Regular Session RS

Milwaukie City Council

CITY OF **MILWAUKIE**

COUNCIL **REGULAR SESSION**

City Hall Council Chambers
10722 SE Main Street
www.milwaukieoregon.gov

2253rd Meeting

AGENDA

SEPTEMBER 5, 2017

1. CALL TO ORDER – 6:00 p.m. **Page #**
Pledge of Allegiance

2. PROCLAMATIONS, COMMENDATIONS, SPECIAL REPORTS, AND AWARDS

A. American Legion Day – Proclamation **2**
Presenter: Mike Wilson, Post 180 Commander, and
Jerry Craig, Post 180 Chaplain

B. Constitution Week – Proclamation **3**
Presenter: Daughters of the American Revolution (DAR) Representative(s)

3. CONSENT AGENDA
These items are considered routine, and therefore, will not be allotted discussion time on the agenda; these items may be passed by the Council in one blanket motion; any Councilor may remove an item from the "Consent" agenda for discussion by requesting such action prior to consideration of that part of the agenda.

A. Approval of City Council Meeting Minutes: **5**
1. **August 1, 2017, Work Session;**
2. **August 1, 2017, Regular Session;**
3. **August 8, 2017, Study Session; and**
4. **August 10, 2017, Special Session.**

B. Appointments to City Boards and Commissions – Resolution **15**

C. Annexation Agreement for Proposed Subdivision on Lake Road – Approval **17**

D. Oregon Liquor Control Commission (OLCC) Applications for:
1. Jo's Saloon – 4400 SE International Way – Change of Ownership; and **32**
2. Kellogg Bowl – 10306 SE Main Street – Greater Privileges. **33**

4. AUDIENCE PARTICIPATION
The presiding officer will call for citizen statements regarding City business. Pursuant to Milwaukie Municipal Code (MMC) Section 2.04.140, only issues that are "not on the agenda" may be raised. In addition, issues that await a Council decision and for which the record is closed may not be discussed. Persons wishing to address the Council shall first complete a comment card and submit it to the City Recorder. Pursuant to MMC Section 2.04.360, "all remarks shall be directed to the whole Council, and the presiding officer may limit comments or refuse recognition if the remarks become irrelevant, repetitious, personal, impertinent, or slanderous." The presiding officer may limit the time permitted for presentations and may request that a spokesperson be selected for a group of persons wishing to speak.

5. PUBLIC HEARING
Public Comment will be allowed on items under this part of the agenda following a brief staff report presenting the item and action requested. The presiding officer may limit testimony.

A. Kellogg Creek (Rusk Road) Planned Development (PD-2017-001) – Ordinance **35**
Staff: Brett Kelver, Associate Planner

6. OTHER BUSINESS

These items will be presented individually by staff or other individuals. A synopsis of each item together with a brief statement of the action being requested shall be made by those appearing on behalf of an agenda item.

A. Final Review of Vision Statement and Action Plan – Resolution 960

Staff: David Levitan, Senior Planner

B. Council Reports

7. INFORMATION

8. ADJOURNMENT

Americans with Disabilities Act (ADA) Notice

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Executive Sessions

The City Council may meet in Executive Session pursuant to ORS 192.660(2); all discussions are confidential and may not be disclosed; news media representatives may attend but may not disclose any information discussed. Executive Sessions may not be held for the purpose of taking final actions or making final decisions and are closed to the public.

Meeting Information

Times listed for each Agenda Item are approximate; actual times for each item may vary. Council may not take formal action in Study or Work Sessions. Please silence mobile devices during the meeting.

CITY OF MILWAUKIE
COUNCIL **REGULAR SESSION**
City Hall Council Chambers
10722 SE Main Street
www.milwaukieoregon.gov

2253rd Meeting
MINUTES
SEPTEMBER 5, 2017

Mayor Mark Gamba called the Council meeting to order at 6:03 p.m.

Present: Council President Lisa Batey; Councilors Angel Falconer, Wilda Parks, Shane Abma

Staff: City Manager Ann Ober
City Recorder Scott Stauffer
City Attorney Peter Watts
Community Development Director Alma Flores
Engineering Director Chuck Eaton
Planning Director Denny Egner
Senior Planner David Levitan
Associate Planner Brett Kelver

1. CALL TO ORDER

Pledge of Allegiance.

2. PROCLAMATIONS, COMMENDATION, SPECIAL REPORTS AND AWARDS

A. American Legion Day – Proclamation

Jerry Craig, American Legion Post 180 Chaplain, **Mike Wilson**, Post 180 Commander, and **Jared Irwin**, Post 180 Honor Guard, introduced the proclamation. **Mayor Gamba** proclaimed September 16, 2017, to be American Legion Day in Milwaukie.

B. Constitution Week – Proclamation

Mr. Stauffer introduced the proclamation and **Mayor Gamba** proclaimed September 17 through 23, 2017, as Constitution Week in Milwaukie.

3. CONSENT AGENDA

It was moved by Council President Batey and seconded by Councilor Abma to approve the consent agenda.

A. City Council Meeting Minutes:
1. **August 1, 2017, Work Session;**
2. **August 1, 2017, Regular Session;**
3. **August 8, 2017, Study Session; and**
4. **August 10, 2017, Special Session.**

B. Resolution 82-2017: A Resolution of the City Council of the City of Milwaukie, Oregon, making appointments to City Boards and Commissions.

C. Approval of an Annexation Agreement for a Proposed Subdivision on Lake Road.

D. Oregon Liquor Control Commission (OLCC) Applications for:
1. **Jo's Saloon – 4400 SE International Way – Change of Ownership; and**
2. **Kellogg Bowl – 10306 SE Main Street – Greater Privileges.**

Motion passed with the following vote: Councilors Falconer, Batey, Parks, and Abma and Mayor Gamba voting "aye." [5:0]

4. AUDIENCE PARTICIPATION

Mayor Gamba reviewed the Audience Participation procedures and **Ms. Ober** reported that there was no follow-up report from the August 15, 2017, Audience Participation.

6. OTHER BUSINESS

Mayor Gamba announced that Agenda Item 6. A. would be heard before Item 5. A.

A. Final Review of Vision Statement and Action Plan – Resolution

Mr. Levitan noted the work done by the Vision Advisory Committee (VAC). He introduced **Kristin Green**, consultant with Cogan Owens Green (COG), and the members of the VAC that were present. **Ms. Green** remarked on the community visioning process, the proposed vision statement, and the next steps to implement the vision.

Bryce Magorian, **Jessica Neu**, **Ben Rousseau**, and **Misty Collard Adcox**, VAC members, and **Odalys Diaz**, Youth Vision Action Team (YVAT) member, commented on the VAC's work and their experiences participating in the visioning process. They thanked Council and staff for initiating and guiding the process.

Mayor Gamba remarked on the community visioning process and suggested that Milwaukie's vision was getting attention throughout the region. He thanked the Visioning Steering Committee, the VAC and YVAT members, City staff, and the COG consultants. He read the final vision statement:

> In 2040, Milwaukie is a flourishing city that is entirely equitable, delightfully livable, and completely sustainable. It is a safe and welcoming community whose residents enjoy secure and meaningful work, a comprehensive educational system, and affordable housing. A complete network of sidewalks, bike lanes, and paths along with well-maintained streets and a robust transit system connect our neighborhood centers. Art and creativity are woven into the fabric of the city.
>
> Milwaukie's neighborhoods are the centers of daily life, with each containing amenities and community-minded local businesses that meet residents' needs. Our industrial areas are magnets for innovation, and models for environmentally-sensitive manufacturing and high wage jobs. Our residents can easily access the training and education needed to win those jobs.
>
> Milwaukie nurtures a verdant canopy of beneficial trees, promotes sustainable development, and is a net-zero energy city. The Willamette River, Johnson Creek, and Kellogg Creek are free flowing, and accessible. Their ecosystems are protected by a robust stormwater treatment system and enhanced by appropriate riparian vegetation. Milwaukie is a resilient community, adaptive to the realities of a changing climate, and prepared for emergencies, such as the Cascadia Event.
>
> Milwaukie's government is transparent and accessible, and is committed to promoting tolerance and inclusion and eliminating disparities. It strongly encourages engagement and participation by all and nurtures a deep sense of community through celebrations and collective action. Residents have the resources necessary to access the help they need. In this great city, we strive to reach our full potential in the areas of education, environmental stewardship, commerce, culture, and recreation; and are proud to call it home.

Mayor Gamba presented certificates to the VAC and YVAT members.

It was moved by Councilor Falconer and seconded by Councilor Parks to approve the Resolution adopting the Milwaukie Community Vision. Motion passed with the following vote: Councilors Falconer, Batey, Parks, and Abma and Mayor Gamba voting "aye." [5:0]

Resolution 83-2017:

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF MILWAUKIE, OREGON, ADOPTING THE MILWAUKIE COMMUNITY VISION.

5. PUBLIC HEARING

A. Kellogg Creek (Rusk Road) Planned Development (PD-2017-001) – Ordinance

Opening: **Mayor Gamba called the hearing on the Ordinance amending the Zoning Map and Comprehensive Plan Amendments, File #s ZA-2017-001 and PD-2017-001, to order at 6:35 p.m.**

Purpose and Procedure: **Mayor Gamba** announced that the purpose of the hearing was to consider the Planning Commission's recommendation to approve changes to the Zoning Map and Compressive Plan related to lots located at 13333 SE Rusk Road. He reviewed the hearing procedures and order of business. He announced that Council would consider recessing the hearing for continuation at a future meeting at 9:00 p.m.

Conflict of Interest: **Mayor Gamba** asked if any member of Council wished to announce actual or potential conflicts of interest. **Councilor Abma** noted that although he works for Metro regional government, which sets land use regulations, he did not work on land use issues at Metro. It was noted that no other member of Council announced any conflicts of interest and no member of the audience challenged a member of Council's ability to participate in the hearing.

Mr. Watts suggested Council declare any ex-parte contacts.

Mayor Gamba read a statement regarding his knowledge of the proposed development prior to the Planning Commission's hearing. He reviewed the comments he had received from the public and state land management staff regarding the planned development, and recounted his visit to the site on February 5, 2017. The group reviewed a series of photos Mayor Gamba had taken during his site visit.

Council President Batey noted that prior to the Planning Commission's hearing on the proposed development, she had seen social media comments about the site. She also noted that she served as Council's representative to the North Clackamas Urban Watershed Council (NCUWC).

Councilor Parks reported that she had attended a meeting about the proposed development held at the church located next to the site. She did not speak to the presenters at that meeting and did not watch the Planning Commission hearing until she received the September 5, 2017, Regular Session packet.

Councilor Abma noted that he had watched the Planning Commission hearing video. He had not talked about or read anything related to the proposed development.

Councilor Falconer noted that she had avoided reading or discussing the proposed development, and that she had declined to comment on it when asked by members of the public. **Councilor Abma** added that an individual had commented to him about the development at a recent Milwaukie Sunday Farmers Market and that the comment had offered no new information.

Correspondence: staff reported that no additional correspondence had been received regarding the proposed development.

Mr. Watts suggested that the audience be asked if they wished to challenge a member of Council's bias in conducting the hearing. **Mayor Gamba** asked if any member of the audience wished to challenge a member of Council's impartiality or ability to participate in the hearing. It was noted that no member of the audience challenged a member of Council's ability to participate in the hearing.

Staff Presentation: **Mr. Kelver** discussed the proposed planned development, describing the site location, relationship with the adjacent church, previous development plans, and the site's current and proposed zoning. The group commented on how the site had been partially rezoned through a failed development process in 1987.

Mr. Kelver explained the planned development hearing process and noted that the Planning Commission had recommended Council approve the proposal. He reviewed the development site and reported that the applicant had requested variances for the water resource overlay and the number of houses allowed on a closed street system.

Mayor Gamba and **Mr. Egner** remarked on allowing a closed loop street system.

Mr. Kelver described the natural resource and habitat conservation areas (HCA) on the site. He reported that the applicant had proposed giving the wetland areas and HCA to the City as park land. He reviewed the site issues addressed during the Planning Commission hearing, noting the attention given to the Federal Emergency Management Agency (FEMA) floodplain assessments and maps. **Mr. Egner** explained that the applicant had re-evaluated the floodplain map for the site. The group discussed the accuracy of the FEMA 100-year floodplain map, the elevation levels on the site, how the applicant had re-evaluated the site's floodplain areas, and that the site contained fill dirt from unknown sources. It was noted that planned developments were required to consider 100-year flood levels and that more detailed engineering calculations would be required if the proposal was approved. **Mr. Eaton** noted it was a requirement to meet FEMA floodplain levels so that homebuyers were not required to buy flood insurance.

The group remarked on the City's responsibility to ensure that existing floodways downstream would not be impacted by new development.

Mr. Kelver continued to note the issues raised during the Planning Commission's hearing, including consideration of the site's HCAs and mapping inaccuracies. The group remarked on whether the proposed road on the site would go through floodplain areas.

Mr. Kelver, **Council President Batey**, and **Mr. Egner** discussed issues related to revising the natural resources map to add an area of white oak trees in the HCA. **Mayor Gamba** and **Mr. Egner** remarked on the known inaccuracies of HCA and water quality resource (WQR) maps. **Mr. Kelver** noted staff's recommendation that the HCA map be adjusted to include the white oak trees – either now through the proposed planned development or when the HCA map is next updated.

Mr. Kelver discussed the proposed traffic mitigation plan and noted safety and traffic concerns around the site. The group discussed how close the Rusk Road and Hwy 224 intersection was to being rated a failing intersection, and how the Oregon Department of Transportation (ODOT) collects vehicle trip data.

Mr. Kelver reviewed the approval criteria for a planned development and the variances requested by the applicant. **Councilor Abma** remarked on the variance criteria regarding outstanding designs and asked if the proposed development could occur under regular zoning. **Mr. Kelver** replied that the proposed design features could be permitted under regular zoning and commented on the current split-zoning of the site.

Mr. Kelver reviewed the key conditions recommended by the Planning Commission. **Mayor Gamba** and **Mr. Kelver** discussed the proposed mitigation and restoration plantings to be done on the site. **Ms. Ober** reported that the North Clackamas Parks and Recreation District (NCPRD) had also weighed-in on the proposed mitigation plan.

Council President Batey and **Mr. Kelver** remarked on the proposal to add a turn lane on Rusk Road at Hwy 224. They noted that the current proposal would not make any improvements at the intersection of Rusk Road and Kellogg Creek Drive.

Mr. Kelver summarized the questions for Council to consider regarding the density bonus and natural resource area variance requests. The group commented on how the Milwaukie Municipal Code (MMC) defines extraordinary amenities and Council's ability to interpret ambiguous sections of the Code.

Mr. Kelver and **Mr. Eaton** commented on the landscaping referenced in the application materials and the role of the MMC and the City's Public Works Standards in determining which tree species would be planted on the site. **Mr. Eaton** noted that the FEMA floodplain maps were last updated in 2008.

Councilor Parks and **Mr. Kelver** remarked on how the proposed development would be impacted by church traffic. **Mr. Eaton** commented on how the City's Safe Access for Everyone (SAFE) bicycle and pedestrian access projects would integrate with the proposed development. He reported that staff had been talking with Clackamas County regarding jurisdiction issues along Kellogg Creek Drive.

Council President Batey and **Mr. Kelver** noted the amount of vehicle parking each unit in the development would include and the planned street widths.

Mayor Gamba and **Mr. Kelver** discussed the history of the site in terms of when the dirt fill was placed, previous development plans, and when it was annexed into the City. **Mr. Eaton** remarked that placing fill on a site does not often require a permit.

Mayor Gamba and **Mr. Kelver** noted that the City could grant a variance for minimum density and that the proposal was to build single-family residential (SFR) rowhouses. The group commented on rowhouse standards for garages and driveways, and noted that the MMC did not require the installation of light emitting diode (LED) street lights but that Portland General Electric (PGE) had been installing LED lights. **Council President Batey** and **Mr. Kelver** noted the how the application addressed bird-safe lighting guidelines around the natural resource areas.

Mayor Gamba discussed the site's zoning history and previous assumptions about traffic based on a 1987 proposal to build senior housing on the site. The group commented on the site's zoning, the City's zoning and land use change processes, and the impact of State and regional policies promoting certain types of development.

Mayor Gamba and **Mr. Kelver** commented on the proposed development's use of the City's solar access requirements and noted that the applicant was not requesting a variance related to solar access protection.

Mayor Gamba asked about building medium density housing on a site that includes HCA and WQR overlays. **Mr. Kelver** noted that the 1987 application for senior housing on the site likely predated the City's natural resource protections. **Mayor Gamba**, **Mr. Kelver**, and **Mr. Egner** remarked on how an application for senior housing on the site would be considered under the City's current zoning and natural resource requirements.

Mayor Gamba and **Mr. Egner** remarked on the MMC and FEMA requirements that homes be built at least one foot above the 100-year floodplain elevation.

Mayor Gamba, **Mr. Kelver**, and **Mr. Egner** noted that the City would charge storm system development charges (SDCs) on the site and that park and recreation SDCs would be charged at a SFR rate.

Mayor Gamba and **Mr. Kelver** discussed what percentage of a front yard for front-loaded houses was required to be vegetated, and the maximum percentage a front yard could be for vehicle maneuvering or driveway area.

Mayor Gamba, Mr. Kelver, and **Councilor Parks** discussed the process for considering the proposed development and the related variances.

Mayor Gamba and **Mr. Eaton** discussed the proposed development's plan to handle predicated accumulative rainfall totals. They noted the City's Public Works Standards regarding stormwater facilities and commented on water control and detention facilities.

The group noted where in the application the number of trees on the site was listed.

Ms. Ober noted that it was 8:45 p.m. and that Council had suggested it would recess the hearing to future meeting date at 9:00 p.m. **Mr. Watts** suggested Council may want to consider which presentations and testimonies to hear at the present meeting if it intends to continue the hearing to a future date. The group discussed how to proceed and the option of recessing the hearing to the September 19, 2017, Regular Session.

Mayor Gamba recessed the Regular Session at 8:46 p.m. and reconvened the Regular Session at 8:53 p.m.

Mayor Gamba announced that Council would continue with the applicant testimony. He asked those in the audience who wished to address Council regarding the proposed development to submit their comments for the record or come to the September 19, 2017, Regular Session when Council would take public testimony.

Applicant Testimony: **Serah Breakstone**, Senior Planner at DOWL Engineering, introduced Scott Emmens, Senior Project Manager at DOWL; John Van Staveren, Senior Scientist at Pacific Habitat Services; and the applicant Randy Myers, President of Brownstone Homes. She described features of the proposed planned development and noted the process used to meet the City's criteria and to engage the community. She suggested that preserving white oak trees and dedicating part of the site for park land was not something that would be done under standard zoning. She remarked that the development was intended to be workforce housing.

The group discussed the median family income (MFI) in Milwaukie and how workforce housing was defined in the City's Housing Needs Analysis (HNA).

Mr. Emmens confirmed that the proposed development would have one point of access with additional emergency access via a grass alley. He had worked with an arborist to understand the importance of the trees on the site and the proposed plan relocated sidewalks on Kellogg Creek Drive to preserve the white oak trees. He discussed how the proposed plan addressed two flood zones and noted that there would be more calculations to handle flooding as the development progressed. He remarked on the proposals to address traffic issues on Rusk Road and Hwy 224.

Ms. Breakstone reviewed the proposal to include pedestrian access and wayfinding signage throughout the development that would meet the City's standards. **Mayor Gamba** and **Mr. Emmens** discussed concerns about emergency vehicle access to the development. It was noted that the proposal included access driveways from the church parking lot that would be built to City standards.

Councilor Falconer discussed the definitions of affordable and workforce housing per the HNA and the reported price range for the proposed 92 units of housing on the site.

Ms. Breakstone and **Councilor Falconer** discussed whether the proposed rowhouses could be defined as workforce housing and whether the City needed housing at the proposed price point of $300,000 to $350,000. It was noted that the consultants who worked on the HNA, Jerry Johnson, Principle at Johnson Economics, and Matt Hastie, Project Manager at Angelo Planning Group, had been consulted by the applicant and that they had suggested this type of housing was needed in Milwaukie. The group discussed whether the term "workforce housing" included the types of housing proposed by the applicant. **Ms. Breakstone** suggested that Mr. Johnson could address Council on September 19, 2017.

Councilor Parks asked if all 92 units would have the same size and if 10 units could be priced in more affordably. **Ms. Breakstone** reported that the units would be priced differently based on location on the site. It was noted that the application materials in the Council packet included proposed floorplans.

Councilor Parks and **Ms. Breakstone** noted that the homeowner's association (HOA) would maintain the playground and the community garden.

The group noted the lack of public transportation around the site and **Councilor Parks** asked if the applicant had talked to TriMet about reinstating bus service to the area. **Ms. Breakstone** reported that they had not spoken to TriMet about bus service.

Councilor Abma and **Ms. Breakstone** discussed whether the proposed development met the exceptional living standards and amenities criteria to meet the requested density bonus. They commented on the long-term guarantee that an HOA would be able to maintain a garden and playground, and whether the applicant could guarantee price points for affordable or workforce housing. **Mr. Emmens** and **Ms. Breakstone** remarked that unit pricing would be market driven and the applicant's intention was to balance open space with a development that achieves the City's density calculations.

Council President Batey, **Mr. Emmens**, and **Ms. Breakstone** discussed the widths of the proposed rowhouse lots, garages, homes, and driveways.

Mayor Gamba asked how the proposed development addressed the Council's climate action goal. **Ms. Breakstone** and **Mr. Emmens** noted that energy efficiency and use standards would be addressed by the builder.

Mayor Gamba asked if the applicant intended to do a FEMA Conditional Letter of Map Revision (CLOMR) and **Mr. Emmens** confirmed that they intended to do so.

Mayor Gamba and **Mr. Emmens** reviewed a map showing the amount of fill to be added to the site to raise the homes above the FEMA 100-year flood elevation. They noted varying depths of fill to be added, the plan to mitigate the fill on site, the presence of wetlands, and the need to satisfy FEMA regulations so that homebuyers would not have to buy flood insurance. They commented on flood mitigation planning on the site.

Mayor Gamba and **Ms. Breakstone** discussed why the applicant was seeking to build 92 units and noted the need to balance construction costs by building more units.

Mayor Gamba asked if the site could be staked out before the next hearing on September 19, 2017, so Council could visualize the current site. The group discussed the feasibility of staking the site and arranging individual site visits for members of Council and/or the public. It was noted that the applicant's site drawings could include aerial maps at the next hearing for better visualizing the site.

Councilor Abma asked if Council intended to finish the hearing at a future date. **Ms. Ober** noted that Council would need to vote to continue past 10:00 p.m. **Mr. Watts** noted that the applicant and staff would need time to provide additional information.

Mayor Gamba asked if an undisturbed field would absorb stormwater at the same rate as a cleared area. **Mr. Van Staveren** reported that the site had a history of disturbance and that it was not in a pristine condition. He noted that the natural flood area had been changed. He suggested that the flooding detention would be fine and that the proposed development's goal was to delay, not detain, flood water. **Mayor Gamba** and **Mr. Van Staveren** discussed water runoff and mitigation planning.

Council discussed whether to continue the hearing to a future meeting date. It was noted that one person who wished to address Council regarding the planned development could not attend the next hearing and would submit a comment via email.

It was moved by Councilor Falconer and seconded by Council President Batey to continue the hearing to a date certain of September 19, 2017. Motion passed with the following vote: Councilors Falconer, Batey, Parks, and Abma and Mayor Gamba voting "aye." [5:0]

Mayor Gamba recessed the hearing at 10:00 p.m.

It was moved by Councilor Falconer and seconded by Council President Batey to extend the Regular Session to 10:05 p.m. Motion passed with the following vote: Councilors Falconer, Batey, Parks, and Abma and Mayor Gamba voting "aye." [5:0]

6. OTHER BUSINESS (continued)

B. Council Reports

Mayor Gamba announced upcoming activities, including the second Solarize Milwaukie campaign workshop, a Ledding Cultural Forum event, the Historic Milwaukie Neighborhood District Association (NDA) and Island Station NDA summer picnics, a Community Emergency Response Team (CERT) training, a Meals on Wheels fundraiser, the 11th Annual Serbian Festival, and the Annual Rotary Club Peace Walk.

Council President Batey noted the Sunday Parkways on September 24, 2017, a Stop Oregon Litter and Vandalism (SOLV) event on September 23, 2017, and a tour of Milwaukie Pioneer Cemetery sponsored by the Milwaukie Historical Society.

7. INFORMATION

8. ADJOURNMENT

It was moved by Councilor Parks and seconded by Councilor Abma to adjourn the Regular Session. Motion passed with the following vote: Councilors Falconer, Batey, Parks, and Abma and Mayor Gamba voting "aye." [5:0]

Mayor Gamba moved to adjourn the regular session at 10:06 p.m.

Respectfully submitted,

Scott S. Stauffer, City Recorder

Regular Session Agenda Item No.	2

Proclamations, Commendations, Special Reports, & Awards

CITY OF MILWAUKIE

PROCLAMATION

WHEREAS, the American Legion was chartered by Congress on September 16th, 1919, as a wartime veterans organization based on the four pillars of Veterans Affairs & Rehabilitation, National Security, Americanism, and Children & Youth; and

WHEREAS, the American Legion has become a pre-eminent community service organization working to support programs that benefit our nation's veterans, service members, and their families; and

WHEREAS, Legionnaires uphold the ideals of freedom and democracy while working to make a difference in the lives of all Americans; and

WHEREAS, the City of Milwaukie enjoys its partnership with American Legion Post 180 and its affiliated units and organizations; and

WHEREAS, the 2017 observance of American Legion Day provides an opportunity to recognize Legionnaires in our community for their leadership and many contributions.

NOW, THEREFORE, I, Mark Gamba, Mayor of the City of Milwaukie, a municipal corporation in the County of Clackamas, in the State of Oregon, do hereby proclaim **SEPTEMBER 16, 2017**, as **AMERICAN LEGION DAY** in the City of Milwaukie, and do hereby commend its observance to all citizens of "The Dogwood City of the West".

IN WITNESS WHEREOF, and with the consent of the City Council of the City of Milwaukie, I have hereunto set my hand on this **5th** day of **September**, **2017**.



Mark Gamba, Mayor

ATTEST:

Scott Stauffer, City Recorder

CITY OF **MILWAUKIE**

PROCLAMATION

WHEREAS, We the People of the United States, in Order to form a More Perfect Union, Establish Justice, Insure Domestic Tranquility, Provide for the Common Defence, Promote the General Welfare, and Secure the Blessings of Liberty to Ourselves and Our Posterity, did Ordain and Establish a Constitution for the United States of America; and

WHEREAS, September 17th, 2017, marks the two-hundred thirtieth anniversary of the adoption of the Constitution by a convention of the States; and

WHEREAS, it is fitting to proclaim official recognition of this essential document on the anniversary of its adoption in accordance with Public Law 915 which guarantees that a proclamation will be issued annually by the President of the United States designating September 17th through 23rd as Constitution Week.

NOW, THEREFORE, I, Mark Gamba, Mayor of the City of Milwaukie, a municipal corporation in the County of Clackamas, in the State of Oregon, do hereby proclaim **SEPTMEBER 17th THROUGH 23RD, 2017**, as **CONSTITUTION WEEK** in the City of Milwaukie and do commend its observance by all citizens.

IN WITNESS, WHEREOF, and with the consent of the City Council of the City of Milwaukie, I have hereunto set my hand on this **5th** day of **SEPTEMBER 2017**.

Mark Gamba, Mayor

ATTEST:



Scott Stauffer, City Recorder



Regular Session Agenda Item No.	3

Consent Agenda

CITY OF MILWAUKIE

COUNCIL **WORK SESSION**

City Hall Conference Room
10722 SE Main Street
www.milwaukieoregon.gov

MINUTES

AUGUST 1, 2017

Mayor Mark Gamba called the Council meeting to order at 4:02 p.m.

Present: Council President Lisa Batey; Councilors Angel Falconer, Wilda Parks, Shane Abma

Staff: Community Development Director Alma Flores
Planning Director Denny Egner
Assistant to the City Manager Mitch Nieman
Senior Planner David Levitan
City Recorder Scott Stauffer

Vietnam Veterans Memorial at Scott Park

Mr. Nieman and **Mr. Stauffer** provided an update on the installation of a monument commemorating the 50th anniversary of the Vietnam War. They noted the project partners, the review process, and the installation and dedication timeline.

The group discussed possible impacts of the Ledding Library construction project on Scott Park and the Vietnam monument. It was noted that staff would contact the construction company to confirm the impact on the monument.

Council Goal: Housing Affordability Update #1

Ms. Flores introduced Ann Gray, Director of Lending at the Network for Oregon Affordable Housing (NOAH).

It was noted that Councilor Abma arrived at 4:15 p.m.

Ms. Gray provided an overview of NOAH including their Strategic Plan, programs, and financing options. **Mayor Gamba** and **Ms. Gray** discussed market rate lending and the conversion process into affordable housing.

It was noted that Council President Batey left the meeting at 4:28 p.m.

Ms. Gray continued to describe NOAH financing options.

It was noted that Council President Batey returned to the meeting at 4:37 p.m.

Councilor Abma and **Ms. Gray** discussed loan repayment affordability and financing, and how NOAH finances loans for accessory dwelling units (ADUs). The group discussed how ADUs could be financed and distributed to several sites by an organization or agency.

It was noted that Council President Batey left the meeting at 4:42 p.m. and returned to the meeting at 4:43 p.m.

The group continued to discuss NOAH's general funding model.

Ms. Flores explained how the City had partnered with Neighborhood Economic Development Corporation (NEDCO) on an equitable housing grant for the development of a cottage cluster project. She reviewed the membership of City's Housing Affordability Work Group (HAWG) and asked for Council recommendations for housing organizations to reach out to. **Mayor Gamba** suggested staff contact Northwest Housing Alternatives (NHA) and the group discussed other possible organizations.

Ms. Flores noted her involvement on the Clackamas County Housing Advisory Board and her other relevant partnerships with housing and social need groups. She discussed steps taken by staff to pursue Council's Housing Affordability Goal.

It was noted that Councilor Falconer left the meeting at 4:59 p.m. and returned to the meeting at 5:01 p.m.

Ms. Flores continued to review steps staff had taken towards Council's Housing Affordability Goal. She discussed the City's opportunity sites, working groups, Metro's upcoming housing summit, and the feasibility of pursuing different types of housing.

It was noted that Councilor Falconer left the meeting at 5:06 p.m. and returned to the meeting at 5:07 p.m.

Ms. Flores reported on the City's work related to a Metro Equitable Housing Planning and Development Grant for a Cottage Cluster Feasibility Analysis. She noted the City's work with Clackamas County on the Hillside Manor site on 32nd Avenue. She explained the progress of the development team, Guardian Real Estate, involved with the redevelopment of the Bernard's Garage site.

Ms. Flores announced that Layla Aman had joined the City staff this week and discussed Ms. Aman's role in Community Development projects.

Councilor Abma asked how opportunity sites are promoted. **Ms. Flores** explained the City assists in the promotional process and to encourage interested parties in developing publicly and privately owned sites.

Mayor Gamba adjourned the Work Session at 5:14 p.m.

Respectfully submitted,

_____

Amy Aschenbrenner, Administrative Specialist II

CITY OF MILWAUKIE
COUNCIL **REGULAR SESSION**
City Hall Council Chambers
10722 SE Main Street
www.milwaukieoregon.gov

2251st Meeting
MINUTES
AUGUST 1, 2017

Mayor Mark Gamba called the Council meeting to order at 6:00 p.m.

Present: Council President Lisa Batey; Councilors Angel Falconer, Wilda Parks, Shane Abma

Staff: Community Development Director Alma Flores
City Recorder Scott Stauffer
City Attorney Peter Watts
Planning Director Denny Egner
Senior Planner David Levitan
Associate Planner Mary Heberling
Code Compliance Coordinator Tim Salyers

1. CALL TO ORDER
Pledge of Allegiance.

Council President Batey noted she may leave the dais due to an illness and **Councilor Falconer** noted she may leave the dais to attend to a sick child.

2. PROCLAMATIONS, COMMENDATION, SPECIAL REPORTS AND AWARDS
A. None scheduled.

3. CONSENT AGENDA
It was moved by Councilor Parks and seconded by Councilor Abma to approve the consent agenda.

A. City Council Meeting Minutes:
   1. July 5, 2017, Work Session; and
   2. July 5, 2017, Regular Session.

B. Resolution 72-2017: A Resolution of the City Council of the City of Milwaukie, Oregon, making appointments to City boards and commissions.

C. Resolution 73-2017: A Resolution of the City Council of the City of Milwaukie, Oregon, accepting the recommendation of the Kellogg Good Neighbor Committee to provide up to $6,000 from the Good Neighbor Fund for the installation of two additional benches and a trash receptacle along the path in the Kellogg Treatment Plant open space along the Willamette River to facilitate use of the area.

D. Resolution 74-2017: A Resolution of the City Council of the City of Milwaukie, Oregon, purchasing a replacement street sweeper.

E. Resolution 75-2017: A Resolution of the City Council of the City of Milwaukie, Oregon, requesting approval of an intergovernmental agreement with the State of Oregon Department of Administrative Services for membership in the Oregon Cooperative Procurement Program (ORCPP).

F. An Oregon Liquor Control Commission (OLCC) Application for Beer Central, 11301 SE 21st Avenue – New Outlet

Motion passed with the following vote: Councilors Falconer, Batey, Parks, and Abma and Mayor Gamba voting "aye." [5:0]

4. AUDIENCE PARTICIPATION
Mayor Gamba reviewed the Audience Participation procedures and noted that City Manager Ann Ober had been excused from the meeting. **Ms. Flores** reported on staff's efforts to contact the Milwaukie Lions Club regarding the Club's sign request. **Ms. Flores** and **Mayor Gamba** noted the location of cooling centers in the area.

5. PUBLIC HEARING
A. None Scheduled.

6. OTHER BUSINESS

A. Protest of Abatement at 11909 SE Stanley Avenue

Mr. Salyers explained that Council was asked to declare the subject property a nuisance and allow the abatement process to proceed. He reviewed the abatement process, described the property, and noted the code violations. He discussed the costs of pursuing an abatement and noted that the compliance process would continue if Council declined to declare the property a nuisance.

Council President Batey and **Mr. Salyers** noted that the City had received several complaints about the property.

Councilor Parks and **Mr. Salyers** noted that the property had been in violation of the Milwaukie Municipal Code (MMC) for years. They discussed what steps the City could take if Council did not declare the property a nuisance.

The group discussed how the City calculates liens. They noted that the lien on the subject property had been in place since 2011 and had accrued to over $100,000. They remarked on the progress made to clean-up the debris over the last decade.

Jim Schultz, property resident**,** thanked Council for hearing his appeal and noted that the property owner, his mother, had not resided on the property since 2004. **Mr. Salyers** and **Mr. Schultz** briefly remarked on when the City had notified the property owner about the citations.

Mr. Shultz commented on the current state of the property and reported that he and his sons had been cleaning up the debris. He noted that the seasonal wetlands on the property limited when they could remove vehicles and suggested that he could finish removing the debris by September 2017. He expressed concern about the higher cost of paying the City to clean-up the property.

Councilor Falconer and **Council President Batey** asked Mr. Schultz how long he had been working to clean-up the property. **Mr. Schultz** reported that he had started to remove debris in June and July 2017.

Councilor Abma asked Mr. Schultz if he had received the abatement notices sent by the City. **Mr. Schultz** explained that the property owner had received the notices and that he had been working to remove the vehicles and debris. **Mayor Gamba** and **Mr. Schultz** noted the seasonal window that vehicles could be removed from the property.

Mr. Schultz noted that he had resided on the property since 2012.

The group discussed the possibility of giving Mr. Schultz more time to clean-up the property by delaying the Council vote to declare the property a nuisance. **Mr. Salyers** noted the seasonal and contracting timelines for abating the property and reported that Mr. Schultz had been working to clean-up the property. He suggested that there would be opportunities for staff to reassess the situation and halt the abatement process if enough progress had been made to clean-up the property.

Council President Batey and **Mr. Salyers** remarked on the potential impacts on other abatement projects if Council were to wait to declare the property a nuisance. **Mr. Salyers** reiterated the request that the property be declared a nuisance at the present meeting and noted that if sufficient progress was made the process could be stopped.

The group discussed the timeline, financial costs, and impacts on staff work if Council waited 2 weeks before declaring the property a nuisance.

Councilor Parks expressed concern that the violations had been going on for years. She suggested Council continue the abatement process.

Council President Batey expressed concern about how long the Code enforcement process had been going on and about the potential for hazardous materials to have leaked out of the vehicles into the wetlands. She suggested Council move forward with

the abatement with the understanding that staff would stop the process if enough progress were made to clean-up the property.

Councilor Abma concurred with Councilor Parks and Council President Batey and expressed support for declaring the property a nuisance. He remarked on the need to review the MMC to address issues like how liens are calculated.

Councilor Falconer expressed support for staff reassessing the process as the property was cleaned. She was concerned about how long the property has been in violation and remarked on the challenges of addressing hoarding problems with family members. She suggested Council declare the property a nuisance.

Mayor Gamba commented on dealing with family members who are hoarders. He noted that he had been inclined to delay the process but would agree with Council if a majority wanted to declare the property a nuisance at the present meeting.

Councilor Parks and **Mayor Gamba** noted Council's interest in discussing the MMC related to liens at a future meeting and **Mr. Watts** discussed how the City could address properties with significant outstanding liens.

It was moved by Council President Batey and seconded by Councilor Abma to uphold the Staff decision to abate the property located at 11909 SE Stanley Avenue. Motion passed with the following vote: Councilors Falconer, Batey, Parks, and Abma and Mayor Gamba voting "aye." [5:0]

Mayor Gamba recessed the Regular Session at 6:51 p.m. and reconvened the Regular Session at 7:00 p.m.

B. Vision Statement and Action Plan: Final Review

Mr. Levitan and **Anais Mathez**, visioning consultant with Cogan Owens Green (COG), reviewed the changes to the Vision Statement and Action Plan proposed by Council at the July 5, 2017, Work Session and asked if there was any further feedback.

Mayor Gamba proposed changes to the Action Plan related to work being undertaken by the City's Tree Board, the Safe Access for Everyone (SAFE) program, and a future library concierge service. The group noted revisions proposed at previous meetings that had been omitted from the presented drafts that would be made to the final versions.

Council President Batey thought the drafts looks good.

Councilor Parks thanked staff for addressing her changes before the meeting and asked if there had been any concern about the local transit funding piece added by the Vision Advisory Committee (VAC). **Mr. Levitan** reported that several items not identified in the community survey had been added by the VAC. He suggested Council could remove items if they were not comfortable including them in the final document.

The group discussed the ambiguous language of the public safety item and noted the Milwaukie Police Department's (MPD) efforts to proactively engage the community.

Councilor Abma suggested that former Councilor Karin Power be included on the acknowledgements page and the group agreed with Councilor Abma's suggestion.

The group thanked staff, the VAC, and the consultants for their work. It was noted that the final Vision Statement and Action Plan would be presented for Council consideration at the September 5, 2017, Regular Session.

Mayor Gamba noted that **Michael Hall**, Milwaukie resident, wished to address Council regarding the visioning process. **Mr. Hall** remarked on the importance of the visioning process and suggested that elements of the Action Plan had created excitement among various environmental groups in the area.

C. Comprehensive Plan Update

Mr. Egner reported that staff was asking for Council comment on the proposed Comprehensive Plan Advisory Committee (CPAC) application. **Mr. Levitan** reviewed recent Council discussions regarding the CPAC membership and application process.

It was noted that Council President Batey left the meeting at 7:21 p.m. and returned to the meeting at 7:22 p.m.

Mr. Levitan presented a revised CPAC application that had incorporated previous Council suggestions and asked if there was additional input on the application. He reported that the Planning Commission agreed with the recommendation to designate one Council member and one Planning Commissioner to serve as liaisons to the CPAC.

The group discussed which members of Council should serve as liaisons to the CPAC and they remarked on the role of elected and appointed officials on advisory groups. **Councilors Abma**, **Falconer**, and **Parks** agreed that Mayor Gamba and Council President Batey should serve as CPAC liaisons and **Mr. Egner** noted that all decisions related to the Comprehensive Plan review would require action by the entire Council. The group remarked on the size of the CPAC and it was Council consensus that Mayor Gamba and Council President Batey would serve a Council liaisons to the CPAC.

Councilor Abma suggested several changes to the CPAC application, including adding education and home ownership questions and spelling out neighborhood district association (NDA). **Councilor Parks** and **Mayor Gamba** noted that they agreed with Councilor Abma's suggestions.

The group discussed making the CPAC application available in multiple languages and the feasibility of providing translation services during CPAC meetings.

Councilor Abma suggested that the question about how the applicant's background would help the CPAC be made less specific. **Mayor Gamba** and **Councilor Parks** concurred with Councilor Abma's suggestion.

The group discussed the feasibility of translating CPAC meetings and documents into different languages. They noted that translators had been used at visioning public meetings and would be used at public meetings for the Comprehensive Plan review. The group agreed that CPAC materials should be advertised in English and Spanish.

Councilor Abma and **Mr. Levitan** noted a reference to the community visioning process on the CPAC application that needed to be replaced.

Mr. Levitan reviewed the process used to appoint VAC members and asked if Council wished to use the same process. The group discussed identifying a short list of applicants to interview by screening CPAC applications.

Mayor Gamba asked why the City would not be going through a periodic review process. **Mr. Egner**, **Mr. Levitan**, and **Mr. Watts** explained that the State was not offering that process due to limited resources. They noted that the City would work with the State and adhere to the periodic review process as much as practicable.

The group discussed Council's interest in reviewing the CPAC applications. It was the group consensus that Council would review the applications and communicate comments to staff directly and not to Council as a group.

Mr. Egner and **Mr. Levitan** explained that staff proposed using the same element and super action structure that had been used for the visioning process. They noted the example framework from the City of Hillsboro that had incorporated Statewide Planning Goals and they confirmed that staff would work with the State as much as possible throughout the process.

Mayor Gamba noted that Hillsboro had called out healthy food and noise management in their framework and **Council President Batey** remarked on the increasing concern about noise management around commercial and industrial zones. **Mr. Egner** and **Mr. Levitan** commented on the flexibility of the proposed framework.

It was noted Council President Batey left the meeting at 7:56 p.m. and returned to the meeting at 7:57 p.m.

Mayor Gamba, **Mr. Watts**, and **Mr. Egner** discussed driving factors in the cities of Hillsboro and Lake Oswego's recent Comprehensive Plan reviews.

It was Council consensus that the proposed framework for the Comprehensive Plan review looked good. The group briefly commented on the CPAC recruitment process.

D. Council Reports

Mayor Gamba announced upcoming events, including neighborhood concerts, a movie night, a community day celebration, the grand opening of the Milwaukie Station Food Cart pod, August First Friday events, and the first Solarize Milwaukie workshop.

Council President Batey noted that the August First Friday would include music at City Hall and a Milwaukie Historical Society-led tour of the Trolley Trail.

Councilor Falconer mentioned the cooling stations in the area and noted that more information could be found at www.211info.org, or by calling or texting "211". The group remarked on ways to keep cool and noted that there was a total burn ban in effect.

7. INFORMATION

8. ADJOURNMENT

It was moved by Councilor Parks and seconded by Councilor Falconer to adjourn the Regular Session. Motion passed with the following vote: Councilors Falconer, Batey, Parks, and Abma and Mayor Gamba voting "aye." [5:0]

Mayor Gamba moved to adjourn the regular session at 8:04 p.m.

Respectfully submitted,

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Scott S. Stauffer, City Recorder

CITY OF MILWAUKIE

COUNCIL **STUDY SESSION**

City Hall Conference Room
10722 SE Main Street
www.milwaukieoregon.gov

MINUTES

AUGUST 8, 2017

Mayor Mark Gamba called the Council meeting to order at 5:15 p.m.

Present: Council President Lisa Batey; Councilors Angel Falconer, Wilda Parks, Shane Abma

Staff: City Manager Ann Ober
City Recorder Scott Stauffer
Assistant to the City Manager Mitch Nieman
Community Programs Coordinator Jason Wachs
Public Affairs Coordinator Jordan Imlah
Police Public Information Officer Greg Elkins

Sunday Parkways 2018

Mr. Nieman and **Mr. Wachs** discussed the City's planning process for the 2018 Sunday Parkways event and asked for Council feedback. **Mr. Nieman** suggested that the City could identify its own goals for the event.

The group talked about the kind of Sunday Parkways event the City should produce. They discussed possible routes and different event elements. The group noted that the 2018 event would be the first Sunday Parkways that the City would produce on their own and the discussed the various construction projects that may affect the route.

It was the group consensus that the 2018 event would be held on the fourth Sunday in September.

Mr. Nieman and **Mr. Wachs** discussed the number of volunteers needed for the event. **Mr. Nieman** noted the likelihood of drawing from outside sources to help coordinate volunteers. The group discussed the process of recruiting volunteers.

Mr. Nieman discussed the cost of the previous years' events and noted how much the City would need for its own event in 2018. He noted how long it would take to plan the event. He discussed the importance of treating volunteers well and explained the City of Portland's volunteer celebration event. The group discussed volunteer appreciation.

Mr. Wachs and **Mr. Nieman** asked if Council had an opinion of what to name the event. They noted that it did not have to be called "Sunday Parkways." **Mr. Nieman** pointed out name suggestions and suggested staff could brainstorm more options.

Mr. Stauffer noted that this meeting would continue to be broadcast live, since the Planning Commission meeting had been canceled.

Mayor Gamba recessed the Study Session at 6:15 p.m. and reconvened the Study Session at 6:22 p.m.

Rebranding Report and Discussion

Mr. Imlah presented his graduate thesis on branding and identity for the City. He reviewed the research he had completed and provided an identity story for the City, along with a mission, tagline, and key values. He noted the history of the City's logo, discussed the new branding guide, and provided templates for letters and business cards. Members of Council agreed it was important to have a style guide.

Mr. Imlah presented sample ideas for new a new logo design and explained the imagery and color palette. **Mayor Gamba** desired a larger and more involved process for designing a City logo. The group discussed the logo and motto change process. The group noted the importance of message consistency.

The group discussed the lifespan of logos and noted the process that similar cities and organizations went though. **Mr. Stauffer** discussed the City's seal. The group noted the importance of the river in historical, current, and future contexts.

The group discussed next steps in the rebranding process. **Ms. Ober** noted the importance of engaging the community around the adoption of a new logo and thanked Mr. Imlah for his work.

Mr. Imlah noted that dogwood imagery could be included on the City seal that is used on official documents. **Ms. Ober** asked Council to send their thoughts to staff and they would move forward with the process.

Mayor Gamba recessed the Study Session at 7:15 p.m. and reconvened the Study Session at 7:19 p.m.

Media Relations

Officer Elkins and **Mr. Nieman** distributed the City's administrative media policy and the Milwaukie Police Department (MPD) media policy. **Mr. Nieman** noted this conversation was to discuss the City's and MPD's relation with the media. He noted that he, Mr. Imlah, Officer Elkins, and Ms. Ober were all trained in press relationships and could help Council if they had any questions.

Mr. Imlah and members of Council discussed the amount and types of news releases that are picked up by the media. **Mr. Nieman** noted different ways to track news stories related to the City.

Officer Elkins explained his role in the MPD and discussed the use of FlashAlert for press releases. He noted MPD's use of different social media platforms. **Officer Elkins** discussed why certain types of information that are not shared publicly.

Ms. Ober noted Mr. Imlah was a great resource to help assist with media relations. The group discussed recent examples of news reports being shared with the community.

Mayor Gamba adjourned the Study Session at 7:45 p.m.

Respectfully submitted,

Amy Aschenbrenner, Administrative Specialist II

CITY OF MILWAUKIE

COUNCIL **SPECIAL SESSION**

Regal Fox Tower Stadium 10 Theater
846 SW Park Avenue, Portland, OR 97205
www.milwaukieoregon.gov

MINUTES

AUGUST 10, 2017

Members of the Council gathered at 3:30 p.m.

Present: Mayor Mark Gamba and Councilor Wilda Parks

Absent: Council President Lisa Batey and Councilors Angel Falconer and Shane Abma

Staff: City Manager Ann Ober
Finance Director Haley Fish
Assistant to the City Manager Mitch Nieman

Members of the Council gathered at the Fox Tower Stadium 10 Theater in Downtown Portland, Oregon, to view a screening of the film "An Inconvenient Sequel: Truth to Power". There was no discussion of City business and no actions were taken.

The screening concluded at approximately 5:25 p.m.

Respectfully submitted,

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Ann Ober, City Manager

CITY OF MILWAUKIE
COUNCIL **STAFF REPORT**

To: Mayor and City Council
Through: Ann Ober, City Manager
Reviewed: Jason Wachs, Community Programs Coordinator
From: Scott Stauffer, City Recorder, and
Amy Aschenbrenner, Administrative Specialist II

Date: 8/11/17 for 9/5/17

Subject: **Appointments to Boards and Commissions**

ACTION REQUESTED
Consider approving a resolution making appointments to City committees.

HISTORY OF PRIOR ACTIONS AND DISCUSSIONS
Appointments to City boards and commissions are made on an as-needed basis.

ANALYSIS
Authority to fill vacancies on City boards and commissions is granted to the Mayor and Council by Section 26 of the Milwaukie City Charter. Council and staff liaisons conduct interviews with interested applicants and provide appointment recommendations which are then considered by the entire Council. Appointed individuals serve for a term length determined by the Milwaukie Municipal Code (MMC). Upon the completion of a term, if the individual is still eligible to serve, they may be re-appointed with the Council's consent.

Certain boards and commissions have positions that are filled by individuals nominated by neighborhood district associations (NDAs); NDA-nominated appointments are noted below.

BUDGET AND WORKLOAD IMPACTS
There are no fiscal or workload impacts associated with the recommended actions.

COORDINATION, CONCURRENCE, OR DISSENT
Staff and members of Council concur on the recommended actions.

STAFF RECOMMENDATION
Staff recommends making the following appointments:

Design and Landmarks Committee (DLC)

Position	Name	Term Start Date	Term End Date
2	Kyle Simukka	9/5/2017	3/31/2019
4	Mary Neustadter	9/5/2017	3/31/2018

ALTERNATIVES
Council could decline to make the recommended appointments.

ATTACHMENTS
1. Appointing Resolution

CITY OF MILWAUKIE
COUNCIL **RESOLUTION No.**

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF MILWAUKIE, OREGON, MAKING APPOINTMENTS TO CITY BOARDS AND COMMISSIONS.

WHEREAS, Milwaukie Charter Section 26 authorizes the Mayor, with the consent of the Council, to make appointments to City boards and commissions; and

WHEREAS, the Milwaukie Municipal Code (MMC) authorizes neighborhood district associations (NDAs) to nominate NDA residents to serve on certain City boards and commissions; and

WHEREAS, board and commission vacancies exist; and

WHEREAS, members of Council and staff recommend the following qualified individual be appointed to a City committee:

Design and Landmarks Committee (DLC)

Position	Name	Term Start Date	Term End Date
2	Kyle Simukka	9/5/2017	3/31/2019
4	Mary Neustadter	9/5/2017	3/31/2018

Now, Therefore, be it Resolved by the City Council of the City of Milwaukie, Oregon, that the individuals named in this Resolution are hereby appointed to the identified boards and commissions of the City of Milwaukie for the term dates noted.

Introduced and adopted by the City Council on **September 5, 2017**.

This resolution is effective immediately.

Mark Gamba, Mayor

ATTEST:

APPROVED AS TO FORM:
Jordan Ramis PC

Scott S. Stauffer, City Recorder

City Attorney

MILWAUKIE CITY COUNCIL
STAFF REPORT

Agenda Item:
Meeting Date: September 5, 2017

To: Mayor and City Council

Through: Ann Ober, City Manager and
Haley Fish, Acting City Manager

Subject: **Annexation Agreement for a Proposed Subdivision on Lake Road**

From: Denny Egner, Planning Director

Date: August 25, 2017 for September 5, 2017

ACTION REQUESTED

Authorize the City Manager to sign the attached annexation agreement with PDX Development, Inc. so that a proposed 56-lot subdivision on Lake Rd will annex to the City upon final plat approval by Clackamas County.

HISTORY OF PRIOR ACTIONS AND DISCUSSION

There has been no prior Council action on this issue.

ANALYSIS

On August 23, 2017, City Manager Ann Ober signed a memorandum of understanding (MOU) with PDX Development Inc. (PDX) outlining a set of conditions that have been negotiated to entice PDX to annex their proposed 56-lot subdivision into the City of Milwaukie. The MOU was necessary to provide some interim level of assurance to the developer that the City will not actively oppose their proposed development as they complete their purchase of the property and submit their development application to Clackamas County. The proposed annexation agreement is intended to provide additional certainty and set in motion several conditions that were requested by PDX.

In June 2017, AKS Engineers (the representative for PDX) had a preapplication conference with the Clackamas County Planning Department regarding development of the property. County staff indicated that, as proposed, it was their belief that the project could meet all County code requirements for approval.

Upon learning of the proposal, the City set up a meeting with AKS and the engineer from Clackamas River Water (CRW). The purpose of the meeting was to explore options for annexation and connection to the City water system. It was noted by City staff that the area is located within Dual Interest Area B identified in the City's Urban Growth Management Agreement (UGMA) with Clackamas County. The UGMA states that within Dual Interest Area B, there is a need for particularly close coordination, notification, and review of appropriate provision of services. City staff noted that, based on the City Water Master Plan, the area along

Kuehn Rd was to be served by City of Milwaukie. CRW staff noted that CRW already serves the area and they believe they have capacity to serve the development.

Following the meeting, the City staff suggested that there may be some incentives that the City could offer to encourage annexation. In late July, AKS contacted the City and proposed that the developer would be willing to annex following approval of the subdivision by the County along with several additional conditions. It was proposed that the City and the developer enter an annexation agreement. City staff noted that an agreement would need City Council approval. It was suggested that a memorandum of understanding could be a first step toward the annexation agreement and that it could be signed by the City Manager. The MOU was signed on August 25, 2017.

Key factors that led to the MOU and the proposed annexation agreement include the following:

- **Timing** – PDX is seeking approvals in the shortest time frame possible and would like to sell and build homes in the current building cycle. They believe that development approval through the City would delay their ability to bring lots online given several differences in City and County development standards.
- **Zoning and Density** – The property is zoned R-10 in the County and would be zoned R-10 in the City if it were to be annexed through the expedited annexation process. Under County zoning, the developer can utilize a flexible lot size provision that allows lots to be smaller than 10,000 sq ft. The City code requires all R-10 lots to meet the minimum 10,000 sq ft lot size. To provide the same lot size flexibility, the City would need to zone the property R-7 which would add additional time to the annexation process.
- **Development Standards** – County development standards are more permissive than City standards. Lot setbacks in the County's R-10 zone are less than the City setbacks. The City does not allow flag lots in subdivisions and the PDX subdivision proposal includes some flag lots given the long narrow shape of the property being subdivided. The County does not have infill standards governing house design and garage placement. The developer's builders have some house designs that would not comply with the City's garage frontage regulations.
- **Urban Services** – All urban level utilities and services are available through special districts so there is no compelling need from the developer's perspective for the property to be annexed. Sewer service can be provided by Water Environment Services (WES) and water service is available through CRW.
- **Taxes** – PDX expressed concern that the City tax rate is higher than what they would pay under County jurisdiction. Regarding the 2016 general government taxes for City and County properties (for rates where there are differences), City property owners paid $4.6477 per $1000 of assessed value while County owners paid $1.2755 per $1000 of assessed value. The 2016 property tax rates for all services were $19.6884 per $1000 in the City and $16.3162 per $1000 in the County.
- **Sense of Community** – City officials generally believe that it is important to bring the property into the City so that area residents can be fully engaged citizens of the City of Milwaukie and participate in all civic activities including City events, committees, and elections.

The MOU and the draft annexation agreement address most of the factors outlined above. The annexation agreement is in the process of being reviewed by PDX so it is possible there may some changes recommended prior to the September 5 Council meeting. In addition, the exhibits

to the agreement are still being prepared. Staff is in the process of collecting the legal descriptions for the properties (Exhibit A) and are working with the County Assessor's office to prepare an example of how the tax rate will be calculated (Exhibit D).

REVIEW AND COORDINATION

The staff report has been reviewed by the Planning Director and the Finance Director (as acting City Manager). The annexation agreement was prepared by the City Attorney.

FISCAL IMPACTS

The annexation agreement includes a provision that would significantly reduce City property taxes on property in the subdivision for a period of ten years. For five years, the City would reduce its general government tax rate so that taxes would be no higher than what would be paid under County jurisdiction. The full 100% City rate would then be phased in over the next five years. The difference in the City and County rates is $3.3722 per $1000 of assessed value.

Alternatively, no City taxes would be collected from this property if it remained in the County.

WORK LOAD IMPACTS

No major increase in workload is anticipated from annexation of this property. There would be a greater than normal impact on the Planning Department workload to process an annexation that also includes a zone change and planned development overlay. This type of annexation requires Planning Commission review in addition to City Council review.

STAFF RECOMMENDATION

Authorize the City manager to approve the annexation agreement.

ATTACHMENTS

1. Draft Annexation Agreement with Exhibits 1-4
2. August 23, 2017 Memorandum of Understanding

After recording, return to:
City of Milwaukie
10722 SE Main Street
Milwaukie, Or 97222

UNTIL A CHANGE IS REQUESTED
SEND TAX STATEMENTS TO:
(NO CHANGE)

This space is reserved for recorder's use.

ANNEXATION AGREEMENT

This Annexation Agreement ("Agreement") is made between the City of Milwaukie, an Oregon municipal corporation ("CITY") and PDX Development, Inc., an Oregon corporation ("PDX").

I. Recitals:

A. PDX intends to acquire the parcels of land described in Exhibit 'A' and shown on the maps attached as Exhibit 'B' incorporated herein by this reference ("Property"). The Property is contiguous to the jurisdictional limits of the City.

B. On August 23, 2017, the parties entered into a Memorandum of Understanding ("MOU") in which the parties expressed their desire to have the Property annex to the City in accordance with the terms and conditions outlined in the MOU and subject to a final decision of the City Council in accordance with applicable statutes and ordinances.

C. The Parties intend that this Agreement constitutes a legally binding annexation contract as provided for in ORS 222.115 and subject to the terms and conditions set forth herein.

Now, therefore, in consideration of the mutual covenants herein, the parties AGREE as follows:

II. Developer Obligations:

1. Within ten (10) days of the date PDX acquires the Property, PDX will record this Agreement and the Consent to Annexation, Exhibit 'C', hereto against the Property and submit a recorded copy to City together with an application for annexation of the Property (this is limited to a completed and signed City application form and a legal description and map of the Property). PDX will cooperate with the City to provide supporting information that may be reasonably needed by City for purposes of reviewing and making a decision on the annexation and related zoning of the property.

2. PDX either has or will submit an application for a single-family subdivision development and related land use approvals to Clackamas County. PDX shall be responsible for obtaining final land use approval for development of the Property in accordance with County standards and in particular the County's R-10 zone as set forth in Table 315-2 of the Clackamas County Zoning and Development Ordinance as referenced in Item III. 2.a. below.

3. Notwithstanding final land use approval, PDX will not apply for or obtain building permits from Clackamas County or construct dwellings on the Property except for a maximum of six model homes.

4. Except for dwellings constructed pursuant to Section II.3, PDX will submit all building permit applications and plans to City for review and tentative approval pending annexation taking effect. PDX shall pay all normal and customary City fees.

5. The provisions of Section II, 3 and 4 shall not apply if City approval of the annexation or the Land Use Actions is delayed beyond the date that is 14 days from the date the final plat is approved and recorded provided such denial or delay does not result from the action or inaction of PDX. PDX shall provide a copy of this Agreement to a purchaser of any portion of the Property prior to annexation, including any lot pursuant to tentative plat approval, and shall require that the purchaser(s) execute and record Consent to Annexation as a condition of such sale.

6. Upon annexation, PDX and its builders will submit all permit applications to City and shall pay to City all normal and customary building fees and charges, including permit and inspection fees and systems development charges.

7. PDX will reasonably cooperate with City in obtaining annexation approval, approval of R-7 zoning and a Planned Development Overlay.

III. City Obligations.

1. City will waive any application fees applicable to the annexation. City staff will diligently process the application, including preparation of staff reports, orders and other items. Staff will strive to obtain final City Council action on the annexation within six months of receiving the signed application. The annexation, if approved, shall not be effective until the final plat for the Property is recorded.

2. City staff will recommend to the City Council that with annexation, the Property be zoned as City R-7 Low Density Residential along with a Planned Development overlay to be consistent with the following Clackamas County standards under which PDX obtained land use approval ("Land Use Actions"):

a. Plan and zone the subject property as R-7 Low Density Residential with a Planned Development Overlay that implements the dimensional standards of the County's R-10 zone as set forth in Table 315-2 from the Clackamas County Zoning and Development Ordinance in place at the time of submittal of the land use application. The Planned Development Overlay will also include provisions modifying City Code requirements as follows:

b. MMC 19.505 2.B.2. Permit garages on the Property to occupy 60% of the street-facing façade width of a home when a three-car garage is provided.

c. MMC 19.504.8. Permit dimensional and design standards for flag lots and flag lot development on the Property to be the same as what is applicable to other lots in the subdivision.

3. City will not formally or informally oppose the application of PDX for subdivision and related land use approvals from Clackamas County. This does not preclude City from providing comments or recommendations to Clackamas County that are normal and customary for land development applications within Dual Interest Area 'B' of the Urban Growth Management Agreement.

4. City shall provide plan review; inspection and tentative building permit approval for the Property pending the effective date of annexation and of the Land Use Actions. City promptly shall issue any tentatively approved permits upon the effective date of the annexation and the Land Use Actions. If PDX obtains a building permit from Clackamas County due to delay in approval of the annexation, as provided in Section II.5, PDX shall be entitled to a refund of any building permit review fee previously paid to City for that lot, provided review has not occured. PDX shall be entitled to a refund of any building permit and related fees paid to City if City denies the annexation and fails to adopt the Land Use Actions provided that such denial does not result from the action or inaction by PDX.

5. City will not oppose obtaining water, sanitary sewer, storm water management or similar public services from public service providers other than City. City will cooperate with PDX to provide City water service if requested by PDX.

6. Pursuant to ORS 222.111 during the first ten (10) full fiscal years beginning with the first fiscal year after the annexation takes effect, the rate of ad valorem property taxation will be at a specified ratio of the highest rate of taxation applicable that year for other property in the City. For the first five full fiscal years, the specified ratio will apply so as to approximate the rate that the Property would pay had it not annexed to the City. For each of the next five fiscal years, the discount from the highest rate applicable for that year for other property in the City shall decrease by 20%. The intent of this paragraph is to phase-out the tax differential between the Property and other property in the City over five years. Beginning with the 11th full fiscal year, the Property will be subject to taxation in the same manner and in the same amount as other property in the City. The parties acknowledge that the calculation of phase-in city tax rates is performed by the Clackamas County Assessor pursuant to OAR 150-222-111(3). Exhibit 'D' illustrates the calculation of the tax rate applicable for fiscal year 2018/19 based on the assumption that the annexation is effective for that fiscal year.

IV. Mutual Obligations and Understandings

1. The City Council of Milwaukie is the final city review authority for annexations and amendments to the Milwaukie Municipal Code. Nothing in this Agreement shall in any way limit the discretion of the City Council in deciding whether to approve, modify or deny any such

application or request. Nor does anything in this Agreement waive or release PDX from compliance with any applicable standard for obtaining permits or approvals from City.

2. If the City Council, in the exercise of its discretion, elects to deny or not approve, elects to condition or to substantially modify the annexation and the Land Use Actions other than as described in this Agreement, PDX shall be limited to the following remedies. Failure of City Council to issue a final decision on annexation and the Land Use Actions within 240 days of the Effective Date of this Agreement may be treated by PDX as a denial provided such failure does not result from the action or inaction of PDX.

a. By written notice to City prior to the effective date of annexation, terminate this Agreement and withdraw its consent and application to annex; and

b. Obtain a refund of fees paid for tentative building permit review, inspections and approval.

In no event, shall City be liable for any claim for damages of any sort arising from the exercise by City Council of its discretion to deny or modify the annexation and land use actions.

3. Unless terminated by PDX pursuant to Section IV. 2, the Consent to Annex and the application for annexation are irrevocable. City may take all steps provided by law to effectuate the annexation and enforce the consent to annex.

4. City shall make diligent good faith efforts to implement the tax discount provided for in Section IV.6. It is understood, however, that the ad valorem property tax laws are administered by Clackamas County and the Oregon Department of Revenue. Further, it is understood that third parties may initiate a legal challenge to ORS 222.111 or its implementation. City shall in no way be responsible or liable for the failure or refusal of Clackamas County or the Department of Revenue to implement, in whole or in part, the tax discount provided for in this Agreement or in the event that the discount is determined to be unlawful. Further, any such disallowance shall not impact the validity of annexation once the annexation is effective.

5. The parties will cooperate reasonably, diligently and in good faith in fulfilling the terms of this Agreement.

6. Pursuant to ORS 222.115, this Agreement will be recorded in the records of Clackamas County against the Property and will bind the successors in interest to the Property and the executors, assigns, heirs, administrators and successors of the parties.

7. This Agreement constitutes the entire agreement of the parties and supersedes all previous agreements, negotiations or communications regarding the subject matter of this Agreement.

8. If any provision of this Agreement is deemed unenforceable or invalid, such enforceability or invalidity shall not affect the enforceability or validity of any other provision of this Agreement. The validity, meaning, enforceability, and effect of the Agreement and the rights and liabilities of the parties hereto will be determined in accordance with the laws of the State of Oregon.

This Agreement is effective on the date last executed below.

CITY	PDX
By: _____ Ann Ober, City Manager Date: _____	By: _____ Name: _____ Title: _____ Date: _____

STATE OF OREGON)
) ss.
County of _____)

This instrument was acknowledged before me on _____ _____, 2017, by _____ as _____ of PDX Development, Inc.

_____
NOTARY PUBLIC FOR OREGON
My Commission Expires:_____

Exhibit "A"

Real property in the County of Clackamas, State of Oregon, described as follows:

PARCEL I:

ALL THAT PORTION OF TRACT 2, ATKINSON, LYING EAST OF THE JULIUS KUEHN ROAD NO 1249.

PARCEL II:

PART OF TRACT 1, ATKINSON, MORE PARTICULARLY DESCRIBED AS FOLLOWS: BEGINNING AT THE SOUTHEAST CORNER OF SAID TRACT 1; THENCE FOLLOWING THE EASTERLY LINE OF SAID TRACT NORTH 0°49' WEST 317.8 FEET TO THE CENTER LINE OF LAKE ROAD; THENCE FOLLOWING THE CENTER LINE OF SAID ROAD NORTH 72°18' WEST 314.2 FEET; THENCE SOUTH 0°49' EAST 414 FEET TO THE SOUTHERLY LINE OF SAID TRACT 1; THENCE SOUTH 89 DEGREES 58 MINUTES EAST 299.8 FEET TO THE POINT OF BEGINNING.

PARCEL III:

PART OF SECTION 6, TOWNSHIP 28, RANGE 2 EAST WILLAMETTE MERIDIAN, MORE PARTICULARLY DESCRIBED AS FOLLOWS: BEGINNING AT THE NORTHWEST CORNER OF THE ELISHA KELLOGG D.L.C.; THENCE NORTH 4.06 CHAINS TO A STAKE IN THE CENTER OF LAKE ROAD; THENCE NORTH 71°30' WEST ALONG THE CENTER OF SAID ROAD 4.22 CHAINS TO A STAKE; THENCE SOUTH 25 CHAINS TO A STAKE; THENCE SOUTH 71°30' EAST 4.22 CHAINS TO A STAKE ON THE LINE DIVIDING THE JOSEPH KELLOGG D.L.C. AND THE ELISHA KELLOGG D.L.C.; THENCE NORTH 20.94 CHAINS TO THE POINT OF BEGINNING.

PARCEL IV:

THE NORTH 85 FOOT OF THAT PORTION OF LOT 3, ATKINSON, LYING EAST OF THE JULIUS KUEHN COUNTY ROAD NO. 12491 SAID NORTH 85 FEET TO BE CUT OFF BY A LINE DRAWN PARALLEL WITH THE NORTH LINE OF SAID LOT 3.

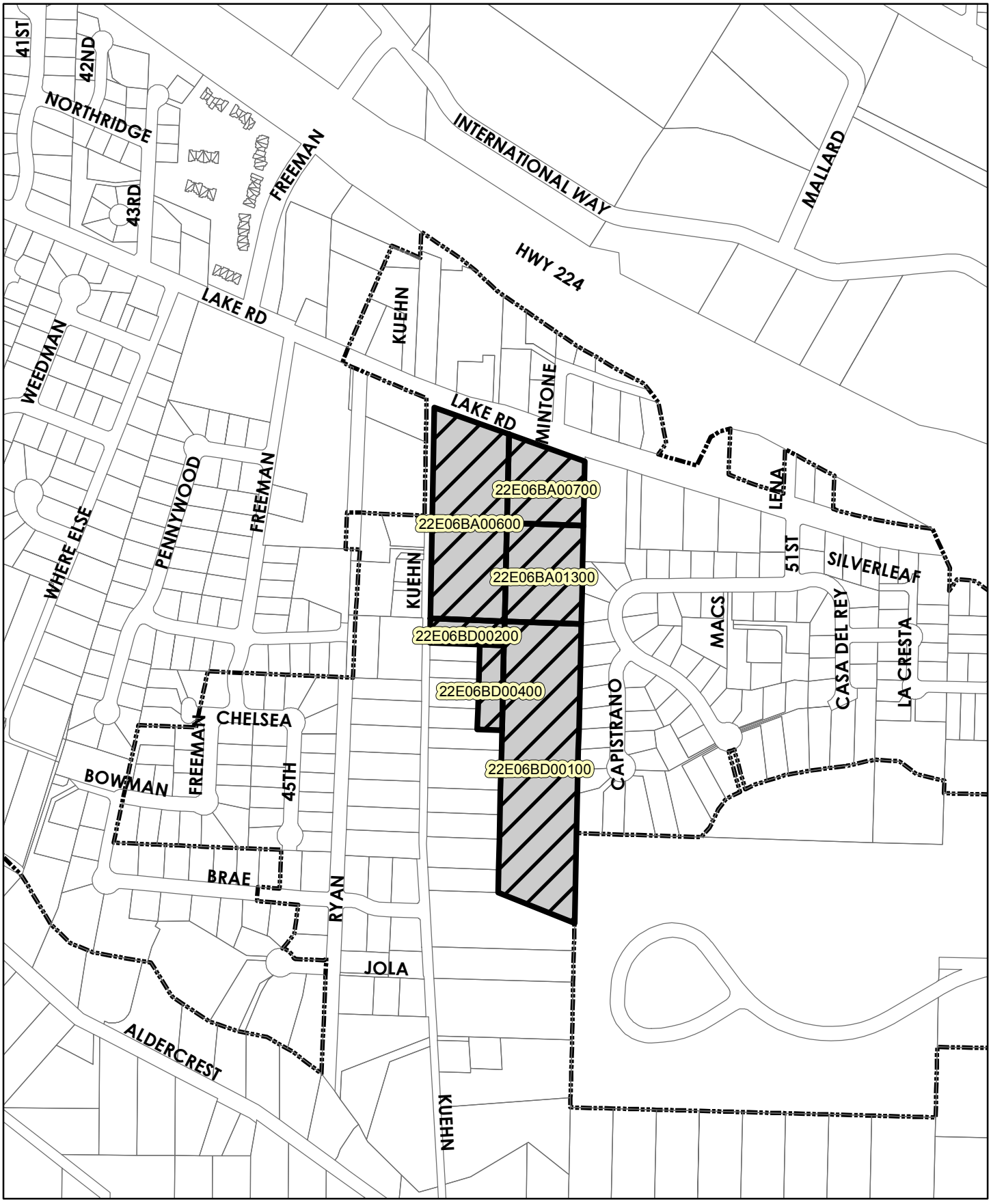
PARCEL V:

A PORTION OF TRACT 3, ATKINSON, DESCRIBED AS FOLLOWS: BEGINNING AT A POINT ON THE EAST LINE OF THE SAID TRACT 3 WHICH IS 85 FEET SOUTH OF THE NORTHEAST CORNER OF TRACT 3, SAID POINT ALSO BEING THE SOUTHEAST CORNER OF THE TRACT CONVEYED TO JOSEPH COREGHINO, ET UX, BY DEED RECORDED AUGUST 22, 1962, IN BOOK 609, PAGE 222, DEED RECORDS OF CLACKAMAS COUNTY; THENCE WEST PARALLEL WITH THE NORTH LINE OF SAID TRACT 3, A DISTANCE OF 85 FEET TO A POINT ON THE SOUTH LINE OF THE SAID COREGHINO TRACT; THENCE SOUTH, PARALLEL WITH THE EAST LINE OF TRACT 3, A DISTANCE OF 295 FEET, MORE OR LESS, TO THE SOUTH LINE OF TRACT 3; THENCE EAST A DISTANCE OF 85 FEET TO THE SOUTHEAST CORNER OF TRACT 3, THENCE NORTH 295 FEET, MORE OR LESS, TO THE POINT OF BEGINNING.

NOTE: THIS LEGAL DESCRIPTION WAS CREATED PRIOR TO JANUARY 01, 2008.

EXHIBIT B

Annexation Agreement - Property Map



RS26

This map was prepared for assessment purpose only.

NE 1/4 NW1/4 SEC. 6 T.2S. R.2E. W.M.
CLACKAMAS COUNTY
1"=100'

D. L. C.
JOSEPH KELLOGG NO 53
ELISHA KELLOGG NO. 54
JOHN GARRETT NO. 61

CANCELLED
1200
1400
1190
190
990
1191
1090

MILWAUKIE - ESTACADA STATE HIGHWAY 224
PAC. HWY. CENTRAL AVENUE EAST CASCADE SECTION
SEE MAP 1 2E 31D
SEE MAP 1 2E 31CD
MINTONE DRIVE
MINTONE DR.
MINTONE
LAKE ROAD
ATKINSON ROAD
KUEHN ROAD
30' RD. 124
SEE MAP 2 2E 6BB
SEE MAP 2 2E 6AB
SEE MAP 2 2E 6AC
SEE MAP 2 2E 6BD

PARCEL 1
PARCEL 2
PARCEL 3
PARCEL 3

R-10

12-131
12-246
12-51

HOMES
GREENS
CASCADE
GREENS
2060

S.E. CASA DEL REY DRIVE
S.E. CAPISTRANO COURT
S.E. MACKS PL
S.E. SCOTT MT
CREEK

SOUTH LINE D.L.C. NO 61
N.E. Cor. JOSEPH KELLOGG D.L.C. NO 53
N.W. Cor. ELISHA KELLOGG D.L.C. NO 54
E LINE DLC 53
W LINE DLC 54

P.P. 1999-26 - 2 PCL.

Approx. 1/16 Cor.
Approx. 1/16 Cor.

4700
4900
5200
12600
12800
13100

RS27

F.H.D.
BOOK 15
2 2E 6BA

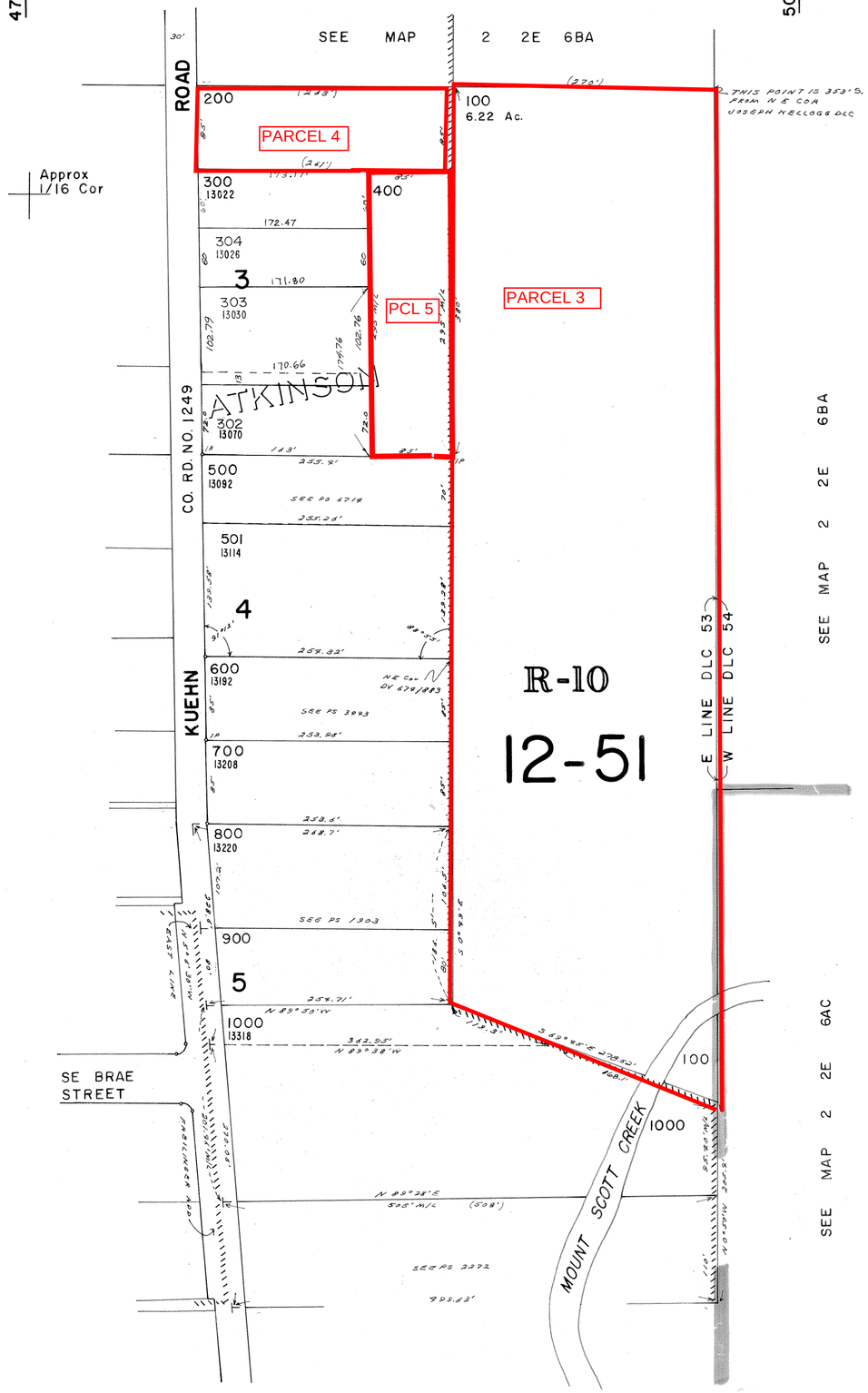
This map was prepared for assessment purpose only.

SE 1/4 NW 1/4 SEC. 6 T.2S. R.2E. W.M.
CLACKAMAS COUNTY

D.L.C. JOSEPH KELLOGG NO 53

2 2E 6BD

1"=100'



9 11-69 DH

F.H.D.

13500 BOOK 15

Approx Center Sec

2 2E 6BD

RS28

MEMO OF UNDERSTANDING

This Memorandum of Understanding (MOU) represents a statement of intent to enter a formal annexation agreement between the City of Milwaukie (City) and PDX Development, Inc. (Developer) for property located at 4900 SE Lake Rd and including the following properties: Map 22E06BA - Tax Lots 00100, 00200, 00400, 00600, 00700, and 01300 (the Subject Property).

Background

AKS Engineering and Forestry (AKS) represents PDX Development, Inc., who is in the process of purchasing the property for development. In June 2017, AKS had a preapplication conference with the Clackamas County Planning Department regarding development of the property. County staff indicated that, as proposed, it was their belief that the project could meet all County code requirements.

Upon learning of the proposal, the City set up a meeting with AKS and the engineer from Clackamas River Water. The purpose of the meeting was to explore options for annexation and connection to the City water system. It was noted by City staff that the area is located within Dual Interest Area B identified in the City's Urban Growth Management Agreement (UGMA) with Clackamas County. The UGMA states that within Dual Interest Area B, there is a need for particularly close coordination, notification and review of appropriate provision of services. City staff noted, that based on the City Water Master Plan the area along Kuehn Rd City was to be served by City Water. CRW staff noted that CRW already serves the area and they believe they have capacity to serve the development. All parties agreed that duplication of services was not desired but a determination as to who was the appropriate service provider was not finalized.

Following the meeting, the Milwaukie Planning Director suggested that there may be some incentives that the City could offer to encourage annexation. In late July, AKS contacted the City and proposed that the Developer would be willing to annex following approval of the subdivision by the County along with several additional conditions. It was proposed that the City and the Developer enter an annexation agreement. City staff noted that an agreement would need City Council approval. It was suggested that a Memorandum of Understanding could be a first step toward the annexation agreement and that it could be signed by the City Manager. The City staff reviewed this concept with the City Manager who agreed in principal with the concept of an annexation agreement.

Recitals

Whereas, it is the desire of the City to have properties that are developing within the City's Urban Growth Management Boundary annex to the City;

Whereas, new area residents will identify with the City, will use City facilities, and should be able to fully participate as citizens of the City and therefore should reside within the City limits;

Whereas, the Developer of the Subject Property desires to see the property developed as quickly as possible and for costs to be carefully managed;

Whereas, the Developer intends to file an application to subdivide the Subject Property through Clackamas County once the Milwaukie City Manager and the Developer have signed this MOU;

Now, therefore:

It is the intent of the City and the Developer to enter a formal annexation agreement and the City staff will forward the draft agreement to the City Council at a meeting in the month of September 2017. The agreement is expected to include the following provisions:

A. The Developer commits to the following:
    1. The Developer of the Subject Property will sign and submit an application to annex the Subject Property concurrent with the signing of the annexation agreement. It is understood by both parties that the annexation will be processed by the City but will not become effective until the County approves, signs, and records the final plat for the Developer's proposed subdivision of the Subject Property.
    2. The Developer will provide a legal description of the Subject Property for the annexation.
    3. Prior to finalization of the annexation, the Developer will ensure that no lots are sold or that new houses are occupied without the City first obtaining a signed consent to annex form from the new owner or resident.
    4. The Developer's builders will conform with modified development standards implemented by a Planned Development overlay that will be applied to the Subject Property by the City as described in Item B-5 below.
    5. The annexation agreement shall include a provision that makes annexation binding in the event, the Developer sells the property to another party prior to final development approval through the County.
B. The City commits to the following:
    1. The City will prepare and process all items related to the annexation (except that the Developer will provide the legal description of the Subject Property). The City intends to waive application and processing fees for the annexation and associated Planned Development overlay noted in Item B-5, below. The ordinance approving the annexation will include a provision that sets the effective date for the annexation to be at the time the final plat for the subdivision is recorded with Clackamas County.
    2. The City will not formally or informally oppose (orally or in writing) a land use application for subdivision of the Subject Property being processed by Clackamas County.
    3. The City will not oppose obtaining services (water, sanitary sewer, stormwater management, etc.) through Clackamas County service providers. Given that the City's Water Master Plan, indicates that this area will be served with City water, the City will cooperate with the Developer to provide City water should the Developer choose to utilize City water service rather than Clackamas River Water.
    4. Provided City standards are satisfied, the City will issue any construction permits (for infrastructure) necessary for any portions of the project in City jurisdiction and will not unnecessarily delay or obstruct issuance of construction permits for necessary improvements for the subdivision.
    5. With annexation, the City intends to apply R-7 Low Density Residential zoning to the Subject Property along with a Planned Development overlay that implements the dimensional

standards of the County's R-10 zone as set forth in Table 315-2 from the Clackamas County Zoning and Development Ordinance. The Planned Development overlay will also include provisions modifying City code requirements as follows:

i. MMC 19.505.2.B.2 - Allow a garage to occupy 60% of the street-facing façade width of a home when a three-car garage is provided.
ii. MMC 19.504.8 – Allow dimensional and design standards for flag lots and flag lot development to be the same as what would apply elsewhere in the subdivision.

6. The City intends to allow construction of 4 model homes prior to plat recordation, to be permitted through Clackamas County provided the homes meet the applicable City design standards as established by the Planned Development overlay noted in Item B-5, above.
7. The City intends to annex the Subject Property so that the effective date of the annexation is concurrent with recordation of the final subdivision plat. If the plat is recorded and annexation is delayed, the City intends to proceed with review of building permits and the issuance of building permits for home construction as if annexation has occurred, provided that any new property owner has signed a form consenting to annex to the City. In the event that annexation is delayed, the City will not object to plan review and building permit issuance occurring through the County during the interim while any annexation delay is worked out, provided that any such permits are subject to the applicable City design standards as established by the Planned Development overlay noted in Item B-5, above and provided that any new property owner has signed a form consenting to annex to the City.
8. The City intends to review building permit applications (structural, electrical, mechanical, fire life safety etc.) prior to annexation such that building permits can be issued upon plat recordation and annexation.
9. The City will apply standard building permit review/inspection fees.
10. The City will apply its standard SDCs for homes in the subdivision.
11. To the extent allowed by law, the City intends to grant a property tax reduction such that future property taxes for lots and development in the subdivision are no higher than the comparable property taxes of those in unincorporated Clackamas County. The tax reduction shall apply for 5 years and shall be phased in to reach the 100% City tax rate over the next 5 years (assume a 20% increase every year).

C. Caveats:

1. Several of the commitments offered by the City in this document are dependent on decisions by the City Council. The City Manager cannot guarantee the City Council will ultimately agree with all of these provisions. The City Manager commits to advocate for the provisions outlined above.

Signed by:

Ann Ober, Milwaukie City Manager — Date: 8/23/17

Bruce Ament, for PDX Development, Inc., Developer — Date: 8/22/17

To: Mayor Gamba and Milwaukie City Council

Through: Ann Ober, City Manager

From: Steve Bartol, Chief of Police (Dave Rash, Police Captain)

Date: August 24, 2017

Subject: OLCC Application – Jo's Saloon – 4400 SE International Way, Milwaukie, OR 97222

Action Requested:

It is respectfully requested the Council approve the OLCC Application from Jo's Saloon – 4400 SE International Way, Milwaukie, OR 97222

Background:

We have conducted a background investigation and find no reason to deny the request for liquor license.

To: Mayor Gamba and Milwaukie City Council

Through: Ann Ober, City Manager

From: Steve Bartol, Chief of Police

Date: August 28, 2017

Subject: OLCC Application – Kellogg Bowl – 10306 SE Main Street, Milwaukie, OR 97222

Action Requested:

It is respectfully requested the Council approve the OLCC Application from Kellogg Bowl – 10306 SE Main Street, Milwaukie, OR 97222

Background:

We have conducted a background investigation and find no reason to deny the request for liquor license.

Regular Session Agenda Item No. 5

Public Hearing

CITY OF MILWAUKIE
COUNCIL **STAFF REPORT**

To: Mayor and City Council
Date: August 29, 2017, for September 5, 2017, Public Hearing

Through: Ann Ober, City Manager
Reviewed: Denny Egner, Planning Director
From: Brett Kelver, Associate Planner

Subject: **Kellogg Creek Planned Development**

ACTION REQUESTED
Adopt the proposed ordinance found in Attachment 1 regarding the proposed 92-unit planned development subdivision on the Turning Point Church site at 13333 SE Rusk Rd (land use application master file #PD-2017-001), including the Final Development Plan and Program found in Attachment 1-b. The action would change the zoning map to add the Planned Development designation to the subject property as shown in Attachment 1-d.

In addition, adopt the Final Decision and Order presented in Attachment 2 to approve the applications for the proposed subdivision, natural resource review, transportation facilities review, variance request, and minor modification to a community service use, as addressed in the recommended Findings and Conditions of Approval found in Attachments 1-a and 1-c, respectively.

HISTORY OF PRIOR ACTIONS AND DISCUSSIONS
No City Council action or discussion has occurred. The Council is the final decision-maker for Planned Development projects. Planning Commission review of the project to date is summarized below.

- **May 23, 2017** – The Planning Commission opened the public hearing for PD-2017-001 and heard presentations from City staff and the applicant. The public testimony portion of the hearing was opened, but the hearing was continued due to the lateness of the hour and the presence of many people waiting to testify. (https://www.milwaukieoregon.gov/planning/planning-commission-170)
- **May 25, 2017** – At a special session, the hearing was reopened to complete the public testimony and begin Commission deliberations. The Commission confirmed that it preferred the applicant's revised site plan, requested more information about several items, and continued the hearing again. (https://www.milwaukieoregon.gov/bc-pc/planning-commission-special-session)
- **June 27, 2017** – At the applicant's request, and without any further deliberation, the Commission continued the hearing to July 25, 2017. (https://www.milwaukieoregon.gov/planning/planning-commission-172)
- **July 25, 2017** – The Commission re-opened the hearing on July 25, took additional public testimony on the new information, deliberated, and voted 3-1 to recommend that City Council approve the project with the revised site plan and recommended conditions of approval. (https://www.milwaukieoregon.gov/planning/planning-commission-174)

ANALYSIS
On August 17, 2017, City staff met with staff from the North Clackamas Parks & Recreation District (NCPRD) to discuss issues related to ownership and management of the open space tract. That conversation prompted staff to propose a few revisions to the Findings and Conditions that were

recommended for approval by the Planning Commission. “Track Changes” (i.e., ~~strikeout~~/underline) versions of those documents are included as Attachments 3-a and 3-b, respectively.

See Attachment 4 for a report with background and analysis similar to that which was provided to the Planning Commission over the course of its three meetings.

BUDGET IMPACTS
A decision to approve the proposed planned development subdivision will result in the addition of 92 new housing units to the City’s various infrastructure systems. System Development Charges (SDCs) will be collected as per City policy to address future needed improvements to the City infrastructure. The establishment of new housing units on the previously underdeveloped site will increase tax revenues from the subject property.

WORKLOAD IMPACTS
The proposed development will not disproportionately affect City staff workload compared to other new development projects. The processes for final plat, development review and permitting, and monitoring of construction of public and private improvements will be proportional to the scale of the proposed development.

COORDINATION, CONCURRENCE, OR DISSENT
As per the standard land use referral and review process, various City departments and other agencies have had an opportunity to review and comment on the proposed development. Comments on the application have been provided by the City Engineering Department, City Public Works Department (Stormwater Division), Clackamas Fire District #1, Clackamas County Department of Transportation and Development, North Clackamas Parks and Recreation District, Metro, Oregon Department of Transportation, and Oregon Department of Fish and Wildlife. In addition, comments have been received from the Lake Road Neighborhood District Association, Oak Grove Community Council, and North Clackamas Urban Watersheds Council. Comments have been incorporated into the recommended findings and conditions as appropriate.

STAFF RECOMMENDATION
Adopt the proposed ordinance found in Attachment 1 to approve the proposed final development plan as recommended by the Planning Commission and with modified Findings and Conditions as presented in Attachments 3-a and 3-b, respectively; and to change the zoning map to add the Planned Development designation to the subject property.

In addition, adopt the Final Decision and Order presented in Attachment 2 to approve the applications for the proposed subdivision, natural resource review, transportation facilities review, variance request, and minor modification to a community service use, as addressed in the recommended Findings and Conditions of Approval found in Attachments 1-a and 1-c, respectively.

ALTERNATIVES
1. Approve the proposed planned development with modifications, including an adjustment in the number of units or other specific details. Such modifications need to be read into the record and incorporated into the Findings and Conditions.
2. Continue the hearing to allow time for the provision of additional information (if needed) to Council and/or for additional public testimony.
3. Continue consideration of the proposal and refer the application back to Planning Commission with recommendations for amendment.
4. Deny the application, ending the hearing process.

ATTACHMENTS

Attachments are provided as indicated by the checked boxes. All material is available for viewing upon request.

	Early CC Mailing	Public Copies	E-Packet
1. Ordinance	☐	☒	☒
a. Exhibit A – Findings in Support of Approval *(clean version)*	☐	☒	☒
b. Exhibit B – Final Development Plan and Program	☐	☒	☒
1) Attachment 1 – Development Plan Set a) C000 Cover Sheet b) C100 Existing Conditions c) C101 & 102 Tree Protection & Removal Plan d) C200 Preliminary Lot Line Adjustment e) C201 Preliminary Plat f) C202 Typical Street Sections g) C300 Grading Plan h) C400 Composite Utility Plan i) C500 Public Improvement Plan j) L100 & 110 Landscape Plan & Enlargements k) A100 Building Plans & Elevations l) A2, A4, & A6 Alley-facing unit plans m) 2.0, 4.0, 6.0, 7.0, & 7.1 Street-facing unit plans	☒	☒	☒
c. Exhibit C – Conditions of Approval *(clean version)*	☐	☒	☒
d. Exhibit D – Existing and Proposed Zoning	☐	☒	☒
2. Final Order			
3. Track Changes Versions *(modified after July 25 PC hearing)*			
a. Findings in Support of Approval	☐	☒	☒
b. Conditions of Approval	☐	☒	☒
4. Background and Analysis Report	☐	☒	☒
5. Applicant's Narrative and Supporting Documentation *(all materials received July 11, 2017, unless otherwise noted)*			
a. Narratives 1) Planned Development, Variance, Zone Change 2) Minor Modification to Community Service Use, Subdivision Preliminary Plat, Transportation Facilities Review, Natural Resources Review	☒	☒	☒
b. Exhibit A – Development Plan Set *(same as Att. 1-b(1), above)*	☒	☒	☒
c. Exhibit B – Preapplication Notes from August 2016	☒	☒	☒
d. Exhibit C – City Planning Process Memo, dated October 4, 2016	☒	☒	☒
e. Exhibit D – Wetland Delineation Report by Pacific Habitat Services	☒	☒	☒
f. Exhibit E – Drainage Report prepared by DOWL • Exhibit E-1 – Stormwater Response Memo from DOWL *(received April 7, 2017)* • Exhibit E-2 – Floodplain Analysis Memo from DOWL, dated January 23, 2017 *(received April 7, 2017)* • Exhibit E-3 – Floodplain Mitigation Exhibit *(received July 17, 2017)*	☒	☒	☒

	Early CC Mailing	Public Copies	E-Packet
g. Exhibit F – Geotechnical Evaluation prepared by GEO Consultants Northwest	☒	☒	☒
h. Exhibit G – Traffic Impact Study prepared by Kittleson & Associates (including appendices and supplemental memo dated June 12)	☒	☒	☒
i. Exhibit H – Neigbhorhood Meeting Materials prepared by DOWL	☒	☒	☒
j. Exhibit I – Arborist Report prepared by Morgan Holen & Associates (including supplemental memo dated June 11)	☒	☒	☒
k. Exhibit J – Natural Resource Review report prepared by Pacific Habitat Services	☒	☒	☒
l. Exhibit K – Memo from Johnson Economics	☒	☒	☒
6. Comments Received as part of Planning Commission hearing			
a. Michelle Wyfells, Metro (April 20, 2017)	☒	☒	☒
b. Matt Amos, Clackamas Fire District #1 *(April 25 & May 4)*	☒	☒	☒
c. Rob Livingston, City Public Works Dept. *(April 25 & 27)*	☒	☒	☒
d. Paul Hawkins, Lake Road NDA *(April 28)*	☒	☒	☒
e. Rebecca Hamilton, Metro *(May 1)*	☒	☒	☒
f. Joseph Edge, Oak Grove Community Council *(May 1)*	☒	☒	☒
g. Sarah Hartung, ESA (City consultant) *(May 1)*	☒	☒	☒
h. Marah Danielson, ODOT Region 1 *(May 3)*	☒	☒	☒
i. Alex Roller, City Engineering Dept. *(May 5)*	☒	☒	☒
j. Kenneth Kent, Clackamas County Engineering *(May 8)*	☒	☒	☒
k. Kathryn Krygier and Tonia Williamson, North Clackamas Parks & Recreation District *(May 11)*	☒	☒	☒
l. Laura Hickman, area resident *(May 11)*	☒	☒	☒
m. Ray Olma, area resident *(May 15)*	☒	☒	☒
n. Jamie Marshall, area resident *(May 15)*	☒	☒	☒
o. Melanie Frisch, area resident *(May 15)*	☒	☒	☒
p. Alex Roller, City Engineering Department, revised memo *(May 16)*	☒	☒	☒
q. Dan Sweet, area resident *(May 18)*	☒	☒	☒
r. Vince Alvarez, Lake Road NDA *(May 18)*	☒	☒	☒
s. Bruce Reiter, area resident *(May 22)*	☒	☒	☒
t. John Green-Hite, area resident *(May 22)*	☒	☒	☒
u. Joan Young, area resident *(May 22)*	☒	☒	☐
v. Howard Lanoff, area resident *(May 22)*	☒	☒	☒
w. Georgia Bogner, area resident *(May 22)*	☒	☒	☒
x. Chris Runyard, ecological restoration specialist *(May 22)*	☒	☒	☒
y. Linda Huntley, area resident *(May 22)*	☒	☒	☒
z. Jennifer Stipetic, area resident *(May 22)*	☒	☒	☒
aa. Terry Gibson, North Clackamas Urban Watersheds Council *(May 22)*	☒	☒	☒

	Early CC Mailing	Public Copies	E-Packet
bb. Linda Huntley, area resident *(May 23)*	☒	☒	☒
cc. Sara Miller, area resident *(May 23)*	☒	☒	☒
dd. Dick Shook, area resident *(May 23)*	☒	☒	☒
ee. Matt Menely, area resident *(May 23)*	☒	☒	☒
ff. Laura Hickman, area resident *(May 23)*	☒	☒	☒
gg. Todd Alsbury, Oregon Department of Fish & Wildlife *(May 23)*	☒	☒	☒
hh. Lisa Kennedy, area resident *(May 24)*	☒	☒	☒
ii. Sue Hayes, area resident *(May 24)*	☒	☒	☒
jj. Bev St. John, area resident *(May 25)*	☒	☒	☒
kk. Randy Day, area resident *(May 25)*	☒	☒	☒
ll. Jarrod Allen, area resident *(May 25)*	☒	☒	☒
mm. Lois Keiser, area resident *(May 25)*	☒	☒	☒
nn. Ben Geertz, area resident *(May 25)*	☒	☒	☒
oo. Lois Herring, area resident *(May 25)*	☒	☒	☒
pp. Linda & Roger Huntley, area residents *(May 25)*	☒	☒	☒
qq. Joseph Edge, Oak Grove Community Council *(May 26)*	☒	☒	☒
rr. Chris Runyard, ecological restoration specialist *(June 7)*	☒	☒	☒
ss. Kathryn Krygier, North Clackamas Parks & Recreation District *(July 11)*	☒	☒	☒
tt. Alex Roller, City Engineering Department, revised memo *(July 18)*	☒	☒	☒
uu. Marah Danielson, ODOT Region 1 *(July 21)*	☒	☒	☒
vv. Todd Alsbury, Oregon Department of Fish & Wildlife *(July 25)*	☒	☒	☒
ww. Mat Dolata, DKS (City consultant) *(July 25)*	☒	☒	☒
7. Staff responses to Planning Commission questions between hearings	☒	☒	☒
8. Minutes from May 23 Planning Commission meeting	☒	☒	☒
9. Comments Received after Planning Commission hearing			
a. Kenneth Kent, Clackamas County Engineering *(July 26)*	☒	☒	☒
b. Nancy Pierce, area resident *(July 31)*	☒	☒	☒
c. Chris Runyard, ecological restoration specialist *(Aug 25)*	☐	☒	☒
d. Mary Zellharie, area resident *(Aug 28)*	☐	☒	☒
e. Judy Sherley, area resident *(Aug 28)*	☐	☒	☒
f. Ed Hacmac, area business owner *(Aug 28)*	☐	☒	☒

Key:

Early CC Mailing = paper materials provided to City Council at the time of public notice 20 days prior to the hearing (August 16, 2017).

Public Copies = paper copies of the packet available for review at City facilities and at the City Council meeting.

E-Packet = packet materials available online at https://www.milwaukieoregon.gov/citycouncil/city-council-regular-session-212.

CITY OF MILWAUKIE
COUNCIL **ORDINANCE No.**

AN ORDINANCE OF THE CITY OF MILWAUKIE, OREGON, ADOPTING THE FINAL DEVELOPMENT PLAN AND PROGRAM FOR THE KELLOGG CREEK SUBDIVISION (FILE #PD-2017-001) AND AMENDING THE CITY'S ZONING MAP TO ADD THE "PD" DESIGNATION TO THE SUBJECT PROPERTY AS SHOWN IN EXHIBIT D BELOW (FILE #ZA-2017-001).

WHEREAS, the approved final development plan and program will establish the standards and requirements for development within the Kellogg Creek subdivision; and

WHEREAS, the proposed amendments to the Zoning Map will result in residential development that is compatible with the surrounding neighborhood; and

WHEREAS, legal and public notices have been provided as required by law; and

WHEREAS, on July 25, 2017, the Milwaukie Planning Commission conducted a public hearing as required by MMC 19.1007.5 and adopted a motion in support of the final development plan and program and proposed amendments; and

WHEREAS, the Milwaukie City Council finds that the final development plan and program and proposed amendments are in the public interest of the City of Milwaukie.

Now, Therefore, the City of Milwaukie does ordain as follows:

Section 1. Findings. Findings of fact in support of the final development plan and program amendments are adopted by the City Council and are attached as Exhibit A.

Section 2. Final Development Plan and Program. The final development plan and program for the Kellogg Creek subdivision are adopted by the City Council and are attached as Exhibit B.

Section 3. Conditions. Conditions of approval related to the final development plan and program are adopted by the City Council and are attached as Exhibit C.

Section 4. Amendments. The Milwaukie Zoning Map is amended as described in Exhibit D (Proposed Zoning Map Amendments).

Section 5. Acceptance of Open Space Dedication. On behalf of the City of Milwaukie, the City Council accepts the proposed dedication of the open space tract (Tract E), as shown on the final development plans attached as Exhibit B, and directs the City Manager to proceed with the necessary arrangements to complete the dedication.

Section 6. Effective Date. The amendments shall become effective 30 days from the date of adoption.

Read the first time on _____, and moved to second reading by _____ vote of the City Council.

Read the second time and adopted by the City Council on _____.

Signed by the Mayor on _____.

Mark Gamba, Mayor

ATTEST:

APPROVED AS TO FORM:
Jordan Ramis PC

Scott S. Stauffer, City Recorder

City Attorney

EXHIBIT A
Findings in Support of Approval
Master File #PD-2017-001
Kellogg Creek Planned Development

Sections of the Milwaukie Municipal Code not addressed in these findings are found to be inapplicable to the decision on this application.

1. The applicant, Brownstone Development, Inc., has applied for approval to create a 92-unit Planned Development subdivision on property currently addressed at 13333 SE Rusk Rd. The site is split zoned Medium Density Residential R-3 on the western half and Low Density Residential R-10 on the eastern half. The land use application master file number is PD-2017-001, with accompanying file numbers ZA-2017-001, S-2017-001, NR-2017-001, TFR-2017-001, VR-2017-003, and CSU-2017-001.

2. The subject property is comprised of a single lot that is the result of a recent lot consolidation and property line adjustment process (land use files PLA-2017-001 andLC-2017-001). Previously, the subject property was comprised of four lots totaling 17.55 acres, with the Turning Point Church located in the southeastern corner of the site and addressed as 13333 SE Rusk Rd. Three of the lots on the western side of the original property were consolidated, and the property line between this new lot and the remaining church lot was subsequently adjusted to accurately reflect the location of the church building and accompanying off-street parking areas. The resulting church site is approximately 3.7 acres, and the subject property being subdivided is approximately 13.8 acres.

3. The applicant has proposed to divide the subject property into 92 lots for 4-unit rowhouse development, with tracts for stormwater (3 facilities), open space (nearly 7 acres), a community garden, and a pedestrian connection to Kellogg Creek Drive along the eastern edge of the development. A network of new public streets will provide access to the new development, with two points of vehicle access to Kellogg Creek Drive and pedestrian and bicycle access to an existing sidewalk at the intersection of Rusk Road and Highway 224. Private alleys will provide additional access to the rear of some of the proposed rowhouses. Previously, the church site depended on an access through the subject property; access to the church site will be retained through one of the new public streets. The proposal includes a variance request for locating the driveway access for one of the proposed lots slightly closer to a street intersection than the City code allows.

4. Mount Scott Creek flows across the northern portion of the subject property, and a large wetland (approximately 0.7 acres) is located within the 100-year floodplain designated over most of the western half of the site. Water Quality Resource (WQR) and Habitat Conservation Area (HCA) designations exist around the creek and wetland, and portions of these natural resource areas will be disturbed by the proposed development. The applicant has proposed mitigation plantings within the WQR and HCA and to balance cut and fill within the floodplain. The proposal includes a variance request for configuring several of the new lots in such a way that there is little or no buildable area outside the WQR or HCA.

5. The proposal is subject to the following provisions of the Milwaukie Municipal Code (MMC):
   - MMC Section 19.1007 Type IV Review
   - MMC Section 19.311 Planned Development Zone (PD)
   - MMC Section 19.301 Low Density Residential Zones (including R-10)
   - MMC Section 19.302 Medium and High Density Residential Zones (including R-3)

- MMC Section 19.902 Amendments to Maps and Ordinances
- MMC Title 17 Land Division
- MMC Title 18 Flood Hazard Regulations
- MMC Section 19.402 Natural Resources
- MMC Chapter 19.500 Supplementary Development Regulations
- MMC Chapter 19.600 Off-Street Parking and Loading
- MMC Chapter 19.700 Public Facility Improvements
- MMC Section 19.904 Community Service Uses
- MMC Section 19.911 Variances
- MMC Chapter 19.1200 Solar Access Protection

6. The application submittal includes a proposed Planned Development, Zoning Map Amendment, Subdivision (preliminary plat), Natural Resource Review, Transportation Facilities Review, Variance Request, and minor modification to the church as an existing Community Service Use. Of all of the application components, the Planned Development and Zoning Map Amendment require the highest level of review (Type IV); as per MMC Subsection 19.1001.6.B, all are being processed with Type IV review.

   The application has been processed and public notice provided in accordance with MMC Section 19.1007 Type IV Review. As required by MMC Subsection 19.1002.2, a preapplication conference was held on August 11, 2016. Public notice was sent to property owners and current residents within 500 ft of the subject property. MMC Subsection 19.1007.3.D requires a 400-ft radius for public notice, but the applicant requested a broader notice radius to correspond with the notice sent for the applicant's voluntary neighborhood meeting prior to submittal. As required by law, a public hearing with the Planning Commission was opened on May 23, 2017; continued to May 25; continued again to June 27 (where it was only nominally re-opened); and continued again to July 25, 2017. The Planning Commission hearing resulted in a recommendation for final decision by the City Council. A public hearing with the City Council was held on September 5, 2017, as required by law.

   These findings are worded to reflect the City Council's role as final decision-maker; they represent the Planning Commission's recommendation to the City Council.

7. MMC Chapter 19.300 Base Zones

   As a Planned Development, the proposed subdivision is subject to the requirements for Planned Developments as established in MMC Section 19.311. The Planned Development (PD) zone is a superimposed zone applied in combination with regular existing zones. The subject property is split-zoned R-10 and R-3, so the underlying zone requirements of MMC Sections 19.301 and 19.302, respectively, are relevant and must be addressed as well.

   a. MMC Section 19.311 Planned Development Zone (PD)

      The purpose of a PD zone is to provide a more desirable environment than is possible through the strict application of Zoning Ordinance requirements, encouraging greater flexibility of design and providing a more desirable use of public and private common open space. PD zones can promote variety in the physical development pattern of the city and encourage a mix of housing types.

(1) MMC Subsection 19.311.2 Use

The City Council approves the final development plan of a PD zone, in consideration of the proposal's conformance to the following standards:

(a) Conformance to the City's Comprehensive Plan

As addressed in more detail in Finding 8, the proposed Planned Development conforms to the City's Comprehensive Plan and is consistent with the relevant policies and goals.

(b) Formation of a compatible and harmonious group

As proposed, the development will provide 92 single-family attached units in the form of 23 four-unit rowhouses. Approximately half of the units will be alley-loaded, with driveways and garages located in the rear; the other half will be front-loaded, with driveways and garages accessing the streets. Although the two types of structures will have different front facades, according to the applicant's submittal materials, the size, orientation, architecture, color palette, and articulating features will be similar and will lend a sense of group compatibility.

(c) Suitability to the capacity of existing and proposed community utilities and facilities

The existing public utilities and facilities in the vicinity of the subject property are all of sufficient size and capacity to support the proposed development. As required, the new streets and utilities provided within the proposed development itself will be suitable to serve it.

(d) Cohesive design and consistency with the protection of public health, safety, and welfare in general

The proposed street network, comprised of public streets, a public alley, and pedestrian and bicycle paths, is cohesively designed and meets the various applicable City standards for spacing and sight-distance. Frontage improvements on the new public streets and along the subject property's frontage on Kellogg Creek Drive, including sidewalks, landscaping, and streetlights will meet applicable City standards. A soft-surface trail system through a portion of the open space area will offer recreational opportunities while limiting impacts to natural areas.

(e) Affordance of reasonable protection to the permissible uses of properties surrounding the site

No commercial or other nonresidential uses are proposed as part of the development. Surrounding properties are zoned for low-density residential uses, and the proposed development will not limit any future development or redevelopment of those properties. Access to the adjacent church site will be modified to allow a safe connection to Kellogg Creek Drive through the new street system of the proposed development. Future redevelopment of the church site may require further modifications to its access, but the proposed development does not preclude such redevelopment. The northern portion of the site, which is adjacent to the rear of several residential lots on Kayla Court, will not be accessible across Mount Scott Creek and will not present any new impacts as a result of the proposed development.

(2) MMC Subsection 19.311.3 Development Standards

MMC 19.311.3 establishes that the various applicable standards and requirements of MMC Title 19, including those of the underlying zone(s), are applicable in a PD zone, unless the Planning Commission grants a variance from said standards in its approval of the PD or the accompanying subdivision plat. The City Attorney has concurred with the conclusion of City staff that a formal variance request is not required for adjustments related to the flexibility inherent in the stated purpose of the PD zone to encourage greater flexibility of design and provide a more efficient and desirable use of common open space, with an allowance for some increase in density as a reward for outstanding design (e.g., housing type, lot size, lot dimension, setbacks, and similar standards).

(a) Minimum Size of a PD Zone

MMC Subsection 19.311.3.A requires a minimum of 2 contiguous acres of land for a Planned Development.

The subject property is approximately 13.8 acres in size and provides an adequate area for development.

(b) Special Improvements

MMC Subsection 19.311.3.B establishes the City's authority to require the developer to provide special or oversize sewer lines, water lines, roads and streets, or other service facilities.

The City's Engineering Department has determined that no special or oversize facilities are required to ensure that the proposed development provides adequate public facilities.

(c) Density Increase and Control

MMC Subsection 19.311.3.C allows an increase in density of up to 20% above the maximum allowed in the underlying zone(s), if the City Council determines that the proposed Planned Development is outstanding in planned land use and design and provides exceptional advantages in living conditions and amenities not found in similar developments constructed under regular zoning.

Subtracting the area occupied by floodplain, proposed rights-of-way, and required open space, as required by the density-calculation standards provided in MMC Subsection 19.202.4, the maximum allowable density for the net area of the subject property is 82 units. The applicant has proposed a total of 92 units, which is a 12% increase. The applicant has listed the following elements as evidence of the project's outstanding design and exceptional advantages:

- *Over 7 acres of open space, which will protect natural resource and floodplain areas on the site and provide recreational opportunities with a soft-surface trail system. The open space tract includes a stand of mature Oregon white oak trees that have been identified by public testimony as a priority for preservation. As proposed, the open space tract will be dedicated to the City.*

- *Overall site design that provides a sense of openness and visual permeability between the natural open space tract and the residential lots, nearly half of which will have backyards that are directly adjacent to the open space. A condition has been established to require fencing that along the boundaries of lots adjacent to the open space tract (Tract E), to maintain views of the open space but prevent uncontrolled access.*
- *Unfenced stormwater facilities planted with low-lying grasses that maintain views of the open space and provide connection points between the trail system and the rest of the development*
- *A community garden for use by residents, located in the northeastern portion of the site*
- *Trees planted as screening between Highway 224 and the adjacent lots in the northeast corner of the site*
- *92 units of attached single-family housing offered at a price point that is affordable for working people with moderate incomes*
- *Compact development in proximity to a large public park (North Clackamas Park) and with access to a major roadway (Highway 224)*

The applicant has asserted that, without the Planned Development process, the site would be difficult to develop at a level that would meet the City's minimum density standard, at least without resulting in greater impacts to the designated natural resources on the site and a loss of some of the proposed amenities like the soft-surface trails and community garden. In effect, the proposed development is outstanding by virtue of being the only practicable and feasible layout for the site that provides new housing targeted at working people with moderate incomes.

As per the recommendation of the Planning Commission, the City Council finds that the proposed development provides sufficiently outstanding design features and extraordinary amenities to justify the proposed density increase.

(d) Peripheral Yards

MMC Subsection 19.311.3.D requires that yards along the periphery of any Planned Development zone be at least as deep as the front yard required in the underlying zone(s). Open space may serve as peripheral yard.

The front yard requirements of the underlying zones are 20 ft for R-10 and 15 ft for R-3. The large open space tract on the north and west sides of the proposed development provides a buffer of well over 20 ft. Where the proposed development is adjacent to the church property on the east, a 22-ft-wide public alley provides a peripheral buffer for Lots 45 and 57, and the 20-ft-wide pedestrian connection on tracts E and F provides a peripheral buffer for Lots 1 and 17. The pedestrian-bicycle connection between the cul-de-sac and the sidewalk at Rusk Road, in the northeastern corner of the site, provides 15 ft of separation for Lot 92; together with the proposed 5-ft side yard, a total of 20 ft will be provided as a buffer for this lot.

(e) Open Space

MMC Subsection 19.311.3.E requires that a Planned Development set aside land as open space, for scenic, landscaping, or other recreational purposes within the development. A minimum of one-third of the gross area of the site must be provided as open space and/or outdoor recreational areas, with at least half of this area being of the same general character as the area containing dwelling units.

The gross area of the subject property is approximately 13.8 acres, so a minimum of 4.6 acres must be provided as open space, with at least 2.3 acres available for recreational purposes. The applicant has proposed to establish an open space tract of approximately 7 acres, with a soft-surface trail system making approximately 2.5 acres available for recreation.

(3) MMC Subsection 19.311.6 Planning Commission Review of Preliminary Development Plan and Program

MMC 19.311.6 establishes that the Planning Commission shall review an applicant's preliminary development plan and program for a PD and shall notify the applicant whether the proposal appears to satisfy the provisions of this section or has any deficiencies. Upon the Commission's approval in principle of the preliminary plan and program, the applicant shall file a final development plan and program and an application for zone change.

The applicant has submitted a development plan and program for the proposed PD and has requested that the Commission consider it to be the final development plan and program submittal, along with the accompanying application for zone change.

(4) MMC Subsection 19.311.8 Subdivision Plat

MMC 19.311.8 requires that the submittal of a final development plan and program be accompanied by an application for subdivision preliminary plat, where the PD involves the subdivision of land.

The proposal involves a 92-unit subdivision, and the applicant has included an application for subdivision preliminary plat with the submittal of a final development plan and program.

(5) MMC Subsection 19.311.9 Application for Zone Change

MMC 19.311.9 requires that an application for zone change accompany the submittal of a final development plan and program.

Along with the final development plan and program, the applicant has included an application for zone change to apply the PD zone to the subject property.

(6) MMC Subsection 19.311.10 Planning Commission Action on Final Development Plan and Program

MMC 19.311.10 requires that the Planning Commission hold a public hearing using Type IV review to consider a final development plan and program, zone change application, and subdivision preliminary plat. If the Planning Commission finds that the final development plan and program is in compliance with the preliminary approval and with the intent and requirements of the applicable provisions of the zoning ordinance, it shall forward a recommendation for approval to the City Council for adoption.

As required, the Planning Commission opened a public hearing on May 23, 2017, in accordance with the Type IV process outlined in MMC Section 19.1007, and considered the proposed development plan and program, zone change application, subdivision preliminary plat, and other accompanying reviews. The hearing was continued to May 25, again to June 27, and again to July 25, 2017. The Planning Commission found that the development plan and program is in compliance with the intent and requirements of the applicable provisions of MMC Title 19 Zoning and forwarded a recommendation of approval to the City Council for adoption.

(7) MMC Subsection 19.311.11 Council Action on Final Development Plan and Program

MMC 19.311.11 requires that the City Council consider the final development plan and program and zone change application through the Type IV review process, upon receipt of a recommendation from the Planning Commission. Upon consideration of the proposal, the Council may adopt an ordinance applying the PD zone to the subject property and adopt the final development plan and program as the standards and requirements for that PD zone. The Council may also continue consideration and refer the matter back to the Planning Commission with recommendations for amendment, or may reject the proposal and abandon further hearings and proceedings.

The Council considered the final plan and program and zone change application, as well as the accompanying applications for subdivision preliminary plat and associated reviews, in accordance with the Type IV review process outlined in MMC Section 19.1007. The Council held a public hearing on September 5, 2017, and adopted an ordinance applying the PD zone to the subject property, which adopted the final development plan and program as the standards and requirements for the new PD zone (Ordinance ____).

The City Council finds that the applicable standards and requirements of MMC 19.311 are met. As per Ordinance ____, the final development plan and program is adopted as the standards and requirements and the PD zone designation is applied to the subject property.

b. MMC Sections 19.301 Low Density Residential Zones (including R-10) and 19.302 Medium and High Density Residential Zones (including R-3)

The subject property is split-zoned Residential R-10 and Residential R-3. MMC 19.301 and 19.302 establish the allowable uses and development standards for the residential R-10 and R-3 zones, respectively. As noted in Finding 7-a(2), although the underlying zone standards are primarily applicable, the PD zone allows adjustment to some of those standards. This applies to such underlying zone limitations as housing type, lot size, lot dimension, setbacks, and similar standards that relate to flexibility of design, greater efficiency in the use of common open space, and minor increases in density allowed as a reward for outstanding design.

(1) Permitted Uses

As per MMC Table 19.301.2, rowhouse development is not a permitted use in the R-10 zone; rowhouses are an outright permitted use in the R-3 zone (as per MMC Table 19.302.2). As noted in Finding 7-a, the primary purposes of the PD zone include encouraging greater flexibility of design and providing a more

efficient use of common open space, so housing types not ordinarily permitted in the base zone may be proposed.

The applicant has proposed a 92-unit development comprised of 23 four-unit rowhouse buildings. The proposed design maximizes the development potential of the subject property, providing a public street network and utility infrastructure while minimizing impacts to the natural resource and floodplain areas on the site, which will remain protected in open space.

(2) Lot and Development Standards

The applicant has proposed to apply a single set of lot and development standards across the entire site, which is zoned R-3 on the western half and R-10 on the eastern half. As discussed in Finding 7-a(2), above, adjustments to underlying zone standards that are related to the flexibility of design afforded by the PD process are allowed and do not require a formal variance request. Table 7-b(2) compares the applicable standards for development in the R-10 and R-3 zones with the standards proposed as the final development plan and program for this PD zone.

Table 7-b(2)
Lot and Development Standards

Standard	R-10 Requirement	R-3 Requirement[1]	Proposed PD Requirement
1. Minimum Lot Size	10,000 sq ft	3,000 sq ft	Lots range from 1,600 sq ft to approx. 2,500 sq ft
2. Minimum Lot Width	70 ft	30 ft	Lot widths range from 20 ft to 28 ft
3. Minimum Lot Depth	100 ft	80 ft	Lot depths range from 80 to 87.25 ft
4. Minimum street frontage	35 ft	30 ft	Typical range is 20 to 25 ft; three lots on cul de sac are <20 ft
5. Front Yard	20 ft	15 ft	Front-loaded lots = 18 ft Alley-loaded lots = 10 ft
6. Side Yard	10 ft	0 ft (common) 5 ft (exterior)	Common wall = 0 ft Exterior wall = 5 to 6 ft
7. Street-Side Yard	20 ft	15 ft	8 ft
8. Rear Yard	20 ft	15 ft	Front-loaded lots = 15 ft Alley-loaded lots = 20 ft
8. Maximum Building Height	2.5 stories or 35 ft (whichever is less)	2.5 stories or 35 ft (whichever is less)	2 stories, <35 ft
9. Side yard height plane limit	45-degree slope at 20 ft height	45-degree slope at 20 ft height	≤20 ft
10. Maximum lot coverage	30%	40% (+20% for rowhouses)	Lots range from 46% to 59%

11. Minimum vegetation	35%	35%	Small vegetated areas on each lot, with access to large open space area to west
12. Front yard minimum vegetation	40%	40%	Front yard areas not occupied by driveways and walkways will be vegetated
13. Minimum density	3.5 units per acre	11.6 units per acre	Minimum of 67 units for entire site
14. Maximum density	4.4 units per acre	14.5 units per acre	Maximum of 82 units for entire site (Applicant has requested a 12% density increase to a total of 92 units)

[1] R-3 requirements from MMC Table 19.302.2 for rowhouses

The lot and development standards that will govern development on the subject property are shown in Table 7-b(2) and effectively establish a component of the final development plan and program for this PD zone.

8. MMC Section 19.902 Amendments to Maps and Ordinances

MMC 19.902 establishes the process for amending the City's Comprehensive Plan and land use regulations, including the zoning map. Specifically, MMC Subsection 19.902.6 establishes the review process and approval criteria for zoning map amendments.

a. MMC Subsection 19.902.6.A Review Process

MMC 19.902.6.A provides that, generally, changes to the zoning map that involve 5 or more properties or encompass more than 2 acres of land are legislative and are therefore subject to Type V review; otherwise, they are quasi-judicial in nature and subject to Type III review. The City Attorney has the authority to determine the appropriate review process for each proposed zoning map amendment.

The proposed zoning map amendment encompasses a single property of approximately 13.8 acres and is related to a proposed planned development, which requires Type IV review. The City Attorney has determined that the proposed zoning map amendment is quasi-judicial in nature and requires Type III review. The concurrent planned development requires Type IV review, which is also a quasi-judicial process. The City Council finds that the Type IV review process is appropriate for the proposed zoning map change.

b. MMC Subsection 19.902.6.B Approval Criteria

MMC 19.906.2.B establishes the following approval criteria for zoning map amendments:

(1) The proposed amendment is compatible with the surrounding area based on the following factors:

(a) Site location and character of the area

(b) Predominant land use pattern and density of the area

(c) Expected changes in the development pattern for the area

The area surrounding the subject property includes North Clackamas Park and low to moderate density residential development, as well as the Deerfield Village assisted living center (40 apartment units) located directly across Kellogg Creek Drive from the site. The proposed development will preserve over half of the site

area as natural open space with access through soft-surface trails for low-impact recreational use. The location offers easy access to Highway 224, North Clackamas Park, several nearby schools, and employment centers along the Highway 224 and Interstate 205 corridors.

The 92 units of proposed rowhouses will be arranged in a compact pattern accessible by fully constructed local streets, with landscape strips, street trees, and on-street parking. Although the residential portion of the proposed development will be denser than most of the surrounding neighborhood, the Deerfield Village assisted living center is similar in density and aesthetic to an apartment or multifamily development. The proposed development is consistent with the single-family attached housing that Milwaukie's 2016 Housing Needs Analysis predicts will be developed over the next 20 years.

The proposed zoning amendment is compatible with the surrounding area based on the factors listed above.

(2) The need is demonstrated for uses allowed by the proposed amendment.

The draft 2016 Housing Needs Analysis prepared for Milwaukie notes a particular need for single-family attached units like the proposed rowhouses.

(3) The availability is shown of suitable alternative areas with the same or similar zoning designation.

Functionally, the PD designation is a form of overlay zone designation that can be applied to sufficiently sized properties for greater flexibility in developing the site. This criterion is more applicable to standard base zone designations and is intended to ensure that a suitable number of other properties with the same base zone designation will remain available for development.

This criterion is not applicable to a proposal to add the PD designation to a base zone.

(4) The subject property and adjacent properties presently have adequate public transportation facilities, public utilities, and services to support the use(s) allowed by the proposed amendment, or such facilities, utilities, and services are proposed or required as a condition of approval for the proposed amendment.

The applicant's submittal materials include a traffic impact study, utility plans, and preliminary stormwater drainage report to demonstrate that public facilities are or will be made adequate to serve the proposed development.

Existing water and sanitary sewer services in Kellogg Creek Drive are provided by Clackamas River Water (CRW) and Clackamas County's Water and Environment Services (WES), respectively, and are adequate to serve the proposed new units. Within the public rights-of-way that will serve the proposed development, new water and sanitary sewer mains will be constructed as per City standards and will be maintained by the City, though they will connect to the CRW and WES facilities in Kellogg Creek Drive.

The applicant proposes to manage stormwater runoff from the new public streets with three large, shallow bioswale facilities. The applicant's preliminary drainage report, prepared by a qualified professional engineer, explains in more detail how stormwater will be managed and demonstrates that post-development runoff will not exceed the applicable pre-development standards.

Within the newly dedicated public rights-of-way that will serve the proposed lots, public streets will be constructed to meet applicable City standards, with paved travel lanes, curb and gutter, landscape planter strips, and sidewalks. On Kellogg Creek Drive along the subject property frontage, the existing right-of-way will be also be improved to provide the required width travel lane, striped bicycle lane, on-street parking strip, curb and gutter, landscape planter strip, and setback sidewalk.

The subject property and adjacent properties presently have adequate public transportation facilities, public utilities, and services to support the proposed development.

(5) The proposed amendment is consistent with the functional classification, capacity, and level of service of the transportation system. A transportation impact study may be required subject to the provisions of Chapter 19.700.

The applicant prepared a traffic impact study (TIS) to evaluate the proposed development's anticipated impacts on the transportation system. The TIS concluded that traffic volumes from the proposed development will not cause any of the intersections in the study area to fall below acceptable levels of service.

As discussed in Finding 14-c, the City's traffic consultant has reviewed the applicant's TIS and concluded that, with the exception of one error related to measurement of the northbound right-turn lane on Rusk Road at the Highway 224 intersection, the methodology and conclusions of the TIS are sound. As proposed, the northbound right-turn leg of the Rusk Road/Highway 224 intersection would fall below the acceptable level of service. A condition has been established to require extension of the northbound right-turn lane on Rusk Road so the Highway 224 intersection maintains an acceptable level of service.

As conditioned, the proposed amendment is consistent with the functional classification, capacity, and level of service of the transportation system.

(6) The proposed amendment is consistent with the goals and policies of the Comprehensive Plan, including the Land Use Map.

The Land Use Map within the City's Comprehensive Plan (Comp Plan) reflects the split zoning of the subject property, with a Low Density designation for the portion zoned R-10 and a Medium Density designation for the portion zoned R-3. The proposed amendment would add the Planned Development (PD) designation to each of the zone designations for the subject property but would not affect the designations on the Land Use Map.

The Comp Plan includes a number of goals and policies that are applicable to the proposed development.

(a) Chapter 1 Citizen Involvement

The goal of Chapter 1 is to encourage and provide opportunities for citizens to participate in all phases of the planning process. Prior to submitting the application, the applicant held an open meeting to present and discuss the project. The Lake Road Neighborhood District Association and to property owners and residents within 500 ft of the site were invited. According to the applicant's submittal materials, approximately 30 people attended the meeting, held on November 3, 2016. The applicant noted the various

concerns raised by neighbors and has noted that several aspects of the original plan were revised as a result.

The Type IV review process utilized for consideration of any Planned Development provides for public hearings by both the Planning Commission and City Council, where citizens have the opportunity to present testimony and participate in the decision-making process. A public hearing on the proposed development was opened by the Planning Commission on May 23, 2017; continued to May 25; continued again to June 27 (where it was only nominally re-opened); and continued again to July 25, 2017. A public hearing was held by the City Council on [month/day], 2017. The Commission and Council considered testimony from citizens en route to reaching the decision reflected in these findings.

(b) Chapter 2 Plan Review and Amendment Process

The goal of Chapter 2 is to establish a process for review and amendment of the Comp Plan, as a basis for land use decisions and with public participation. Policies related to the objective of implementing the Comp Plan include a requirement that zone changes and other planning actions be consistent with the intent of the Comp Plan. The applicant's narrative and supporting materials are evidence of the required review process at work, with opportunities for public involvement at Commission and Council hearings as noted above.

(c) Chapter 3 Environmental and Natural Resources

Chapter 3 focuses on conservation of the City's remaining natural resources.

(i) Natural Hazards Element

The goal of the Natural Hazards element is to provide appropriate safeguards for development in areas of known natural hazards, such as floodplains. Policies include the direction to establish regulations to prevent development from increasing stormwater runoff and standards to ensure the strength and quality of construction materials within the floodplain. The finished elevations of the lowest floors of buildings and streets must be a minimum of 1 ft above the 100-year flood elevation, and actions are encouraged to retain the floodplain as minimally undeveloped open space.

The subject property includes a designated floodplain area, and the proposed development involves some alteration of the floodplain. As discussed in Finding 10, the applicant proposes to balance the amount of fill that will be added within the floodplain with the removal of an equal amount of material. The fill will raise those areas of residential construction and streets at least 1 ft above the base flood elevation. The remaining floodplain areas on the site will be included in a large open space tract.

(ii) Open Spaces, Scenic Areas, and Natural Resources Element

The goal of the Open Spaces element is to conserve open space and protect and enhance natural resources to create an aesthetically pleasing urban environment. Policies include the protection of natural

resources through conservation and mitigation, designation of riparian area buffers, regulation of the placement and design of stormwater drainage facilities, and protection of existing upland areas and values related to wildlife habitat and erosion control.

As discussed in more detail in Finding 11, the applicant's submittal materials include a natural resource report that analyzes practicable alternatives to the proposed development and demonstrates that its proposal does the most to avoid impacts to the WQR and HCA parts of the site, minimizes impacts where unavoidable, and sufficiently mitigates for the allowed disturbance. The applicant's submittal materials include a preliminary drainage report that explains how the proposed stormwater management facilities are designed to ensure that post-development runoff will not exceed pre-development levels.

(d) Chapter 4 Land Use

Chapter 4 provides objectives and policies to guide the development of vacant lands and redevelopment of existing features, considering a variety of needs such as housing, employment, and recreation.

(i) Residential Land Use and Housing Element

The goal of the Residential Land Use element includes the provision of new housing that is adequate to meet the needs of local residents and the regional housing market.

Policies related to buildable lands include the use of zoning to implement the policies and standards of various other elements of the Comp Plan and requirement of a report demonstrating consistency with the policies of Chapter 3 (Environmental and Natural Resources) for sites with special resource designations. Policies related to residential land use design include an allowed density bonus of up to 20% for Planned Unit Developments in exchange for exceptional design quality or special project amenities, a requirement that Planned Unit Developments provide areas dedicated to open space and/or outdoor recreation, and encouragement for preservation of existing tree canopy and connected vegetated corridors. Policies related to housing choice include the development of larger subdivisions and Planned Unit Developments that use innovative techniques for the purpose of reducing housing costs while creating an attractive living environment.

The applicant's narrative includes an address of the proposal's consistency with the various applicable goals, objectives, and policies of the Comp Plan, including those of Chapter 3. As addressed in Finding 7-a-(2)(c), the applicant has proposed a density increase of 12%, based on the exceptional design and special amenities of the proposed development. The proposed development includes nearly half of the overall site retained as open space, with the developable lots configured in such a way as to preserve as many of the existing trees on the site as practicable and to avoid impacts to the riparian corridor along Mount Scott Creek. The applicant asserts that the number of proposed lots will create a certain economy of scale that

will allow the new units to be sold at an affordable price and meet one of the community's housing needs.

(ii) Recreational Needs Element

The goal of the recreational needs element is to provide for the recreational needs of current and future city residents by maximizing the use of existing public facilities, encouraging the development of private recreational facilities, and preserving the opportunity for future public recreational use of vacant private lands.

The subject property is adjacent to the eastern edge of North Clackamas Park, and future residents in the proposed development will have easy access to this existing public facility. Within the proposed open space tract, a soft-surface trail system will be available for recreational use by both future residents and the public at large (through a public access easement).

(e) Chapter 5 Transportation, Public Facilities, and Energy Conservation

Chapter 5 addresses the City's responsibility to provide its current and future residents with a full range of urban services, including streets, sewer, and water.

(i) Transportation Element

The City's Transportation System Plan (TSP) is an ancillary Comp Plan document that contains the City's long-term transportation goals and policies. The applicant's TIS demonstrates consistency with the TSP and asserts that the proposed development will not result in significant impacts to the surrounding transportation system. As discussed in Finding 14-c, the City's traffic consultant has reviewed the applicant's TIS and concluded that, with the exception of one adjustment related to measurement of the northbound right-turn lane on Rusk Road at the Highway 224 intersection, the methodology and conclusions of the TIS are sound. A condition has been established to address this error.

(ii) Public Facilities and Services Element

The goal of the Public Facilities element is to provide for the orderly and efficient arrangement of public facilities and services to serve urban development. The proposed development includes the extension of existing water and sewer services to serve the new lots, as well as stormwater facilities designed to ensure that post-development runoff does not exceed pre-development levels.

(iii) Energy Conservation Element

The goal of the Energy Conservation element is to conserve energy by encouraging energy-efficient land use patterns and transportation systems. The proposed development is a compact arrangement of 92 units of rowhouse housing that is located close to large employment corridors across Highway 224 and along Interstate 205.

As conditioned, the proposed amendment is consistent with the goals and policies of the Comprehensive Plan, including the Land Use Map.

(7) The proposed amendment is consistent with the Metro Urban Growth Management Functional Plan and relevant regional policies.

The Metro Urban Growth Management Functional Plan includes a number of titles that address various aspects of the region's goals and policies for urban development.

(a) Title 1 Housing Capacity

The proposed development will provide a large number of needed housing units in a compact urban form.

(b) Title 3 Water Quality and Flood Management

The proposed development is configured to avoid and/or minimize impacts to the designated natural resources on the site. Proposed alterations to the floodplain will be done in accordance with local and federal requirements.

(c) Title 7 Housing Choice

The proposed development will provide single-family attached housing and will support Metro's policies for expanding housing choice with a needed housing type in Milwaukie.

(d) Title 13 Nature in Neighborhoods

The proposed development supports Metro's policies for conserving and enhancing habitat areas by avoiding and minimizing impacts to the designated natural resources on the site, as well as by establishing a large open space tract that includes wetlands, floodplain, existing mature native trees, and the riparian corridor along Mount Scott Creek.

The proposed amendment is consistent with the Metro Urban Growth Management Functional Plan and relevant regional policies.

(8) The proposed amendment is consistent with relevant State statutes and administrative rules, including the Statewide Planning Goals and Transportation Planning Rule.

Several of the Statewide Planning Goals are relevant to the proposed amendment:

(a) Goal 2 Citizen Involvement

Prior to submitting the application, the applicant held an open meeting to present and discuss the proposed development with neighbors. The applicant made several revisions to the original concept plan as a direct result of the discussion at that meeting. The Type IV review process for Planned Development proposals requires public hearings with both the Planning Commission and the City Council, allowing additional opportunities for citizens to submit written and oral testimony before the decision-makers. A public hearing on the proposed development was held by the Planning Commission on May 23, 2017; continued to May 25; continued to June 27 (where it was only nominally re-opened); and continued again to July 25, 2017. A public hearing with the City Council was held on September 5, 2017.

(b) Goal 5 Natural Resources

The proposed development is subject to the applicable standards of MMC Section 19.402 Natural Resources, which provide protections for designated natural resource areas. As discussed in more detail in Finding 11, the applicant has proposed to avoid impacts to WQR and HCA parts of the site as much as practicable, to minimize impacts where unavoidable, and to sufficiently mitigate for the allowed disturbance.

(c) Goal 7 Areas Subject to Natural Hazards

The subject property includes a significant area of floodplain. As addressed in Finding 10, the applicant proposes substantial alteration of the floodplain in accordance with local and federal requirements, including the provision that the amount of fill material placed in the floodplain must be balanced by an equal removal of material from within the floodplain.

(d) Goal 12 Transportation and Transportation Planning

As addressed in Finding 14 and elsewhere in these findings, with the conditioned correction of one minor error noted by City staff, the applicant's TIS demonstrates that the proposed development will not require changes to the functional classification of existing or planned transportation facilities and will not result in significant impacts on the transportation system.

As conditioned, the proposed amendment is consistent with relevant State statutes and administrative rules, including the Statewide Planning Goals and Transportation Planning Rule.

The proposed amendment, as conditioned, is consistent with the applicable criteria for zoning map amendments.

As conditioned, the City Council finds that the proposed amendment to the City's Zoning Map is approvable.

9. MMC Title 17 Land Division

MMC Title 17 establishes the City's regulations and procedures for lot consolidations, land divisions, property boundary changes, and creation of streets and rights-of-way. As per MMC Section 17.04.050, all decisions on boundary changes and land divisions expire 1 year after the date of approval, with one 6-month extension allowed upon submission of a formal request to the original decision-making authority.

a. MMC Chapter 17.12 Application Procedure and Approval Criteria

MMC 17.12 establishes the application procedures and approval criteria for land divisions and property boundary changes. Specifically, MMC Subsection 17.12.020.E provides that applications for subdivision preliminary plat are subject to Type III review.

MMC Section 17.12.040 establishes the following approval criteria for preliminary plat:

(1) The proposed preliminary plat complies with Title 19 of this code and other applicable ordinances, regulations, and design standards.

The proposed preliminary plat is for a planned development subdivision of 92 lots for rowhouse development, with tracts for stormwater facilities, open space, a community garden, and a pedestrian connection to Kellogg Creek Drive along

the eastern edge of the development. The subject property is a 13.8-acre parcel that was created from a larger 17.5-acre property by a Property Line Adjustment and Lot Consolidation application (file #s PLA-2017-001 and LC-2017-001) approved in July 2017.

As addressed throughout these findings, the proposed subdivision complies with the applicable standards of Title 19 and other applicable ordinances, regulations, and design standards.

The City Council finds that this standard is met.

(2) The proposed division will allow reasonable development and will not create the need for a variance of any land division or zoning standard.

The proposed division will allow reasonable development on all developable lots, without creating the need for any additional variances of land division or zoning standards beyond those addressed in these findings.

The City Council finds that this standard is met.

(3) The proposed subdivision plat name is not duplicative and the plat otherwise satisfies the provisions of ORS 92.090(1).

The proposed subdivision name, Kellogg Creek, is not duplicative, and the plat otherwise satisfies the provisions of ORS 92.090(1).

The City Council finds that this standard is met.

(4) The streets and roads are laid out so as to conform to the plats of subdivisions already approved for adjoining property as to width, general direction, and in all other respects unless the City determines it is in the public interest to modify the street or road pattern.

The Whitman's Lake-East Heights subdivision of 2001 is adjacent to the subject property to the north, across Mount Scott Creek from the proposed development. The Whitman's Lake-East Heights subdivision includes a public street (Madeira Drive) that bends away from the subject property and does not provide a connection point to the subject property. The proposed development does not include a crossing of Mount Scott Creek nor any developable lots or streets adjacent to the adjoining subdivision to the north.

The City Council finds that this standard is not applicable.

(5) A detailed narrative description demonstrating how the proposal conforms to all applicable code sections and design standards.

The applicant has provided a detailed narrative description that demonstrates how the proposal conforms to all applicable standards and addresses variance requests as needed.

The City Council finds that this standard is met.

The City Council finds that the applicable procedures and approval criteria for the proposed subdivision, as outlined in MMC 17.12, are met.

b. MMC Chapter 17.16 Application Requirements and Procedures

MMC 17.16 establishes application requirements for land divisions and property boundary changes, including for preliminary plat for subdivision. The application must

include all required forms and fees, as well as the information specified on the Submittal Requirements and Preliminary Plat checklists.

The applicant's submittal materials include all required forms and fees for the proposed subdivision, as well as plan sheets, narratives addressing the various applicable standards and criteria, and supporting documents and reports.

The City Council finds that the application requirements and procedures of MMC 17.16 are met.

c. MMC Chapter 17.20 Preliminary Plat

MMC 17.20 establishes the information required with the preliminary plat, including existing and proposed conditions, a drainage summary report, proposed deed restrictions (if any), and proposed public improvements.

The applicant's preliminary plat materials include existing and proposed conditions, a preliminary drainage report, and plans for proposed improvements (including grading, landscaping, public utilities, and frontage improvements). No deed restrictions are proposed.

The City Council finds that the preliminary plat requirements of MMC 17.20 are met.

d. MMC Chapter 17.28 Design Standards

MMC 17.28 establishes general design standards for land divisions and property boundary changes.

(1) MMC Section 17.28.020 Public Facility Improvements

MMC 17.28.020 requires that all land divisions that increase the number of lots are subject to the requirements and standards of MMC Chapter 19.700 Public Facility Improvements.

The proposed subdivision will increase the number of lots. The applicable standards of MMC 19.700 are addressed in Finding 12.

(2) MMC Section 17.28.030 Easements

MMC 17.28.030 requires that easements for public utilities (including sewers and water mains) be dedicated wherever necessary.

The proposed subdivision will establish new public streets, where the public utility infrastructure will be located. Three tracts for stormwater facilities and three tracts for pedestrian and/or bicycle access will be established and dedicated to the public. A condition has been established to ensure that easements for stormwater outfalls, for public access across private alleys, or for any other public utilities will be dedicated as needed.

(3) Specifically, MMC Section 17.28.040 provides standards for general lot design, including a requirement for rectilinear lots and a 10% limit on the cumulative lateral shift of compound lot line segments.

Lots 88-92, which are located in the curve of the proposed cul-de-sac, each have at least one compound lot line segment. None of the compound segments are greater than 10% of the distance between opposing lot corners.

The City Council finds that the applicable lot design standards of MMC 17.28 are met.

The City Council finds that the proposed subdivision meets all applicable land division standards of MMC Title 17.

10. MMC Title 18 Flood Hazard Regulations

MMC Title 18 provides standards intended to minimize public and private losses due to flood conditions in specific areas. The regulations established in MMC Title 18 do this in part by controlling the alteration of natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel flood waters; controlling filling, grading, dredging, and other development which may increase flood damage; and preventing or regulating the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards in other areas. As per MMC Section 18.04.100, a development permit is required prior to any construction or development within the flood management area.

The subject property includes flood hazard and flood management areas as identified on the Flood Insurance Rate Maps prepared by the Federal Emergency Management Agency (FEMA) and acknowledged by the City for the purposes of implementing this title. The applicant is proposing a revision to the FIRM map, to demonstrate that new lots will not be in the modified floodplain. Although no buildings will be built below the floodplain elevation, the proposed development includes cut and fill within the floodplain.

The proposed development is subject to the applicable provisions of MMC Title 18.

a. MMC Section 18.04.150 General Standards

MMC 18.04.150 provides general standards for all special flood hazard and all flood management areas.

(1) MMC Subsection 18.04.150.C Utilities

MMC 18.04.150.C requires that all new water and sanitary sewer systems be designed to minimize or eliminate infiltration of floodwaters into the system.

A condition has been established to ensure that all new utilities are installed underground and shall otherwise be designed to minimize or eliminate infiltration of floodwaters into the system, including stubs for utility service prior to surfacing any streets.

(2) MMC Subsection 18.04.150.D Subdivisions

MMC 18.04.150.D requires that all subdivision proposals must be consistent with the need to minimize flood damage. Public utilities and facilities shall be located and constructed to minimize or eliminate flood damage. Adequate drainage shall be provided to reduce exposure to flood damage. Base flood elevation data shall be provided for subdivision proposals that contain at least 50 lots or 5 acres.

The base flood elevation is is 69.9 located at cross section C on FEMA map number FM41005C0036D (NAVD 1988 datum). The proposed development would establish 92 units on approximately 13.8 acres and was designed to minimize flood damage by elevating the developable portions of the site at least 1 ft above base flood elevation. As proposed, all public utilities are located outside the floodplain, except for the sanitary sewer connection to the existing sanitary sewer located within the existing floodplain and those public utilities that will be in Kellogg Creek Drive, a portion of which lies within the existing floodplain. The site will be graded to provide positive drainage to reduce

exposure to flood damage. Proposed street grades meet or exceed the minimum grade allowed by the City's Public Works Standards, and street cross sections match typical sections provided by the City to ensure proper drainage.

(3) MMC Section 18.04.150.F Balanced Cut and Fill

MMC 18.04.150.F provides requirements for the displacement of flood storage area by the placement of fill or structures.

As per the applicant's submittal materials, all fill added to the floodplain will be balanced with an equal amount of soil removed from the floodplain meeting the "no net fill" requirement. Excavation will occur on the same parcel as the proposed development and will not occur below the bankfull stage.

As conditioned, the proposed development is consistent with the applicable general standards for all special flood hazard and all flood management areas.

b. MMC Section 18.04.160 Specific Standards

MMC Subsection 18.04.160.A provides specific standards for residential construction, including a requirement that new construction of any residential structure shall have the lowest floor, including basement, elevated 1 ft above base flood elevation.

As proposed, all new primary residential structures will have the lowest floor elevated at least 1 ft above base flood elevation.

The City Council finds that, pending approval of the applicant's proposed revision to the appropriate FIRM map and as conditioned, the proposed development is consistent with the applicable standards of MMC Title 18.

11. MMC Section 19.402 Natural Resources

MMC 19.402 establishes regulations for designated natural resource areas. The standards and requirements of MMC 19.402 are an acknowledgment that many of the riparian, wildlife, and wetland resources in the community have been adversely impacted by development over time. The regulations are intended to minimize additional negative impacts and to restore and improve natural resources where possible.

a. MMC Subsection 19.402.3 Applicability

MMC 19.402.3 establishes applicability of the Natural Resource (NR) regulations, including all properties containing Water Quality Resources (WQRs) and Habitat Conservation Areas (HCAs) as shown on the City's Natural Resource (NR) Administrative Map.

Mount Scott Creek flows across the northern portion of the subject property, and a large wetland (approximately 0.7 acres) is located within the 100-year floodplain designated over most of the western half of the site. The City's NR Administrative Map shows WQR and HCA designations around the creek and wetland, and portions of these natural resource areas will be disturbed by the proposed development.

As presented in the applicant's submittal materials, the proposed development will temporarily or permanently disturb approximately 115,700 sq ft of WQR and/or HCA area. At that scale, the proposed activity is not listed as exempt according to the standards outlined in MMC 19.402.4.

The City Council finds that the requirements of MMC 19.402 are applicable to the proposed activity.

b. MMC Subsection 19.402.7 Activities Requiring Type II Review

MMC 19.402.7 establishes that certain activities within a designated WQR and/or HCA are subject to Type II review in accordance with MMC 19.1005. As per MMC 19.402.7.E, this includes boundary verifications that propose substantial corrections to the NR Administrative Map, including identifying the precise location of wetlands, as required by MMC 19.402.15.A.

The subject property includes a delineated wetland. As provided in MMC Subsection 19.402.15.A, the Type II review process is required to confirm the specific location of wetlands. However, the proposed activity requires other applications that are being processed concurrently with Type IV review. As provided in MMC Subsection 19.1001.6.B.1, concurrent applications are processed according to the highest numbered review type, with a single decision to be issued that includes findings for all concurrent applications.

The City Council finds that the boundary verification for wetlands shall be processed concurrently with Type IV review.

c. MMC Subsection 19.402.8 Activities Requiring Type III Review

MMC 19.402.8 establishes that certain activities within a designated WQR and/or HCA are subject to Type III review in accordance with MMC 19.1006. As per MMC 19.402.8.A.1, this includes activities allowed in the base zone that are not otherwise exempt or permitted as a Type I or II activity.

The subdivision of land containing a WQR and/or HCA is subject to Type III review and the standards established in MMC Subsections 19.402.13.H and 13.I. The level of disturbance proposed within the designated WQR and HCA areas on the subject property exceeds the levels allowed by Type I and II review, as provided in MMC 19.402.6 and 402.7, respectively. As such, the activity is subject to Type III review and the discretionary process established in MMC 19.402.12. As noted in Finding 11-b above, the Natural Resource review is associated with other applications being processed concurrently with Type IV.

The City Council finds that the proposed activity is subject to Type III review and will be processed concurrently with other applications requiring Type IV review.

d. MMC Subsection 19.402.9 Construction Management Plans

MMC 19.402.9 establishes standards for construction management plans, which are required for projects that disturb more than 150 sq ft of designated natural resource area. Construction management plans must provide information related to site access, staging of materials and equipment, and measures for tree protection and erosion control.

The applicant's Natural Resource Review report includes a construction management plan that provides the information required by MMC 19.402.9, including tree protection measures. The plan will be formally reviewed at the time of submittal for development permits.

e. MMC Subsection 19.402.11 Development Standards

MMC 19.402.11 establishes development standards for projects that impact a designated natural resource, including requirements to protect natural resource areas during development and general standards for required mitigation (e.g., plant species, size, spacing, and diversity).

In particular, MMC Subsection 19.402.11.C establishes mitigation requirements for disturbance within WQRs. The requirements vary depending on the existing condition of the WQR, according to the categories established in MMC Table 19.402.11.C. For Class A "Good" WQR conditions, MMC Table 19.402.11.C requires that the applicant submit a plan for mitigating water quality impacts related to the development; for Class C “Poor” WQR conditions, the table requires restoration and mitigation with native species using a City-approved plan.

The proposed development will permanently disturb approximately 32,800 sq ft and temporarily disturb approximately 8,350 sq ft within the WQR. The portion of the WQR closest to Mount Scott Creek is categorized as Class A (“Good”); other portions are categorized as Class C (“Poor”). In addition, the proposed development will permanently disturb approximately 40,700 sq ft and temporarily disturb approximately 5,500 sq ft within the HCA-only areas on the site.

Using the mitigation planting ratio provided in MMC Subsection 19.402.11.D.2.b as a guide, the applicant proposes to plant 5 trees and 25 shrubs per 500 sq ft of disturbance area. For the total WQR and HCA disturbance of approximately 86,350 sq ft (both permanent and temporary disturbance), the applicant proposes to plant 863 native trees and 4,317 native shrubs within a specific mitigation area. As proposed, the mitigation plantings will meet the minimum requirements established in MMC Subsection 19.402.11.B. Mitigation trees will be of at least ½-in caliper (measured at 6 ft above the ground level after planting) and shrubs will be of at least 1-gallon size and at least 12-in height.

ESA, the City’s consultant for on-call natural resource services, has evaluated the proposed mitigation plan and concluded that, with a few adjustments, it adequately addresses the proposed WQR and HCA disturbance. ESA provided a few additional recommendations to improve the mitigation plan, including retaining the existing white oak saplings that appear to have been planted on the site as part of an ongoing restoration effort and re-evaluating the assessment of WQR classification at several of the sample points to ensure that mitigation plantings are distributed appropriately. Conditions have been established to ensure that these recommendations are implemented. In addition, conditions have been established to require a maintenance plan ensuring that the mitigation effort is successful and ongoing and to limit the impact of lights shining directly into WQR or HCA locations.

As conditioned, the City Council finds that the applicable development standards of MMC 19.402.11are met.

f. MMC Subsection 19.402.12 General Discretionary Review

MMC 19.402.12 establishes the discretionary review process for activities that substantially disturb designated natural resource areas.

(1) Impact Evaluation and Analysis

MMC Subsection 19.402.12.A requires an impact evaluation and alternatives analysis in order to determine compliance with the approval criteria for discretionary review and to evaluate alternatives to the proposed development. A technical report prepared by a qualified natural resource professional is required and should include the following components:

- Identification of ecological functions
- Inventory of vegetation

- Assessment of water quality impacts
- Alternatives analysis
- Demonstration that no practicable alternative method or design exists that would have a lesser impact on the resource and that impacts are mitigated to the extent practicable
- Mitigation plan

The applicant's submittal materials include a technical report prepared by Pacific Habitat Services, Inc., a private firm providing a range of environmental consulting services including natural resource assessment, wetland delineation, and environmental restoration. The technical report includes an impact evaluation and alternatives analysis consistent with the required components listed above, as well as an inventory of existing vegetation and discusses the ecological function of the existing WQR and HCA areas within the project area. The report also provides a mitigation plan for permanent and temporary impacts to the WQR and HCA.

The technical report considers two alternatives to the proposed development configuration: (1) another planned development scenario with no regard for natural resources on the site (resulting in greater impacts to the WQR and HCA) and (2) a subdivision following the existing split zoning of the site and configured to produce almost no disturbance of the WQR and HCA. The report concludes that the proposed development is the most practicable alternative that results in the least impact to the natural resources on the site.

The City Council finds that the applicant's impact evaluation and alternatives analysis is sufficient for purposes of reviewing the proposed activity against the approval criteria provided in MMC 19.402.12. This standard is met.

(2) Approval Criteria

MMC Subsection 19.402.12.B provides the approval criteria for discretionary review as follows:

Note: ESA reviewed the applicant's technical report and presented its assessment to the City in a summary memo, which informs this portion of the findings.

- Avoid – The proposed activity avoids the intrusion of development into the WQR and/or HCA to the extent practicable, and has less detrimental impact to the natural resource areas than other practicable alternatives.

  Mount Scott Creek cuts across the northern portion of the nearly 14-acre development site, resulting in significant areas of designated WQR and HCA. Developing the site to achieve even the minimum density without any impacts to the WQR and HCA is difficult. The applicant has proposed a Planned Development instead of a conventional subdivision to have the flexibility to blend the densities allowed by the split R-10 and R-3 zoning of the site. This flexibility allows the applicant to direct the development generally away from the WQR and HCA. By using 4-unit rowhouse structures, the applicant is able to provide a larger number of units in a more compact form than a conventional subdivision would allow. Considering the other alternatives noted in Finding 11-f(1) above, the proposed development will have less detrimental impact to the natural resource areas on the site than other practicable alternatives.

- Minimize – If the applicant demonstrates that there is no practicable alternative to avoid disturbance of the natural resource, then the proposed activity shall minimize detrimental impacts to the extent practicable.

  As noted in the above discussion of avoiding impacts, the proposed development is configured to reduce impacts to the WQR and HCA to the greatest extent practicable. The proposed development is compact by design and focuses major site impacts away from the WQR and HCA where practicable.

- Mitigate – If the applicant demonstrates that there is no practicable alternative that will avoid disturbance of the natural resource, then the proposed activity shall mitigate for adverse impacts to the resource area. The applicant shall present a mitigation plan that demonstrates compensation for detrimental impacts to ecological functions, with mitigation occurring on the site of the disturbance to the extent practicable, utilization of native plants, and a maintenance plan to ensure the success of plantings.

  As noted in Finding 11-e, the applicant's submittal includes a mitigation plan for the WQR and HCA disturbance that will accompany the proposed development. The applicant has proposed to plant 863 native trees and 4,317 native shrubs in the areas of permanent and temporary disturbance, and to remove nuisance plants and noxious material and debris. Conditions have been established to ensure that all mitigation plantings are species from the Milwaukie Native Plants List, that existing restoration plantings are preserved where possible, and that a long-term maintenance plan is in place. To further mitigate future impacts to the WQR and HCA, conditions have been established to demarcate the boundary of the delineated wetland and provide pet-waste bag dispensing devices dispersed along the soft-surface trail system. In addition, to ensure the long-term maintenance of all mitigation areas, the applicant has proposed to dedicate the open space tract to the City. A condition has been established to ensure that the proposed dedication is finalized.

As conditioned, the City Council finds that the proposed development meets the approval criteria for discretionary review as established in MMC 19.402.12.B.

(3) Limitations and Mitigation for Disturbance of HCAs

MMC Subsection 19.402.12.C establishes the discretionary review process for mitigation of more HCA disturbance than would be allowed by the nondiscretionary standards of MMC Subsection 19.402.11.D.1. In such cases, the applicant must submit an Impact Evaluation and Alternatives Analysis consistent with the standards established in MMC 19.402.12.A and subject to the approval criteria established in MMC 19.402.12.B.

As discussed in Finding 11-f(1), the applicant's submittal materials include a technical report that provides an evaluation of impacts to the WQR as well as to those impacted HCA areas beyond the WQR, consistent with the standards established in MMC 19.402.12.A. As discussed in Finding 11-f(2), the proposed development, with the conditions noted therein, meets the approval criteria established in MMC 19.402.12.B.

As conditioned, the City Council finds that the proposed development meets the discretionary standards for disturbance of HCAs as established in MMC 19.402.12.C.

The City Council finds that, as conditioned, the proposed development meets the applicable discretionary review standards of MMC 19.402.12.

g. MMC Subsection 19.402.15 Boundary Verification and Map Administration

MMC 19.402.15 establishes standards for verifying the boundaries of WQRs and HCAs and for administering the City's Natural Resource (NR) Administrative Map.

The locations of WQRs are determined based on the provisions of MMC Table 19.402.15. For streams, the WQR includes the feature itself and a vegetated corridor that extends 50 ft from the ordinary high water mark or 2-year recurrence interval flood elevation. Where the slope exceeds 25% for less than 150 ft, the vegetated corridor is measured with a 50-ft width from the break in the 25% slope. For wetlands, a wetland delineation report prepared by a professional wetland specialist and approved by the Department of State Lands (DSL) is required.

For HCAs, the City's NR Administrative Map is assumed to be accurate with respect to location unless challenged by the applicant, using the procedures outlined in either MMC Subsection 19.402.15.A.1 or MMC Subsection 19.402.15.A.2.b.

The technical report provided by the applicant includes a detailed topographic map showing the accurate boundaries of the WQR using the provisions of MMC Table 19.402.15, as well as a wetland delineation report prepared in accordance with the standards of DSL. A revised version of the report includes a formal letter of concurrence by DSL.

The applicant is not challenging the accuracy of the NR Administrative Map with respect to the HCA location on the site. However, as a result of the disturbance allowed by the approval of the proposed development, the NR Administrative Map shall be adjusted accordingly to remove those HCA locations that will be permanently disturbed by the proposed development.

In addition, the City has conducted a review of the mapped HCA in accordance with the detailed verification procedures provided in MMC 19.402.15.A.2.b and confirmed that the NR Administrative Map is inaccurate with respect to the HCA boundary in the southwestern corner of the subject property. The City's documentation of this boundary verification was provided as an exhibit at a public hearing with the City Council on September 5, 2017, and demonstrates where the HCA boundary shall be extended to include the tree canopy provided by the existing white oak trees in the southwestern portion of the site.

The City Council finds that the City's NR Administrative Map shall be adjusted to reflect the detailed information provided by the applicant with respect to the location of the delineated wetland on the site and the permanent disturbance to the HCA, as well as to reflect the adjusted HCA boundary based on information provided by the City.

The City Council finds that, as conditioned, the proposed development, including disturbance of the designated natural resource area on the subject property, meets all applicable standards of MMC 19.402.

12. MMC Chapter 19.500 Supplementary Development Regulations

MMC 19.500 provides supplementary standards for development.

a. MMC Subsection 19.504.9 On-Site Walkways and Circulation

MMC 19.504.9 establishes standards for on-site walkways, including requirements that on-site walkways be at least 5 ft wide, constructed of hard surface materials that are permeable for stormwater, and lighted to a minimum level of 0.5 footcandles.

The proposed development includes pedestrian connections on Tracts H and I, as well as a 10-ft-wide pedestrian/bicycle path in the northeast corner of Tract E. A condition has been established to ensure that all such on-site pathways are designed and constructed to meet the applicable standards of MMC 19.504.9.

As conditioned, the City Council finds that this standard is met.

b. MMC Subsection 19.505.5 Building Design Standards for Rowhouses

MMC 19.505.5 establishes design standards for rowhouse development.

(1) MMC Subsection 19.505.5.C Rowhouse Design Standards

As per MMC Subsection 19.505.5.C.1, rowhouses are subject to the design standards for single-family housing as established in MMC Subsection 19.505.1. As per MMC Subsection 19.505.5.C.2, rowhouses shall include either a vertical or horizontal transition area between the public right-of-way and the private entry of the dwelling.

The proposed development's compliance with the applicable standards of MMC 19.505.5.C will be confirmed through the development review process outlined in MMC Section 19.906 at the time of development. As proposed, the new rowhouse units will have covered front porches that appear to meet the standards for providing a horizontal transition between the right-of-way and the front entry.

(2) MMC Subsection 19.505.5.D Number of Rowhouses Allowed

As per MMC 19.505.5.D, no more than 4 consecutive rowhouses may share a common wall, though sets of 4-unit rowhouse structures may be adjacent to one another.

The proposed development is comprised of 23 structures with 4 rowhouse units each. No more than 4 consecutive rowhouses will share a common wall.

(3) MMC Subsection 19.505.5.E Rowhouse Lot Standards

MMC 19.505.5.E establishes standards for the size and dimension of rowhouse lots in various zones. Generally, rowhouse development is not allowed on lots less than 35 ft wide.

As discussed in Finding 7-b, the Planned Development process allows some flexibility of design, including in lot size and dimension. As proposed, the new lots will range in width from 20 to 28 ft and in size from 1,600 sq ft to approximately 2,500 sq ft. Approval of the final development plan and program effectively makes the standards of MMC 19.505.5.E inapplicable.

(4) MMC Subsection 19.505.5.F Driveway Access and Parking

MMC Subsection 19.505.5.F.1 establishes restrictions on garages on the front façade of a rowhouse as well as on off-street parking areas and driveway accesses in the front yard. A minimum of 30 ft of street frontage is required, no more than 2 shared accesses are allowed for 4 rowhouses, and outdoor on-site parking areas and garage door width shall not exceed 10 ft. For rowhouses that do not provide garages or parking areas on the front façade, MMC Subsection 19.505.5.F.2 establishes standards for consolidated access.

As discussed in Finding 7-b and noted in Finding 12-c above, the Planned Development process allows for reduced lot widths. The proposed development's compliance with the other applicable standards of MMC 19.505.5.F will be confirmed through the development review process outlined in MMC Section 19.906 at the time of development. As proposed, the new 4-unit rowhouse structures with front-facing garages will share 2 driveway accesses, with on-site parking and maneuvering areas no wider than 10 ft and garage doors no wider than 10 ft. The new rowhouse structures with rear-facing garages will share access off private alleys.

(5) MMC Subsection 19.505.5.G Accessory Structure Setbacks

MMC 19.505.5.G provides that there is no required side yard setback between an accessory structure and a side lot line abutting another rowhouse lot, though all other accessory structure regulations in MMC Subsection 19.502.2.A apply.

No accessory structures are proposed as part of the proposed development, and the applicant has not requested any adjustment to this standard.

The City Council finds that the proposed development meets the standards of MMC 19.505.5 that are applicable to the subdivision and final development plan and program of the Planned Development, noting that consistency with all applicable standards will be confirmed as part of the development review process outlined in MMC Section 19.906 at the time of submittal for development permits for the new rowhouses.

The City Council finds that, as conditioned, the proposed development is consistent with the applicable standards of MMC Chapter 19.500.

13. MMC Chapter 19.600 Off-Street Parking and Loading

MMC 19.600 regulates off-street parking and loading areas on private property outside the public right-of-way. The purpose of these requirements includes providing adequate space for off-street parking, minimizing parking impacts to adjacent properties, and minimizing environmental impacts of parking areas.

MMC Section 19.605 establishes standards to ensure that development provides adequate vehicle parking based on estimated parking demand. MMC Table 19.605.1 provides minimum and maximum requirements for a range of different uses. For rowhouses, a minimum of 1 off-street parking space is required per dwelling unit, with no maximum limit.

MMC Section 19.607 establishes standards for off-street parking areas for residential uses, including for rowhouses. Standards include minimum dimensions for off-street parking spaces and limitations on required spaces being located in the front yard setback.

As proposed, all rowhouse units will have attached garages. Units with front-facing garages have a single-car garage; units with rear-facing garages have a two-car garage.

As proposed, all garages will be located outside the front yard setback and of adequate dimension. A final determination of the proposed development's consistency with the applicable standards of MMC 19.600 will be made as part of the development review process outlined in MMC Section 19.906 at the time of submittal for development permits for the new rowhouses.

The City Council finds that the proposed development meets the standards of MMC 19.600 that are applicable to the subdivision and final development plan and program of the Planned Development, noting that consistency with all applicable standards will be confirmed as part of the development review process outlined in MMC Section 19.906 at the time of submittal for development permits for the new rowhouses.

14. MMC Chapter 19.700 Public Facility Improvements

MMC 19.700 establishes provisions to ensure that development provides public facilities that are safe, convenient, and adequate in rough proportion to their public facility impacts.

a. MMC Section 19.702 Applicability

MMC 19.702 establishes the applicability of the provisions of MMC 19.700, including land divisions, new construction, and modification or expansion of an existing structure or a change or intensification in use that result in any projected increase in vehicle trips or any increase in gross floor area on the site.

The applicant proposes to subdivide the subject property to create 92 lots for rowhouse development as well as several other tracts for open space, stormwater facilities, and pedestrian/bicycle connections. The proposed land division triggers the requirements of MMC 19.700.

b. MMC Section 19.703 Review Process

MMC 19.703 establishes the review process for development that is subject to MMC 19.700, including requiring a preapplication conference, establishing the type of application required, and providing approval criteria.

The applicant had a preapplication conference with City staff prior to application submittal, on August 11, 2016. The proposed development triggers a Transportation Impact Study (as addressed in Finding 14-c). The proposal's compliance with MMC 19.700 has been evaluated through a concurrent Transportation Facilities Review application. Finding 14-f addresses the proposal's compliance with the approval criteria established in MMC Subsection 19.703.3, particularly the required transportation facility improvements.

c. MMC Section 19.704 Transportation Impact Evaluation

MMC 19.704 establishes the process and requirements for evaluating development impacts on the surrounding transportation system, including determining when a formal Transportation Impact Study (TIS) is necessary and what mitigation measures will be required.

The proposed development will trigger a significant increase in trip generation above the existing church use on a portion of the site and therefore requires a TIS. City Engineering staff and the City's on-call traffic consultant (DKS) provided the applicant with a scope of work for the TIS. Kittleson & Associates, the applicant's traffic consultant, prepared the TIS that was included with the applicant's larger submittal for the proposed planned development. To ensure accuracy, the original TIS was updated with additional counts for the intersections of Rusk Road and Highway 224,

Rusk Road and Ruscliff Road, Rusk Road and Kellogg Creek Drive, and Kellogg Creek Drive and the proposed Street A.

The TIS concluded that the proposed development does not trigger mitigation of impacts beyond the required frontage improvements and bike lane requirements, for which conditions of approval have been established. The TIS also concluded that the surrounding transportation system will continue to operate at the same level of service as before the proposed development.

However, ODOT and Clackamas County have expressed concern regarding the analysis performed for the right-turn lane for northbound traffic at the Rusk Road/Highway 224 intersection. The TIS indicates a turn lane with a queuing length of 50 ft. City Engineering staff agrees with ODOT and Clackamas County that this value may be overestimated. The TIS also indicates that the right-turn-on-red allowance is 50 vehicles per hour, which likely is not how this intersection functions where one through-vehicle can block the entire turn lane.

DKS, the City's consultant, has re-analyzed this intersection with the left turn, through movement, and right turn all together as a single lane. Also, the right-turn-on-red movement was reduced to zero vehicles, which is a more accurate representation of how the intersection currently functions. With these adjustments, the resulting volume-to-capacity ratio (v/c) of the single lane is greater than 1.0, indicating a need for mitigation requirements. A condition has been established to require extension of the right-turn lane on Rusk Road at the Highway 224 intersection, to ensure that the surrounding transportation system will continue to operate at the same level of service as before the proposed development

As conditioned, the applicant's TIS is sufficient to meet the requirements of MMC 19.704.

d. MMC Section 19.705 Rough Proportionality

MMC 19.705 requires that transportation impacts of the proposed development be mitigated in proportion to its potential impacts.

The City has determined that conditions established to require improvements on Kellogg Creek Drive and in the right-turn lane on Rusk Road at the Highway 224 intersection meet the proportionality requirements for the proposed development.

As conditioned, the proposed development is consistent with MMC 19.705.

e. MMC Section 19.707 Agency Notification and Coordinated Review

MMC 19.707 establishes provisions for coordinating land use application review with other agencies that may have some interest in a project that is in proximity to facilities they manage.

The application was referred to the Oregon Department of Transportation (ODOT), Clackamas County, Metro, and TriMet for comment. The section of Kellogg Creek Drive fronting the subject property is under the jurisdiction of Clackamas County. The County has regulatory authority where transportation impacts and improvement standards are concerned, and the County's Department of Transportation and Development (DTD) provided comments that have been incorporated into these findings and the associated conditions of approval as appropriate.

f. MMC Section 19.708 Transportation Facility Requirements

MMC 19.708 establishes the City's requirements and standards for improvements to public streets, including pedestrian, bicycle, and transit facilities. However, the subject property's public street frontage is along Kellogg Creek Drive, which is under the jurisdiction of Clackamas County. Where the City has more restrictive standards than the County for certain elements, it is the City's practice to defer to the County standards when the proposed development demonstrates that there is no practicable alternative and that the proposal presents the minimum exception necessary to provide a safe and functional design. Such situations are evaluated at the time of development permit review.

The County DTD provided comments on the application, with recommended findings and conditions that address the County's requirements for such elements as access management, clear vision, street design, and bicycle and pedestrian facilities. Those comments have been incorporated into these findings and conditions of approval as appropriate.

(1) MMC Subsection 19.708.1 General Street Requirements and Standards

MMC 19.708.1 provides general standards for streets, including for access management, clear vision, street layout and connectivity, and intersection design and spacing.

As proposed, the development is consistent with the applicable standards of MMC 19.708.1.

(2) MMC Subsection 19.708.2 Street Design Standards

MMC 19.708.2 provides design standards for streets, including dimensional requirements for the various street elements (e.g., travel lanes, bike lanes, on-street parking, landscape strips, and sidewalks).

The street to the east of Lots 45 and 57 does not comply with minimum City standards, as the required sidewalk and planter strips are not proposed. The City has allowed this reduced cross section because of the pending adoption of a low-volume residential standard cross section with pedestrian routes on the street surface. The 22-ft right-of-way width accommodates the minimum 10-ft travel lanes, curb, and separation from the private property.

The proposed cross sections for Kellogg Creek Drive and all remaining internal streets conform to applicable requirements and are consistent with MMC 19.708.2.

(3) MMC Subsection 19.708.3 Sidewalk Requirements and Standards

MMC 19.708.3 provides standards for public sidewalks, including the requirement for compliance with applicable standards of the Americans with Disabilities Act (ADA).

As proposed, the development is consistent with all applicable standards of MMC 19.708.3.

(4) MMC Subsection 19.708.4 Bicycle Facility Requirements and Standards

MMC 19.708.4 provides standards for bicycle facilities.

Per Milwaukie's Transportation System Plan (TSP), a bike lane is required connecting the northeast corner of the property to the southwest corner of the

property. The applicant has proposed to construct an on-street bike route through the development. A multiuse path will connect the northeast turnaround on Street B to the Rusk Road/Highway 224 intersection.

As proposed, the development is consistent with all applicable standards of MMC 19.708.4.

(5) MMC Subsection 19.708.5 Pedestrian/Bicycle Path Requirements and Standards

MMC 19.708.5 provides standards for pedestrian and bicycle paths.

Pedestrian access is required at the end of the proposed cul-de-sac, which is satisfied through a 15-ft multiuse path extended to Rusk Road. Pedestrian access is also required from the east end of Street A to Kellogg Creek Drive, which is satisfied through a pedestrian connection in Tracts E and F.

As proposed, the development is consistent with all applicable standards of MMC 19.708.5.

(6) MMC Subsection 19.708.6 Transit Requirements and Standards

MMC 19.708.6 provides standards for transit facilities.

The portion of Kellogg Creek Drive fronting the proposed development is classified as a transit route in the Milwaukie TSP. However, transit facilities are already in place. As a result, transit facility improvements are not required for the proposed development.

As proposed, the development is consistent with all applicable standards of MMC 19.708.6.

Conditions have been established in response to these County findings, to ensure that the proposed development will meet all applicable standards of MMC 19.708, the Clackamas County Roadway Standards, and any other applicable County requirements.

As conditioned, the City Council finds that the proposed development meets the applicable public facility improvement standards of MMC 19.700.

15. MMC Section 19.904 Community Service Uses

MMC 19.904 establishes standards for community service uses, including churches, schools, and parks. MMC Subsection 19.904.5.C authorizes the approval of minor modifications to an approved community service, provided that such modification:

a. Does not increase the intensity of any use.

The proposed modification includes reconfiguring the existing driveway at Rusk Road to reinforce its status as an ingress-only access (left and right turns in), removing some existing parking spaces along the western edge of the parking lot to create access points between the church and the proposed development, and removal of the existing play area adjacent to the western edge of the parking area. The proposed modification will not add square footage to the church use or otherwise result in an increase in activity or use of the church site.

b. Meets all requirements of the underlying zone relating to building size and location and off-street parking and the standards of Title 19.

The applicable standards of Title 19 are those related to off-street parking (MMC Chapter 19.600) and access (MMC Section 19.708 and MMC Chapter 12.16).

As proposed, 10 existing parking spaces will be eliminated from the church parking lot. The church, which has 400 seats, has a minimum parking requirement of 100 spaces (at a ratio of 1 space for every 4 seats, as per MMC Table 19.605.1) and a maximum allowance of 200 spaces (at a ratio of 1 space for every 2 seats). There are currently 225 spaces in the church parking lot. Removal of 10 spaces will bring the church site closer to conformance with the current standards.

In addition, the proposal includes a 6-ft landscape buffer along the northern and western perimeter of the existing parking area, adjacent to the proposed development, which will bring the site closer to conformance with the perimeter landscaping standards of MMC Subsection 19.606.2 and will screen the parking area from the proposed development.

One of the purposes of MMC Section 19.708 Transportation Facility Requirements, and the intent of MMC Chapter 12.16, is to ensure safe access to public streets. The proposed modifications to the existing church driveway at Rusk Road will ensure that the driveway is used for ingress only, which will improve safety on Rusk Road by reducing potential conflicts due to poor sight distance at that location.

c. Does not result in deterioration or loss of any protected natural feature or open space, and does not negatively affect nearby properties.

The proposed modifications to the existing church parking lot and driveway access at Rusk Road do not impact any designated natural resource area or open space feature.

d. Does not alter or contravene any conditions specifically placed on the development by the Planning Commission or City Council.

The property was annexed into the city limits in 1981 (land use file #A-80-07). In 1983, use of the site for pasture land and grazing for horses was approved as a conditional use (file #C-83-08); however, the conditional use application was subsequently withdrawn.

The site was approved as a CSU for church use by the Milwaukie Assembly of God in 1984 (file #CS-84-02). Conditions of approval included requirements to provide plans for landscaping, public facilities, and exterior lighting, as well as a traffic study and right-of-way dedication along Rusk Rd and Kellogg Creek Dr.

In 1987, the City Council approved a zone change for the western portion of the property, from R-10 to R-3, along with a conditional use approval for senior housing and an amendment to the Comprehensive Plan map (file #CPA-87-01, ZC-87-05, CU-87-05, with Ordinance #1639). The senior housing project (called Parkside Village) was never developed.

In 1992, the City approved a 5,500-sq-ft addition to the church building (file #CSO-92-03, NR-92-01). Conditions of approval included requirements to install the approved landscaping and to direct lighting away from the designated natural resource area.

In 1997, the Planning Commission denied a sign permit request to locate an electronic reader board sign on the property near the intersection of Highway 224 and Rusk Rd (file #SP-97-01).

In 2014, the Planning Director approved a minor modification to the existing CSU for the church, for removal of approximately 75 of 300 existing parking spaces as part of a natural resource restoration effort near Mount Scott Creek (file #s CSU-14-06 and NR-14-06). There were no conditions of approval.

The proposed modification does not alter or contravene any of the past conditions placed on the church development by the Planning Commission.

e. Does not cause any public facility, including transportation, water, sewer and storm drainage, to fail to meet any applicable standards relating to adequacy of the public facility.

With regard to public facilities, the proposed modification will affect only the existing church driveway at Rusk Road. As proposed, the driveway will be modified to further limit egress movements at that location, which, due to limited sight distance and the proximity to the intersection of Rusk Road and Highway 224, will improve public safety. A new in/out access to the church site will be established through the proposed development and will be designed to meet applicable standards. The new access will focus more church trips on Kellogg Creek Drive, a local street, instead of on Rusk Road, a collector. The proposed modification will not cause any public facility to fail to meet any applicable standards relating to adequacy.

As proposed, the City Council finds that the proposed development meets the approval criteria for a minor modification to the existing community service use.

16. MMC Section 19.911 Variances

MMC Section 19.911 establishes the variance process for seeking relief from specific code sections that have the unintended effect of preventing reasonable development or imposing undue hardship.

a. MMC Subsection 19.911.2 Applicability

MMC 19.911.2 establishes applicability standards for variance requests.

Variances may be requested to any standard of MMC Title 19, provided the request is not specifically listed as ineligible in MMC Subsection 19.911.2.B.

The applicant has requested two variances: (1) to allow more than 20 dwellings to be served by a closed-end street system as limited by MMC Subsection 19.708.1.E.5; and (2) to exempt 23 of the 92 proposed lots from the requirement of MMC Subsection 19.402.13.I.2 to provide adequate buildable area outside of the WQR and HCA. The second variance request would permit an additional number of units to be constructed through a 12% increase in density, as allowed in a Planned Development zone (MMC Section 19.311).

The request would not eliminate the restriction on a prohibited activity, change a required review type, allow a use not allowed outright in the R-10 or R-3 zone, or otherwise produce any of the results listed in MMC Subsection 19.911.2.B. The requests are each eligible for a variance as per MMC 19.911.2.

b. MMC Subsection 19.911.3 Review Process

MMC 19.911.3 establishes review processes for different types of variances. MMC Subsection 19.911.3.C establishes the Type III review process for larger or more complex variations to standards than those allowed through the Type II review process as per MMC Subsection 19.911.3.B, variations that require additional discretion and warrant a public hearing.

The applicant has requested variances to the closed-end street standard established in MMC Subsection 19.708.1.E.5 and to the requirement that all new lots have adequate buildable area outside of the WQR and HCA. These requests are not eligible for Type II review as provided in MMC 19.911.3.B and so are subject to Type III review as per MMC 19.911.3.C. As noted in Finding 6, since the variance requests are associated with a proposed Planned Development, which itself requires Type IV review, the variances are also subject to Type IV review as per MMC Subsection *19.1001.6.B.*

c. MMC Subsection 19.911.4 Approval Criteria

MMC 19.911.4 establishes approval criteria for variance requests. Specifically, MMC Subsection 19.911.4.B.1 provides approval criteria for Type III variances where the applicant elects to utilize the Discretionary Relief Criteria:

(1) The applicant's alternatives analysis provides, at a minimum, an analysis of the impacts and benefits of the variance proposal as compared to the baseline code requirements.

Closed-End Street System: In order to preserve the existing white oak trees in the southwestern corner of the site and to maintain 92 dwelling units as originally proposed, the development plan was shifted approximately 40 ft to the east and removed one of the two street connections to Kellogg Creek Drive. Although this effectively makes the street system a dead-end one serving all 92 units, the revised network maintains safe internal circulation and sufficient fire and emergency service access for the proposed development because access is available through the adjacent church property.

Adequate Buildable Area Variance: As noted above, 23 of the 92 proposed lots are affected by the requested variance. Eliminating the lots in question would reduce the proposed development below the minimum density of 66 units required for the site with the proposed street configuration. In addition, eliminating those lots would remove the need for the requested density bonus, which was being justified by the inclusion of several amenities (e.g., community garden, additional landscaping) that would likely be removed from the proposal. The proposed disturbance to the WQR and HCA will be mitigated with native plantings to enhance the remaining natural resource areas.

The City Council finds that the applicant's analysis of alternatives is sufficient to address the impacts and benefits of both of the proposed variances. This criterion is met.

(2) The proposed variance is determined to be both reasonable and appropriate, and it meets one or more of the following criteria:

(a) The proposed variance avoids or minimizes impacts to surrounding properties.

(b) The proposed variance has desirable public benefits.

(c) The proposed variance responds to the existing built or natural environment in a creative and sensitive manner.

Closed-End Street System: The proposed variance will not have any negative impacts on surrounding properties and helps ensure that the existing white oak trees in the southwestern corner of the site will not be removed.

Adequate Buildable Area Variance: The requested variance does not affect any adjacent properties outside the proposed development. Approval of the variance allows the development of 92 units of housing instead of 61 units, which helps address an identified housing need for the community. The overall development layout is configured to minimize intrusion into the floodplain and designated natural resource areas on the site, and to focus impacts on WQR and HCA resources that are of lower ecological value and/or that have already been impacted by past development activity. Mitigation plantings will enhance remaining natural resources on the site.

The City Council finds that the requested variances are reasonable and appropriate and that they both meet one or more of the criteria provided in MMC Subsection 19.911.B.1.b.

(3) Impacts from the proposed variance will be mitigated to the extent practicable.

Closed-End Street System: To address potential impacts of the proposed variance on fire and emergency service access, the design of the revised street system incorporates comments received from Clackamas Fire District #1 to provide adequate access for fire and emergency service vehicles.

Adequate Buildable Area Variance: The applicant has provided a mitigation plan for disturbed natural resource areas that includes removal of nuisance plants, noxious materials, and debris within the WQR and HCA areas on the site. As proposed, 863 native trees and 4,317 native shrubs will be planted. Two other areas beyond the disturbance zones will be enhanced with removal of nuisance plants and debris and additional native plantings. As proposed, the mitigation plan will enhance the natural resource areas that remain.

The City Council finds that both variance requests will be mitigated to the extent practicable.

The City Council finds that the proposed development meets the approval criteria for a Type III variance request, as provided in MMC 19.911.4.B.

As proposed, the City Council finds that both of the requested variances are allowable as per the applicable standards of MMC 19.911.

17. MMC Chapter 19.1200 Solar Access Protection

A primary purpose of MMC 19.1200 is to orient new lots and parcels to allow utilization of solar energy. In particular, MMC Section 19.1203 establishes solar access provisions for new development. In particular, MMC Subsection 19.1203.2 establishes the applicability of MMC Subsection 19.1203.3 as applications for the creation of lots in single-family zones. Exceptions are allowable to the extent the Planning Director finds that the applicant has shown one or more of the conditions listed in MMC Subsections 19.1203.4 and 19.1203.5 exist and that exemptions or adjustments are warranted.

a. MMC Subsection 19.1203.3 Design Standard

MMC 19.1203.3 establishes a solar design standard for at least 80% of the lots in any proposed development, including basic requirements for north-south dimension and front-lot-line orientation with respect to a true east-west axis. There are two other options for compliance, either establishing a protected solar building line or demonstrating a level of performance with respect to protection from shading.

The proposed development is for 92 lots, none of which have a minimum north-south dimension of at least 90 ft. However, 76 lots (approximately 82%) have a minimum north-south dimension of at least 80 ft and have the front lot line oriented within 30 degrees of a true east-west axis. Of the remaining 16 lots, all have their long axis oriented within 30 degrees of a true east-west axis, but due to the attached nature of the rowhouses in the proposed development, the ground floor south wall of most of the units will be shaded by the adjacent unit to the south.

The applicant has requested an adjustment to the design standard of MMC 19.1203.3.

b. MMC Subsection 19.1203.5 Adjustment to Design Standard

MMC 19.1203.5 allows the reduction of the number of lots that must comply with MMC 19.1203.3 to the minimum extent necessary, if the applicant demonstrates that the standard would cause or is subject to certain conditions, such as adverse impacts on density, cost, or amenities.

Considering the flexibility of design afforded to planned developments in MMC Section 19.311, the allowance for a density bonus as discussed in Finding 7-a, and the site constraints presented by natural resources and floodplain on the site, the design standard of MMC 19.1203.3 presents a particular challenge for the subject property. To configure more lots with a north-south axis of at least 90 ft would result in additional disturbance to natural resources or the floodplain. Reducing the number of lots accordingly would substantially reduce the effectiveness of the Planned Development option for a site that is otherwise well suited for flexible design.

As proposed, 76 of the 92 proposed lots (approximately 82%) are close to meeting the design standard of MMC 19.1203.3, with a north-south dimension of at least 80 ft. In a planned development scenario, where adjustments to conventional lot size and dimensional requirements are expected, and where strict adherence to the design standard would result in a significant decrease in density or increase in disturbance to natural resource and floodplain areas, a request to reduce the number of lots that must comply is reasonable.

The City Council finds that the request to adjust the number of lots that must comply with the design standard of MMC 19.1203.3 is warranted. The 76 lots with a north-south axis of at least 80 ft are sufficient to meet the requirements of MMC 19.1200.

As proposed, and with the approved reduction noted above, the City Council finds that the proposed development complies with the applicable standards of MMC 19.1200.

18. The application was referred to the following departments and agencies on April 13, 2017, with additional materials sent on April 26, 2017:
    - Milwaukie Building Department
    - Milwaukie Engineering Department
    - Milwaukie Public Works Department
    - ESA (City's on-call consultant for natural resource review)
    - Clackamas Fire District #1
    - Lake Road Neighborhood District Association (NDA) Chairperson and Land Use Committee (LUC)
    - Clackamas County Department of Transportation and Development
    - Metro

- Oregon Department of Transportation (ODOT)
- TriMet
- North Clackamas Parks & Recreation District
- Oak Grove Community Council

The comments received are summarized as follows, including comments received in response to the public notice posted on the site and mailed to property owners and residents within 500 ft of the site:

a. **Michelle Wyfells, Planner II, TriMet:** Given the imminent changes to re-route the existing bus service on Kellogg Creek Drive (Line 152), TriMet has no comments on the proposal.

b. **Matt Amos, Fire Inspector, Clackamas Fire District #1 (CFD#1):** Comments related to fire access and water supply requirements, including notes on required turning radii and approvable turnarounds.

c. **Rob Livingston, Erosion Control Specialist, City of Milwaukie Public Works:** Due to the site being over 5 acres, a 1200C construction stormwater permit from DEQ will be required. A maintenance agreement with the City must be established for the stormwater facilities on site. For the City's erosion control permit, more information will be required on how hydric soils will be managed during excavation of the wetland area. Given the number of new households proposed and the accompanying number of anticipated household pets, a dispensing device(s) for pet-waste bags should be required in the large natural open space area. There is also concern for the likelihood of negative impacts to water quality and fish habitat from household pets recreating in Mount Scott Creek.

   The proposed stormwater facilities do not show details for detention prior to discharge into Mount Scott Creek, particularly regarding how or where stormwater discharge will be mitigated. Many of the proposed plantings are near buildings and sidewalks—tree plantings closer to the creek would improve shade, reducing stream temperatures and mitigating for the development's removal of large mature trees from the site. The plantings proposed in Additional Enhancement Areas A and B do not provide meaningful streambank enhancement or vegetative shading for the creek.

d. **Paul Hawkins, Land Use Chair, Lake Road NDA:** The FEMA flood data for this location is dated, so it is unclear whether the three proposed detention ponds will be adequate. The "Y" intersection of Rusk Road and Kellogg Creek Drive is less than ideal, and traffic currently backs up on Rusk Road at the Highway 224 intersection during weekday commuting hours.

e. **Rebecca Hamilton, Regional Planner, Metro:** Metro notes that the application would require a Type III Variance to allow impacts to designated natural areas for creating 31 of the 92 proposed lots. The City of Milwaukie's Municipal Code is consistent with Metro's Functional Plan. If the City of Milwaukie is satisfied that the application has met its requirements for a Type III Variance, and if there is no request for an amendment to the City's comprehensive plan or zoning code, then Metro has no comment on this application.

f. **Joseph Edge, Director, Oak Grove Community Council:** The trip estimates for the proposed development appear to be low, as the proposed units will perform more like single-family detached dwellings than townhouses, given their proposed price point and the likelihood that two wage-earners employed outside the household will live in

each unit. The stormwater calculations are based on a pre-development curve number that is too high and does not accurately represent the pre-development conditions that should be more conservatively assumed for the site, especially considering the flood potential of the area. The loss of large white oak trees in the southwestern corner of the site is unacceptable, as these mature, old-growth trees cannot be sufficiently replaced with new trees. An alternative that preserves those trees and combines the 12 units in the southwestern portion of the site into a multifamily building elsewhere on the site would be more acceptable.

g. **Sarah Hartung, Senior Biologist, ESA (City's On-Call Natural Resource Consultant):** A report providing peer review of the applicant's Natural Resource Review report has been provided to City staff and has been integrated into the Recommended Findings and Conditions of Approval.

h. **Marah Danielson, Development Review Planner, ODOT Region 1:** The proposed zone change results in only a small increase in additional trips to the state highway. The applicant's Traffic Impact Analysis (TIA) shows a high number of crashes at both the Rusk Road and Webster Road intersections with Highway 224. Since the TIA analyzed the northbound right-turn movement at the Rusk Road/Highway 224 intersection as a right-turn lane where there is only a flare for a turn lane, ODOT recommends a condition requiring installation of a northbound right-turn lane at the Rusk Road/Highway 224 intersection.

i. **Alex Roller, Engineering Tech II, City of Milwaukie Engineering Department:** Comments related to the proposal's compliance with Milwaukie Municipal Code (MMC) Title 12 Streets, Sidewalks, and Public Places; MMC Title 18 Flood Hazard Regulations; and MMC Chapter 19.700 Public Facility Improvements, with relevant recommended conditions of approval.

j. **Kenneth Kent, Senior Planner, Clackamas County Department of Transportation and Development (DTD), Engineering Division:** Both Kellogg Creek Drive and Rusk Road are under the County's jurisdiction, so County standards and requirements apply where frontage improvements are concerned. On Kellogg Creek Drive, half-street improvements are required (minimum 16-ft roadway, curb or curb and gutter, 5-ft landscape strip, 5-ft sidewalk), with no bike lane striping. Recommendation that the existing church driveway at Rusk Road be closed, due to poor sight-distance and the difficulty of ensuring one-way ingress to the site without a median on Rusk Road. Recommendation that the applicant's traffic impact study be updated to (1) evaluate the study intersections to include estimated summer traffic volumes from North Clackamas Park, (2) include impacts of closure of the existing church driveway at Rusk Road, (3) reevaluate queuing on Rusk Road at the Highway 224 intersection using the SimTraffic program, and (4) evaluate the need for a northbound left-turn lane at the Rusk Road intersection with Kellogg Creek Drive. Suggestion that an analysis or evaluation of parking availability within the proposed development (in driveways, garages, and on-street) be conducted to understand the potential impacts of overflow parking in the adjacent neighborhood.

k. **Kathryn Krygier, Planning and Development Manager, and Tonia Williamson, Natural Resource Coordinator, North Clackamas Parks & Recreation District (NCPRD):** Concern that increased traffic resulting from the proposed development will impact access to nearby NCPRD facilities. Note that the applicant's Traffic Impact Study (TIS) was not conducted during the time when activity at the ballfield complex in North Clackamas Park is at its peak (April through July). Concerns about safety at

the intersection of Rusk Road and Kellogg Creek Drive. Suggestion that a parking study be conducted to examine the issue of visitor parking within the proposed development. Concern that the bike lane between Rusk Road and Street B appears to dead-end. Questions about the soft-surface trail system, including public accessibility, maintenance, and assessment of natural resource impacts, with a note that the trails are short and discontinuous. Request for a phasing plan, if phasing is proposed. Concern about the potential for increased flooding resulting from development within designated natural resource areas on the site. Suggestion that the applicant has not sufficiently demonstrated that impacts to natural resources will be minimized.

l. **Laura Hickman, area resident:** Concern about traffic impacts resulting from the proposed development; including pedestrian and bicycle safety to and from area homes, North Clackamas Park, and nearby schools. Questions about the methodology and assumptions of the TIS.

m. **Ray Olma, area resident:** Traffic on Highway 224 and Rusk Road is already bad and will be made worse by trips from the proposed development. Concern for pedestrian safety on and crossing Rusk Road, which does not have sidewalks.

n. **Jamie Marshall, area resident:** Existing infrastructure (including water treatment facilities and I-205) is inadequate to support the proposed development.

o. **Melanie Frisch, area resident:** Concern about traffic impacts (inadequate infrastructure) and impacts to natural resources.

p. **Alex Roller, Engineering Tech II, City of Milwaukie Engineering Department:** Revisions to comments provided in the earlier memo related to MMC Title 12 Streets, Sidewalks, and Public Places; MMC Title 18 Flood Hazard Regulations; and MMC Chapter 19.700 Public Facility Improvements.

q. **Dan Sweet, area resident:** Comments in opposition to the proposed development, based on concerns about traffic, flooding, and stormwater runoff.

r. **Vincent Alvarez, Chair, Lake Road NDA:** Concerns about the proposed destruction of existing wetlands and removal of healthy white oak trees, flooding potential, and traffic impacts.

s. **Bruce Reiter, area resident:** Concerns about traffic impacts and potential impacts to the wetland's role in flood management.

t. **John Green-Hite, area resident:** Concerns about impacts to the watershed and flooding as well as to traffic.

u. **Joan Young, area resident:** Concerns about impacts to the broader community beyond city limits, including impacts to traffic, the environment in general, the white oak trees in particular, and flooding. Reports a history of illegal fill activity on the site.

v. **Howard Lanoff, area resident:** Concern about increased density and its impacts on livability.

w. **Georgia Bogner, area resident:** Wait times at the light at Rusk Road and Highway 224 are already bad. The proposed 92-unit development will add more than 1 vehicle each during peak times.

x. **Chris Runyard, ecological restoration specialist:** Submitted a 3-minute video posted online in opposition to the proposed development, citing concerns about impacts to the white oak trees, wetlands, and flooding.

y. **Linda Huntley, area resident:** Comments in opposition to the proposed development, based on concerns about traffic (accidents and congestion).

z. **Jennifer Stipetic, area resident:** Concerns about impacts on area traffic and the environment, including a desire to preserve the existing white oak trees and avoid any fill in the wetlands.

aa. **Terry Gibson, Board Chair of North Clackamas Urban Watersheds Council:** The applicant has failed to show that the proposed development avoids or minimizes impacts to surrounding properties, has desirable public benefits, or responds to the existing built or natural environment in a creative or sensitive manner. The application does not address the potential for increased flooding in North Clackamas Park or the public benefit currently provided by the natural resource area on the site (including the white oak trees). The watershed council is heavily invested in the restoration of the natural resource area on site through its Streamside Stewards Program and believes the proposed mitigation plantings would be redundant of these earlier efforts.

bb. **Linda Huntley, area resident:** Additional note that traffic from ball field activity in the park (Spring through Fall) already presents significant congestion and safety issues.

cc. **Sara Miller, area resident:** The proposed development does not promote several of the goals identified in Milwaukie's 2040 Vision, particularly where it proposes to remove existing white oak trees and fill in the wetland and floodplain. The proposal does not appear to include sidewalks or address sidewalk gaps and ADA deficiencies. There are better locations in Milwaukie to develop townhomes.

dd. **Dick Shook, area resident:** Concerns about impacts on area creeks and wetlands (flooding), the old-growth white oak trees, and the number of proposed units.

ee. **Matt Menely, area resident:** The proposed development does not reflect the community values that have been expressed over time—walkable communities, more open space, and housing developments that create a sense of community. Wetlands and trees provide benefits to the community and should be preserved.

ff. **Laura Hickman, area resident:** Submitted a report from the North Clackamas School District that included a detailed review of pedestrian conditions on Rusk Road. Walking conditions on Rusk Road are unsafe.

gg. **Todd Alsbury, District Fish Biologist, Oregon Department of Fish & Wildlife (ODFW):** ODFW has conducted a preliminary review of the proposed project and asks for additional time for review. Priority and/or special status fish and wildlife species are known to occur on and near the property, and Mount Scott Creek is considered Essential Salmonid Habitat. Flowing water, riparian zones, wetlands, and Oregon white oak habitat are identified as Strategy (Priority) Habitats in the Oregon Conservation Strategy. ODFW is concerned about siting infrastructure within an active floodplain, encroachment into the riparian zone, loss of existing wetlands, and loss of Oregon white oak trees that would result from the proposed development. ODFW recommends that new infrastructure be sited outside floodplains, wetlands, and other priority fish and wildlife habitats, that those habitats be adequately buffered, and that the white oak trees be retained.

hh. **Lisa Kennedy, area resident:** Comments in favor of the proposed development, including that it provides plenty of open space with affordable housing.

ii. Sue Hayes, area resident: Comments in opposition to the proposed development, including that 92 units are too many, the lots are too small, the site is in a flood zone, and that it would increase traffic and be dangerous for pedestrians.

jj. Bev St. John, area resident: Concerns about traffic impacts and pedestrian safety (lack of sidewalks in the area).

kk. Randy Day, area resident: The proposed development is too much for this site, considering the impact to adjacent sensitive lands and the fact that it will be an auto-dependent development. The traffic impacts will be significant and a right-turn lane on Rusk Road at Highway 224 is needed now; increased trips would seem to necessitate a left-turn lane and signal as well.

ll. Jarrod Allen, area resident: Opposition to the proposed development, due to traffic impacts and a lack of pedestrian facilities. The wetland area should remain undeveloped.

mm. Lois Keiser, area resident: Concerns about general impacts to neighborhood (density, water/sewer infrastructure, and traffic).

nn. Ben Geertz, area resident: Concerns for pedestrian and other non-motorized safety, as Rusk Road is currently very unsafe (no shoulder, blind corners, limited pedestrian facilities).

oo. Lois Herring, area resident: Support for May 25 comment by Joseph Edge that traffic study calculations for the proposed development should be done using the assumption that the proposed rowhouses will function in similar fashion to single-family detached dwellings.

pp. Linda and Roger Huntley, area residents: Additional concerns related to the need to preserve salmon habitat and the white oak trees.

qq. Joseph Edge, Director, Oak Grove Community Council: There is no guarantee that the market rate for the proposed units will remain within the price range of modest-income people, so the promotion of the proposed units as workforce housing should not be the basis for granting a density bonus. To be more affordable, at least some of the housing should be proposed as rental units in multifamily buildings. This would also reduce the aggregate footprint of structures on the site and thus further avoid and minimize impacts to natural resources.

The site is not ideal for lower income affordable housing, due to the expense of motor-vehicle ownership and the fact that the lack of safe transportation options at this location means that the people who live at the site will likely have 1 or 2 vehicles and therefore will not likely be lower income people. One suggestion is to have the new homeowners association provide a car-sharing service to help reduce the number of resident-owned vehicles in the new development. Such a car-sharing service, together with a multifamily configuration of buildings to reduce impacts to natural resources, could arguably be viewed as the kind of creative and outstanding amenities that would warrant a density bonus.

rr. Chris Runyard, ecological restoration specialist: It is not the role of the Planning Commission or City staff to ensure that developers make a profit. Ninety-two (92) units are not necessary for the developer to make a profit. The new units will not be “affordable housing” but will be sold at the market rate. The developer would benefit from giving the open space tract to the North Clackamas Parks & Recreation District (NCPRD), so the wetlands should not be negotiated away in exchange for the higher

density (92 units). The City does have a responsibility to protect the public good (e.g., wetlands, trees, housing, and reduced flooding) and should be more concerned with protecting natural resources than with the developer's profit margin.

ss. Kathryn Krygier, Planning and Development Manager, North Clackamas Parks & Recreation District (NCPRD): NCPRD is willing to acquire and manage the proposed open space tract. No funds are available for NCPRD position to purchase the tract or to provide System Development Charge (SDC) credits in exchange, but NCPRD would accept the tract if offered at no cost. The District's interest extends only to the open space tract and not to the community garden or play area.

If acquired, NCPRD would manage the tract to be compatible with the master plan for North Clackamas Park, including approval of the location and specifications of the trail and review of the mitigation plan. NCPRD would either accept the tract after the mitigation plantings had been installed and approved by the City or could implement the mitigation plan itself with the funding provided by the developer. The District is also amenable to having the City take ownership of the tract and amending the Intergovernmental Agreement (IGA) as needed to have NCPRD manage and maintain the tract.

Pedestrian and bicycle routes through and within the site are critical to the development's success. To provide for complete connectivity throughout the site, the path shown on the revised site plan where a road was shown on the original plan should be public and meet ADA requirements.

tt. Alex Roller, Engineering Tech II, City of Milwaukie Engineering Department: Revised comments related to the proposed variance to the number of lots allowed to be served by a closed-end street system (MMC Subsection 19.708.1.E.5).

uu. Marah Danielson, Development Review Planner, ODOT Region 1: Comments on the revised traffic information, concluding that the intersection of Rusk Road and Highway 224 meets ODOT standards under the proposed development scenario but will continue to experience congestion. ODOT agrees that the addition of a northbound right-turn lane on Rusk Road will improve present and future operation.

vv. Todd Alsbury, District Fish Biologist, (ODFW): Significant concerns from a water quality perspective and for the potential for direct impacts if the riparian area is compromised. Concern that developments of this size provide too much risk to be located within 100 ft of salmon-bearing streams, particularly ones that are the focus of recovery efforts.

ww. Mat Dolata, DKS (City's On-Call Traffic Consultant): Adjustment to an earlier memo provided to City Engineering staff in response to the updated traffic information. No change in recommendation—no significant off-site traffic impacts are anticipated as a result of the proposed development.

xx. Kenneth Kent, Senior Planner, Clackamas County DTD: Additional comments in response to the revised site plan. With the single point of access to Kellogg Creek Drive, use of the church driveway on Rusk Road may increase, including as an exit (even if modified to be enter-only). The supplemental traffic report does not discuss the church driveway at Rusk Road and the County continues to recommend closure of that access point. In addition, the County notes that bike lanes are not usually recommended on local streets like Kellogg Creek Drive; to preserve existing white oak trees in the public right-of-way, the County recommends eliminating the bike lane and replacing it with a curb-tight sidewalk.

yy. Nancy Pierce, area resident: Opposition to the proposed development, citing concerns about inadequate infrastructure and traffic impacts.

zz. Chris Runyard, ecological restoration specialist: Assertion that the proposed development is too large for the site, that no impacts to designated natural resources should be allowed, and that all white oak trees and associated habitat should be preserved.

aaa. Mary Zellharie, area resident: Opposition to the proposed development due to concerns about traffic impacts.

bbb. Judy Sherley, area resident: Opposition to the proposed development, citing concerns about natural resource impacts and traffic impacts, with several suggestions for traffic mitigation.

ccc. Ed Hacmac, area business owner: Concerns about traffic impacts, with a suggestion to consider constructing a roundabout at the intersection of Kellogg Creek Drive and Rusk Road.

EXHIBIT B
Final Development Plan and Program
Master File #PD-2017-001
Kellogg Creek Planned Development

The purpose of a Planned Development (PD) zone is to provide a more desirable environment than is possible through the strict application of Zoning Ordinance requirements. PD zones encourage greater flexibility of design and a mix of housing types.

The PD zone is a superimposed zone applied in combination with regular existing zones. The subject property was previously split-zoned R-10 and R-3, so the underlying zone requirements of Milwaukie Municipal Code (MMC) Sections 19.301 (Low Density Residential Zones, including R-10) and 19.302 (Medium and High Density Residential Zones, including R-3), respectively, were considered in determining the final development plan and program.

1. Final Development Plan

The final development plan of the Kellogg Creek planned development subdivision shall be comprised of the final revised development plan set stamped received by the Planning Department on July 11, 2017 (see Attachment 1). This includes such details as building locations and elevations.

2. Final Development Program

The final development program of the Kellogg Creek planned development subdivision shall be comprised of the following requirements and standards. These requirements and standards shall be applicable to development and activity on the planned development site (as shown in Attachment 1) and supersede the related provisions of MMC Title 19 Zoning.

a. Permitted Uses

Rowhouses are permitted on all lots in the Kellogg Creek subdivision.

b. Lot and Development Standards

Table 7-b(2) compares the applicable standards for development in the R-10 and R-3 zones with the standards approved as the final development plan and program for this PD zone.

Table 7-b(2)
Lot and Development Standards

Standard	R-10 Requirement	R-3 Requirement[1]	Approved PD Requirement
1. Minimum Lot Size	10,000 sq ft	3,000 sq ft	Lots range from 1,600 sq ft to approx. 2,500 sq ft
2. Minimum Lot Width	70 ft	30 ft	Lot widths range from 20 ft to 28 ft
3. Minimum Lot Depth	100 ft	80 ft	Lot depths range from 80 to 87.25 ft
4. Minimum street frontage	35 ft	30 ft	Typical range is 20 to 25 ft; three lots on cul de sac are <20 ft
5. Front Yard	20 ft	15 ft	Front-loaded lots = 18 ft Alley-loaded lots = 10 ft

6. Side Yard	10 ft	0 ft (common) 5 ft (exterior)	Common wall = 0 ft Exterior wall = 5 to 6 ft
7. Street-Side Yard	20 ft	15 ft	8 ft
8. Rear Yard	20 ft	15 ft	Front-loaded lots = 15 ft Alley-loaded lots = 20 ft
8. Maximum Building Height	2.5 stories or 35 ft (whichever is less)	2.5 stories or 35 ft (whichever is less)	2 stories, <35 ft
9. Side yard height plane limit	45-degree slope at 20 ft height	45-degree slope at 20 ft height	≤20 ft
10. Maximum lot coverage	30%	40% (+20% for rowhouses)	Lots range from 46% to 59%
11. Minimum vegetation	35%	35%	Small vegetated areas on each lot, with access to large open space area to west
12. Front yard minimum vegetation	40%	40%	Front yard areas not occupied by driveways and walkways will be vegetated
13. Minimum density	3.5 units per acre	11.6 units per acre	Minimum of 67 units for entire site
14. Maximum density	4.4 units per acre	14.5 units per acre	Maximum of 92 units for entire site (Represents a 12% increase over the standard maximum of 82 units)

[1] R-3 requirements from MMC Table 19.302.2 for rowhouses

3. Additional Requirements

   a. As proposed, the open space tract (Tract E) will be dedicated to the City as part of the final plat process.

   b. As conditioned, a public access easement for the pedestrian connections across Tracts H and I, including across Alley C, shall be established as part of the final plat process.

   c. The approved mitigation plan for the natural resource area on Tract E shall be implemented by the developer, who shall be responsible for ensuring 80% plant survival for the 2-year monitoring period. A mitigation maintenance bond is required to ensure the survival of mitigation plantings.

   d. Fencing in yards adjacent to the open space tract (Tract E) shall remain free of sight-obscuring materials, to allow visibility into the adjacent open space.

   e. Where practicable, lights on lots adjacent to the Water Quality Resource (WQR) and Habitat Conservation Area (HCA) shall be placed so that they do not shine directly into any WQR and/or HCA location.

Attachments

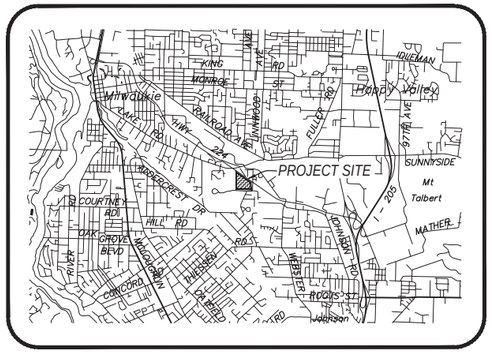
1. Development Plan Set

Attachment 1

KELLOGG CREEK

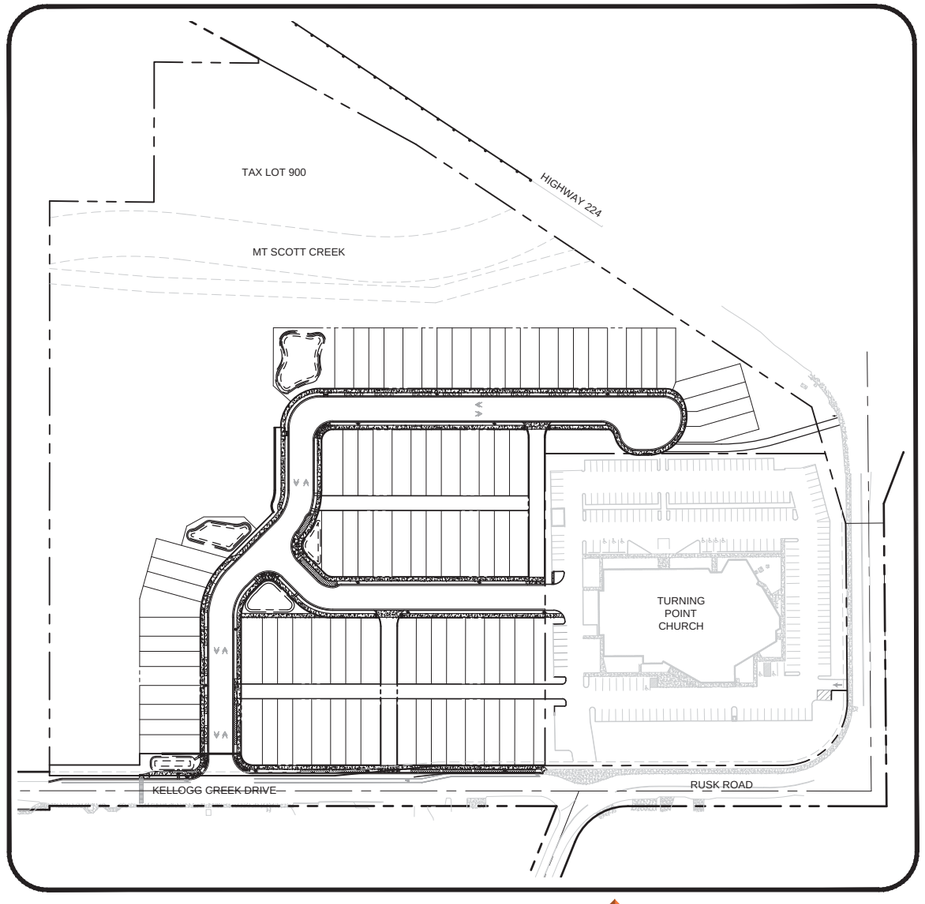
Planned Development Subdivision Application
Milwaukie, Oregon

July, 2017



VICINITY MAP

SCALE: NTS



SITE MAP

SCALE: NTS

SHEET INDEX

C000	COVER SHEET
C100	EXISTING CONDITIONS
C101	TREE PROTECTION & REMOVAL PLAN
C102	TREE PROTECTION & REMOVAL PLAN
C200	PRELIMINARY LOT LINE ADJUSTMENT
C201	PRELIMINARY PLAT
C202	TYPICAL STREET SECTIONS
C300	GRADING PLAN
C400	COMPOSITE UTILITY PLAN
C500	PUBLIC IMPROVEMENT PLAN
L100	LANDSCAPE PLAN
L110	LANDSCAPE ENLARGEMENTS
A100	BUILDING PLANS AND ELEVATIONS
A2	ALLEY MAIN FLOOR
A4	ALLEY UPPER FLOOR
A6	ALLEY FOUR-PLEX ELEVATIONS
2.0	FOUR-PLEX MAIN FLOOR PLAN
4.0	FOUR-PLEX UPPER FLOOR PLAN
6.0	FOUR-PLEX ELEVATIONS
7.0	FOUR-PLEX ELEVATIONS
7.1	FOUR-PLEX STREET SIDE ELEVATIONS

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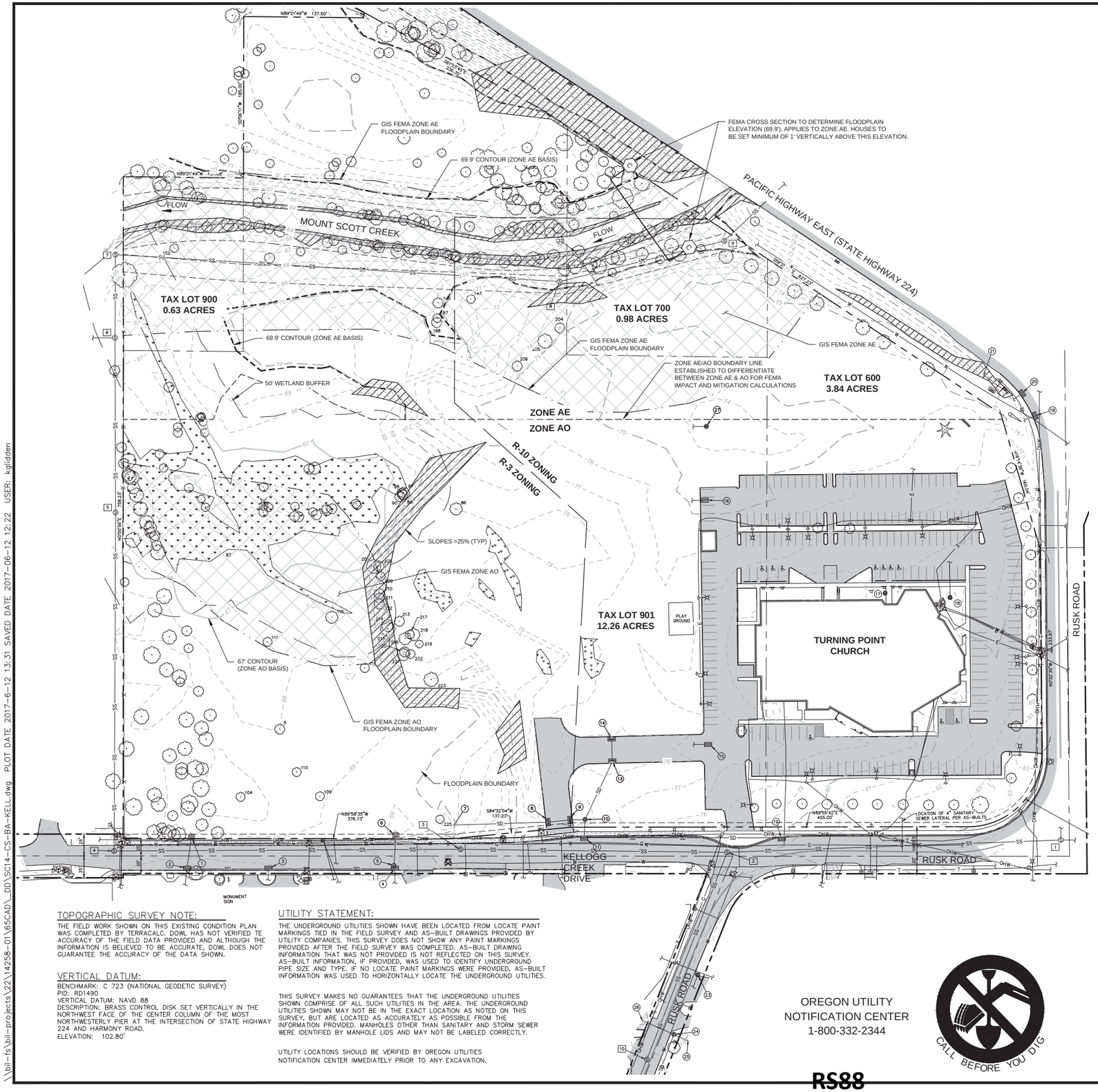
KELLOGG CREEK SUBDIVISION
COVER SHEET
BROWNSTONE DEVELOPMENT
MILWAUKIE, OREGON
SEI/7 NE1/4 SEC. 6 T2S R2E W.M. EXISTING TAXLOTS 600, 700, 900, 901

PROJECT	14258-01
DATE	06/12/2017

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LEGEND:

- EXISTING ASPHALT
- EXISTING CONCRETE
- EXISTING GRAVEL
- EXISTING SLOPES GREATER THAN 25%
- EXISTING EXISTING WETLAND
- SD — STORM DRAINAGE LINE
- SS — SANITARY SEWER LINE
- T — UNDERGROUND TELECOMMUNICATION LINE
- E — UNDERGROUND ELECTRIC LINE
- W — UNDERGROUND WATER LINE
- X — FENCE
- OHW — OVERHEAD POWER LINE
- G — GAS LINE
- DECIDUOUS TREE
- CONIFEROUS TREE
- SIGN
- TRAFFIC SIGNAL POLE
- SANITARY SEWER MANHOLE
- STORM DRAINAGE MANHOLE
- CATCH BASIN
- AREA DRAIN
- DITCH INLET
- ELECTRICAL VAULT
- COMMUNICATIONS VAULT
- WATER VAULT
- ELECTRICAL METER
- ELECTRICAL RISER
- WATER VALVE
- WATER METER
- FIRE HYDRANT
- FIRE DEPARTMENT CONNECTION
- SPRINKLER VALVE
- GAS VALVE
- COMMUNICATIONS RISER
- ELECTRIC JUNCTION BOX
- SIGNAL JUNCTION BOX
- BOLLARD
- LIGHT POLE
- SIGNAL POLE
- PEDESTRIAN SIGNAL POLE
- UTILITY POLE
- GUY ANCHOR
- HANDICAPPED PARKING SPACE
- EXTG MAJOR CONTOUR
- EXTG MINOR CONTOUR
- FLOOD PLAIN (100 YEAR)
- LOT LINE
- BOUNDARY LINE
- RIGHT OF WAY LINE
- CENTERLINE
- ZONING DELINEATION

SANITARY SEWER TABLE:

1. SANITARY SEWER MANHOLE
   RIM=82.78'
   IE 8" CONC (N)=68.77'
   IE 12" CONC (E)=68.54'
   IE 12" CONC (W)=68.50'
2. SANITARY SEWER MANHOLE
   RIM=79.05'
   IE 8" CONC (S)=68.12'
   IE 12" CONC (E)=67.60'
   IE 12" CONC (W)=67.55'
3. SANITARY SEWER MANHOLE
   RIM=71.50'
   IE 12" CONC (E)=63.83'
   IE 12" CONC (W)=63.83'
4. SANITARY SEWER MANHOLE
   RIM=68.97'
   IE 12" CONC (E)=62.99'
   IE 12" CONC (N)=62.54'
5. SANITARY SEWER MANHOLE
   RIM=66.79'
   IE 12" CONC (S)=60.82'
   IE 12" CONC (N)=60.78'
6. SANITARY SEWER MANHOLE
   RIM=66.57'
   IE 12" CONC (S)=53.59'
   IE 42" CONC (N)=51.77'
   IE 42" CONC (W)=51.68'
7. SANITARY SEWER MANHOLE
   RIM=65.51'
   IE 42" CONC (E)='
   IE 42" CONC (S)='
8. SANITARY SEWER MANHOLE
   RIM=69.73'
   IE 42" CONC (E)=52.94'
   IE 42" CONC (W)=52.94'
9. SANITARY SEWER MANHOLE
   RIM=70.91'
   IE 42" CONC (NE)=53.40'
   IE 42" CONC (W)=53.21'

STORM DRAINAGE TABLE:

1. DITCH INLET
   GRATE='
   IE 12" CPP (S)=66.15'
2. CATCH BASIN
   GRATE=67.40'
   IE 6" PVC (S)=65.95'
   IE 12" CPP (N)=65.93'
   IE 12" CONC (E)=65.88'
3. CATCH BASIN
   GRATE=67.79'
   IE 8" PVC (S)=65.72'
   IE 12" CONC (W)=65.62'
   IE 12" CONC (E)=65.62'
4. CATCH BASIN
   GRATE=68.47'
   IE 12" CONC (W)=65.22'
   IE 12" CONC (NW)=65.42'
   IE 12" CONC (S)=65.17'
5. STORM DRAINAGE MANHOLE
   RIM=68.65'
   IE 12" CONC (N)=65.29'
   IE 12" CONC (SE)=65.58'
6. DITCH INLET
   GRATE=67.83'
   IE 12" CONC (S)=65.69'
7. IE 12" CPP (E)=69.69'
8. CATCH BASIN
   GRATE=75.17'
   IE 12" CPP (E)=70.89'
   IE 12" CPP (W)=70.89'
9. CATCH BASIN
   GRATE=75.11'
   IE 12" CPP (E)=71.41'
   IE 12" CPP (W)=71.41'
10. AREA DRAIN
    GRATE=75.57'
    IE 12" CONC (N)=72.36'
    IE 12" CONC (S)=72.23'
    IE 12" CPP (W)=71.86'
11. CATCH BASIN
    GRATE=76.05'
    IE 12" CONC (E)=74.27'
    IE 12" CONC (N)=73.25'
12. CATCH BASIN
    GRATE=79.51'
    IE 12" CONC (W)=76.32'
13. CATCH BASIN
    GRATE=75.01'
    IE 12" CPP (N)=72.42'
    IE 12" CPP (S)=72.59'
14. CATCH BASIN
    GRATE=75.03'
    IE 12" CPP (S)=72.70'
15. CATCH BASIN/OIL TRAP
    GRATE=76.12'
    WATER LEVEL=75.00'
    COULD NOT OPEN TRAP
16. CATCH BASIN/OIL TRAP
    GRATE=73.86'
    WATER LEVEL=73.16'
    COULD NOT OPEN TRAP
17. AREA DRAIN
    GRATE=77.52'
18. AREA DRAIN/OIL TRAP
    GRATE=77.60'
    WATER LEVEL=76.89'
    COULD NOT OPEN TRAP
19. CATCH BASIN
    GRATE=76.41'
    IE 12" CONC (SW)=74.65'
20. CATCH BASIN
    GRATE=76.14'
    IE 12" CONC (SW)=74.09'
21. IE 16" CPP (E)=72.59'
22. IE 12" PVC (SE)=64.71'
23. AREA DRAIN
    GRATE=77.39'
    IE 3" PVC (S)=76.74'
24. AREA DRAIN
    GRATE=76.08'
    IE 24" CONC (E&W)=71.42'
25. IE 24" CONC (W)=71.63'
26. IE 24" CONC (E)=70.95'
27. AREA DRAIN
    GRATE=72.78'
    WATER LEVEL=72.03'
    COULD NOT OPEN TRAP

TOPOGRAPHIC SURVEY NOTE:

THE FIELD WORK SHOWN ON THIS EXISTING CONDITION PLAN WAS COMPLETED BY TERRACALC. DOWL HAS NOT VERIFIED TE ACCURACY OF THE FIELD DATA PROVIDED AND ALTHOUGH THE INFORMATION IS BELIEVED TO BE ACCURATE, DOWL DOES NOT GUARANTEE THE ACCURACY OF THE DATA SHOWN.

VERTICAL DATUM:

BENCHMARK: C 723 (NATIONAL GEODETIC SURVEY)
PID: RD1490
VERTICAL DATUM: NAVD 88
DESCRIPTION: BRASS CONTROL DISK SET VERTICALLY IN THE NORTHWEST FACE OF THE CENTER COLUMN OF THE MOST NORTHWESTERLY PIER AT THE INTERSECTION OF STATE HIGHWAY 224 AND HARMONY ROAD.
ELEVATION: 102.80'

UTILITY STATEMENT:

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM LOCATE PAINT MARKINGS TIED IN THE FIELD SURVEY AND AS-BUILT DRAWINGS PROVIDED BY UTILITY COMPANIES. THIS SURVEY DOES NOT SHOW ANY PAINT MARKINGS PROVIDED AFTER THE FIELD SURVEY WAS COMPLETED. AS-BUILT DRAWING INFORMATION THAT WAS NOT PROVIDED IS NOT REFLECTED ON THIS SURVEY. AS-BUILT INFORMATION, IF PROVIDED, WAS USED TO IDENTIFY UNDERGROUND PIPE SIZE AND TYPE. IF NO LOCATE PAINT MARKINGS WERE PROVIDED, AS-BUILT INFORMATION WAS USED TO HORIZONTALLY LOCATE THE UNDERGROUND UTILITIES.

THIS SURVEY MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE OF ALL SUCH UTILITIES IN THE AREA. THE UNDERGROUND UTILITIES SHOWN MAY NOT BE IN THE EXACT LOCATION AS NOTED ON THIS SURVEY, BUT ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE INFORMATION PROVIDED. MANHOLES OTHER THAN SANITARY AND STORM SEWER WERE IDENTIFIED BY MANHOLE LIDS AND MAY NOT BE LABELED CORRECTLY.

UTILITY LOCATIONS SHOULD BE VERIFIED BY OREGON UTILITIES NOTIFICATION CENTER IMMEDIATELY PRIOR TO ANY EXCAVATION.

OREGON UTILITY
NOTIFICATION CENTER
1-800-332-2344

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RS88

60 0 60
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KELLOGG CREEK SUBDIVISION

EXISTING CONDITIONS

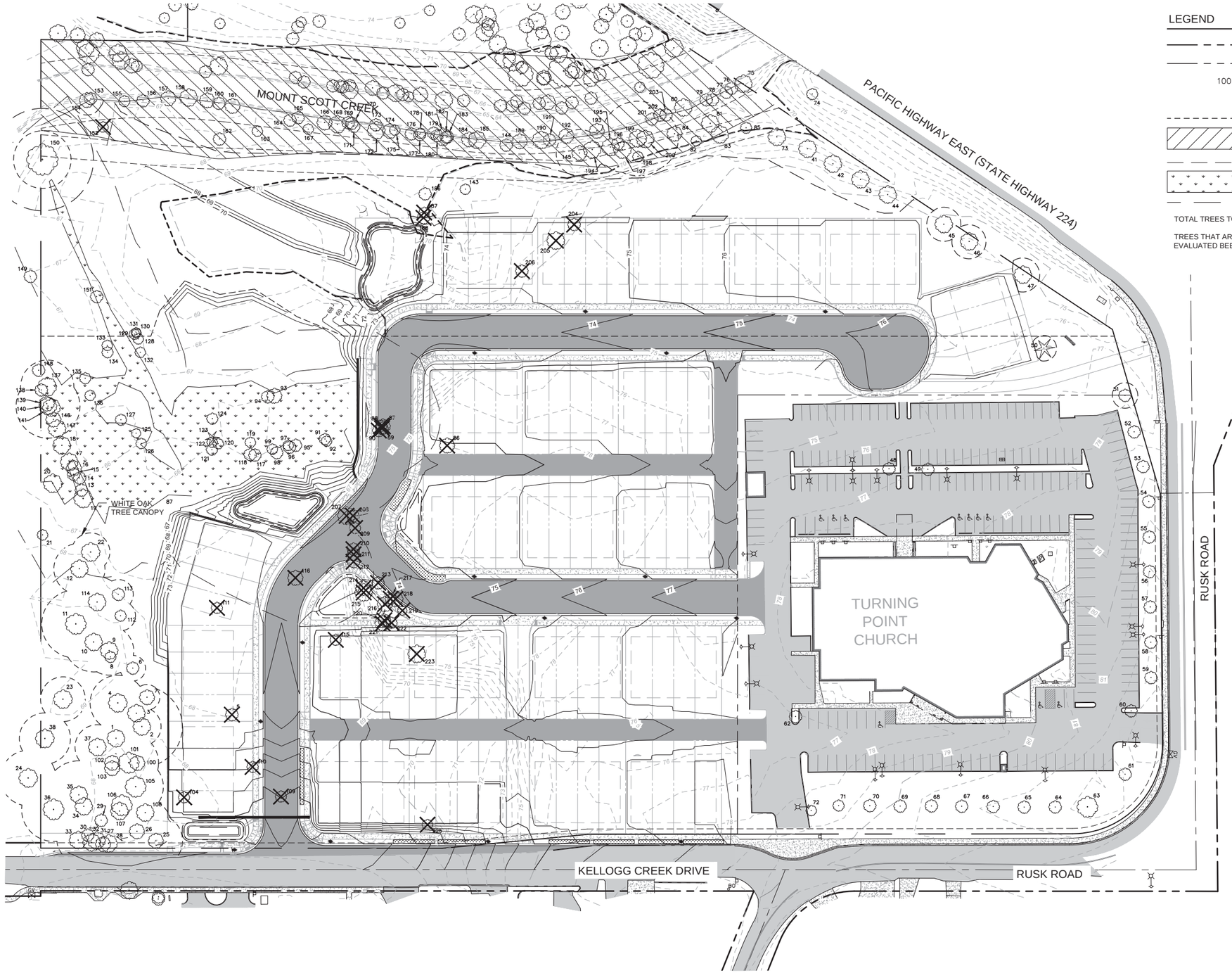
BROWNSTONE DEVELOPMENT
MILWAUKIE, OREGON
SEL/7 NE1/4 SEC. 6 T2S R2E W.M. EXISTING TAXLOTS 600, 700, 900, 901

PROJECT	14258-01
DATE	06/12/2017

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LEGEND

- EXISTING BOUNDARY LINE
- PROPOSED LOT LINE
- 100 — EXISTING TREE TO BE REMOVED
- TREE PROTECTION FENCING
- GIS VEGETATED CORRIDOR
- FLOOD PLAIN BOUNDARY
- WETLAND
- WETLAND BUFFER

TOTAL TREES TO BE REMOVED = 62

TREES THAT ARE NOT NUMBERED HAVE NOT BEEN EVALUATED BEEN BY THE TREE ARBORIST

N

50 0 50 100
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REGISTERED PROFESSIONAL ENGINEER
OREGON
J. SCOTT EMMENS
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EXPIRES: 12/31/2017

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KELLOGG CREEK SUBDIVISION

TREE PROTECTION & REMOVAL PLAN

BROWNSTONE DEVELOPMENT
MILWAUKIE, OREGON
SE1/7 NE1/4 SEC. 6 T2S R2E W.M. EXISTING TAXLOTS 600, 700, 900, 901

PROJECT	14258-01
DATE	06/12/2017

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Q:\22\14258-01\65CAD_DD\SC14-VB-TR-KELL.dwg PLOT DATE 2017-7-10 15:32 SAVED DATE 2017-06-12 12:45 USER: semmens

Number	Dia (in)	White Oak (Y/N)	Remove (Y/N)
1	18	Y	N
2	18	Y	N
3	18	Y	N
4	20	Y	N
5	12	N	Y
6	12	Y	N
7	14	Y	N
8	10	Y	N
9	16	Y	N
10	16	Y	N
11	24	Y	N
12	18	Y	N
13	12	N	N
14	12	N	N
15	12	N	N
16	14x2	N	N
17	16	N	N
18	18	N	N
19	20	N	N
20	20	N	N
21	8	N	N
22	20	Y	N
23	20	Y	N
24	20	Y	N
25	14	Y	N
26	14x2	Y	N
27	14	Y	N
28	16	Y	N
29	12	N	N
30	12	Y	N
31	16	Y	N
32	16	Y	N
33	16	Y	N
34	16	Y	N
35	16x2	Y	N
36	24	Y	N
37	18	Y	N
38	20	Y	N
41	18	N	N
42	16	N	N
43	16	N	N
44	16	N	N
45	16	N	N
46	16	N	N
47	16	N	N
48	12	N	N
49	12	N	N
50	12x2	N	N
51	12	N	N
52	12	N	N
53	12	N	N
54	12	N	N
55	14	N	N
56	12	N	N
57	12	N	N
58	12	N	N
59	12	N	N
60	12	N	N
61	12	N	N
62	10	N	N
63	24	N	N
64	12	N	N
65	12	N	N
66	12	N	N
67	12	N	N
68	12	N	N
69	12	N	N
70	12	N	N
71	12	N	N
72	8	N	N
73	16	N	N
74	10	N	N
75	16	N	N
76	12x3	N	N
77	12	N	N
78	12	N	N
79	12	N	N
80	18	N	N
81	18	N	N
82	8	N	N
83	16	N	N
84	14	N	N
85	10	N	N
86	14	N	Y
87	14x2	N	Y
88	10	N	Y
89	12	N	Y
90	12	N	Y
91	10	N	N
92	8	N	N
93	14	N	N
94	12	N	N
95	12	N	N
96	12	N	N
97	8	N	N
98	12	N	N
99	8	N	N
100	14	Y	N
101	24	Y	N
102	8x6	N	N
103	14	Y	N
104	10	N	Y
105	24	Y	N
106	24	Y	N
107	18	N	N
108	16x2	N	N
109	10	N	Y
110	10	N	Y
111	10x5	N	Y
112	10	Y	N
113	12	Y	N
114	18	Y	N
115	10x8	N	Y
116	14	N	Y
117	12	N	N
118	12	N	N
119	8x2	N	N
120	8	N	N
121	10	N	N
122	8	N	N
123	6	N	N
124	10x2	N	N
125	6	N	N
126	8	N	N
127	10	N	N
128	8	N	N
129	8	N	N
130	6	N	N
131	6	N	N
132	8	N	N
133	8	N	N
134	10	N	N
135	10	N	N
136	8x2	N	N
137	20	Y	N
138	12	N	N
139	14	N	N
140	16	N	N
141	16	Y	N
143	8	N	N
144	12	N	N
145	14x2	Y	N
146	14	N	N
147	16x2	N	N
148	12x3	N	N
149	12	N	N
150	48	Y	N
151	12	N	N
152	8	N	Y
153	12	N	N
154	14	N	N
155	10x4	N	N
156	12x2	N	N
157	14	N	N
158	16	N	N
159	14	N	N
160	10x3	N	N
161	14	N	N
162	10	N	N
163	8x2	N	N
164	12	N	N
165	12	N	N
166	14	N	N
167	8	N	N
168	18	N	N
169	12	N	N
170	12	N	N
171	12	N	N
172	16x3	N	N
173	12	N	N
174	14	N	N
175	8	N	N
176	12	N	N
177	10	N	N
178	8	N	N
179	10x2	N	N
180	12	N	N
181	16	N	N
182	12	N	N
183	12	N	N
184	14x2	N	N
185	18x2	N	N
186	12x3	N	N
187	8x2	N	Y
188	10x2	N	Y
189	14x2	N	N
190	16	N	N
191	12	N	N
192	14x2	N	N
193	14	N	N
194	16	Y	N
195	16	Y	N
196	12	Y	N
197	16	Y	N
198	8	Y	N
199	19	Y	N
200	18	Y	N
201	12	N	N
202	12	N	N
203	10x2	N	N
204	12	N	Y
205	18x2	N	Y
206	12x4	N	Y
207	16	N	Y
208	12x2	N	Y
209	10x9	N	Y
210	12	N	Y
211	12	N	Y
212	12	N	Y
213	12	N	Y
214	14	N	Y
215	16	N	Y
216	14	N	Y
217	10	N	Y
218	14	N	Y
219	6x3	N	Y
220	12	N	Y
221	14	N	Y
222	10	N	Y
223	16x2	N	Y
225	8x3	N	Y

TOTAL TREES TO BE REMOVED = 36

TREES THAT ARE NOT NUMBERED HAVE NOT BEEN EVALUATED BEEN BY THE TREE ARBORIST

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 09, 2004
J. SCOTT EMMENS
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TREE PROTECTION & REMOVAL TABLE

BROWNSTONE DEVELOPMENT
MILWAUKIE, OREGON
SEL/7 NE1/4 SEC. 6 T2S R2E W.M. EXISTING TAXLOTS 600, 700, 900, 901

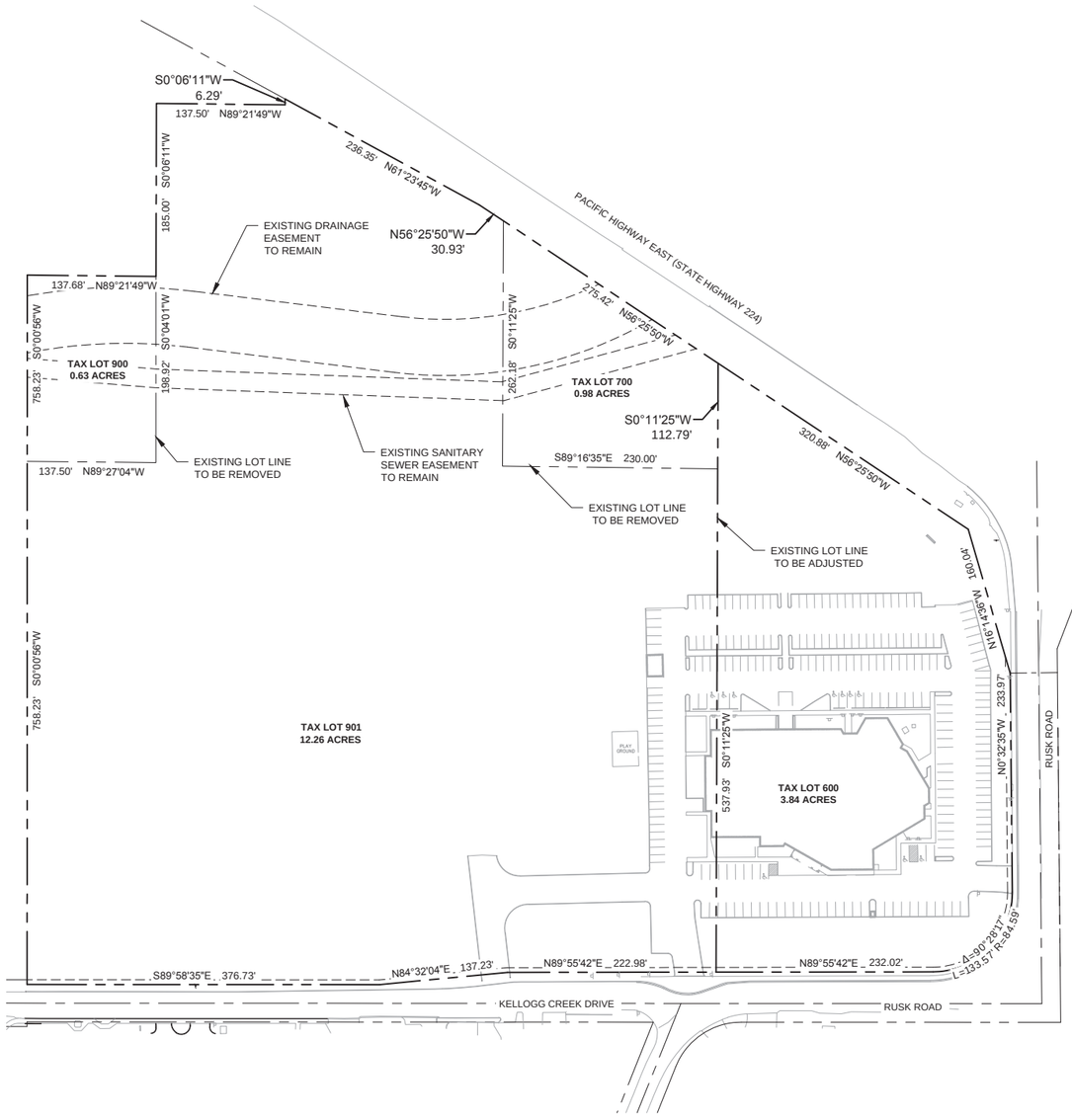
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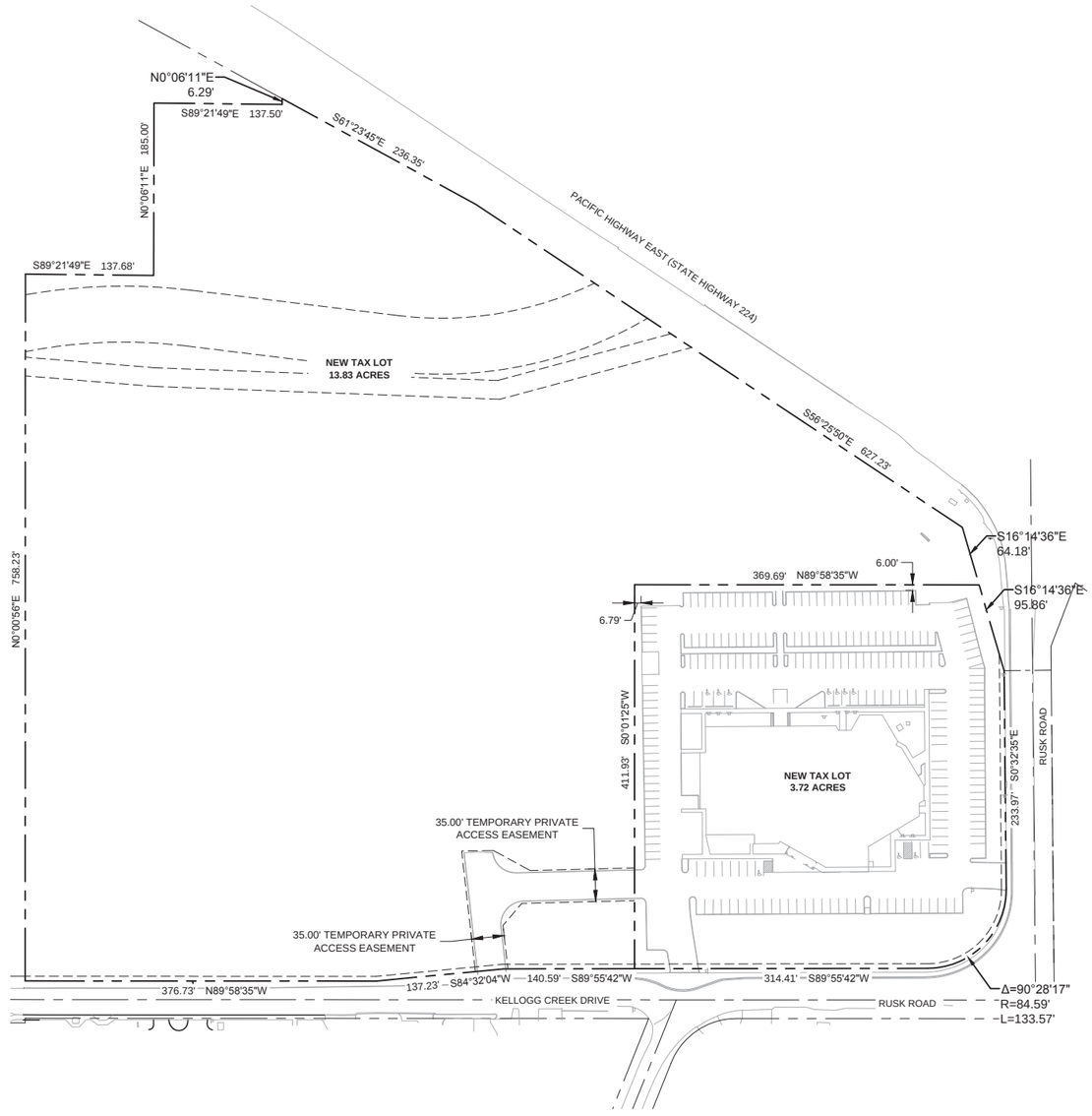
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RS90

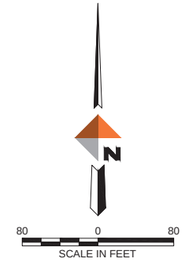


EXISTING LOT LINES



PROPOSED LOT LINES

LOT CONSOLIDATION AND PROPERTY LOT LINE ADJUSTMENT



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PRELIMINARY LOT LINE ADJUSTMENT

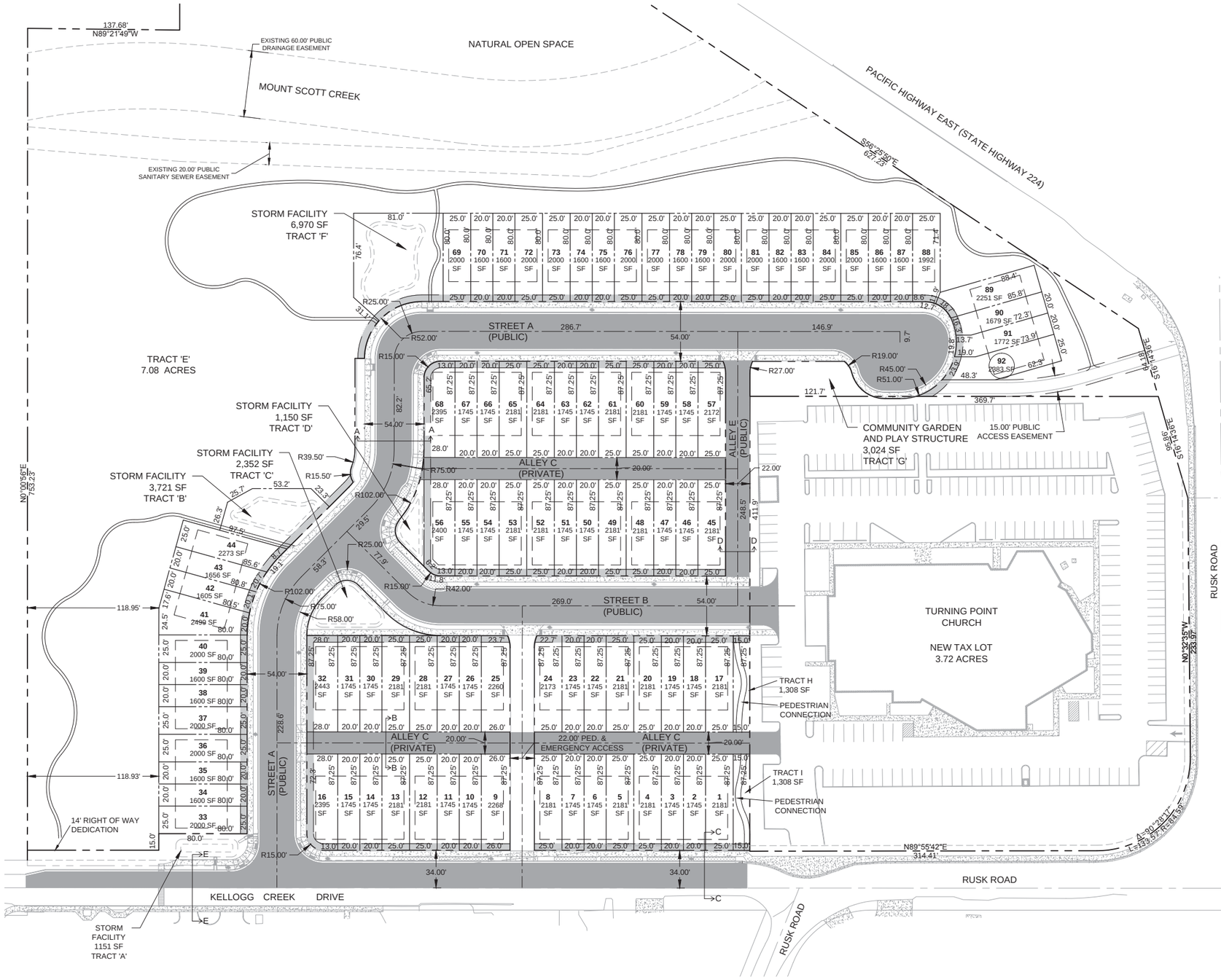
BROWNSTONE DEVELOPMENT
MILWAUKIE, OREGON
SE1/7 NE1/4 SEC. 6 T2S R2E W.M. EXISTING TAXLOTS 600, 700, 900, 901

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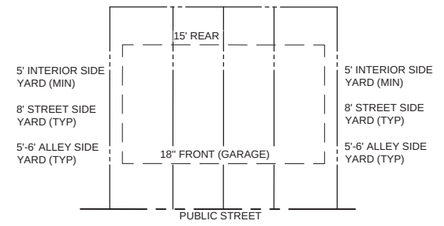


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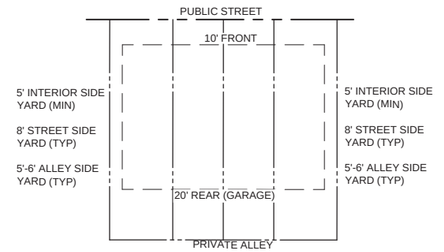
- ZONING BOUNDARY
- EXISTING CENTERLINE
- PROPOSED CENTERLINE
- PROPOSED LOT LINE
- PROPOSED RIGHT OF WAY LINE
- EXISTING RIGHT OF WAY LINE
- EXISTING PROPERTY LINE TO REMAIN
- EXISTING PROPERTY LINE TO REMOVE
- PROPOSED SETBACK LINE
- PROPOSED CURB AND GUTTER
- EXISTING EASEMENT
- PROPOSED 6' PUE

A A

SEE SHEET C202 FOR STREET SECTIONS



FRONT LOAD SETBACKS
1" = 30'



ALLEY LOAD SETBACKS
1" = 30'

50 0 50
SCALE IN FEET

REGISTERED PROFESSIONAL ENGINEER
OREGON
JANUARY 9, 2009
J. SCOTT EMMENS
FOR REVIEW
EXPIRES: 12/31/2017

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PRELIMINARY PLAT

BROWNSTONE DEVELOPMENT
MILWAUKIE, OREGON
SEL/7 NE1/4 SEC. 6 T2S R2E W.M. EXISTING TAXLOTS 600, 700, 900, 901

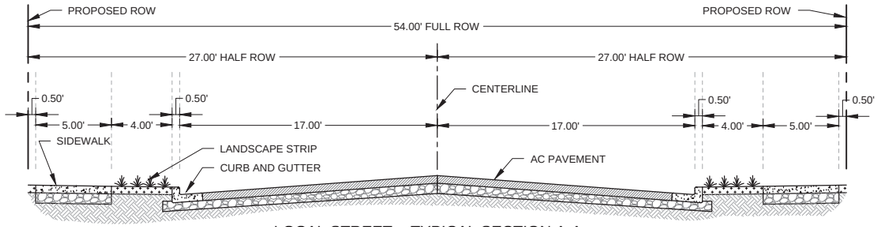
PROJECT	14258-01
DATE	06/12/2017

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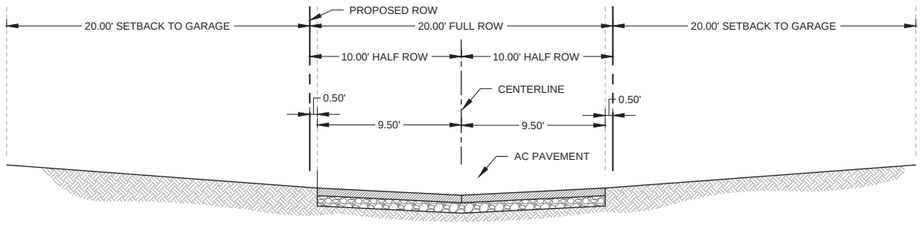
RS92

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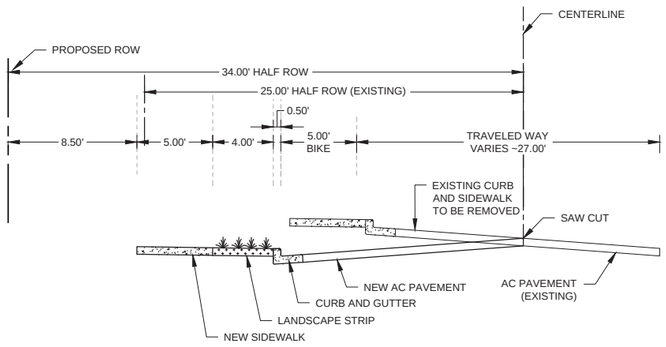
LOCAL STREET - TYPICAL SECTION A-A

HORIZONTAL SCALE: 1" = 5'



ALLEY - TYPICAL SECTION B-B

HORIZONTAL SCALE: 1" = 5'

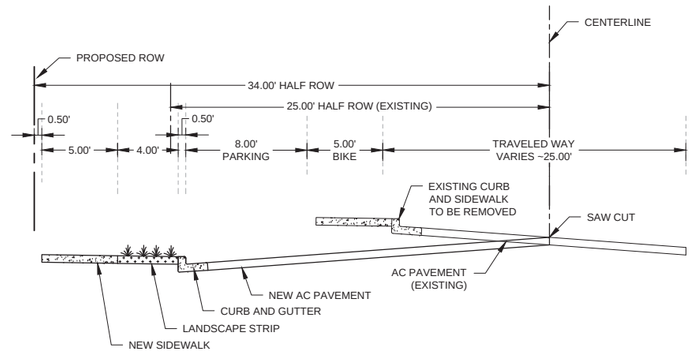


KELLOGG CREEK DRIVE - TYPICAL SECTION E-E

HORIZONTAL SCALE: 1" = 5'

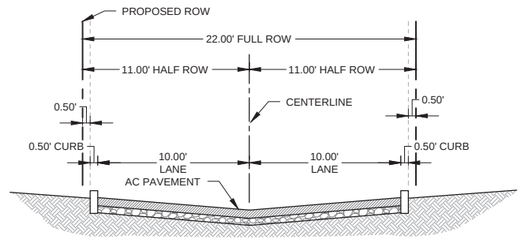
NOTES:

1. SEE PLAN FOR WIDENED ROW FOR STORM FACILITY.
2. SEE PLAN FOR SECTION OF KELLOG CREK DRIVE TO HAVE CURB TIGHT AND DETACHED VARYING OFFSET SIDEWALK.



KELLOGG CREEK DRIVE - TYPICAL SECTION C-C

HORIZONTAL SCALE: 1" = 5'



PUBLIC ALLEY - TYPICAL SECTION D-D

HORIZONTAL SCALE: 1" = 5'

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KELLOGG CREEK SUBDIVISION

TYPICAL STREET SECTIONS

BROWNSTONE DEVELOPMENT
MILWAUKIE, OREGON
SE1/7 NE1/4 SEC. 6 T2S R2E W.M. EXISTING TAXLOTS 600, 700, 900, 901

PROJECT	14258-01
DATE	06/12/2017

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SHEET

C202

\\bli-fs\bli-projects\22\14258-01\65CAD_DD\SC14-CS-SI-KELL.dwg PLOT DATE 2017-6-12 14:28 SAVED DATE 2017-06-09 13:55 USER: kglidden

RS93

LEGEND:

- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- EXISTING PROPERTY LINE
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- PROPOSED RIGHT OF WAY
- TOE OF SLOPE
- SEDIMENT FENCE
- INLET PROTECTION
- PROPOSED FLOODPLAIN BOUNDARY

HIGHWAY 224
MT SCOTT CREEK
TOE OF SLOPE
TRACT 'E' STORM FACILITY
4.8%
0.1%
STREET A
0.7%
0.0%
TRACT 'D'
TRACT 'C' STORM FACILITY
TRACT 'A' STORM FACILITY
2:1 MAX SLOPE
28.6%
TRACT 'B' STORM FACILITY
STREET B
1.2%
1.0%
TRACT 'F' STORM FACILITY
TURNING POINT CHURCH
RUSK ROAD
STOCKPILE AREA
TRACT 'G'
STAGING AREA
TRACT 'H'
KEYSTONE BLOCK RETAINING WALL
5.0%
4.0%
2.5%
CONSTRUCTION ENTRANCE
KELLOGG CREEK DRIVE

50 0 50
SCALE IN FEET

FOR REVIEW ONLY
REGISTERED PROFESSIONAL ENGINEER
OREGON
J. SCOTT EMMENS
EXPIRES: 12/31/2017

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KELLOGG CREEK SUBDIVISION

GRADING PLAN

BROWNSTONE DEVELOPMENT
MILWAUKIE, OREGON
SE1/7 NE1/4 SEC. 6 T2S R2E W.M. EXISTING TAXLOTS 600, 700, 900, 901

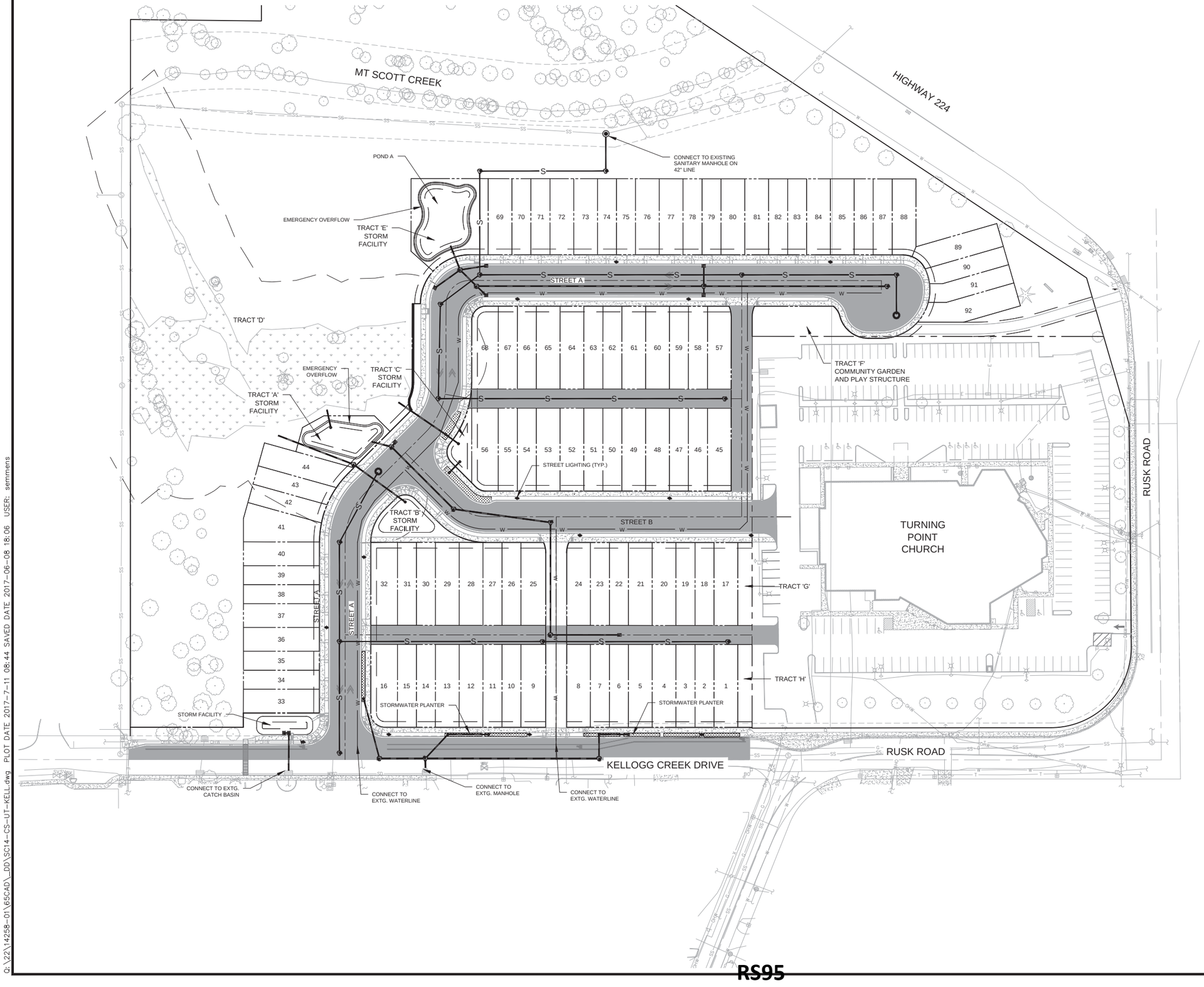
PROJECT	14258-01
DATE	06/12/2017

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SHEET
C300

RS94

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LEGEND:

- S — EXISTING SANITARY SEWER LINE
- SD — EXISTING STORM LINE
- W — EXISTING WATER LINE
- EXISTING STORM MAN HOLE
- EXISTING SANITARY MAN HOLE
- EXISTING CATCH BASIN
- EXISTING WATER VALVE
- S — PROPOSED SANITARY SEWER LINE
- SD — PROPOSED STORM LINE
- W — PROPOSED WATER LINE
- PROPOSED SANITARY MAN HOLE
- PROPOSED STORM MAN HOLE
- PROPOSED CATCH BASIN
- PROPOSED STORMWATER PLANTER

NOTES:

1. OUTFALL A AND B: SEE SECTION '6.3 FLOW DISPERSION' OF THE STORM WATER REPORT DATED JANUARY 12, 2017 PREPARED BY DOWL.

REGISTERED PROFESSIONAL ENGINEER — OREGON — J. SCOTT EMMENS — 80608PE — FOR REVIEW ONLY
EXPIRES: 12/31/2017

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KELLOGG CREEK SUBDIVISION

COMPOSITE UTILITY PLAN

BROWNSTONE DEVELOPMENT
MILWAUKIE, OREGON
SE1/7 NE1/4 SEC. 6 T2S R2E W.M. EXISTING TAXLOTS 600, 700, 900, 901

PROJECT	14258-01
DATE	06/12/2017

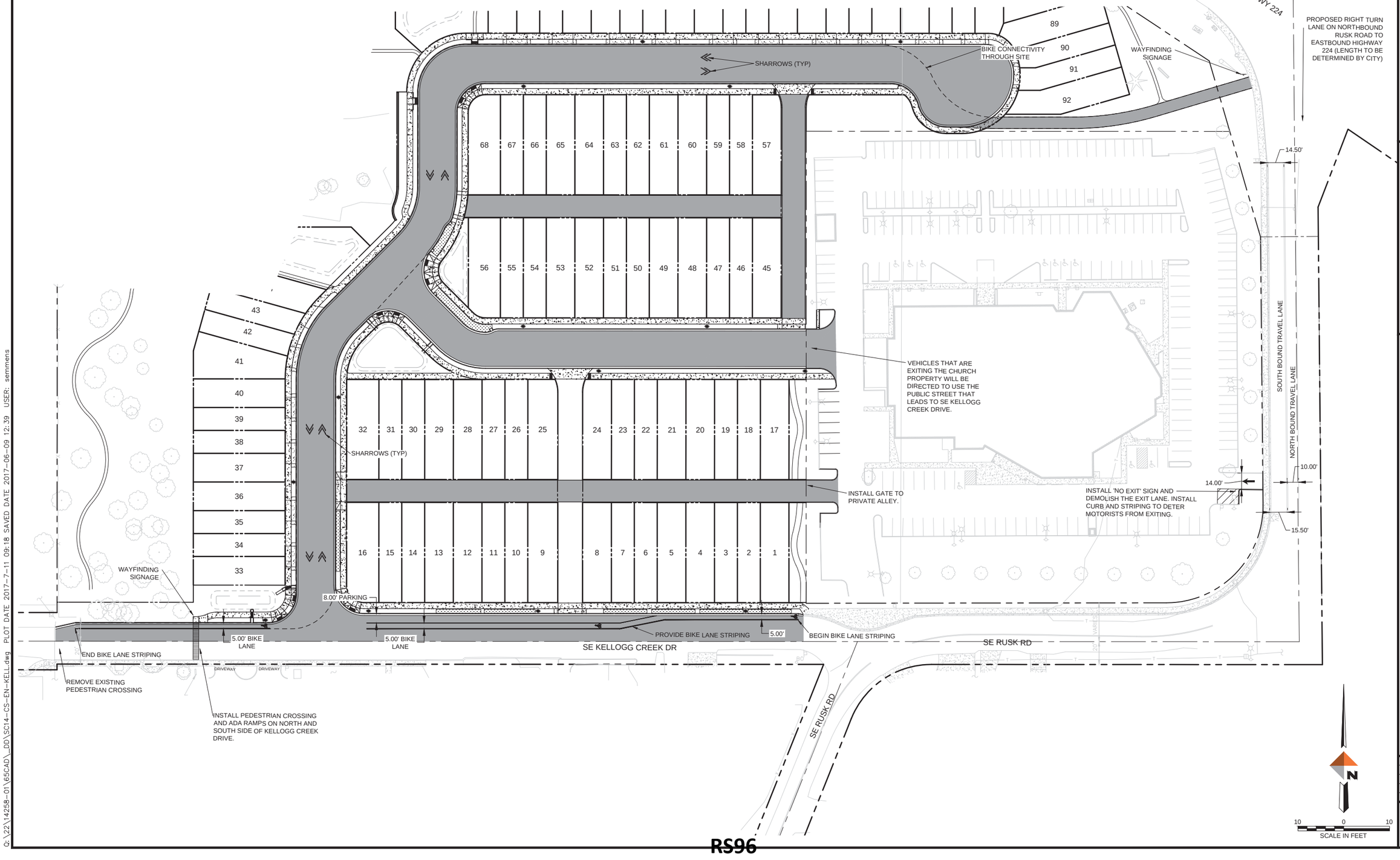
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SHEET
C400

50 0 50
SCALE IN FEET

RS95

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REGISTERED PROFESSIONAL ENGINEER
OREGON
J. SCOTT EMMENS
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KELLOGG CREEK SUBDIVISION

PUBLIC INTERSECTION

BROWNSTONE DEVELOPMENT
MILWAUKIE, OREGON
SE1/7 NE1/4 SEC. 6 T2S R2E W.M. EXISTING TAXLOTS 600, 700, 900, 901

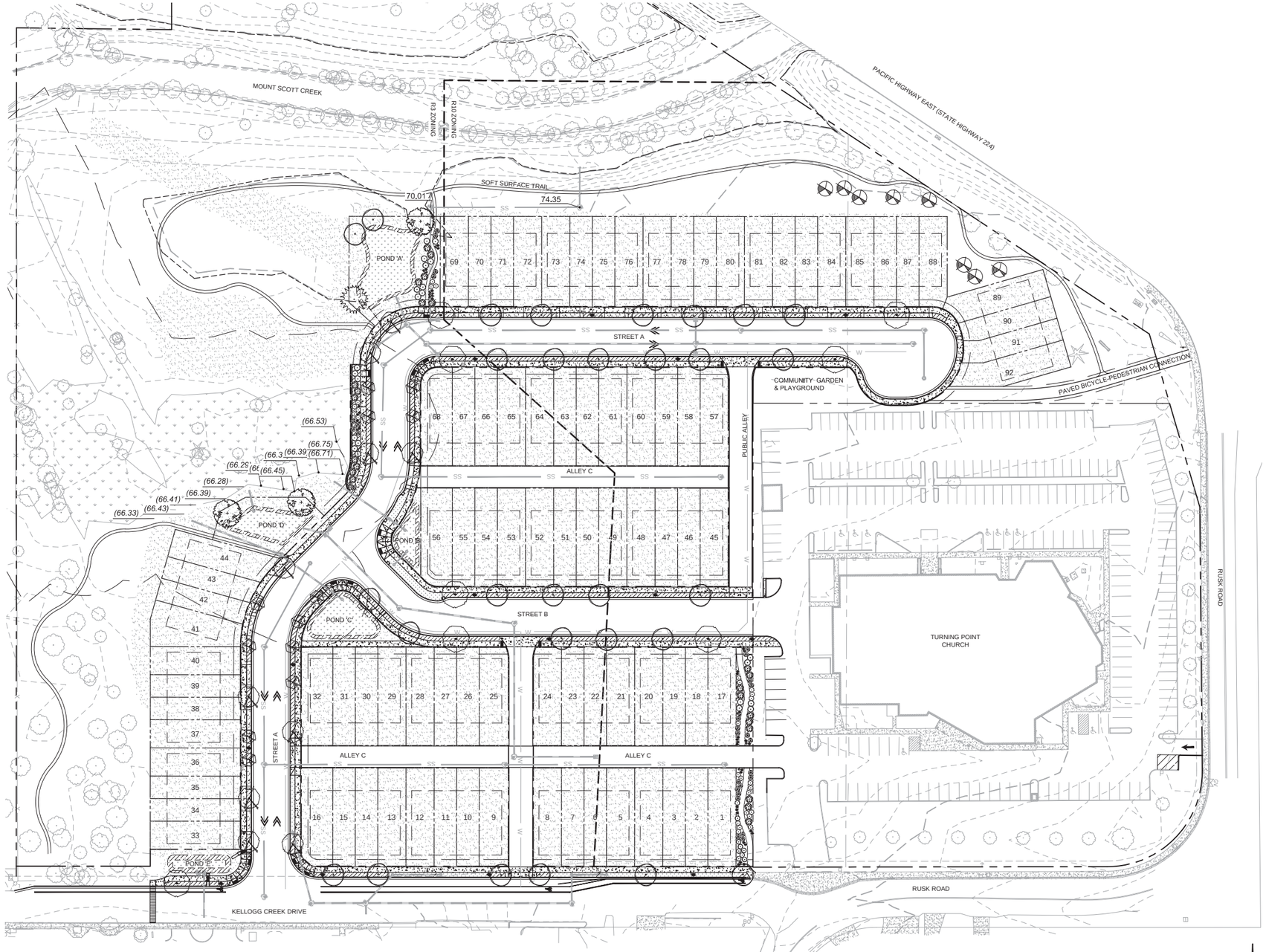
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DATE	06/12/2017

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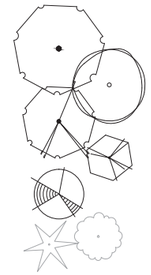
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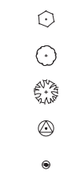


FRONTAGE AND OPEN SPACE MATERIALS LEGEND



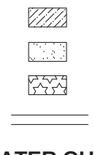
TREES

ITEM	SIZE / SPACING	QUANTITY
A. TRUN. x A. PLAT. 'WARRENRED' PACIFIC SUNSET MAPLE	1.5" CAL. / B&B AS SHOWN	8
ACER GRISEUM PAPERBARK MAPLE	1.5" CAL. / B&B AS SHOWN	27
GINKGO BILOBA 'PRINCETON SENTRY' PRINCETON SENTRY GINKGO	1.5" CAL. / B&B AS SHOWN	10
CARPINUS BETULUS 'FRANS FONTAINE' FRANS FONTAINE HORNBEAM	1.5" CAL. / B&B AS SHOWN	12
THUJA PLICATA WESTERN RED CEDAR	4' HEIGHT MINIMUM	8
EXISTING TREE TO REMAIN	AS NOTED	



SHRUBS & ACCENTS

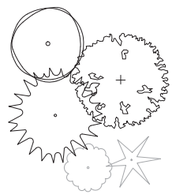
ITEM	SIZE / SPACING	QUANTITY
MAHONIA AQUIFOLIUM OREGON GRAPE	1 GAL. AS SHOWN	27
RIBES SANGUINEUM RED-FLOWERING CURRENT	3 GAL. AS SHOWN	31
VACCINIUM OVATUM EVERGREEN HUCKLEBERRY	3 GAL. AS SHOWN	23
ROSMARINUS OFFICINALIS 'ARP' ARP ROSEMARY	1 GAL. AS SHOWN	29
CAL. ACUTIFLORA 'KARL FOERSTER' KARL FOERSTER REED GRASS	1 GAL. AS SHOWN	47



GROUNDCOVERS & MISCELANEOUS

ITEM	SIZE / SPACING	QUANTITY
ARCTO. UVA-URSI 'MASSACHUSETTS' MASSACHUSETTS KINNICKINNICK	1 GALLON 3'-0" O.C.	8,279 SF - PLANTS
NATIVE EROSION CONTROL GRASS MIX SUNMARK SEEDS - FAIRVIEW, OR	SEED @ 1 LBS. / 1,000 SF	215,368 SF 215 LBS
CROCUS V. 'GIANT DUTCH' & N. TETE-A-TETE GIANT CROCUS & TETE-A-TETE DAFFODIL	BULBS 20 / 100 SF	120 SF 24 BULBS
SOFT SURFACE TRAIL	2'-6" WIDTH	

WATER QUALITY FACILITY MATERIALS LEGEND



TREES

ITEM	SIZE / SPACING	QUANTITY
ACER GRISEUM PAPERBARK MAPLE	1.5" CAL. / B&B AS SHOWN	2
ALNUS RUBRA RED ALDER	1.5" CAL. / B&B AS SHOWN	3
PSEUDOTSUGA MENZIESII DOUGLAS FIR	6' HT / B&B AS SHOWN	1
EXISTING TREES TO REMAIN	AS NOTED	



SHRUBS & ACCENTS

ITEM	SIZE / SPACING	QUANTITY
MAHONIA AQUIFOLIUM OREGON GRAPE	2 GALLON 7 PLANTS / 100 SF	-
CORNUS SERICEA RED TWIG DOGWOOD	2 GALLON 7 PLANTS / 100 SF	-
ROSA NOOTKANA NOOTKA ROSE	2 GALLON 7 PLANTS / 100 SF	-

GROUNDCOVERS & MISCELANEOUS

ITEM	SIZE / SPACING	QUANTITY
ARCTO. UVA-URSI 'MASSACHUSETTS' MASSACHUSETTS KINNICKINNICK	1 GALLON 70 / 100 SF	2,580 SF 1,806 PLANTS
SEDGE / RUSH MIX 50% CAREX STIPATA 50% JUNCUS PATENS	1 GALLON 80 PLANTS / 100 SF	7,422 SF 5,938 PLANTS

STORMWATER FACILITY REQUIREMENTS:

ZONE A TOTALS: 7,422 SF
REQUIRES: 80 HERBACEOUS / 100 SF = 5,938 HERBACEOUS
PROPOSED: 5,938 HERBACEOUS

ZONE B TOTALS: 2,580 SF
REQUIRES: 7 SHRUBS / 100 SF = 1,81 SHRUBS
PROPOSED: 181 SHRUBS (MIX OF SPECIES)

50 0 50
SCALE IN FEET

REGISTERED
749
PATRICK C. MAJOR
OREGON
05/13/11
LANDSCAPE ARCHITECT
EXPIRES 05/31/17

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KELLOGG CREEK SUBDIVISION

PLANTING PLAN - OVERALL

BROWNSTONE DEVELOPMENT
MILWAUKIE, OREGON
SE1/7 NE1/4 SEC. 6 T2S R2E W.M. EXISTING TAXLOTS 600, 700, 900, 901

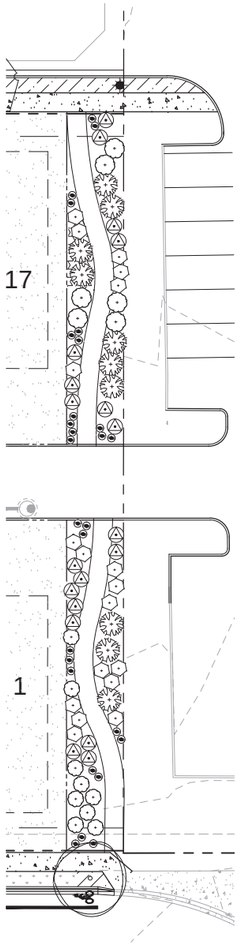
PROJECT	14258-01
DATE	07/07/2017

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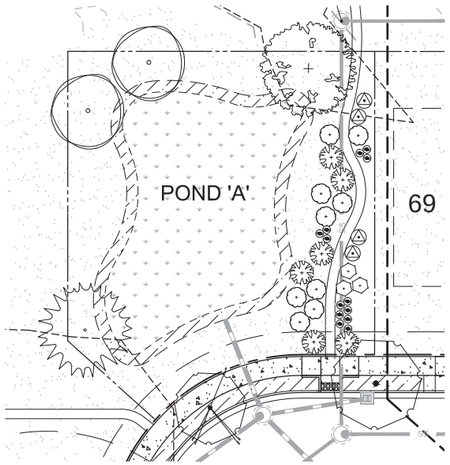
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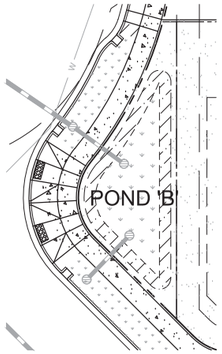
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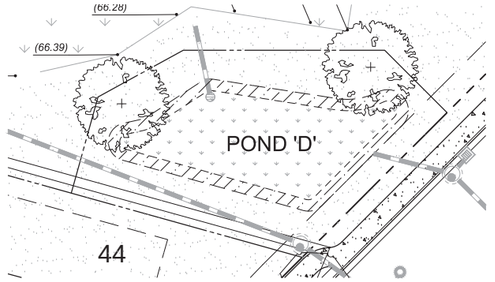
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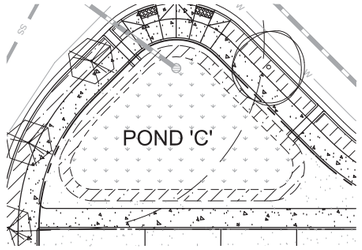


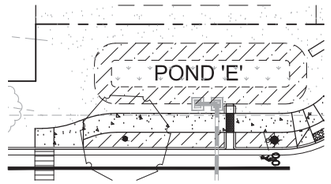
A OPEN SPACE TRACTS





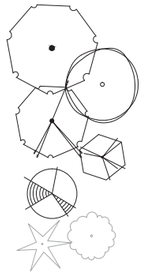






B WATER QUALITY FACILITIES

FRONTAGE AND OPEN SPACE MATERIALS LEGEND



TREES

ITEM	SIZE / SPACING	QUANTITY
A. TRUN. x A. PLAT. 'WARRENRED' PACIFIC SUNSET MAPLE	1.5" CAL. / B&B AS SHOWN	8
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THUJA PLICATA WESTERN RED CEDAR	4' HEIGHT MINIMUM	8
EXISTING TREE TO REMAIN	AS NOTED	

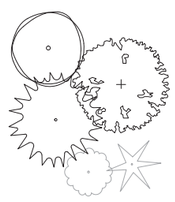
SHRUBS & ACCENTS

ITEM	SIZE / SPACING	QUANTITY
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WATER QUALITY FACILITY MATERIALS LEGEND



TREES

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PSEUDOTSUGA MENZIESII DOUGLAS FIR	6' HT / B&B AS SHOWN	1
EXISTING TREES TO REMAIN	AS NOTED	

SHRUBS & ACCENTS

ITEM	SIZE / SPACING	QUANTITY
MAHONIA AQUIFOLIUM OREGON GRAPE	2 GALLON 7 PLANTS / 100 SF	-
CORNUS SERICEA RED TWIG DOGWOOD	2 GALLON 7 PLANTS / 100 SF	-
ROSA NOOTKANA NOOTKA ROSE	2 GALLON 7 PLANTS / 100 SF	-

GROUNDCOVERS & MISCELANEOUS

ITEM	SIZE / SPACING	QUANTITY
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PROPOSED: 5,938 HERBACEOUS

ZONE B TOTALS: 2,580 SF
REQUIRES: 7 SHRUBS / 100 SF = 1,81 SHRUBS
PROPOSED: 181 SHRUBS (MIX OF SPECIES)

20 0 20
SCALE IN FEET

RS98

REGISTERED LANDSCAPE ARCHITECT
749
PATRICK O'NOR
OREGON
05/13/2011
EXPIRES 05/31/17
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KELLOGG CREEK SUBDIVISION

PLANTING PLAN - ENLARGEMENTS

BROWNSTONE DEVELOPMENT
MILWAUKIE, OREGON
SE1/7 NE1/4 SEC. 6 T2S R2E W.M. EXISTING TAXLOTS 600, 700, 900, 901

PROJECT	14258-01
DATE	07/07/2017

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SHEET
L110

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FRONT LOAD UNITS



ALLEY LOAD UNITS

RS99

REGISTERED PROFESSIONAL ENGINEER
OREGON
J. SCOTT EMMENS
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KELLOGG CREEK SUBDIVISION

TOWNHOME RENDERINGS

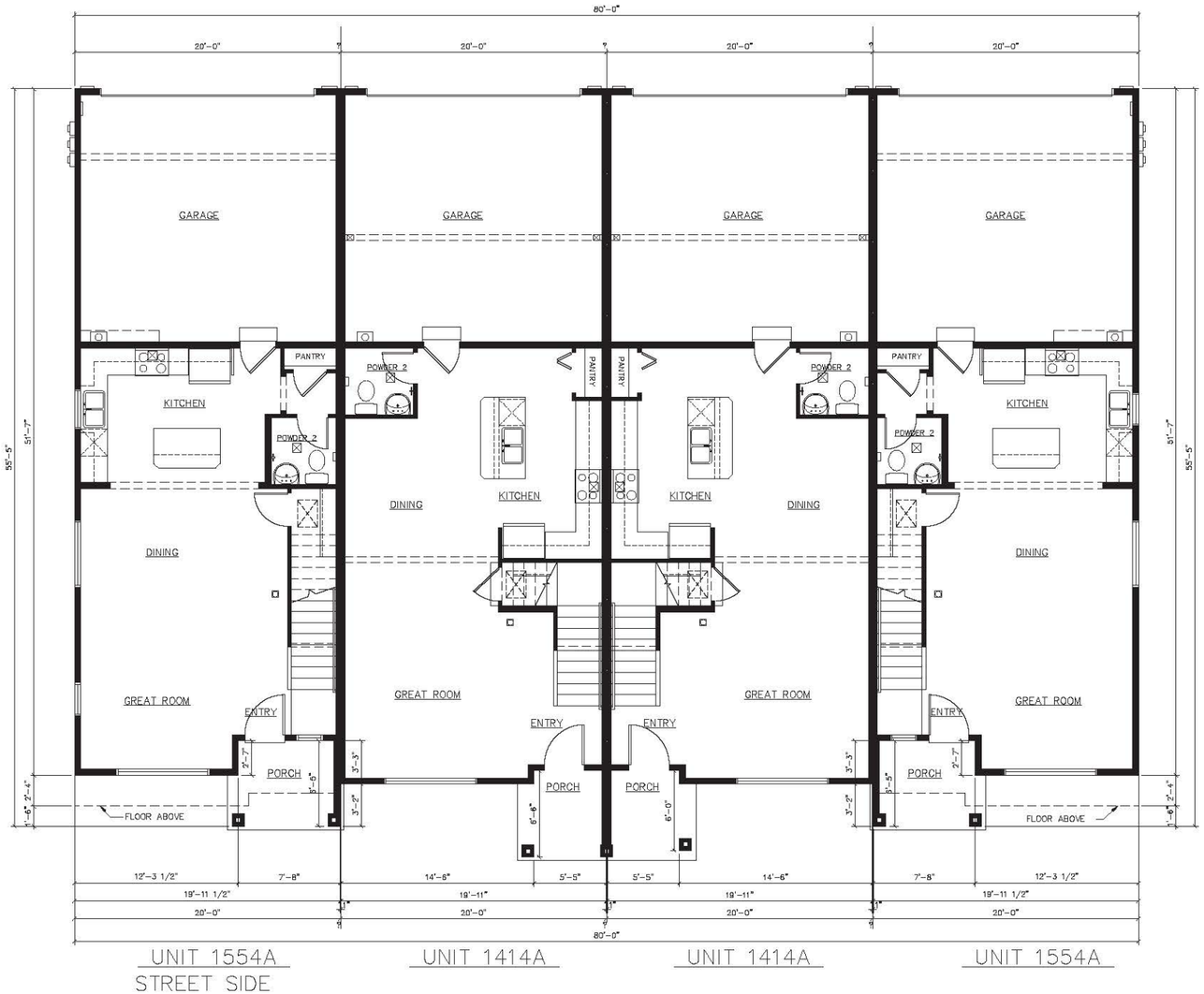
BROWNSTONE DEVELOPMENT
MILWAUKIE, OREGON
SE1/7 NE1/4 SEC. 6 T2S R2E W.M. EXISTING TAXLOTS 600, 700, 900, 901

PROJECT	14258-01
DATE	06/12/2017

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SHEET
A100

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MAIN FLOOR PLANS 4-PLEX BUILDING TYPE A1

SCALE 3/16" = 1'-0"

RS100

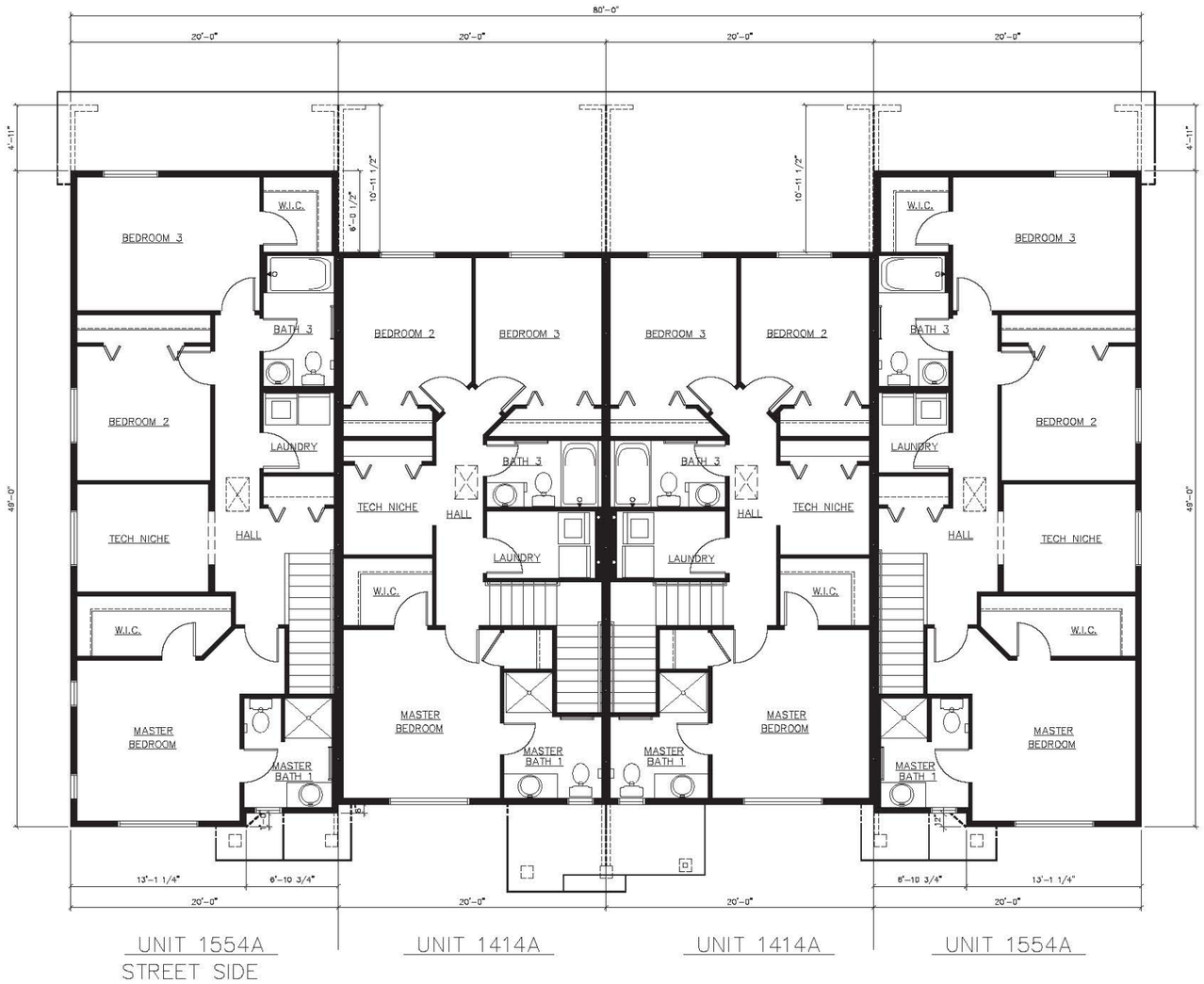
STRUCTURAL DESIGN:
VOELKER ENGINEERING
1911 116th Ave. NE
Bellevue, WA 98004
425-451-4946

BUILDER/DESIGNER:
D.R. HORTON
4380 SW Macadam Ave, Suite 100
Portland, OR 97239
503-222-3719

KELLOGG CREEK ALLEY
MAIN FLOOR

8/05/15

A2



UPPER FLOOR PLANS TYPE A1

SCALE 3/16" = 1'-0"

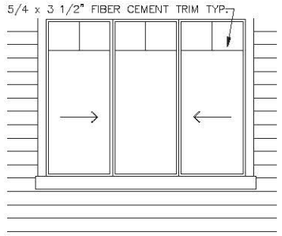
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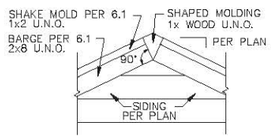
STRUCTURAL DESIGN:
VOELKER ENGINEERING
1911 116th Ave. NE
Bellevue, WA 98004
425-451-4946

BUILDER/DESIGNER:
D.R. HORTON
4380 SW Macadam Ave, Suite 100
Portland, OR 97239
503-222-3719

KELLOGG CREEK ALLEY
UPPER FLOOR

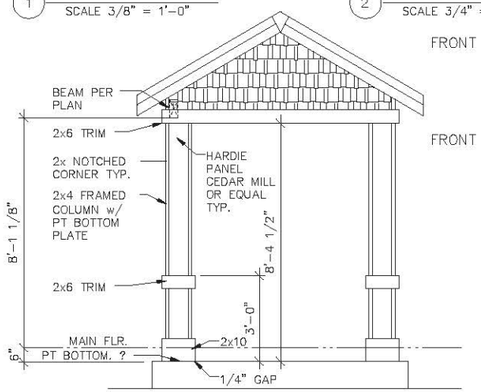
A4





1 TYP. WINDOW TRIM
SCALE 3/8" = 1'-0"

2 GABLE END TRIM
SCALE 3/4" = 1'-0"



3 PORCH DETAIL
SCALE 3/8" = 1'-0"

FRONT ELEVATION GLAZING PERCENTAGE

WALL AREA	=	1,424 SF
GLAZING AREA	=	302 SF
GLAZING %	=	21.2 %

FRONT ELEVATION SIDING PERCENTAGE

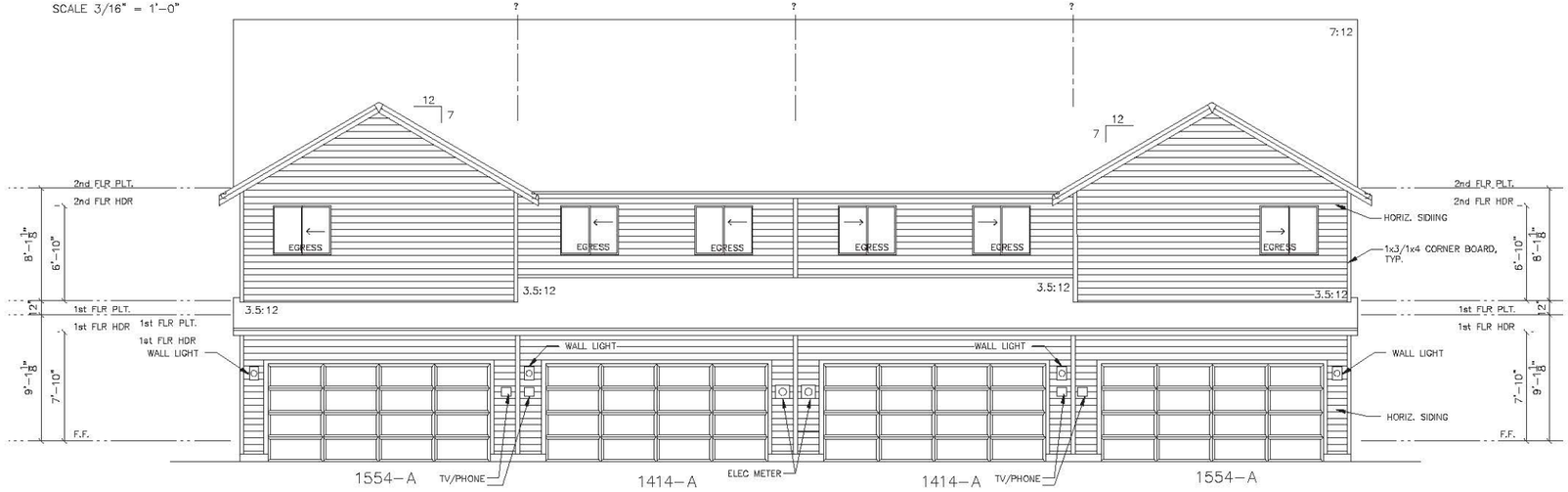
WALL AREA	=	1,424 SF
SIDING AREA	=	632 SF
SIDING %	=	44.4 %

BUILDING DETAILED DESIGN ELEMENTS PER 19.505.1.C.4:

A. COVERED PORCH AT LEAST 5 FT DEEP, AS MEASURED HORIZONTALLY FROM THE FACE OF THE MAIN BUILDING FAÇADE TO THE EDGE OF THE DECK, AND AT LEAST 5 FT WIDE.
C. OFFSET ON THE BUILDING FACE OF AT LEAST 16 IN FROM 1 EXTERIOR WALL SURFACE TO THE OTHER.
F. ROOF LINE OFFSETS OF AT LEAST 2 FT FROM THE TOP SURFACE OF 1 ROOF TO THE TOP SURFACE OF THE OTHER.
H. HORIZONTAL LAP SIDING BETWEEN 3 TO 7 IN WIDE (THE VISIBLE PORTION ONCE INSTALLED). THE SIDING MATERIAL MAY BE WOOD, FIBER-CEMENT, OR VINYL.
I. BRICK, CEDAR SHINGLES, STUCCO, OR OTHER SIMILAR DECORATIVE MATERIALS COVERING AT LEAST 40% OF THE STREET-FACING FAÇADE.
K. WINDOW TRIM AROUND ALL WINDOWS AT LEAST 3 IN WIDE AND 5/8 IN DEEP.



FRONT ELEVATION 4-PLEX BUILDING
SCALE 3/16" = 1'-0"



REAR ELEVATION 4-PLEX BUILDING
SCALE 3/16" = 1'-0"



SIDE ELEVATION GLAZING PERCENTAGE

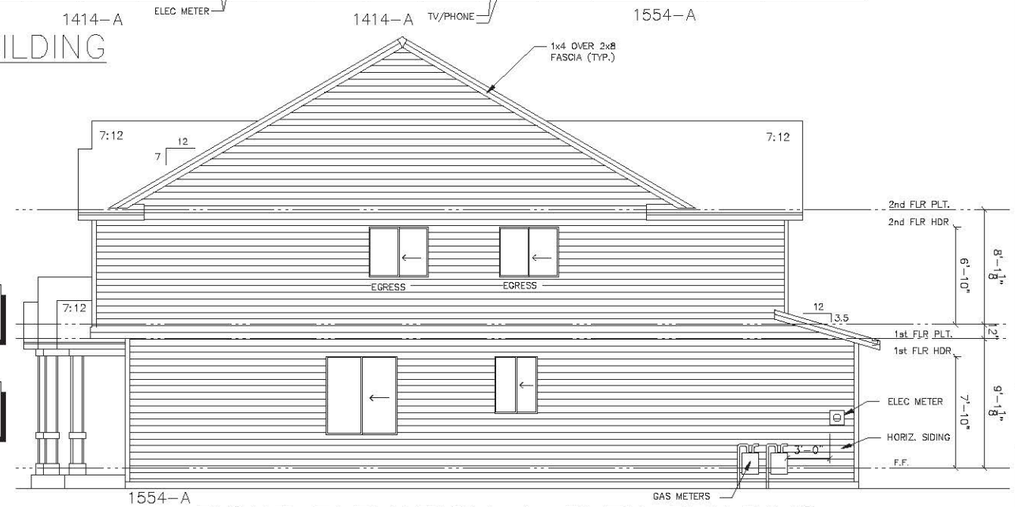
WALL AREA	=	906 SF
GLAZING AREA	=	109 SF
GLAZING %	=	12.0 %

SIDE ELEVATION SIDING PERCENTAGE

WALL AREA	=	906 SF
SIDING AREA	=	435 SF
SIDING %	=	48.0 %

LEFT ELEVATION 4-PLEX BUILDING
STREET SIDE ELEVATION
SCALE 3/16" = 1'-0"

NOTE: THIS ELEVATION TO BE ONLY AT CORNER LOTS w/ STREET EXPOSURE **RS102**



RIGHT ELEVATION 4-PLEX BUILDING
SCALE 3/16" = 1'-0"

STRUCTURAL DESIGN:
VOELKER ENGINEERING
1911 116th Ave. NE
Bellevue, WA 98004
425-451-4946

BUILDER/DESIGNER:
D.R. HORTON
4380 SW Macadam Ave, Suite 100
Portland, OR 97239
503-222-3719

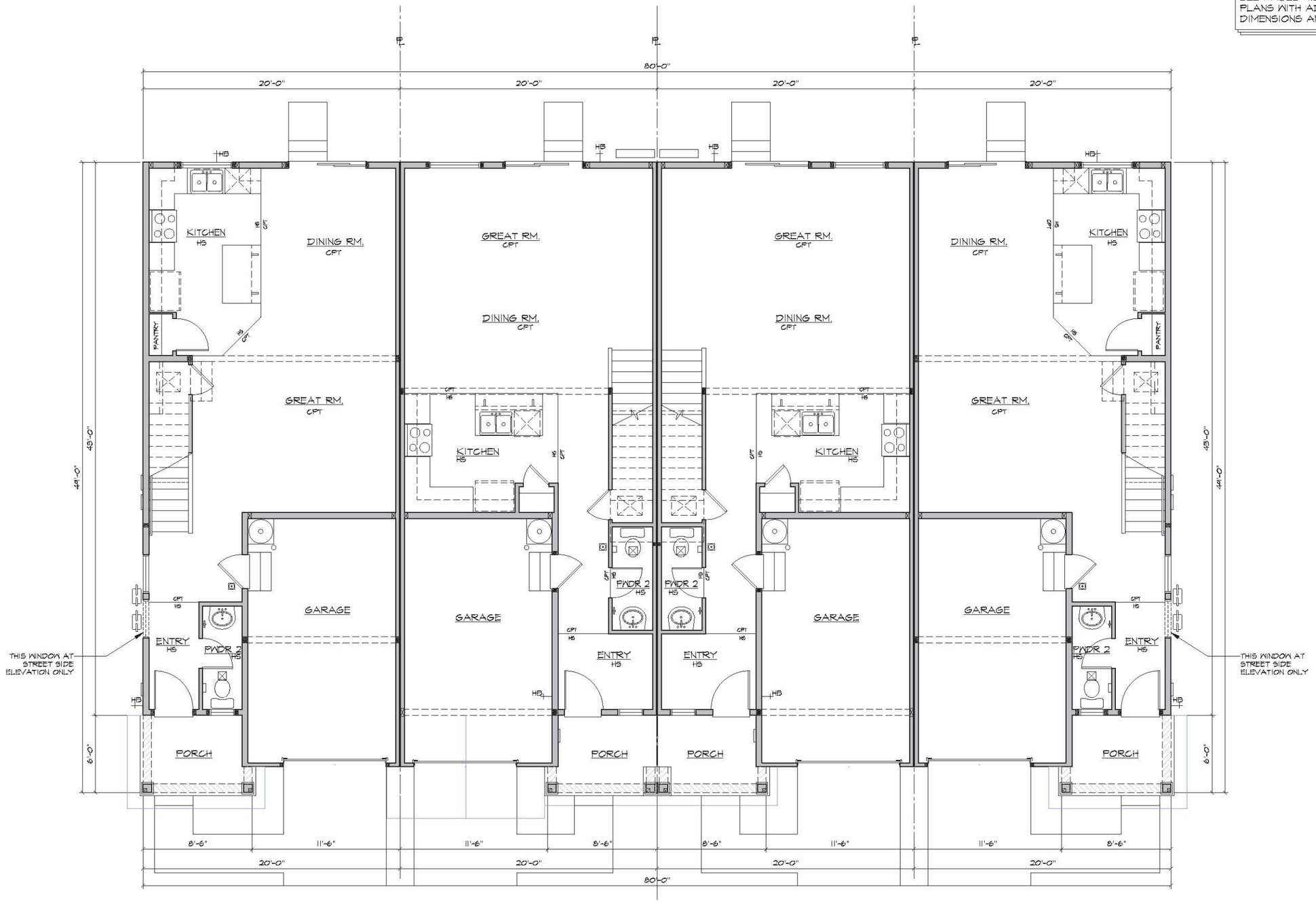
KELLOGG CREEK ALLEY
ALLEY FOUR-PLEX ELEVATIONS

BUILDING
A-1

8/05/15

A6

NOTE:
SEE PAGES 9.0-10.0 FOR UNIT PLANS WITH ADDITIONAL DIMENSIONS AND NOTES.



NOTE:
TYPICAL EXTERIOR WALL TO BE CONSTRUCTED PER SCHEDULE PAGE 3.0 AS P6 SHEARWALLS UNLESS NOTED OTHERWISE

PLAN 1535-D
SEE SHEET 9.0

PLAN 1498-C
SEE SHEET 10.0

PLAN 1498-D
SEE SHEET 10.0

PLAN 1535-C
SEE SHEET 9.0

MAIN FLOOR PLANS

SCALE 1/4" = 1'-0"

RS103

STRUCTURAL DESIGN:
VOELKER ENGINEERING
1911 116th Ave. NE
Bellevue, WA 98004
425-451-4946

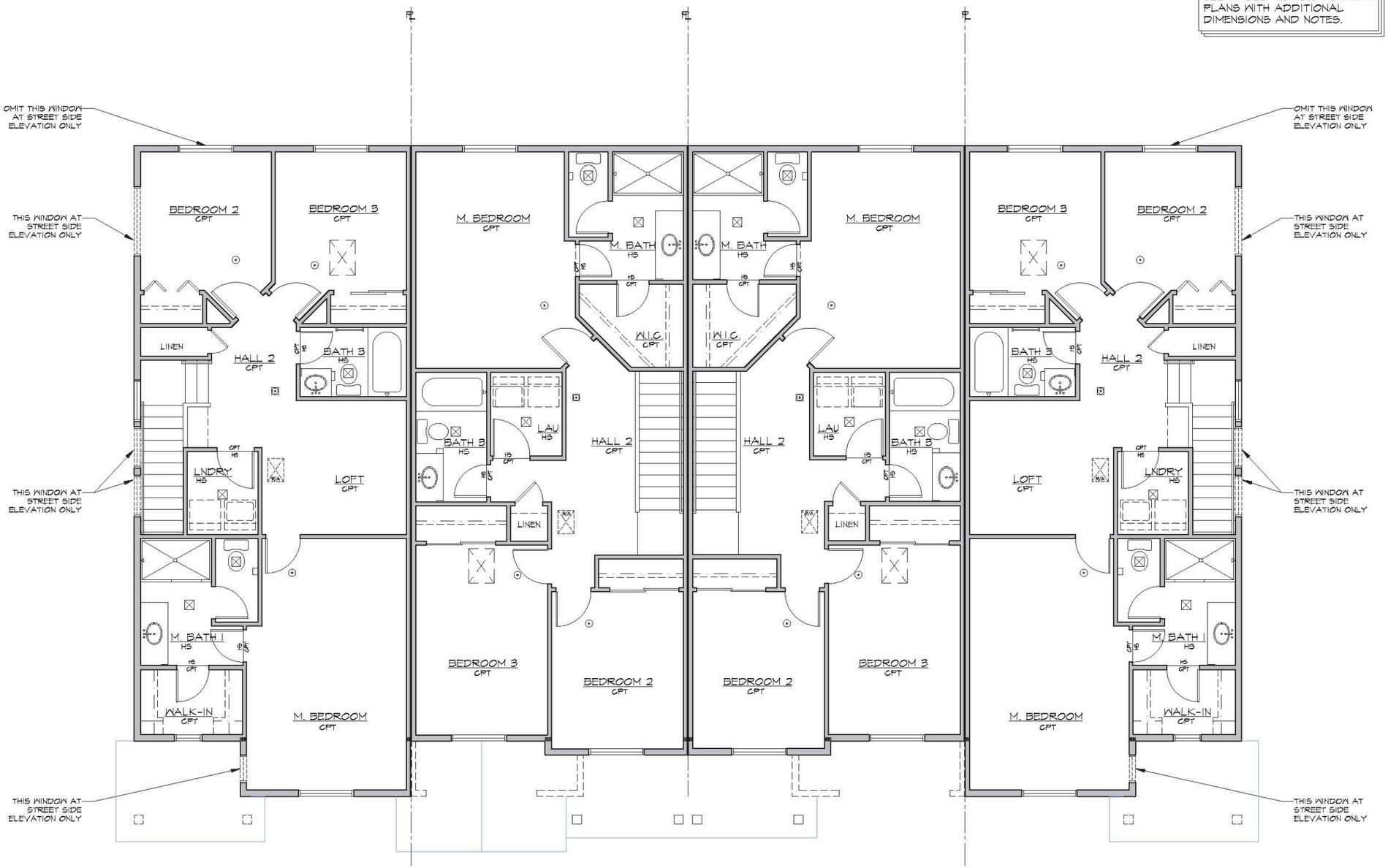
BUILDER/DESIGNER:
D.R. HORTON
4380 SW Macadam Ave, Suite 100
Portland, OR 97239
503-222-3719

KELLOGG CREEK
FOUR-PLEX MAIN FLOOR PLAN

REL 6/04/15

2.0

NOTE:
SEE PAGES 9.0-10.0 FOR UNIT PLANS WITH ADDITIONAL DIMENSIONS AND NOTES.



PLAN 1535-D
SEE SHEET 9.0

PLAN 1498-C
SEE SHEET 10.0

PLAN 1498-D
SEE SHEET 10.0

PLAN 1535-C
SEE SHEET 9.0

NOTE:
TYPICAL EXTERIOR WALL TO BE CONSTRUCTED PER SCHEDULE PAGE 3.0 AS P6 SHEARWALLS UNLESS NOTED OTHERWISE

UPPER FLOOR PLANS

SCALE 1/4" = 1'-0"

RS104

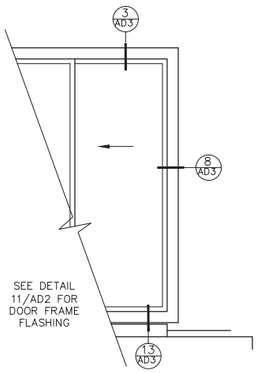
STRUCTURAL DESIGN:
VOELKER ENGINEERING
1911 116th Ave. NE
Bellevue, WA 98004
425-451-4946

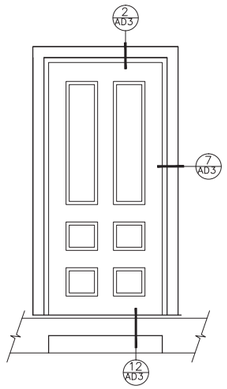
BUILDER/DESIGNER:
D.R. HORTON
4380 SW Macadam Ave, Suite 100
Portland, OR 97239
503-222-3719

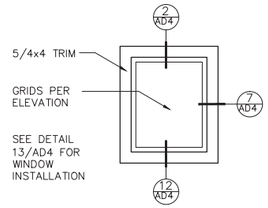
KELLOGG CREEK
FOUR-PLEX UPPER FLOOR PLAN

REL 6/04/15

4.0







DOORS AND WINDOWS

SCALE 1/2" = 1'–0"

1 NOT USED

4 NOT USED

BUILDING DETAILED DESIGN ELEMENTS PER 19.505.1.C.4:

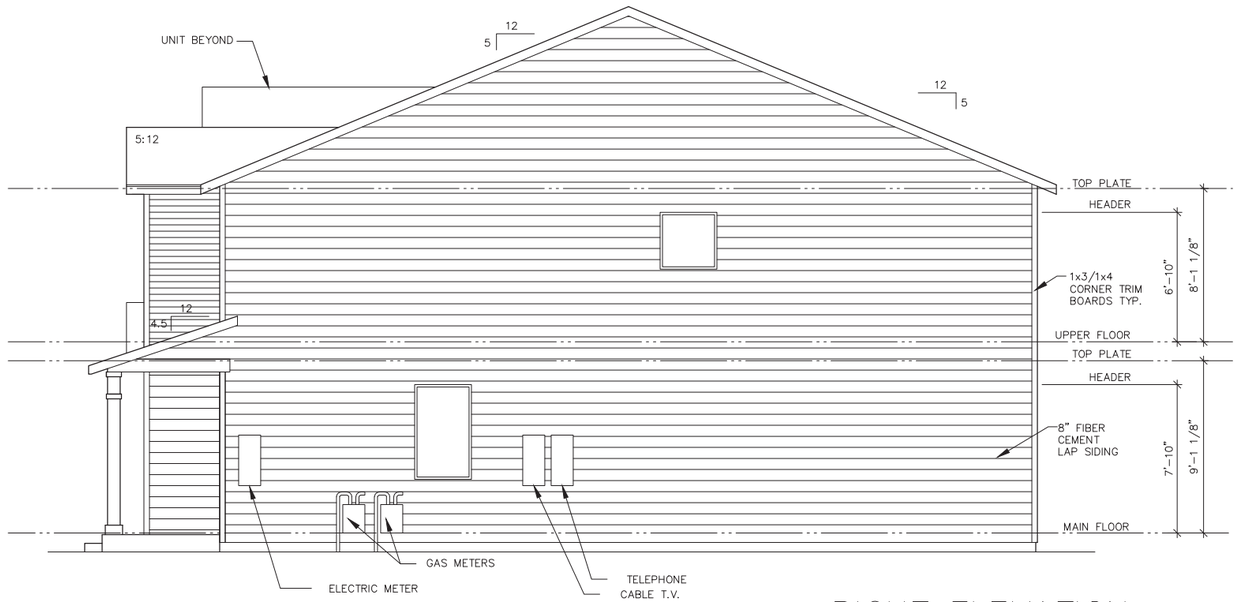
A. COVERED PORCH AT LEAST 5 FT DEEP, AS MEASURED HORIZONTALLY FROM THE FACE OF THE MAIN BUILDING FAÇADE TO THE EDGE OF THE DECK, AND AT LEAST 5 FT WIDE.

C. OFFSET ON THE BUILDING FACE OF AT LEAST 16 IN FROM 1 EXTERIOR WALL SURFACE TO THE OTHER.

F. ROOF LINE OFFSETS OF AT LEAST 2 FT FROM THE TOP SURFACE OF 1 ROOF TO THE TOP SURFACE OF THE OTHER.

H. HORIZONTAL LAP SIDING BETWEEN 3 TO 7 IN WIDE (THE VISIBLE PORTION ONCE INSTALLED). THE SIDING MATERIAL MAY BE WOOD, FIBER–CEMENT, OR VINYL.

K. WINDOW TRIM AROUND ALL WINDOWS AT LEAST 3 IN WIDE AND 5/8 IN DEEP.



RIGHT ELEVATION

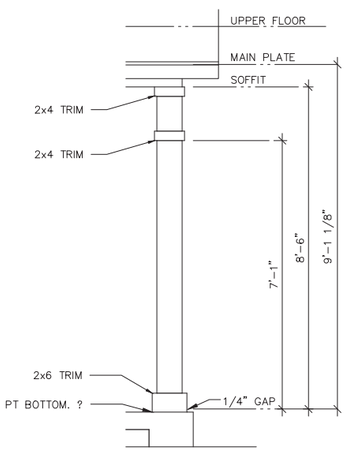
SCALE 1/4" = 1'–0"

FRONT ELEVATION GLAZING PERCENTAGE

WALL AREA	=	1,424 SF
GLAZING AREA	=	302 SF
GLAZING %	=	21.2 %

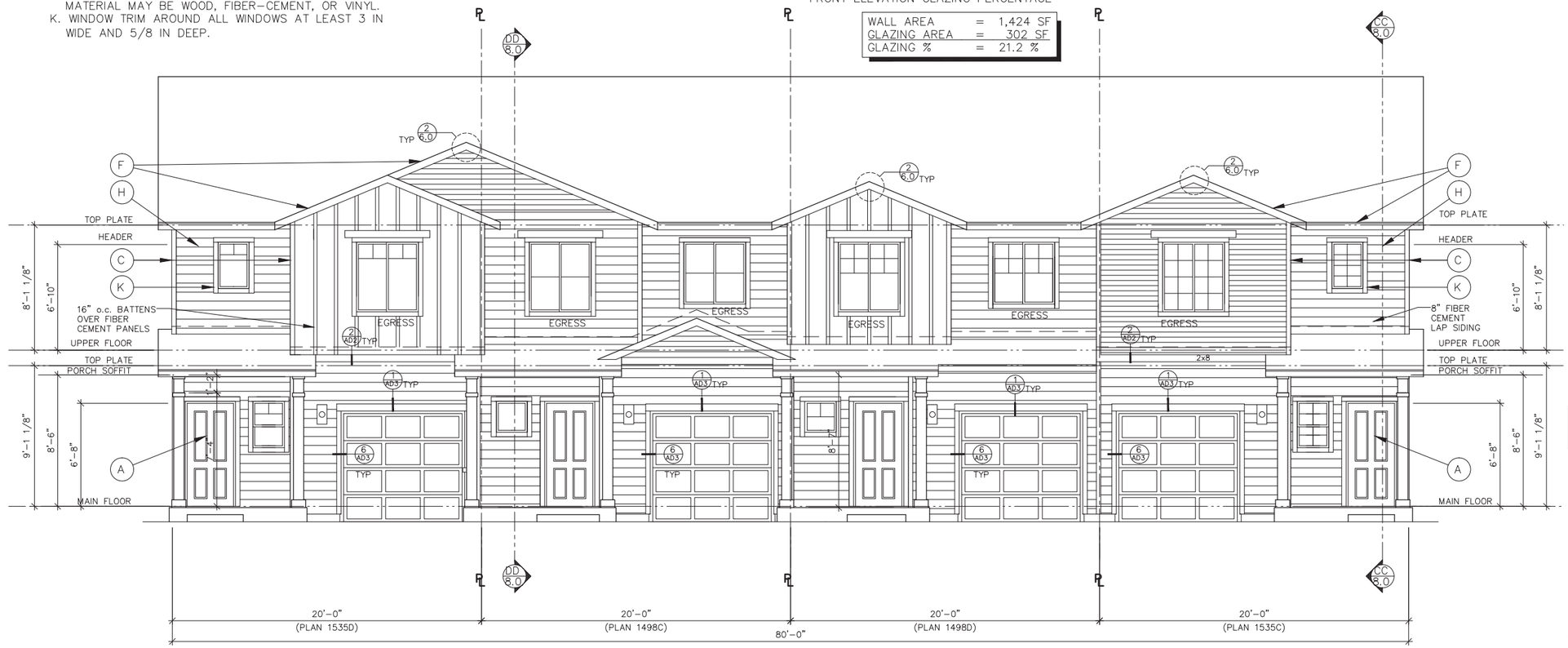
2 GABLE END TRIM

SCALE 3/4" = 1'–0"



3 PORCH COLUMN DETAIL

SCALE 1/2" = 1'–0"



NOTE:
SEE SHEETS AD0 THROUGH AD4 FOR WATER INTRUSION AND FLASHING DETAILS.

FRONT ELEVATION

SCALE 1/4" = 1'–0"

RS105

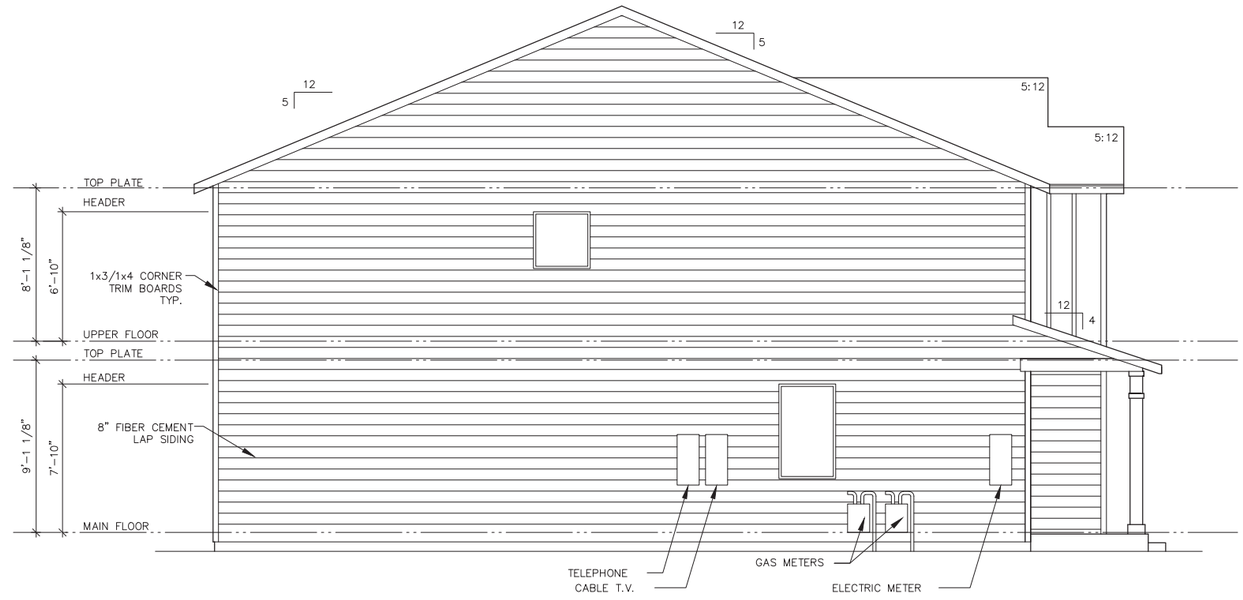
STRUCTURAL DESIGN:
VOELKER ENGINEERING
1911 116th Ave. NE
Bellevue, WA 98004
425–451–4946

BUILDER/DESIGNER:
D.R. HORTON
4380 SW Macadam Ave, Suite 100
Portland, OR 97239
503–222–3719

KELLOGG CREEK
FOUR–PLEX ELEVATIONS

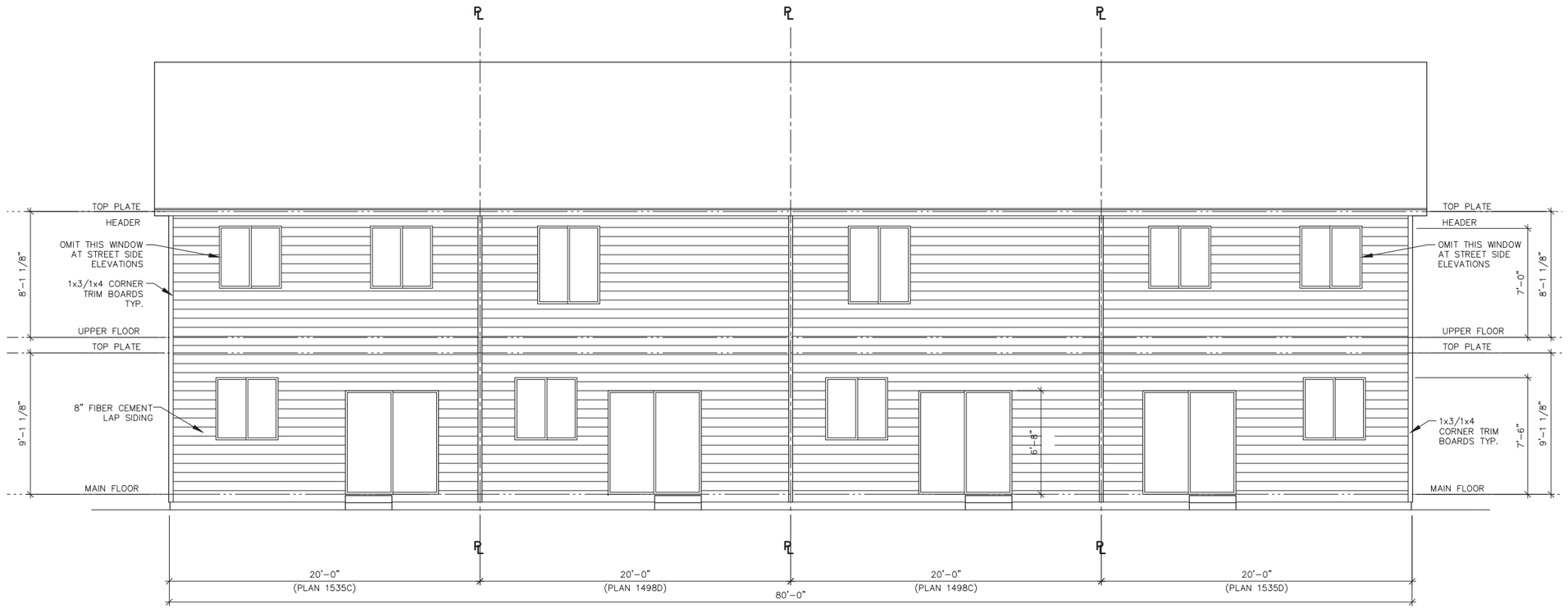
REL 2/22/16

6.0



LEFT ELEVATION

SCALE 1/4" = 1'-0"



REAR ELEVATION

SCALE 1/4" = 1'-0"

RS106

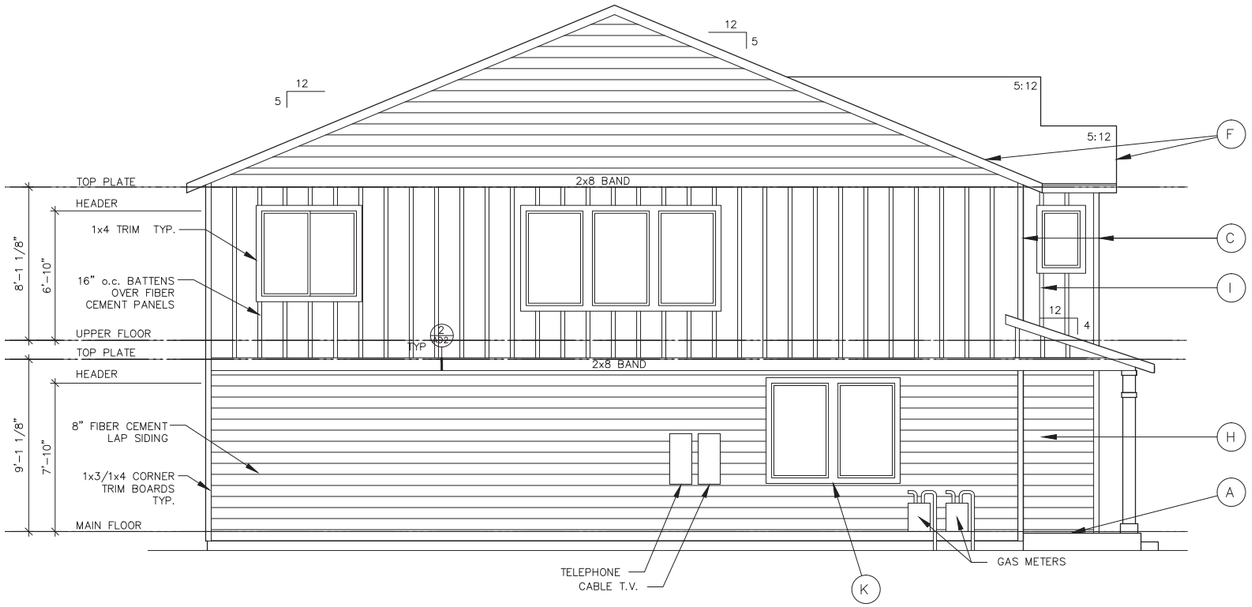
STRUCTURAL DESIGN:
VOELKER ENGINEERING
1911 116th Ave. NE
Bellevue, WA 98004
425-451-4946

BUILDER/DESIGNER:
D.R. HORTON
4380 SW Macadam Ave, Suite 100
Portland, OR 97239
503-222-3719

KELLOGG CREEK
FOUR-PLEX ELEVATIONS

REL 2/22/16

7.0



STREET SIDE LEFT ELEVATION

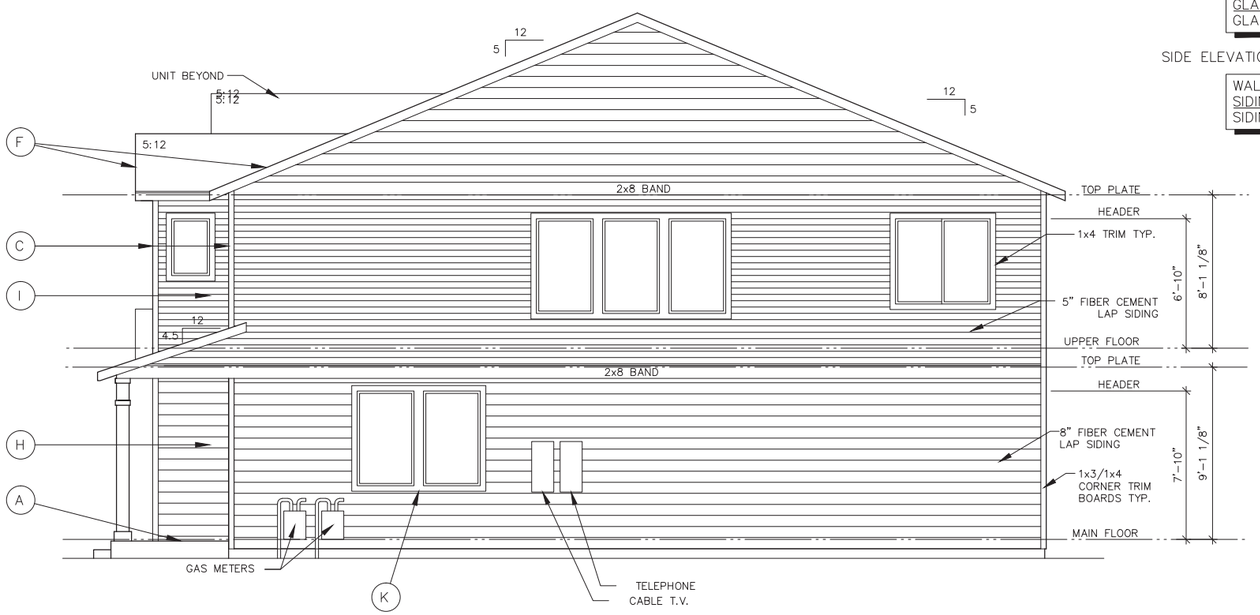
SCALE 1/4" = 1'-0"

SIDE ELEVATION GLAZING PERCENTAGE

WALL AREA	=	858 SF
GLAZING AREA	=	103.5 SF
GLAZING %	=	12.1 %

SIDE ELEVATION SIDING PERCENTAGE

WALL AREA	=	858 SF
SIDING AREA	=	425 SF
SIDING %	=	49.5 %



STREET SIDE RIGHT ELEVATION

SCALE 1/4" = 1'-0"

BUILDING DETAILED DESIGN ELEMENTS PER 19.505.1.C.4:

A. COVERED PORCH AT LEAST 5 FT DEEP, AS MEASURED HORIZONTALLY FROM THE FACE OF THE MAIN BUILDING FAÇADE TO THE EDGE OF THE DECK, AND AT LEAST 5 FT WIDE.
C. OFFSET ON THE BUILDING FACE OF AT LEAST 16 IN FROM 1 EXTERIOR WALL SURFACE TO THE OTHER.
F. ROOF LINE OFFSETS OF AT LEAST 2 FT FROM THE TOP SURFACE OF 1 ROOF TO THE TOP SURFACE OF THE OTHER.
H. HORIZONTAL LAP SIDING BETWEEN 3 TO 7 IN WIDE (THE VISIBLE PORTION ONCE INSTALLED). THE SIDING MATERIAL MAY BE WOOD, FIBER-CEMENT, OR VINYL.
I. BRICK, CEDAR SHINGLES, STUCCO, OR OTHER SIMILAR DECORATIVE MATERIALS COVERING AT LEAST 40% OF THE STREET-FACING FAÇADE.
K. WINDOW TRIM AROUND ALL WINDOWS AT LEAST 3 IN WIDE AND 5/8 IN DEEP.

RS107

STRUCTURAL DESIGN:
VOELKER ENGINEERING
1911 116th Ave. NE
Bellevue, WA 98004
425-451-4946

BUILDER/DESIGNER:
D.R. HORTON
4380 SW Macadam Ave, Suite 100
Portland, OR 97239
503-222-3719

KELLOGG CREEK
FOUR-PLEX STREET SIDE ELEVATIONS

REL 3/16/16

7.1

EXHIBIT C
Conditions of Approval
Master File #PD-2017-001
Kellogg Creek Planned Development

Conditions

1. The applicant shall submit a final plat application within 6 months of the preliminary plat approval in accordance with MMC Section 17.24.040. The applicant shall obtain approval of the final plat prior to the expiration of this preliminary plat approval. If the applicant chooses to phase the final plat approval, a revised stormwater report shall be provided with the submittal for each phase. A payment and performance bond for 100% of the cost of the required public improvements shall be provided with the submittal materials.
2. The applicant's final plat application shall include the items listed on the City of Milwaukie Final Plat Checklist. The following specific items and changes are required as part of the application:
    a. Provide a written narrative describing all changes made to the final plat that are not related to these conditions of approval.
    b. Provide a final plat that substantially conforms to the revised plans approved by this action, which are the plans stamped received by the City on July 11, 2017; and modified by the updated floodplain mitigation exhibit received on July 17, 2017; except as otherwise modified by these conditions of approval.

        Note that plans for the open space tract (Tract E), particularly the location of the soft-surface trail system and the nature and location of any fencing between the tract and a public street, are understood to be conceptual and that specific details shall be determined prior to final plat approval. The final details shall be approved by the Planning Director after review by North Clackamas Parks & Recreation Department (NCPRD) staff. Plans for the community garden are also understood to be conceptual, with details to be finalized prior to final plat approval, with ongoing maintenance provided by the HOA.
    c. The modifications required by these conditions of approval include the following revisions to all relevant plan sheets:
        (1) As per Finding 14-c, extend the northbound right-turn lane at the Rusk Road/Highway 224 intersection sufficient to meet applicable ODOT standards.
        (2) As per Finding 12-a, provide sufficient detail to demonstrate that the pedestrian connections on Tracts H and I are at least 5 ft wide; that the pedestrian/bicycle path in the northeast corner of Tract E is at least 10 ft wide; and that all of these pathways are constructed of hard surface materials that are permeable for stormwater and meet all other applicable design standards of MMC Subsection 19.504.9.E, including the requirement for lighting to a minimum level of 0.5 footcandles.
        (3) As per Finding 11-f(2), revise the mitigation planting plan to ensure that all mitigation plantings are species found on the Milwaukie Native Plants List.
        (4) As per Finding 11-f(2), re-evaluate the assessment of WQR classification at the various sample points noted in the applicant's technical report. Revise the configuration of Mitigation Area A accordingly.
    d. The final plat submittal shall include a complete set of revised plans. The revised plans shall be consistent with one another, accurate with respect to the proposed development details, drawn to scale, and providing a legend that clearly identifies all

detailed features. The final plat shall include spaces for signatures by the Milwaukie Planning Director and Milwaukie Engineering Directoras well as a note indicating that the subdivision is subject to the requirements of City of Milwaukie Land Use Application master file PD-2017-001.

e. Provide a public access easement for the pedestrian connections on Tracts H and I, including across Alley C.

f. Provide Convenants, Conditions, and Restrictions (CC&Rs) for the Home Owners' Association (HOA) that will be established for the proposed development. Details shall address maintenance of the publicly accessible pedestrian and bicycle connections on the various tracts as well as of common areas such as the community garden.

g. As per Finding 11-f(2), establish a two-year maintenance plan for the open space tract (Tract E). The maintenance plan shall be coordinated with NCPRD; approved by the Planning Director; and shall address such topics as survival of mitigation plantings, tree health, public access, trail maintenance, litter management, weed control, fencing, and similar issues.

h. Provide design details for the new retaining walls adjacent to the open space tract, including wall texture and adjacent landscaping that screens the walls (beyond the mitigation plantings required for natural resource disturbance).

3. Prior to approval of the Final Plat, the following items shall be resolved:

a. As proposed, dedicate the open space tract (Tract E) to the City.

b. Install all required mitigation plantings in the open space tract (Tract E) as per the approved mitigation plan. EAs per Finding 11-f(2), existing plantings from previous restoration efforts within the open space tract shall be preserved where possible.

The applicant shall provide a bond sufficient to cover the costs of ensuring the survival of mitigation plantings, including watering, weed control, and plant replacement due to mortality. This mitigation maintenance bond shall be held by the City until the end of the required monitoring period, which is two years after the initial mitigation plantings are completed.

c. Submit a letter from the project landscape designer attesting that all required site plantings have been completed in conformance with the approved site plans and with City standards, including all mitigation plantings. This includes removal of all invasive or nuisance species vegetation (as identified on the Milwaukie Native Plant List), noxious materials, and man-made debris such as concrete rubble from within all WQR and HCA locations on the site, on the north and south sides of the creek, as per Finding 11.

d. As per Finding 11-f(2), demarcate the boundary of the delineated wetland within the open space tract, using permanent signage and/or split-rail fencing.

e. As per Finding 11-f(2), provide at least two pet-waste bag dispensing devices dispersed along the soft-surface trail system.

f. Submit a final stormwater management plan to the City of Milwaukie Engineering Department for review and approval. The plan shall be prepared in accordance with Section 2 – Stormwater Design Standards of the City of Milwaukie Public Works Standards. Submit full-engineered plans for construction of all required public improvements, reviewed and approved by the City of Milwaukie Engineering Department. All utilities shall conform to the Milwaukie Public Works Standards.

g. Obtain a City right-of-way permit for construction of all required public improvements listed in these recommended conditions of approval for the public right(s)-of-way under City of Milwaukie jurisdiction.

h. Pay an inspection fee equal to 5.5% of the cost of the public improvements.

i. Provide a payment and performance bond for 100% of the cost of the required public improvements.

j. Provide an erosion control plan and obtain an erosion control permit.

k. Dedicate 14 ft of right-of-way on Kellogg Creek Drive fronting the subject property to accommodate the required parking and bike facilities.

l. Install all underground utilities, including stubs for utility service prior to surfacing any streets. Utilities shall be designed to minimize or eliminate infiltration of floodwaters into the system. New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of floodwaters into the system and discharge from the systems into floodwaters. Relocate or provide a private utility easement for all utilities encroaching onto adjacent properties.

m. Construct a 5-ft set-back sidewalk, 4-ft planter strip, curb and gutter, 7-ft parking strip, and 10-ft travel lane for each half of right-of-way on Street A and Street B.

n. Construct all ADA ramps and driveways on Street A and Street B.

o. Extend the right-turn lane for northbound traffic at the Rusk Road/Highway 224 intersection in accordance with the applicable ODOT standards.

p. Construct a driveway approach to meet all guidelines of the Americans with Disabilities Act (ADA) to each new lot that takes direct access from a public street. The driveway approach aprons shall be between 9 ft and 20 ft in width and least 7.5 ft from the side property line.

q. Clear vision areas shall be maintained at all driveways and accessways and on the corners of all property adjacent to an intersection. Remove all signs, structures, or vegetation more than 3 ft in height located in “vision clearance areas” at intersections of streets, driveways, and alleys fronting the proposed development.

r. Provide a 12-month Maintenance Bond upon completion of the construction.

s. Provide a final approved set of Mylar and electronic PDF “As Constructed” drawings to the City of Milwaukie prior to final inspection.

t. Construct and receive County Engineering inspection for all required public improvements in the public right(s)-of-way under Clackamas County jurisdiction. All frontage improvements in or adjacent to Clackamas County right-of-way shall be designed and constructed in accordance with *Clackamas County Roadway Standards*.

Prior to commencement of site work the applicant shall obtain a Development Permit from the Clackamas County Engineering Division for design and construction of required improvements to Kellogg Creek Drive. To obtain the Permit, the applicant shall submit plans prepared and stamped by an Engineer registered in the State of Oregon, provide a Performance Guarantee, and pay an Inspection Fee. The Performance Guarantee is 125% of the approved Engineer’s cost estimate for the required improvements.

Prior to commencement of utility work within the Kellogg Creek Drive or Rusk Road rights-of-way, a Utility Placement Permit shall be obtained from the Clackamas County Engineering Division.

Required improvements to Kellogg Creek Drive include the following:

(1) A minimum 16-ft-wide one-half street improvement for a local roadway. The applicant shall widen Kellogg Creek Drive so that the minimum total road width along the site frontage is 32 ft. The structural section for Kellogg Creek Drive improvements shall consist of 4 in of asphalt concrete, per *Clackamas County Roadway Standards Standard* Drawing C100.

(2) Standard curb, or curb and gutter if curbline slope is less than 1%.

(3) Adjacent to the curb, a 5-ft landscape strip, including street trees, shall be constructed along the entire site frontage.

(4) Except where modified by the City Engineering Director, a minimum 5-ft-wide unobstructed sidewalk shall be constructed along the entire site frontage, per Standard Drawing S960. Where the sidewalk does not connect to sidewalk on adjacent property, the end of the sidewalk shall include a concrete ADA accessible ramp, providing a transition from the new sidewalk to the edge of the pavement. The applicant shall conduct an exploratory excavation using an airspade, hydrovac, or similar tool where improvements will be adjacent to existing white oak trees. The applicant's arborist shall determine whether the improvements will affect any roots critical to the health or stability of the oak trees and shall prescribe additional treatment methods as needed to minimize the possibility of tree failure, as preservation of the trees was noted as a priority in Finding 7-a-2(c).

(5) Inbound and outbound tapers shall be provided per Section 250.6.4 of the *Clackamas County Roadway Standards*. The full road improvement shall extend to the westerly project property line, with the outbound taper beginning at that point.

(6) Dual curb ramps shall be constructed at proposed intersections with Kellogg Creek Drive, per Standard Drawing S910. A perpendicular curb ramp shall be constructed at the westerly project boundary, per Standard Drawing S940. Crosswalk striping shall be modified as necessary based on required road widening. The designer shall complete the County ADA Assessment Checklist and provide a copy with the improvement plans. The County has adopted the following curb ramp design and construction standards:

Feature	Design Standard	Construction Standard
Ramp Slope	7.5%	8.33%
Ramp Cross Slope	1.5%	2.0%
Landing (turning space) Cross Slope	1.5%	2.0%

(7) Drainage facilities shall be in conformance with Water Environment Services regulations and *Clackamas County Roadway Standards*, Chapter 4. Stormwater detention facilities shall not be located within the public right-of-way.

(8) The applicant shall grant an 8-ft-wide public utility easement adjacent to the public right-of-way along the entire site frontage of Kellogg Creek Drive.

u. Record all required easements and/or deed restrictions with the Clackamas County Recorder's office and provide a copy of each to the City Planning Department.

4. Prior to issuance of any building permit, the following shall be resolved:

   a. Obtain approval of the necessary FEMA map revision for those lots that are currently in the floodplain.

5. Prior to final inspection of any building permit, the following shall be resolved:

   a. Provide a narrative describing all actions taken to comply with these conditions of approval. In addition, describe any changes made after the issuance of this land use decision that are not related to these conditions of approval.

   b. Connect all residential roof drains to a private drywell or other approved structure. Private properties may only connect to public storm system if percolation tests show that infiltration cannot be obtained on site or if the water table is too shallow. In the event the storm management system contains underground injection control devices, submit proof of acceptance of the storm system design from the Department of Environmental Quality.

   c. As per Finding 7-a(2), construct fencing with no gates along the boundaries of those lots adjacent to the open space tract (Tract E). For Lots 33-44 and 69-79, the fencing shall be no more than 25% sight-obscuring, to allow for visual permeability.

6. Ongoing conditions of approval include the following:

   a. As per Finding 7-a-2, fencing in yards adjacent to the open space tract (Tract E) specifically identified in Condition 5-c shall remain free of sight-obscuring materials, to allow visibility into the adjacent open space.

   b. As per Finding 11-e, where practicable, lights on lots adjacent to WQR and HCA areas shall be placed so that they do not shine directly into any WQR and/or HCA location.

Additional Requirements

The following items are not conditions of approval necessary to meet applicable land use review criteria. They relate to other development standards and permitting requirements contained in the Milwaukie Municipal Code (MMC) and Public Works Standards that are required at various points in the development and permitting process.

1. Prior to commencement of any earth-disturbing activities, the applicant shall obtain an erosion control permit.

2. Limitations on Development Activity

   Development activity on the site shall be limited to 7:00 a.m. to 10:00 p.m. Monday through Friday and 8:00 a.m. to 5:00 p.m. Saturday and Sunday, as per MMC Subsection 8.08.070(I).

3. Final Development Plan and Program

   As per the requirements of MMC Subsections 19.311.12 through 19.311.15, no excavation, grading, construction, improvement, or building shall begin, and no permits therefor shall be issued, until the following items must be addressed regarding the final development plan and program:

   a. Prior to the effective date of the ordinance adopting the final development plan and program and accompanying change to the zoning map, file with the City Recorder's

office a final development plan and program that includes any modifications that were part of the final plan approved by City Council.

b. The City shall prepare a notice to acknowledge that the final development plan and program approved by City Council constitutes zoning for the subject property. The notice shall contain a legal description of the property and reference to the certified copy of the final development plan and program filed in the office of the City Recorder. The applicant shall record a copy of this acknowledgment notice in the County Recorder's office.

c. An application for approval of variations to the recorded final plan and program may be submitted in writing. Such variations may be approved by the City staff provided they do not alter dwelling unit densities, alter dwelling unit type ratios, increase or change the type or location of commercial or residential structures, change the boundaries of the planned development, or change the location and area of public open spaces and recreational areas.

4. Landscaping Maintenance

As per MMC Subsection 19.402.11.B.9, a minimum of 80% of all required mitigation plantings for WQR or HCA disturbance shall remain alive on the second anniversary of the date the planting is completed.

5. Requirements from Clackamas Fire District #1 (CFD#1)

a. A Fire Access and Water Supply plan is required for subdivisions. The plan shall show fire apparatus access, fire lanes, fire hydrants, fire lines, available fire flow, FDC location (if applicable), building square footage, and type of construction. The applicant shall provide fire flow tests per NFPA 291, and shall be no older than 12 months. Work to be completed by experienced and responsible persons and coordinated with the local water authority.

b. Access

(1) Provide address numbering that is clearly visible from the street.

(2) The inside turning radius and outside turning radius for a 20-ft-wide road shall not be less than 28 ft and 48 ft respectively, measured from the same center point.

(3) Provide an approved turnaround for dead end access roads exceeding 150 ft in length.

(4) Fire Department turnarounds shall meet the dimensions found in the fire code applications guide.

c. Water Supply

(1) Fire Hydrants, One and Two-Family Dwellings & Accessory Structures: Where a portion of a structure is more than 600 ft from a hydrant on a fire apparatus access road, as measured in an approved route around the exterior of the structure(s), additional fire hydrants and mains shall be provided.

(2) Prior to the start of combustible construction required fire hydrants shall be operational and accessible.

(3) For one and two family dwellings located in areas with reliable municipal fire fighting water supply the following shall apply:

<3,600 sq ft (including attached garage)

(a) 1,000 gpm @ 20 psi with hydrant within 600 ft of furthest portion of new residential construction, (OFC Section B105.2)

>3,600 sq ft (including attached garage)

(a) Shall meet fire flow requirements specified in Appendix B of the current Oregon Fire Code, (OFC, Table B105.1)

(b) Shall meet hydrant coverage as specified in Appendix C of the current Oregon Fire Code, (OFC, Table C105.1)

6. Expiration of Approval

a. As per MMC Subsection 19.311.16, if substantial construction or development in compliance with the approved final development plan and program has not occurred within 6 months of its effective date, the Planning Commission may initiate a review of the PD Zone and hold a public hearing to determine whether its continuation (in whole or in part) is in the public interest. Notification and hearing shall be in accordance with MMC Section 19.1007 Type IV Review. If found not to be, the Planning Commission shall recommend to the City Council that the PD Zone be removed by appropriate amendment to the Zoning Ordinance and the property changed back to original zoning.

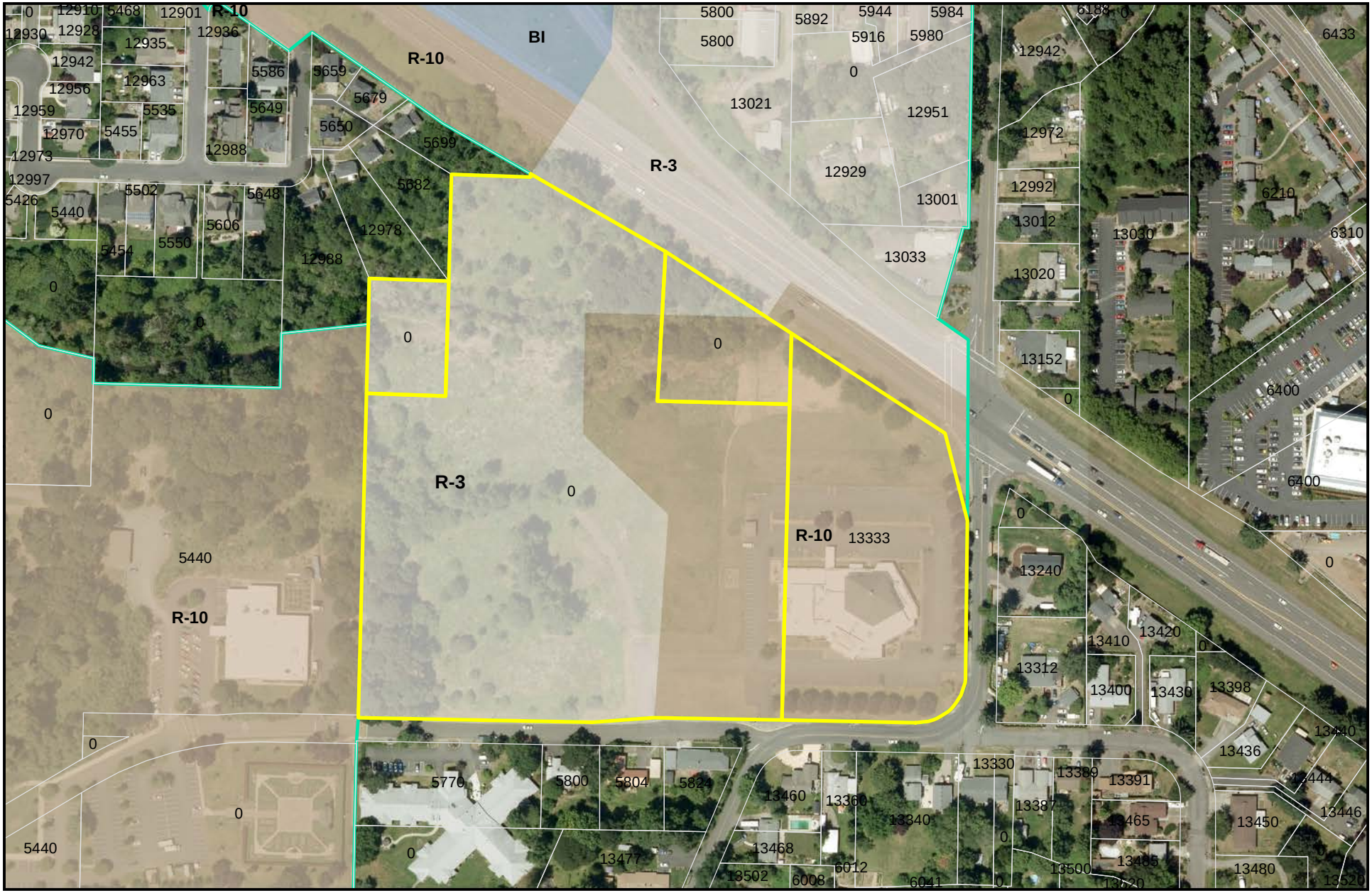
b. Beyond the limitations of MMC 19.311.6, proposals requiring any kind of development permit must complete both of the following steps, as per MMC Subsection 19.1001.7.E.1.a:

(1) Obtain and pay for all necessary development permits and start construction within two (2) years of land use approval.

(2) Pass final inspection and/or obtain a certificate of occupancy within four (4) years of land use approval.

Exhibit D

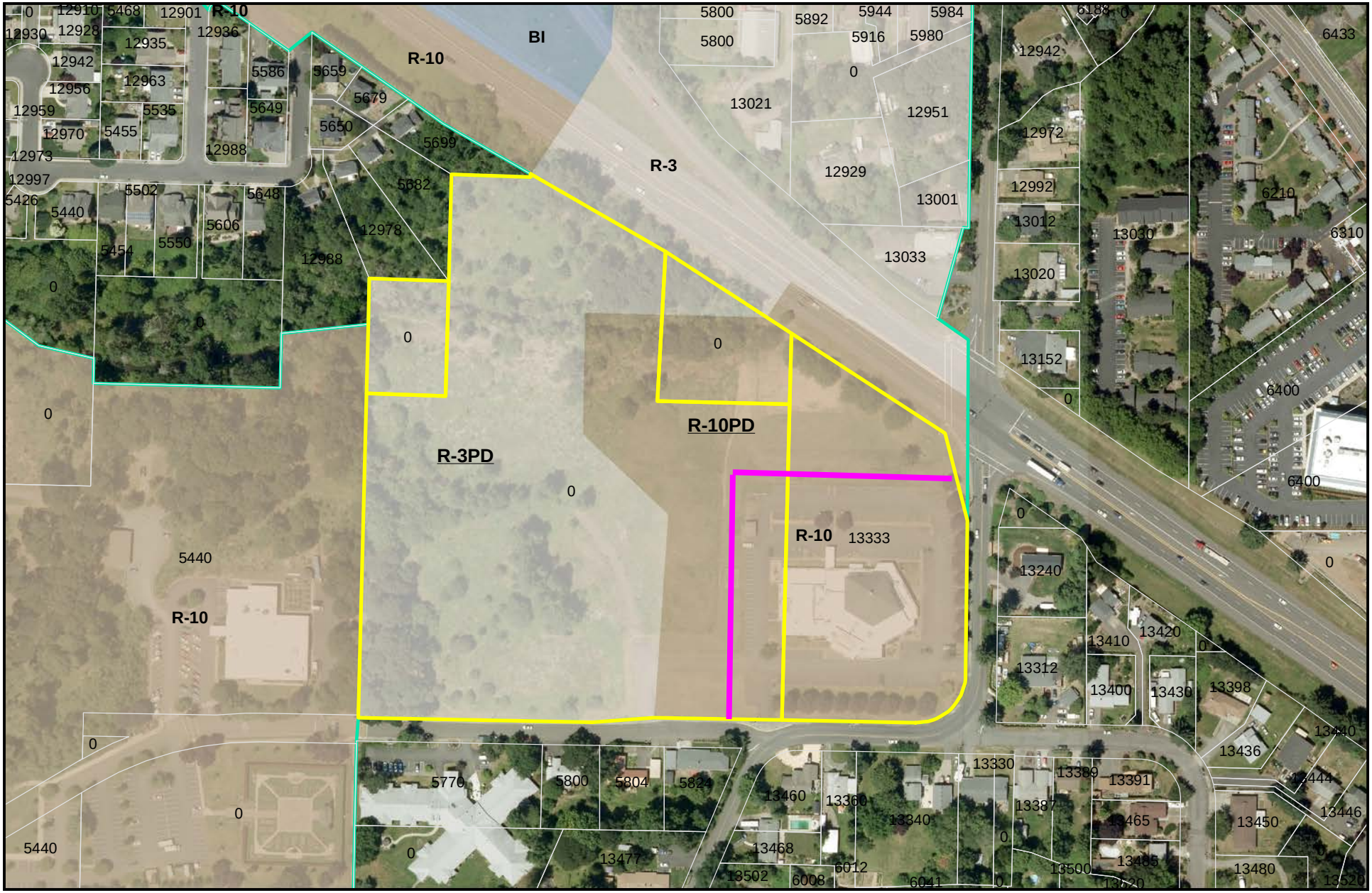
Existing Zoning



MILWAUKIE, OREGON FOUNDED 1847	**Site Map**	Milwaukie Planning Dept. Data: City of Milwaukie GIS; Metro RLIS Date: 4/19/2017 Author: Planning Staff	1 inch = 237 feet 0 45 90 180 270 360 Feet	The information depicted on this map is for general reference only. The City of Milwaukie does not accept any responsibility for errors, omissions or positional accuracy. There are no warranties, expressed or implied, including the warranty of merchantability or fitness for a particular purpose, accompanying this product.

RS115

Proposed Zoning



	Site Map	Milwaukie Planning Dept. Data: City of Milwaukie GIS; Metro RLIS Date: 4/19/2017 Author: Planning Staff	1 inch = 237 feet 0 45 90 180 270 360 Feet	The information depicted on this map is for general reference only. The City of Milwaukie does not accept any responsibility for errors, omissions or positional accuracy. There are no warranties, expressed or implied, including the warranty of merchantability or fitness for a particular purpose, accompanying this product.

RS116

ATTACHMENT 2

Milwaukie City Council
Final Decision and Order

Master File #PD-2017-001
Kellogg Creek Subdivision

1. Overview

Brownstone Development, Inc. (Applicant) filed its Planned Development application package in February 2017 and it was deemed complete on April 17, 2017. The submittal (master land use file #PD-2017-001) included applications for Planned Development, Zoning Map Amendment, Subdivision (preliminary plat), Natural Resource Review, Transportation Facilities Review, Variance Request, and minor modification to a Community Service Use.

The following provisions of the Milwaukie Municipal Code (MMC) apply:

- MMC Section 19.1007 Type IV Review
- MMC Section 19.311 Planned Development Zone (PD)
- MMC Section 19.301 Low Density Residential Zones (including R-10)
- MMC Section 19.302 Medium and High Density Residential Zones (including R-3)
- MMC Section 19.902 Amendments to Maps and Ordinances
- MMC Title 17 Land Division
- MMC Title 18 Flood Hazard Regulations
- MMC Section 19.402 Natural Resources
- MMC Chapter 19.500 Supplementary Development Regulations
- MMC Chapter 19.600 Off-Street Parking and Loading
- MMC Chapter 19.700 Public Facility Improvements
- MMC Section 19.904 Community Service Uses
- MMC Section 19.911 Variances
- MMC Chapter 19.1200 Solar Access Protection

Public hearings were conducted pursuant to the provisions of MMC Section 19.1007 Type IV Review. The Milwaukie Planning Commission (Commission) opened a public hearing on May 23, 2017; where it was continued to May 25; continued again to June 27 (where it was only nominally re-opened); and continued again to July 25, 2017, when the Commission approved a recommendation for approval by the City Council.

The Milwaukie City Council (Council) opened a public hearing on September 5, 2017. The hearing commenced with a staff report presented by Brett Kelver, Associate Planner. The Council heard a presentation by the applicant team and took public testimony.

After deliberations, a motion was made by Councilor _____ and seconded by Councilor _____ to approve the applications and adopt the Findings and Conditions prepared by City staff. The motion passed with ___ votes in favor and ___ votes opposed.

2. The Record

The record was finalized at the September 5, 2017, Council hearing. The record includes the entire file from master file #PD-2017-001.

3. Findings and Conditions

The Council adopts the findings and conditions of approval included with the September 5, 2017, staff report for master file #PD-2017-001.

4. Order

The Council adopted Ordinance ____ to approve the Final Development Plan and Program for the Planned Development and accompanying Zoning Map Amendment.

The Council concludes that the Subdivision (preliminary plat), Natural Resource Review, Transportation Facilities Review, Variance Request, and minor modification to a Community Service Use components of master file #PD-2017-001 are approved based on the Record and Findings and Conditions noted above.

_____ _____

Mark Gamba, Mayor Date

Milwaukie City Council

Appeals of Type IV decisions are handled by the Oregon Land Use Board of Appeals (LUBA) at: 550 Capitol Street NE, Suite 235, Salem, Oregon 97301-2552, 503-373-1265, http://luba.state.or.us. They can provide information regarding the timeline for filing an appeal and the proper forms and procedures.

Only persons who submitted comments or made an appearance of record at a public hearing on this application have standing to appeal the decision by filing a written appeal.

This decision is effective upon the signing of this Final Order.

ATTACHMENT 3-a
Recommended Findings in Support of Approval
Master File #PD-2017-001
Kellogg Creek Planned Development

Sections of the Milwaukie Municipal Code not addressed in these findings are found to be inapplicable to the decision on this application.

1. The applicant, Brownstone Development, Inc., has applied for approval to create a 92-unit Planned Development subdivision on property currently addressed at 13333 SE Rusk Rd. The site is split zoned Medium Density Residential R-3 on the western half and Low Density Residential R-10 on the eastern half. The land use application master file number is PD-2017-001, with accompanying file numbers ZA-2017-001, S-2017-001, NR-2017-001, TFR-2017-001, VR-2017-003, and CSU-2017-001.

2. The subject property is comprised of a single lot that is the result of a recent lot consolidation and property line adjustment process (land use files PLA-2017-001 andLC-2017-001). Previously, the subject property was comprised of four lots totaling 17.55 acres, with the Turning Point Church located in the southeastern corner of the site and addressed as 13333 SE Rusk Rd. Three of the lots on the western side of the original property were consolidated, and the property line between this new lot and the remaining church lot was subsequently adjusted to accurately reflect the location of the church building and accompanying off-street parking areas. The resulting church site is approximately 3.7 acres, and the subject property being subdivided is approximately 13.8 acres.

3. The applicant has proposed to divide the subject property into 92 lots for 4-unit rowhouse development, with tracts for stormwater (3 facilities), open space (nearly 7 acres), a community garden, and a pedestrian connection to Kellogg Creek Drive along the eastern edge of the development. A network of new public streets will provide access to the new development, with two points of vehicle access to Kellogg Creek Drive and pedestrian and bicycle access to an existing sidewalk at the intersection of Rusk Road and Highway 224. Private alleys will provide additional access to the rear of some of the proposed rowhouses. Previously, the church site depended on an access through the subject property; access to the church site will be retained through one of the new public streets. The proposal includes a variance request for locating the driveway access for one of the proposed lots slightly closer to a street intersection than the City code allows.

4. Mount Scott Creek flows across the northern portion of the subject property, and a large wetland (approximately 0.7 acres) is located within the 100-year floodplain designated over most of the western half of the site. Water Quality Resource (WQR) and Habitat Conservation Area (HCA) designations exist around the creek and wetland, and portions of these natural resource areas will be disturbed by the proposed development. The applicant has proposed mitigation plantings within the WQR and HCA and to balance cut and fill within the floodplain. The proposal includes a variance request for configuring several of the new lots in such a way that there is little or no buildable area outside the WQR or HCA.

5. The proposal is subject to the following provisions of the Milwaukie Municipal Code (MMC):
   - MMC Section 19.1007 Type IV Review
   - MMC Section 19.311 Planned Development Zone (PD)
   - MMC Section 19.301 Low Density Residential Zones (including R-10)
   - MMC Section 19.302 Medium and High Density Residential Zones (including R-3)

- MMC Section 19.902 Amendments to Maps and Ordinances
- MMC Title 17 Land Division
- MMC Title 18 Flood Hazard Regulations
- MMC Section 19.402 Natural Resources
- MMC Chapter 19.500 Supplementary Development Regulations
- MMC Chapter 19.600 Off-Street Parking and Loading
- MMC Chapter 19.700 Public Facility Improvements
- MMC Section 19.904 Community Service Uses
- MMC Section 19.911 Variances
- MMC Chapter 19.1200 Solar Access Protection

6. The application submittal includes a proposed Planned Development, Zoning Map Amendment, Subdivision (preliminary plat), Natural Resource Review, Transportation Facilities Review, Variance Request, and minor modification to the church as an existing Community Service Use. Of all of the application components, the Planned Development and Zoning Map Amendment require the highest level of review (Type IV); as per MMC Subsection 19.1001.6.B, all are being processed with Type IV review.

   The application has been processed and public notice provided in accordance with MMC Section 19.1007 Type IV Review. As required by MMC Subsection 19.1002.2, a preapplication conference was held on August 11, 2016. Public notice was sent to property owners and current residents within 500 ft of the subject property. MMC Subsection 19.1007.3.D requires a 400-ft radius for public notice, but the applicant requested a broader notice radius to correspond with the notice sent for the applicant's voluntary neighborhood meeting prior to submittal. As required by law, a public hearing with the Planning Commission was opened on May 23, 2017; continued to May 25; continued again to June 27 (where it was only nominally re-opened); and continued again to July 25, 2017. The Planning Commission hearing resulted in a recommendation for final decision by the City Council. A public hearing with the City Council was held on September 5, 2017, as required by law.

   These findings are worded to reflect the City Council's role as final decision-maker; they represent the Planning Commission's recommendation to the City Council.

7. MMC Chapter 19.300 Base Zones

   As a Planned Development, the proposed subdivision is subject to the requirements for Planned Developments as established in MMC Section 19.311. The Planned Development (PD) zone is a superimposed zone applied in combination with regular existing zones. The subject property is split-zoned R-10 and R-3, so the underlying zone requirements of MMC Sections 19.301 and 19.302, respectively, are relevant and must be addressed as well.

   a. MMC Section 19.311 Planned Development Zone (PD)

      The purpose of a PD zone is to provide a more desirable environment than is possible through the strict application of Zoning Ordinance requirements, encouraging greater flexibility of design and providing a more desirable use of public and private common open space. PD zones can promote variety in the physical development pattern of the city and encourage a mix of housing types.

      (1) MMC Subsection 19.311.2 Use

The City Council approves the final development plan of a PD zone, in consideration of the proposal's conformance to the following standards:

(a) Conformance to the City's Comprehensive Plan

As addressed in more detail in Finding 8, the proposed Planned Development conforms to the City's Comprehensive Plan and is consistent with the relevant policies and goals.

(b) Formation of a compatible and harmonious group

As proposed, the development will provide 92 single-family attached units in the form of 23 four-unit rowhouses. Approximately half of the units will be alley-loaded, with driveways and garages located in the rear; the other half will be front-loaded, with driveways and garages accessing the streets. Although the two types of structures will have different front facades, according to the applicant's submittal materials, the size, orientation, architecture, color palette, and articulating features will be similar and will lend a sense of group compatibility.

(c) Suitability to the capacity of existing and proposed community utilities and facilities

The existing public utilities and facilities in the vicinity of the subject property are all of sufficient size and capacity to support the proposed development. As required, the new streets and utilities provided within the proposed development itself will be suitable to serve it.

(d) Cohesive design and consistency with the protection of public health, safety, and welfare in general

The proposed street network, comprised of public streets, a public alley, and pedestrian and bicycle paths, is cohesively designed and meets the various applicable City standards for spacing and sight-distance. Frontage improvements on the new public streets and along the subject property's frontage on Kellogg Creek Drive, including sidewalks, landscaping, and streetlights will meet applicable City standards. A soft-surface trail system through a portion of the open space area will offer recreational opportunities while limiting impacts to natural areas.

(e) Affordance of reasonable protection to the permissible uses of properties surrounding the site

No commercial or other nonresidential uses are proposed as part of the development. Surrounding properties are zoned for low-density residential uses, and the proposed development will not limit any future development or redevelopment of those properties. Access to the adjacent church site will be modified to allow a safe connection to Kellogg Creek Drive through the new street system of the proposed development. Future redevelopment of the church site may require further modifications to its access, but the proposed development does not preclude such redevelopment. The northern portion of the site, which is adjacent to the rear of several residential lots on Kayla Court, will not be accessible across Mount Scott Creek and will not present any new impacts as a result of the proposed development.

(2) MMC Subsection 19.311.3 Development Standards

MMC 19.311.3 establishes that the various applicable standards and requirements of MMC Title 19, including those of the underlying zone(s), are applicable in a PD zone, unless the Planning Commission grants a variance from said standards in its approval of the PD or the accompanying subdivision plat. The City Attorney has concurred with the conclusion of City staff that a formal variance request is not required for adjustments related to the flexibility inherent in the stated purpose of the PD zone to encourage greater flexibility of design and provide a more efficient and desirable use of common open space, with an allowance for some increase in density as a reward for outstanding design (e.g., housing type, lot size, lot dimension, setbacks, and similar standards).

(a) Minimum Size of a PD Zone

MMC Subsection 19.311.3.A requires a minimum of 2 contiguous acres of land for a Planned Development.

The subject property is approximately 13.8 acres in size and provides an adequate area for development.

(b) Special Improvements

MMC Subsection 19.311.3.B establishes the City's authority to require the developer to provide special or oversize sewer lines, water lines, roads and streets, or other service facilities.

The City's Engineering Department has determined that no special or oversize facilities are required to ensure that the proposed development provides adequate public facilities.

(c) Density Increase and Control

MMC Subsection 19.311.3.C allows an increase in density of up to 20% above the maximum allowed in the underlying zone(s), if the City Council determines that the proposed Planned Development is outstanding in planned land use and design and provides exceptional advantages in living conditions and amenities not found in similar developments constructed under regular zoning.

Subtracting the area occupied by floodplain, proposed rights-of-way, and required open space, as required by the density-calculation standards provided in MMC Subsection 19.202.4, the maximum allowable density for the net area of the subject property is ~~80~~ 82 units. The applicant has proposed a total of 92 units, which is a ~~15~~12% increase. The applicant has listed the following elements as evidence of the project's outstanding design and exceptional advantages:

- *Over 7 acres of open space, which will protect natural resource and floodplain areas on the site and provide recreational opportunities with a soft-surface trail system. The open space tract includes a stand of mature Oregon white oak trees that have been identified by public testimony as a priority for preservation. ~~Staff notes that, to ensure ongoing maintenance of the open space~~As proposed, the ~~area~~ open space tract will ~~should either~~ be dedicated to the City ~~or~~*

~~*North Clackamas Parks & Recreation District or that a Home Owners' Association be established with Covenants, Conditions, and Restrictions that require ongoing maintenance*~~.

- *Overall site design that provides a sense of openness and visual permeability between the natural open space tract and the residential lots, nearly half of which will have backyards that are directly adjacent to the open space. A condition has been established to require fencing that along the boundaries of lots adjacent to the open space tract (Tract E), to maintain views of the open space but prevent uncontrolled access.*
- *Unfenced stormwater facilities planted with low-lying grasses that maintain views of the open space and provide connection points between the trail system and the rest of the development*
- *A community garden for use by residents, located in the northeastern portion of the site*
- *Trees planted as screening between Highway 224 and the adjacent lots in the northeast corner of the site*
- *92 units of attached single-family housing offered at a price point that is affordable for working people with moderate incomes*
- *Compact development in proximity to a large public park (North Clackamas Park) and with access to a major roadway (Highway 224)*

The applicant has asserted that, without the Planned Development process, the site would be difficult to develop at a level that would meet the City's minimum density standard, at least without resulting in greater impacts to the designated natural resources on the site and a loss of some of the proposed amenities like the soft-surface trails and community garden. In effect, the proposed development is outstanding by virtue of being the only practicable and feasible layout for the site that provides new housing targeted at working people with moderate incomes.

As per the recommendation of the Planning Commission, the City Council finds that the proposed development provides sufficiently outstanding design features and extraordinary amenities to justify the proposed density increase.

(d) Peripheral Yards

MMC Subsection 19.311.3.D requires that yards along the periphery of any Planned Development zone be at least as deep as the front yard required in the underlying zone(s). Open space may serve as peripheral yard.

The front yard requirements of the underlying zones are 20 ft for R-10 and 15 ft for R-3. The large open space tract on the north and west sides of the proposed development provides a buffer of well over 20 ft. Where the proposed development is adjacent to the church property on the east, a 22-ft-wide public alley provides a peripheral buffer for Lots 45 and 57, and the 20-ft-wide pedestrian connection on tracts E and F provides a peripheral buffer for Lots 1 and 17. The pedestrian-bicycle connection between the

cul-de-sac and the sidewalk at Rusk Road, in the northeastern corner of the site, provides 15 ft of separation for Lot 92; together with the proposed 5-ft side yard, a total of 20 ft will be provided as a buffer for this lot.

(e) Open Space

MMC Subsection 19.311.3.E requires that a Planned Development set aside land as open space, for scenic, landscaping, or other recreational purposes within the development. A minimum of one-third of the gross area of the site must be provided as open space and/or outdoor recreational areas, with at least half of this area being of the same general character as the area containing dwelling units.

The gross area of the subject property is approximately 13.8 acres, so a minimum of 4.6 acres must be provided as open space, with at least 2.3 acres available for recreational purposes. The applicant has proposed to establish an open space tract of approximately 7 acres, with a soft-surface trail system making approximately 2.5 acres available for recreation.

(3) MMC Subsection 19.311.6 Planning Commission Review of Preliminary Development Plan and Program

MMC 19.311.6 establishes that the Planning Commission shall review an applicant's preliminary development plan and program for a PD and shall notify the applicant whether the proposal appears to satisfy the provisions of this section or has any deficiencies. Upon the Commission's approval in principle of the preliminary plan and program, the applicant shall file a final development plan and program and an application for zone change.

The applicant has submitted a development plan and program for the proposed PD and has requested that the Commission consider it to be the final development plan and program submittal, along with the accompanying application for zone change.

(4) MMC Subsection 19.311.8 Subdivision Plat

MMC 19.311.8 requires that the submittal of a final development plan and program be accompanied by an application for subdivision preliminary plat, where the PD involves the subdivision of land.

The proposal involves a 92-unit subdivision, and the applicant has included an application for subdivision preliminary plat with the submittal of a final development plan and program.

(5) MMC Subsection 19.311.9 Application for Zone Change

MMC 19.311.9 requires that an application for zone change accompany the submittal of a final development plan and program.

Along with the final development plan and program, the applicant has included an application for zone change to apply the PD zone to the subject property.

(6) MMC Subsection 19.311.10 Planning Commission Action on Final Development Plan and Program

MMC 19.311.10 requires that the Planning Commission hold a public hearing using Type IV review to consider a final development plan and program, zone change application, and subdivision preliminary plat. If the Planning Commission

finds that the final development plan and program is in compliance with the preliminary approval and with the intent and requirements of the applicable provisions of the zoning ordinance, it shall forward a recommendation for approval to the City Council for adoption.

As required, the Planning Commission opened a public hearing on May 23, 2017, in accordance with the Type IV process outlined in MMC Section 19.1007, and considered the proposed development plan and program, zone change application, subdivision preliminary plat, and other accompanying reviews. The hearing was continued to May 25, again to June 27, and again to July 25, 2017. The Planning Commission found that the development plan and program is in compliance with the intent and requirements of the applicable provisions of MMC Title 19 Zoning and forwarded a recommendation of approval to the City Council for adoption.

(7) MMC Subsection 19.311.11 Council Action on Final Development Plan and Program

MMC 19.311.11 requires that the City Council consider the final development plan and program and zone change application through the Type IV review process, upon receipt of a recommendation from the Planning Commission. Upon consideration of the proposal, the Council may adopt an ordinance applying the PD zone to the subject property and adopt the final development plan and program as the standards and requirements for that PD zone. The Council may also continue consideration and refer the matter back to the Planning Commission with recommendations for amendment, or may reject the proposal and abandon further hearings and proceedings.

The Council considered the final plan and program and zone change application, as well as the accompanying applications for subdivision preliminary plat and associated reviews, in accordance with the Type IV review process outlined in MMC Section 19.1007. The Council held a public hearing on September 5, 2017, and adopted an ordinance applying the PD zone to the subject property, which adopted the final development plan and program as the standards and requirements for the new PD zone (Ordinance ____).

The City Council finds that the applicable standards and requirements of MMC 19.311 are met. As per Ordinance ____, the final development plan and program is adopted as the standards and requirements and the PD zone designation is applied to the subject property.

b. MMC Sections 19.301 Low Density Residential Zones (including R-10) and 19.302 Medium and High Density Residential Zones (including R-3)

The subject property is split-zoned Residential R-10 and Residential R-3. MMC 19.301 and 19.302 establish the allowable uses and development standards for the residential R-10 and R-3 zones, respectively. As noted in Finding 7-a(2), although the underlying zone standards are primarily applicable, the PD zone allows adjustment to some of those standards. This applies to such underlying zone limitations as housing type, lot size, lot dimension, setbacks, and similar standards that relate to flexibility of design, greater efficiency in the use of common open space, and minor increases in density allowed as a reward for outstanding design.

(1) Permitted Uses

As per MMC Table 19.301.2, rowhouse development is not a permitted use in the R-10 zone; rowhouses are an outright permitted use in the R-3 zone (as per MMC Table 19.302.2). As noted in Finding 7-a, the primary purposes of the PD zone include encouraging greater flexibility of design and providing a more efficient use of common open space, so housing types not ordinarily permitted in the base zone may be proposed.

The applicant has proposed a 92-unit development comprised of 23 four-unit rowhouse buildings. The proposed design maximizes the development potential of the subject property, providing a public street network and utility infrastructure while minimizing impacts to the natural resource and floodplain areas on the site, which will remain protected in open space.

(2) Lot and Development Standards

The applicant has proposed to apply a single set of lot and development standards across the entire site, which is zoned R-3 on the western half and R-10 on the eastern half. As discussed in Finding 7-a(2), above, adjustments to underlying zone standards that are related to the flexibility of design afforded by the PD process are allowed and do not require a formal variance request. Table 7-b(2) compares the applicable standards for development in the R-10 and R-3 zones with the standards proposed as the final development plan and program for this PD zone.

Table 7-b(2)
Lot and Development Standards

Standard	R-10 Requirement	R-3 Requirement[1]	Proposed PD Requirement
1. Minimum Lot Size	10,000 sq ft	3,000 sq ft	Lots range from 1,600 sq ft to approx. 2,500 sq ft
2. Minimum Lot Width	70 ft	30 ft	Lot widths range from 20 ft to 28 ft
3. Minimum Lot Depth	100 ft	80 ft	Lot depths range from 80 to 87.25 ft
4. Minimum street frontage	35 ft	30 ft	Typical range is 20 to 25 ft; three lots on cul de sac are <20 ft
5. Front Yard	20 ft	15 ft	Front-loaded lots = 18 ft Alley-loaded lots = 10 ft
6. Side Yard	10 ft	0 ft (common) 5 ft (exterior)	Common wall = 0 ft Exterior wall = 5 to 6 ft
7. Street-Side Yard	20 ft	15 ft	8 ft
8. Rear Yard	20 ft	15 ft	Front-loaded lots = 15 ft Alley-loaded lots = 20 ft
8. Maximum Building Height	2.5 stories or 35 ft (whichever is less)	2.5 stories or 35 ft (whichever is less)	2 stories, <35 ft

9. Side yard height plane limit	45-degree slope at 20 ft height	45-degree slope at 20 ft height	≤20 ft
10. Maximum lot coverage	30%	40% (+20% for rowhouses)	Lots range from 46% to 59%
11. Minimum vegetation	35%	35%	Small vegetated areas on each lot, with access to large open space area to west
12. Front yard minimum vegetation	40%	40%	Front yard areas not occupied by driveways and walkways will be vegetated
13. Minimum density	3.5 units per acre	11.6 units per acre	Minimum of ~~66~~ 67 units for entire site
14. Maximum density	4.4 units per acre	14.5 units per acre	Maximum of ~~80~~ 82 units for entire site (Applicant has requested a ~~15~~12% density increase to a total of 92 units)

[1] R-3 requirements from MMC Table 19.302.2 for rowhouses

The lot and development standards that will govern development on the subject property are shown in Table 7-b(2) and effectively establish a component of the final development plan and program for this PD zone.

8. MMC Section 19.902 Amendments to Maps and Ordinances

MMC 19.902 establishes the process for amending the City's Comprehensive Plan and land use regulations, including the zoning map. Specifically, MMC Subsection 19.902.6 establishes the review process and approval criteria for zoning map amendments.

a. MMC Subsection 19.902.6.A Review Process

MMC 19.902.6.A provides that, generally, changes to the zoning map that involve 5 or more properties or encompass more than 2 acres of land are legislative and are therefore subject to Type V review; otherwise, they are quasi-judicial in nature and subject to Type III review. The City Attorney has the authority to determine the appropriate review process for each proposed zoning map amendment.

The proposed zoning map amendment encompasses a single property of approximately 13.8 acres and is related to a proposed planned development, which requires Type IV review. The City Attorney has determined that the proposed zoning map amendment is quasi-judicial in nature and requires Type III review. The concurrent planned development requires Type IV review, which is also a quasi-judicial process. The City Council finds that the Type IV review process is appropriate for the proposed zoning map change.

b. MMC Subsection 19.902.6.B Approval Criteria

MMC 19.906.2.B establishes the following approval criteria for zoning map amendments:

(1) The proposed amendment is compatible with the surrounding area based on the following factors:

(a) Site location and character of the area

(b) Predominant land use pattern and density of the area

(c) Expected changes in the development pattern for the area

The area surrounding the subject property includes North Clackamas Park and low to moderate density residential development, as well as the Deerfield Village assisted living center (40 apartment units) located directly across Kellogg Creek Drive from the site. The proposed development will preserve over half of the site area as natural open space with access through soft-surface trails for low-impact recreational use. The location offers easy access to Highway 224, North Clackamas Park, several nearby schools, and employment centers along the Highway 224 and Interstate 205 corridors.

The 92 units of proposed rowhouses will be arranged in a compact pattern accessible by fully constructed local streets, with landscape strips, street trees, and on-street parking. Although the residential portion of the proposed development will be ~~more dense~~denser than most of the surrounding neighborhood, the Deerfield Village assisted living center is similar in density and aesthetic to an apartment or multifamily development. The proposed development is consistent with the single-family attached housing that Milwaukie's 2016 Housing Needs Analysis predicts will be developed over the next 20 years.

The proposed zoning amendment is compatible with the surrounding area based on the factors listed above.

(2) The need is demonstrated for uses allowed by the proposed amendment.

The draft 2016 Housing Needs Analysis prepared for Milwaukie notes a particular need for single-family attached units like the proposed rowhouses.

(3) The availability is shown of suitable alternative areas with the same or similar zoning designation.

Functionally, the PD designation is a form of overlay zone designation that can be applied to sufficiently sized properties for greater flexibility in developing the site. This criterion is more applicable to standard base zone designations and is intended to ensure that a suitable number of other properties with the same base zone designation will remain available for development.

This criterion is not applicable to a proposal to add the PD designation to a base zone.

(4) The subject property and adjacent properties presently have adequate public transportation facilities, public utilities, and services to support the use(s) allowed by the proposed amendment, or such facilities, utilities, and services are proposed or required as a condition of approval for the proposed amendment.

The applicant's submittal materials include a traffic impact study, utility plans, and preliminary stormwater drainage report to demonstrate that public facilities are or will be made adequate to serve the proposed development.

Existing water and sanitary sewer services in Kellogg Creek Drive are provided by Clackamas River Water (CRW) and Clackamas County's Water and Environment Services (WES), respectively, and are adequate to serve the proposed new units. Within the public rights-of-way that will serve the proposed development, new water and sanitary sewer mains will be constructed as per City standards and will be maintained by the City, though they will connect to the CRW and WES facilities in Kellogg Creek Drive.

The applicant proposes to manage stormwater runoff from the new public streets with three large, shallow bioswale facilities. The applicant's preliminary drainage report, prepared by a qualified professional engineer, explains in more detail how stormwater will be managed and demonstrates that post-development runoff will not exceed the applicable pre-development standards.

Within the newly dedicated public rights-of-way that will serve the proposed lots, public streets will be constructed to meet applicable City standards, with paved travel lanes, curb and gutter, landscape planter strips, and sidewalks. On Kellogg Creek Drive along the subject property frontage, the existing right-of-way will be also be improved to provide the required width travel lane, striped bicycle lane, on-street parking strip, curb and gutter, landscape planter strip, and setback sidewalk.

The subject property and adjacent properties presently have adequate public transportation facilities, public utilities, and services to support the proposed development.

(5) The proposed amendment is consistent with the functional classification, capacity, and level of service of the transportation system. A transportation impact study may be required subject to the provisions of Chapter 19.700.

The applicant prepared a traffic impact study (TIS) to evaluate the proposed development's anticipated impacts on the transportation system. The TIS concluded that traffic volumes from the proposed development will not cause any of the intersections in the study area to fall below acceptable levels of service.

As discussed in Finding 14-c, the City's traffic consultant has reviewed the applicant's TIS and concluded that, with the exception of one error related to measurement of the northbound right-turn lane on Rusk Road at the Highway 224 intersection, the methodology and conclusions of the TIS are sound. As proposed, the northbound right-turn leg of the Rusk Road/Highway 224 intersection would fall below the acceptable level of service. A condition has been established to require extension of the northbound right-turn lane on Rusk Road so the Highway 224 intersection maintains an acceptable level of service.

As conditioned, the proposed amendment is consistent with the functional classification, capacity, and level of service of the transportation system.

(6) The proposed amendment is consistent with the goals and policies of the Comprehensive Plan, including the Land Use Map.

The Land Use Map within the City's Comprehensive Plan (Comp Plan) reflects the split zoning of the subject property, with a Low Density designation for the portion zoned R-10 and a Medium Density designation for the portion zoned R-3. The proposed amendment would add the Planned Development (PD) designation to each of the zone designations for the subject property but would not affect the designations on the Land Use Map.

The Comp Plan includes a number of goals and policies that are applicable to the proposed development.

(a) Chapter 1 Citizen Involvement

The goal of Chapter 1 is to encourage and provide opportunities for citizens to participate in all phases of the planning process. Prior to submitting the

application, the applicant held an open meeting to present and discuss the project. The Lake Road Neighborhood District Association and to property owners and residents within 500 ft of the site were invited. According to the applicant's submittal materials, approximately 30 people attended the meeting, held on November 3, 2016. The applicant noted the various concerns raised by neighbors and has noted that several aspects of the original plan were revised as a result.

The Type IV review process utilized for consideration of any Planned Development provides for public hearings by both the Planning Commission and City Council, where citizens have the opportunity to present testimony and participate in the decision-making process. A public hearing on the proposed development was opened by the Planning Commission on May 23, 2017; continued to May 25; continued again to June 27 (where it was only nominally re-opened); and continued again to July 25, 2017. A public hearing was held by the City Council on [month/day], 2017. The Commission and Council considered testimony from citizens en route to reaching the decision reflected in these findings.

(b) Chapter 2 Plan Review and Amendment Process

The goal of Chapter 2 is to establish a process for review and amendment of the Comp Plan, as a basis for land use decisions and with public participation. Policies related to the objective of implementing the Comp Plan include a requirement that zone changes and other planning actions be consistent with the intent of the Comp Plan. The applicant's narrative and supporting materials are evidence of the required review process at work, with opportunities for public involvement at Commission and Council hearings as noted above.

(c) Chapter 3 Environmental and Natural Resources

Chapter 3 focuses on conservation of the City's remaining natural resources.

(i) Natural Hazards Element

The goal of the Natural Hazards element is to provide appropriate safeguards for development in areas of known natural hazards, such as floodplains. Policies include the direction to establish regulations to prevent development from increasing stormwater runoff and standards to ensure the strength and quality of construction materials within the floodplain. The finished elevations of the lowest floors of buildings and streets must be a minimum of 1 ft above the 100-year flood elevation, and actions are encouraged to retain the floodplain as minimally undeveloped open space.

The subject property includes a designated floodplain area, and the proposed development involves some alteration of the floodplain. As discussed in Finding 10, the applicant proposes to balance the amount of fill that will be added within the floodplain with the removal of an equal amount of material. The fill will raise those areas of residential construction and streets at least 1 ft above the base flood elevation. The remaining floodplain areas on the site will be included in a large open space tract.

(ii) Open Spaces, Scenic Areas, and Natural Resources Element

The goal of the Open Spaces element is to conserve open space and protect and enhance natural resources to create an aesthetically pleasing urban environment. Policies include the protection of natural resources through conservation and mitigation, designation of riparian area buffers, regulation of the placement and design of stormwater drainage facilities, and protection of existing upland areas and values related to wildlife habitat and erosion control.

As discussed in more detail in Finding 11, the applicant's submittal materials include a natural resource report that analyzes practicable alternatives to the proposed development and demonstrates that its proposal does the most to avoid impacts to the WQR and HCA parts of the site, minimizes impacts where unavoidable, and sufficiently mitigates for the allowed disturbance. The applicant's submittal materials include a preliminary drainage report that explains how the proposed stormwater management facilities are designed to ensure that post-development runoff will not exceed pre-development levels.

(d) Chapter 4 Land Use

Chapter 4 provides objectives and policies to guide the development of vacant lands and redevelopment of existing features, considering a variety of needs such as housing, employment, and recreation.

(i) Residential Land Use and Housing Element

The goal of the Residential Land Use element includes the provision of new housing that is adequate to meet the needs of local residents and the regional housing market.

Policies related to buildable lands include the use of zoning to implement the policies and standards of various other elements of the Comp Plan and requirement of a report demonstrating consistency with the policies of Chapter 3 (Environmental and Natural Resources) for sites with special resource designations. Policies related to residential land use design include an allowed density bonus of up to 20% for Planned Unit Developments in exchange for exceptional design quality or special project amenities, a requirement that Planned Unit Developments provide areas dedicated to open space and/or outdoor recreation, and encouragement for preservation of existing tree canopy and connected vegetated corridors. Policies related to housing choice include the development of larger subdivisions and Planned Unit Developments that use innovative techniques for the purpose of reducing housing costs while creating an attractive living environment.

The applicant's narrative includes an address of the proposal's consistency with the various applicable goals, objectives, and policies of the Comp Plan, including those of Chapter 3. As addressed in Finding 7-a-(2)(c), the applicant has proposed a density increase of ~~15~~12%, based on the exceptional design and special amenities of the proposed development. The proposed development includes nearly half of the overall site retained as open space, with the developable

lots configured in such a way as to preserve as many of the existing trees on the site as practicable and to avoid impacts to the riparian corridor along Mount Scott Creek. The applicant asserts that the number of proposed lots will create a certain economy of scale that will allow the new units to be sold at an affordable price and meet one of the community's housing needs.

(ii) Recreational Needs Element

The goal of the recreational needs element is to provide for the recreational needs of current and future city residents by maximizing the use of existing public facilities, encouraging the development of private recreational facilities, and preserving the opportunity for future public recreational use of vacant private lands.

The subject property is adjacent to the eastern edge of North Clackamas Park, and future residents in the proposed development will have easy access to this existing public facility. Within the proposed open space tract, a soft-surface trail system will be available for recreational use by both future residents and the public at large (through a public access easement).

(e) Chapter 5 Transportation, Public Facilities, and Energy Conservation

Chapter 5 addresses the City's responsibility to provide its current and future residents with a full range of urban services, including streets, sewer, and water.

(i) Transportation Element

The City's Transportation System Plan (TSP) is an ancillary Comp Plan document that contains the City's long-term transportation goals and policies. The applicant's TIS demonstrates consistency with the TSP and asserts that the proposed development will not result in significant impacts to the surrounding transportation system. As discussed in Finding 14-~~xx~~c, the City's traffic consultant has reviewed the applicant's TIS and concluded that, with the exception of one ~~error~~ adjustment related to measurement of the northbound right-turn lane on Rusk Road at the Highway 224 intersection, the methodology and conclusions of the TIS are sound. A condition has been established to address this error.

(ii) Public Facilities and Services Element

The goal of the Public Facilities element is to provide for the orderly and efficient arrangement of public facilities and services to serve urban development. The proposed development includes the extension of existing water and sewer services to serve the new lots, as well as stormwater facilities designed to ensure that post-development runoff does not exceed pre-development levels.

(iii) Energy Conservation Element

The goal of the Energy Conservation element is to conserve energy by encouraging energy-efficient land use patterns and transportation systems. The proposed development is a compact arrangement of 92

units of rowhouse housing that is located close to large employment corridors across Highway 224 and along Interstate 205.

As conditioned, the proposed amendment is consistent with the goals and policies of the Comprehensive Plan, including the Land Use Map.

(7) The proposed amendment is consistent with the Metro Urban Growth Management Functional Plan and relevant regional policies.

The Metro Urban Growth Management Functional Plan includes a number of titles that address various aspects of the region's goals and policies for urban development.

(a) Title 1 Housing Capacity

The proposed development will provide a large number of needed housing units in a compact urban form.

(b) Title 3 Water Quality and Flood Management

The proposed development is configured to avoid and/or minimize impacts to the designated natural resources on the site. Proposed alterations to the floodplain will be done in accordance with local and federal requirements.

(c) Title 7 Housing Choice

The proposed development will provide single-family attached housing and will support Metro's policies for expanding housing choice with a needed housing type in Milwaukie.

(d) Title 13 Nature in Neighborhoods

The proposed development supports Metro's policies for conserving and enhancing habitat areas by avoiding and minimizing impacts to the designated natural resources on the site, as well as by establishing a large open space tract that includes wetlands, floodplain, existing mature native trees, and the riparian corridor along Mount Scott Creek.

The proposed amendment is consistent with the Metro Urban Growth Management Functional Plan and relevant regional policies.

(8) The proposed amendment is consistent with relevant State statutes and administrative rules, including the Statewide Planning Goals and Transportation Planning Rule.

Several of the Statewide Planning Goals are relevant to the proposed amendment:

(a) Goal 2 Citizen Involvement

Prior to submitting the application, the applicant held an open meeting to present and discuss the proposed development with neighbors. The applicant made several revisions to the original concept plan as a direct result of the discussion at that meeting. The Type IV review process for Planned Development proposals requires public hearings with both the Planning Commission and the City Council, allowing additional opportunities for citizens to submit written and oral testimony before the decision-makers. A public hearing on the proposed development was held by the Planning Commission on May 23, 2017; continued to May 25;

continued to June 27 (where it was only nominally re-opened); and continued again to July 25, 2017. A public hearing with the City Council was held on September 5, 2017.

(b) Goal 5 Natural Resources

The proposed development is subject to the applicable standards of MMC Section 19.402 Natural Resources, which provide protections for designated natural resource areas. As discussed in more detail in Finding 11, the applicant has proposed to avoid impacts to WQR and HCA parts of the site as much as practicable, to minimize impacts where unavoidable, and to sufficiently mitigate for the allowed disturbance.

(c) Goal 7 Areas Subject to Natural Hazards

The subject property includes a significant area of floodplain. As addressed in Finding 10, the applicant proposes substantial alteration of the floodplain in accordance with local and federal requirements, including the provision that the amount of fill material placed in the floodplain must be balanced by an equal removal of material from within the floodplain.

(d) Goal 12 Transportation and Transportation Planning

As addressed in Finding 14 and elsewhere in these findings, with the conditioned correction of one minor error noted by City staff, the applicant's TIS demonstrates that the proposed development will not require changes to the functional classification of existing or planned transportation facilities and will not result in significant impacts on the transportation system.

As conditioned, the proposed amendment is consistent with relevant State statutes and administrative rules, including the Statewide Planning Goals and Transportation Planning Rule.

The proposed amendment, as conditioned, is consistent with the applicable criteria for zoning map amendments.

As conditioned, the City Council finds that the proposed amendment to the City's Zoning Map is approvable.

9. MMC Title 17 Land Division

MMC Title 17 establishes the City's regulations and procedures for lot consolidations, land divisions, property boundary changes, and creation of streets and rights-of-way. As per MMC Section 17.04.050, all decisions on boundary changes and land divisions expire 1 year after the date of approval, with one 6-month extension allowed upon submission of a formal request to the original decision-making authority.

a. MMC Chapter 17.12 Application Procedure and Approval Criteria

MMC 17.12 establishes the application procedures and approval criteria for land divisions and property boundary changes. Specifically, MMC Subsection 17.12.020.E provides that applications for subdivision preliminary plat are subject to Type III review.

MMC Section 17.12.040 establishes the following approval criteria for preliminary plat:

(1) The proposed preliminary plat complies with Title 19 of this code and other applicable ordinances, regulations, and design standards.

The proposed preliminary plat is for a planned development subdivision of 92 lots for rowhouse development, with tracts for stormwater facilities, open space, a community garden, and a pedestrian connection to Kellogg Creek Drive along the eastern edge of the development. The subject property is a 13.8-acre parcel that was created from a larger 17.5-acre property by a Property Line Adjustment and Lot Consolidation application (file #s PLA-2017-001 and LC-2017-001) approved in ~~May~~ July 2017.

As addressed throughout these findings, the proposed subdivision complies with the applicable standards of Title 19 and other applicable ordinances, regulations, and design standards.

The City Council finds that this standard is met.

(2) The proposed division will allow reasonable development and will not create the need for a variance of any land division or zoning standard.

The proposed division will allow reasonable development on all developable lots, without creating the need for any additional variances of land division or zoning standards beyond those addressed in these findings.

The City Council finds that this standard is met.

(3) The proposed subdivision plat name is not duplicative and the plat otherwise satisfies the provisions of ORS 92.090(1).

The proposed subdivision name, Kellogg Creek, is not duplicative, and the plat otherwise satisfies the provisions of ORS 92.090(1).

The City Council finds that this standard is met.

(4) The streets and roads are laid out so as to conform to the plats of subdivisions already approved for adjoining property as to width, general direction, and in all other respects unless the City determines it is in the public interest to modify the street or road pattern.

The Whitman's Lake-East Heights subdivision of 2001 is adjacent to the subject property to the north, across Mount Scott Creek from the proposed development. The Whitman's Lake-East Heights subdivision includes a public street (Madeira Drive) that bends away from the subject property and does not provide a connection point to the subject property. The proposed development does not include a crossing of Mount Scott Creek nor any developable lots or streets adjacent to the adjoining subdivision to the north.

The City Council finds that this standard is not applicable.

(5) A detailed narrative description demonstrating how the proposal conforms to all applicable code sections and design standards.

The applicant has provided a detailed narrative description that demonstrates how the proposal conforms to all applicable standards and addresses variance requests as needed.

The City Council finds that this standard is met.

The City Council finds that the applicable procedures and approval criteria for the proposed subdivision, as outlined in MMC 17.12, are met.

b. MMC Chapter 17.16 Application Requirements and Procedures

MMC 17.16 establishes application requirements for land divisions and property boundary changes, including for preliminary plat for subdivision. The application must include all required forms and fees, as well as the information specified on the Submittal Requirements and Preliminary Plat checklists.

The applicant's submittal materials include all required forms and fees for the proposed subdivision, as well as plan sheets, narratives addressing the various applicable standards and criteria, and supporting documents and reports.

The City Council finds that the application requirements and procedures of MMC 17.16 are met.

c. MMC Chapter 17.20 Preliminary Plat

MMC 17.20 establishes the information required with the preliminary plat, including existing and proposed conditions, a drainage summary report, proposed deed restrictions (if any), and proposed public improvements.

The applicant's preliminary plat materials include existing and proposed conditions, a preliminary drainage report, and plans for proposed improvements (including grading, landscaping, public utilities, and frontage improvements). No deed restrictions are proposed.

The City Council finds that the preliminary plat requirements of MMC 17.20 are met.

d. MMC Chapter 17.28 Design Standards

MMC 17.28 establishes general design standards for land divisions and property boundary changes.

(1) MMC Section 17.28.020 Public Facility Improvements

MMC 17.28.020 requires that all land divisions that increase the number of lots are subject to the requirements and standards of MMC Chapter 19.700 Public Facility Improvements.

The proposed subdivision will increase the number of lots. The applicable standards of MMC 19.700 are addressed in Finding 12.

(2) MMC Section 17.28.030 Easements

MMC 17.28.030 requires that easements for public utilities (including sewers and water mains) be dedicated wherever necessary.

The proposed subdivision will establish new public streets, where the public utility infrastructure will be located. Three tracts for stormwater facilities and three tracts for pedestrian and/or bicycle access will be established and dedicated to the public. A condition has been established to ensure that easements for stormwater outfalls, for public access across private alleys, or for any other public utilities will be dedicated as needed.

(3) Specifically, MMC Section 17.28.040 provides standards for general lot design, including a requirement for rectilinear lots and a 10% limit on the cumulative lateral shift of compound lot line segments.

Lots 88-92, which are located in the curve of the proposed cul-de-sac, each have at least one compound lot line segment. None of the compound segments are greater than 10% of the distance between opposing lot corners.

The City Council finds that the applicable lot design standards of MMC 17.28 are met.

The City Council finds that the proposed subdivision meets all applicable land division standards of MMC Title 17.

10. MMC Title 18 Flood Hazard Regulations

MMC Title 18 provides standards intended to minimize public and private losses due to flood conditions in specific areas. The regulations established in MMC Title 18 do this in part by controlling the alteration of natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel flood waters; controlling filling, grading, dredging, and other development which may increase flood damage; and preventing or regulating the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards in other areas. As per MMC Section 18.04.100, a development permit is required prior to any construction or development within the flood management area.

The subject property includes flood hazard and flood management areas as identified on the Flood Insurance Rate Maps prepared by the Federal Emergency Management Agency (FEMA) and acknowledged by the City for the purposes of implementing this title. The applicant is proposing a revision to the FIRM map, to demonstrate that new lots will not be in the modified floodplain. Although no buildings will be built below the floodplain elevation, the proposed development includes cut and fill within the floodplain.

The proposed development is subject to the applicable provisions of MMC Title 18.

a. MMC Section 18.04.150 General Standards

MMC 18.04.150 provides general standards for all special flood hazard and all flood management areas.

(1) MMC Subsection 18.04.150.C Utilities

MMC 18.04.150.C requires that all new water and sanitary sewer systems be designed to minimize or eliminate infiltration of floodwaters into the system.

A condition has been established to ensure that all new utilities are installed underground and shall otherwise be designed to minimize or eliminate infiltration of floodwaters into the system, including stubs for utility service prior to surfacing any streets.

(2) MMC Subsection 18.04.150.D Subdivisions

MMC 18.04.150.D requires that all subdivision proposals must be consistent with the need to minimize flood damage. Public utilities and facilities shall be located and constructed to minimize or eliminate flood damage. Adequate drainage shall be provided to reduce exposure to flood damage. Base flood elevation data shall be provided for subdivision proposals that contain at least 50 lots or 5 acres.

The base flood elevation is is 69.9 located at cross section C on FEMA map number FM41005C0036D (NAVD 1988 datum). The proposed development would establish 92 units on approximately 13.8 acres and was designed to minimize flood damage by elevating the developable portions of the site at least 1 ft above base flood elevation. As proposed, all public utilities are located outside the floodplain, except for the sanitary sewer connection to the existing sanitary sewer located within the existing floodplain and those public utilities that will be in Kellogg Creek Drive, a portion of which lies within the existing

floodplain. The site will be graded to provide positive drainage to reduce exposure to flood damage. Proposed street grades meet or exceed the minimum grade allowed by the City's Public Works Standards, and street cross sections match typical sections provided by the City to ensure proper drainage.

(3) MMC Section 18.04.150.F Balanced Cut and Fill

MMC 18.04.150.F provides requirements for the displacement of flood storage area by the placement of fill or structures.

As per the applicant's submittal materials, all fill added to the floodplain will be balanced with an equal amount of soil removed from the floodplain meeting the "no net fill" requirement. Excavation will occur on the same parcel as the proposed development and will not occur below the bankfull stage.

As conditioned, the proposed development is consistent with the applicable general standards for all special flood hazard and all flood management areas.

b. MMC Section 18.04.160 Specific Standards

MMC Subsection 18.04.160.A provides specific standards for residential construction, including a requirement that new construction of any residential structure shall have the lowest floor, including basement, elevated 1 ft above base flood elevation.

As proposed, all new primary residential structures will have the lowest floor elevated at least 1 ft above base flood elevation.

The City Council finds that, pending approval of the applicant's proposed revision to the appropriate FIRM map and as conditioned, the proposed development is consistent with the applicable standards of MMC Title 18.

11. MMC Section 19.402 Natural Resources

MMC 19.402 establishes regulations for designated natural resource areas. The standards and requirements of MMC 19.402 are an acknowledgment that many of the riparian, wildlife, and wetland resources in the community have been adversely impacted by development over time. The regulations are intended to minimize additional negative impacts and to restore and improve natural resources where possible.

a. MMC Subsection 19.402.3 Applicability

MMC 19.402.3 establishes applicability of the Natural Resource (NR) regulations, including all properties containing Water Quality Resources (WQRs) and Habitat Conservation Areas (HCAs) as shown on the City's Natural Resource (NR) Administrative Map.

Mount Scott Creek flows across the northern portion of the subject property, and a large wetland (approximately 0.7 acres) is located within the 100-year floodplain designated over most of the western half of the site. The City's NR Administrative Map shows ~~Water Quality Resource (~~WQR~~)~~ and ~~Habitat Conservation Area (~~HCA~~)~~ designations around the creek and wetland, and portions of these natural resource areas will be disturbed by the proposed development.

As presented in the applicant's submittal materials, the proposed development will temporarily or permanently disturb approximately 115,700 sq ft of WQR and/or HCA area. At that scale, the proposed activity is not listed as exempt according to the standards outlined in MMC 19.402.4.

The City Council finds that the requirements of MMC 19.402 are applicable to the proposed activity.

b. MMC Subsection 19.402.7 Activities Requiring Type II Review

MMC 19.402.7 establishes that certain activities within a designated WQR and/or HCA are subject to Type II review in accordance with MMC 19.1005. As per MMC 19.402.7.E, this includes boundary verifications that propose substantial corrections to the NR Administrative Map, including identifying the precise location of wetlands, as required by MMC 19.402.15.A.

The subject property includes a delineated wetland. As provided in MMC Subsection 19.402.15.A, the Type II review process is required to confirm the specific location of wetlands. However, the proposed activity requires other applications that are being processed concurrently with Type IV review. As provided in MMC Subsection 19.1001.6.B.1, concurrent applications are processed according to the highest numbered review type, with a single decision to be issued that includes findings for all concurrent applications.

The City Council finds that the boundary verification for wetlands shall be processed concurrently with Type IV review.

c. MMC Subsection 19.402.8 Activities Requiring Type III Review

MMC 19.402.8 establishes that certain activities within a designated WQR and/or HCA are subject to Type III review in accordance with MMC 19.1006. As per MMC 19.402.8.A.1, this includes activities allowed in the base zone that are not otherwise exempt or permitted as a Type I or II activity.

The subdivision of land containing a WQR and/or HCA is subject to Type III review and the standards established in MMC Subsections 19.402.13.H and 13.I. The level of disturbance proposed within the designated WQR and HCA areas on the subject property exceeds the levels allowed by Type I and II review, as provided in MMC 19.402.6 and 402.7, respectively. As such, the activity is subject to Type III review and the discretionary process established in MMC 19.402.12. As noted in Finding 11-b above, the Natural Resource review is associated with other applications being processed concurrently with Type IV.

The City Council finds that the proposed activity is subject to Type III review and will be processed concurrently with other applications requiring Type IV review.

d. MMC Subsection 19.402.9 Construction Management Plans

MMC 19.402.9 establishes standards for construction management plans, which are required for projects that disturb more than 150 sq ft of designated natural resource area. Construction management plans must provide information related to site access, staging of materials and equipment, and measures for tree protection and erosion control.

The applicant's Natural Resource Review report includes a construction management plan that provides the information required by MMC 19.402.9, including tree protection measures. The plan will be formally reviewed at the time of submittal for development permits.

e. MMC Subsection 19.402.11 Development Standards

MMC 19.402.11 establishes development standards for projects that impact a designated natural resource, including requirements to protect natural resource areas

during development and general standards for required mitigation (e.g., plant species, size, spacing, and diversity).

In particular, MMC Subsection 19.402.11.C establishes mitigation requirements for disturbance within WQRs. The requirements vary depending on the existing condition of the WQR, according to the categories established in MMC Table 19.402.11.C. For Class A "Good" WQR conditions, MMC Table 19.402.11.C requires that the applicant submit a plan for mitigating water quality impacts related to the development; for Class C "Poor" WQR conditions, the table requires restoration and mitigation with native species using a City-approved plan.

The proposed development will permanently disturb approximately 32,800 sq ft and temporarily disturb approximately 8,350 sq ft within the WQR. The portion of the WQR closest to Mount Scott Creek is categorized as Class A ("Good"); other portions are categorized as Class C ("Poor"). In addition, the proposed development will permanently disturb approximately 40,700 sq ft and temporarily disturb approximately 5,500 sq ft within the HCA-only areas on the site.

Using the mitigation planting ratio provided in MMC Subsection 19.402.11.D.2.b as a guide, the applicant proposes to plant 5 trees and 25 shrubs per 500 sq ft of disturbance area. For the total WQR and HCA disturbance of approximately 86,350 sq ft (both permanent and temporary disturbance), the applicant proposes to plant 863 native trees and 4,317 native shrubs within a specific mitigation area. As proposed, the mitigation plantings will meet the minimum requirements established in MMC Subsection 19.402.11.B. Mitigation trees will be of at least ½-in caliper (measured at 6 ft above the ground level after planting) and shrubs will be of at least 1-gallon size and at least 12-in height.

ESA, the City's consultant for on-call natural resource services, has evaluated the proposed mitigation plan and concluded that, with a few adjustments, it adequately addresses the proposed WQR and HCA disturbance. ESA provided a few additional recommendations to improve the mitigation plan, including retaining the existing white oak saplings that appear to have been planted on the site as part of an ongoing restoration effort and re-evaluating the assessment of WQR classification at several of the sample points to ensure that mitigation plantings are distributed appropriately. Conditions have been established to ensure that these recommendations are implemented. In addition, ~~a~~ condition<u>s</u> ha~~s~~<u>ve</u> been established to require a maintenance plan ensuring that the mitigation effort is successful and ongoing <u>and to limit the impact of lights shining directly into WQR or HCA locations</u>.

As conditioned, the City Council finds that the applicable development standards of MMC 19.402.11are met.

f. MMC Subsection 19.402.12 General Discretionary Review

MMC 19.402.12 establishes the discretionary review process for activities that substantially disturb designated natural resource areas.

(1) Impact Evaluation and Analysis

MMC Subsection 19.402.12.A requires an impact evaluation and alternatives analysis in order to determine compliance with the approval criteria for discretionary review and to evaluate alternatives to the proposed development. A technical report prepared by a qualified natural resource professional is required and should include the following components:

- Identification of ecological functions
- Inventory of vegetation
- Assessment of water quality impacts
- Alternatives analysis
- Demonstration that no practicable alternative method or design exists that would have a lesser impact on the resource and that impacts are mitigated to the extent practicable
- Mitigation plan

The applicant's submittal materials include a technical report prepared by Pacific Habitat Services, Inc., a private firm providing a range of environmental consulting services including natural resource assessment, wetland delineation, and environmental restoration. The technical report includes an impact evaluation and alternatives analysis consistent with the required components listed above, as well as an inventory of existing vegetation and discusses the ecological function of the existing WQR and HCA areas within the project area. The report also provides a mitigation plan for permanent and temporary impacts to the WQR and HCA.

The technical report considers two alternatives to the proposed development configuration: (1) another planned development scenario with no regard for natural resources on the site (resulting in greater impacts to the WQR and HCA) and (2) a subdivision following the existing split zoning of the site and configured to produce almost no disturbance of the WQR and HCA. The report concludes that the proposed development is the most practicable alternative that results in the least impact to the natural resources on the site.

The City Council finds that the applicant's impact evaluation and alternatives analysis is sufficient for purposes of reviewing the proposed activity against the approval criteria provided in MMC 19.402.12. This standard is met.

(2) Approval Criteria

MMC Subsection 19.402.12.B provides the approval criteria for discretionary review as follows:

Note: ESA reviewed the applicant's technical report and presented its assessment to the City in a summary memo, which informs this portion of the findings.

- Avoid – The proposed activity avoids the intrusion of development into the WQR and/or HCA to the extent practicable, and has less detrimental impact to the natural resource areas than other practicable alternatives.

  Mount Scott Creek cuts across the northern portion of the nearly 14-acre development site, resulting in significant areas of designated WQR and HCA. Developing the site to achieve even the minimum density without any impacts to the WQR and HCA is difficult. The applicant has proposed a Planned Development instead of a conventional subdivision to have the flexibility to blend the densities allowed by the split R-10 and R-3 zoning of the site. This flexibility allows the applicant to direct the development generally away from the WQR and HCA. By using 4-unit rowhouse structures, the applicant is able to provide a larger number of units in a more compact form than a conventional subdivision would allow. Considering the other alternatives noted in Finding 11-f(1) above, the

proposed development will have less detrimental impact to the natural resource areas on the site than other practicable alternatives.

- Minimize – If the applicant demonstrates that there is no practicable alternative to avoid disturbance of the natural resource, then the proposed activity shall minimize detrimental impacts to the extent practicable.

  As noted in the above discussion of avoiding impacts, the proposed development is configured to reduce impacts to the WQR and HCA to the greatest extent practicable. The proposed development is compact by design and focuses major site impacts away from the WQR and HCA where practicable.

- Mitigate – If the applicant demonstrates that there is no practicable alternative that will avoid disturbance of the natural resource, then the proposed activity shall mitigate for adverse impacts to the resource area. The applicant shall present a mitigation plan that demonstrates compensation for detrimental impacts to ecological functions, with mitigation occurring on the site of the disturbance to the extent practicable, utilization of native plants, and a maintenance plan to ensure the success of plantings.

  As noted in Finding 11-e, the applicant's submittal includes a mitigation plan for the WQR and HCA disturbance that will accompany the proposed development. The applicant has proposed to plant 863 native trees and 4,317 native shrubs in the areas of permanent and temporary disturbance, and to remove nuisance plants and noxious material and debris. Conditions have been established to ensure that all mitigation plantings are species from the Milwaukie Native Plants List, that existing restoration plantings are preserved where possible, and that a long-term maintenance plan is in place. To further mitigate future impacts to the WQR and HCA, conditions have been established to demarcate the boundary of the delineated wetland and provide pet-waste bag dispensing devices dispersed along the soft-surface trail system. In addition, to ensure the long-term maintenance of all mitigation areas, the applicant has proposed ~~a condition has been established to require that the development either (1)~~ to dedicate the open space tract to the City ~~or North Clackamas Parks & Recreation District or (2) establish Covenants, Conditions, and Restrictions and a Home Owners' Association that require ongoing maintenance~~. A condition has been established to ensure that the proposed dedication is finalized.

As conditioned, the City Council finds that the proposed development meets the approval criteria for discretionary review as established in MMC 19.402.12.B.

(3) Limitations and Mitigation for Disturbance of HCAs

MMC Subsection 19.402.12.C establishes the discretionary review process for mitigation of more HCA disturbance than would be allowed by the nondiscretionary standards of MMC Subsection 19.402.11.D.1. In such cases, the applicant must submit an Impact Evaluation and Alternatives Analysis consistent with the standards established in MMC 19.402.12.A and subject to the approval criteria established in MMC 19.402.12.B.

As discussed in Finding 11-f(1), the applicant's submittal materials include a technical report that provides an evaluation of impacts to the WQR as well as to

those impacted HCA areas beyond the WQR, consistent with the standards established in MMC 19.402.12.A. As discussed in Finding 11-f(2), the proposed development, with the conditions noted therein, meets the approval criteria established in MMC 19.402.12.B.

As conditioned, the City Council finds that the proposed development meets the discretionary standards for disturbance of HCAs as established in MMC 19.402.12.C.

The City Council finds that, as conditioned, the proposed development meets the applicable discretionary review standards of MMC 19.402.12.

g. MMC Subsection 19.402.15 Boundary Verification and Map Administration

MMC 19.402.15 establishes standards for verifying the boundaries of WQRs and HCAs and for administering the City's Natural Resource (NR) Administrative Map.

The locations of WQRs are determined based on the provisions of MMC Table 19.402.15. For streams, the WQR includes the feature itself and a vegetated corridor that extends 50 ft from the ordinary high water mark or 2-year recurrence interval flood elevation. Where the slope exceeds 25% for less than 150 ft, the vegetated corridor is measured with a 50-ft width from the break in the 25% slope. For wetlands, a wetland delineation report prepared by a professional wetland specialist and approved by the Department of State Lands (DSL) is required.

For HCAs, the City's NR Administrative Map is assumed to be accurate with respect to location unless challenged by the applicant, using the procedures outlined in either MMC Subsection 19.402.15.A.1 or MMC Subsection 19.402.15.A.2.b.

The technical report provided by the applicant includes a detailed topographic map showing the accurate boundaries of the WQR using the provisions of MMC Table 19.402.15, as well as a wetland delineation report prepared in accordance with the standards of DSL. ~~A condition has been established to require~~A revised version of the report includes a formal letter of concurrence by DSL ~~prior to the issuance of any development permits~~.

The applicant is not challenging the accuracy of the NR Administrative Map with respect to the HCA location on the site. However, as a result of the disturbance allowed by the approval of the proposed development, the NR Administrative Map shall be adjusted accordingly to remove those HCA locations that will be permanently disturbed by the proposed development.

In addition, the City has conducted a review of the mapped HCA in accordance with the detailed verification procedures provided in MMC 19.402.15.A.2.b and confirmed that the NR Administrative Map is inaccurate with respect to the HCA boundary in the southwestern corner of the subject property. The City's documentation of this boundary verification was provided as an exhibit at a public hearing with the City Council on September 5, 2017, and demonstrates where the HCA boundary shall be extended to include the tree canopy provided by the existing white oak trees in the southwestern portion of the site.

The City Council finds that the City's NR Administrative Map shall be adjusted to reflect the detailed information provided by the applicant with respect to the location of the delineated wetland on the site and the permanent disturbance to the HCA, as well as to reflect the adjusted HCA boundary based on information provided by the City.

The City Council finds that, as conditioned, the proposed development, including disturbance of the designated natural resource area on the subject property, meets all applicable standards of MMC 19.402.

12. MMC Chapter 19.500 Supplementary Development Regulations

MMC 19.500 provides supplementary standards for development.

a. MMC Subsection 19.504.9 On-Site Walkways and Circulation

MMC 19.504.9 establishes standards for on-site walkways, including requirements that on-site walkways be at least 5 ft wide, constructed of hard surface materials that are permeable for stormwater, and lighted to a minimum level of 0.5 footcandles.

The proposed development includes pedestrian ~~and bicycle pathways~~connections on Tracts ~~E, F, and~~ H and I, as well as a 10-ft-wide pedestrian/bicycle path in the northeast corner of Tract E. A condition has been established to ensure that all such on-site pathways are designed and constructed to meet the applicable standards of MMC 19.504.9.

As conditioned, the City Council finds that this standard is met.

b. MMC Subsection 19.505.5 Building Design Standards for Rowhouses

MMC 19.505.5 establishes design standards for rowhouse development.

(1) MMC Subsection 19.505.5.C Rowhouse Design Standards

As per MMC Subsection 19.505.5.C.1, rowhouses are subject to the design standards for single-family housing as established in MMC Subsection 19.505.1. As per MMC Subsection 19.505.5.C.2, rowhouses shall include either a vertical or horizontal transition area between the public right-of-way and the private entry of the dwelling.

The proposed development's compliance with the applicable standards of MMC 19.505.5.C will be confirmed through the development review process outlined in MMC Section 19.906 at the time of development. As proposed, the new rowhouse units will have covered front porches that appear to meet the standards for providing a horizontal transition between the right-of-way and the front entry.

(2) MMC Subsection 19.505.5.D Number of Rowhouses Allowed

As per MMC 19.505.5.D, no more than 4 consecutive rowhouses may share a common wall, though sets of 4-unit rowhouse structures may be adjacent to one another.

The proposed development is comprised of 23 structures with 4 rowhouse units each. No more than 4 consecutive rowhouses will share a common wall.

(3) MMC Subsection 19.505.5.E Rowhouse Lot Standards

MMC 19.505.5.E establishes standards for the size and dimension of rowhouse lots in various zones. Generally, rowhouse development is not allowed on lots less than 35 ft wide.

As discussed in Finding 7-b, the Planned Development process allows some flexibility of design, including in lot size and dimension. As proposed, the new lots will range in width from 20 to 28 ft and in size from 1,600 sq ft to

approximately 2,500 sq ft. Approval of the final development plan and program effectively makes the standards of MMC 19.505.5.E inapplicable.

(4) MMC Subsection 19.505.5.F Driveway Access and Parking

MMC Subsection 19.505.5.F.1 establishes restrictions on garages on the front façade of a rowhouse as well as on off-street parking areas and driveway accesses in the front yard. A minimum of 30 ft of street frontage is required, no more than 2 shared accesses are allowed for 4 rowhouses, and outdoor on-site parking areas and garage door width shall not exceed 10 ft. For rowhouses that do not provide garages or parking areas on the front façade, MMC Subsection 19.505.5.F.2 establishes standards for consolidated access.

As discussed in Finding 7-b and noted in Finding 12-c above, the Planned Development process allows for reduced lot widths. The proposed development's compliance with the other applicable standards of MMC 19.505.5.F will be confirmed through the development review process outlined in MMC Section 19.906 at the time of development. As proposed, the new 4-unit rowhouse structures with front-facing garages will share 2 driveway accesses, with on-site parking and maneuvering areas no wider than 10 ft and garage doors no wider than 10 ft. The new rowhouse structures with rear-facing garages will share access off private alleys.

(5) MMC Subsection 19.505.5.G Accessory Structure Setbacks

MMC 19.505.5.G provides that there is no required side yard setback between an accessory structure and a side lot line abutting another rowhouse lot, though all other accessory structure regulations in MMC Subsection 19.502.2.A apply.

No accessory structures are proposed as part of the proposed development, and the applicant has not requested any adjustment to this standard.

The City Council finds that the proposed development meets the standards of MMC 19.505.5 that are applicable to the subdivision and final development plan and program of the Planned Development, noting that consistency with all applicable standards will be confirmed as part of the development review process outlined in MMC Section 19.906 at the time of submittal for development permits for the new rowhouses.

The City Council finds that, as conditioned, the proposed development is consistent with the applicable standards of MMC Chapter 19.500.

13. MMC Chapter 19.600 Off-Street Parking and Loading

MMC 19.600 regulates off-street parking and loading areas on private property outside the public right-of-way. The purpose of these requirements includes providing adequate space for off-street parking, minimizing parking impacts to adjacent properties, and minimizing environmental impacts of parking areas.

MMC Section 19.605 establishes standards to ensure that development provides adequate vehicle parking based on estimated parking demand. MMC Table 19.605.1 provides minimum and maximum requirements for a range of different uses. For rowhouses, a minimum of 1 off-street parking space is required per dwelling unit, with no maximum limit.

MMC Section 19.607 establishes standards for off-street parking areas for residential uses, including for rowhouses. Standards include minimum dimensions for off-street parking spaces and limitations on required spaces being located in the front yard setback.

As proposed, all rowhouse units will have attached garages. Units with front-facing garages have a single-car garage; units with rear-facing garages have a two-car garage. As proposed, all garages will be located outside the front yard setback and of adequate dimension. A final determination of the proposed development's consistency with the applicable standards of MMC 19.600 will be made as part of the development review process outlined in MMC Section 19.906 at the time of submittal for development permits for the new rowhouses.

The City Council finds that the proposed development meets the standards of MMC 19.600 that are applicable to the subdivision and final development plan and program of the Planned Development, noting that consistency with all applicable standards will be confirmed as part of the development review process outlined in MMC Section 19.906 at the time of submittal for development permits for the new rowhouses.

14. MMC Chapter 19.700 Public Facility Improvements

MMC 19.700 establishes provisions to ensure that development provides public facilities that are safe, convenient, and adequate in rough proportion to their public facility impacts.

a. MMC Section 19.702 Applicability

MMC 19.702 establishes the applicability of the provisions of MMC 19.700, including land divisions, new construction, and modification or expansion of an existing structure or a change or intensification in use that result in any projected increase in vehicle trips or any increase in gross floor area on the site.

The applicant proposes to subdivide the subject property to create 92 lots for rowhouse development as well as several other tracts for open space, stormwater facilities, and pedestrian/bicycle connections. The proposed land division triggers the requirements of MMC 19.700.

b. MMC Section 19.703 Review Process

MMC 19.703 establishes the review process for development that is subject to MMC 19.700, including requiring a preapplication conference, establishing the type of application required, and providing approval criteria.

The applicant had a preapplication conference with City staff prior to application submittal, on August 11, 2016. The proposed development triggers a Transportation Impact Study (as addressed in Finding 14-c). The proposal's compliance with MMC 19.700 has been evaluated through a concurrent Transportation Facilities Review application. Finding 14-f addresses the proposal's compliance with the approval criteria established in MMC Subsection 19.703.3, particularly the required transportation facility improvements.

c. MMC Section 19.704 Transportation Impact Evaluation

MMC 19.704 establishes the process and requirements for evaluating development impacts on the surrounding transportation system, including determining when a formal Transportation Impact Study (TIS) is necessary and what mitigation measures will be required.

The proposed development will trigger a significant increase in trip generation above the existing church use on a portion of the site and therefore requires a TIS. City Engineering staff and the City's on-call traffic consultant (DKS) provided the applicant with a scope of work for the TIS. Kittleson & Associates, the applicant's traffic consultant, prepared the TIS that was included with the applicant's larger submittal for

the proposed planned development. To ensure accuracy, the original TIS was updated with additional counts for the intersections of Rusk Road and Highway 224, Rusk Road and Ruscliff Road, Rusk Road and Kellogg Creek Drive, and Kellogg Creek Drive and the proposed Street A.

The TIS concluded that the proposed development does not trigger mitigation of impacts beyond the required frontage improvements and bike lane requirements, for which conditions of approval have been established. The TIS also concluded that the surrounding transportation system will continue to operate at the same level of service as before the proposed development.

However, ODOT and Clackamas County have expressed concern regarding the analysis performed for the right-turn lane for northbound traffic at the Rusk Road/Highway 224 intersection. The TIS indicates a turn lane with a queuing length of 50 ft. ~~The~~ City Engineering staff agrees with ODOT and Clackamas County that this value may be overestimated. The TIS also indicates that the right-turn-on-red allowance is 50 vehicles per hour, which likely is not how this intersection functions where one through-vehicle can block the entire turn lane.

DKS, the City's consultant, has re-analyzed this intersection with the left turn, through movement, and right turn all together as a single lane. Also, the right-turn-on-red movement was reduced to zero vehicles, which is a more accurate representation of how the intersection currently functions. With these adjustments, the resulting volume-to-capacity ratio (v/c) of the single lane is greater than 1.0, indicating a need for mitigation requirements. A condition has been established to require extension of the right-turn lane on Rusk Road at the Highway 224 intersection, to ensure that the surrounding transportation system will continue to operate at the same level of service as before the proposed development

As conditioned, the applicant's TIS is sufficient to meet the requirements of MMC 19.704.

d. MMC Section 19.705 Rough Proportionality

MMC 19.705 requires that transportation impacts of the proposed development be mitigated in proportion to its potential impacts.

The City has determined that conditions established to require improvements on Kellogg Creek Drive and in the right-turn lane on Rusk Road at the Highway 224 intersection meet the proportionality requirements for the proposed development.

As conditioned, the proposed development is consistent with MMC 19.705.

e. MMC Section 19.707 Agency Notification and Coordinated Review

MMC 19.707 establishes provisions for coordinating land use application review with other agencies that may have some interest in a project that is in proximity to facilities they manage.

The application was referred to the Oregon Department of Transportation (ODOT), Clackamas County, Metro, and TriMet for comment. The section of Kellogg Creek Drive fronting the subject property is under the jurisdiction of Clackamas County. The County has regulatory authority where transportation impacts and improvement standards are concerned, and the County's Department of Transportation and Development (DTD) provided comments that have been incorporated into these findings and the associated conditions of approval as appropriate.

f. MMC Section 19.708 Transportation Facility Requirements

MMC 19.708 establishes the City's requirements and standards for improvements to public streets, including pedestrian, bicycle, and transit facilities. However, the subject property's public street frontage is along Kellogg Creek Drive, which is under the jurisdiction of Clackamas County. Where the City has more restrictive standards than the County for certain elements, it is the City's practice to defer to the County standards when the proposed development demonstrates that there is no practicable alternative and that the proposal presents the minimum exception necessary to provide a safe and functional design. Such situations are evaluated at the time of development permit review.

The County DTD provided comments on the application, with recommended findings and conditions that address the County's requirements for such elements as access management, clear vision, street design, and bicycle and pedestrian facilities. Those comments have been incorporated into these findings and conditions of approval as appropriate.

(1) MMC Subsection 19.708.1 General Street Requirements and Standards

MMC 19.708.1 provides general standards for streets, including for access management, clear vision, street layout and connectivity, and intersection design and spacing.

As proposed, the development is consistent with the applicable standards of MMC 19.708.1.

(2) MMC Subsection 19.708.2 Street Design Standards

MMC 19.708.2 provides design standards for streets, including dimensional requirements for the various street elements (e.g., travel lanes, bike lanes, on-street parking, landscape strips, and sidewalks).

The street to the east of Lots 45 and ~~53~~ 57 does not comply with minimum City standards, as the required sidewalk and planter strips are not proposed. The City has allowed this reduced cross section because of the pending adoption of a low-volume residential standard cross section with pedestrian routes on the street surface. The 22-ft right-of-way width accommodates the minimum 10-ft travel lanes, curb, and separation from the private property.

The proposed cross sections for Kellogg Creek Drive and all remaining internal streets conform to applicable requirements and are consistent with MMC 19.708.2.

(3) MMC Subsection 19.708.3 Sidewalk Requirements and Standards

MMC 19.708.3 provides standards for public sidewalks, including the requirement for compliance with applicable standards of the Americans with Disabilities Act (ADA).

As proposed, the development is consistent with all applicable standards of MMC 19.708.3.

(4) MMC Subsection 19.708.4 Bicycle Facility Requirements and Standards

MMC 19.708.4 provides standards for bicycle facilities.

Per Milwaukie's Transportation System Plan (TSP), a bike lane is required connecting the northeast corner of the property to the southwest corner of the

property. The applicant has proposed to construct an on-street bike route through the development. A multiuse path will connect the northeast turnaround on Street B to the Rusk Road/Highway 224 intersection.

As proposed, the development is consistent with all applicable standards of MMC 19.708.4.

(5) MMC Subsection 19.708.5 Pedestrian/Bicycle Path Requirements and Standards

MMC 19.708.5 provides standards for pedestrian and bicycle paths.

Pedestrian access is required at the end of the proposed cul-de-sac, which is satisfied through a 15-ft multiuse path extended to Rusk Road. Pedestrian access is also required from the east end of Street A to Kellogg Creek Drive, which is satisfied through a pedestrian connection in Tracts E and F.

As proposed, the development is consistent with all applicable standards of MMC 19.708.5.

(6) MMC Subsection 19.708.6 Transit Requirements and Standards

MMC 19.708.6 provides standards for transit facilities.

The portion of Kellogg Creek Drive fronting the proposed development is classified as a transit route in the Milwaukie TSP. However, transit facilities are already in place. As a result, transit facility improvements are not required for the proposed development.

As proposed, the development is consistent with all applicable standards of MMC 19.708.6.

Conditions have been established in response to these County findings, to ensure that the proposed development will meet all applicable standards of MMC 19.708, the Clackamas County Roadway Standards, and any other applicable County requirements.

As conditioned, the City Council finds that the proposed development meets the applicable public facility improvement standards of MMC 19.700.

15. MMC Section 19.904 Community Service Uses

MMC 19.904 establishes standards for community service uses, including churches, schools, and parks. MMC Subsection 19.904.5.C authorizes the approval of minor modifications to an approved community service, provided that such modification:

a. Does not increase the intensity of any use.

The proposed modification includes reconfiguring the existing driveway at Rusk Road to reinforce its status as an ingress-only access (left and right turns in), removing some existing parking spaces along the western edge of the parking lot to create access points between the church and the proposed development, and removal of the existing play area adjacent to the western edge of the parking area. The proposed modification will not add square footage to the church use or otherwise result in an increase in activity or use of the church site.

b. Meets all requirements of the underlying zone relating to building size and location and off-street parking and the standards of Title 19.

The applicable standards of Title 19 are those related to off-street parking (MMC Chapter 19.600) and access (MMC Section 19.708 and MMC Chapter 12.16).

As proposed, 10 existing parking spaces will be eliminated from the church parking lot. The church, which has 400 seats, has a minimum parking requirement of 100 spaces (at a ratio of 1 space for every 4 seats, as per MMC Table 19.605.1) and a maximum allowance of 200 spaces (at a ratio of 1 space for every 2 seats). There are currently 225 spaces in the church parking lot. Removal of 10 spaces will bring the church site closer to conformance with the current standards.

In addition, the proposal includes a 6-ft landscape buffer along the northern and western perimeter of the existing parking area, adjacent to the proposed development, which will bring the site closer to conformance with the perimeter landscaping standards of MMC Subsection 19.606.2 and will screen the parking area from the proposed development.

One of the purposes of MMC Section 19.708 Transportation Facility Requirements, and the intent of MMC Chapter 12.16, is to ensure safe access to public streets. The proposed modifications to the existing church driveway at Rusk Road will ensure that the driveway is used for ingress only, which will improve safety on Rusk Road by reducing potential conflicts due to poor sight distance at that location.

c. Does not result in deterioration or loss of any protected natural feature or open space, and does not negatively affect nearby properties.

The proposed modifications to the existing church parking lot and driveway access at Rusk Road do not impact any designated natural resource area or open space feature.

d. Does not alter or contravene any conditions specifically placed on the development by the Planning Commission or City Council.

The property was annexed into the city limits in 1981 (land use file #A-80-07). In 1983, use of the site for pasture land and grazing for horses was approved as a conditional use (file #C-83-08); however, the conditional use application was subsequently withdrawn.

The site was approved as a CSU for church use by the Milwaukie Assembly of God in 1984 (file #CS-84-02). Conditions of approval included requirements to provide plans for landscaping, public facilities, and exterior lighting, as well as a traffic study and right-of-way dedication along Rusk Rd and Kellogg Creek Dr.

In 1987, the City Council approved a zone change for the western portion of the property, from R-10 to R-3, along with a conditional use approval for senior housing and an amendment to the Comprehensive Plan map (file #CPA-87-01, ZC-87-05, CU-87-05, with Ordinance #1639). The senior housing project (called Parkside Village) was never developed.

In 1992, the City approved a 5,500-sq-ft addition to the church building (file #CSO-92-03, NR-92-01). Conditions of approval included requirements to install the approved landscaping and to direct lighting away from the designated natural resource area.

In 1997, the Planning Commission denied a sign permit request to locate an electronic reader board sign on the property near the intersection of Highway 224 and Rusk Rd (file #SP-97-01).

In 2014, the Planning Director approved a minor modification to the existing CSU for the church, for removal of approximately 75 of 300 existing parking spaces as part of a natural resource restoration effort near Mount Scott Creek (file #s CSU-14-06 and NR-14-06). There were no conditions of approval.

The proposed modification does not alter or contravene any of the past conditions placed on the church development by the Planning Commission.

e. Does not cause any public facility, including transportation, water, sewer and storm drainage, to fail to meet any applicable standards relating to adequacy of the public facility.

With regard to public facilities, the proposed modification will affect only the existing church driveway at Rusk Road. As proposed, the driveway will be modified to further limit egress movements at that location, which, due to limited sight distance and the proximity to the intersection of Rusk Road and Highway 224, will improve public safety. A new in/out access to the church site will be established through the proposed development and will be designed to meet applicable standards. The new access will focus more church trips on Kellogg Creek Drive, a local street, instead of on Rusk Road, a collector. The proposed modification will not cause any public facility to fail to meet any applicable standards relating to adequacy.

As proposed, the City Council finds that the proposed development meets the approval criteria for a minor modification to the existing community service use.

16. MMC Section 19.911 Variances

MMC Section 19.911 establishes the variance process for seeking relief from specific code sections that have the unintended effect of preventing reasonable development or imposing undue hardship.

a. MMC Subsection 19.911.2 Applicability

MMC 19.911.2 establishes applicability standards for variance requests.

Variances may be requested to any standard of MMC Title 19, provided the request is not specifically listed as ineligible in MMC Subsection 19.911.2.B.

The applicant has requested two variances: (1) to allow more than 20 dwellings to be served by a closed-end street system as limited by MMC Subsection 19.708.1.E.5; and (2) to exempt 23 of the 92 proposed lots from the requirement of MMC Subsection 19.402.13.I.2 to provide adequate buildable area outside of the WQR and HCA. The second variance request would permit an additional number of units to be constructed through a ~~15~~12% increase in density, as allowed in a Planned Development zone (MMC Section 19.311).

The request would not eliminate the restriction on a prohibited activity, change a required review type, allow a use not allowed outright in the R-10 or R-3 zone, or otherwise produce any of the results listed in MMC Subsection 19.911.2.B. The requests are each eligible for a variance as per MMC 19.911.2.

b. MMC Subsection 19.911.3 Review Process

MMC 19.911.3 establishes review processes for different types of variances. MMC Subsection 19.911.3.C establishes the Type III review process for larger or more complex variations to standards than those allowed through the Type II review process as per MMC Subsection 19.911.3.B, variations that require additional discretion and warrant a public hearing.

The applicant has requested variances to the closed-end street standard established in MMC Subsection 19.708.1.E.5 and to the requirement that all new lots have adequate buildable area outside of the WQR and HCA. These requests are not eligible for Type II review as provided in MMC 19.911.3.B and so are subject to Type III review as per MMC 19.911.3.C. As noted in Finding 6, since the variance requests are associated with a proposed Planned Development, which itself requires Type IV review, the variances are also subject to Type IV review as per MMC Subsection *19.1001.6.B.*

c. MMC Subsection 19.911.4 Approval Criteria

MMC 19.911.4 establishes approval criteria for variance requests. Specifically, MMC Subsection 19.911.4.B.1 provides approval criteria for Type III variances where the applicant elects to utilize the Discretionary Relief Criteria:

(1) The applicant's alternatives analysis provides, at a minimum, an analysis of the impacts and benefits of the variance proposal as compared to the baseline code requirements.

Closed-End Street System: In order to preserve the existing white oak trees in the southwestern corner of the site and to maintain 92 dwelling units as originally proposed, the development plan was shifted approximately 40 ft to the east and removed one of the two street connections to Kellogg Creek Drive. Although this effectively makes the street system a dead-end one serving all 92 units, the revised network maintains safe internal circulation and sufficient fire and emergency service access for the proposed development because access is available through the adjacent church property.

Adequate Buildable Area Variance: As noted above, 23 of the 92 proposed lots are affected by the requested variance. Eliminating the lots in question would reduce the proposed development below the minimum density of 66 units required for the site with the proposed street configuration. In addition, eliminating those lots would remove the need for the requested density bonus, which was being justified by the inclusion of several amenities (e.g., community garden, additional landscaping) that would likely be removed from the proposal. The proposed disturbance to the WQR and HCA will be mitigated with native plantings to enhance the remaining natural resource areas.

The City Council finds that the applicant's analysis of alternatives is sufficient to address the impacts and benefits of both of the proposed variances. This criterion is met.

(2) The proposed variance is determined to be both reasonable and appropriate, and it meets one or more of the following criteria:

(a) The proposed variance avoids or minimizes impacts to surrounding properties.

(b) The proposed variance has desirable public benefits.

(c) The proposed variance responds to the existing built or natural environment in a creative and sensitive manner.

Closed-End Street System: The proposed variance will not have any negative impacts on surrounding properties and helps ensure that the existing white oak trees in the southwestern corner of the site will not be removed.

Adequate Buildable Area Variance: The requested variance does not affect any adjacent properties outside the proposed development. Approval of the variance allows the development of 92 units of housing instead of 61 units, which helps address an identified housing need for the community. The overall development layout is configured to minimize intrusion into the floodplain and designated natural resource areas on the site, and to focus impacts on WQR and HCA resources that are of lower ecological value and/or that have already been impacted by past development activity. Mitigation plantings will enhance remaining natural resources on the site.

The City Council finds that the requested variances are reasonable and appropriate and that they both meet one or more of the criteria provided in MMC Subsection 19.911.B.1.b.

(3) Impacts from the proposed variance will be mitigated to the extent practicable.

Closed-End Street System: To address potential impacts of the proposed variance on fire and emergency service access, the design of the revised street system incorporates comments received from Clackamas Fire District #1 to provide adequate access for fire and emergency service vehicles.

Adequate Buildable Area Variance: The applicant has provided a mitigation plan for disturbed natural resource areas that includes removal of nuisance plants, noxious materials, and debris within the WQR and HCA areas on the site. As proposed, ~~more than 1,150~~863 native trees and ~~5,750~~4,317 native shrubs will be planted. Two other areas beyond the disturbance zones will be enhanced with removal of nuisance plants and debris and additional native plantings. As proposed, the mitigation plan will enhance the natural resource areas that remain.

The City Council finds that both variance requests will be mitigated to the extent practicable.

The City Council finds that the proposed development meets the approval criteria for a Type III variance request, as provided in MMC 19.911.4.B.

As proposed, the City Council finds that both of the requested variances are allowable as per the applicable standards of MMC 19.911.

17. MMC Chapter 19.1200 Solar Access Protection

A primary purpose of MMC 19.1200 is to orient new lots and parcels to allow utilization of solar energy. In particular, MMC Section 19.1203 establishes solar access provisions for new development. In particular, MMC Subsection 19.1203.2 establishes the applicability of MMC Subsection 19.1203.3 as applications for the creation of lots in single-family zones. Exceptions are allowable to the extent the Planning Director finds that the applicant has shown one or more of the conditions listed in MMC Subsections 19.1203.4 and 19.1203.5 exist and that exemptions or adjustments are warranted.

a. MMC Subsection 19.1203.3 Design Standard

MMC 19.1203.3 establishes a solar design standard for at least 80% of the lots in any proposed development, including basic requirements for north-south dimension and front-lot-line orientation with respect to a true east-west axis. There are two other options for compliance, either establishing a protected solar building line or demonstrating a level of performance with respect to protection from shading.

The proposed development is for 92 lots, none of which have a minimum north-south dimension of at least 90 ft. However, 76 lots (approximately 82%) have a minimum north-south dimension of at least 80 ft and have the front lot line oriented within 30 degrees of a true east-west axis. Of the remaining 16 lots, all have their long axis oriented within 30 degrees of a true east-west axis, but due to the attached nature of the rowhouses in the proposed development, the ground floor south wall of most of the units will be shaded by the adjacent unit to the south.

The applicant has requested an adjustment to the design standard of MMC 19.1203.3.

b. MMC Subsection 19.1203.5 Adjustment to Design Standard

MMC 19.1203.5 allows the reduction of the number of lots that must comply with MMC 19.1203.3 to the minimum extent necessary, if the applicant demonstrates that the standard would cause or is subject to certain conditions, such as adverse impacts on density, cost, or amenities.

Considering the flexibility of design afforded to planned developments in MMC Section 19.311, the allowance for a density bonus as discussed in Finding 7-a, and the site constraints presented by natural resources and floodplain on the site, the design standard of MMC 19.1203.3 presents a particular challenge for the subject property. To configure more lots with a north-south axis of at least 90 ft would result in additional disturbance to natural resources or the floodplain. Reducing the number of lots accordingly would substantially reduce the effectiveness of the Planned Development option for a site that is otherwise well suited for flexible design.

As proposed, 76 of the 92 proposed lots (approximately 82%) are close to meeting the design standard of MMC 19.1203.3, with a north-south dimension of at least 80 ft. In a planned development scenario, where adjustments to conventional lot size and dimensional requirements are expected, and where strict adherence to the design standard would result in a significant decrease in density or increase in disturbance to natural resource and floodplain areas, a request to reduce the number of lots that must comply is reasonable.

The City Council finds that the request to adjust the number of lots that must comply with the design standard of MMC 19.1203.3 is warranted. The 76 lots with a north-south axis of at least 80 ft are sufficient to meet the requirements of MMC 19.1200.

As proposed, and with the approved reduction noted above, the City Council finds that the proposed development complies with the applicable standards of MMC 19.1200.

18. The application was referred to the following departments and agencies on April 13, 2017, with additional materials sent on April 26, 2017:
    - Milwaukie Building Department
    - Milwaukie Engineering Department
    - Milwaukie Public Works Department
    - ESA (City's on-call consultant for natural resource review)
    - Clackamas Fire District #1
    - Lake Road Neighborhood District Association (NDA) Chairperson and Land Use Committee (LUC)
    - Clackamas County Department of Transportation and Development
    - Metro

- Oregon Department of Transportation (ODOT)
- TriMet
- North Clackamas Parks & Recreation District
- Oak Grove Community Council

The comments received are summarized as follows, including comments received in response to the public notice posted on the site and mailed to property owners and residents within 500 ft of the site:

a. **Michelle Wyfells, Planner II, TriMet:** Given the imminent changes to re-route the existing bus service on Kellogg Creek Drive (Line 152), TriMet has no comments on the proposal.

b. **Matt Amos, Fire Inspector, Clackamas Fire District #1 (CFD#1):** Comments related to fire access and water supply requirements, including notes on required turning radii and approvable turnarounds.

c. **Rob Livingston, Erosion Control Specialist, City of Milwaukie Public Works:** Due to the site being over 5 acres, a 1200C construction stormwater permit from DEQ will be required. A maintenance agreement with the City must be established for the stormwater facilities on site. For the City's erosion control permit, more information will be required on how hydric soils will be managed during excavation of the wetland area. Given the number of new households proposed and the accompanying number of anticipated household pets, a dispensing device(s) for pet-waste bags should be required in the large natural open space area. There is also concern for the likelihood of negative impacts to water quality and fish habitat from household pets recreating in Mount Scott Creek.

   The proposed stormwater facilities do not show details for detention prior to discharge into Mount Scott Creek, particularly regarding how or where stormwater discharge will be mitigated. Many of the proposed plantings are near buildings and sidewalks—tree plantings closer to the creek would improve shade, reducing stream temperatures and mitigating for the development's removal of large mature trees from the site. The plantings proposed in Additional Enhancement Areas A and B do not provide meaningful streambank enhancement or vegetative shading for the creek.

d. **Paul Hawkins, Land Use Chair, Lake Road NDA:** The FEMA flood data for this location is dated, so it is unclear whether the three proposed detention ponds will be adequate. The "Y" intersection of Rusk Road and Kellogg Creek Drive is less than ideal, and traffic currently backs up on Rusk Road at the Highway 224 intersection during weekday commuting hours.

e. **Rebecca Hamilton, Regional Planner, Metro:** Metro notes that the application would require a Type III Variance to allow impacts to designated natural areas for creating 31 of the 92 proposed lots. The City of Milwaukie's Municipal Code is consistent with Metro's Functional Plan. If the City of Milwaukie is satisfied that the application has met its requirements for a Type III Variance, and if there is no request for an amendment to the City's comprehensive plan or zoning code, then Metro has no comment on this application.

f. **Joseph Edge, Director, Oak Grove Community Council:** The trip estimates for the proposed development appear to be low, as the proposed units will perform more like single-family detached dwellings than townhouses, given their proposed price point and the likelihood that two wage-earners employed outside the household will live in

each unit. The stormwater calculations are based on a pre-development curve number that is too high and does not accurately represent the pre-development conditions that should be more conservatively assumed for the site, especially considering the flood potential of the area. The loss of large white oak trees in the southwestern corner of the site is unacceptable, as these mature, old-growth trees cannot be sufficiently replaced with new trees. An alternative that preserves those trees and combines the 12 units in the southwestern portion of the site into a multifamily building elsewhere on the site would be more acceptable.

g. **Sarah Hartung, Senior Biologist, ESA (City's On-Call Natural Resource Consultant):** A report providing peer review of the applicant's Natural Resource Review report has been provided to City staff and has been integrated into the Recommended Findings and Conditions of Approval.

h. **Marah Danielson, Development Review Planner, ODOT Region 1:** The proposed zone change results in only a small increase in additional trips to the state highway. The applicant's Traffic Impact Analysis (TIA) shows a high number of crashes at both the Rusk Road and Webster Road intersections with Highway 224. Since the TIA analyzed the northbound right-turn movement at the Rusk Road/Highway 224 intersection as a right-turn lane where there is only a flare for a turn lane, ODOT recommends a condition requiring installation of a northbound right-turn lane at the Rusk Road/Highway 224 intersection.

i. **Alex Roller, Engineering Tech II, City of Milwaukie Engineering Department:** Comments related to the proposal's compliance with Milwaukie Municipal Code (MMC) Title 12 Streets, Sidewalks, and Public Places; MMC Title 18 Flood Hazard Regulations; and MMC Chapter 19.700 Public Facility Improvements, with relevant recommended conditions of approval.

j. **Kenneth Kent, Senior Planner, Clackamas County Department of Transportation and Development (DTD), Engineering Division:** Both Kellogg Creek Drive and Rusk Road are under the County's jurisdiction, so County standards and requirements apply where frontage improvements are concerned. On Kellogg Creek Drive, half-street improvements are required (minimum 16-ft roadway, curb or curb and gutter, 5-ft landscape strip, 5-ft sidewalk), with no bike lane striping. Recommendation that the existing church driveway at Rusk Road be closed, due to poor sight-distance and the difficulty of ensuring one-way ingress to the site without a median on Rusk Road. Recommendation that the applicant's traffic impact study be updated to (1) evaluate the study intersections to include estimated summer traffic volumes from North Clackamas Park, (2) include impacts of closure of the existing church driveway at Rusk Road, (3) reevaluate queuing on Rusk Road at the Highway 224 intersection using the SimTraffic program, and (4) evaluate the need for a northbound left-turn lane at the Rusk Road intersection with Kellogg Creek Drive. Suggestion that an analysis or evaluation of parking availability within the proposed development (in driveways, garages, and on-street) be conducted to understand the potential impacts of overflow parking in the adjacent neighborhood.

k. **Kathryn Krygier, Planning and Development Manager, and Tonia Williamson, Natural Resource Coordinator, North Clackamas Parks & Recreation District (NCPRD):** Concern that increased traffic resulting from the proposed development will impact access to nearby NCPRD facilities. Note that the applicant's Traffic Impact Study (TIS) was not conducted during the time when activity at the ballfield complex in North Clackamas Park is at its peak (April through July). Concerns about safety at

the intersection of Rusk Road and Kellogg Creek Drive. Suggestion that a parking study be conducted to examine the issue of visitor parking within the proposed development. Concern that the bike lane between Rusk Road and Street B appears to dead-end. Questions about the soft-surface trail system, including public accessibility, maintenance, and assessment of natural resource impacts, with a note that the trails are short and discontinuous. Request for a phasing plan, if phasing is proposed. Concern about the potential for increased flooding resulting from development within designated natural resource areas on the site. Suggestion that the applicant has not sufficiently demonstrated that impacts to natural resources will be minimized.

l. **Laura Hickman, area resident:** Concern about traffic impacts resulting from the proposed development; including pedestrian and bicycle safety to and from area homes, North Clackamas Park, and nearby schools. Questions about the methodology and assumptions of the TIS.

m. **Ray Olma, area resident:** Traffic on Highway 224 and Rusk Road is already bad and will be made worse by trips from the proposed development. Concern for pedestrian safety on and crossing Rusk Road, which does not have sidewalks.

n. **Jamie Marshall, area resident:** Existing infrastructure (including water treatment facilities and I-205) is inadequate to support the proposed development.

o. **Melanie Frisch, area resident:** Concern about traffic impacts (inadequate infrastructure) and impacts to natural resources.

p. **Alex Roller, Engineering Tech II, City of Milwaukie Engineering Department:** Revisions to comments provided in the earlier memo related to MMC Title 12 Streets, Sidewalks, and Public Places; MMC Title 18 Flood Hazard Regulations; and MMC Chapter 19.700 Public Facility Improvements.

q. **Dan Sweet, area resident:** Comments in opposition to the proposed development, based on concerns about traffic, flooding, and stormwater runoff.

r. **Vincent Alvarez, Chair, Lake Road NDA:** Concerns about the proposed destruction of existing wetlands and removal of healthy white oak trees, flooding potential, and traffic impacts.

s. **Bruce Reiter, area resident:** Concerns about traffic impacts and potential impacts to the wetland's role in flood management.

t. **John Green-Hite, area resident:** Concerns about impacts to the watershed and flooding as well as to traffic.

u. **Joan Young, area resident:** Concerns about impacts to the broader community beyond city limits, including impacts to traffic, the environment in general, the white oak trees in particular, and flooding. Reports a history of illegal fill activity on the site.

v. **Howard Lanoff, area resident:** Concern about increased density and its impacts on livability.

w. **Georgia Bogner, area resident:** Wait times at the light at Rusk Road and Highway 224 are already bad. The proposed 92-unit development will add more than 1 vehicle each during peak times.

x. **Chris Runyard, ecological restoration specialist:** Submitted a 3-minute video posted online in opposition to the proposed development, citing concerns about impacts to the white oak trees, wetlands, and flooding.

y. **Linda Huntley, area resident:** Comments in opposition to the proposed development, based on concerns about traffic (accidents and congestion).

z. **Jennifer Stipetic, area resident:** Concerns about impacts on area traffic and the environment, including a desire to preserve the existing white oak trees and avoid any fill in the wetlands.

aa. **Terry Gibson, Board Chair of North Clackamas Urban Watersheds Council:** The applicant has failed to show that the proposed development avoids or minimizes impacts to surrounding properties, has desirable public benefits, or responds to the existing built or natural environment in a creative or sensitive manner. The application does not address the potential for increased flooding in North Clackamas Park or the public benefit currently provided by the natural resource area on the site (including the white oak trees). The watershed council is heavily invested in the restoration of the natural resource area on site through its Streamside Stewards Program and believes the proposed mitigation plantings would be redundant of these earlier efforts.

bb. **Linda Huntley, area resident:** Additional note that traffic from ball field activity in the park (Spring through Fall) already presents significant congestion and safety issues.

cc. **Sara Miller, area resident:** The proposed development does not promote several of the goals identified in Milwaukie's 2040 Vision, particularly where it proposes to remove existing white oak trees and fill in the wetland and floodplain. The proposal does not appear to include sidewalks or address sidewalk gaps and ADA deficiencies. There are better locations in Milwaukie to develop townhomes.

dd. **Dick Shook, area resident:** Concerns about impacts on area creeks and wetlands (flooding), the old-growth white oak trees, and the number of proposed units.

ee. **Matt Menely, area resident:** The proposed development does not reflect the community values that have been expressed over time—walkable communities, more open space, and housing developments that create a sense of community. Wetlands and trees provide benefits to the community and should be preserved.

ff. **Laura Hickman, area resident:** Submitted a report from the North Clackamas School District that included a detailed review of pedestrian conditions on Rusk Road. Walking conditions on Rusk Road are unsafe.

gg. **Todd Alsbury, District Fish Biologist, Oregon Department of Fish & Wildlife (ODFW):** ODFW has conducted a preliminary review of the proposed project and asks for additional time for review. Priority and/or special status fish and wildlife species are known to occur on and near the property, and Mount Scott Creek is considered Essential Salmonid Habitat. Flowing water, riparian zones, wetlands, and Oregon white oak habitat are identified as Strategy (Priority) Habitats in the Oregon Conservation Strategy. ODFW is concerned about siting infrastructure within an active floodplain, encroachment into the riparian zone, loss of existing wetlands, and loss of Oregon white oak trees that would result from the proposed development. ODFW recommends that new infrastructure be sited outside floodplains, wetlands, and other priority fish and wildlife habitats, that those habitats be adequately buffered, and that the white oak trees be retained.

hh. **Lisa Kennedy, area resident:** Comments in favor of the proposed development, including that it provides plenty of open space with affordable housing.

ii. Sue Hayes, area resident: Comments in opposition to the proposed development, including that 92 units are too many, the lots are too small, the site is in a flood zone, and that it would increase traffic and be dangerous for pedestrians.

jj. Bev St. John, area resident: Concerns about traffic impacts and pedestrian safety (lack of sidewalks in the area).

kk. Randy Day, area resident: The proposed development is too much for this site, considering the impact to adjacent sensitive lands and the fact that it will be an auto-dependent development. The traffic impacts will be significant and a right-turn lane on Rusk Road at Highway 224 is needed now; increased trips would seem to necessitate a left-turn lane and signal as well.

ll. Jarrod Allen, area resident: Opposition to the proposed development, due to traffic impacts and a lack of pedestrian facilities. The wetland area should remain undeveloped.

mm. Lois Keiser, area resident: Concerns about general impacts to neighborhood (density, water/sewer infrastructure, and traffic).

nn. Ben Geertz, area resident: Concerns for pedestrian and other non-motorized safety, as Rusk Road is currently very unsafe (no shoulder, blind corners, limited pedestrian facilities).

oo. Lois Herring, area resident: Support for May 25 comment by Joseph Edge that traffic study calculations for the proposed development should be done using the assumption that the proposed rowhouses will function in similar fashion to single-family detached dwellings.

pp. Linda and Roger Huntley, area residents: Additional concerns related to the need to preserve salmon habitat and the white oak trees.

qq. Joseph Edge, Director, Oak Grove Community Council: There is no guarantee that the market rate for the proposed units will remain within the price range of modest-income people, so the promotion of the proposed units as workforce housing should not be the basis for granting a density bonus. To be more affordable, at least some of the housing should be proposed as rental units in multifamily buildings. This would also reduce the aggregate footprint of structures on the site and thus further avoid and minimize impacts to natural resources.

The site is not ideal for lower income affordable housing, due to the expense of motor-vehicle ownership and the fact that the lack of safe transportation options at this location means that the people who live at the site will likely have 1 or 2 vehicles and therefore will not likely be lower income people. One suggestion is to have the new homeowners association provide a car-sharing service to help reduce the number of resident-owned vehicles in the new development. Such a car-sharing service, together with a multifamily configuration of buildings to reduce impacts to natural resources, could arguably be viewed as the kind of creative and outstanding amenities that would warrant a density bonus.

rr. Chris Runyard, ecological restoration specialist: It is not the role of the Planning Commission or City staff to ensure that developers make a profit. Ninety-two (92) units are not necessary for the developer to make a profit. The new units will not be “affordable housing” but will be sold at the market rate. The developer would benefit from giving the open space tract to the North Clackamas Parks & Recreation District (NCPRD), so the wetlands should not be negotiated away in exchange for the higher

density (92 units). The City does have a responsibility to protect the public good (e.g., wetlands, trees, housing, and reduced flooding) and should be more concerned with protecting natural resources than with the developer's profit margin.

ss. Kathryn Krygier, Planning and Development Manager, North Clackamas Parks & Recreation District (NCPRD): NCPRD is willing to acquire and manage the proposed open space tract. No funds are available for NCPRD position to purchase the tract or to provide System Development Charge (SDC) credits in exchange, but NCPRD would accept the tract if offered at no cost. The District's interest extends only to the open space tract and not to the community garden or play area.

If acquired, NCPRD would manage the tract to be compatible with the master plan for North Clackamas Park, including approval of the location and specifications of the trail and review of the mitigation plan. NCPRD would either accept the tract after the mitigation plantings had been installed and approved by the City or could implement the mitigation plan itself with the funding provided by the developer. The District is also amenable to having the City take ownership of the tract and amending the Intergovernmental Agreement (IGA) as needed to have NCPRD manage and maintain the tract.

Pedestrian and bicycle routes through and within the site are critical to the development's success. To provide for complete connectivity throughout the site, the path shown on the revised site plan where a road was shown on the original plan should be public and meet ADA requirements.

tt. Alex Roller, Engineering Tech II, City of Milwaukie Engineering Department: Revised comments related to the proposed variance to the number of lots allowed to be served by a closed-end street system (MMC Subsection 19.708.1.E.5).

uu. Marah Danielson, Development Review Planner, ODOT Region 1: Comments on the revised traffic information, concluding that the intersection of Rusk Road and Highway 224 meets ODOT standards under the proposed development scenario but will continue to experience congestion. ODOT agrees that the addition of a northbound right-turn lane on Rusk Road will improve present and future operation.

vv. Todd Alsbury, District Fish Biologist, (ODFW): Significant concerns from a water quality perspective and for the potential for direct impacts if the riparian area is compromised. Concern that developments of this size provide too much risk to be located within 100 ft of salmon-bearing streams, particularly ones that are the focus of recovery efforts.

ww. Mat Dolata, DKS (City's On-Call Traffic Consultant): Adjustment to an earlier memo provided to City Engineering staff in response to the updated traffic information. No change in recommendation—no significant off-site traffic impacts are anticipated as a result of the proposed development.

xx. Kenneth Kent, Senior Planner, Clackamas County DTD: Additional comments in response to the revised site plan. With the single point of access to Kellogg Creek Drive, use of the church driveway on Rusk Road may increase, including as an exit (even if modified to be enter-only). The supplemental traffic report does not discuss the church driveway at Rusk Road and the County continues to recommend closure of that access point. In addition, the County notes that bike lanes are not usually recommended on local streets like Kellogg Creek Drive; to preserve existing white oak trees in the public right-of-way, the County recommends eliminating the bike lane and replacing it with a curb-tight sidewalk.

yy. **Nancy Pierce, area resident:** Opposition to the proposed development, citing concerns about inadequate infrastructure and traffic impacts.

zz. **Chris Runyard, ecological restoration specialist:** Assertion that the proposed development is too large for the site, that no impacts to designated natural resources should be allowed, and that all white oak trees and associated habitat should be preserved.

aaa. **Mary Zellharie, area resident:** Opposition to the proposed development due to concerns about traffic impacts.

bbb. **Judy Sherley, area resident:** Opposition to the proposed development, citing concerns about natural resource impacts and traffic impacts, with several suggestions for traffic mitigation.

~~tt.~~ccc. **Ed Hacmac, area business owner:** Concerns about traffic impacts, with a suggestion to consider constructing a roundabout at the intersection of Kellogg Creek Drive and Rusk Road.

ATTACHMENT 3-b
Recommended Conditions of Approval
Master File #PD-2017-001
Kellogg Creek Planned Development

Conditions

1. The applicant shall submit a final plat application within 6 months of the preliminary plat approval in accordance with MMC Section 17.24.040. The applicant shall obtain approval of the final plat prior to the expiration of this preliminary plat approval. If the applicant chooses to phase the final plat approval, a revised stormwater report shall be provided with the submittal for each phase. A payment and performance bond for 100% of the cost of the required public improvements shall be provided with the submittal materials ~~for the first phase~~.

2. The applicant's final plat application shall include the items listed on the City of Milwaukie Final Plat Checklist. The following specific items and changes are required as part of the application:

   a. Provide a written narrative describing all changes made to the final plat that are not related to these conditions of approval.

   b. Provide a final plat that substantially conforms to the revised plans approved by this action, which are the plans stamped received by the City on July 11, 2017; and modified by the updated floodplain mitigation exhibit received on July 17, 2017; except as otherwise modified by these conditions of approval.

      Note that plans for the open space tract (Tract E), particularly the location of the soft-surface trail system and the nature and location of any fencing between the tract and a public street,~~)~~ are understood to be conceptual and that specific details shall be determined prior to final plat approval. The final details shall be approved by the Planning Director after review by North Clackamas Parks & Recreation Department (NCPRD) staff. ~~If the open space tract remains~~ in the ownership of the developer or a Home Owners' Association (HOA), ~~maintenance of the trail system shall be set forth in the long-term maintenance plan as noted in Condition 2-i, below.~~ Plans for the community garden are also understood to be conceptual, with details to be finalized prior to final plat approval, with ongoing maintenance provided by the HOA.

   c. The modifications required by these conditions of approval include the following revisions to all relevant plan sheets:

      (1) As per Finding 14-c, extend the northbound right-turn lane at the Rusk Road/Highway 224 intersection sufficient to meet applicable ODOT standards.

      (2) As per Finding 12-a, provide sufficient detail to demonstrate that the pedestrian ~~and bicycle pathways~~connections on Tracts H and I are at least 5 ft wide~~,~~; that the pedestrian/bicycle path in the northeast corner of Tract E is at least 10 ft wide; and that all of these pathways are constructed of hard surface materials that are permeable for stormwater~~,~~ and meet all other applicable design standards of MMC Subsection 19.504.9.E, including the requirement for lighting to a minimum level of 0.5 footcandles.

      (3) As per Finding 11-f(2), revise the mitigation planting plan to ensure that all mitigation plantings are species found on the Milwaukie Native Plants List.

      (4) As per Finding 11-f(2), re-evaluate the assessment of WQR classification at the various sample points noted in the applicant's technical report. Revise the configuration of Mitigation Area A accordingly.

Commented [KB1]: The revised site plan does not include phasing.

Commented [KB2]: Suggestion from NCPRD, in anticipation of future maintenance needs.

Commented [KB3]: The developer has proposed to dedicate the open space tract to the City.

Commented [KB4]: Clarification of path width and location.

d. The final plat submittal shall include a complete set of revised plans. The revised plans shall be consistent with one another, accurate with respect to the proposed development details, drawn to scale, and providing a legend that clearly identifies all detailed features. The final plat shall include spaces for signatures by the Milwaukie Planning Director and Milwaukie Engineering Director~~, and~~ as well as a note indicating that the subdivision is subject to the requirements of City of Milwaukie Land Use Application master file PD-2017-001.

~~e. Provide a concurrence letter from the Department of State Lands (DSL) regarding the delineated wetland on the site.~~

~~f.~~e. Provide~~public easements~~ ~~and/or deed restrictions as required by this approval, including for public access to the soft-surface trail system on Tract G; public access to the bicycle and pedestrian connection from Street B to Rusk Road on Tract E;~~ a public access easement ~~to~~for the pedestrian connections ~~across~~ on Tracts H and I, including across Alley C~~; and private access through Alley C for the church~~.

~~g.~~f. Provide Convenants, Conditions, and Restrictions (CC&Rs) for the Home Owners' Association (HOA) that will be established for the proposed development. Details shall address maintenance of the publicly accessible pedestrian and bicycle connections on the various tracts as well as of common areas such as the community garden.

~~h. Either dedicate the open space tract to the City or NCPRD or demonstrate that the HOA and CC&Rs will ensure adequate long-term maintenance of the mitigation plantings and restoration areas within the open space tract. Note that, under the HOA option, if proper maintenance of the open space tract does not occur, the CC&Rs shall establish the right for the City to undertake maintenance of the open space tract and shall clearly state that the City may put a lien on all of the properties within the development to pay for all maintenance costs.~~

~~i.~~g. As per Finding 11-f(2), establish a ~~long term~~two-year maintenance plan for the open space tract (Tract E). The maintenance plan shall be coordinated with NCPRD; approved by the Planning Director; and shall address such topics as survival of mitigation plantings, tree health, public access, trail maintenance, litter management, weed control, fencing, and similar issues.

~~j.~~h. Provide design details for the new retaining walls adjacent to the open space tract, including wall texture and adjacent landscaping that screens the walls (beyond the mitigation plantings required for natural resource disturbance).

3. Prior to approval of the Final Plat, the following items shall be resolved:

a. As proposed, dedicate the open space tract (Tract E) to the City.

b. Install all required mitigation plantings in the open space tract (Tract E) as per the approved mitigation plan. EAs per Finding 11-f(2), existing plantings from previous restoration efforts within the open space tract shall be preserved where possible.

The applicant shall provide a bond sufficient to cover the costs of ensuring the survival of mitigation plantings, including watering, weed control, and plant replacement due to mortality. This mitigation maintenance bond shall be held by the City until the end of the required monitoring period, which is two years after the initial mitigation plantings are completed.

c. Submit a letter from the project landscape designer attesting that all required site plantings have been completed in conformance with the approved site plans and with City standards, including all mitigation plantings. This includes removal of all invasive

Commented [KB5]: A concurrence letter from DSL was included in the revised Natural Resource report.

Commented [KB6]: With the proposal to dedicate the open space tract to the City, public easements are not necessary to ensure public access.

Commented [KB7]: Alley C is not intended to be accessible to the church except for emergencies.

Commented [KB8]: Follow-through on a note in the findings.

Commented [KB9]: Condition stemming from discussion with NCPRD about future maintenance of the open space tract.

Commented [KB10]: The next 3 items were moved farther forward within Condition 3.

or nuisance species vegetation (as identified on the Milwaukie Native Plant List), noxious materials, and man-made debris such as concrete rubble from within all WQR and HCA locations on the site, on the north and south sides of the creek, as per Finding 11.

d. As per Finding 11-f(2), demarcate the boundary of the delineated wetland within the open space tract, using permanent signage and/or split-rail fencing.

e. As per Finding 11-f(2), provide at least two pet-waste bag dispensing devices dispersed along the soft-surface trail system.

~~a.~~f. Submit a final stormwater management plan to the City of Milwaukie Engineering Department for review and approval. The plan shall be prepared in accordance with Section 2 – Stormwater Design Standards of the City of Milwaukie Public Works Standards. Submit full-engineered plans for construction of all required public improvements, reviewed and approved by the City of Milwaukie Engineering Department. All utilities shall conform to the Milwaukie Public Works Standards.

~~b.~~g. Obtain a City right-of-way permit for construction of all required public improvements listed in these recommended conditions of approval for the public right(s)-of-way under City of Milwaukie jurisdiction.

~~c.~~h. Pay an inspection fee equal to 5.5% of the cost of the public improvements.

~~d.~~i. Provide a payment and performance bond for 100% of the cost of the required public improvements.

~~e.~~j. Provide an erosion control plan and obtain an erosion control permit.

~~f.~~k. Dedicate 14 ft of right-of-way on Kellogg Creek Drive fronting the subject property to accommodate the required parking and bike facilities.

~~g.~~l. Install all underground utilities, including stubs for utility service prior to surfacing any streets. Utilities shall be designed to minimize or eliminate infiltration of floodwaters into the system. New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of floodwaters into the system and discharge from the systems into floodwaters. Relocate or provide a private utility easement for all utilities encroaching onto adjacent properties.

~~h.~~m. Construct a 5-ft set-back sidewalk, 4-ft planter strip, curb and gutter, 7-ft parking strip, and 10-ft travel lane for each half of right-of-way on Street A and Street B.

~~i.~~n. Construct all ADA ramps and driveways on Street A and Street B.

~~j.~~o. Extend the right-turn lane for northbound traffic at the Rusk Road/Highway 224 intersection in accordance with the applicable ODOT standards.

~~k.~~p. Construct a driveway approach to meet all guidelines of the Americans with Disabilities Act (ADA) to each new lot that takes direct access from a public street. The driveway approach aprons shall be between 9 ft and 20 ft in width and least 7.5 ft from the side property line.

~~l.~~q. Clear vision areas shall be maintained at all driveways and accessways and on the corners of all property adjacent to an intersection. Remove all signs, structures, or vegetation more than 3 ft in height located in “vision clearance areas” at intersections of streets, driveways, and alleys fronting the proposed development.

~~m.~~r. Provide a 12-month Maintenance Bond upon completion of the construction.

~~n.~~s. Provide a final approved set of Mylar and electronic PDF “As Constructed” drawings to the City of Milwaukie prior to final inspection.

~~o.~~t. Construct and receive County Engineering inspection for all required public improvements in the public right(s)-of-way under Clackamas County jurisdiction. All frontage improvements in or adjacent to Clackamas County right-of-way shall be designed and constructed in accordance with *Clackamas County Roadway Standards*.

Prior to commencement of site work the applicant shall obtain a Development Permit from the Clackamas County Engineering Division for design and construction of required improvements to Kellogg Creek Drive. To obtain the Permit, the applicant shall submit plans prepared and stamped by an Engineer registered in the State of Oregon, provide a Performance Guarantee, and pay an Inspection Fee. The Performance Guarantee is 125% of the approved Engineer's cost estimate for the required improvements.

Prior to commencement of utility work within the Kellogg Creek Drive or Rusk Road rights-of-way, a Utility Placement Permit shall be obtained from the Clackamas County Engineering Division.

Required improvements to Kellogg Creek Drive include the following:

(1) A minimum 16-ft-wide one-half street improvement for a local roadway. The applicant shall widen Kellogg Creek Drive so that the minimum total road width along the site frontage is 32 ft. The structural section for Kellogg Creek Drive improvements shall consist of 4 in of asphalt concrete, per *Clackamas County Roadway Standards Standard* Drawing C100.

(2) Standard curb, or curb and gutter if curbline slope is less than 1%.

(3) Adjacent to the curb, a 5-ft landscape strip, including street trees, shall be constructed along the entire site frontage.

(4) Except where modified by the City Engineering Director, a minimum 5-ft-wide unobstructed sidewalk shall be constructed along the entire site frontage, per Standard Drawing S960. Where the sidewalk does not connect to sidewalk on adjacent property, the end of the sidewalk shall include a concrete ADA accessible ramp, providing a transition from the new sidewalk to the edge of the pavement. The applicant shall conduct an exploratory excavation using an airspade, hydrovac, or similar tool where improvements will be adjacent to existing white oak trees. The applicant's arborist shall determine whether the improvements will affect any roots critical to the health or stability of the oak trees and shall prescribe additional treatment methods as needed to minimize the possibility of tree failure, as preservation of the trees was noted as a priority in Finding 7-a-2(c).

(5) Inbound and outbound tapers shall be provided per Section 250.6.4 of the *Clackamas County Roadway Standards*. The full road improvement shall extend to the westerly project property line, with the outbound taper beginning at that point.

(6) Dual curb ramps shall be constructed at proposed intersections with Kellogg Creek Drive, per Standard Drawing S910. A perpendicular curb ramp shall be constructed at the westerly project boundary, per Standard Drawing S940. Crosswalk striping shall be modified as necessary based on required road widening. The designer shall complete the County ADA Assessment Checklist and provide a copy with the improvement plans. The County has adopted the following curb ramp design and construction standards:

Feature	Design Standard	Construction Standard
Ramp Slope	7.5%	8.33%
Ramp Cross Slope	1.5%	2.0%
Landing (turning space) Cross Slope	1.5%	2.0%

(7) Drainage facilities shall be in conformance with Water Environment Services regulations and *Clackamas County Roadway Standards*, Chapter 4. Stormwater detention facilities shall not be located within the public right-of-way.

(8) The applicant shall grant an 8-ft-wide public utility easement adjacent to the public right-of-way along the entire site frontage of Kellogg Creek Drive.

~~p.~~u. Record all required easements and/or deed restrictions with the Clackamas County Recorder's office and provide a copy of each to the City Planning Department.~~Submit a letter from the project landscape designer attesting that all required site plantings have been completed in conformance with the approved site plans and with City standards, including all mitigation plantings. This includes removal of all invasive or nuisance species vegetation (as identified on the Milwaukie Native Plant List), noxious materials, and man-made debris such as concrete rubble from within all WQR and HCA locations on the site, on the north and south sides of the creek, as per Finding 11.~~

Commented [KB11]: Moved these conditions further forward within Condition 3.

~~q.~~a. ~~As per Finding 11, demarcate the boundary of the delineated wetland within the open space tract, using permanent signage and/or split-rail fencing.~~

~~r.~~a. ~~As per Finding 11, provide at least two pet waste bag dispensing devices dispersed along the soft surface trail system.~~

4. Prior to issuance of any building permit, the following shall be resolved:
   a. Obtain approval of the necessary FEMA map revision for those lots that are currently in the floodplain.
5. Prior to final inspection of any building permit, the following shall be resolved:
   a. Provide a narrative describing all actions taken to comply with these conditions of approval. In addition, describe any changes made after the issuance of this land use decision that are not related to these conditions of approval.
   b. Connect all residential roof drains to a private drywell or other approved structure. Private properties may only connect to public storm system if percolation tests show that infiltration cannot be obtained on site or if the water table is too shallow. In the event the storm management system contains underground injection control devices, submit proof of acceptance of the storm system design from the Department of Environmental Quality.
   ~~b.~~c. As per Finding 7-a(2), construct fencing with no gates along the boundaries of those lots adjacent to the open space tract (Tract E). For Lots 33-44 and 69-79, the fencing shall be no more than 25% sight-obscuring, to allow for visual permeability.
6. Ongoing conditions of approval include the following:
   a. As per Finding 7-a-2, fencing in yards adjacent to the open space tract (Tract E) specifically identified in Condition 5-c shall remain free of sight-obscuring materials, to allow visibility into the adjacent open space.

b. As per Finding 11-e, where practicable, lights on lots adjacent to WQR and HCA areas shall be placed so that they do not shine directly into any WQR and/or HCA location.

Additional Requirements

The following items are not conditions of approval necessary to meet applicable land use review criteria. They relate to other development standards and permitting requirements contained in the Milwaukie Municipal Code (MMC) and Public Works Standards that are required at various points in the development and permitting process.

1. Prior to commencement of any earth-disturbing activities, the applicant shall obtain an erosion control permit.
2. Limitations on Development Activity

   Development activity on the site shall be limited to 7:00 a.m. to 10:00 p.m. Monday through Friday and 8:00 a.m. to 5:00 p.m. Saturday and Sunday, as per MMC Subsection 8.08.070(I).
3. Final Development Plan and Program

   As per the requirements of MMC Subsections 19.311.12 through 19.311.15, no excavation, grading, construction, improvement, or building shall begin, and no permits therefor shall be issued, until the following items must be addressed regarding the final development plan and program:

   a. Prior to the effective date of the ordinance adopting the final development plan and program and accompanying change to the zoning map, file with the City Recorder's office a final development plan and program that includes any modifications that were part of the final plan approved by City Council.

   b. The City shall prepare a notice to acknowledge that the final development plan and program approved by City Council constitutes zoning for the subject property. The notice shall contain a legal description of the property and reference to the certified copy of the final development plan and program filed in the office of the City Recorder. The applicant shall record a copy of this acknowledgment notice in the County Recorder's office.

   c. An application for approval of variations to the recorded final plan and program may be submitted in writing. Such variations may be approved by the City staff provided they do not alter dwelling unit densities, alter dwelling unit type ratios, increase or change the type or location of commercial or residential structures, change the boundaries of the planned development, or change the location and area of public open spaces and recreational areas.
4. Landscaping Maintenance

   As per MMC Subsection 19.402.11.B.9, a minimum of 80% of all required mitigation plantings for WQR or HCA disturbance shall remain alive on the second anniversary of the date the planting is completed.
5. Requirements from Clackamas Fire District #1 (CFD#1)

   a. A Fire Access and Water Supply plan is required for subdivisions. The plan shall show fire apparatus access, fire lanes, fire hydrants, fire lines, available fire flow, FDC location (if applicable), building square footage, and type of construction. The applicant shall provide fire flow tests per NFPA 291, and shall be no older than 12

months. Work to be completed by experienced and responsible persons and coordinated with the local water authority.

b. Access

(1) Provide address numbering that is clearly visible from the street.

(2) The inside turning radius and outside turning radius for a 20-ft-wide road shall not be less than 28 ft and 48 ft respectively, measured from the same center point.

(3) Provide an approved turnaround for dead end access roads exceeding 150 ft in length.

(4) Fire Department turnarounds shall meet the dimensions found in the fire code applications guide.

c. Water Supply

(1) Fire Hydrants, One and Two-Family Dwellings & Accessory Structures: Where a portion of a structure is more than 600 ft from a hydrant on a fire apparatus access road, as measured in an approved route around the exterior of the structure(s), additional fire hydrants and mains shall be provided.

(2) Prior to the start of combustible construction required fire hydrants shall be operational and accessible.

(3) For one and two family dwellings located in areas with reliable municipal fire fighting water supply the following shall apply:

<3,600 sq ft (including attached garage)

(a) 1,000 gpm @ 20 psi with hydrant within 600 ft of furthest portion of new residential construction, (OFC Section B105.2)

>3,600 sq ft (including attached garage)

(a) Shall meet fire flow requirements specified in Appendix B of the current Oregon Fire Code, (OFC, Table B105.1)

(b) Shall meet hydrant coverage as specified in Appendix C of the current Oregon Fire Code, (OFC, Table C105.1)

6. Expiration of Approval

a. As per MMC Subsection 19.311.16, if substantial construction or development in compliance with the approved final development plan and program has not occurred within 6 months of its effective date, the Planning Commission may initiate a review of the PD Zone and hold a public hearing to determine whether its continuation (in whole or in part) is in the public interest. Notification and hearing shall be in accordance with MMC Section 19.1007 Type IV Review. If found not to be, the Planning Commission shall recommend to the City Council that the PD Zone be removed by appropriate amendment to the Zoning Ordinance and the property changed back to original zoning.

b. Beyond the limitations of MMC 19.311.6, proposals requiring any kind of development permit must complete both of the following steps, as per MMC Subsection 19.1001.7.E.1.a:

(1) Obtain and pay for all necessary development permits and start construction within two (2) years of land use approval.

(2) Pass final inspection and/or obtain a certificate of occupancy within four (4) years of land use approval.

MILWAUKIE
Dogwood City of the West

To: **City Council**

Through: **Dennis Egner, Planning Director**

From: **Brett Kelver, Associate Planner**

Date: **August 30, 2017, for September 5, 2017, Public Hearing**

Subject: **File:** PD-2017-001 (master file)
Applicant: Brownstone Development, Inc.
Owner(s): Turning Point Church
Address: 13333 SE Rusk Rd
Legal Description (Map & Tax Lot): 2S2E06AD, lots 600, 700, 900, 901
NDA: Lake Road NDA

BACKGROUND INFORMATION

The 17.5-acre subject property at 13333 SE Rusk Road is currently developed with the Turning Point Church in the southeast corner of the site. Mount Scott Creek flows across the northern portion of the property, with a 0.7-acre wetland and 100-year floodplain boundary in the low-lying western half of the site. The applicant is in the process of adjusting the boundaries of the site to establish the church on its own lot and use the remaining property for a planned development subdivision (see Figure 1). The proposal would establish 92 single-family rowhouse units on individual lots, built clustered in 4-unit buildings. A large open space tract on the western side of the site would contain the designated natural resource and floodplain areas as well as a soft-surface trail system. Additional tracts would contain stormwater facilities, pedestrian and bicycle connections, and a community garden.

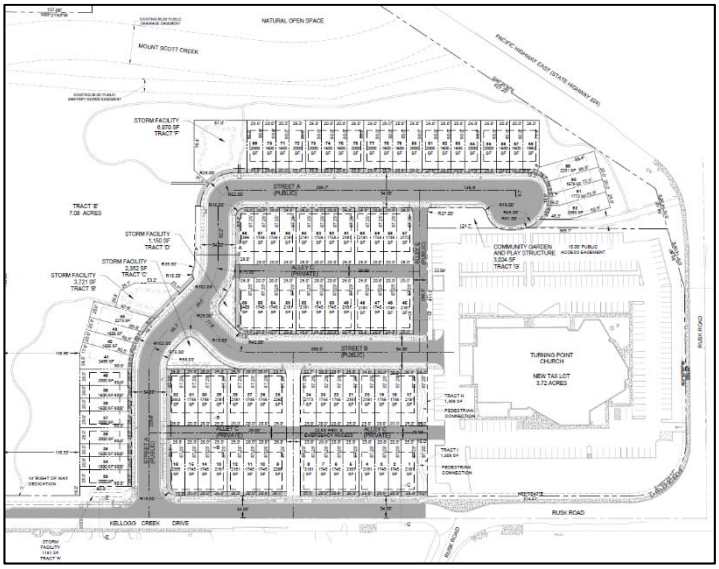


Figure 1. Proposed development

A. Site and Vicinity

The site is located at 13333 SE Rusk Rd. The southeastern corner of the site (approximately 3.7 acres) contains the Turning Point Church, with ingress from Rusk Road and an additional access to Kellogg Creek Drive through the proposed development site to the west. The remainder of the site (approximately 13.8 acres) is undeveloped (see Figure 2). Mount Scott Creek flows east to west across the property, leaving an approximately 2-acre section of the site largely inaccessible on the north side of the creek. A delineated wetland approximately 0.7 acres in size extends across the low-lying area on the western

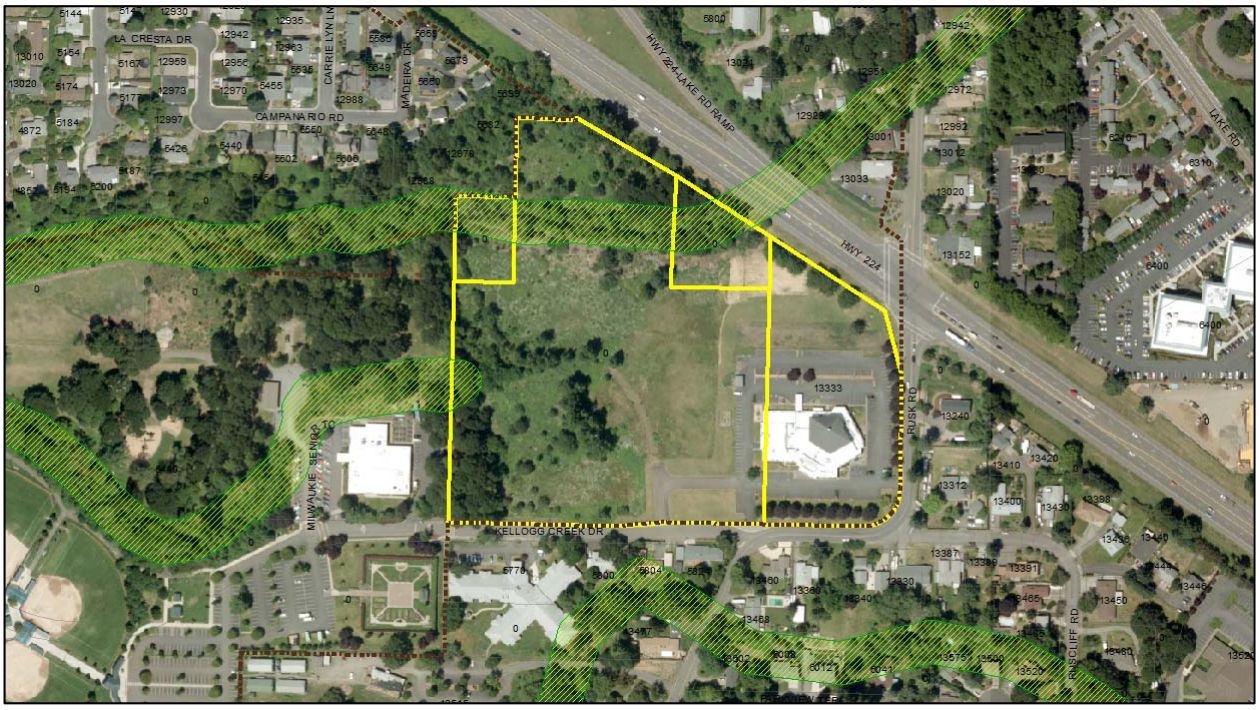


Figure 2. Site and vicinity, showing green-hatched Water Quality Resource (WQR) areas

portion of the property. Water Quality Resource (WQR) and Habitat Conservation Area (HCA) designations follow the creek and wetland, and the 100-year floodplain covers a substantial portion of the low-lying western half of the site. South of the wetland, along the southwest boundary of the property, a stand of mature white oak trees is not included in the HCA designation but represents a natural resource worthy of evaluation for protection, as half of those trees are proposed for removal.

Highway 224 is adjacent to the north of the site. The Turning Point Church is adjacent to the east. To the south, across Kellogg Creek Drive in unincorporated Clackamas County, there are 3 single-family houses (zoned R-10) and the Deerfield Village assisted living facility. Adjacent to the west is North Clackamas Park, with the Milwaukie Center and an open wetland area immediately adjacent to the subject property.

B. Zoning Designation

Residential R-10 and Residential R-3 (site is split-zoned—see Figure 3)



Figure 3. Zoning designation

C. Comprehensive Plan Designation

Low Density Residential (LD) and Medium Density Residential (Med. D)

D. Land Use History

- **June 1981:** City Council approved Ordinance 13-1981 to annex the subject property into Milwaukie (land use file #A-80-07). A concurrent request to re-zone the property from R-10 to R-2 was withdrawn (file #ZC-80-07).
- **October 1984:** Planning Commission approved a Community Service Overlay for use of the site by the Milwaukie Assembly of God (file #CS-84-02).
- **October 1987:** City Council approved Ordinance 1638 to amend the Comprehensive Plan ma p's land use designation for the subject property and Ordinance 1639 to change the zoning of the western portion of the property from R-10 to R-3. In addition, a conditional use was approved for a 162-unit senior housing project on the western portion of the site (file #s CPA-87-01, ZC-87-05, and CU-87-05).
- **November 1987:** The Planning Director approved a minor land partition to separate the existing church on the east side of the site from the senior housing project approved by file #CU-87-05 (file #MLP-87-04). The senior housing project (named Parkside Village) was never developed and the partition was never finalized.
- **July 1992:** Planning Commission approved a 5,500-sq-ft addition to the church building for classrooms, foyer, chapel, and storage; as well as the establishment of a regulation softball field on the northern portion of the site (file #s CSO-92-03 and NR-92-01). The staff report indicates that portions of the wetlands on site were filled in 1980 and again in 1990 in violation of Division of State Lands (DSL) regulations; the fill was required to be removed and the wetlands restored in 1991. It does not appear that the softball field was ever developed.
- **September 1997:** Planning Commission denied a Sign Permit application to locate an electronic reader board sign on the property near the intersection of Highway 224 and Rusk Road (file #SP-97-01).
- **September 2014:** The Planning Director approved a minor modification to the existing Community Service Use for the church, for removal of approximately 75 of 300 existing parking spaces as part of a natural resource restoration effort near Mount Scott Creek (file #s CSU-14-06 and NR-14-06). The site was overparked by approximately 100 spaces, so the proposal brought the off-street parking situation closer into conformance with the applicable standards. The project involved revegetating the area where the spaces were removed and did not directly impact

any designated natural areas, but it required approval of a Construction Management Plan due to its location within 100 ft of the HCA on the site.

E. Proposal

The applicant is proposing a subdivision to create 92 lots for 4-unit rowhouse development, setting aside much of the floodplain and designated natural resource areas on the site within a large open space tract. The applicant is utilizing the Planned Development (PD) process, which allows greater flexibility of design than would otherwise be possible through the standards of the underlying zoning for the site.

The project requires approval of the following applications:

1. Planned Development (master file, #PD-2017-001)

   The Planned Development process allows for adjustments in lot sizes, lot dimensions, and some development standards; a blending of standards across the split-zoned site; and a potential increase in density (up to 20% above the maximum normally allowed).

2. Zoning Map Amendment (ZA-2017-001)

   The City's Zoning Map would be changed, adding the PD designation to the existing R-10 and R-3 designations for the site.

3. Subdivision, preliminary plat (S-2017-001)

   The proposed subdivision would create 92 lots for residential development, in addition to 8 different tracts for stormwater facilities, open space, and pedestrian and bicycle connections.

4. Natural Resource Review (NR-2017-001)

   The proposal to disturb portions of the existing WQR and HCA on the site must demonstrate compliance with the applicable provisions of MMC Section 19.402, including the requirements to provide an analysis of alternatives and to avoid, minimize, and mitigate for impacts.

5. Transportation Facilities Review (TFR-2017-001)

   The project's impacts on traffic must be evaluated to determine whether improvements to the transportation system are warranted.

6. Variance Request (VR-2017-003)

   The applicant has requested variances for two aspects of the project: (1) allow more than 20 dwelling units to be served by a closed-loop street system; and (2) to waive the requirement that all new lots must provide adequate buildable area outside the WQR and/or HCA (23 of the 92 proposed lots do not meet this requirement).

7. Community Service Use (CSU), minor modification (CSU-2017-001)

   The proposed adjustments to the church site require a minor modification to the existing CSU approval for the site.

See Attachment 5 from the Council report for a list of the applicant's materials.

F. Land Use Review Process

Milwaukie Municipal Code (MMC) Section 19.311 outlines the review process for approval of a Planned Development. Ordinarily, after receiving "approval in principle" from the Planning Commission of a preliminary development plan, the applicant would initiate a Type IV review process by submitting a final development plan along with a proposed subdivision and any other applicable reviews. The Commission would consider the application package and make a recommendation to the City Council for a final decision. In this case, the applicant opted to move directly into the Type IV process and presented its preliminary development plan to the Commission as the final development plan. All of the other associated land use applications are also subject to the Type IV review process.

The Commission has recommended approval of the revised development plan and accompanying conditions. The Council will hold a public hearing and has several decision-making options:

- Adopt an ordinance to apply the Planned Development (PD) zone designation to the site, with the development plan establishing the standards that will apply to the property. Council may adopt the development plan recommended by the Planning Commission or make additional changes.
- Continue consideration of the proposal and refer the application back to the Planning Commission with recommendations for amendment.
- Reject the proposed planned development and abandon further hearings and proceedings.

KEY ISSUES

Summary

Staff has identified the following key issues for the Council's deliberation. Aspects of the proposal not listed below will be addressed in the Findings and generally require less analysis and discretion by the Council.

A. Have the project's impacts on traffic been thoroughly evaluated?

B. How will the proposal to fill in the floodplain affect other properties, both upstream and downstream?

C. Does the proposed development plan adequately protect the natural resources on the site, including the white oak trees in the southwest corner of the property?

D. What issues are involved with the City assuming ownership of the open space tract, as proposed?

E. What is the appropriate balance between providing housing units and protecting natural resources?

F. Does the project provide enough "exceptional advantages in living conditions and amenities not found in similar developments" to warrant the additional proposed density as allowed by MMC Subsection 19.311.3.C?

Analysis

A. Have the project's impacts on traffic been thoroughly evaluated?

The Transportation Facilities Review process required the applicant to prepare a Traffic Impact Study (TIS), which involves estimates and forecasting based on traffic modeling and actual count data at specific intersections. City staff and the City's traffic consultant coordinated with the applicant to define a scope of work for the TIS and then reviewed the results as part of the application submittal process.

There are accepted methodologies for determining the nature and degree of anticipated impacts, given the number and type of residential units proposed and the current level of service (LOS) provided at the various subject intersections. The addition of 92 units on the subject property will increase the number of vehicle trips in the area. The question is whether the increase in trips will cause any of the study intersections to fail (i.e., to fall below the acceptable LOS), and if so, what improvements are warranted to prevent intersection failure. The City uses a data-based assessment and rating system to make those determinations. ODOT facilities like Highway 224 have unique metrics for LOS and thus different trigger points for requiring improvements than Milwaukie. For the proposed development, the TIS concluded that the increase in vehicle trips will not cause any of the study intersections to fail.

However, both the traffic data and the anecdotes presented at the Planning Commission hearings confirmed that there are existing traffic problems in the vicinity. Due to questions about the specific timing of the original traffic counts, the Commission requested new counts for three critical intersections (Rusk Road and Highway 224, Rusk Road and Ruscliffe Road, and Rusk Road and Kellogg Creek Drive) on a day that North Clackamas School District (NCSD) schools were open on a regular schedule. The applicant's traffic consultant obtained new counts and summarized the results of their revised analysis (see the relevant memo within Attachment 5-h from the Council report).

The applicant's traffic consultant maintains its original conclusion that the proposed development will not significantly impact the existing transportation system; the City's traffic consultant concurs (see the revised memo from DKS in Attachment 6-ww from the Council report). Using the estimates and methodology established in the Institute of Transportation Engineers (ITE) Trip Generation manual, new trips from the proposed development are not forecast to trigger a great enough impact to warrant more than the establishment of a formal right-turn lane on northbound Rusk Road at the intersection with Highway 224. Staff has established that requirement as a condition of approval and the applicant has expressed no opposition. Staff has confirmed that there is adequate space within the existing public right-of-way (ROW) on Rusk Road to construct the required right-turn lane.

B. How will the proposal to fill in the floodplain affect downstream properties?

The proposal involves significant alteration of the designated floodplain area on the site. The City's flood hazard regulations require that a project result in no net change in the volume of material in the floodplain, so any "fill" or addition of material must be balanced with an equivalent "cut" or removal of material. In the case of this proposal, a significant area within the floodplain must be filled in order to establish buildable lots on the western side of the property, so the applicant has proposed to excavate within another portion of the site to balance the volume of flood storage area lost due to the fill. The applicant's floodplain mitigation exhibit shows the flood zones on the site, with two different base flood elevations (see Exhibit E-3 within Attachment 5-f from the Council report).

A final determination of the exact location and area of the floodplain will be made later in the development review process, but from the initial information provided, staff is convinced that the applicant will be able to complete the necessary technical studies to demonstrate compliance with the applicable flood hazard standards. The project will not reduce the flood storage capacity of the site and may in fact result in a net gain, which would improve the situation for properties downstream. As part of the process, the applicant will make a formal Federal Emergency Management Agency (FEMA) map change based on final grading plan approval from the City.

C. Does the proposed development plan adequately protect the natural resources on the site, including the white oak trees in the southwest corner of the property?

The latest version of the site plan locates the new lots and streets generally away from Mount Scott Creek, the delineated wetlands, and the existing white oak trees in the southwestern corner of the site. Most of the designated WQR and HCA on the site will be preserved within the proposed open space tract (see Figure 3). On the property itself, none of the white oaks would be removed.

The standard street improvements required within the public right-of-way along Kellogg Creek Drive (a 6-ft bike lane, 8-ft parking strip, curb and gutter, 4-ft landscape planter, and 5-ft set-back sidewalk) would have resulted in the removal of 7 or 8 of the existing white

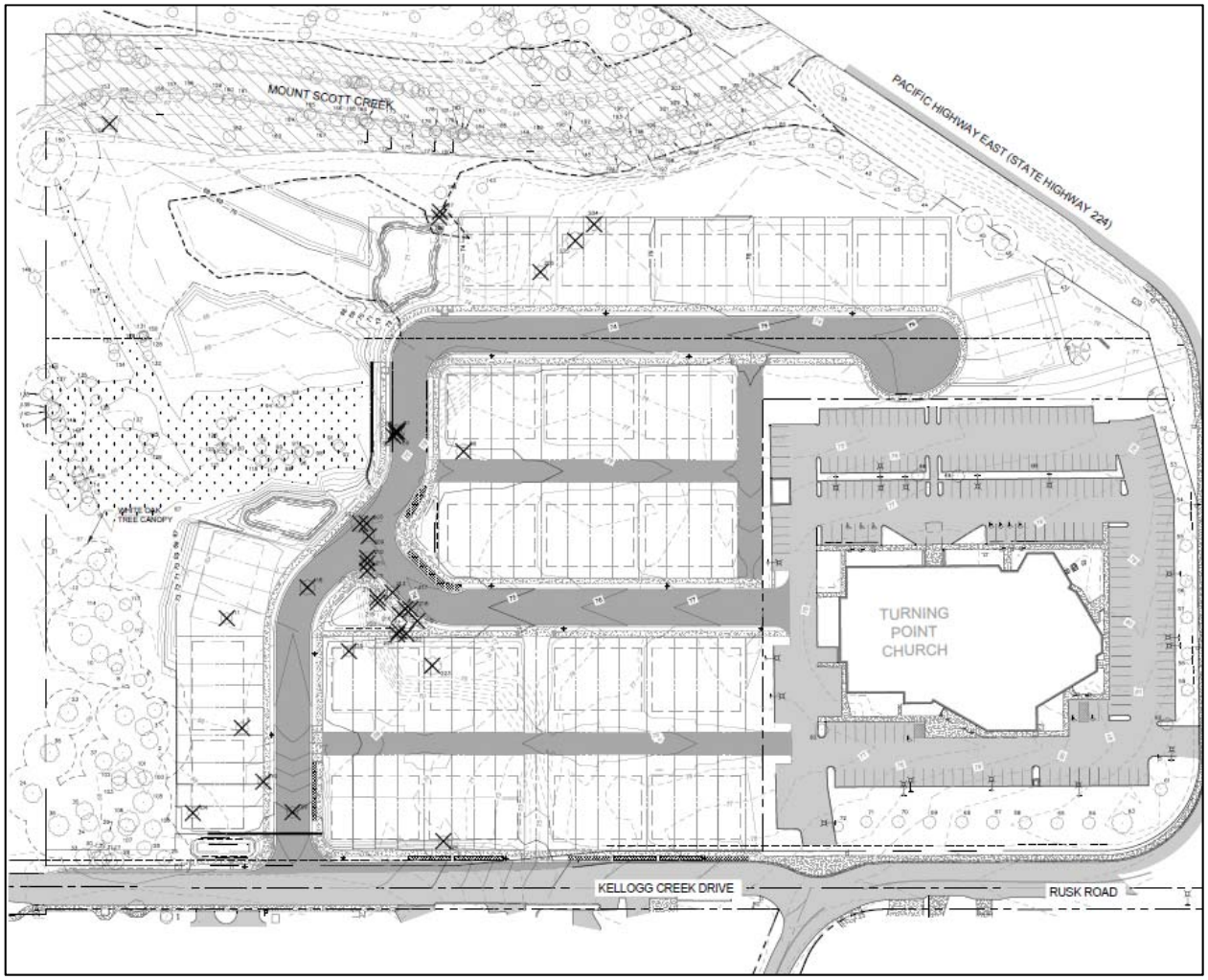


Figure 3. Revised site plan showing trees

oak trees. However, City staff has determined that it is acceptable to eliminate the parking strip, landscape planter, and sidewalk and simply install a bike lane and curb and gutter along this portion of the Kellogg Creek Drive frontage (see Figure 4).

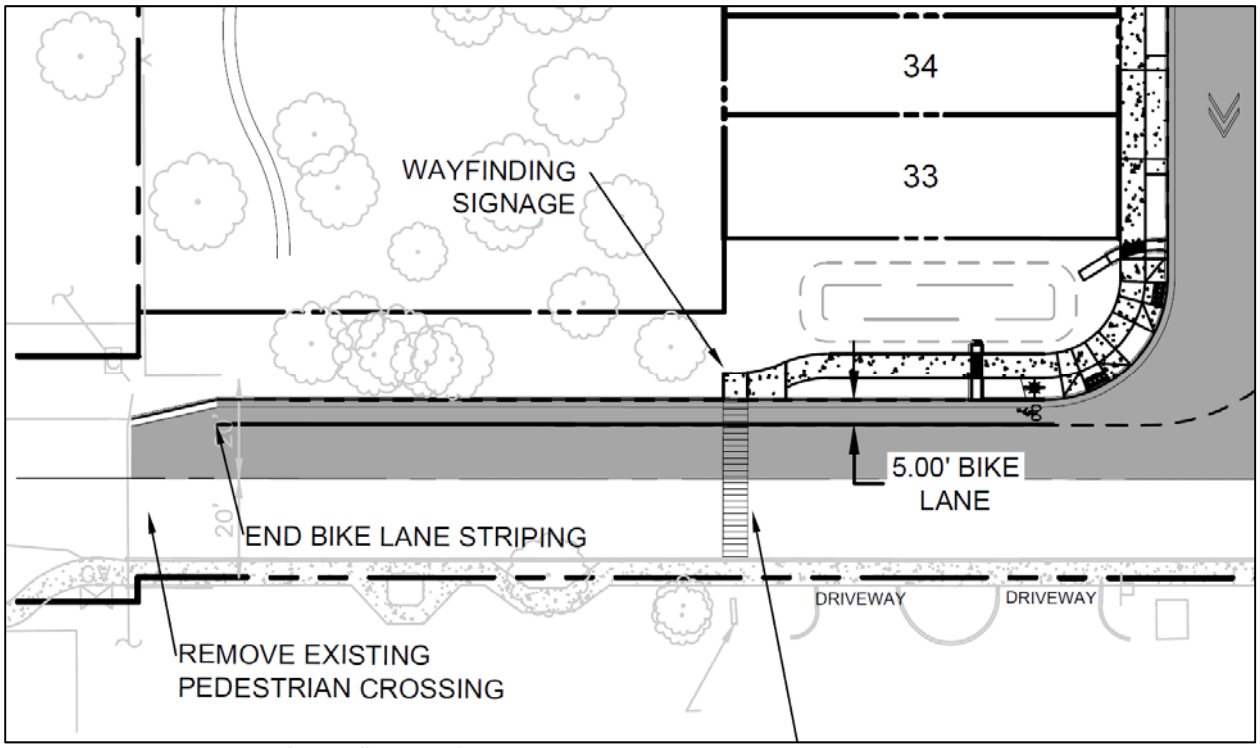


Figure 4. Tree preservation along Kellogg Creek Dr

Some excavation near the oak trees will be needed to remove the existing sidewalk and install the bike lane and new curb. There is a chance that the work could damage tree roots near or under the edge of the sidewalk, which might impact long-term health of individual trees. As noted in the applicant's arborist's supplemental memo, some preliminary excavation could be conducted to determine whether any critical roots would be affected (see the supplemental memo within Attachment 5-j from the Council report). Given that there is no certainty that any root damage would be substantial enough to directly result in tree mortality, staff believes that the revised public improvement plan presents an acceptably low risk to the white oak trees that will remain in the public right-of-way.

D. What issues are involved with the City assuming ownership of the open space tract, as proposed?

Over the course of the Planning Commission hearing process, the applicant has decided to donate the open space tract to the City. The North Clackamas Parks and Recreation District (NCPRD), which maintains the City's parks as per an intergovernmental agreement (IGA), has confirmed that it is willing to manage the open space tract with no additional resources from the City of Milwaukie. The new development will generate new property taxes into NCPRD.

If the open space tract is acquired, NCPRD would manage it to be compatible with the master plan for North Clackamas Park, including approval of the location and specifications of the trail. The exact trail location and surface materials will be based on the park master plan and so will likely be somewhat different than shown on the current site

plan. As part of the later development review process, the District will review the mitigation plan to ensure compatibility with its approach to wetland restoration, so some small changes to the final mitigation plan may emerge.

The preference of both NCPRD and the City is that the applicant and/or developer install the mitigation plantings and be responsible for them through the required 2-year monitoring period before NCPRD takes responsibility. Based on an August 17 meeting with NCPRD staff, the City staff is proposing a new condition to require that the developer provide a bond for the costs of mitigation maintenance (including watering, weed maintenance, and replacement plantings). This new condition is highlighted in the "Track Changes" version of the Recommended Findings (see Attachment 3-a from the Council report).

The City would take ownership of the open space tract at the time of final plat approval. NCPRD would assume general management responsibility for the overall open space tract at that time, with the terms spelled out in a revised IGA with the City. Following successful completion of the 2-year mitigation monitoring period, NCPRD would assume management responsibility for the mitigation plantings as part of its management of the entire open space tract.

E. What is the appropriate balance between providing housing units and protecting natural resources on the subject property?

One of the conclusions of the 2016 Housing Needs Analysis (HNA) prepared for Milwaukie was that, over the next 20 years, there is a need for single-family attached units that are affordably priced as workforce housing (below $380,000), similar to the ones being proposed. As one of few such large residentially zoned parcels in Milwaukie, the subject property presents an important opportunity to establish such needed housing. The Planned Development process allows a developer to request an increase (up to 20%) in density if the project can demonstrate exceptional design. The applicant has proposed a 15% density increase (12 dwelling units).

However, the property includes significant natural resources (Mount Scott Creek and a delineated wetland, as well as the stand of white oak trees in the southwestern corner of the site) spread over a broad area, which makes it difficult to develop the site without negatively impacting them. The approval criteria provided in MMC Subsection 19.402.12.B require that the applicant demonstrate (1) that intrusion into WQR and HCA areas has been avoided to the extent practicable, and that there are no practicable, less intrusive alternatives; (2) that adverse impacts have been minimized to the extent practicable; and (3) that detrimental impacts to the ecological functions of natural resource areas have been sufficiently mitigated on site.

The Planning Commission found that the applicant has demonstrated that the proposed plan does as much as possible to avoid natural resource impacts and limit impacts when avoidance is not possible. The resource areas that remain will be enhanced by the removal of invasive plants and debris and the installation of native plantings. The applicant asserts that their plan is the most practicable plan for meeting the City's housing need while maintaining the health and essential function of the WQR and HCA on the site.

The Planning Commission discussed and considered the following list of options. None were found to provide a better balance of meeting housing need and environmental protection than the applicant's proposal.

a) Planned Development proposal with a smaller or no density bonus (max. 80 units)

b) Residential Cluster Development as outlined in MMC Subsection 19.402.14.C, which allows transfers of density across a site to avoid or minimize impacts to WQRs and/or HCAs

c) Cottage Cluster Housing as outlined in MMC Subsection 19.505.4

d) Planned Development proposal with fewer lots but adding a multifamily component to achieve some increase in density (up to 20%)

e) Conventional subdivision with the entire site rezoned to R-3

f) Conventional subdivision with split zoning, but with some allowance for WQR and/or HCA disturbance (compared to the no-disturbance alternative included in the applicant's submittal)

In general, decreasing disturbance to the WQR and HCA results in fewer lots. With this proposal, the Council is faced with evaluating the community benefits of having additional new homes in Milwaukie against the resulting impacts to the WQR and HCA on the site. Given that the property is zoned for residential use, it is important for the decision-makers to consider how many units they expect or hope to see developed on this site to meet the City's long-term housing goals. The Council can deliberate about what an acceptable level of WQR and HCA disturbance, if any, may be for this site.

F. Does the project provide enough "exceptional advantages in living conditions and amenities not found in similar developments" to warrant the additional proposed density as allowed by MMC Subsection 19.311.3.C?

The subject property is split-zoned Residential R-10 and R-3 and includes a significant area of natural resources and floodplain. The Planned Development process allows the applicant to effectively blend the two zones' densities across the site while concentrating development away from the naturally constrained areas. If the applicant can demonstrate exceptional design in the project, there is an opportunity to increase the density up to 20% above the maximum normally allowed.

The applicant has asserted that the proposed development provides the following exceptional features:

- Over 7 acres of open space (to be donated to the City), protecting natural resource and floodplain areas on the site and providing recreational opportunities with a soft-surface trail system
- Configuration of lots that preserves visual and spatial connections to the natural open space
- Unfenced stormwater facilities planted with low-lying grasses that maintain views of the open space and provide connection points between the trail system and the rest of the development
- Community garden for use by residents, located in the northeastern portion of the site
- Trees planted as screening between Highway 224 and the adjacent lots in the northeast corner of the site
- 92 units of attached single-family housing that is affordable for working people with moderate incomes

- Compact development in proximity to a large public park and with access to a major roadway (Highway 224)

Many of the stated attributes of the proposed development are directly related to its location or to code requirements, rather than to its design. Proximity to a large park and a major roadway and the provision of open space as required are not design features in and of themselves. The proposed community garden is on a tract that is otherwise not easily developable and does not appear to be an integrated and central part of the overall development. Likewise, the provision of trees for screening lots from the adjacent highway is a basic buffer that one would expect for this location.

When considered together, the Planning Commission found that these features adequately addressed the criteria for exceptional design.

CONCLUSIONS

Staff's recommendation to the City Council is as follows:

Adopt the ordinance, findings, and conditions of approval (as modified) to allow the proposed 92-unit planned development project.

CODE AUTHORITY AND DECISION-MAKING PROCESS

The proposal is subject to the following provisions of the Milwaukie Municipal Code (MMC).

- MMC Section 19.1007 Type IV Review
- MMC Section 19.311 Planned Development Zone (PD)
- MMC Section 19.301 Low Density Residential Zones (including R-10)
- MMC Section 19.302 Medium and High Density Residential Zones (including R-3)
- MMC Section 19.902 Amendments to Maps and Ordinances
- MMC Title 17 Land Division
- MMC Title 18 Flood Hazard Regulations
- MMC Section 19.402 Natural Resources
- MMC Chapter 19.500 Supplementary Development Regulations
- MMC Chapter 19.600 Off-Street Parking and Loading
- MMC Chapter 19.700 Public Facility Improvements
- MMC Title 12 Streets, Sidewalks, and Public Places
- MMC Chapter 13.14 Stormwater Management
- MMC Section 19.904 Community Service Uses
- MMC Section 19.911 Variances
- MMC Chapter 19.1200 Solar Access Protection

This application is subject to Type IV review, which requires the Council to consider whether the applicant has demonstrated compliance with the code sections shown above. In making a decision, the Council also evaluates testimony and evidence received at the public hearing and considers the recommendation forwarded from the Planning Commission.

The Council has four decision-making options as follows:

A. Approve the application subject to the recommended Findings and Conditions of Approval.

B. Approve the application with modifications to the recommended Findings and Conditions of Approval. Such modifications need to be read into the record.

C. Continue the hearing, to allow for the provision of additional information from the applicant and/or additional deliberation by the Council. The continuance could involve referring the application back to the Planning Commission with recommendations for amendment. The applicant has provided a waiver to the 120-day clock, adding 60 days to the time the City has to make a final decision. The applicant may need to provide an additional waiver to the 120-day clock in the future, depending on the outcome of the continued hearing.

D. Deny the application upon finding that it does not meet approval criteria.

The final decision on these applications, which includes any appeals to the City Council, must be made by October 4, 2017, based on the applicant's 60-day extension of the 120-day clock and in accordance with the Oregon Revised Statutes and the Milwaukie Zoning Ordinance. The applicant can make additional waivers to the time period in which the application must be decided.

KELLOGG CREEK
Milwaukie, Oregon

A Land Use Application for:

Planned Development
Type III Variance
Type IV Zone Change

Revised and Submitted:
June 2017

Applicant:
Brownstone Development, Inc.
47 South State Street
Lake Oswego, OR 97934

Prepared by:
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Portland, Oregon 97205
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- **I.** Arborist Report
- **J.** Natural Resource Review
- **K.** Memo from Johnson Economics

Project team

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I. INTRODUCTION

Summary of Proposal

Brownstone Development (the applicant) is proposing a new residential subdivision located at 13333 Rusk Road in the City of Milwaukie (see Figure 1, Vicinity Map). The development site is approximately 13.8 acres and will consist of 92 new lots intended for single-family attached (rowhouse) dwelling units and associated public streets. The attached homes will be in groupings of four units and will be accessed from rear alleys or front-facing driveways. The development will also include new public local streets, private alleys and a soft-surface pedestrian trail to provide connectivity throughout the site. Open spaces and natural areas will surround the homes and connect to the adjacent North Clackamas Park west of the site.

The subject property currently consists of four tax lots all owned by the Turning Point Church, which is located at the corner of Rusk Road and Kellogg Creek Drive. A property line adjustment application has been submitted to the City of Milwaukie in order to consolidate and reconfigure the four tax lots into two lots. One lot (13.8 acres) will be the development site and the other lot (3.7 acres) will be the church lot. The Turning Point Church and its associated parking areas will remain.

Access to the site will be taken from SE Kellogg Creek Drive, as shown on the Preliminary Plat, Sheet C201 in Exhibit A. In order to ensure the Turning Point Church continues to have safe ingress and egress to the church site, a connection between the two sites will be provided to allow church visitors to exit through the development site onto Kellogg Creek Drive (exit from the church site onto Rusk Road is not permitted; that access is entrance only).

Zoning & Land Uses

The subject site currently has split zoning, with the western portion of the site zoned R-3 and the eastern portion of the site zoned R-10. See Figure 2 and the Existing Conditions Plan (Sheet C100) in Exhibit A. The table below describes the uses and zoning on properties surrounding the subject site.

Table 1: Surrounding Uses

Area	Zoning	Land Uses
North	R-10	Single-family residences, Highway 224 right-of-way
East	R-10	Turning Point Church, SE Rusk Road, and single-family residences
South	R-10	SE Kellogg Creek Road, single-family residences, Deerfield Village Assisted Living Center
West	R-10	The Milwaukie Center, North Clackamas Park

Figure 1: Vicinity Map



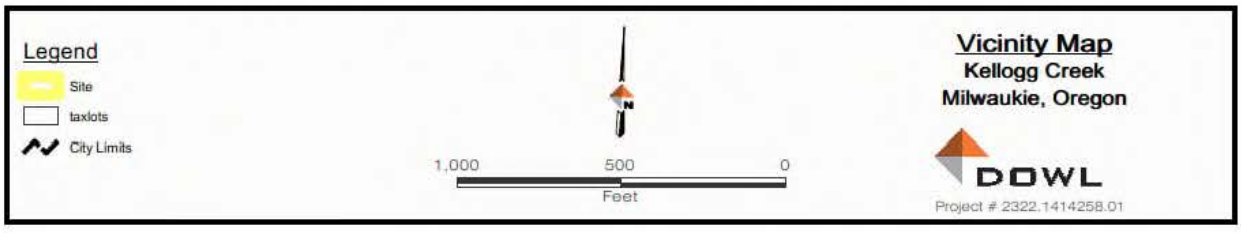
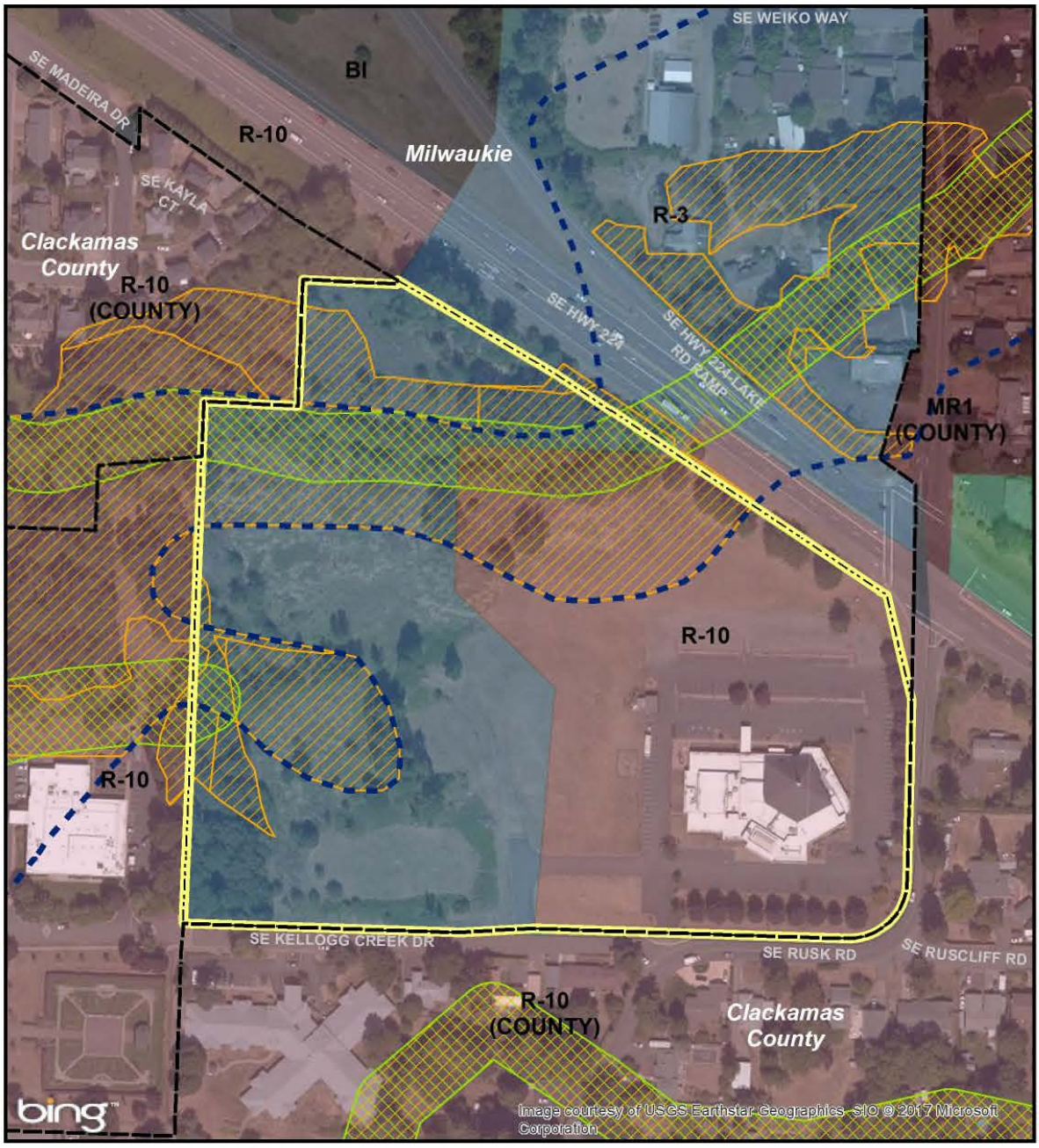
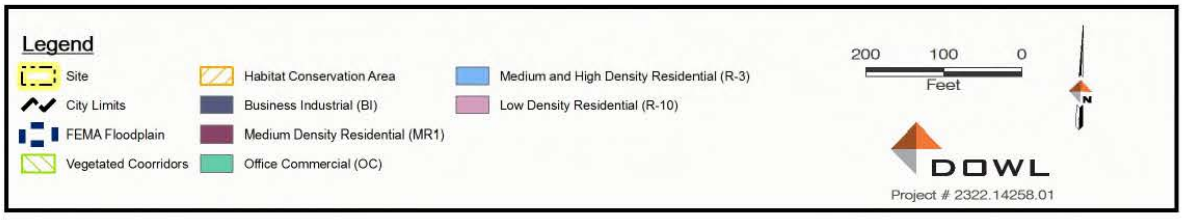


Figure 2: Natural Resources & Zoning





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Planned Development

In order to maximize development potential on the site, preserve natural resources and provide needed housing for Milwaukie, the applicant is proposing to develop this site using the city's Planned Development process. The Planned Development process allows for greater flexibility in design and use of a site to encourage a mix of housing types and creation of a unique environment that would not be possible under strict application of the Zoning Code. The Planned Development process has several steps, including a zone change and a final development plan. The zone change is necessary to apply the Planned Development (PD) zone to the site. To clarify the Planned Development review process and how it relates to the other applications needed for this project, the project team met with Milwaukie Planning staff in August 2016 for a pre-application conference, and again in September 2016 for a follow-up discussion. After the September meeting, city staff drafted a memo presenting two possible options for a review process – standard and streamlined. See Exhibits B and C for a copy of the pre-application notes and the September memo.

The applicant has chosen to utilize the streamlined review process, as outlined in the September memo. As such, two application packages are being submitted concurrently:

1. Zone Change and Development Plan Package – Type IV review
2. Subdivision and related applications – Type III review

As noted below, this narrative is part of the Type IV application package and addresses standards and criteria for Planned Development and Zone Change reviews.

Natural Resources

The site contains approximately 4.5 acres of designated floodplain area, which is regulated by Chapter 18.04 of the Milwaukie Municipal Code. The site also contains approximately 5.6 acres of designated Habitat Conservation Area (HCA) (See Figure 2). HCA lands are natural resources that have been identified by the City for protection and are regulated under Chapter 19.402 of the Milwaukie Zoning Code. Impacts to floodplain and HCA are permitted by the City if certain conditions can be met and mitigation of those impacts is provided. While the bulk of existing natural resources on the subject site will be preserved, some impacts will be necessary to accommodate the proposed development. The separate and concurrent Type III application package provides information about those impacts and how they will be mitigated in accordance with City regulations. A Natural Resource Review report is provided in Exhibit J.

Wetlands

Wetlands have been identified on the site and delineated by Pacific Habitat Services (See Exhibit D, Wetland Delineation Report). Impacts to the wetlands will occur in order to accommodate development on the site. Those impacts require a joint permit from Department of State Lands (DSL) and the US Army Corps of Engineers (USACE). A joint permit application for wetland impacts will be submitted as required.

Request

As part of the overall Planned Development project, this application package contains the following requests for approvals from the City of Milwaukie:

- Planned Development
- Type III Variance
- Type IV Zoning Map Amendment

The applicant has submitted this application, narrative, and plans in order to demonstrate how this proposal complies with the standards set forth the in the City of Milwaukie's Municipal Code. All applicable standards have been addressed and all required submittal materials have been provided.

The applicant is also submitting a separate application package for associated Type II and III approvals including subdivision and natural resources reviews. The two application packages are related and intended to be reviewed concurrently by the city.

II. COMPLIANCE WITH CITY OF MILWAUKIE DEVELOPMENT CODE

This section contains responses to applicable sections of the Milwaukie Development Code, Title 19 Zoning. Those sections that are not applicable to the proposal are generally not included unless needed for context.

Section 19.311 Planned Development Zone

19.311.1 Purpose

The purpose of a PD Planned Development Zone is:

A. To provide a more desirable environment than is possible through the strict application of Zoning Ordinance requirements;

B. To encourage greater flexibility of design and the application of new techniques in land development;

C. To provide a more efficient, aesthetic, and desirable use of public and private common open space;

D. To promote variety in the physical development pattern of the City; and

E. To encourage a mix of housing types and to allow a mix of residential and other land uses.

Response: The proposed project is well aligned with the purpose of the PD Zone. The flexibility of the PD Zone allows the applicant to protect significant natural resources while maximizing development potential of the site. This balance is critical to the success of the project.

The PD Zone provides the ability to reduce lot sizes and cluster them on the site so that impacts to the Habitat Conservation Area, floodplain area, trees and wetlands are minimized. Those natural resources will be largely protected and remain available as open space for the public and future residents of the development site. Application of the PD Zone will also achieve:

- Development of rowhouses in a planned community. This project represents a relatively new and different type of housing for Milwaukie and will contribute to the overall variety of housing types in the city. This is especially important considering the need for additional affordable housing in Milwaukie. A recent housing needs analysis[1] was prepared for the City to forecast housing needs over the next 20 years. That analysis identifies a need for over 1,000 new housing units. The majority (71 percent) of that housing is projected to be ownership housing, over half of which is projected to be an attached housing type. The proposed development will provide attached housing for ownership, thereby supporting the City's goal to provide more of this type of housing.
- The proposed development will consist of rowhouses on small lots in a relatively compact area with large, integrated open spaces. This arrangement is not one that is typically found in Milwaukie and will support the City's goal of encouraging a greater variety of development patterns.
- Natural and usable open spaces will be available for the public and residents of the development. Approximately seven acres of natural area and open space will be preserved on the site. A soft-surface trail system is proposed throughout the site to allow greater access to the protected natural areas while preserving the overall natural character of the site.

19.311.2 Use

A planned development approved by the City Council and based on a final development plan and program shall constitute the Planned Development Zone. The PD Zone is a superimposed zone applied in combination with regular existing zones. A PD Zone shall be comprised of such combinations of types of dwellings and other

[1] Housing and Residential Land Needs Assessment, prepared by Johnson Economics, August 2016.

structures and uses as shall be authorized by the Council, but the Council shall authorize only those types of dwellings and other structures and uses as will:

A. Conform to the City's Comprehensive Plan;

Response: Consistency with applicable Comprehensive Plan goals and policies is demonstrated in responses in Section III of this narrative.

B. Form a compatible and harmonious group;

Response: The proposed development will consist of single-family attached dwellings (rowhouses) in groups of four units. Some units will be alley-loaded with driveways and garages located in the rear of the lot, and the remainder will be front-loaded with driveways and garages located in the front. The two housing types will have a different front façade due to the difference in garage locations; however, they will be similar in size, orientation, architecture, color palette, and articulating features (renderings are provided on Sheet A100 in Exhibit A). The dwellings have been designed to provide aesthetic variation while still maintaining a sense of compatibility as a group. The groups of rowhouses will be arranged in a compact pattern around a simple grid of public streets and private alleys. Landscaping will be provided between the front driveways and the rear (alley) driveways to provide some separation between units. The intent of the development is to create a cohesive and compact neighborhood surrounded by natural areas and open space.

C. Be suited to the capacity of existing and proposed community utilities and facilities;

Response: Public utilities and facilities in the vicinity of the site are available to serve the proposed development. Specifically:

- Water – The site is within the Clackamas River Water (CRW) district and will connect to an existing CRW water main located in SE Kellogg Creek Drive. The applicant will construct new water lines within the right-of-way of new public streets on the site to serve the proposed residential units. Proposed utilities are shown on the Composite Utility Plan (Sheet C400) in Exhibit A.
- Sewer – There is a Clackamas County wastewater main located along the western and northern property lines of the site and is available to serve the proposed development. The applicant will construct an 8-inch PVC sewer line within the right-of-way of new public streets on the site and will connect this line to the existing sewer main north of the site. Proposed utilities are shown on the Composite Utility Plan (Sheet C400) in Exhibit A.
- Stormwater – The applicant has submitted a preliminary stormwater report prepared by a qualified professional engineer as part of this application (see Exhibit E). The report explains how stormwater runoff will be managed on the site and demonstrates that post-development runoff will not exceed pre-development runoff. The report also demonstrates consistency with the City's water quality standards.
- Streets – The site will take access from SE Kellogg Creek Drive, which currently has 40 feet of right-of-way. The traffic impact study conducted for this project indicates that traffic volumes from the proposed development will not cause intersections in the study area to fall below acceptable levels of service. Additional right-of-way will be dedicated along the site's frontage on Kellogg Creek Drive to accommodate half-street improvements as required by the City's engineering staff.
- Parks – The site is located adjacent to the North Clackamas Park, which is a 47-acre regional park with a variety of recreational amenities available to serve the proposed development. The site will also have approximately seven acres of additional open space and over two acres of usable open space (the trail system) available for the public and future residents of the development.

D. Be cohesively designed and consistent with the protection of public health, safety, and welfare in general; and

Response: As noted above, the proposed development will consist of rowhouse dwelling units in groups of four, designed to be visually compatible and form a cohesive neighborhood within the site. Public health, safety and welfare will be protected through the following measures:

- A connected system of streets designed to the local street functional classification, which includes sidewalks on both sides of the street and planter strips with street trees. The street system will also provide adequate access and circulation for emergency fire vehicles and service trucks.
- Street connections to the existing street system along Kellogg Creek Drive that meet the City's access spacing and sight distance standards.
- Half-street improvements along the site's frontage with Kellogg Creek Drive that will include a bike path to improve connections to North Clackamas Park.
- Protected natural resource areas, including a stand of mature Oregon white oaks, wetlands, habitat areas and floodplain.
- A soft-surface trail system throughout the development that allows access through the natural resource areas and provides opportunity for recreation while minimizing impacts to the natural area.
- An outdoor community garden with raised planter beds, gravel pathways, and a water source. The community garden will be fenced and gated for security and will be managed by the future homeowners association.
- A play area, located adjacent to the community garden, for use by residents of the subdivision.

E. Afford reasonable protection to the permissible uses of properties surrounding the site. In addition to residences and their accessory uses, the Council may authorize commercial and nonresidential uses which it finds to be:

1. *Designed to serve primarily the residents of the planned development,*
2. *Limited to those nonresidential uses which do not exist in the vicinity, and*
3. *Fully compatible with, and incorporated into, the design of the planned development.*

Response: No commercial or non-residential uses are being proposed as part of this development. The development will consist of single-family attached dwellings and associated public streets. Properties surrounding the site are zoned for low-density residential uses (R-10). The proposed development will not impact the ability of those surrounding properties to develop or redevelop with permissible uses. The proposed development will not impact access to those properties, change flood elevations, or impose any other physical or conceptual constraints on surrounding properties that will impede their ability to develop as allowed.

19.311.3 Development Standards

All standards and requirements of this chapter and other City ordinances shall apply in a PD Zone unless the Planning Commission grants a variance from said standards in its approval of the PD Zone or accompanying subdivision plat.

A. Minimum Size of a PD Zone

A PD Zone may be established only on land which is suitable for the proposed development and of sufficient size to be planned and developed in a manner consistent with the purposes of this zone. A PD Zone shall not be

established on less than 2 acres of contiguous land unless the Planning Commission finds that a smaller site is suitable because of unique character, topography, landscaping features, or constitutes an isolated problem area.

Response: The proposed Planned Development site is approximately 14 acres of contiguous land, a portion of which is suitable for the proposed development. The site has been designed to preserve significant amounts of designated natural resources while maximizing development potential through compact rowhouse development. The site is also suitable for development in terms of access to public streets and utilities, as noted previously.

B. Special Improvements

In its approval of the final plan or subdivision plat within a PD Zone, the City may require the developer to provide special or oversize sewer lines, water lines, roads and streets, or other service facilities. Such approval shall not obligate the City to expend funds for additional construction equipment or for special road, sewer, lighting, water, fire, or police service.

Response: The applicant understands that the City may require special or oversized sewer lines, water lines, roads or other service facilities in its approval of the final plan and subdivision plat.

C. Density Increase and Control

The Council may permit residential densities which exceed those of the underlying zone, if it determines that the planned development is outstanding in planned land use and design and provides exceptional advantages in living conditions and amenities not found in similar developments constructed under regular zoning. In no case shall such density increase be more than 20% greater than the density range prescribed for the primary land use designation indicated in the Comprehensive Plan.

Response: Maximum density for the site was calculated consistent with the density calculation provisions in MMC Section 19.202.4. The allowable density was calculated for each zone (R-3 and R-10) separately and then combined to determine allowable density for the entire site. Per the City's pre-application notes, "the development may effectively blend the densities for the two zones by distributing structures across the site regardless of the specific zoning boundary." Table 2 shows the detailed density calculations. See Figure 3 for a map of areas used for the density calculations.

Table 2A: Net Acres Calculation

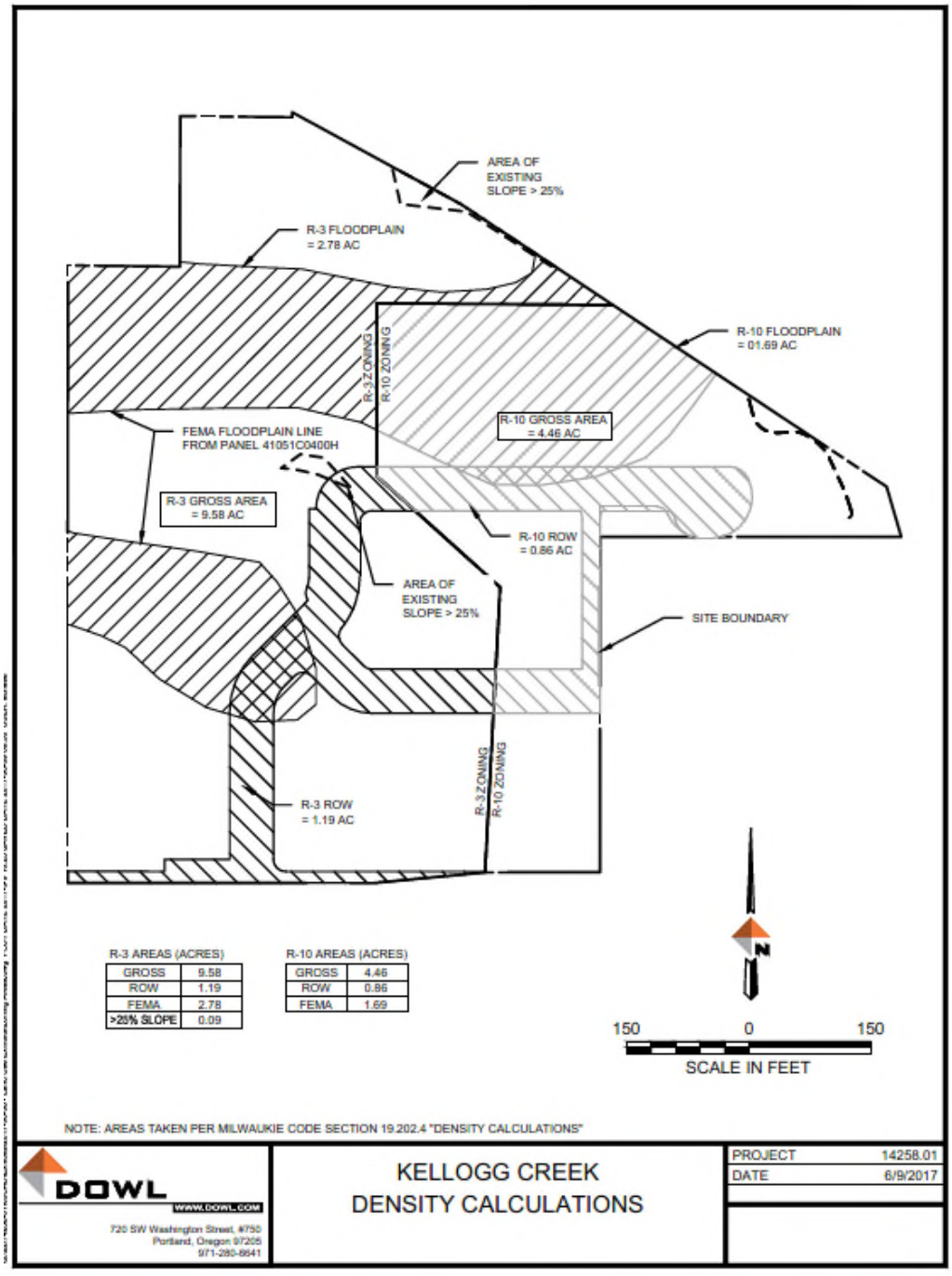
Zoning	Gross Acres	FEMA Mapped Floodplain	Right-of-way	Additional Open Space[1]	Slopes > 25%	Net Acres[2]
R-3	9.58	2.78	1.19	0.41	0.09	5.11
R-10	4.44	1.69	0.86	0	0	1.89
Totals	**14.02**	**4.47**	**2.05**	**0.41**		**7.00**

Table 2B: Maximum Density Calculation

Zoning	Net Acres[2]	Maximum Density (du/net acre)	Maximum Number of Units Allowed (without PD)	PD Increase (20%)[3]	Maximum Number of Units with Rounding (per MMC 19.202.4)
R-3	5.11	14.5	74.09	88.90	89
R-10	1.89	4.4	8.32	9.98	10
Totals	**7.00**	**-**	**82.4 (82 with rounding)**	**-**	**99**

1. Required open space is one-third of the gross acreage (per PD provisions in 19.311.3.E). The above calculations assume a portion of the open space overlaps with floodplain. Additional open space needed to achieve one-third of the gross is indicated here.
2. Net acres = gross acres – (floodplain + right-of-way + open space)
3. Per Section 19.311.3.C, a density increase of up to 20% is allowed in the PD Zone.

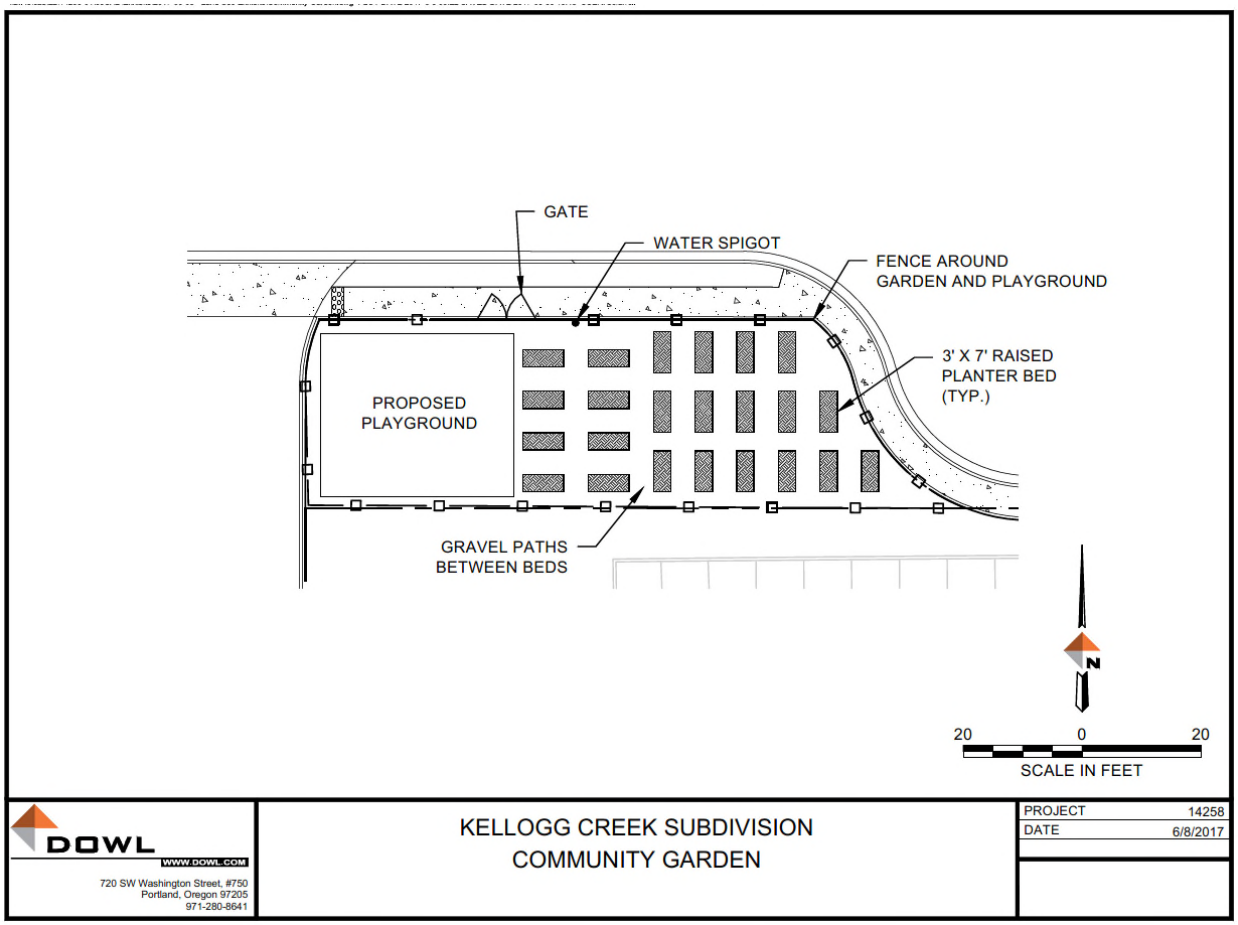
Figure 3: Density Calculation Areas



As shown, the maximum number of units that would be allowed on the site per the underlying zoning is 82 units. The maximum number of units that would be allowed with the 20 percent density increase per the PD Zone is 99 units. The proposed development has 92 units. This represents an approximately 12 percent increase in density, which is less than the 20 percent maximum increase allowed by the PD Zone. There are a number of unique and "outstanding" amenities provided with this proposed development that support the density increase:

- Just over half of the 14-acre site will be preserved as open space to minimize impacts to important natural resources, including habitat conservation area, floodplain, mature trees and wetlands. Residents of the development and the public will have access to these natural open spaces via a soft-surface trail system that will travel throughout the site. The trail will connect to a paved pedestrian/bicycle path at the northeast corner of the site near the intersection of Rusk Road and Highway 224.
- The site has been designed to avoid impacts to the large stand of mature Oregon white oak trees located in the southwest corner of the site. These trees have been identified extremely valuable and their protection is a high priority for the City and community members. Lots have been shifted as far east as possible to allow the oaks to remain on the site. In addition, the required half-street improvement along Kellogg Creek Drive has been altered (in collaboration with City Engineering staff) to avoid any tree removal associated with frontage improvements. As a result, all Oregon white oaks on the site will remain and be protected. The project arborist, Morgan Holen & Associates, LLC, has provided a supplemental memo dated June 11, 2017 that identifies specific tree protection measures that can be taken during construction to avoid damage to the white oaks.
- The site has been designed to create a sense of permeability between the natural open spaces and the developed portion of the site. In the southwest portion of the development, 12 homes will have yards that back up to the stand of large Oregon white oak trees. The backyards of those lots will have low (4-foot height) fencing made of black cyclone material to provide visibility and a sense of openness to the natural area while providing privacy and security for individual home owners. In addition, Street A has been designed to travel along the large protected wetland to provide visual access into the natural area in the northwest portion of the site. There are no homes located along the western edge of Street A through that area, which allows views into the natural area from the developed part of the site.
- The larger water quality facilities have been designed and located in order to provide views into the open space areas beyond them. The water quality facilities will be planted with low-lying grasses and will not be fenced, so they will provide a sense of openness for the nearby homes, as well as vehicles and pedestrians traveling through the site.
- A community garden will be provided on the site in Tract D for use by residents of the development (see Figure 4). That garden (approximately 3,100 square feet) will include raised planter beds, gravel pathways and a water source. The garden will be fenced and gated for security and will be managed by the future homeowners association.
- A play structure will also be provided adjacent to the community garden in Tract D for use by the residents of the development and church visitors. This structure will replace the existing church play structure that will be removed as part of this project.
- Additional trees will be planted where the site abuts Highway 224 in the northeastern corner to provide some additional screening for those lots that are located closest to that property line.

Figure 4: Community Garden and Play Area



- The proposed development will provide 92 units of attached single-family housing. Those rowhouse units will be available for ownership at a price point that is affordable for working people with moderate incomes (referred to as workforce housing). The need for this type of housing at this price point was well-established in the housing needs analysis prepared for the City at the end of 2016. This was further clarified in a memo prepared by Johnson Economics[2] on behalf of the applicant. That memo states (emphasis added):

  "The proposed development is consistent with the observed trends in the residential market, and is expected to deliver a product that is consistent with identified market demand. ***The subject site is particularly well suited for this type of development,*** *with proximate parks and open space to complement the limited yard space provided in a townhome configuration. We would expect the project to have* ***appeal to a cost-sensitive starter family market****, which will value the local amenity mix as well as proximity to employment and commercial services.*

  The development is requesting a Planned Development approval, which would allow for flexibility to deal with the site and natural resources. The site is split zoned, with portions zoned either R-10 or R-3. The R-10 zoning has a minimum lot size of 10,000 square feet, and would yield few units. Even under a duplex scenario, the zoning would require 14,000 square feet per duplex. The R-3 zoning allows for 3,000 square foot lots sizes, but with the level of natural resource on the site, a development would not be able to

[2] Johnson Economics also prepared the 2016 Housing Needs Analysis for the City of Milwaukie.

meet minimum density. ***As zoned, any development on the site would necessarily be at a price point that would not be responsive to the local demand.***

The proposed townhome development would allow for family-oriented units at a price point that meets identified demand, and can provide workforce housing. ***It would help realize and expand the City's housing capacity, increasing housing options for local residents as well as locally-employed households.****"*

See Exhibit K for the full memo. It's important to note the language about price point above because it directly relates to the density increase. Without the proposed 12 percent density increase to 92 lots, this project would not be economically feasible and would not be able to deliver housing at the needed price point. Simply stated, fewer lots means a higher price point.

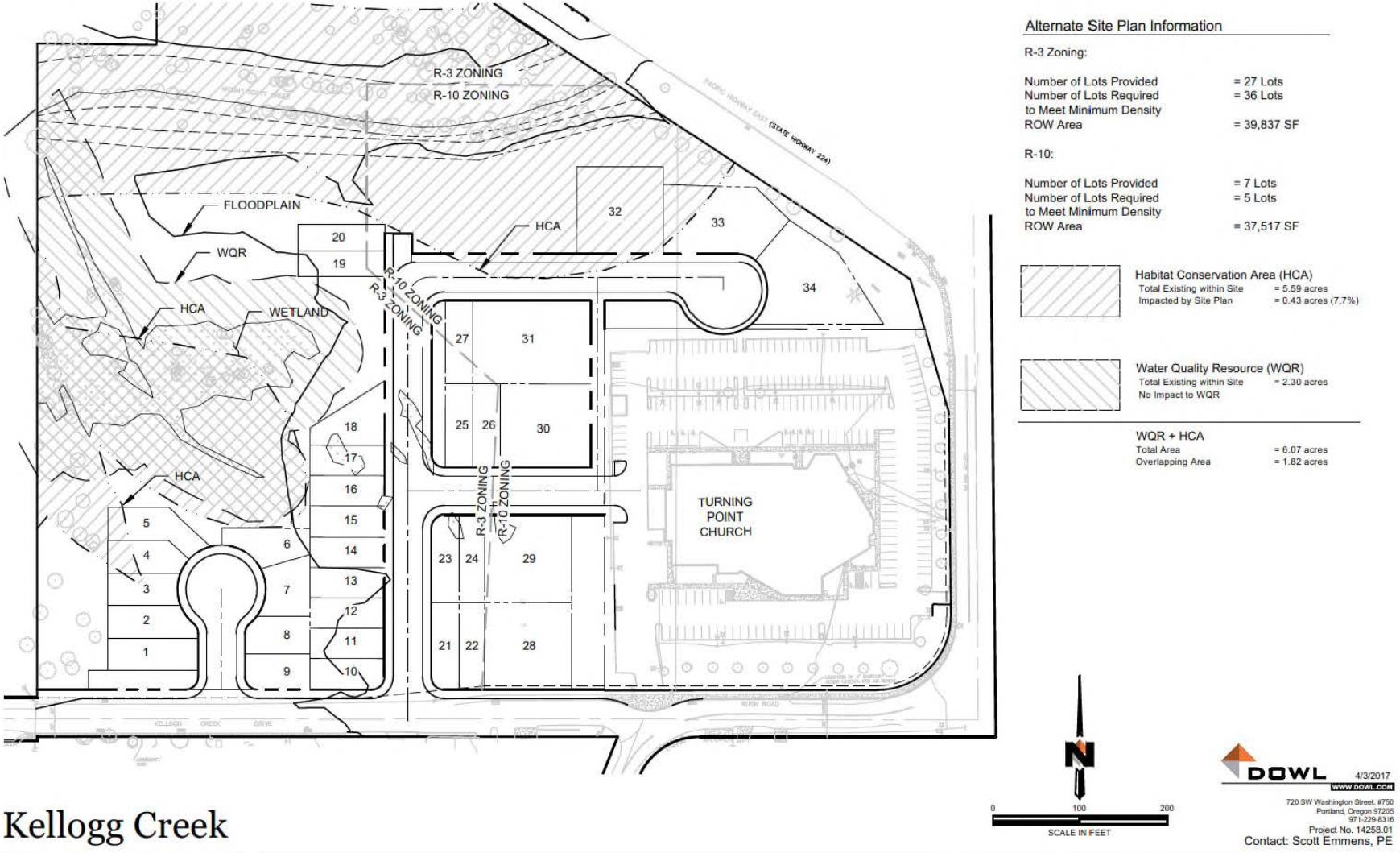
- The proposed development will be compact, with small individual lots on a connected street system in close proximity to a large public park with convenient access to a major arterial (Highway 224). The development is located less than 2.5 miles from downtown Milwaukie. This type of development is consistent with the housing trends that are anticipated to occur in Milwaukie over the next 20 years, as identified in the 2016 housing analysis. Those trends include the need for more dense and efficient development within the city limits, migration to urban areas, the desire for smaller homes in well-planned and safe communities, and the need for workforce housing.
- Under standard zoning (meaning, without using the PD provisions), this site would be very difficult to develop and would likely not produce an economically viable project. The alternative site layout shown in Figure 5 below shows a potential configuration of lots in the context of the standard R-10 and R-3 zoning (blending of zones would not be permitted as it is with the PD) and the natural resource provisions in MMC 19.402. The alternative layout is consistent with the subdivision standard in MMC 19.402.13.I that requires at least 90 percent of the HCA and 100 percent of the WRQ to be located in a separate non-developable tract.

  As shown, 27 lots are provided in the R-3 portion of the site. However, the minimum density required under this scenario is 36 lots (for the R-3). In order to meet minimum density requirements (see Table 3 for calculations) in the R-3 zone, nine additional units would be needed, which would result in impacts to the natural resources on the site. Furthermore, the lots in this alternative layout are larger (significantly larger in the R-10 portion) which means the price point for housing in this scenario will be much higher. Amenities such as the proposed community garden and soft-surface trail are not required considerations under standard subdivision zoning and would therefore not likely be provided in this scenario.

Table 3: Alternative Layout – Minimum Density

Zone	Gross Acres	Gross SF	Floodway	Proposed ROW	Additional Open Space	Net SF	Net Acres	Min Required Units
R3	9.58	417,305	52,359	39,837	189,922	135,187	3.10	36
R10	4.44	193,406	21,753	37,517	74,488	59,649	1.37	5

Figure 5: Alternative Site Layout – Standard Zoning



D. Peripheral Yards

Along the periphery of any PD Zone, additional yard depth, buffering, or screening may be required. Peripheral yards shall be at least as deep as that required by the front yard regulations of underlying zones. Open space may serve as peripheral yard and/or buffer strips to separate one planned area from another, if such dual use of the land is deemed to comply with this section.

Response: The front yard depths in the proposed development range from 10 to 20 feet so it is assumed here that the required periphery buffer is required to be at least 10 feet deep. The proposed development is surrounded by large areas of open space to the north and west, Kellogg Creek Drive to the south, and the existing church parking lot to the east. Where the proposed development abuts open space and Kellogg Creek Drive, additional periphery buffer is not required. The remainder of the development provides a periphery buffer as follows:

- Tracts E and F provide a 15-foot buffer between lots 1 and 17 and the property line.
- The public alley provides a 22-foot buffer between lots 45 and 53 and the property line.
- The bicycle/pedestrian path provides a 15-foot buffer between lot 92 and the property line.

E. Open Space

Open space means the land area to be set aside and used for scenic, landscaping, or open recreational purposes within the development. Open space may also include areas which, because of topographic or other conditions, are deemed by the Council to be suitable for leaving in a natural condition. Open space shall be adequate for the recreational and leisure needs of the occupants of the development, and shall include the preservation of areas designated by the City for open space or scenic preservation in the Comprehensive Plan or other plans adopted by the City.

The development plan and program shall provide for the landscaping and/or preservation of the natural features of the land. To ensure that open space will be permanent, deeds or dedication of easements of development rights to the City may be required. Instruments and documents guaranteeing the maintenance of open space shall be approved as to form by the City Attorney. Failure to maintain open space or any other property in a manner specified in the development plan and program shall empower the City to enter said property in order to bring it up to specified standards. In order to recover such maintenance costs, the City may, at its option, assess the real property and improvements within the planned development.

All planned unit developments will have at least one-third of the gross area devoted to open space and/or outdoor recreational areas. At least half of the required open space and/or recreational areas will be of the same general character as the area containing dwelling units. Open space and/or recreational areas do not include public or private streets.

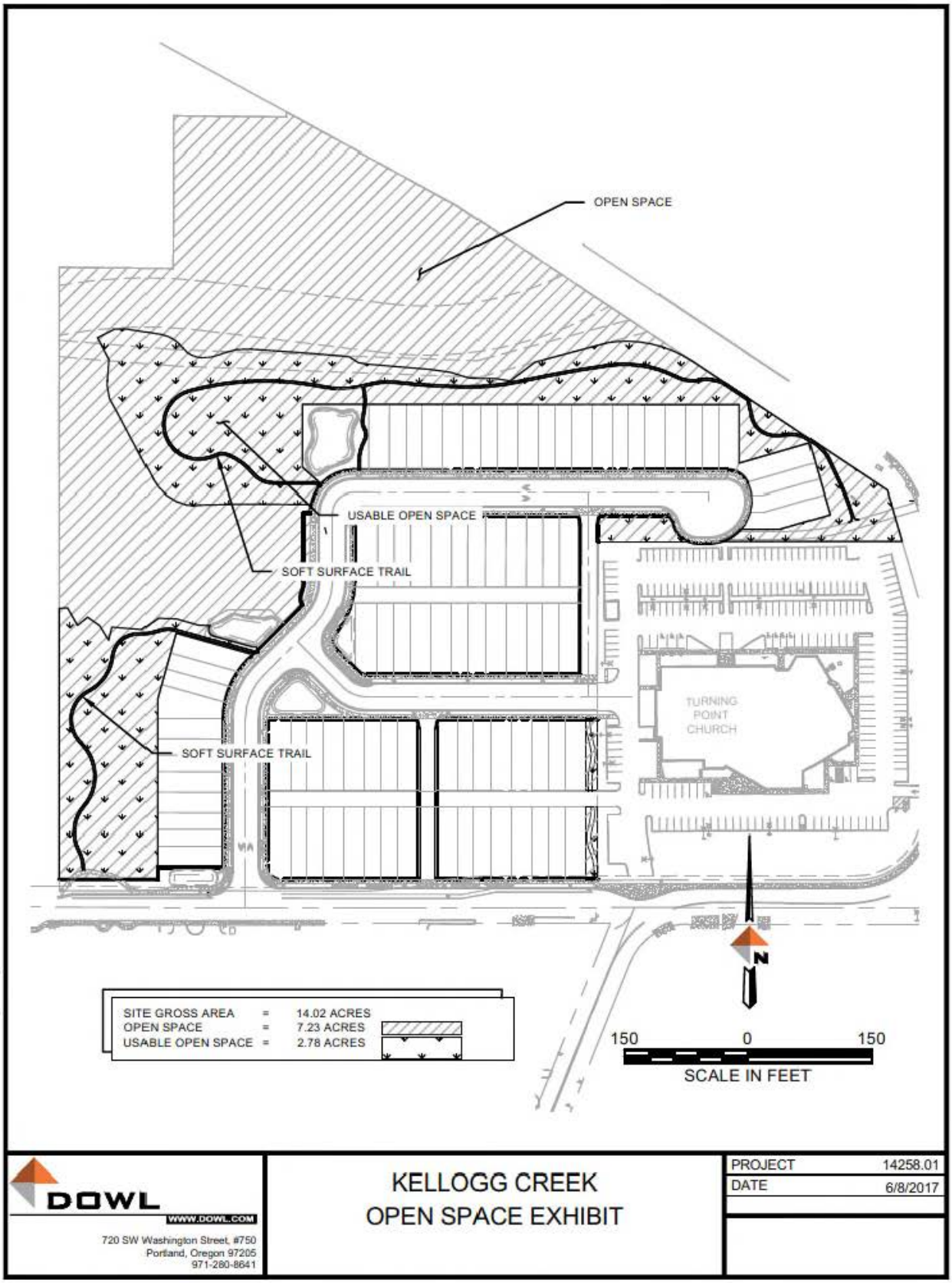
Response: The subject site is approximately 14 acres. One-third of the site is 4.67 acres, which is the amount required for open space per the standard above. One-half of the open space (2.34 acres) must be usable open space of the same general character as the area containing dwelling units.

As shown on Figure 6 below, the proposed development will have 7.23 acres of open space, which exceeds the one-third requirement. Approximately 2.78 acres of that open space will be available for recreational purposes via the proposed soft-surface trail system that travels through the site, which exceeds the one-half requirement. The trail system travels through the natural areas and connects to Kellogg Creek Drive in the southwest corner of the site and the bicycle/pedestrian pathway in the northeast corner of the site. Preservation of natural resources played a significant role in determining how this site was designed. It is appropriate and “in character” to leave those natural resources as intact as possible. The intent of the trail is to provide access to the open spaces that are being preserved on the site, while maintaining the overall integrity of the natural resources they

protect. Users who desire a more landscaped and programmed recreational area have convenient access to North Clackamas Park, which is directly adjacent to the site. Walking distance from the furthest point on the development site to North Clackamas Park is less than one-half mile, or about an eight minute walk.

In addition to the open space trail system, a community garden and play structure will be provided near the cul-de-sac at the northern end of the development.

Figure 6: Open Space Areas



19.311.4 Subject to Design Review

Any development within a PD Zone shall be subject to the provisions of design review as outlined in a separate ordinance.

Response: The proposed rowhouse development is subject to design standards, which have been addressed in the concurrent application narrative for subdivision and other associated reviews.

Section 19.902 Amendments to Maps and Ordinances

19.902.6 Zoning Map Amendments

Changes to the Zoning Map of Milwaukie, Oregon, shall be called Zoning Map amendments.

B. Approval Criteria

Changes to the Zoning Map shall be evaluated against the following approval criteria. A quasi-judicial map amendment shall be approved if the following criteria are met. A legislative map amendment may be approved if the following criteria are met:

1. *The proposed amendment is compatible with the surrounding area based on the following factors:*
    a. *Site location and character of the area.*
    b. *Predominant land use pattern and density of the area.*
    c. *Expected changes in the development pattern for the area.*

Response: The area surrounding the subject site has two predominate characteristics: parks/open space and low to moderately dense residential development. North Clackamas Park is located directly west of the site and consists of the Milwaukie Center building, ball fields, trails, and both passive and active recreational areas. The proposed development will preserve a significant area (about seven acres) of natural open spaces abutting the park, and will provide a soft-surface trail system throughout those open spaces. These preserved open space areas will be compatible with, and help maintain, the natural and open space character of the area. The large amount of open space preserved on the site will also help to buffer the impact of denser development.

The proposed project will also consist of 92 single family attached dwelling units (rowhouses) in a compact development pattern. While density on the site will be greater than density in the surrounding residential developments, it will not be out of character with surrounding residential development patterns. The proposed project will have full local streets, with landscaped strips and street trees, arranged in a grid-like pattern (with one cul-de-sac). The site is directly across Kellogg Creek Drive from the Deerfield Village Assisted Living center, which has characteristics similar to an apartment or multi-family development in terms of density and aesthetic.

As noted in the Johnson Economics memo in Exhibit K, "The location of the site provides excellent access and visibility from Highway 224, as well as access to the North Clackamas Park, Alder Creek Middle School, the Clackamas Aquatic Center, and employment concentrations along Highway 224 and I-205 corridors. While proximate to single family residential concentrations…the site is separated by topography and environmental corridors, limiting the impact on these properties from new development."

It's also important to note that a primary purpose of the PD Zone, which is the subject of this zone change request, is to encourage "the application of new techniques in land development…promote variety in the physical development pattern of the City, and…encourage a mix of housing types." Therefore, the PD Zone inherently and intentionally encourages unique development that is intended to adapt to the natural

characteristics of a site. This development proposal implements that intent while maintaining the two prevailing characteristics that define its surroundings: open space and residential development.

In terms of expected changes to the development pattern, the proposed development is consistent with the housing development trends that are anticipated to occur in Milwaukie over the next 20 years, as identified in the 2016 housing analysis. Those trends include the need for more dense and efficient development within the city limits, the desire for smaller homes in well-planned and safe communities, and the need for workforce housing.

2. The need is demonstrated for uses allowed by the proposed amendment.

Response: The proposed development will provide 92 single-family attached dwelling units (rowhouses) on individual lots. The need for this type of housing product has been identified in the housing needs analysis that was prepared for the City in 2016, and summarized previously.

3. The availability is shown of suitable alternative areas with the same or similar zoning designation.

Response: As noted in the 2016 Housing Needs Analysis prepared for the City, only 20 percent of the City's current land capacity is located on vacant parcels, with relatively few larger parcels available for "greenfield" development of single-family homes. The subject site has a particular combination of qualities that make it suitable for this development, including proximity to downtown, employment corridors, parks, schools and other services. The property is under single ownership and is available for purchase.

It's important to note that the PD Zone is a zone that is applied as an overlay at the request of an applicant who needs additional flexibility to develop a site. This criterion does not directly apply to a PD Zone request.

4. The subject property and adjacent properties presently have adequate public transportation facilities, public utilities, and services to support the use(s) allowed by the proposed amendment, or such facilities, utilities, and services are proposed or required as a condition of approval for the proposed amendment.

Response: The applicant has provided a traffic impact study, utility plans and a drainage report to demonstrate that adequate public services (transportation, water, sewer, stormwater) are available, or can be provided, to serve the use proposed by the requested amendment. Specifically:

- Water – The site is within the Clackamas River Water (CRW) district and will connect to an existing CRW water main located in SE Kellogg Creek Drive. The applicant will construct new water lines within the right-of-way of new public streets on the site to serve the proposed residential units. Proposed utilities are shown on the Composite Utility Plan (Sheet C400) in Exhibit A.
- Sewer – There is a Clackamas County wastewater main located along the western and northern property lines of the site and is available to serve the proposed development. The applicant will construct an 8-inch PVC sewer line within the right-of-way of new public streets on the site and will connect this line to the existing sewer main north of the site. Proposed utilities are shown on the Composite Utility Plan (Sheet C400) in Exhibit A.
- Stormwater – The applicant has submitted a preliminary stormwater report prepared by a qualified professional engineer as part of this application (see Exhibit E). The report explains how stormwater runoff will be managed on the site and demonstrates that post-development runoff will not exceed pre-development runoff. The report also demonstrates consistency with the City's water quality standards.
- Streets – The site will take access from SE Kellogg Creek Drive, which currently has 40 feet of right-of-way. The traffic impact study conducted for this project indicates that traffic volumes from the proposed development will not cause intersections in the study area to fall below acceptable levels of service.

Additional right-of-way will be dedicated along the site's frontage on Kellogg Creek Drive to accommodate half-street improvements, including a striped bike lane.

- Parks – The site is located adjacent to the North Clackamas Park, which is a 47-acre regional park with a variety of recreational amenities available to serve the proposed development. The site will also have approximately seven acres of additional open space and over two acres of usable open space (the trail system) available for the public and future residents of the development.

5. The proposed amendment is consistent with the functional classification, capacity, and level of service of the transportation system. A transportation impact study may be required subject to the provisions of Chapter 19.700.

Response: As demonstrated in the traffic impact study provided to the City, the proposed project is (or can be made to be) consistent with the functional classification, capacity and level of service of the surrounding transportation system.

6. The proposed amendment is consistent with the goals and policies of the Comprehensive Plan, including the Land Use Map.

Response: Responses to demonstrate that the proposed Planned Development is consistent with applicable Comprehensive Plan goals and policies are provided in Section III of this narrative.

7. The proposed amendment is consistent with the Metro Urban Growth Management Functional Plan and relevant regional policies.

Response: Relevant sections from the Urban Growth Management Functional Plan are addressed below.

Title 1 Housing Capacity. The proposed subdivision will provide housing in a compact urban form, which directly supports the intent of Metro's Housing Capacity requirements.

Title 3 Water Quality and Flood Management. The proposed development has been designed to preserve water quality resources and floodplain areas to the greatest extent feasible while still allowing development of the site. Consistent with Milwaukie's code, impacts to those areas will be mitigated and floodplain alterations will be done in accordance with local and federal requirements.

Title 7 Housing Choice. The proposed development will support Metro's Housing Choice policies by providing a needed housing type in Milwaukie that will be affordable to workers with moderate incomes.

Title 13 Nature in Neighborhoods. The proposed development supports these Metro policies by providing a large area of natural open space on the site that is contiguous to North Clackamas Park and protects the streamside vegetated corridor along Mount Scott Creek. The development will also comply with Milwaukie's Natural Resources code (Chapter 19.402), which protects habitat conservation and water quality resource areas on the site.

8. The proposed amendment is consistent with relevant State statutes and administrative rules, including the Statewide Planning Goals and Transportation Planning Rule.

Response: There are a number of directly relevant Statewide Planning Goals, which are briefly addressed below.

Goal 2 Citizen Involvement. Prior to submittal of the land use applications for this project, the applicant held a neighborhood meeting to discuss the proposal with surrounding neighbors. As noted previously in this narrative, changes to the overall development plan were made based on input during that meeting. Meeting materials are provided in Exhibit H. In addition, the review process for this application will include at least one hearing before the Planning Commission and one hearing before the City Council. Those hearings are open to the public and public notice will be provided consistent with the City's procedural code. Neighbors will have additional opportunity at those hearings to provide comment to the City prior to decisions.

Goal 5 Natural Resources. As noted previously, there are significant amounts of natural resources on the subject site, including wetlands, habitat conservation area, and mature trees. Impacts to those areas resulting from the proposed development have been minimized and over half the site will remain as natural open space. Impacts necessary to accommodate development on the site have been identified, and all applicable local, state and federal regulations have been addressed. Those regulations include the City's Title 19 natural resources provisions, and joint DSL/USACE wetlands permitting.

Goal 7 Areas Subject to Natural Hazards. A significant amount of floodplain exists on the site and alteration of the floodplain will be necessary to accommodate the proposed development. Impacts to the floodplain have been identified and all applicable local floodplain regulations in the City's Title 18 have been addressed. Federal requirements governing floodplain fill and management are being addressed in parallel to the local permitting effort.

Goal 12 Transportation and Transportation Planning Rule. As noted in the traffic impact study provided to the City, the proposed zoning map amendment "will not require changes to the functional classification of existing or planned transportation facilities, will not require a change to the standards implementing the comprehensive plan, and will not significantly affect a transportation facility. Accordingly, the proposed zoning map amendment does not result in a significant effect on the transportation system, and no further review of mitigation for Transportation Planning Rule purposes is necessary."

Section 19.911 Variances

19.911.3 Review Process

C. Type III Variances

Type III variances allow for larger or more complex variations to standards that require additional discretion and warrant a public hearing consistent with the Type III review process. Any variance request that is not specifically listed as a Type II variance per Subsection 19.911.3.B shall be evaluated through a Type III review per Section 19.1006.

Response: The applicant is requesting two variances:

- A variance is requested to MMC 19.708.1.E.5 which states that "Closed-end street systems may serve no more than 20 dwellings." Because the proposed subdivision has one access point on Kellogg Creek Drive, it is considered a closed-end street system and serves 92 dwellings, which exceeds the 20 dwelling maximum per this standard. This type of variance request is not specifically listed as a Type II variance; therefore a Type III variance is required.
- A variance is requested to the natural resource standards in MMC 19.402 pertaining to applications for subdivisions. Specifically, MMC 19.402.13.I.2.a states that, "All proposed lots shall have adequate buildable area outside of the WQR and HCA." As indicated in the Natural Resources Report in Exhibit J (see Figure 5) approximately 25 of the proposed 92 lots do not meet this standard. Those lots are lots 41-44, 68, and 69-86. This type of variance request is not specifically listed as a Type II variance; therefore a Type III variance is required.

19.911.4 Approval Criteria

B. Type III Variances

An application for a Type III variance shall be approved when all of the criteria in either Subsection 19.911.4.B.1 or 2 have been met. An applicant may choose which set of criteria to meet based upon the nature of the variance request, the nature of the development proposal, and the existing site conditions.

1. Discretionary Relief Criteria

a. The applicant's alternatives analysis provides, at a minimum, an analysis of the impacts and benefits of the variance proposal as compared to the baseline code requirements.

Response:

Closed-end street system variance. This variance will allow preservation of the stand of mature Oregon white oak trees located in the southwest corner of the site. The originally submitted site plan for this project had two access points on Kellogg Creek Drive. However, that plan resulted in removal of approximately half of the existing white oaks. Based on extensive feedback from the City and community members, preservation of all the white oaks should be considered a top priority. For that reason, the lots that abut the white oak stand were shifted about 40 feet to the east in order to avoid impacts to the trees. To maintain the 92-lot count, the street system was redesigned with one access point on Kellogg Creek Drive to accommodate that 40-foot shift. The proposed site plan allows protection of the Oregon white oaks while maintaining the same number of lots. The proposed street system also maintains safe and convenient circulation for future residents of the subdivision. Emergency fire access is provided throughout the site. The Clackamas Fire District has reviewed this site plan and provided comments indicating that it will meet their fire access standards.

Adequate buildable area variance. As noted above, the requested variance impacts 25 of the 92 lots in the proposed Planned Development subdivision. Without the variance, those 25 lots could not be retained and the resulting Planned Development would be reduced to approximately 67 lots. That represents a significant reduction in the number of proposed lots, which would have a number of impacts:

- As proposed, the project proposes 92 lots, which represents an approximately 12 percent increase in the allowed maximum density for the site. The Planned Development provisions in MMC 19.311 allow a density bonus up to 20 percent if the project can demonstrate that it is "outstanding in planned land use and design" and provides amenities that would not otherwise be provided. This project proposes a number of design features and amenities that were included specifically to justify the proposed density increase. However, if the number of lots is reduced, the density bonus is no longer applicable and those amenities would no longer be necessary. In other words, without the proposed variance, project amenities such as the open space trail, additional landscaping, and community garden/play structure would not be provided.
- Although the proposed variance will result in impacts to areas of mapped natural resources on the site, those impacts will be minimized and mitigated. The result of the mitigation and enhancement activities will be an overall improvement in the quality of natural resource areas on the site. This is described in more detail in the responses below.
- As discussed in more detail below, the proposed variance will allow the project to provide 92 units of a needed housing type (attached single-family residential) for the City. Without the variance, the ability of the project to provide this type of housing (attached ownership units) at the identified price point (low to mid $300,000 range) will be constrained.

The table below summarizes the impacts and benefits of the proposed project under baseline code requirements (i.e., without the variance) versus the proposed project with the requested variance.

Issue	Project without Variance	Project with Variance
Impacts natural resource areas	Minimal impacts to natural resources	HCA impacts: 0.95 acres WQR impacts: 0.80 acres
Improves and restores natural resource areas	No	Yes
Meets Minimum Density	No	Yes
Provides Community Amenities	No	Yes
Provides Needed Housing	Unlikely to provide needed attached single family housing type	Provides 92 attached single family units - providing a housing type that is identified as needed in the City's HNA

b. The proposed variance is determined by the Planning Commission to be both reasonable and appropriate, and it meets one or more of the following criteria:

(1) The proposed variance avoids or minimizes impacts to surrounding properties.

Response:

Neither variance request will have impacts to surrounding properties. The requested variances are internal to the subdivision site and will not change how the development interacts with, or impacts, surrounding uses. The Traffic Impact Study provided in Exhibit G demonstrates that traffic impacts from the proposed subdivision, with the requested variances, will not negatively impact functionality or safety of the public street system.

(2) The proposed variance has desirable public benefits.

Response:

Closed-end street system variance. The proposed variance will ensure that impacts to the stand of mature Oregon white oak trees can be avoided.

Adequate buildable area variance. The proposed variance will provide a number of public benefits that would otherwise not be provided.

- As noted above, the variance will allow the proposed Planned Development to achieve 92 lots, which utilizes the density bonus allowed by the Planned Development provisions. In response to the density bonus, the project includes public amenities (open space trail, community garden and additional landscaping). Without the variance, those public amenities would not be provided.
- This project specifically responds to the need for additional single family attached housing in Milwaukie. A recent housing needs analysis[3] was prepared for the City to forecast housing needs over the next 20 years. That analysis identifies a need for over 1,000 new housing units. The majority (71 percent) of that housing is projected to be ownership housing, over half of which is projected to be an attached housing type. The proposed variance will allow the project to provide 92 units of attached housing for ownership, thereby supporting the City's goal to provide more of this type of needed housing. Without the variance, it is likely that the project would shift to a different housing type with larger lots and at a higher price point that would not provide the attached housing type needed in the City.

  A memo prepared by Johnson Economics states the following (emphasis added):

[3] Housing and Residential Land Needs Assessment, prepared by Johnson Economics, August 2016.

"The proposed development is consistent with the observed trends in the residential market, and is expected to deliver a product that is consistent with identified market demand. ***The subject site is particularly well suited for this type of development,*** *with proximate parks and open space to complement the limited yard space provided in a townhome configuration. We would expect the project to* ***appeal to a cost-sensitive starter family market****, which will value the local amenity mix as well as proximity to employment and commercial services.*

The development is requesting a Planned Development approval, which would allow for flexibility to deal with the site and natural resources. The site is split zoned, with portions zoned either R-10 or R-3. The R-10 zoning has a minimum lot size of 10,000 square feet, and would yield few units. Even under a duplex scenario, the zoning would require 14,000 square feet per duplex. The R-3 zoning allows for 3,000 square foot lots sizes, but with the level of natural resource on the site, a development would not be able to meet minimum density. ***As zoned, any development on the site would necessarily be at a price point that would not be responsive to the local demand.***

The proposed townhome development would allow for family-oriented units at a price point that meets identified demand, and can provide workforce housing. ***It would help realize and expand the City's housing capacity, increasing housing options for local residents as well as locally-employed households.****"*

Without the requested variance to allow 92 lots, the project would not be able to deliver housing at a price point desired by the community and needed in the region.

(3) The proposed variance responds to the existing built or natural environment in a creative and sensitive manner.

Response:

Closed-end street system variance. This variance responds to the natural environment by allowing protection of the stand of mature Oregon white oaks located in the southwest corner of the site. As noted previously, the originally submitted site plan for this project had two access points on Kellogg Creek Drive. However, that plan resulted in removal of approximately half of the existing white oaks. Based on extensive feedback from the City and community members, preservation of all the white oaks should be considered a top priority. For that reason, the lots that abut the white oak stand were shifted about 40 feet to the east in order to avoid impacts to the trees. To maintain the 92-lot count, the street system was redesigned with one access point on Kellogg Creek Drive to accommodate that 40-foot shift. The proposed site plan allows protection of the Oregon white oaks while maintaining the same number of lots.

Adequate buildable area variance. The Planned Development site has a large amount of mapped natural resources that significantly limits the developable area. The proposed variance responds to this condition by ensuring that development encroachment areas are limited to areas that provide low habitat/water quality function and value. Mitigation proposed to compensate for encroachment into the mapped areas will result in an overall improvement in the quality and value of natural resource areas on the site.

Although impacts to natural resources will occur, those impacts have been identified and documented in the Natural Resource Report (Exhibit J). The report identifies areas of water quality resource (WQR) on the site and rates their quality according to definitions provided in MMC Chapter 19.402. The following summary describes those WQR areas:

- WQR area south of Mt. Scott Creek is Class A, or "good" quality. That area **is not** being impacted by the proposed variance.

- WQR area west of Wetland A is Class A, or "good" quality. That area **is not** being impacted by the proposed variance.
- WQR areas east and south of Wetland A are Class C, or "poor" quality. Those are the areas that will be impacted by the proposed variance.

In addition, the habitat conservation area (HCA) located at the northern edge of the proposed subdivision (impacted by lots 69-86) is not good quality wildlife habitat. This area is primarily composed of non-native, weedy plant species and lacks vegetation structure and diversity. As such, it provides less wildlife habitat than those areas that are forested and have a more diverse understory. The Natural Resources Report states the following:

> *"The development has been designed taking into consideration the City's building, design, and development requirements, while avoiding and minimizing resource impacts to the greatest extent practicable, and still allowing the project to be financially feasible. As such development in the WQR and HCA has been limited to the outer potions of each, in areas that are of lowest quality."*

The proposed variance responds to the natural environment by limiting impacts to primarily those natural resource areas that have been identified as low or poor quality. Mitigation and enhancement activities on the site (discussed more in the response below) will ensure that the overall quality of natural resource areas will be improved.

c. Impacts from the proposed variance will be mitigated to the extent practicable.

Response:

Closed-end street system variance. Possible impacts from the proposed variance include emergency access concerns. The street system has been designed consistent with comments provided by the Clackamas Fire District in their review of the revised site plan. The district made several recommendations related to fire access; all of those recommendations have been implemented on the site.

Adequate buildable area variance. As proposed, the subdivision will impact 0.95 acres of habitat conservation area and 0.80 acres of water quality resource. The Natural Resource Report provided in Exhibit J describes in detail how the natural resource impacts from the proposed variance will be minimized and mitigated. Those measures include:

- A construction management plan that describes how erosion and sediment control measures will protect natural resource areas during construction activities.
- A tree protection plan that describes how trees will be protected during construction.
- Natural resource areas that will be temporarily disturbed during construction will be restored and improved through removal of invasive plant species and replanting with native species suitable to the site that will enhance habitat value.
- Natural resource areas that will be permanently disturbed will be mitigated on the site consistent with requirements in MMC Chapter 19.402 and with federal requirements for mitigation of wetland impacts (through the joint DSL and COE permit process). Mitigation areas are shown on Figure 9 and will include:
    - Inventory and removal of man-made debris and noxious materials that are located on the site, as identified in the Geo-Technical Report in Exhibit F.
    - Removal of non-native, invasive plant species from the riparian corridor along Mt. Scott Creek.

- Installation of tree and shrubs within the remaining natural resource areas and floodplain storage area to restore a diverse, native plant community.
- Bare or open soil areas will be seeded to 100 percent surface coverage with native grasses and other groundcover species.
- Woody material will be placed in the mitigation and restoration areas after construction to maximize survival of the plantings.
- Monitoring of the mitigation and restoration areas will occur in the two years following construction. Annual monitoring reports will be submitted to the City consistent with requirements in MMC 19.402.

In addition to required mitigation, the project will provide further enhancement to two areas on the site. Those areas are shown as Additional Enhancement Areas A and B on the revised Figure 9 from the Natural Resources Report. Enhancement Area A is approximately 0.34 acres and is located north of Mt. Scott Creek. Enhancement Area B is approximately 0.12 acres and is located south of Mt. Scott Creek and Highway 224 in the eastern corner of the site. Both of those areas will be enhanced through the removal of man-made debris, removal of invasive plant species and planting with native trees, shrubs and seed mix. Those plantings will improve the native plant community, vegetation structure and diversity – all of which will improve the overall quality of wildlife habitat on the site. The planting lists for the mitigation area and the two additional enhancement areas are shown on Figure 9A of the Natural Resources Report.

As a result of mitigation and enhancement activities on the site, the Natural Resource Report describes the overall impacts of the project as follows:

> *"The proposed project is not anticipated to have any adverse impacts to water quality. The use of erosion and sediment controls during construction will prevent sediment-related impacts to water quality. The proposed project is not anticipated to result in additional nutrient inputs to the stream, and the restoration of the floodplain on the south side of Mt. Scott Creek will increase shade on the stream as the riparian plantings mature, helping to reduce water temperatures in the stream."*

The report further states that (emphasis added),

> *"Implementation of the proposed mitigation will ensure the proposed project minimizes adverse effects to the ecological functions of the WQR and loss of habitat, as follows:*
>
> - *The minimization of areal impacts as well as the proposed plantings to restore native plant communities on the south side of Mt. Scott Creek, along the northeast and south sides of Wetland A, and within the floodplain storage area will ensure that the WQR continues to provide vegetated corridors that separate protected water features from development.*
> - *As the proposed tree and shrub plantings south of Mt. Scott Creek, around Wetland A, and within the floodplain storage area mature, they will increasingly provide microclimate regulation and shade for the stream and wetland, and* ***provide better microclimate regulation and shade as compared to the existing plant communities.***
> - *As the proposed tree and shrub plantings south of Mt. Scott Creek, around Wetland A, and the floodplain storage area mature, they* ***will provide more effective streamflow moderation during high flow events than the herbaceous plant community, predominantly composed of reed canarygrass, that is present under existing conditions.***
> - *The diverse plant community within the WQR, HCA and floodplain storage area will continue to provide water filtration, infiltration, and natural purification functions. The proposed project will not adversely affect these functions.*

- *The proposed restoration plantings and the resulting diverse plant community within the WQR, HCA and floodplain storage area will continue to provide bank stabilization and sediment and pollution control functions. The proposed project will not adversely affect these functions.*
- *Trees will remain within the vegetated corridor following construction, and therefore, the WQR will continue to provide the potential for large wood recruitment and retention functions. No impacts are proposed for the creek, and therefore, there will be no adverse impact on channel dynamics.*
- *Because the WQR will continue to be vegetated with a diverse plant community, the proposed project will not adversely affect the resource's ability to provide organic inputs to the stream and riparian area."*

III. COMPLIANCE WITH CITY OF MILWAUKIE COMPREHENSIVE PLAN

This section contains responses to applicable Comprehensive Plan goals and policies. Where specific policy language was not particularly relevant to this application, the overall goal statement is addressed instead.

Chapter 1 Citizen Involvement

GOAL STATEMENT: To encourage and provide opportunities for citizens to participate in all phases of the planning process, to keep citizens informed and to open lines of communication for the sharing of questions, problems and suggestions regarding the Comprehensive Plan and land use regulations

Response: Consistent with Citizen Involvement goals, the applicant held a neighborhood meeting on November 3, 2016 to discuss the proposed project with surrounding property owners and the Lake Road Neighborhood District Association (NDA). A letter of invitation to the meeting was mailed to all property owners within a 500-foot radius of the site. The Chair of the Lake Road NDA was also contacted (via email and telephone) to inform the NDA of the meeting and invite them to attend. The meeting was held at the Turning Point Church, which is directly adjacent to the project site. Approximately 30 people attended the meeting. See Exhibit H for meeting materials.

During the meeting, the consultant team presented an overview of the proposed site plan and explained the review process that will be required in order to approve the project. The consultant team included the project civil engineers, traffic engineer, biologist and land use planner. The applicant and property owner (Turning Point Church) were also present at the meeting. Neighbors expressed some concerns during the meeting as noted below.

- Neighbors were concerned that proposed development on the site could exacerbate existing flooding issues that occur in the area. Subsequently, the site plan was revised to significantly reduce impacts to the floodplain area. In addition, the applicant will comply with all Milwaukie Title 18 floodplain alteration provisions and applicable FEMA flood map revision requirements. Those provisions and processes are in place to ensure floodplain alterations do not negatively impact surrounding development.
- Neighbors were concerned that traffic resulting from the development will add congestion, delays and safety issues on surrounding streets and intersections. The applicant has submitted a traffic impact study to the City, which has been reviewed and discussed during the required TIS pre-application meeting. The traffic study identifies anticipated impacts from the proposed development and mitigating improvements that will be constructed as part of the development. Per the study, intersections within the study area are expected to continue to operate at acceptable levels after the proposed development is complete.
- Neighbors were concerned that there are too many lots proposed on the site. Subsequently, the development plan was revised and the total number of lots was reduced from 99 to 92. Compatibility with the surrounding neighborhood has been discussed previously in this narrative and must be balanced with other interests such as protection of natural resources and the need for more housing in Milwaukie.

In addition to the neighborhood meeting, citizens will be notified by the City when the applications are submitted and deemed complete for review. They will have an opportunity to provide written comment on the application during the public comment period prior to the public hearings. Citizens will also have the ability to provide written or oral testimony during the public hearings before the Planning Commission and City Council. The City provides such notice to all property owners within a 300-foot radius of the project site, consistent with City procedural code.

Chapter 2 Plan Review & Amendment Process

GOAL STATEMENT: Establish a Plan review and amendment process as a basis for land use decisions, provide for participation by citizens and affected governmental units, and ensure a factual base for decisions and actions.

Response: Policies under Chapter 2, Objective #2 require that zone changes and other planning actions be consistent with the intent of the Comprehensive Plan. This application supports those policies by providing these findings to demonstrate conformance with applicable Comprehensive Plan goals and policies. As noted in the response to Chapter 1 above, opportunities for participation by citizens and affected governmental units has been, or will be, provided through the neighborhood meeting and the City's public notice and hearings processes.

Chapter 3 Environmental & Natural Resources

NATURAL HAZARDS ELEMENT

Floodplain Policies

1. New construction and development will be regulated so that water flow will not be increased. The capacity of the floodplain shall not be reduced by development activities.

Response: The capacity of the floodplain will not be reduced by the proposed development activities. Balanced cut and fill of the floodplain will be conducted on the site to accommodate the proposed development. Milwaukie's Title 18 floodplain alteration provisions will be met and the applicant has provided this information to the City. In addition, FEMA flood map revision requirements will also be addressed through a separate process.

2. Construction materials which may be inundated will be of such strength and quality that they will not deteriorate, and they must be able to withstand the pressure and velocity of flowing water.

Response: Areas of residential construction will be filled to ensure that the surface of residential foundations is at least one foot above the base flood elevation. Therefore, no residential construction areas will fall within the inundation area of a 100-year flood event.

3. The finished elevations of the lowest floor of buildings and streets will be a minimum of 1.0 foot above the 100 year flood elevation.

Response: Finished elevations of the lowest floor of buildings and streets will be at least one foot above the 100-year flood elevation.

4. Whenever possible, the floodplain will be retained as open space and used for recreation, wildlife areas, or trails. Dedication of lands or public easements within the floodplain is encouraged when indicated by the Recreational Needs Element, and may be required as a condition of development along creeks and rivers or other water bodies or wetlands.

Response: Floodplain on the site will be largely left as natural open space and will be accessible to residents for recreational purposes via a soft-surface trail system, as described and shown previously in this narrative.

OPEN SPACES, SCENIC AREAS, AND NATURAL RESOURCES ELEMENT

Natural Resource Policies

1. Protect designated natural resources and their associated values through preservation, intergovernmental coordination, conservation, mitigation, and acquisition of resources.

Response: The natural resources on the site (habitat conservation area and wetlands) will be protected to the greatest extent possible while allowing the applicant to provide efficient and compact residential development.

All impacts to protected areas will be done in accordance with applicable local and federal regulations, including MMC Chapter 19.402 for Natural Resources and the joint DSL/USACE wetlands permitting process. Impacts will be mitigated as required through those processes.

2. Provide protection to important wetland and water body areas through designation of riparian area buffers between natural resources and other urban development activities. Restrict non-water dependent development within the riparian buffer area.

Response: Chapter 19.402 of the Milwaukie code establishes vegetated corridor width requirements for protected water features, including those found on the subject site, and restricts activity within those corridors. As part of a separate and concurrent application package, the applicant has submitted a Natural Resources review application to demonstrate consistency with Chapter 19.402 regarding habitat conservation area and water quality resources. A Natural Resource Review report is provided in Exhibit J.

3. Maintain and improve water quality of wetlands and water bodies by regulating the placement and design of stormwater drainage facilities.

Response: Placement and design of stormwater facilities has been provided to the City in the Drainage Report in Exhibit E and the plans in Exhibit A. Those facilities have been designed consistent with City standards and requirements.

4. Protect existing upland areas and values related to wildlife habitat, groundwater recharge, and erosion control.

- *Encourage the development of open spaces and increased vegetation for wildlife habitats.*
- *Protect steep slopes from erosion through the use of vegetation.*
- *Provide protection between the resource and other urban development.*

Response: Chapter 19.402 of the Milwaukie code establishes regulations and requirements for habitat conservation areas, including those found on the subject site. As part of a separate and concurrent application package, the applicant has submitted a Natural Resources review application to demonstrate consistency with Chapter 19.402 regarding habitat conservation area and water quality resources.

Chapter 4 Land Use

RESIDENTIAL LAND USE AND HOUSING ELEMENT

Buildable Land Policies

1. Policies and standards found in the Historic Resources, Natural Hazard and Open Spaces, Scenic Areas, and Natural Resources Elements of the Environmental and Natural Resources Chapter apply, where applicable, throughout the City. Through its regular zoning, building and safety enforcement process, the City will implement those policies in Special Policies Classification areas and direct urban development toward more suitable areas through density transfer.

Response: The proposed development supports this policy by transferring available density from the portion of the site with natural resources to the portion of the site more suitable for development.

2. Prior to the approval of any building permit or other development approval, the developer of any vacant land within special policies classification areas must submit a report indicating how the applicable policies in the Environmental and Natural Resources Chapter are to be met. The report will describe the proposed type of site preparation and building techniques, how these techniques meet the applicable policies, and the mitigative measures, if any, proposed to lessen impacts during construction.

Response: Applicable policies from the Environmental and Natural Resources chapter of the Comprehensive Plan are provided in the above section of this narrative.

Residential Land Use Design Policies

2. In all Planned Unit Developments, a density bonus up twenty percent (20%) over the allowable density may be granted in exchange for exceptional design quality or special project amenities.

Response: As noted previously, and reiterated here, the maximum number of units that would be allowed on the site per the underlying zoning is 82 units. The proposed development has 92 units. This represents an approximately 12 percent increase in density, which is less than the 20 percent maximum increase afforded by the PD Zone. There are a number of unique and "outstanding" amenities provided with this proposed development that meet the intent of this standard:

- Just over half of the 14-acre site will be preserved as open space to minimize impacts to important natural resources, including habitat conservation area, floodplain, mature trees and wetlands. Residents of the development and the public will have access to these natural open spaces via a soft-surface trail system that will travel throughout the site. The trail will connect to a paved pedestrian/bicycle path at the northeast corner of the site near the intersection of Rusk Road and Highway 224.
- The site has been designed to avoid impacts to the large stand of mature Oregon white oak trees located in the southwest corner of the site. These trees have been identified extremely valuable and their protection is a high priority for the City and community members. Lots have been shifted as far east as possible to allow the oaks to remain on the site. In addition, the required half-street improvement along Kellogg Creek Drive has been altered (in collaboration with City Engineering staff) to avoid any tree removal associated with frontage improvements. As a result, all Oregon white oaks on the site will remain and be protected. The project arborist, Morgan Holen & Associates, LLC, has provided a supplemental memo dated June 11, 2017 that identifies specific tree protection measures that can be taken during construction to avoid damage to the white oaks.
- The site has been designed to create a sense of permeability between the natural open spaces and the developed portion of the site. In the southwest portion of the development, 12 homes will have yards that back up to the stand of large Oregon white oak trees. The backyards of those lots will have low (4-foot height) fencing made of black cyclone material to provide visibility and a sense of openness to the natural area while providing privacy and security for individual home owners. In addition, Street A has been designed to travel along the large protected wetland to provide visual access into the natural area in the northwest portion of the site. There are no homes located along the western edge of Street A through that area, which allows views into the natural area from the developed part of the site.
- The larger water quality facilities have been designed and located in order to provide views into the open space areas beyond them. The water quality facilities will be planted with low-lying grasses and will not be fenced, so they will provide a sense of openness for the nearby homes, as well as vehicles and pedestrians traveling through the site.
- A community garden will be provided on the site in Tract D for use by residents of the development (see Figure 4). That garden (approximately 3,100 square feet) will include raised planter beds, gravel pathways and a water source. The garden will be fenced and gated for security and will be managed by the future homeowners association.
- A play structure will also be provided adjacent to the community garden in Tract D for use by the residents of the development and church visitors. This structure will replace the existing church play structure that will be removed as part of this project.

- Additional trees will be planted where the site abuts Highway 224 in the northeastern corner to provide some additional screening for those lots that are located closest to that property line.
- The proposed development will provide 92 units of attached single-family housing. Those rowhouse units will be available for ownership at a price point that is affordable for working people with moderate incomes (referred to as workforce housing). The need for this type of housing at this price point was well-established in the housing needs analysis prepared for the City at the end of 2016. This was further clarified in a memo prepared by Johnson Economics[4] on behalf of the applicant. That memo states (emphasis added):

  "The proposed development is consistent with the observed trends in the residential market, and is expected to deliver a product that is consistent with identified market demand. ***The subject site is particularly well suited for this type of development,*** *with proximate parks and open space to complement the limited yard space provided in a townhome configuration. We would expect the project to have* ***appeal to a cost-sensitive starter family market****, which will value the local amenity mix as well as proximity to employment and commercial services.*

  The development is requesting a Planned Development approval, which would allow for flexibility to deal with the site and natural resources. The site is split zoned, with portions zoned either R-10 or R-3. The R-10 zoning has a minimum lot size of 10,000 square feet, and would yield few units. Even under a duplex scenario, the zoning would require 14,000 square feet per duplex. The R-3 zoning allows for 3,000 square foot lots sizes, but with the level of natural resource on the site, a development would not be able to meet minimum density. ***As zoned, any development on the site would necessarily be at a price point that would not be responsive to the local demand.***

  The proposed townhome development would allow for family-oriented units at a price point that meets identified demand, and can provide workforce housing. ***It would help realize and expand the City's housing capacity, increasing housing options for local residents as well as locally-employed households.****"*

  See Exhibit K for the full memo. It's important to note the language about price point above because it directly relates to the density increase. Without the proposed 12 percent density increase to 92 lots, this project would not be economically feasible and would not be able to deliver housing at the needed price point. Simply stated, fewer lots means a higher price point.
- The proposed development will be compact, with small individual lots on a connected street system in close proximity to a large public park with convenient access to a major arterial (Highway 224). The development is located less than 2.5 miles from downtown Milwaukie. This type of development is consistent with the housing trends that are anticipated to occur in Milwaukie over the next 20 years, as identified in the 2016 housing analysis. Those trends include the need for more dense and efficient development within the city limits, migration to urban areas, the desire for smaller homes in well-planned and safe communities, and the need for workforce housing.

3. All Planned Unit Developments will have area devoted to open space and/or outdoor recreational areas. At least half of the open space and/or recreational areas will be of the same general character as the area containing dwelling units. Open space and/or recreational areas do not include public or private streets.

Response: As demonstrated previously in this narrative, the proposed PD development will provide at least one-third of the site as open space and at least half of that open space will be usable and of the same general character as the area containing dwellings.

[4] Johnson Economics also prepared the 2016 Housing Needs Analysis for the City of Milwaukie.

4. All projects in Medium Density and High Density areas will have area devoted to open space and/or outdoor recreational areas. At least half of the open space and/or recreational areas will be of the same general character as the area containing dwelling units. Open space and/or recreational areas do not include public or private streets and parking areas, but may include private yards.

Response: As demonstrated previously in this narrative, the proposed PD development will provide at least one-third of the site as open space and at least half of that open space will be usable for recreation (walking paths) and of the same general character as the area containing dwellings.

5. In all cases, existing tree coverage will be preserved whenever possible, and areas of trees and shrubs will remain connected particularly along natural drainage courses.

Response: As shown on the Tree Protection and Removal Plan (Sheet C101) in Exhibit A, the majority of existing trees on the site will be preserved, particularly the stand of Oregon white oak trees at the western edge of the site. The Arborist Report in Exhibit I notes that of the existing 221 trees identified on the site, 36 trees (17 percent of the total) will be removed to accommodate development. Of those 36 trees, approximately a third of them were identified as being in poor condition. Trees located along Mt Scott Creek at the northern end of the site will be preserved and protected during development.

6. Specified trees will be protected during construction, in accordance with conditions attached to building permits.

Response: Trees to remain on the site will be protected in accordance with recommendations in the Arborist Report (Exhibit I) and any conditions attached to building permits.

7. Sites within open space, natural hazard or natural resource areas will be protected according to specifications in the Natural Hazard and Natural Resources Elements.

Response: As demonstrated in the responses above, the proposed development will protect natural resources according to applicable policies and Chapter 19.402 of the Milwaukie code.

Housing Choice Policies

2. The City will encourage the development of larger subdivisions and PUDs that use innovative development techniques for the purpose of reducing housing costs as well as creating an attractive living environment. Such techniques to reduce costs may include providing a variety of housing size, type, and amenities. The City may provide density bonuses, additional building height allowances, or other such incentives for the provision of affordable housing in residential development projects. Overall project density may not exceed the allowable density plus ten (10) percent, which may be added to the Planned Unit Development bonus.

Response: The proposed zone change supports this policy by facilitating development of a Planned Development that will provide a housing type that is not commonly found in Milwaukie. Per the housing needs analysis prepared for the City in 2016, single-family attached housing accounts for only 1.6 percent of total housing units in Milwaukie. This proposed development will help the City achieve a greater variety of housing type and a greater number of units that will be affordable to workers with moderate incomes (workforce housing). The proposed development will create an attractive living environment that includes unified building design, large amounts of open space with recreational opportunities, and fully improved streets with landscape strips and street trees.

RECREATIONAL NEEDS ELEMENT

Private Recreation Policies

3. New residential projects not corresponding to areas of deficient park land as identified in the Parks and Recreation Master Plan will ensure adequate space and/or facilities are provided to meet the recreational needs of residents of the project, especially children. New projects may also be subject to a systems development charge for park and recreation improvements. Standards for private playlots will be established in the Parks and Recreation Master Plan. If playlots are required by the Planning Commission, the allowable density on the remaining lands may be increased, so that overall parcel density remains the same.

Response: The site is located directly adjacent to the North Clackamas Park, which is a 47-acre park that provides a wide variety of park amenities. In addition, the proposed development provides a large area of open space (approximately 7 acres) that will be accessible to the public and residents of the development via a soft-surface trail system that travels throughout the site.

Chapter 5 Transportation, Public Facilities and Energy Conservation

TRANSPORTATION ELEMENT

Response: The transportation element of the Comprehensive Plan is the City's Transportation System Plan (TSP). Consistency with the City's TSP is established in the traffic impact study provided to the City. That study concluded that the proposed zoning map amendment will not result in significant impacts to the surrounding transportation system.

PUBLIC FACILITIES AND SERVICES ELEMENT

Response: Generally, the policies contained in this section are intended to ensure orderly and efficient arrangement of public facilities and services to serve new development. As demonstrated in the Composite Utility Plan (Sheet C400) in Exhibit A and the Drainage Report in Exhibit E, public utilities are available and adequate to serve the site. The proposed development will extend those public utilities to serve new homes constructed on the site. Stormwater management will occur on the site, consistent with City regulations. Specifically:

- Water – The site is within the Clackamas River Water (CRW) district and will connect to an existing CRW water main located in SE Kellogg Creek Drive. The applicant will construct new water lines within the right-of-way of new public streets on the site to serve the proposed residential units. Proposed utilities are shown on the Composite Utility Plan (Sheet C400) in Exhibit A.
- Sewer – There is a Clackamas County wastewater main located along the western and northern property lines of the site and is available to serve the proposed development. The applicant will construct an 8-inch PVC sewer line within the right-of-way of new public streets on the site and will connect this line to the existing sewer main north of the site. Proposed utilities are shown on the Composite Utility Plan (Sheet C400) in Exhibit A.
- Stormwater – The applicant has submitted a preliminary stormwater report prepared by a qualified professional engineer as part of this application (see Exhibit E). The report explains how stormwater runoff will be managed on the site and demonstrates that post-development runoff will not exceed pre-development runoff. The report also demonstrates consistency with the City's water quality standards.

ENERGY CONSERVATION ELEMENT

Response: The policies in this section encourage energy efficiency through the use of land use patterns and transportation systems. This proposal supports these policies by providing a dense residential community in close proximity to a large employment corridors located directly across Highway 224 and along I-205.

IV. CONCLUSIONS

As established in the discussion and responses provided in this narrative, the proposed Planned Development and associated zone change and variances are consistent with City standards and criteria. Approval of this application will facilitate development of a project that will preserve and protect natural resources, contribute to the overall variety of housing types and development patterns in Milwaukie, and provide a needed housing type in close proximity to a large employment center.

KELLOGG CREEK
Milwaukie, Oregon

A Land Use Application for:

Minor Modification to Community Service Use
Subdivision Preliminary Plat
Transportation Facilities Review
Natural Resources Review

Revised and Submitted:
June 2017

Applicant:
Brownstone Development, Inc.
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I. PROJECT TEAM

Applicant	**Brownstone Development, Inc.** 47 South State Street PO Box 2375 Lake Oswego, OR 97934 Contact: Randy Myers 503.358.4460 randy@brownstonehomes.net
Property Owner	**Turning Point Church** 13333 Rusk Road Milwaukie, OR 97222 Contact: Pastor Bob Mihuc 503.305.8704 bob@turningpointcares.org
Planning/Civil Engineering	**DOWL** 720 SW Washington Street, Suite 750 Portland, OR 97221 Contact: Serah Breakstone, AICP 503.280.8661 sbreakstone@dowl.com
Traffic Engineering	**Kittelson & Associates, Inc.** 610 SW Alder Street, Suite 700 Portland, OR 97205 Contact: Chris Brehmer, PE 503.535.7433 cbrehmer@kittelson.com
Natural Resources	**Pacific Habitat Services** 9450 SW Commerce Circle, Suite 180 Wilsonville, OR 97070 Contact: John van Staveren 503.570.0800 jvs@pacifichabitat.com
Arborist	**Morgan Holen & Associates** 3 Monroe Parkway, Suite P220 Lake Oswego, Oregon 97035 Contact: Morgan Holen 971.409.9354 morgan.holen@comcast.net

II. INTRODUCTION

Summary of Proposal

Brownstone Development (the applicant) is proposing a new residential subdivision located at 13333 Rusk Road in the City of Milwaukie (see Figure 1, Vicinity Map). The development site is approximately 13.8 acres and will consist of 92 new lots intended for single-family attached (rowhouse) dwelling units and associated public streets. The attached homes will be in groupings of four units and will be accessed from rear alleys or front-facing driveways. The development will also include new public local streets, private alleys and a soft-surface pedestrian trail to provide connectivity throughout the site. Open spaces and natural areas will surround the homes and connect to the adjacent North Clackamas Park west of the site.

The subject property currently consists of four tax lots all owned by the Turning Point Church, which is located at the corner of Rusk Road and Kellogg Creek Drive. A property line adjustment application has been submitted to the City of Milwaukie in order to consolidate and reconfigure the four tax lots into two lots. One lot (13.8 acres) will be the development site and the other lot (3.7 acres) will be established for the church. The Turning Point Church and its associated parking areas will remain.

Access to the development site will be taken from SE Kellogg Creek Drive, as shown on the Preliminary Plat, Sheet C201 in Exhibit A. In order to ensure the Turning Point Church continues to have safe ingress and egress, a connection between the two sites will be provided to allow church visitors to exit through the development site onto Kellogg Creek Drive (exit from the church site onto Rusk Road is not permitted; that access is entrance only).

Zoning & Land Uses

The subject site currently has split zoning, with the western portion of the site zoned R-3 and the eastern portion of the site zoned R-10. See Figure 2 and the Existing Conditions Plan (Sheet C100) in Exhibit A. The table below describes the uses and zoning on properties surrounding the subject site.

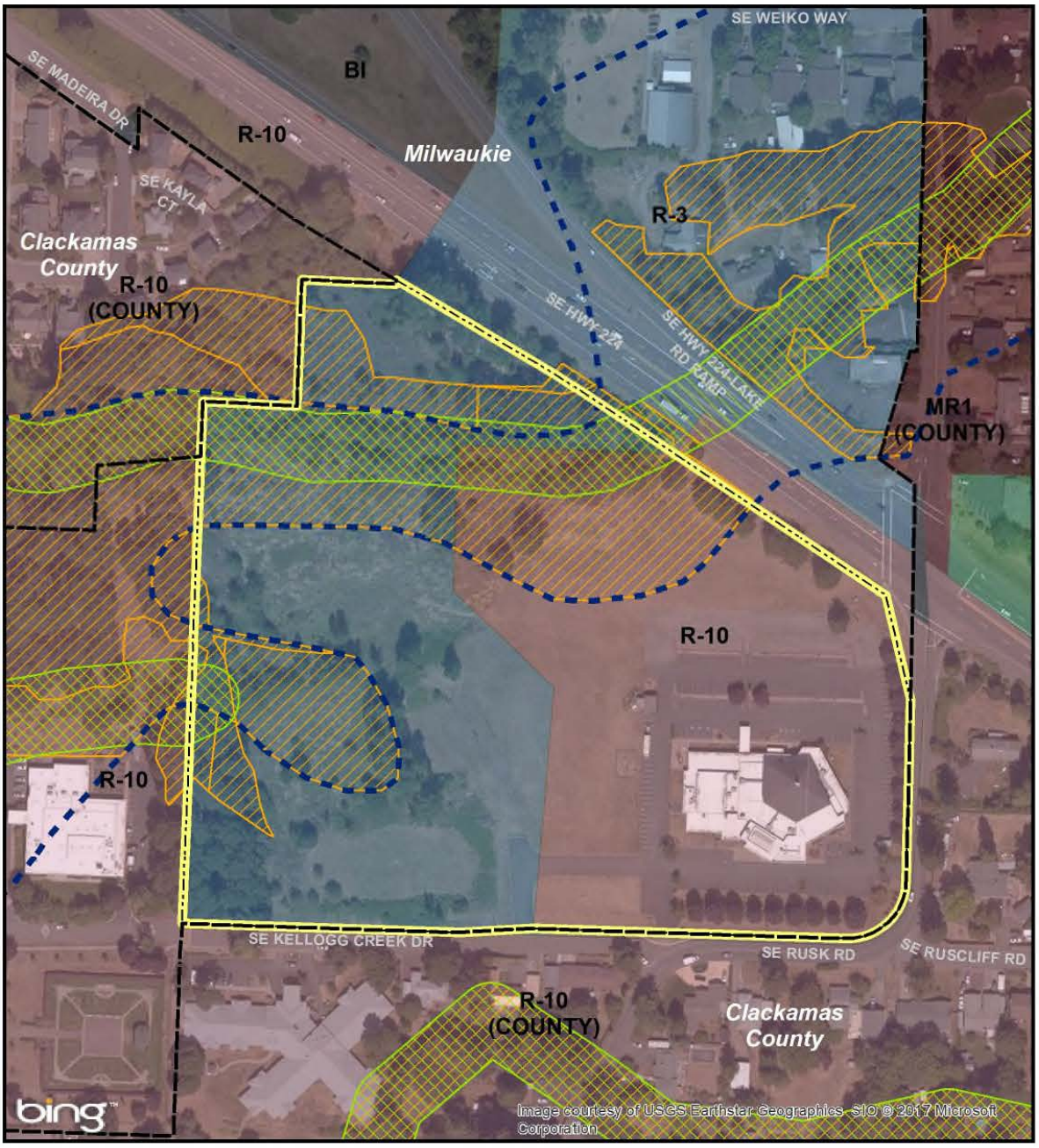
Table 1: Surrounding Uses

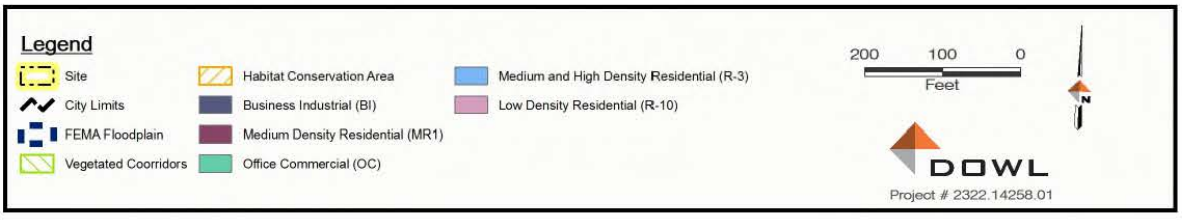
Area	Zoning	Land Uses
North	R-10	Single-family residences, Highway 224 right-of-way
East	R-10	Turning Point Church, SE Rusk Road, and single-family residences
South	R-10	SE Kellogg Creek Road, single-family residences, Deerfield Village Assisted Living Center
West	R-10	The Milwaukie Center, North Clackamas Park

Figure 1: Vicinity Map



Figure 2: Natural Resources & Zoning





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Planned Development

In order to maximize development potential on the site, preserve natural resources and provide needed housing for Milwaukie, the applicant is proposing to develop this site using the city's Planned Development process. The Planned Development process allows for greater flexibility in design and use of a site to encourage a mix of housing types and creation of a unique environment that would not be possible under strict application of the Zoning Code. The Planned Development process has several steps, including a zone change and a final development plan. To clarify the Planned Development review process and how it relates to the other applications needed for this project, the project team met with Milwaukie Planning staff in August 2016 for a pre-application conference, and again in September 2016 for a follow-up discussion. After the September meeting, city staff drafted a memo presenting two possible options for a review process – standard and streamlined. See Exhibits B and C for a copy of the pre-application notes and the September memo.

The applicant has chosen to utilize the streamlined review process, as outlined in the September memo. As such, two application packages are being submitted concurrently:

1. Zone Change and Preliminary Development Plan Package – Type IV review
2. Subdivision and related applications – Type III review

As noted below, this narrative is part of the Type III application package and addresses standards and requirements for a subdivision preliminary plat and related sections of the Zoning Code.

Natural Resources

The site contains approximately 4.5 acres of designated floodplain area, which is regulated by Chapter 18.04 of the Milwaukie Municipal Code. The site also contains approximately 5.6 acres of designated Habitat Conservation Area (HCA). See Figure 2 Natural Resource Areas. HCA lands are natural resources that have been identified by the City for protection and are regulated under Chapter 19.402 of the Milwaukie Zoning Code. Impacts to floodplain and HCA are permitted by the City if certain conditions can be met and mitigation of those impacts is provided. While the bulk of existing natural resources on the subject site will be preserved, some impacts will be necessary to accommodate the proposed development. This application provides information about those impacts and how they will be mitigated in accordance with City regulations.

Wetlands

Wetlands have been identified on the site and delineated by Pacific Habitat Services. See Exhibit D for the Wetland Delineation Report. Impacts to the wetlands will occur in order to accommodate development on the site. Those impacts require a joint permit from Department of State Lands (DSL) and the US Army Corps of Engineers (US Corps). A joint permit application for wetland impacts will be submitted as required.

Modifications to the Church Property

As noted previously, a property line adjustment request has been submitted to the City to establish a separate tax lot for the existing church and associated parking areas. As part of the proposed subdivision development, minor changes to the church property will occur, including:

- The church entrance from Rusk Road will be reconfigured to enforce that it is for entry only; exit onto Rusk Road from that access point is not permitted due to sight distance issues.
- Some parking spaces along the western edge of the church property will be removed in order to create an access between the church site and the proposed subdivision site. This access will provide a new, safe exit point for the church onto Kellogg Creek Drive. Additional parking spaces will be removed just south of the new access point to create a service and emergency-only access from the alley on the subdivision

site. This access will be gated and will only be accessible for emergency fire and garbage service activities.

Because the church use is an approved Community Service Use (CSU) per Milwaukie's code (Section 19.904), a minor modification to the CSU approval is required by the City.

Request

As part of the overall Planned Development project, this application package contains the following requests for approvals from the City of Milwaukie:

- Type I Minor Modification to a CSU
- Type III Preliminary Plat Subdivision
- Type III Natural Resources Review
- Type II Transportation Facilities Review

The applicant has submitted this application, narrative, and plans in order to demonstrate how this proposal complies with the standards set forth the in the City of Milwaukie's Municipal Code. All applicable standards have been addressed and all required submittal materials have been provided.

The applicant is also submitting a separate application package for Planned Development, Zone Change and Variance approvals. The two application packages are related and are intended to be reviewed concurrently by the city.

III. COMPLIANCE WITH CITY OF MILWAUKIE DEVELOPMENT CODE

Section II of this narrative contains sections of the Milwaukie Municipal Code along with responses to demonstrate how the proposed project meets the applicable standards and requirements. Sections of the code that are not applicable are generally not included here unless necessary for context.

Title 17 Land Division

17.12.040 APPROVAL CRITERIA FOR PRELIMINARY PLAT

A. Approval Criteria

The approval authority may approve, approve with conditions, or deny a preliminary plat based on the following approval criteria:

1. The proposed preliminary plat complies with Title 19 of this code and other applicable ordinances, regulations, and design standards.

Response: This narrative provides responses to applicable sections of the Milwaukie Municipal Code to demonstrate how the proposal is consistent with City regulations and design standards.

2. The proposed division will allow reasonable development and will not create the need for a variance of any land division or zoning standard.

Response: The proposed subdivision will allow the applicant reasonable development opportunities on the site and will not create the need for a variance (outside of the concurrent Planned Development request).

3. The proposed subdivision plat name is not duplicative and the plat otherwise satisfies the provisions of ORS 92.090(1).

Response: The proposed subdivision name is Kellogg Creek and is not duplicative. The plat satisfies provisions of ORS 92.090(1), which establishes rules for subdivision plat names and numbering.

4. The streets and roads are laid out so as to conform to the plats of subdivisions already approved for adjoining property as to width, general direction, and in all other respects unless the City determines it is in the public interest to modify the street or road pattern.

Response: There are no previously approved subdivisions on adjoining lots. Therefore, this standard is not applicable.

5. A detailed narrative description demonstrating how the proposal conforms to all applicable code sections and design standards.

Response: This narrative provides a detailed description that demonstrates how the proposed subdivision conforms to applicable code sections and design standards.

B. Conditions of Approval

The approval authority may attach such conditions as are necessary to carry out the applicable ordinances and regulations and may require access control strips be granted to the City for the purpose of controlling access to adjoining undeveloped properties. (Ord. 1965 §§ 6, 7, 2006; Ord. 1907 (Attach. 1), 2002)

Response: The applicant understands that the approval authority may attach conditions of approval as deemed necessary.

17.16.060 PRELIMINARY PLAT FOR PARTITION AND SUBDIVISION

The following shall accompany applications for partition:

A. Completed application form signed by all owners of property included in the proposal;

B. Application fee as adopted by the City Council;

C. Completed and signed "submission requirements" and "partition checklist" or "subdivision checklist" forms as appropriate;

D. All information specified on the "submission requirements" and "partition checklist" or "subdivision checklist" forms as appropriate;

E. Requirements and information specified in Chapter 17.20; and

F. Any additional information as may be needed to demonstrate compliance with approval criteria.

Response: The above items have been provided as part of this application package.

CHAPTER 17.20 PRELIMINARY PLAT

17.20.030 GENERAL INFORMATION TO BE SHOWN ON THE PRELIMINARY PLAT

A. Preliminary plats shall be prepared by an Oregon registered land surveyor.

Response: The Preliminary Plat, Sheet C201 in Exhibit A was prepared by an Oregon registered engineer with DOWL, the applicant's representative.

B. The following general information shall be submitted with the preliminary plat:

1. Proposed name of the subdivision/partition. The name shall not duplicate nor resemble the name of another subdivision in the county. Subdivision names shall be approved by the County Surveyor in accordance with ORS Chapter 92;

2. Date, north point, and scale of drawing;

3. Appropriate identification clearly stating the map is a preliminary plat;

4. Location by section, township, and range; and a legal description sufficient to define the location and boundaries of the area to be divided;

5. Names and addresses of the owner, subdivider, and engineer or surveyor;

6. Acreage;

7. Structures and yard setbacks;

8. The location, width, and purpose of easements;

9. The location, approximate dimensions, and area of all lots;

10. Lot and block numbers; and

11. Other information as maybe specified on application forms and checklists prescribed by the Planning Director.

Response: The Preliminary Plat, Sheet C201 in Exhibit A, includes the above items.

C. Vicinity map shall be drawn at an appropriate scale, showing all existing subdivisions, streets, and unsubdivided land between the proposed subdivision and the nearest existing arterial or collector streets, and

showing how proposed streets may be extended to connect with existing streets. At a minimum, the vicinity map shall depict future street connections for land within 400 feet of the subject property.

Response: The Vicinity Map is provided in Figure 1 above.

17.20.040 BUILDING LINES PROHIBITED

Platted building lines are prohibited. The effect of building lines may be executed through recordation of instruments, which shall be referenced on the recorded plat.

Response: No building lines have been platted.

17.20.050 EXISTING CONDITIONS

The following shall be shown on the preliminary plat:

A. Location, width, and names of all existing or platted streets within or adjacent to the tract, together with easements, railroad right-of-way, and other important features, such as section lines and corners, City boundary lines, and monuments.

B. Contour lines related to an established benchmark or other datum approved by the Engineering Director, with intervals at a minimum of 2 feet for slopes up to 10% and 5 feet for slopes over 10%.

C. Location within the area to be divided, and in the adjoining streets and property, of existing sewers, water mains, culverts, storm drain system, and electric conduits or lines proposed to service the property to be subdivided, and invert elevations of sewer manholes, drain pipes, and culverts.

D. Zoning and existing uses within the tract and 200 feet on all sides, including the location and use of all existing structures indicating those that will remain and those to be removed.

E. Approximate location of areas subject to inundation or stormwater overflow with approximate high-water elevation. Location, width, direction, and flow of all watercourses on or abutting the tract including wetlands and watercourses as shown on City-adopted natural resource and Title 3 maps.

F. Natural features such as rock outcroppings, drainages whether seasonal or perennial, wooded areas, and isolated trees, including type and caliper.

G. Floodway and floodplain boundary.

H. Areas containing slopes of 25% or greater.

Response: The Existing Conditions Plan, Sheet C100 in Exhibit A, includes all of the above required items.

17.20.060 PROPOSED CONDITIONS

A. 12 copies of a preliminary plat shall be submitted to the Planning Director. The plat shall include the following information:

1. Date, north point, scale, address, assessor reference number, and legal description;

2. Name and address of the record owner or owners and of the person who prepared the site plan;

3. Approximate acreage and square feet under a single ownership, or if more than 1 ownership is involved, the total contiguous acreage of all landowners directly involved in the partition;

4. For land adjacent to and within the area to be divided, the locations, names, and existing widths of all streets, driveways, public safety accesses, easements, and rights-of-way; location, width, and purpose of all other existing easements; and location and size of sewer and waterlines, drainage ways, power poles, and other utilities;

5. Location of existing structures, identifying those to remain in place and those to be removed;

6. Lot design and layout, showing proposed setbacks, landscaping, buffers, driveways, lot sizes, and relationship to existing or proposed streets and utility easements;

7. Existing development and natural features for the site and adjacent properties, including those properties within 100 feet of the proposal, showing buildings, mature trees, topography, and other structures;

8. Elevation and location of flood hazard boundaries;

9. The location, width, name, and approximate centerline grade and curve radii of all streets; the relationship of all streets to any projected streets planned by the City; whether roads will continue beyond the plat; and existing and proposed grade profiles. No street name may be used which will duplicate or be confused with the name of an existing street, except for extensions of existing streets. Street names and numbers shall conform to the established pattern in the surrounding area.

Response: The plan set in Exhibit A and Figures 1 and 2 in this narrative include all of the above items.

B. A conceptual plan shall be provided for complete subdivision or partitioning of the property, as well as any adjacent vacant or underutilized properties, so that access issues may be addressed in a comprehensive manner. The concept plan shall include documentation that all options for access have been investigated including shared driveways, pedestrian accessways, and new street development.

Response: The Preliminary Plat provided in Exhibit A shows the conceptual plan for subdivision of the subject site. Areas on the site to remain un-divided are within the floodplain and HCA and contain wetlands; future subdivision of that portion of the site is not anticipated. The Preliminary Plat also shows proposed access to the site, including a new exit point for church visitors (the church site is not permitted to exit onto Rusk Road).

C. A detailed narrative description demonstrating how the proposal meets all applicable provisions of this title, Title 19, and City design standards, including the Public Works Standards.

Response: This narrative provides responses that demonstrate how the proposal complies with applicable City standards.

D. Plans and drawings as necessary to demonstrate compliance with all applicable provisions of chapters of this title, Title 19, and City design standards, including the Public Works Standards.

Response: Plans and drawings are provided in Exhibit A.

E. A drainage summary report and plan prepared in accordance with the applicable Public Works Standards.

Response: A Preliminary Drainage Report is provided in Exhibit E.

F. Proposed deed restrictions, if any, in outline form.

Response: The applicant is not proposing any deed restrictions.

G. Improvements to be made by the developer and the approximate time such improvements are to be completed. Sufficient detail regarding proposed improvements shall be submitted so that they may be checked for compliance with the objectives of this title, State law, and other applicable City ordinances. If the nature of the improvements is such that it is impractical to prepare all necessary details prior to approval of the preliminary plat, the additional details shall be submitted with the request for final plat approval.

Response: The plan set provided in Exhibit A provides detail about proposed improvements , including grading, streets, landscaping, utilities, and frontage improvements. All of these improvements will be completed prior to

occupancy of the proposed homes. Additional details requested by the City will be provided as part of the final plat application.

CHAPTER 17.28 DESIGN STANDARDS

17.28.020 PUBLIC FACILITY IMPROVEMENTS

All land divisions and boundary changes that increase the number of lots shall be subject to the requirements and standards contained in Chapter 19.700 Public Facility Improvements and the Public Works Standards for improvements to streets, sidewalks, bicycle facilities, transit facilities, and public utilities.

Response: Applicable requirements from Chapter 19.700 are addressed later in this narrative.

17.28.030 EASEMENTS

A. Utility Lines

Easements for sewers, water mains, electric lines, or other public utilities shall be dedicated wherever necessary. The easements shall be provided in accordance with applicable design standards in the Public Works Standards.

Response: Easements for sewers, water mains, electric lines and other public utilities will be dedicated where necessary and in accordance with applicable standards.

B. Watercourses

If a subdivision is traversed by a watercourse such as a drainageway, channel, or stream, there shall be provided a stormwater easement or drainage right-of-way conforming substantially with the lines of the watercourse, and such further width as will be adequate for the purpose of construction and maintenance. Streets, parkways, bicycle ways, or pedestrian ways parallel to major watercourses may be required.

Response: Mount Scott Creek runs along the northern edge of the subject site, north of the proposed development area. A 60-foot public drainage easement already exists along the creek, and a 20-foot public sanitary easement exists along the southern edge of the creek. See the Preliminary Plat, Sheet C201 in Exhibit A, for details.

17.28.040 GENERAL LOT DESIGN

This section does not apply to units of land that are created for purposes other than land development including parks, natural areas, right-of-way dedications, or reservations of a similar nature. Lots and tracts created for cottage cluster housing development, per Subsection 19.505.4, are also exempt from the requirements of this section.

A. Size and Shape

Lot size, width, shape, and orientation shall be appropriate for the location and the type of use contemplated. Minimum lot standards shall conform to Title 19.

Response: Single-family attached dwelling units are appropriate on the site given its size, width, shape and orientation of the lots, as well as the presence of a significant amount of natural resources. Lots in the proposed subdivision are compact in order to maximize building potential while protecting natural resources to the greatest extent possible. Proposed lot sizes are smaller than the minimum lot size standards in the underlying base zones (R-3 and R-10). However, the Planned Development process allows for flexibility to alter lot sizes and other dimensional standards as needed to design the site. Approval of the Planned Development proposal will include approval of smaller lot sizes.

B. Rectilinear Lots Required

Lot shape shall be rectilinear, except where not practicable due to location along a street radius, or existing lot shape. The sidelines of lots, as far as practicable, shall run at right angles to the street upon which the lots face. As far as practicable, the rear lot line shall run parallel to the street.

Response: As shown on the Preliminary Plat in Exhibit A, all proposed lots are rectilinear in shape.

C. Limits on Compound Lot Line Segments

Changes in direction along side and rear lot lines shall be avoided. Cumulative lateral changes in direction of a side or rear lot line exceeding 10% of the distance between opposing lot corners along a given lot line is prohibited. Changes in direction shall be measured from a straight line drawn between opposing lot corners.

Response: As shown on the Preliminary Plat in Exhibit A, lots 88 – 92 located at the end of the proposed cul-de-sac have slight changes in direction along their side lot lines. None of those lateral changes exceed the 10 percent limit as measured per the standard above.

D. Adjustments to Lot Shape Standard

Lot shape standards may be adjusted subject to Section 19.911 Variances.

Response: No adjustment to the lot shape standards is being requested.

E. Limits on Double and Reversed Frontage Lots

Double frontage and reversed frontage lots should be avoided, except where essential to provide separations of residential development from railroads, traffic arteries, or adjacent nonresidential uses, or to overcome specific disadvantages of topography and orientation.

Response: As shown on the Preliminary Plat in Exhibit A, no double frontage or reverse frontage lots are proposed as part of this subdivision.

17.28.080 PUBLIC OPEN SPACES

A. Due consideration shall be given to the allocation of suitable areas for schools, parks, and playgrounds to be dedicated for public use.

Response: The applicant will work with North Clackamas Parks and Recreation District to determine if the undeveloped natural resource area on the site (Tract G on Sheet C201) can be sold or dedicated to the parks district.

B. Where a proposed park, playground or other public use shown in the Comprehensive Plan or master plan adopted by the City is located in whole or in part in a subdivision, the Planning Commission may require the dedication or reservation of such area within the subdivision.

Response: There are no proposed parks, playgrounds or other public uses located in whole or in part on the subject site shown in the Comprehensive Plan or other city master plans.

C. Where considered desirable by the Planning Commission, and where the Comprehensive Plan or adopted master plan of the City does not indicate proposed public use area, the Planning Commission may require the dedication or reservation of areas or sites of a character, extent, and location suitable for the development of parks and other public use.

D. If the applicant is required to reserve land area for park, playground, or other public use, such land shall be acquired by the appropriate public agency within 18 months following plat approval, at a price agreed upon prior to approval of the plat, or such reservation shall be released to the applicant.

Response: The applicant understands that the Planning Commission may require dedication or reservation of areas suitable for parks or other public uses. Applicant further understands that any such land will be acquired by the public agency at an agreed upon price.

E. New residential projects will require the dedication of land if the development corresponds to park locations defined in the parks and recreation master plan.

F. In exchange for the dedication of parkland, the allowable density on the remaining lands will be increased, so that the overall parcel density remains the same.

Response: There is not a parks and recreation master plan that includes the proposed subdivision site.

Title 19 Zoning

Section 19.300 Base Zones

*19.301 LOW DENSITY RESIDENTIAL ZONES**

19.301.2 Allowed Uses in Low Density Residential Zones

Response: A portion of the subject site is zoned R-10, which is a low density residential zone. The R-10 does not typically allow rowhouse development, per Table 19.301.2. However, the applicant has submitted a concurrent Planned Development application to apply the PD Zone in combination with the R-10 zone. The PD zone allows "combinations of types of dwellings and other structures and uses" as authorized by the City Council through the PD review process. Approval of the PD zone will allow rowhouse development to occur on the R-10 zoning.

19.301.4 Development Standards

In the low density residential zones, the development standards in Table 19.301.4 apply. Notes and/or cross references to other applicable code sections are listed in the "Standards/Additional Provisions" column. Additional standards are provided in Subsection 19.301.5.

See Sections 19.201 Definitions and 19.202 Measurements for specific descriptions of standards and measurements listed in the table.

Standard	***R-10***	***Response***
Minimum lot size	*10,000 SF*	Proposed lot sizes typically range from 1,600 SF to 2,516 SF. Using Planned Development provisions - see response below.
Minimum lot width	*70 feet*	Proposed lot widths typically range from 20 to 28 feet. Using Planned Development provisions - see response below.
Minimum lot depth	*100 feet*	Proposed lot depths typically range from 80 to 87.25 feet. Using Planned Development provisions - see response below.
Minimum street frontage	*35 feet*	Proposed street frontages typically range from 20 to 25 feet. Some corner lots have reduced street frontages. Using Planned Development provisions - see response below.
Minimum front yard	*20 feet*	Front loaded lots, front yard = 18 feet Alley loaded lots, front yard = 10 feet Using Planned Development provisions - see response below.
Minimum side yard	*10 feet*	Proposed side yard, common wall = 0 feet Proposed side yard, no common wall = 5-6 feet Using Planned Development provisions - see response below.
Minimum street side yard	*20 feet*	Street side yard = 8 feet Using Planned Development provisions - see response below.
Minimum rear yard	*20 feet*	Front loaded lots, rear yard = 15 feet Alley loaded lots, rear yard = 20 feet Using Planned Development provisions - see response below.

Maximum bldg. height	*2.5 stories or 35 feet*	Standard met. As shown on the building elevations provided in Exhibit A, the proposed rowhouses will be two stories and below the maximum building height of 35 feet.
Side yard height plane limit: *Height above ground* *Slope of plane*	 *20 feet* *45 degrees*	Standard will be met on those side yards that do not share a common wall. Using Planned Development provisions - see response below.
Maximum lot coverage	*30 percent*	Proposed lot coverages range from 46 to 59 percent. Using Planned Development provisions - see response below.
Minimum vegetation	*35 percent*	Using Planned Development provisions - see response below.
Minimum density	*3.5 units/acre*	Using Planned Development provisions - see response below.
Maximum density	*4.4 units/acre*	

Response: As noted previously, the applicant is proposing to use the City's Planned Development provisions in Section 19.311. Those provisions allow variation to the development standards as appropriate to be consistent with the purpose of the Planned Development Zone. The purpose of the Planned Development Zone is to encourage flexibility in site design to provide a mix of housing types, variety in development patterns, and preserve natural resources. More discussion regarding how the proposed subdivision meets the intent of the Planned Development Zone is provided in the separate Zone Change and Planned Development application package submitted concurrently with this application package.

As noted in the above table, most of the development standards have been adjusted in order to design the subdivision with small lots for an attached housing type (rowhouses). Due to the small size of lots and the specific housing type planned for this development, dimensional standards such as lot sizes, setbacks, lot coverage and minimum vegetation have all been adjusted accordingly. Approval of the Planned Development will include approval of those adjustments.

Minimum and maximum densities were calculated consistent with the density calculation provisions in MMC Section 19.202.4.

Minimum Density: Table 2 below shows how minimum density was calculated for the site.

Table 2: Net Area and Minimum Density Calculations

Zoning	Gross Acres	FEMA Mapped Floodway	Right-of-way	Additional Open Space[1]	Net Acres[2]	Minimum Density
R-3	9.58	1.20	1.19	1.99	5.20	60 units
R-10	4.44	0.50	0.86	0.98	2.10	7 units
Totals	**14.02**	**1.70**	**2.05**	**2.97**	**7.30**	**67 units**

1. Required open space is one-third of the gross acreage (per PD provisions in 19.311.3.E). The above calculations assume a portion of the open space overlaps with floodway. Additional open space needed to achieve one-third of the gross is indicated here.
2. Net acres = gross acres – (floodway + right-of-way + open space)
3. Minimum density is based on 11.6 units per acre for R-3 and 3.5 units per acre for R-10

Maximum Density: The allowable maximum density was calculated for each zone (R-3 and R-10) separately and then combined to determine allowable density for the entire site. Per the City's pre-application notes, "the development may effectively blend the densities for the two zones by distributing structures across the site regardless of the specific zoning boundary." Table 3 shows the detailed maximum density calculations. See Figure 3 for a map of areas used for the maximum density calculations.

Table 3A: Net Acres Calculation for Maximum Density

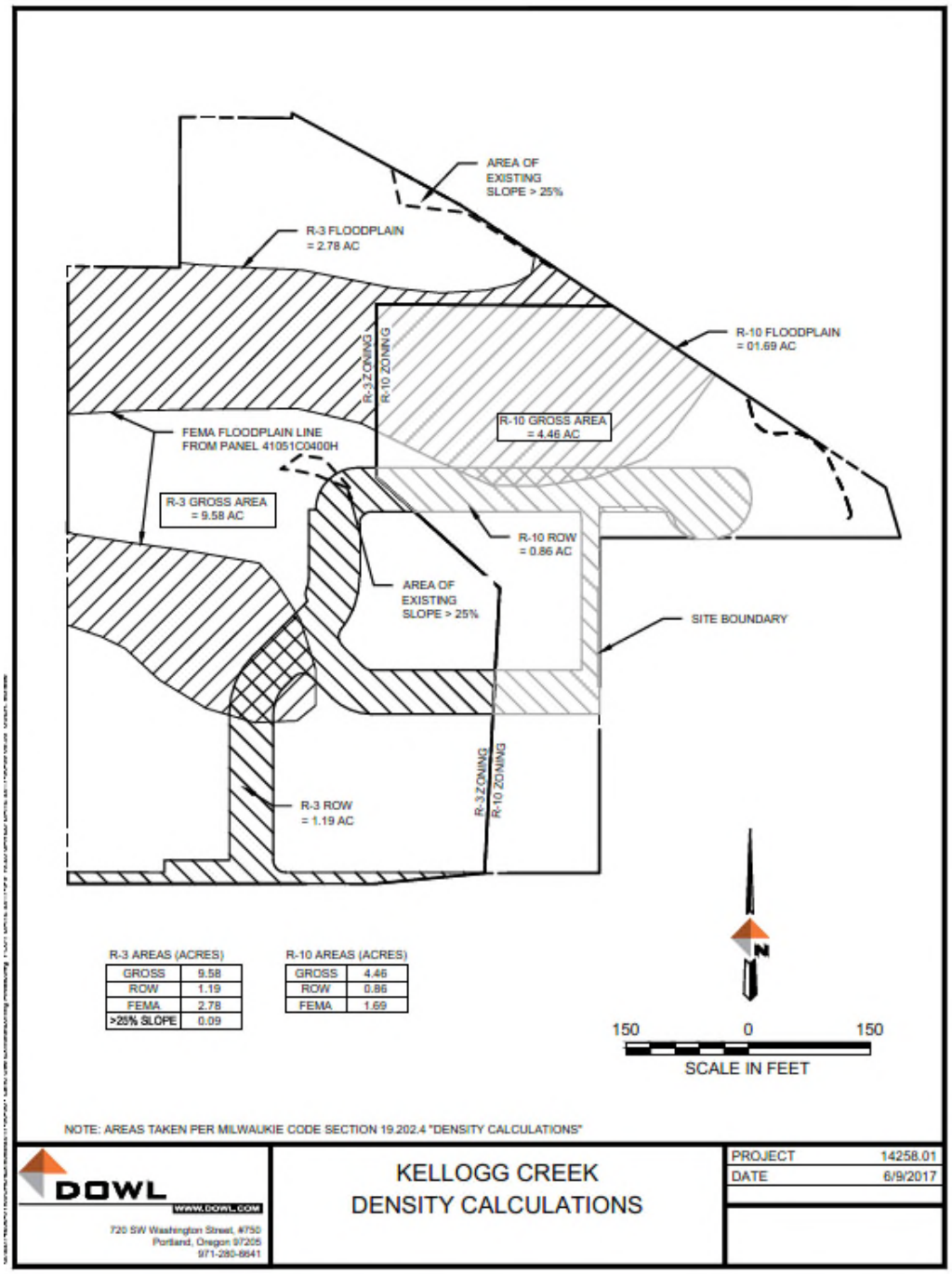
Zoning	Gross Acres	FEMA Mapped Floodplain	Right-of-way	Additional Open Space[1]	Slopes > 25%	Net Acres[2]
R-3	9.58	2.78	1.19	0.41	0.09	5.11
R-10	4.44	1.69	0.86	0	0	1.89
Totals	**14.02**	**4.47**	**2.05**	**0.41**		**7.00**

Table 3B: Maximum Density Calculation

Zoning	Net Acres[2]	Maximum Density (du/net acre)	Maximum Number of Units Allowed (without PD)	PD Increase (20%)[3]	Maximum Number of Units with Rounding (per MMC 19.202.4)
R-3	5.11	14.5	74.09	88.90	89
R-10	1.89	4.4	8.32	9.98	10
Totals	**7.00**	**-**	**82.4 (82 with rounding)**	**-**	**99**

1. Required open space is one-third of the gross acreage (per PD provisions in 19.311.3.E). The above calculations assume a portion of the open space overlaps with floodplain. Additional open space needed to achieve one-third of the gross is indicated here.
2. Net acres = gross acres – (floodplain + right-of-way + open space)
3. Per Section 19.311.3.C, a density increase of up to 20% is allowed in the PD Zone.

Figure 3: Density Calculation Areas



Utilizing the density increase allowed by the Planned Development Zone, the maximum allowable number of units on the site is 99 dwellings. The proposed development has 92 units, which represents an approximately 12 percent increase from the base zone standard.

It's important to note that slopes in excess of 25 percent are required to be deducted from the gross acreage when calculating maximum density. As shown on the Existing Conditions (Sheet C100) in Exhibit A, there are several areas on the site with steep slopes. However, the larger elongated area of steep slopes near the center of the site is an area that was created by man-made fill deposited on the site over ten years ago. The

geotechnical report prepared by Geo Consultants Northwest on October 7, 2016 (Exhibit F) includes the following information regarding this fill:

- The fill ranges in thickness up to 12 feet thick.
- The ten-foot-tall fill zone in the central portion of the site terminates at its western edge with a steep, constructed slope.
- The fill is man-made material (concrete and asphalt) from a nearby construction project that was likely placed on the site prior to 1995.
- As part of site preparation, man-made fill should be removed from the site.

Because this area of steep slopes is not a naturally occurring condition and will be removed as part of site preparation, it was not deducted from the gross acreage for the purpose of calculating density. Other areas of steep slopes that appear to be naturally occurring were deducted, as shown in Table 3A above.

19.301.5 Additional Development Standards

A. Side Yards

In the R-7 Zone, one side yard shall be at least 5 ft and one side yard shall be at least 10 ft, except on a corner lot the street side yard shall be 20 ft.

Response: Not applicable. The R-7 zoning does not apply to the subject site.

B. Lot Coverage

The lot coverage standards in Subsection 19.301.4.B.4 are modified for specific uses and lot sizes as described below. The reductions and increases are combined for properties that are described by more than one of the situations below.

1. Decreased Lot Coverage for Large Lots

The maximum lot coverage percentage in Subsection 19.301.4.B.4 is reduced by 10 percentage points for a single-family detached dwelling, duplex, or residential home on a lot that is more than 2.5 times larger than the minimum lot size in Subsection 19.301.4.A.1.

Response: Not applicable. This proposal does not include large lots.

2. Increased Lot Coverage for Single-Family Detached Dwellings

Response: Not applicable. This proposal does not include detached single-family dwelling units.

3. Increased Lot Coverage for Duplexes

The maximum lot coverage percentage in Subsection 19.301.4.B.4 is increased by 20 percentage points for a duplex.

Response: Not applicable. This proposal does not include duplexes.

4. Increased Lot Coverage for Detached Accessory Dwelling Units

The maximum lot coverage percentage in Subsection 19.301.4.B.4 is increased by 5 percentage points for the development of a new detached accessory dwelling unit. This allowance applies only to the detached accessory structure and does not allow for the primary structure or other accessory structures to exceed lot coverage standards.

Response: Not applicable. This proposal does not include detached accessory dwelling units.

C. Front Yard Minimum Vegetation

At least 40% of the front yard shall be vegetated. The front yard vegetation area required by this subsection counts toward the minimum required vegetation for the lot. A property may provide less than the 40% of the front yard vegetation requirement if it is necessary to provide a turnaround area so that vehicles can enter a collector or arterial street in a forward motion.

Response: As noted previously, this development is proposing to use the Planned Development provisions in Chapter 19.311, which allows flexibility to adjust development standards. The proposed development consists of small lots with an attached housing type; as such, front yards are relatively small. Those areas of front yards that are not used for driveways and sidewalks will be vegetated.

D. Residential Densities

The minimum and maximum development densities in Subsection 19.301.4.C.1 are applicable for land divisions and replats that change the number of lots.

If a proposal for a replat or land division is not able to meet the minimum density requirement—due to the dimensional requirements for lot width, lot depth, or lot frontage—the minimum density requirement shall instead be equal to the maximum number of lots that can be obtained from the site given its dimensional constraints. The inability of new lot lines to meet required yard dimensions from existing structures shall not be considered as a basis for automatically lowering the minimum density requirement.

Response: Required density is addressed in Table 2 above. The minimum density for the site will be met.

E. Accessory Structure Standards

Standards specific to accessory structures are contained in Section 19.502.

Response: Not applicable. No accessory structures are proposed as part of this application.

F. Number of Dwelling Structures

In the low density residential zones, 1 primary building designed for dwelling purposes shall be permitted per lot. See Subsection 19.504.4.

Response: As shown on the Preliminary Plat in Exhibit A, each lot in the proposed subdivision will have one primary building designed for dwelling purposes.

G. Off-Street Parking and Loading

Off-street parking and loading is required as specified in Chapter 19.600.

Response: Applicable standards from Section 19.600 are addressed later in this narrative.

H. Public Facility Improvements

Transportation requirements and public facility improvements are required as specified in Chapter 19.700.

Response: Applicable standards from Section 19.700 are addressed later in this narrative.

I. Additional Standards

Depending upon the type of use and development proposed, the following sections of Chapter 19.500 Supplementary Development Regulations may apply. These sections are referenced for convenience, and do not limit or determine the applicability of other sections within the Milwaukie Municipal Code.

1. Subsection 19.504.4 Buildings on the Same Lot

2. *Subsection 19.504.8 Flag Lot Design and Development Standards*
3. *Subsection 19.505.1 Single-Family Dwellings and Duplexes*
4. *Subsection 19.505.2 Garages and Carports*
5. *Subsection 19.506.4 Manufactured Dwelling Siting and Design Standards, Siting Standards*

Response: Applicable standards from Section 19.500 are addressed later in this narrative.

19.302 MEDIUM AND HIGH DENSITY RESIDENTIAL ZONES

19.302.2 Allowed Uses in Medium and High Density Residential Zones

Response: Part of the subject site is zoned R-3, which is a medium density zone. Rowhouses are an allowed use in the R-3 zone.

19.302.4 Development Standards

In the medium and high density residential zones, the development standards in Table 19.302.4 apply. Notes and/or cross references to other applicable code sections are listed in the "Standards/Additional Provisions" column. Additional standards are provided in Section 19.302.5.

The standards in Subsection 19.302.4 are not applicable to cottage cluster development except where specifically referenced by Subsection 19.505.4.

Standard	***R-3***	***Response***
Minimum lot size, rowhouse	*3,000 SF*	Proposed lot sizes typically range from 1,600 SF to 2,516 SF. Using Planned Development provisions - see response below.
Minimum lot width, rowhouse	*30 feet*	Proposed lot widths typically range from 20 to 28 feet. Using Planned Development provisions - see response below.
Minimum lot depth, rowhouse	*80 feet*	Standard met. Proposed lot depths typically range from 80 to 87.25 feet.
Minimum street frontage, rowhouse	*30 feet*	Proposed street frontages typically range from 20 to 25 feet. Some corner lots have reduced street frontages. Using Planned Development provisions - see response below.
Minimum front yard	*15 feet*	Standard partially met. Front loaded lots, front yard = 18 feet Alley loaded lots, front yard = 10 feet Using Planned Development provisions - see response below.
Minimum side yard, common wall	*0 feet*	Standards met. Proposed side yard, common wall = 0 feet Proposed side yard, no common wall = 5-6 feet
Minimum side yard, no common wall	*5 feet*	
Minimum street side yard	*15 feet*	Street side yard = 8 feet Using Planned Development provisions - see response below.
Minimum rear yard	*15 feet*	Standard met.

		Front loaded lots, rear yard = 15 feet Alley loaded lots, rear yard = 20 feet
Maximum bldg. height	*2.5 stories or 35 feet*	Standard met. As shown on the building elevations provided in Exhibit A, the proposed rowhouses will be two stories and below the maximum building height of 35 feet.
Side yard height plane limit: *Height above ground* *Slope if plane*	 *20 feet* *45 degrees*	Standard will be met on those side yards that do not share a common wall. Using Planned Development provisions - see response below.
Maximum lot coverage	*40 percent*	Standard met. See response to Section 19.302.5.B.2 below regarding increased lot coverage.
Minimum vegetation	*35 percent*	Using Planned Development provisions - see response below.
Minimum density	*11.6 units/acre*	Using Planned Development provisions. See density calculations and discussion provided above.
Maximum density	*14.5 units/acre*	

Response: As noted previously, the applicant is proposing to use the City's Planned Development provisions in Section 19.311. Those provisions allow variation to the development standards as appropriate for consistency with the purpose of the Planned Development Zone. The purpose of the Planned Development Zone is to encourage flexibility in site design to provide a mix of housing types, variety in development patterns, and preserve natural resources. More discussion regarding how the proposed subdivision meets the intent of the Planned Development Zone is provided in the separate Zone Change and Planned Development application package submitted concurrently with this application package.

As noted in the above table, most of the development standards have been adjusted in order to design the subdivision with small lots with an attached housing type (rowhouses). Due to the small size of lots and the specific housing type planned for this development, dimensional standards such as lot sizes, setbacks, lot coverage and minimum vegetation have all been adjusted accordingly. Approval of the Planned Development will include approval of those adjustments.

19.302.5 Additional Development Standards

A. Side Yards

In the medium and high density zones, the required side yard is determined as described below. These measurements apply only to required side yards and do not apply to required street side yards.

1. The side yard for development other than a rowhouse shall be at least 5 ft.

2. There is no required side yard for rowhouses that share 2 common walls. The required side yard for an exterior rowhouse that has only 1 common wall is 0 ft for the common wall and 5 ft for the opposite side yard. An exterior rowhouse on a corner lot shall meet the required street side yard setback in Subsection 19.302.4.B.1.b.

Response: As shown on the Preliminary Plat in Exhibit A, the proposed development will consist of rowhouses in sets of four dwellings. Side yards for the rowhouses not sharing a common wall will be five feet, consistent with this standard. Street side yards will be 8 feet, consistent with the Planned Development provisions as described above.

B. Lot Coverage

The lot coverage standards in Subsection 19.302.4.B.4 are modified for specific uses and lot sizes as described below. The reductions and increases are additive for lots that are described by one or more of the situations below.

1. Increased Lot Coverage for Single-Family Detached Dwellings

Response: Not applicable. The proposal does not include single-family detached dwellings.

2. Increased Lot Coverage for Duplexes and Rowhouses

The maximum lot coverage percentage in Subsection 19.302.4.B.4 is increased by 20 percentage points for a duplex or rowhouse.

Response: The proposed subdivision includes rowhouses, which increases the maximum lot coverage standard to 60 percent. Proposed lot coverage on the site will range from 46 to 59 percent, which is below the maximum coverage standard.

3. Increased Lot Coverage for Detached Accessory Dwelling Units

Response: Not applicable. The proposal does not include detached accessory dwelling units.

C. Minimum Vegetation

At least half of the minimum required vegetation area must be suitable for outdoor recreation by residents, and not have extreme topography or dense vegetation that precludes access.

Response: Vegetated areas on each individual lot will be landscaped and usable and will not have extreme topography or dense vegetation. Residents will also have access to larger areas (approximately seven acres) of natural open space via a soft-surface trail that travels throughout the site. The trail will be approximately 30 inches wide and will not have grades greater than ten percent.

D. Front Yard Minimum Vegetation

At least 40% of the front yard shall be vegetated. The front yard vegetation area required by this subsection counts toward the minimum required vegetation for the lot. A property may provide less than the 40% of the front yard vegetation requirement if it is necessary to provide a turnaround area so that vehicles can enter a collector or arterial street in a forward motion.

Response: As noted previously, this development is proposing to use the Planned Development provisions in Chapter 19.311, which allows flexibility to adjust development standards. The proposed development consists of small lots with an attached housing type; as such, front yards are relatively small. Those areas of front yards that are not used for driveways and sidewalks will be vegetated.

E. Height Exceptions

1 additional story may be permitted in excess of the required maximum standard. For each additional story, an additional 10% of site area beyond the minimum is required to be retained in vegetation.

Response: Not applicable. The proposal does not include buildings that exceed the maximum building height standard.

F. Residential Densities

1. The minimum and maximum development densities in Subsection 19.302.4.C.1 are applicable for land divisions, replats that change the number of lots, and any development that would change the

number of dwelling units on a lot. Development of a single-family detached dwelling or an accessory dwelling is exempt from the minimum and maximum density requirements.

If a proposal for a replat or land division is not able to meet the minimum density requirement—due to the dimensional requirements for lot width, lot depth, or lot frontage—the minimum density requirement shall instead be equal to the maximum number of lots that can be obtained from the site given its dimensional constraints. The inability of new lot lines to meet required yard dimensions from existing structures shall not be considered as a basis for automatically lowering the minimum density requirement.

Response: Required minimum and maximum densities are addressed in Tables 2 and 3 above. The allowable density range for the site is 67 to 99 units; the proposed subdivision falls within that range.

2. Multifamily development in the R-2, R-1, and R-1-B Zones is subject to the minimum site size requirements in Table 19.302.5.F.2. In the event that the minimum site size requirements conflict with the development densities in Subsection 19.302.4.C.1, the site size requirements in Table 19.302.F.2 shall prevail.

Response: Not applicable. This project does not propose multifamily development in the R-2, R-1 or R-1-B zones.

G. Accessory Structure Standards

Standards specific to accessory structures are contained in Section 19.502.

Response: Not applicable. The proposal does not include accessory structures.

H. Building Limitations

1. In the R-3 Zone, 1 single-family detached dwelling or 1 duplex is permitted per lot. See Subsection 19.504.4. A detached accessory dwelling may be permitted in addition to a single-family detached dwelling, per Subsection 19.910.1.

Response: As shown on the Preliminary Plat in Exhibit A, the subdivision proposes one single-family attached dwelling per lot. No detached accessory dwellings are proposed.

2. Multifamily buildings shall not have an overall horizontal distance exceeding 150 linear ft as measured from end wall to end wall.

Response: Not applicable. The proposal does not include multifamily buildings.

I. Transition Measures

The following transition measures apply to multifamily development that abuts an R-10-, R-7-, or R-5-zoned property.

Response: Not applicable. The proposal does not include multifamily development.

J. Off-Street Parking and Loading

Off-street parking and loading is required as specified in Chapter 19.600.

Response: Response: Applicable standards from Section 19.600 are addressed later in this narrative.

K. Public Facility Improvements

Transportation requirements and public facility improvements are required as specified in Chapter 19.700.

Response: Applicable standards from Section 19.700 are addressed later in this narrative.

L. Additional Standards

Depending upon the type of use and development proposed, the following sections of Chapter 19.500 Supplementary Development Regulations may apply. These sections are referenced for convenience, and do not limit or determine the applicability of other sections within the Milwaukie Municipal Code.

1. *Subsection 19.504.4 Buildings on the Same Lot*
2. *Subsection 19.504.8 Flag Lot Design and Development Standards*
3. *Subsection 19.504.9 On-Site Walkways and Circulation*
4. *Subsection 19.504.10 Setbacks Adjacent to Transit*
5. *Subsection 19.505.1 Single-Family Dwellings and Duplexes*
6. *Subsection 19.505.2 Garages and Carports*
7. *Subsection 19.505.3 Multifamily Housing*
8. *Subsection 19.505.4 Cottage Cluster Housing*
9. *Subsection 19.505.8 Building Orientation to Transit*
10. *Subsection 19.506.4 Manufactured Dwelling Siting and Design Standards, Siting Standards*

Response: Applicable standards from Section 19.500 are addressed later in this narrative.

Section 19.402 Natural Resources

19.402.3 Applicability

A. The regulations in Section 19.402 apply to all properties that contain, or are within 100 ft of a WQR and/or HCA (including any locally significant Goal 5 wetlands or habitat areas identified by the City of Milwaukie) as shown on the Milwaukie Natural Resource Administrative Map (hereafter "NR Administrative Map").

Response: The subject property contains areas designated as HCA per the NR Administrative Map. Therefore, the regulations of 19.402 apply.

K. Activities that are not exempt per Subsection 19.402.4, or prohibited per Subsection 19.402.5, are subject to the Type I, II, or III review process as outlined in Table 19.402.3.K.

Response: This proposal includes activities that are not exempt or prohibited. Therefore, this proposal is subject to a Type III Natural Resources Review. A Natural Resource Review report was prepared by Pacific Habitat Services, Inc. in January 2017 and revised in June 2017. That report (see Exhibit J) provides a detailed description of impacts to designated natural resources on the site and responses to applicable standards and criteria from Chapter 19.402 to demonstrate how the project will comply with this section of code.

Chapter 500 Supplementary Development Regulations

19.504 SITE DESIGN STANDARDS

19.504.1 Clear Vision Areas

A clear vision area shall be maintained on the corners of all property at the intersection of 2 streets or a street and a railroad according to the provisions of the clear vision ordinance in Chapter 12.24.

Response: Clear vision areas will be maintained as required by Chapter 12.24.

19.504.2 Maintenance of Minimum Ordinance Requirements

No lot area, yard, other open space, or off-street parking or loading area shall be reduced by conveyance or otherwise below the minimum requirements of this title, except by dedication or conveyance for a public use.

Response: Lot area and yards (setbacks) have been reduced in accordance with the Planned Development provisions in 19.311.

19.504.3 Dual Use of Required Open Space

No lot area, yard, or other open space or off-street parking or loading area which is required by this title for one use shall be used to meet the required lot area, yard, or other open space or off-street parking area for another use, except as provided in Subsection 19.605.4.

Response: No lot area, yard or other open space or off-street parking or loading area required by this code will be used to meet a standard for more than one use.

19.504.4 Buildings on the Same Lot

A. In R-10, R-7, and R-5 Zones, 1 primary dwelling shall be permitted per lot. A detached accessory dwelling unit may be permitted per Subsection 19.910.1.

B. In the R-3 Zone, 1 single-family detached dwelling shall be permitted per lot. A detached accessory dwelling unit may be permitted per Subsection 19.910.1. Multifamily housing, with multiple structures designed for dwelling purposes, may be permitted as a conditional use per Section 19.905.

Response: The proposed development consists of lots with one primary dwelling on each lot. No detached accessory dwellings are proposed.

19.504.5 Distance from Property Line

Where a side or rear yard is not required and a structure is not to be erected at the property line, it shall be set back at least 3 ft from the property line.

Response: Not applicable. Side and rear yards are required in the R-3 and R-10 zones.

19.505 BUILDING DESIGN STANDARDS

19.505.1 Single-Family Dwellings and Duplexes

B. Applicability

The design standards in this subsection apply to the types of development listed below when the closest wall of the street-facing façade is within 50 ft of a front or street side lot line.

1. New single-family detached dwellings, residential homes, duplexes, and rowhouses on individual lots. Placement of a new manufactured home on a lot outside of a manufactured home park is subject to the requirements of Section 19.506 and the standards of Subsection 19.505.1.

Response: The proposed development includes rowhouses on individual lots. Therefore, the building design standards in this section apply.

C. Standards

1. Articulation

All buildings shall incorporate design elements that break up all street-facing façades into smaller planes as follows. See Figure 19.505.1.C.1 for illustration of articulation.

c. For buildings with less than 30 ft of street frontage, the building articulation standard is not applicable.

Response: As shown on the Preliminary Plat in Exhibit A, all rowhouses will be constructed on lots that have less than 30 feet of street frontage. Therefore, this building articulation standard does not apply.

2. Eyes on the Street

At least 12% of the area of each street-facing façade must be windows or entrance doors. See Figure 19.505.1.C.2 for illustration of eyes on the street.

Response: As shown on the building elevations in Exhibit A, all street-facing facades will have at least 12 percent glazing (windows or entrance doors), consistent with this requirement.

a. Windows used to meet this standard must be transparent and allow views from the building to the street. Glass blocks and privacy windows in bathrooms do not meet this standard.

Response: Windows used to meet this standard will be transparent and allow views from the building to the street. Glass blocks and privacy windows have not been used to meet this standard.

b. Half of the total window area in the door(s) of an attached garage counts toward the eyes on the street standard. All of the window area in the street-facing wall(s) of an attached garage count toward meeting this standard.

Response: Garage windows were not included in the calculations for the "eyes on the street standard."

c. Window area is considered the entire area within the outer window frame, including any interior window grid.

Response: Window area was calculated consistent with this standard.

d. Doors used to meet this standard must face the street or be at an angle of no greater than 45 degrees from the street.

Response: Doors used to meet this standard face the street.

e. Door area is considered the portion of the door that moves. Door frames do not count toward this standard.

Response: Door frames were not included in the calculations to meet this standard.

3. Main Entrance

At least 1 main entrance must meet both of the following standards. See Figure 19.505.1.C.3 for illustration of main entrances.

a. Be no further than 8 ft behind the longest street-facing wall of the building.

Response: As shown on the floor plans in Exhibit A, the main entrance for each dwelling is located approximately 2 to 6 feet behind the longest street-facing wall of the building depending on the location of the garage (alley loaded or not). In no case is the main entrance located farther than 8 feet behind the longest street-facing wall.

b. Face the street, be at an angle of up to 45 degrees from the street, or open onto a porch. If the entrance opens up onto a porch, the porch must meet all of these additional standards.

(1) Be at least 25 sq ft in area with a minimum 4-ft depth.

(2) Have at least 1 porch entry facing the street.

(3) Have a roof that is no more than 12 ft above the floor of the porch.

(4) Have a roof that covers at least 30% of the porch area.

Response: As shown on the floor plans and elevations in Exhibit A, all main entries face the street and open onto a porch that meets (and exceeds) the standards in (1) through (4) above.

4. Detailed Design

All buildings shall include at least 5 of the following features on any street-facing façade. See Figure 19.505.1.C.4 for illustration of detailed design elements.

a. Covered porch at least 5 ft deep, as measured horizontally from the face of the main building façade to the edge of the deck, and at least 5 ft wide.

b. Recessed entry area at least 2 ft deep, as measured horizontally from the face of the main building façade, and at least 5 ft wide.

c. Offset on the building face of at least 16 in from 1 exterior wall surface to the other.

d. Dormer that is at least 4 ft wide and integrated into the roof form.

e. Roof eaves with a minimum projection of 12 in from the intersection of the roof and the exterior walls.

f. Roof line offsets of at least 2 ft from the top surface of 1 roof to the top surface of the other.

g. Tile or wood shingle roofs.

h. Horizontal lap siding between 3 to 7 in wide (the visible portion once installed). The siding material may be wood, fiber-cement, or vinyl.

i. Brick, cedar shingles, stucco, or other similar decorative materials covering at least 40% of the street-facing façade.

j. Gable roof, hip roof, or gambrel roof design.

k. Window trim around all windows at least 3 in wide and 5/8 in deep.

l. Window recesses, in all windows, of at least 3 in as measured horizontally from the face of the building façade.

m. Balcony that is at least 3 ft deep, 5 ft wide, and accessible from an interior room.

n. One roof pitch of at least 500 sq ft in area that is sloped to face the southern sky and has its eave line oriented within 30 degrees of the true north/south axis.

o. Bay window at least 2 ft deep and 5 ft long.

p. Attached garage width, as measured between the inside of the garage door frame, of 35% or less of the length of the street-facing façade.

Response: As shown on the floor plans and elevations in Exhibit A, buildings will meet or exceed this standard as follows.

For alley loaded homes:

1. Covered porch consistent with item (a) above
2. Offset on the building face consistent with item (c) above
3. Roofline offsets consistent with item (f) above
4. Horizontal lap siding consistent with item (h) above
5. Decorative materials consistent with item (i) above
6. Window trim consistent with item (k) above

For standard (non-alley-loaded) homes:

1. Covered porch consistent with item (a) above
2. Offset on the building face consistent with item (c) above
3. Roofline offsets consistent with item (f) above
4. Horizontal lap siding consistent with item (h) above
5. Window trim consistent with item (k) above

19.505.5 Rowhouses

C. Rowhouse Design Standards

1. Rowhouses are subject to the design standards for single-family housing in Subsection 19.505.1.

Response: The design standards in Subsection 19.505.1 are addressed above.

2. Rowhouses shall include an area of transition between the public realm of the right-of-way and the entry to the private dwelling. The entry may be either vertical or horizontal, as described below.

a. A vertical transition shall be an uncovered flight of stairs that leads to the front door or front porch of the dwelling. The stairs must rise at least 3 ft, and not more than 8 ft, from grade. The flight of stairs may encroach into the required front yard, and the bottom step must be at least 5 ft from the front lot line.

b. A horizontal transition shall be a covered porch with a depth of at least 6 ft. The porch may encroach into the required front yard, but it shall be at least 7 ft from the front lot line.

Response: As shown on the floor plans and elevations in Exhibit A, the proposed rowhouses will meet the horizontal transition standard in (b) above by providing covered porches with depths of at least 6 feet that are located at least 7 feet from the front lot line.

D. Number of Rowhouses Allowed

No more than 4 consecutive rowhouses that share a common wall(s) are allowed. A set of 4 rowhouses with common walls is allowed to be adjacent to a separate set of 4 rowhouses with common walls.

Response: As shown on the floor plans and elevations in Exhibit A, rowhouses are proposed in sets of four units sharing a common wall. No greater than four consecutive rowhouses sharing a common wall are proposed.

E. Rowhouse Lot Standards

1. Rowhouse development is not allowed on lots with a lot width of more than 35 ft.

Response: As shown on the Preliminary Plat in Exhibit A, all proposed rowhouse lots have widths less than 35 feet.

2. Rowhouse development is allowed only where there are at least 2 abutting lots on the same street frontage whose street frontage, lot width, lot depth, and lot area meet or exceed the base zone requirements listed in Table 19.302.2.

Response: The applicant is requesting Planned Development approval as part of this proposal. The Planned Development provisions in 19.311 allow reductions or variances to applicable standards consistent with the Planned Development purpose and criteria. The Planned Development request includes variances to lot area, dimensions and other development standards established in the base zones. For this reason, the proposed subdivision does not include abutting lots on the same street that meet or exceed the base zone requirements. Approval of the Planned Development will include approval of adjustments to those standards, which will effectively make this standard not applicable.

3. Rowhouse development in the R-3 and R-2.5 Zones must meet the minimum lot size standards in Subsection 19.302.4.A.1.

Response: As noted above, the applicant is requesting Planned Development approval as part of this proposal. The Planned Development provisions in 19.311 allow reductions or variances to applicable standards consistent with the Planned Development purpose and criteria. The Planned Development request includes variances to lot area, dimensions and other development standards established in the base zones. Approval of the Planned Development request will include approval of reduced lot sizes.

4. Rowhouse development in the R-2, R-1 and R-1-B Zones must meet the minimum lot size standards in Subsection 19.302.4.A.1. In addition, the rowhouse development must meet the minimum site size requirements in Table 19.505.5.E.4.

Response: Not applicable. The site is not zoned R-2, R-1 or R-1-B.

F. Driveway Access and Parking

1. Garages on the front façade of a rowhouse, off-street parking areas in the front yard, and driveway accesses in front of a rowhouse are prohibited unless the following standards are met. See Figure 19.505.5.F.1.

Response: The proposed development will consist of rowhouses, some of which are alley-loaded and some of which are front-loaded. For the front-loaded dwellings, garages and driveways will be located on the front façade of the dwelling. Therefore, the following standards apply to the front-loaded rowhouses.

a. Each rowhouse lot has a street frontage of at least 30 ft on a street identified as a Neighborhood Route or Local Street in the Transportation System Plan Figure 8-3b.

Response: As noted above, the applicant is requesting Planned Development approval as part of this proposal. The Planned Development provisions in 19.311 allow reductions or variances to applicable standards consistent with the Planned Development purpose and criteria. Approval of the Planned Development request will include approval of reduced street frontages.

b. Development of 2 or 3 rowhouses has at least 1 shared access between the lots, and development of 4 rowhouses has 2 shared accesses.

Response: The proposed development will consist of rowhouses in sets of four dwellings each. Each set of four rowhouses will have two shared accesses.

c. Outdoor on-site parking and maneuvering areas do not exceed 10 ft wide on any lot.

Response: As shown on the floor plans (Sheet 2.0) in Exhibit A, on-site parking and maneuvering area widths will not exceed 10 feet. Parking and maneuvering areas will be approximately eight feet wide.

d. The garage width does not exceed 10 ft, as measured from the inside of the garage door frame.

Response: As shown on the elevations (Sheet 6.0) in Exhibit A, garage door widths will not exceed 10 feet, as measured from the inside frame. Garage doors will be approximately eight feet wide.

2. The following rules apply to driveways and parking areas for rowhouse developments that do not meet all of the standards in Subsection 19.505.5.F.1.

Response: Not applicable. The proposed development meets the standards in Subsection 19.505.5.F.1, as demonstrated in the responses above.

G. Accessory Structure Setbacks

On rowhouse lots with a lot width of 25 ft or less, there is no required side yard between an accessory structure and a side lot line abutting a rowhouse lot. All other accessory structure regulations in Subsection 19.502.2.A apply.

Response: Not applicable. Accessory structures are not proposed as part of this application.

Chapter 19.600 Off-Street Parking and Loading

19.604 GENERAL PARKING STANDARDS

19.604.1 Parking Provided with Development Activity

All required off-street parking areas shall be provided at the time the structure is built; at the time a structure or site is enlarged; or when there is change in use or an increase in density or intensity. All required off-street parking areas shall be provided in conformance with the standards of Chapter 19.600 prior to issuance of a certificate of occupancy, or final development permit approval, or as otherwise specified in any applicable land use decision.

Response: Required off-street parking for the proposed development will be provided at the time the dwellings are built. Off-street parking will be consistent with standards of Chapter 19.600, as demonstrated in the responses in this narrative.

19.604.2 Parking Area Location

Accessory parking shall be located in one or more of the following areas:

A. On the same site as the primary use for which the parking is accessory.

B. On a site owned by the same entity as the site containing the primary use that meets the standards of Subsection 19.605.4.B.2. Accessory parking that is located in this manner shall not be considered a parking facility for purposes of the base zones in Chapter 19.300.

C. Where shared parking is approved in conformance with Subsection 19.605.4.

Response: Parking for each rowhouse unit will be provided in a garage on the same lot as the rowhouse. No shared parking is proposed.

19.604.3 Use of Parking Areas

All required off-street parking areas shall continually be available for the parking of operable vehicles of intended users of the site. Required parking shall not be rented, leased, sold, or otherwise used for parking that is unrelated to the primary or accessory use of the site, except where a shared parking agreement per Subsection 19.605.4 has been recorded. Subsection 19.604.3 does not prohibit charging fees for parking when the parking serves the primary or accessory uses on site.

Response: Parking for the rowhouse units will be continually available for the residents of the rowhouse. Required parking will not be rented, leased, sold or otherwise used for unrelated parking.

19.604.4 Storage Prohibited

No required off-street parking area shall be used for storage of equipment or materials, except as specifically authorized by Subsection 19.607.2 Commercial Vehicle, Pleasure Craft, and Recreational Vehicle Parking. (Ord. 2025 § 2, 2011)

Response: Off-street parking will not be used for storage.

19.605 VEHICLE PARKING QUANTITY REQUIREMENTS

19.605.1 Minimum and Maximum Requirements

A. Development shall provide at least the minimum and not more than the maximum number of parking spaces as listed in Table 19.605.1. Modifications to the standards in Table 19.605.1 may be made as per Section 19.605. Where multiple ratios are listed, the Planning Director shall determine which ratio to apply to the proposed development or use.

Response: Per Table 19.605.1, rowhouses are required to provide a minimum of one space per unit. There is no maximum parking standard for rowhouses. As shown on the Preliminary Plat in Exhibit A, each rowhouse will provide one off-street parking space, located in an attached garage on the same lot as the dwelling.

19.607 OFF-STREET PARKING STANDARDS FOR RESIDENTIAL AREAS

19.607.1 Residential Driveways and Vehicle Parking Areas

Subsection 19.607.1 is intended to preserve residential neighborhood character by establishing off-street parking standards. The provisions of Subsection 19.607.1 apply to passenger vehicles and off-street parking areas for rowhouses, cottage clusters, duplexes, single-family detached dwellings, and residential homes in all zones, unless specifically stated otherwise.

A. Dimensions

Off-street parking space dimensions for required parking spaces are 9 ft wide x 18 ft deep.

Response: The attached garages provided for off-street parking will be approximately 11 x 18.5 feet, which exceeds the above standard.

B. Location

1. Off-street vehicle parking shall be located on the same lot as the associated dwelling, unless shared parking is approved per Subsection 19.605.4.

Response: Parking for each rowhouse dwelling will be provided on the same lot as the rowhouse.

2. No portion of the required parking space is allowed within the following areas. See Figure 19.607.1.B.2. These standards do not apply to off-street parking for cottage clusters, which are subject to the standards in Subsection 19.505.4.

a. Within the required front yard or within 15 ft of the front lot line, whichever is greater.

b. Within a required street side yard.

Response: Off-street parking spaces are provided in attached garages for each rowhouse unit. No parking spaces are proposed within the front or side yards.

C. Parking Surface Materials

Parking of vehicles shall only be allowed on surfaces described in Subsection 19.607.1.C.

1. The following areas are required to have a durable and dust-free hard surface, and shall be maintained for all-weather use. The use of pervious concrete, pervious paving, driveway strips, or an in-ground grid or lattice surface is encouraged to reduce stormwater runoff.

a. Required parking space(s).

b. All vehicle parking spaces and maneuvering areas located within a required front or side yard. Areas for boat or RV parking are exempt from this requirement and may be graveled.

c. All off-street parking and maneuvering areas for a residential home.

2. Maneuvering areas and unrequired parking areas that are outside of a required front or side yard are allowed to have a gravel surface.

Response: All off-street parking and maneuvering areas on the proposed lots will have a durable and dust-free hard surface appropriate for all-weather use. No gravel areas are proposed.

D. Parking Area Limitations

Uncovered parking spaces and maneuvering areas for vehicles, and for recreational vehicles and pleasure craft as described in Subsection 19.607.2.B, have the following area limitations. See Figure 19.607.1.D. The pole portion of a flag lot is not included in these area limitations.

These standards do not apply to off-street parking for cottage clusters, which are subject to the standards in Subsection 19.505.4; nor to rowhouses, which are subject to the standards in Subsection 19.505.5.

a. Uncovered parking spaces and maneuvering areas cannot exceed 50% of the front yard area.

b. Uncovered parking spaces and maneuvering areas cannot exceed 30% of the required street side yard area.

Response: Not applicable. Required parking for the proposed rowhouses will be provided in attached, covered garages on each lot. No uncovered parking areas are proposed.

c. No more than 3 residential parking spaces are allowed within the required front yard. A residential parking space in the required front yard is any 9- x 18-ft rectangle that is entirely within the required front yard that does not overlap with another 9- x 18-ft rectangle within the required front yard.

Response: Not applicable. No parking spaces are proposed within the front yard. Parking spaces will be provided in attached garages for each rowhouse.

E. Additional Driveway Standards

1. Parking areas and driveways on the property shall align with the approved driveway approach and shall not be wider than the approved driveway approach within 10 ft of the right-of-way boundary.

Response: As shown on the Preliminary Plat and floor plans in Exhibit A, parking areas and driveways on each lot will align with the driveway approach and will not be wider than the driveway approach.

2. Properties that take access from streets other than local streets and neighborhood routes shall provide a turnaround area on site that allows vehicles to enter the right-of-way in a forward motion.

Response: Not applicable. Each lot within the proposed development will take access from a private alley or a local street.

Section 19.700 Public Facility Improvements

19.703 REVIEW PROCESS

19.703.1 Preapplication Conference

For all proposed development that requires a land use application and is subject to Chapter 19.700 per Section 19.702, the applicant shall schedule a preapplication conference with the City prior to submittal of the land use application. The Engineering Director may waive this requirement for proposals that are not complex.

Response: A pre-application conference with the City was held on August 11, 2016. Notes from the City are provided in Exhibit B. A second pre-application conference to review the Traffic Impact Study was held on January 19, 2016.

19.703.2 Application Submittal

For all proposed development that is subject to Chapter 19.700 per Section 19.702, one of the following types of applications is required.

B. Transportation Facilities Review (TFR) Land Use Application

If the proposed development triggers a transportation impact study (TIS) per Section 19.704, a TFR land use application shall be required. Compliance with Chapter 19.700 will be reviewed as part of the TFR application submittal and will be subject to a Type II review process as set forth in Section 19.1005. The TFR application shall be consolidated with, and processed concurrently with, any other required land use applications.

Response: The proposed project requires a TIS and therefore also requires a TFR land use application. The TFR application is included with this submittal package and applicable standards and criteria are addressed in this section of the narrative.

19.703.3 Approval Criteria

For all proposed development that is subject to Chapter 19.700 per Section 19.702, the required development permit and/or land use application shall demonstrate compliance with the following approval criteria at the time of submittal.

A. Procedures, Requirements, and Standards

Development and related public facility improvements shall comply with procedures, requirements, and standards of Chapter 19.700 and the Public Works Standards.

Response: All development and related public facility improvements will comply with Chapter 19.700 and the City's Public Works Standards.

B. Transportation Facility Improvements

Development shall provide transportation improvements and mitigation at the time of development in rough proportion to the potential impacts of the development per Section 19.705 Rough Proportionality, except as allowed by Section 19.706 Fee in Lieu of Construction.

Response: The Traffic Impact Study provided to the City (Exhibit G) identifies recommended improvements that will be done as part of the proposed development. Those recommendations include improvements (signage and other) to the existing church access point on Rusk Road to restrict vehicles from exiting at that location. Half-street improvements along the site's frontage with Kellogg Creek Drive, and full-street improvements along proposed new streets are also recommended.

The applicant is not requesting any fee-in-lieu of construction.

C. Safety and Functionality Standards

The City will not issue any development permits unless the proposed development complies with the City's basic safety and functionality standards, the purpose of which is to ensure that development does not occur in areas where the surrounding public facilities are inadequate. Upon submittal of a development permit application, an applicant shall demonstrate that the development property has or will have all of the following:

1. Adequate street drainage, as determined by the Engineering Director.

Response: Adequate street drainage will be provided, as demonstrated in the Preliminary Drainage Report in Exhibit E.

2. Safe access and clear vision at intersections, as determined by the Engineering Director.

Response: Access to the proposed development will be provided along SE Kellogg Creek Drive. As demonstrated in the TIS provided to the City, the access point will be safe, adequate to serve the site, and consistent with City standards.

3. Adequate public utilities, as determined by the Engineering Director.

Response: As shown in the Composite Utilities Plan (Sheet C400) in Exhibit A, the development property has or will have adequate public utilities to serve the proposed development. Specifically:

- A Clackamas River Water main is available for connection in SE Kellogg Creek Drive and can provide service for the proposed development. As part of the development, water lines will be constructed within the new public streets to serve the homes in the subdivision. All water improvements will be consistent with Clackamas River Water standards.
- There is an existing sanitary sewer line within SE Kellogg Creek Drive that is available for connection to serve the proposed development. The applicant will construct and eight-inch line within the new public streets to serve homes in the subdivision.
- The applicant has submitted a storm drainage report (Exhibit E) that demonstrates how stormwater will be managed on the site consistent with Milwaukie Public Works Standards and the Portland Stormwater Management Manual for design of water quality facilities.

4. Access onto a public street with the minimum paved widths as stated in Subsection 19.703.3.C.5 below.

Response: The proposed development will have access onto SE Kellogg Creek Drive, which has a local street designation and at least 16 feet of paved width.

5. Adequate frontage improvements as follows:

a. For local streets, a minimum paved width of 16 ft along the site's frontage.

b. For nonlocal streets, a minimum paved width of 20 ft along the site's frontage.

c. For all streets, a minimum horizontal right-of-way clearance of 20 ft along the site's frontage.

Response: As recommended in the TIS provided to the City, and shown on Sheet C202 in Exhibit A, standard half street improvements along the site's frontage with SE Kellogg Creek Drive (including a striped bike lane) will be constructed. In addition, all new streets within the proposed subdivision will be constructed to the full-street cross section as required by the City.

6. Compliance with Level of Service D for all intersections impacted by the development, except those on Oregon Highway 99E that shall be subject to the following:

a. Level of Service F for the first hour of the morning or evening 2-hour peak period.

b. Level of Service E for the second hour of the morning or evening 2-hour peak period.

Response: As demonstrated in the Traffic Impact Study provided to the City (Exhibit G), all intersections within the study area will continue to operate within the City's operational standards upon buildout of the proposed development.

19.708 TRANSPORTATION FACILITY REQUIREMENTS

19.708.1 General Street Requirements and Standards

A. Access Management

All development subject to Chapter 19.700 shall comply with access management standards contained in Chapter 12.16.

Response: The proposed development will take access from SE Kellogg Creek Drive and will comply with all applicable access management standards in Chapter 12.16.

B. Clear Vision

All development subject to Chapter 19.700 shall comply with clear vision standards contained in Chapter 12.24.

Response: The proposed development will comply with the clear vision standards contained in Chapter 12.24.

C. Development in Downtown Zones

Street design standards and right-of-way dedication for the downtown zones are subject to the requirements of the Milwaukie Public Works Standards, which implement the streetscape design of the Milwaukie Downtown and Riverfront Plan: Public Area Requirements (PAR). Unless specifically stated otherwise, the standards in Section 19.708 do not apply to development located in the downtown zones or on street sections shown in the PAR per Subsection 19.304.6.

Response: Not applicable.

D. Development in Non-Downtown Zones

Development in a non-downtown zone that has frontage on a street section shown in the PAR is subject to the requirements of the Milwaukie Public Works Standards, which implements the street design standards and right-of-way dedication requirements contained in the PAR for that street frontage. The following general provisions apply only to street frontages that are not shown in the PAR and for development that is not in any of the downtown zones listed in Subsection 19.708.1.C above:

1. Streets shall be designed and improved in accordance with the standards of this chapter and the Public Works Standards. ODOT facilities shall be designed consistent with State and federal standards. County facilities shall be designed consistent with County standards.

Response: All streets constructed or improved as part of the proposed development will comply with the standards of this chapter and the City's Public Works Standards. No improvements to ODOT facilities are anticipated as part of this project.

2. Streets shall be designed according to their functional classification per Figure 8-3b of the TSP.

Response: As shown on the Preliminary Plat and Typical Street Sections in Exhibit A, all streets will be designed according to their functional classification. New streets within the proposed subdivision will be designed to the standard local street cross section.

3. Street right-of-way shall be dedicated to the public for street purposes in accordance with Subsection 19.708.2. Right-of-way shall be dedicated at the corners of street intersections to accommodate the required turning radii and transportation facilities in accordance with Section 19.708 and the Public Works Standards. Additional dedication may be required at intersections for improvements identified by the TSP or a required transportation impact study.

Response: Right-of-way along the site's frontage with Kellogg Creek Drive will be dedicated in order to accommodate the required half-street improvement. No other right-of-way dedication is proposed.

4. The City shall not approve any development permits for a proposed development unless it has frontage or approved access to a public street.

Response: The proposed development has frontage on, and will take access from, SE Kellogg Creek Drive.

5. Off-site street improvements shall only be required to ensure adequate access to the proposed development and to mitigate for off-site impacts of the proposed development.

Response: The proposed development will include off-site improvements to the church access on Rusk Road. Those improvements will restrict vehicles from exiting onto Rusk Road, which is prohibited due to sight distance issues.

6. The following provisions apply to all new public streets and extensions to existing public streets.

a. All new streets shall be dedicated and improved in accordance with this chapter.

b. Dedication and construction of a half-street is generally not acceptable. However, a half-street may be approved where it is essential to allow reasonable development of a property and when the review authority finds that it will be possible for the property adjoining the half-street to dedicate and improve the remainder of the street when it develops. The minimum paved roadway width for a half-street shall be the minimum width necessary to accommodate 2 travel lanes pursuant to Subsection 19.708.2.

Response: All new streets constructed as part of the proposed development will be improved and dedicated in accordance with this code. Half-streets are not proposed; all new streets will be constructed to the full cross section.

7. Traffic calming may be required for existing or new streets. Traffic calming devices shall be designed in accordance with the Public Works Standards or with the approval of the Engineering Director.

Response: Traffic calming elements are not recommended per the TIS and are not proposed as part of this development.

8. Railroad Crossings

Where anticipated development impacts trigger a need to install or improve a railroad crossing, the cost for such improvements may be a condition of development approval.

Response: The proposed development does not anticipate any need to improve or install a railroad crossing.

9. Street Signs

The City shall install all street signs, relative to traffic control and street names, as specified by the Engineering Director. The applicant shall reimburse the City for the cost of all such signs installed by the City.

Response: The applicant understands the City will install any necessary street signs and the applicant will be required to reimburse the City for such costs.

10. Streetlights

The location of streetlights shall be noted on approved development plans. Streetlights shall be installed in accordance with the Public Works Standards or with the approval of the Engineering Director.

Response: The location of streetlights is noted on the Utility Plan in Exhibit A. All streetlights will be installed in accordance with the Public Works Standards or as required by the Engineering Director.

E. Street Layout and Connectivity

1. The length, width, and shape of blocks shall take lot size standards, access and circulation needs, traffic safety, and topographic limitations into consideration.

2. The street network shall be generally rectilinear but may vary due to topography or other natural conditions.

Response: As shown on the Preliminary Plat in Exhibit A, the proposed street layout to serve the new development will allow for safe and efficient access and circulation on the site. The street network is somewhat curvy along the western edge to avoid impacts to the identified wetland area. Due to topographic and access constraints (and the proximity of Highway 224), a cul-de-sac is proposed at the northeast corner of the development where a through street was not feasible.

New streets within the proposed subdivision will have 54 feet of right-of-way with two 10-foot travel lanes, on-street parking, a planter strip and 5-foot sidewalks on both sides.

3. Streets shall be extended to the boundary lines of the developing property where necessary to give access to or allow for future development of adjoining properties.

Response: Due to topography, the presence of natural resources and surrounding land uses, it is not anticipated that street extensions will be necessary to allow for future development of adjoining properties.

4. Permanent turnarounds shall only be provided when no opportunity exists for creating a through street connection. The lack of present ownership or control over abutting property shall not be grounds for construction of a turnaround. For proposed land division sites that are 3 acres or larger, a street ending in a turnaround shall have a maximum length of 200 ft, as measured from the cross street right-of-way to the farthest point of right-of-way containing the turnaround. For proposed land division sites that are less than 3 acres, a street ending in a turnaround shall have a maximum length of 400 ft, measured from the cross street right-of-way to the farthest point of right-of-way containing the turnaround. Turnarounds shall be designed in accordance with the requirements of the Public Works Standards.

Response: The development proposes one permanent turnaround (cul-de-sac) located in the northeast corner of the development where a through street is not possible due to existing constraints (the church building, Highway 224 and natural resource areas). The length of the street ending in the cul-de-sac is approximately 186 feet, as measured from the Alley E right-of-way to the farthest point of right-of-way containing the cul-de-sac. The cul-de-sac will be constructed in accordance with the City's Public Works Standards.

5. Closed-end street systems may serve no more than 20 dwellings.

Response: The proposed subdivision is considered a closed-end street system because it has one access point onto Kellogg Creek Drive. The closed-end street system will serve 92 dwelling units and therefore requires a variance to this standard. A variance request has been submitted as part of this application package.

F. Intersection Design and Spacing

1. Connecting street intersections shall be located to provide for traffic flow, safety, and turning movements, as conditions warrant.

2. Street and intersection alignments for local streets shall facilitate local circulation but avoid alignments that encourage nonlocal through traffic.

Response: Streets and intersections for the proposed development have been designed to provide safe and efficient circulation for the subdivision

3. Streets should generally be aligned to intersect at right angles (90 degrees). Angles of less than 75 degrees will not be permitted unless the Engineering Director has approved a special intersection design.

Response: Streets constructed as part of the proposed development intersect at right angles. Where the new street intersects with SE Kellogg Creek Drive, that intersection will also be at right angles.

4. New streets shall intersect at existing street intersections so that centerlines are not offset. Where existing streets adjacent to a proposed development do not align properly, conditions shall be imposed on the development to provide for proper alignment.

Response: No off-set intersections will be created as part of the proposed development.

5. Minimum and maximum block perimeter standards are provided in Table 19.708.1.

Response: Per Table 19.708.1, maximum block perimeter for local streets is 1,650 feet. As shown on the Preliminary Plat in Exhibit A, perimeters are consistent with this standard. The largest proposed block on the site will have a perimeter of approximately 1,100 feet.

6. Minimum and maximum intersection spacing standards are provided in Table 19.708.1.

Response: Per Table 19.708.1, the minimum block length for local streets is 100 feet and the maximum is 530 feet. As shown on the Preliminary Plat in Exhibit A, the longest block length proposed is approximately 370 feet. The shortest block length proposed is approximately 220 feet.

19.708.2 Street Design Standards

Table 19.708.2 contains the street design elements and dimensional standards for street cross sections by functional classification. Dimensions are shown as ranges to allow for flexibility in developing the most appropriate cross section for a given street or portion of street based on existing conditions and the surrounding development pattern. The additional street design standards in Subsection 19.708.2.A augment the dimensional standards contained in Table 19.708.2. The Engineering Director will rely on Table 19.708.2 and Subsection 19.708.2.A to determine the full-width cross section for a specific street segment based on functional classification. The full-width cross section is the sum total of the widest dimension of all individual street elements. If the Engineering Director determines that a full-width cross section is appropriate and feasible, a full-width cross section will be required. If the Engineering Director determines that a full-width cross section is not appropriate or feasible, the Engineering Director will modify the full-width cross section requirement using the guidelines provided in Subsection 19.708.2.B. Standards for design speed, horizontal/vertical curves, grades, and curb return radii are specified in the Public Works Standards.

Response: New streets constructed to serve the proposed development will be built to the local street standard and will have the following elements, consistent with Table 19.708.2:

- 54 feet total right-of-way
- 34 feet of paved width from curb to curb

- Two 10-foot travel lanes
- 7-foot on-street parking on both sides
- 4-foot planter strip on both sides
- 5-foot sidewalk on both sides

A. Additional Street Design Standards

These standards augment the dimensional standards contained in Table 19.708.2 and may increase the width of an individual street element and/or the full-width right-of-way dimension.

1. Minimum 10-ft travel lane width shall be provided on local streets with no on-street parking.

Response: The new local streets will have two 10-foot travel lanes and on-street parking.

2. Where travel lanes are next to a curb line, an additional 1 ft of travel lane width shall be provided. Where a travel lane is located between curbs, an additional 2 ft of travel lane width shall be provided.

Response: Not applicable. Travel lanes will be next to a planter strip.

3. Where shared lanes or bicycle boulevards are planned, up to an additional 6 ft of travel lane width shall be provided.

Response: A shared bike lane ("sharrows") will be provided on Street A to provide a bike connection from the Highway 224/Rusk Road intersection to Kellogg Creek Drive. The city has not required additional travel lane width.

4. Bike lane widths may be reduced to a minimum of 4 ft where unusual circumstances exist, as determined by the Engineering Director, and where such a reduction would not result in a safety hazard.

Response: Striped bike lanes are not planned on the new streets within the proposed development. A striped bike lane will be included as part of the half-street improvements along the site's frontage with Kellogg Creek Drive.

5. Where a curb is required by the Engineering Director, it shall be designed in accordance with the Public Works Standards.

Response: All curbs will be designed in accordance with Public Works Standards.

6. Center turn lanes are not required for truck and bus routes on street classifications other than arterial roads.

7. On-street parking in industrial zones shall have a minimum width of 8 ft.

8. On-street parking in commercial zones shall have a minimum width of 7 ft.

Response: Items 6-8 above are not applicable.

9. On-street parking in residential zones shall have a minimum width of 6 ft.

Response: On street parking provided on the new local streets will have a width of 7 feet on both sides. On-street parking will also be provided along the site's frontage on Kellogg Creek Drive, except along the southwest corner of the site, where on-street parking has been eliminated to avoid impacts to the Oregon white oak trees located in that area.

10. Sidewalk widths may be reduced to a minimum of 4 ft for short distances for the purpose of avoiding obstacles within the public right-of-way including, but not limited to, trees and power poles.

Response: Sidewalks provided will be five feet in width throughout the proposed development. The half-street improvements along the site's frontage with Kellogg Creek Drive will also include a five-foot sidewalk. Along the southwest corner of the site, the Kellogg Creek Drive frontage improvements will be altered in order to avoid impacts to the stand of Oregon white oak trees. The applicant is working with City Engineering staff to determine the best approach in this location.

11. Landscape strip widths shall be measured from back of curb to front of sidewalk.

Response: Landscape strips provided will be four feet wide, as measured in accordance with this standard.

12. Where landscape strips are required, street trees shall be provided a minimum of every 40 ft in accordance with the Public Works Standards and the Milwaukie Street Tree List and Street Tree Planting Guidelines.

Response: As shown on the Planting Plan (Sheet L100) in Exhibit A, street trees will be provided consistent with this standard.

13. Where water quality treatment is provided within the public right-of-way, the landscape strip width may be increased to accommodate the required treatment area.

Response: As shown on the Composite Utility Plan, water quality treatment facilities are proposed within the public right-of-way landscape strips. Those landscape strips are four feet in width.

14. A minimum of 6 in shall be required between a property line and the street element that abuts it; e.g., sidewalk or landscape strip.

Response: As shown on the Typical Street Sections (Sheet C202) in Exhibit A, six inches will be provided between a property line and the street element that abuts it.

19.708.3 Sidewalk Requirements and Standards

B. Sidewalk Requirements

1. Requirements

Sidewalks shall be provided on the public street frontage of all development per the requirements of this chapter. Sidewalks shall generally be constructed within the dedicated public right-of-way, but may be located outside of the right-of-way within a public easement with the approval of the Engineering Director.

Response: As shown on the Preliminary Plat in Exhibit A, sidewalks will be provided along both sides of new streets throughout the proposed development. A sidewalk will also be provided along SE Kellogg Creek Drive along the site's frontage. Along the southwest corner of the site, the Kellogg Creek Drive frontage improvements will be altered in order to avoid impacts to the stand of Oregon white oak trees. The applicant is working with City Engineering staff to determine the best approach in this location.

2. Design Standards

Sidewalks shall be designed and improved in accordance with the requirements of this chapter and the Public Works Standards.

Response: All sidewalks will be designed and improved in accordance with this chapter and the Public Works Standards.

19.708.5 Pedestrian/Bicycle Path Requirements and Standards

B. Pedestrian/Bicycle Path Requirements

Pedestrian/bicycle paths shall be required in the following situations.

1. In residential and mixed-use districts, a pedestrian/bicycle path shall be required at least every 300 ft when a street connection is not feasible.

Response: As shown on the Preliminary Plat in Exhibit A, pedestrian connections are available at the eastern end of the site where it abuts the church property (Tracts E and F) to connect Street B to Kellogg Creek Drive. Pedestrian connections will also be available via the emergency access through the center of that same block.

2. In residential and industrial districts where addition of a path would reduce walking distance, via a sidewalk or other available pedestrian route, by at least 400 ft and by at least 50% to an existing transit stop, planned transit route, school, shopping center, or park.

Response: Not applicable. Addition of a path to reduce walking distances as noted above is not needed.

3. In commercial districts and community service use developments where addition of a path would reduce walking distance, via a sidewalk or other available pedestrian route, by at least 200 ft and by at least 50% to an existing transit stop, planned transit route, school, shopping center, or park.

Response: Not applicable.

4. In all districts where addition of a path would provide a midblock connection between blocks that exceed 800 ft or would link the end of a turnaround with a nearby street or activity center.

Response: There are no blocks that exceed 800 feet in the proposed development. As shown on the Preliminary Plat in Exhibit A, a pedestrian and bicycle connection will be provided between the end of the turnaround and the sidewalk at the Rusk Road/Highway 224 intersection.

C. Design Standards

Pedestrian/bicycle paths shall be designed and improved in accordance with the requirements of this chapter and the Public Works Standards. Paths shall be located to provide a reasonably direct connection between likely pedestrian and bicyclist destinations. A path shall have a minimum right-of-way width of 15 ft and a minimum improved surface of 10 ft. If a path also provides secondary fire access or a public utility corridor, it shall have a minimum right-of-way width of 20 ft and a minimum improved surface of 15 ft. Additional standards relating to entry points, maximum length, visibility, and path lighting are provided in the Public Works Standards.

Response: There is a proposed pedestrian/bicycle path connecting the end of the cul-de-sac to the intersection of Rusk Road and Highway 224. This path will have a 15-foot public access easement with a 10-foot paved width and will provide bicycle and pedestrian connections from the highway, through the development and down to Kellogg Creek Drive which connects to North Clackamas Park.

Section 19.904 Community Service Uses

19.904.5 Procedures for Reviewing a Community Service Use

C. The Planning Director may approve minor modifications to an approved community service per Section 19.1004 Type I Review, provided that such modification:

Response: The proposed modifications to the church property will include the following elements, all of which represent minor modifications to the approved CSU.

- The church entrance from Rusk Road will be reconfigured to enforce the "entry-only" status; exit onto Rusk Road from that access point is not permitted due to sight distance issues. Improvements to the access point will include narrowing the driveway, striping an entry-only arrow on the pavement, adding signage to indicate "No Exit", and adding some landscaping at the corner to serve as a barrier to exiting the site at that location.
- Some parking spaces along the western edge of the church property will be removed in order to create an access between the church site and the proposed subdivision site. This new access will provide a safe exit point for the church onto Kellogg Creek Drive.
- Additional parking spaces will be removed just south of the new access point to create a service and emergency-only access from Alley C on the subdivision site. This access will be gated and will only be accessible for emergency fire and garbage service activities.

1. Does not increase the intensity of any use;

Response: The proposed modifications to the church property will not add square footage to the church use or otherwise result in an increase in activity or use of the site. The overall amount of parking on the site will be reduced by 10 spaces.

2. Meets all requirements of the underlying zone relating to building size and location and off-street parking and the standards of Title 19;

Response: Applicable standards from Title 19 include only those related to off-street parking and access. No other elements regulated by Title 19 (such as building size and location) will be impacted by the proposed modifications.

- Overall parking on the church site will be reduced by 10 spaces to accommodate the new access points described above. Per Table 19.605.1 in the code, the minimum parking standard for a church is 1 space per 4 seats and the maximum is 1 space per 2 seats. The church has 400 seats. Therefore, the parking minimum is 100 spaces and the maximum is 200 spaces. The church currently has 225 parking spaces, which exceeds the allowable maximum. This is due to the fact that no parking maximums were in place when the church was constructed in 1984. Removing 10 parking spaces from the church site will bring the site closer to conformance with the existing code.
- The Public Facility Improvements standards in Chapter 19.703 require that all development has safe access to a public street. The proposed modifications to the church site will facilitate safe access to the site by improving the entry-only access point on Rusk Road. These improvements will help ensure that the entry-only access point is not used as an exit. The proposed improvements will also provide a safe access point for the church to Kellogg Creek Drive. That access point can be used as both an entry and exit for the church site.
- Per MMC 19.606.2.C, perimeter landscape buffers are required where the parking area abuts another property. A 6-foot landscape buffer will be provided around the parking lot along the northern and

western edges of the parking lot where it abuts the adjacent property. The buffer will be landscaped consistent with MMC 19.606.2.C.2, including one tree for every 40 lineal feet.

3. Does not result in deterioration or loss of any protected natural feature or open space, and does not negatively affect nearby properties;

Response: The proposed parking lot and access modifications will not have any impact on natural resources or open spaces in the vicinity of the site. All proposed modifications to the church site will occur within the boundaries of the existing parking lot and will not negatively affect nearby properties.

4. Does not alter or contravene any conditions specifically placed on the development by the Planning Commission or City Council; and

Response: The most recent review of the church property was conducted in September 2014 when the Turning Point Church requested a CSU Minor Modification and Natural Resource Review in order to remove a section of off-street parking spaces from the church parking lot and replace them with landscaping (grass and ground cover). That decision (File Nos. CSU-14-06 and NR-14-06) did not include any conditions of approval. In the findings for that decision, prior conditions of approval for the church site were listed as follows:

The property was annexed into the city limits in 1981 (land use file #A-80-07). In 1983, use of the site for pasture land and grazing for horses was approved as a conditional use (file #C-83-08); however, the conditional use application was subsequently withdrawn.

The site was approved as a CSU for church use by the Milwaukie Assembly of God in 1984 (file #CS-84-02). Conditions of approval included requirements to provide plans for landscaping, public facilities, and exterior lighting, as well as a traffic study and right-of-way dedication along Rusk Rd and Kellogg Creek Dr.

In 1987, the City Council approved a zone change for the western portion of the property, from R-10 to R-3, along with a conditional use approval for senior housing and an amendment to the Comprehensive Plan map (file #CPA-87-01, ZC-87-05, CU87-05, with Ordinance #1639). The senior housing project (called Parkside Village) was never developed.

In 1992, the City approved a 5,500-sq-ft addition to the church building (file #CSO-92-03, NR-92-01). Conditions of approval included requirements to install the approved landscaping and to direct lighting away from the designated natural resource area.

In 1997, the Planning Commission denied a sign permit request to locate an electronic reader board sign on the property near the intersection of Highway 224 and Rusk Rd (file #SP-97-01).

The proposed modifications to the church parking lot and access will not contravene or alter any of the conditions of approval from the above-listed decisions.

5. Does not cause any public facility, including transportation, water, sewer and storm drainage, to fail to meet any applicable standards relating to adequacy of the public facility.

Response: No public facility will fail to meet adequacy standards as a result of the proposed modifications to the church property. The only public facility that will be impacted by the proposed modifications is public transportation. The proposed modifications at the entry-only access point on Rusk Road combined with the new access point on Kellogg Creek Drive (through the subdivision site) will provide an overall improvement to safe access for the church property. The "no exit" requirement onto Rusk Road will be reinforced and a safe and convenient exit onto Kellogg Creek Drive will be created. The new access point on Kellogg Creek Drive will be designed consistent with applicable standards.

Section 19.1200 Solar Access Protection

19.1203.3 Design Standard

At least 80% of the lots in a development subject to these provisions shall comply with one or more of the options in this subsection; provided a development may, but is not required to, use the options in Subsections 19.1203.3.B or C below to comply with Section 19.1203.

A. Basic Requirement

A lot complies with Subsection 19.1203.3 if it:

1. Has a north-south dimension of 90 ft or more; and

2. Has a front lot line that is oriented within 30 degrees of a true east-west axis (see Figure 19.1203.3).

C. Performance Option

In the alternative, a lot complies with Subsection 19.1203.3 if:

1. Habitable structures built on that lot will have their long axis oriented within 30 degrees of a true east-west axis, and at least 80% of their ground floor south wall will be protected from shade by structures and nonexempt trees using appropriate deed restrictions; or

Response: There are a total of 92 lots proposed as part of this subdivision. As shown on the Preliminary Plat (Sheet C201 in Exhibit A), 76 of the lots will have a north-south dimension of 80 to 87.25 feet. All of those lots have a front lot line that is oriented within 30 degrees of an east-west axis.

For the remaining 16 lots, structures will have their long axis oriented within 30 degrees of an east-west axis. Because the structures will be attached homes in sets of four units, the south-facing walls of units will be protected by the unit attached to it, or by the four-plex structure directly south of it (there will be 10 feet between four-plexes). The only units without shade protection will be those three units at the southern-most end of the east-west oriented structures (Lots 33 and 92 on the Preliminary Plat in Exhibit A).

Because the proposed subdivision does not meet the standards of 19.1203.3 above, an adjustment to the standard is requested, consistent with the criteria established in 19.1203.5 below.

19.1203.5 Adjustment to Design Standard

The Director shall reduce the percentage of lots that must comply with Subsection 19.1203.3, to the minimum extent necessary, if he or she finds the applicant has shown it would cause or is subject to one or more of the following conditions.

A. Adverse Impacts on Density, Cost, or Amenities

1. If the design standard in Subsection 19.1203.3.A is applied, either the resulting density is less than that proposed, or on-site site development costs (e.g., grading, water, storm drainage, sanitary systems, and road) and solar-related off-site site development costs are at least 5% more per lot than if the standard is not applied. The following conditions, among others, could constrain the design of a development in such a way that compliance with Subsection 19.1203.3.A would reduce density or increase costs per lot in this manner. The applicant shall show which, if any, of these or other similar site characteristics apply in an application for a development:

b. There is a significant natural feature on the site, identified as such in the Comprehensive Plan or Development Ordinance, that prevents given streets or lots from being oriented for solar access, and it will exist after the site is developed;

Response: As noted above, 16 lots meet the performance option in MMC 19.1203.3.C above, which is 17 percent of the total proposed lots. Therefore, an adjustment is requested to reduce the percentage of lots required to meet MMC 19.1203 to 17 percent.

If the design standard in 19.1203.3 is applied to the proposed subdivision, the resulting density would be less than what is proposed. The site has numerous physical constraints that limit site design options, including significant natural resources (floodplain, habitat area, Mount Scott Creek and wetlands) and the existing church property. Furthermore, the site has split zoning (R-10 and R-3), which adds more complexity in terms of site design. For all these reasons, the applicant is proposing a Planned Development on the site, which allows greater flexibility to design the site efficiently and economically within the context of the various constraints. The proposed site design minimizes impacts to natural resources while allowing the applicant to develop the site efficiently and in a way that is financially feasible. Reconfiguring the site so that all lots meet the solar access standards would result in significantly fewer lots, and potentially greater impacts to the natural resource areas. For these reasons, an adjustment is appropriate.

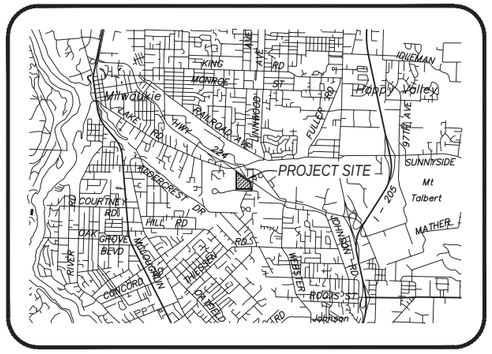
IV. CONCLUSIONS

As established in the discussion and responses provided in this narrative, the proposed subdivision is consistent with City standards and criteria. Approval of this application will facilitate development of a project that will preserve and protect natural resources, contribute to the overall variety of housing types and development patterns in Milwaukie, and provide a needed housing type in close proximity to a large employment center.

KELLOGG CREEK

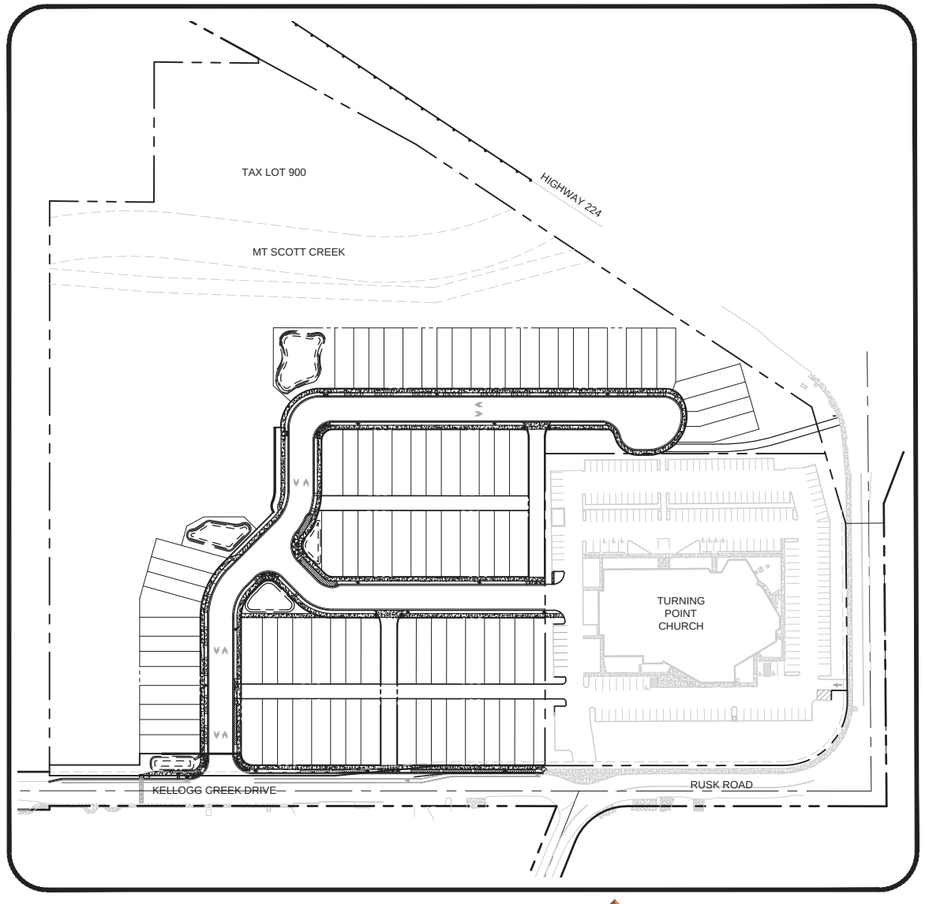
Planned Development Subdivision Application
Milwaukie, Oregon

July, 2017



VICINITY MAP

SCALE: NTS



SITE MAP

SCALE: NTS

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7.1	FOUR-PLEX STREET SIDE ELEVATIONS

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LAKE OSWEGO, OR 97934
(503) 358-4460

CIVIL ENGINEER
DOWL
ATTN:SCOTT EMMENS, P.E.
720 SW WASHINGTON AVE SUITE 750
PORTLAND OR 97205
(971) 280-8641

LAND USE PLANNER
DOWL
ATTN:SERAH BREAKSTONE
720 SW WASHINGTON AVE SUITE 750
PORTLAND OR 97205
(971) 280-8641

LANDSCAPE ARCHITECT
DOWL
ATTN:PAT GAYNOR, PLA
720 SW WASHINGTON AVE SUITE 750
PORTLAND OR 97205
(971) 280-8641

SURVEYOR
TERRACALC LAND SURVEYING, INC.
ATTN: DARREN HARR, PLS
1615 N.E. MILLER STREET
MCMINNVILLE, OR 97128
OFFICE: (503) 857-0935

TRAFFIC ENGINEER
KITTELSON & ASSOCIATES, INC.
ATTN: ZACHARY HOROWITZ, P.E.
610 SW ALDER STREET, SUITE 700
PORTLAND, OR 97205
503-228-5230

ENVIRONMENTAL
PACIFIC HABITAT SERVICES
ATTN:JOHN VAN STAVEREN
9450 SW COMMERCE CIRCLE, SUITE 180
WILSONVILLE, OR 97070
(503) 570-0800

GEOTECHNICAL ENGINEER
GEO CONSULTANTS NORTHWEST
ATTN:BRAD HUPY, P.E., G.E.
824 SE 12TH AVE
PORTLAND, OR 97214
(503) 616-9425

REGISTERED PROFESSIONAL ENGINEER
OREGON
J. SCOTT EMMENS
EXPIRES: 12/31/2017
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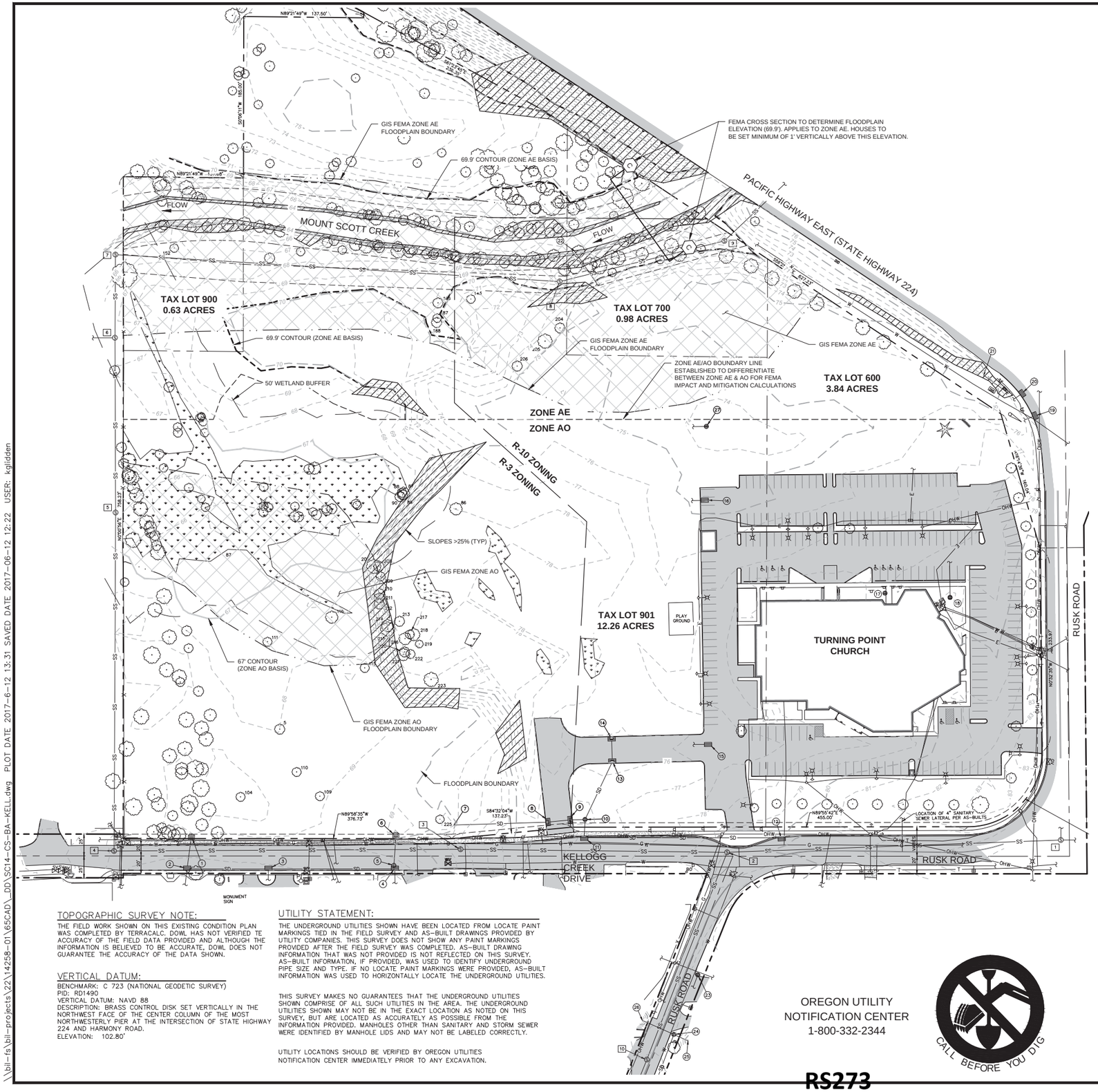
KELLOGG CREEK SUBDIVISION
COVER SHEET
BROWNSTONE DEVELOPMENT
MILWAUKIE, OREGON
SEI/7 NE1/4 SEC. 6 T2S R2E W.M. EXISTING TAXLOTS 600, 700, 900, 901

PROJECT	14258-01
DATE	06/12/2017

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LEGEND:

- EXISTING ASPHALT
- EXISTING CONCRETE
- EXISTING GRAVEL
- EXISTING SLOPES GREATER THAN 25%
- EXISTING EXISTING WETLAND
- SD — STORM DRAINAGE LINE
- SS — SANITARY SEWER LINE
- T — UNDERGROUND TELECOMMUNICATION LINE
- E — UNDERGROUND ELECTRIC LINE
- W — UNDERGROUND WATER LINE
- X — FENCE
- OHW — OVERHEAD POWER LINE
- G — GAS LINE
- DECIDUOUS TREE
- CONIFEROUS TREE
- SIGN
- TRAFFIC SIGNAL POLE
- SANITARY SEWER MANHOLE
- STORM DRAINAGE MANHOLE
- CATCH BASIN
- AREA DRAIN
- DITCH INLET
- ELECTRICAL VAULT
- COMMUNICATIONS VAULT
- WATER VAULT
- ELECTRICAL METER
- ELECTRICAL RISER
- WATER VALVE
- WATER METER
- FIRE HYDRANT
- FIRE DEPARTMENT CONNECTION
- SPRINKLER VALVE
- GAS VALVE
- COMMUNICATIONS RISER
- ELECTRIC JUNCTION BOX
- SIGNAL JUNCTION BOX
- BOLLARD
- LIGHT POLE
- SIGNAL POLE
- PEDESTRIAN SIGNAL POLE
- UTILITY POLE
- GUY ANCHOR
- HANDICAPPED PARKING SPACE
- EXTG MAJOR CONTOUR
- EXTG MINOR CONTOUR
- FLOOD PLAIN (100 YEAR)
- LOT LINE
- BOUNDARY LINE
- RIGHT OF WAY LINE
- CENTERLINE
- ZONING DELINEATION

SANITARY SEWER TABLE:

1 SANITARY SEWER MANHOLE
RIM=82.78'
IE 8" CONC (N)=68.77'
IE 12" CONC (E)=68.54'
IE 12" CONC (W)=68.50'

2 SANITARY SEWER MANHOLE
RIM=79.05'
IE 8" CONC (S)=68.12'
IE 12" CONC (E)=67.60'
IE 12" CONC (W)=67.55'

3 SANITARY SEWER MANHOLE
RIM=71.50'
IE 12" CONC (E)=63.83'
IE 12" CONC (W)=63.83'

4 SANITARY SEWER MANHOLE
RIM=68.97'
IE 12" CONC (E)=62.99'
IE 12" CONC (N)=62.54'

5 SANITARY SEWER MANHOLE
RIM=66.79'
IE 12" CONC (S)=60.82'
IE 12" CONC (N)=60.78'

6 SANITARY SEWER MANHOLE
RIM=66.57'
IE 12" CONC (S)=53.59'
IE 42" CONC (N)=51.77'
IE 42" CONC (W)=51.68'

7 SANITARY SEWER MANHOLE
RIM=65.51'
IE 42" CONC (E)='
IE 42" CONC (S)='

8 SANITARY SEWER MANHOLE
RIM=69.73'
IE 42" CONC (E)=52.94'
IE 42" CONC (W)=52.94'

9 SANITARY SEWER MANHOLE
RIM=70.91'
IE 42" CONC (NE)=53.40'
IE 42" CONC (W)=53.21'

STORM DRAINAGE TABLE:

1 DITCH INLET
GRATE='
IE 12" CPP (S)=66.15'

2 CATCH BASIN
GRATE=67.40'
IE 6" PVC (S)=65.95'
IE 12" CPP (N)=65.93'
IE 12" CONC (E)=65.88'

3 CATCH BASIN
GRATE=67.79'
IE 8" PVC (S)=65.72'
IE 12" CONC (W)=65.62'
IE 12" CONC (E)=65.62'

4 CATCH BASIN
GRATE=68.47'
IE 12" CONC (W)=65.22'
IE 12" CONC (NW)=65.42'
IE 12" CONC (S)=65.17'

5 STORM DRAINAGE MANHOLE
RIM=68.65'
IE 12" CONC (N)=65.29'
IE 12" CONC (SE)=65.58'

6 DITCH INLET
GRATE=67.83'
IE 12" CONC (S)=65.69'

7 IE 12" CPP (E)=69.69'

8 CATCH BASIN
GRATE=75.17'
IE 12" CPP (E)=70.89'
IE 12" CPP (W)=70.89'

9 CATCH BASIN
GRATE=75.11'
IE 12" CPP (E)=71.41'
IE 12" CPP (W)=71.41'

10 AREA DRAIN
GRATE=75.57'
IE 12" CONC (N)=72.36'
IE 12" CONC (S)=72.23'
IE 12" CPP (W)=71.86'

11 CATCH BASIN
GRATE=76.05'
IE 12" CONC (E)=74.27'
IE 12" CONC (N)=73.25'

12 CATCH BASIN
GRATE=79.51'
IE 12" CONC (W)=76.32'

13 CATCH BASIN
GRATE=75.01'
IE 12" CPP (N)=72.42'
IE 12" CPP (S)=72.59'

14 CATCH BASIN
GRATE=75.03'
IE 12" CPP (S)=72.70'

15 CATCH BASIN/OIL TRAP
GRATE=76.12'
WATER LEVEL=75.00'
COULD NOT OPEN TRAP

16 CATCH BASIN/OIL TRAP
GRATE=73.86'
WATER LEVEL=73.16'
COULD NOT OPEN TRAP

17 AREA DRAIN
GRATE=77.52'

18 AREA DRAIN/OIL TRAP
GRATE=77.60'
WATER LEVEL=76.89'
COULD NOT OPEN TRAP

19 CATCH BASIN
GRATE=76.41'
IE 12" CONC (SW)=74.65'

20 CATCH BASIN
GRATE=76.14'
IE 12" CONC (SW)=74.09'

21 IE 16" CPP (E)=72.59'

22 IE 12" PVC (SE)=64.71'

23 AREA DRAIN
GRATE=77.39'
IE 3" PVC (S)=76.74'

24 AREA DRAIN
GRATE=76.08'
IE 24" CONC (E&W)=71.42'

25 IE 24" CONC (W)=71.63'

26 IE 24" CONC (E)=70.95'

27 AREA DRAIN
GRATE=72.78'
WATER LEVEL=72.03'
COULD NOT OPEN TRAP

TOPOGRAPHIC SURVEY NOTE:

THE FIELD WORK SHOWN ON THIS EXISTING CONDITION PLAN WAS COMPLETED BY TERRACALC. DOWL HAS NOT VERIFIED TE ACCURACY OF THE FIELD DATA PROVIDED AND ALTHOUGH THE INFORMATION IS BELIEVED TO BE ACCURATE, DOWL DOES NOT GUARANTEE THE ACCURACY OF THE DATA SHOWN.

VERTICAL DATUM:

BENCHMARK: C 723 (NATIONAL GEODETIC SURVEY)
PID: RD1490
VERTICAL DATUM: NAVD 88
DESCRIPTION: BRASS CONTROL DISK SET VERTICALLY IN THE NORTHWEST FACE OF THE CENTER COLUMN OF THE MOST NORTHWESTERLY PIER AT THE INTERSECTION OF STATE HIGHWAY 224 AND HARMONY ROAD.
ELEVATION: 102.80'

UTILITY STATEMENT:

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM LOCATE PAINT MARKINGS TIED IN THE FIELD SURVEY AND AS-BUILT DRAWINGS PROVIDED BY UTILITY COMPANIES. THIS SURVEY DOES NOT SHOW ANY PAINT MARKINGS PROVIDED AFTER THE FIELD SURVEY WAS COMPLETED. AS-BUILT DRAWING INFORMATION THAT WAS NOT PROVIDED IS NOT REFLECTED ON THIS SURVEY. AS-BUILT INFORMATION, IF PROVIDED, WAS USED TO IDENTIFY UNDERGROUND PIPE SIZE AND TYPE. IF NO LOCATE PAINT MARKINGS WERE PROVIDED, AS-BUILT INFORMATION WAS USED TO HORIZONTALLY LOCATE THE UNDERGROUND UTILITIES.

THIS SURVEY MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE OF ALL SUCH UTILITIES IN THE AREA. THE UNDERGROUND UTILITIES SHOWN MAY NOT BE IN THE EXACT LOCATION AS NOTED ON THIS SURVEY, BUT ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE INFORMATION PROVIDED. MANHOLES OTHER THAN SANITARY AND STORM SEWER WERE IDENTIFIED BY MANHOLE LIDS AND MAY NOT BE LABELED CORRECTLY.

UTILITY LOCATIONS SHOULD BE VERIFIED BY OREGON UTILITIES NOTIFICATION CENTER IMMEDIATELY PRIOR TO ANY EXCAVATION.

OREGON UTILITY
NOTIFICATION CENTER
1-800-332-2344

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KELLOGG CREEK SUBDIVISION

EXISTING CONDITIONS

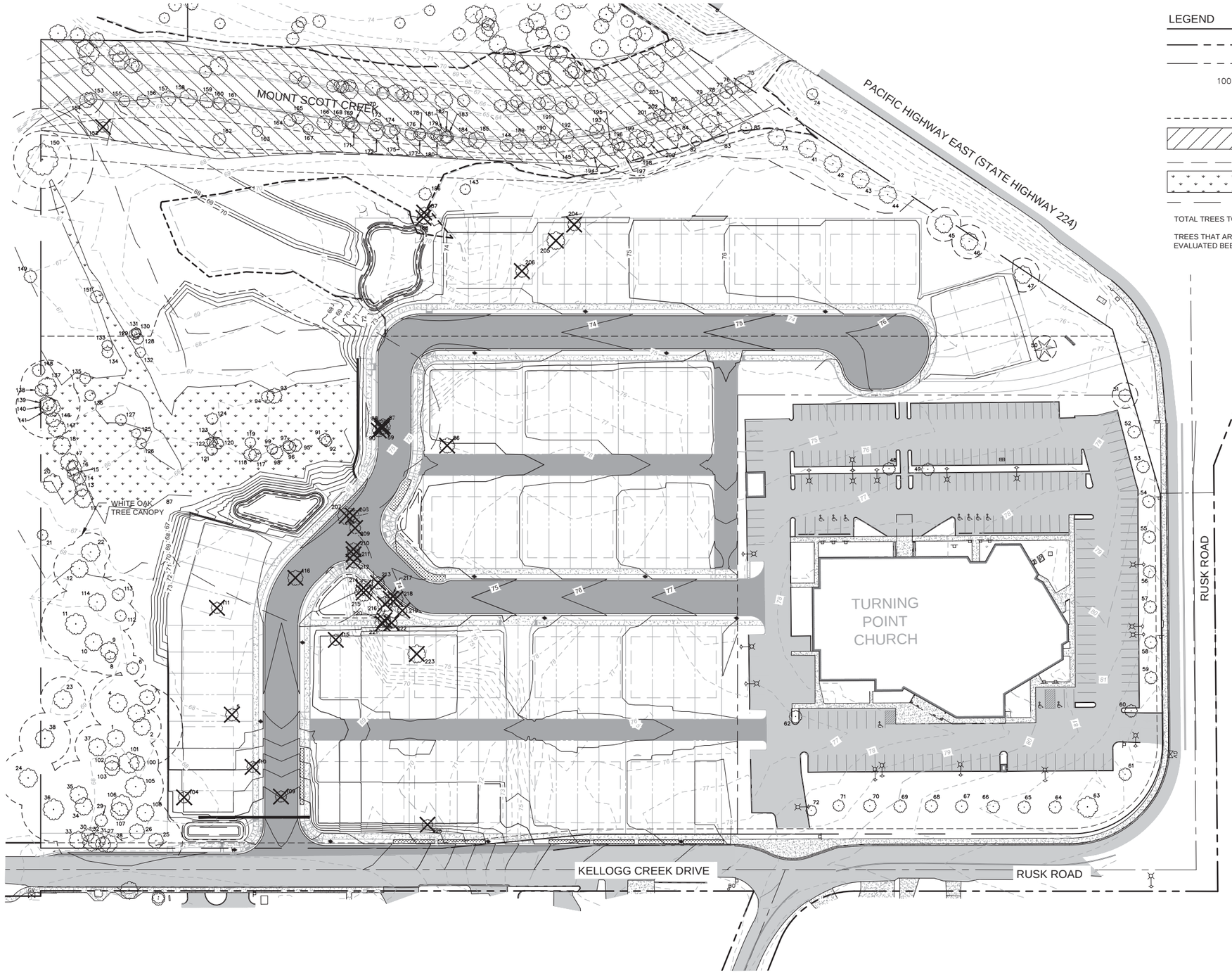
BROWNSTONE DEVELOPMENT
MILWAUKIE, OREGON
SEL/7 NE1/4 SEC. 6 T2S R2E W.M. EXISTING TAXLOTS 600, 700, 900, 901

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LEGEND

- EXISTING BOUNDARY LINE
- PROPOSED LOT LINE
- 100 — EXISTING TREE TO BE REMOVED
- TREE PROTECTION FENCING
- GIS VEGETATED CORRIDOR
- FLOOD PLAIN BOUNDARY
- WETLAND
- WETLAND BUFFER

TOTAL TREES TO BE REMOVED = 62

TREES THAT ARE NOT NUMBERED HAVE NOT BEEN EVALUATED BEEN BY THE TREE ARBORIST

REGISTERED PROFESSIONAL LANDSCAPE ARCHITECT
OREGON
J. SCOTT EMMENS

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EXPIRES: 12/31/2017

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KELLOGG CREEK SUBDIVISION

TREE PROTECTION & REMOVAL PLAN

BROWNSTONE DEVELOPMENT
MILWAUKIE, OREGON
SE1/7 NE1/4 SEC. 6 T2S R2E W.M. EXISTING TAXLOTS 600, 700, 900, 901

50 0 50 100
SCALE IN FEET

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Number	Dia (in)	White Oak (Y/N)	Remove (Y/N)
1	18	Y	N
2	18	Y	N
3	18	Y	N
4	20	Y	N
5	12	N	Y
6	12	Y	N
7	14	Y	N
8	10	Y	N
9	16	Y	N
10	16	Y	N
11	24	Y	N
12	18	Y	N
13	12	N	N
14	12	N	N
15	12	N	N
16	14x2	N	N
17	16	N	N
18	18	N	N
19	20	N	N
20	20	N	N
21	8	N	N
22	20	Y	N
23	20	Y	N
24	20	Y	N
25	14	Y	N
26	14x2	Y	N
27	14	Y	N
28	16	Y	N
29	12	N	N
30	12	Y	N
31	16	Y	N
32	16	Y	N
33	16	Y	N
34	16	Y	N
35	16x2	Y	N
36	24	Y	N
37	18	Y	N
38	20	Y	N
41	18	N	N
42	16	N	N
43	16	N	N
44	16	N	N
45	16	N	N
46	16	N	N
47	16	N	N
48	12	N	N
49	12	N	N
50	12x2	N	N
51	12	N	N
52	12	N	N
53	12	N	N
54	12	N	N
55	14	N	N
56	12	N	N
57	12	N	N
58	12	N	N
59	12	N	N
60	12	N	N
61	12	N	N
62	10	N	N
63	24	N	N
64	12	N	N
65	12	N	N
66	12	N	N
67	12	N	N
68	12	N	N
69	12	N	N
70	12	N	N
71	12	N	N
72	8	N	N
73	16	N	N
74	10	N	N
75	16	N	N
76	12x3	N	N
77	12	N	N
78	12	N	N
79	12	N	N
80	18	N	N
81	18	N	N
82	8	N	N
83	16	N	N
84	14	N	N
85	10	N	N
86	14	N	Y
87	14x2	N	Y
88	10	N	Y
89	12	N	Y
90	12	N	Y
91	10	N	N
92	8	N	N
93	14	N	N
94	12	N	N
95	12	N	N
96	12	N	N
97	8	N	N
98	12	N	N
99	8	N	N
100	14	Y	N
101	24	Y	N
102	8x6	N	N
103	14	Y	N
104	10	N	Y
105	24	Y	N
106	24	Y	N
107	18	N	N
108	16x2	N	N
109	10	N	Y
110	10	N	Y
111	10x5	N	Y
112	10	Y	N
113	12	Y	N
114	18	Y	N
115	10x8	N	Y
116	14	N	Y
117	12	N	N
118	12	N	N
119	8x2	N	N
120	8	N	N
121	10	N	N
122	8	N	N
123	6	N	N
124	10x2	N	N
125	6	N	N
126	8	N	N
127	10	N	N
128	8	N	N
129	8	N	N
130	6	N	N
131	6	N	N
132	8	N	N
133	8	N	N
134	10	N	N
135	10	N	N
136	8x2	N	N
137	20	Y	N
138	12	N	N
139	14	N	N
140	16	N	N
141	16	Y	N
143	8	N	N
144	12	N	N
145	14x2	Y	N
146	14	N	N
147	16x2	N	N
148	12x3	N	N
149	12	N	N
150	48	Y	N
151	12	N	N
152	8	N	Y
153	12	N	N
154	14	N	N
155	10x4	N	N
156	12x2	N	N
157	14	N	N
158	16	N	N
159	14	N	N
160	10x3	N	N
161	14	N	N
162	10	N	N
163	8x2	N	N
164	12	N	N
165	12	N	N
166	14	N	N
167	8	N	N
168	18	N	N
169	12	N	N
170	12	N	N
171	12	N	N
172	16x3	N	N
173	12	N	N
174	14	N	N
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176	12	N	N
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179	10x2	N	N
180	12	N	N
181	16	N	N
182	12	N	N
183	12	N	N
184	14x2	N	N
185	18x2	N	N
186	12x3	N	N
187	8x2	N	Y
188	10x2	N	Y
189	14x2	N	N
190	16	N	N
191	12	N	N
192	14x2	N	N
193	14	N	N
194	16	Y	N
195	16	Y	N
196	12	Y	N
197	16	Y	N
198	8	Y	N
199	19	Y	N
200	18	Y	N
201	12	N	N
202	12	N	N
203	10x2	N	N
204	12	N	Y
205	18x2	N	Y
206	12x4	N	Y
207	16	N	Y
208	12x2	N	Y
209	10x9	N	Y
210	12	N	Y
211	12	N	Y
212	12	N	Y
213	12	N	Y
214	14	N	Y
215	16	N	Y
216	14	N	Y
217	10	N	Y
218	14	N	Y
219	6x3	N	Y
220	12	N	Y
221	14	N	Y
222	10	N	Y
223	16x2	N	Y
225	8x3	N	Y

TOTAL TREES TO BE REMOVED = 36

TREES THAT ARE NOT NUMBERED HAVE NOT BEEN EVALUATED BEEN BY THE TREE ARBORIST

REGISTERED PROFESSIONAL ENGINEER
OREGON
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KELLOGG CREEK SUBDIVISION

TREE PROTECTION & REMOVAL TABLE

BROWNSTONE DEVELOPMENT
MILWAUKIE, OREGON
SEL/7 NE1/4 SEC. 6 T2S R2E W.M. EXISTING TAXLOTS 600, 700, 900, 901

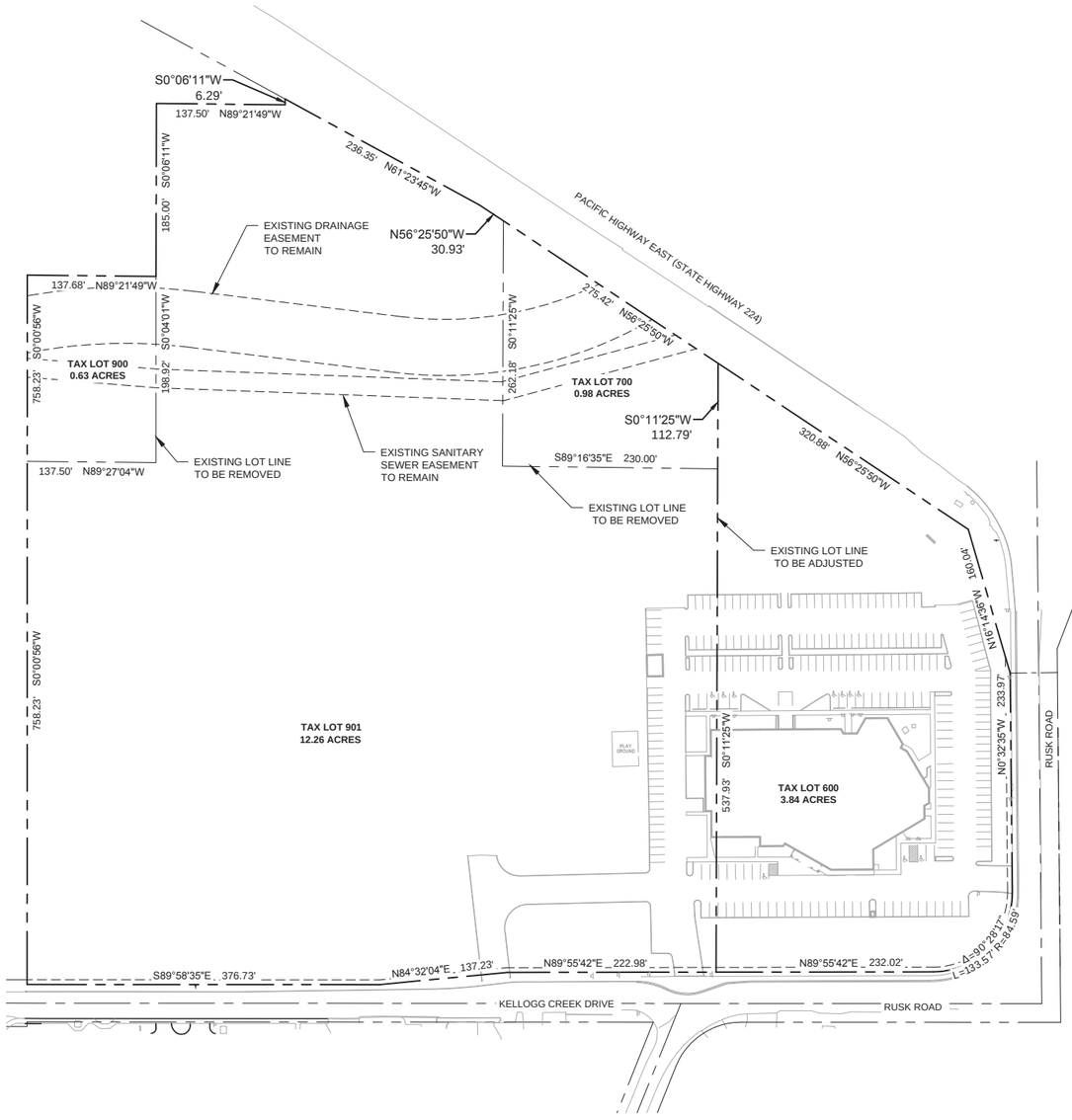
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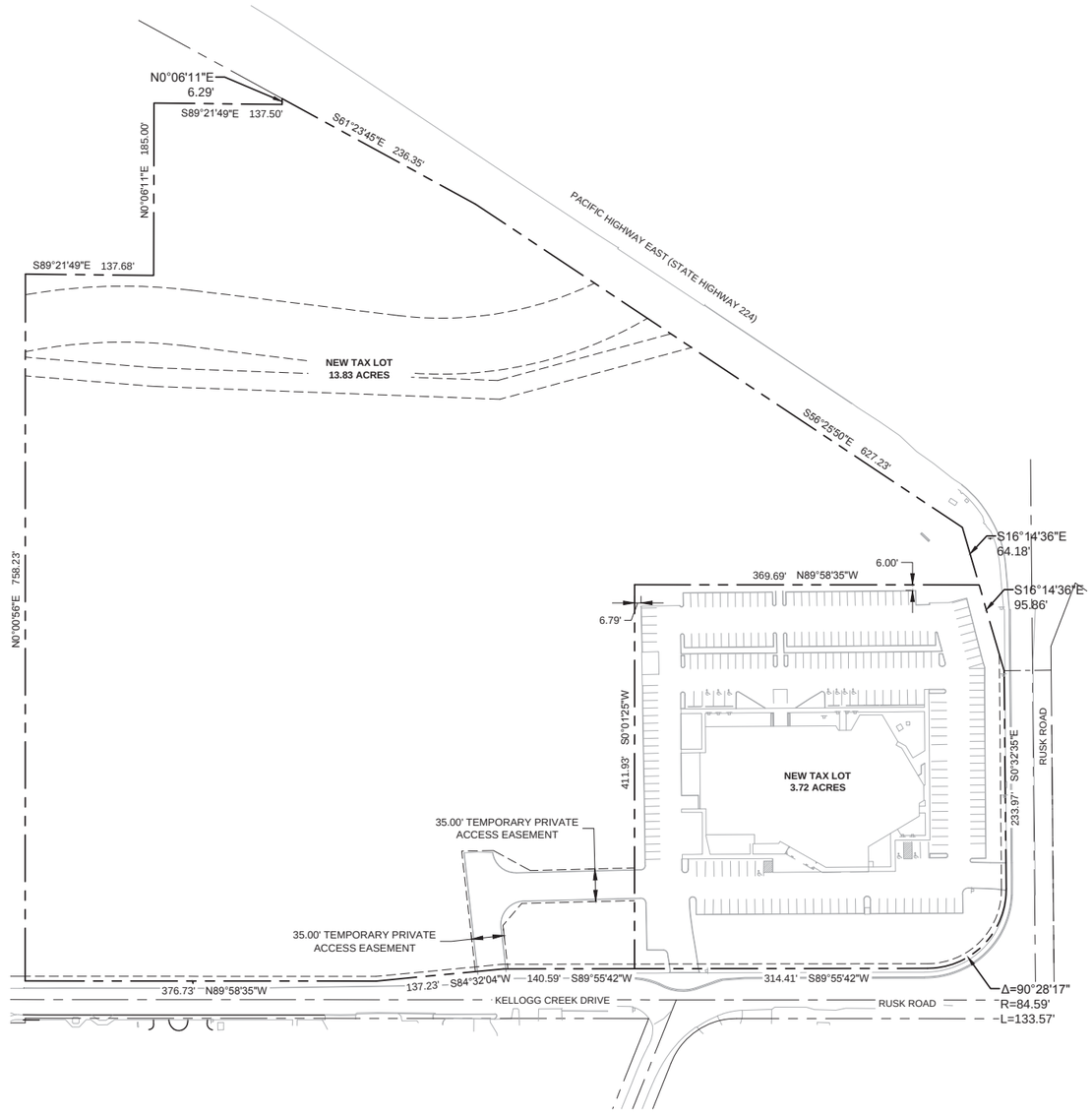
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EXISTING LOT LINES



PROPOSED LOT LINES

LOT CONSOLIDATION AND PROPERTY LOT LINE ADJUSTMENT



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PRELIMINARY LOT LINE ADJUSTMENT

BROWNSTONE DEVELOPMENT
MILWAUKIE, OREGON
SE1/7 NE1/4 SEC. 6 T2S R2E W.M. EXISTING TAXLOTS 600, 700, 900, 901

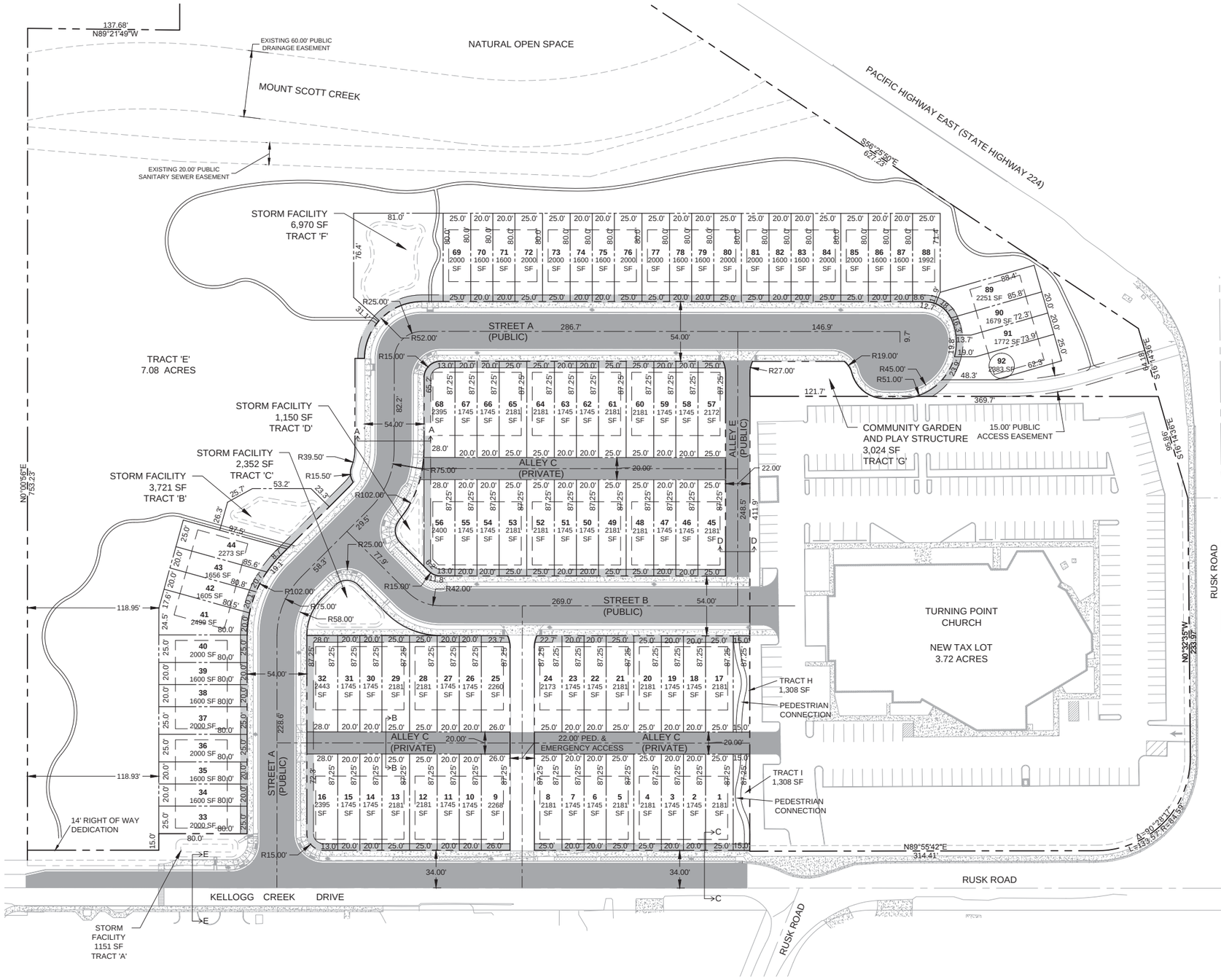
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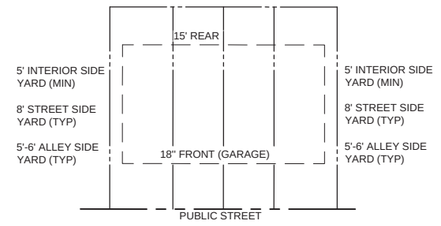


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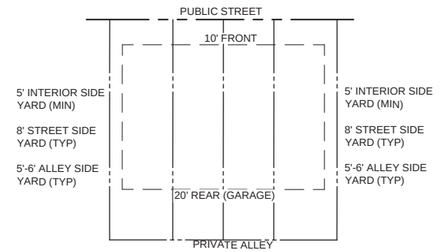
- ZONING BOUNDARY
- EXISTING CENTERLINE
- PROPOSED CENTERLINE
- PROPOSED LOT LINE
- PROPOSED RIGHT OF WAY LINE
- EXISTING RIGHT OF WAY LINE
- EXISTING PROPERTY LINE TO REMAIN
- EXISTING PROPERTY LINE TO REMOVE
- PROPOSED SETBACK LINE
- PROPOSED CURB AND GUTTER
- EXISTING EASEMENT
- PROPOSED 6' PUE

A A

SEE SHEET C202 FOR STREET SECTIONS



FRONT LOAD SETBACKS
1" = 30'



ALLEY LOAD SETBACKS
1" = 30'

50 0 50
SCALE IN FEET

REGISTERED PROFESSIONAL ENGINEER
OREGON
JANUARY 9, 2009
J. SCOTT EMMENS
EXPIRES: 12/31/2017

FOR REVIEW

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KELLOGG CREEK SUBDIVISION

PRELIMINARY PLAT

BROWNSTONE DEVELOPMENT
MILWAUKIE, OREGON
SEL/7 NE1/4 SEC. 6 T2S R2E W.M. EXISTING TAXLOTS 600, 700, 900, 901

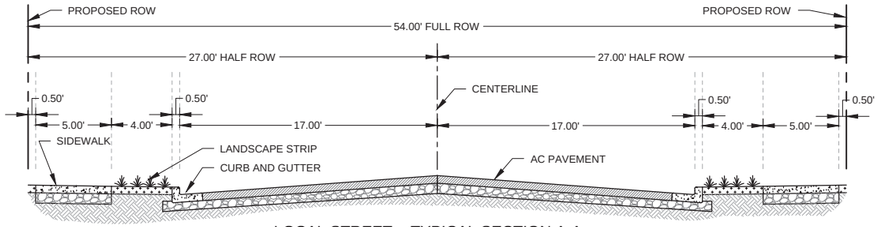
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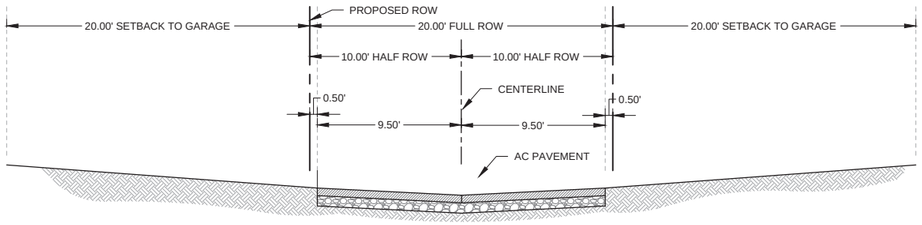
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RS277



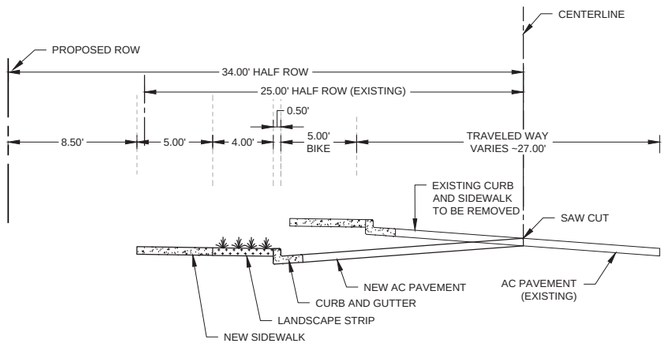
LOCAL STREET - TYPICAL SECTION A-A

HORIZONTAL SCALE: 1" = 5'



ALLEY - TYPICAL SECTION B-B

HORIZONTAL SCALE: 1" = 5'

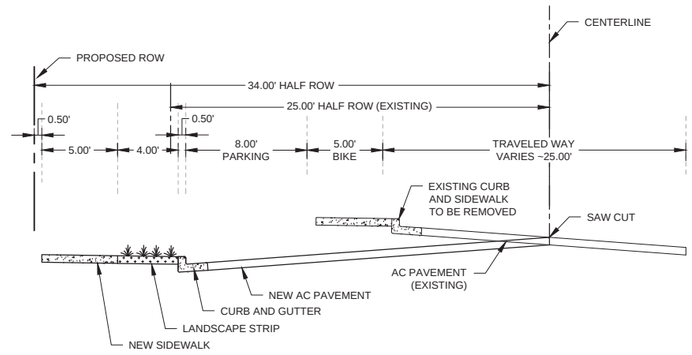


KELLOGG CREEK DRIVE - TYPICAL SECTION E-E

HORIZONTAL SCALE: 1" = 5'

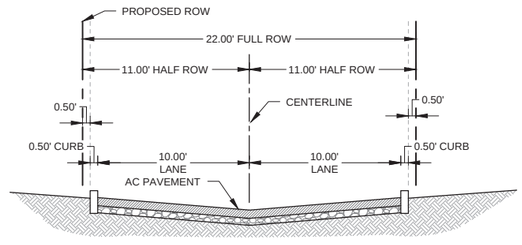
NOTES:

1. SEE PLAN FOR WIDENED ROW FOR STORM FACILITY.
2. SEE PLAN FOR SECTION OF KELLOG CREK DRIVE TO HAVE CURB TIGHT AND DETACHED VARYING OFFSET SIDEWALK.



KELLOGG CREEK DRIVE - TYPICAL SECTION C-C

HORIZONTAL SCALE: 1" = 5'



PUBLIC ALLEY - TYPICAL SECTION D-D

HORIZONTAL SCALE: 1" = 5'

\\bli-fs\bli-projects\22\14258-01\65CAD_DD\SC14-CS-SI-KELL.dwg PLOT DATE 2017-6-12 14:28 SAVED DATE 2017-06-09 13:55 USER: kglidden

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 9, 2004
J. SCOTT EMMENS
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EXPIRES: 12/31/2017

DOWL
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KELLOGG CREEK SUBDIVISION

TYPICAL STREET SECTIONS

BROWNSTONE DEVELOPMENT
MILWAUKIE, OREGON
SE1/7 NE1/4 SEC. 6 T2S R2E W.M. EXISTING TAXLOTS 600, 700, 900, 901

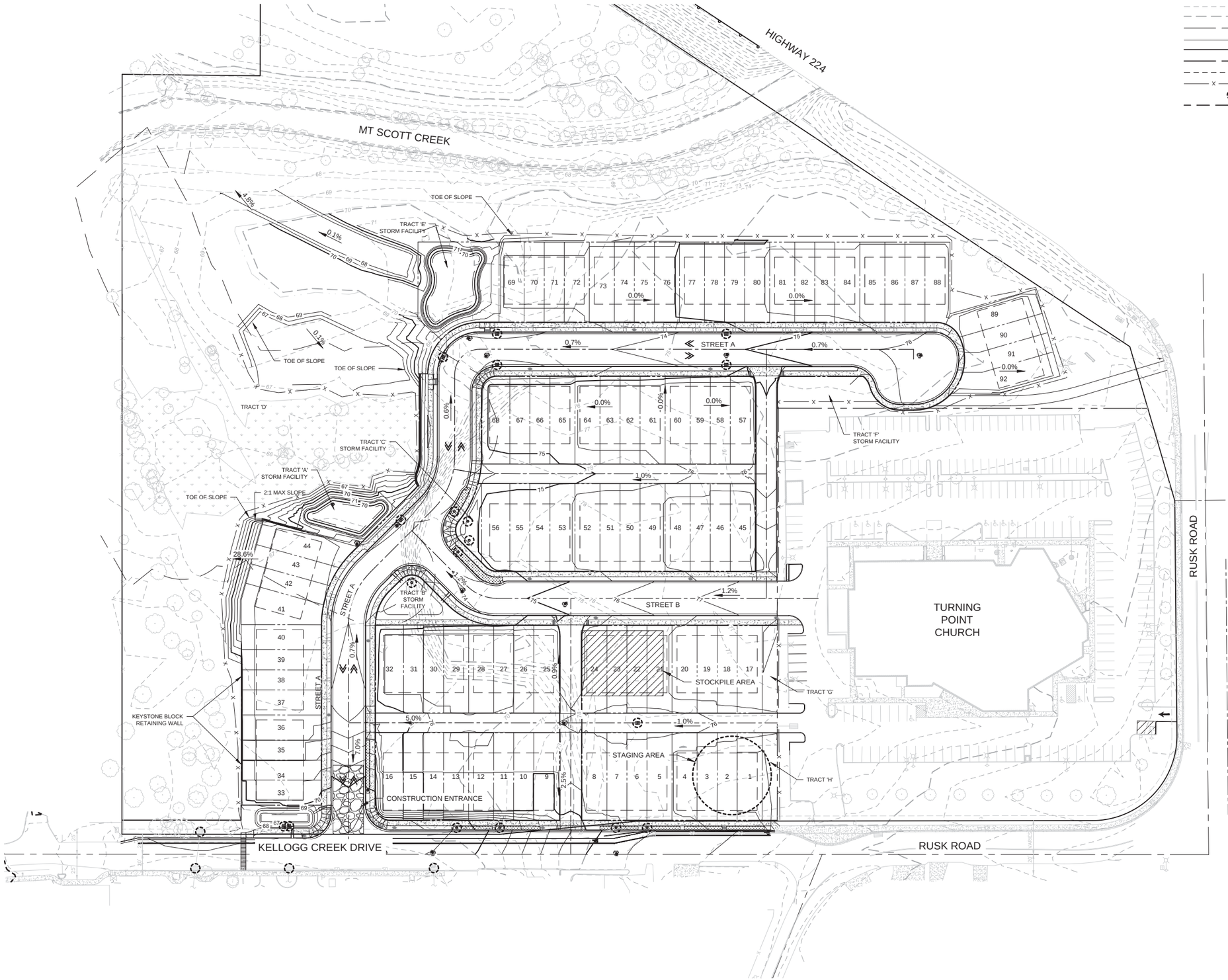
PROJECT	14258-01
DATE	06/12/2017

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SHEET

C202

RS278



RS279

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OREGON
J. SCOTT EMMENS
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KELLOGG CREEK SUBDIVISION

GRADING PLAN

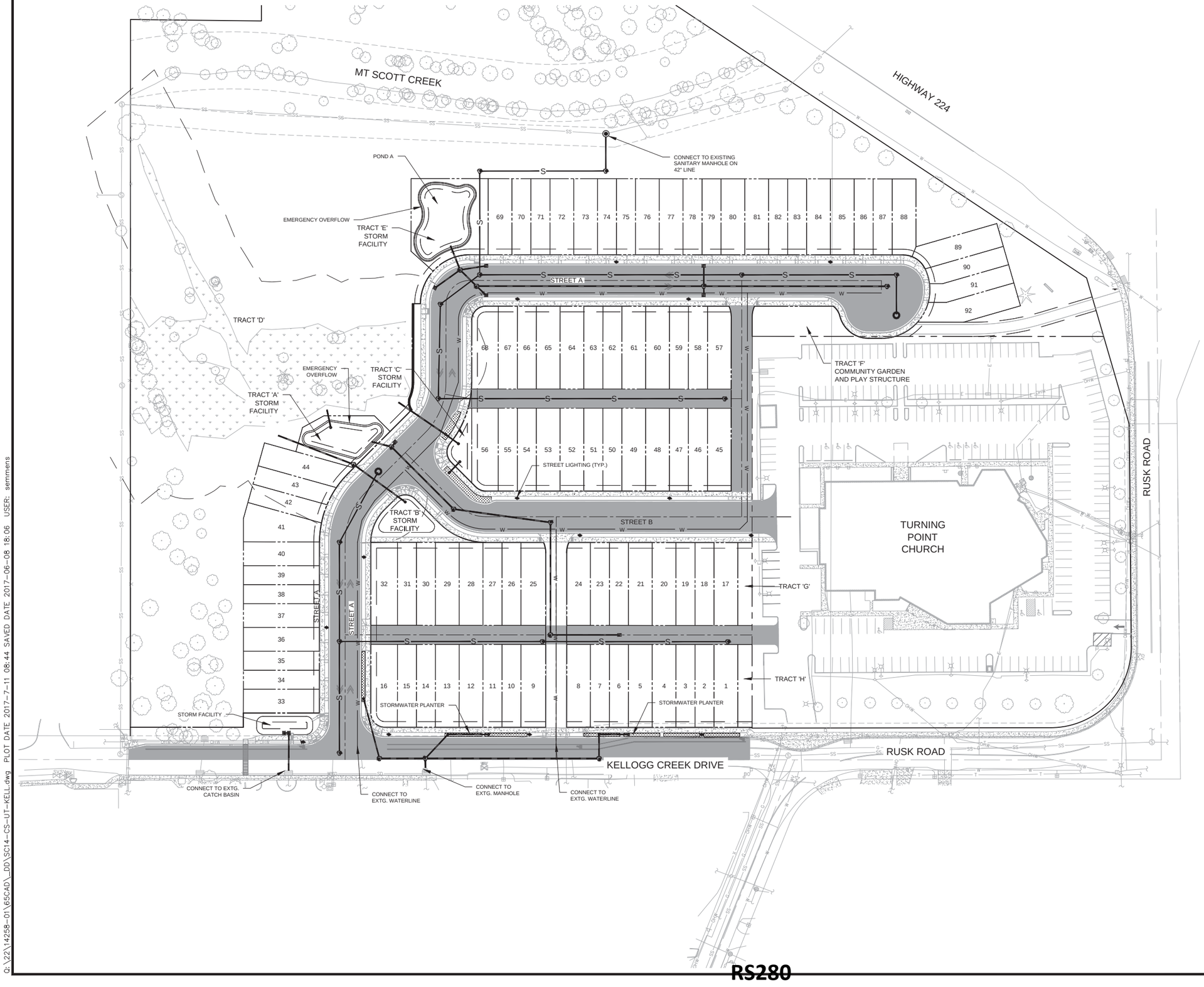
BROWNSTONE DEVELOPMENT
MILWAUKIE, OREGON
SE1/7 NE1/4 SEC. 6 T2S R2E W.M. EXISTING TAXLOTS 600, 700, 900, 901

PROJECT	14258-01
DATE	06/12/2017

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SHEET
C300

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LEGEND:

- S — EXISTING SANITARY SEWER LINE
- SD — EXISTING STORM LINE
- W — EXISTING WATER LINE
- EXISTING STORM MAN HOLE
- EXISTING SANITARY MAN HOLE
- EXISTING CATCH BASIN
- EXISTING WATER VALVE
- S — PROPOSED SANITARY SEWER LINE
- SD — PROPOSED STORM LINE
- W — PROPOSED WATER LINE
- PROPOSED SANITARY MAN HOLE
- PROPOSED STORM MAN HOLE
- PROPOSED CATCH BASIN
- PROPOSED STORMWATER PLANTER

NOTES:

1. OUTFALL A AND B: SEE SECTION '6.3 FLOW DISPERSION' OF THE STORM WATER REPORT DATED JANUARY 12, 2017 PREPARED BY DOWL.

REGISTERED PROFESSIONAL ENGINEER — OREGON — J. SCOTT EMMENS — 80608PE — FOR REVIEW ONLY — EXPIRES: 12/31/2017

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KELLOGG CREEK SUBDIVISION

COMPOSITE UTILITY PLAN

BROWNSTONE DEVELOPMENT
MILWAUKIE, OREGON
SE1/7 NE1/4 SEC. 6 T2S R2E W.M. EXISTING TAXLOTS 600, 700, 900, 901

PROJECT	14258-01
DATE	06/12/2017

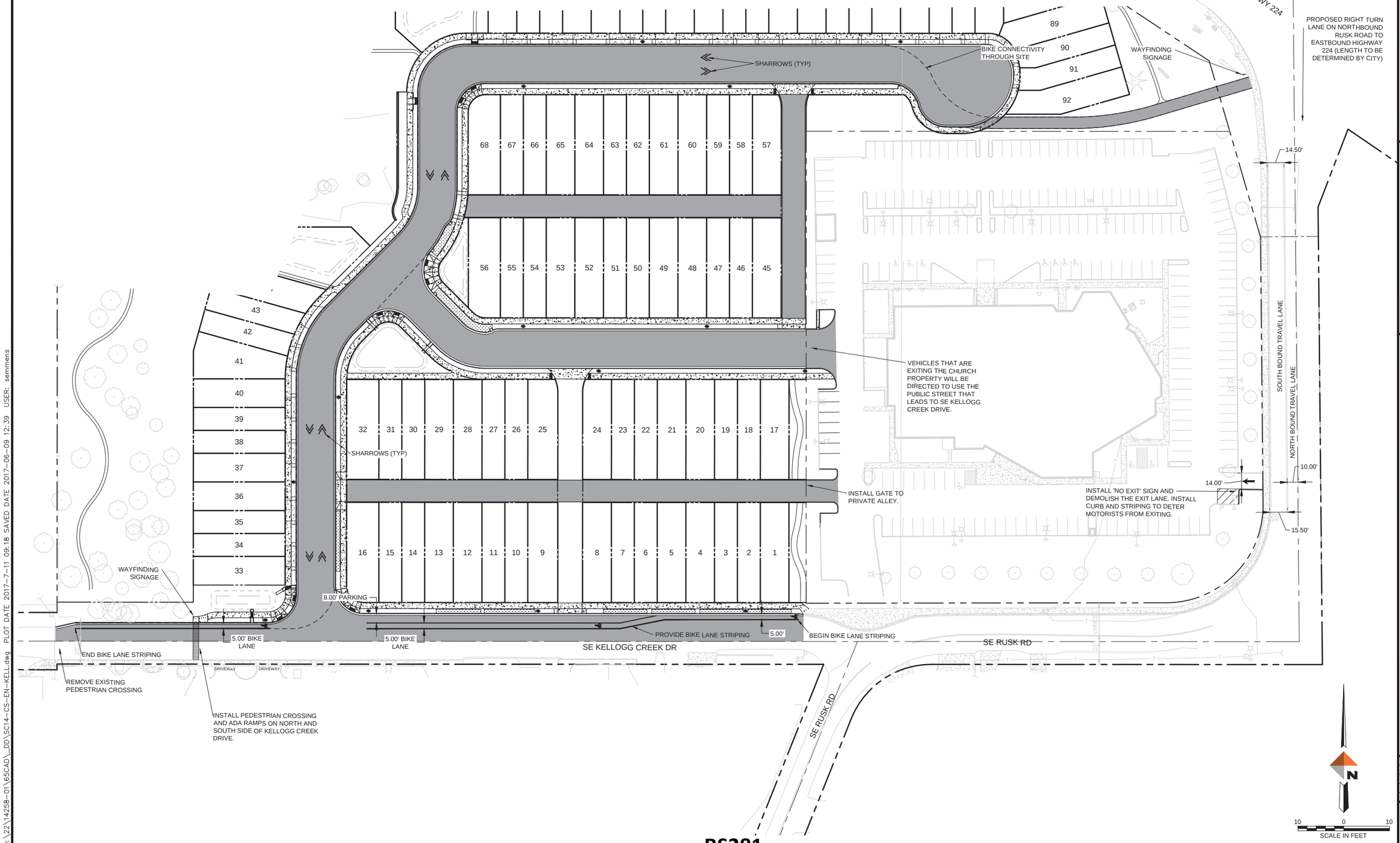
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SHEET
C400

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SCALE IN FEET

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RS280



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OREGON
J. SCOTT EMMENS
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KELLOGG CREEK SUBDIVISION
PUBLIC INTERSECTION
BROWNSTONE DEVELOPMENT
MILWAUKIE, OREGON
SE1/7 NE1/4 SEC. 6 T2S R2E W.M. EXISTING TAXLOTS 600, 700, 900, 901

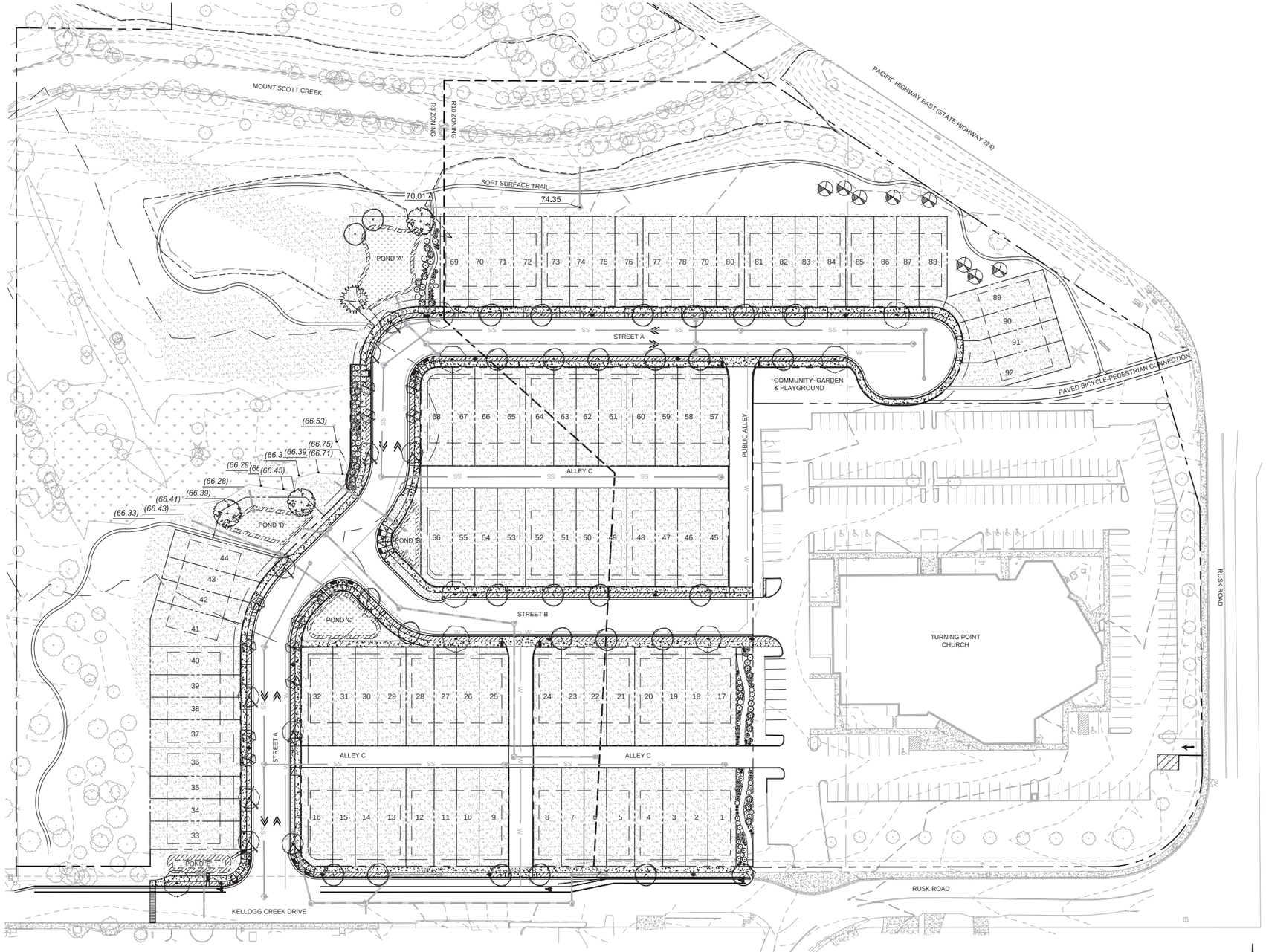
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DATE	06/12/2017

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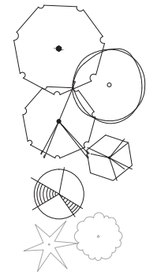
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RS281

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FRONTAGE AND OPEN SPACE MATERIALS LEGEND



TREES

ITEM	SIZE / SPACING	QUANTITY
A. TRUN. x A. PLAT. 'WARRENRED' PACIFIC SUNSET MAPLE	1.5" CAL. / B&B AS SHOWN	8
ACER GRISEUM PAPERBARK MAPLE	1.5" CAL. / B&B AS SHOWN	27
GINKGO BILOBA 'PRINCETON SENTRY' PRINCETON SENTRY GINKGO	1.5" CAL. / B&B AS SHOWN	10
CARPINUS BETULUS 'FRANS FONTAINE' FRANS FONTAINE HORNBEAM	1.5" CAL. / B&B AS SHOWN	12
THUJA PLICATA WESTERN RED CEDAR	4' HEIGHT MINIMUM	8
EXISTING TREE TO REMAIN	AS NOTED	

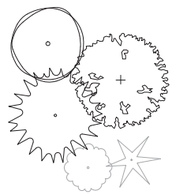
SHRUBS & ACCENTS

ITEM	SIZE / SPACING	QUANTITY
MAHONIA AQUIFOLIUM OREGON GRAPE	1 GAL. AS SHOWN	27
RIBES SANGUINEUM RED-FLOWERING CURRENT	3 GAL. AS SHOWN	31
VACCINIUM OVATUM EVERGREEN HUCKLEBERRY	3 GAL. AS SHOWN	23
ROSMARINUS OFFICINALIS 'ARP' ARP ROSEMARY	1 GAL. AS SHOWN	29
CAL. ACUTIFLORA 'KARL FOERSTER' KARL FOERSTER REED GRASS	1 GAL. AS SHOWN	47

GROUNDCOVERS & MISCELANEOUS

ITEM	SIZE / SPACING	QUANTITY
ARCTO. UVA-URSI 'MASSACHUSETTS' MASSACHUSETTS KINNICKINNICK	1 GALLON 3'-0" O.C.	8,279 SF - PLANTS
NATIVE EROSION CONTROL GRASS MIX SUNMARK SEEDS - FAIRVIEW, OR	SEED @ 1 LBS. / 1,000 SF	215,368 SF 215 LBS
CROCUS V. 'GIANT DUTCH' & N. TETE-A-TETE GIANT CROCUS & TETE-A-TETE DAFFODIL	BULBS 20 / 100 SF	120 SF 24 BULBS
SOFT SURFACE TRAIL	2'-6" WIDTH	

WATER QUALITY FACILITY MATERIALS LEGEND



TREES

ITEM	SIZE / SPACING	QUANTITY
ACER GRISEUM PAPERBARK MAPLE	1.5" CAL. / B&B AS SHOWN	2
ALNUS RUBRA RED ALDER	1.5" CAL. / B&B AS SHOWN	3
PSEUDOTSUGA MENZIESII DOUGLAS FIR	6' HT / B&B AS SHOWN	1
EXISTING TREES TO REMAIN	AS NOTED	

SHRUBS & ACCENTS

ITEM	SIZE / SPACING	QUANTITY
MAHONIA AQUIFOLIUM OREGON GRAPE	2 GALLON 7 PLANTS / 100 SF	-
CORNUS SERICEA RED TWIG DOGWOOD	2 GALLON 7 PLANTS / 100 SF	-
ROSA NOOTKANA NOOTKA ROSE	2 GALLON 7 PLANTS / 100 SF	-

GROUNDCOVERS & MISCELANEOUS

ITEM	SIZE / SPACING	QUANTITY
ARCTO. UVA-URSI 'MASSACHUSETTS' MASSACHUSETTS KINNICKINNICK	1 GALLON 70 / 100 SF	2,580 SF 1,806 PLANTS
SEDGE / RUSH MIX 50% CAREX STIPATA 50% JUNCUS PATENS	1 GALLON 80 PLANTS / 100 SF	7,422 SF 5,938 PLANTS

STORMWATER FACILITY REQUIREMENTS:

ZONE A TOTALS: 7,422 SF
REQUIRES: 80 HERBACEOUS / 100 SF = 5,938 HERBACEOUS
PROPOSED: 5,938 HERBACEOUS

ZONE B TOTALS: 2,580 SF
REQUIRES: 7 SHRUBS / 100 SF = 1,81 SHRUBS
PROPOSED: 181 SHRUBS (MIX OF SPECIES)

50 0 50
SCALE IN FEET

N

REGISTERED
749
PATRICK C. MAJOR
OREGON
05/13/11
LANDSCAPE ARCHITECT
EXPIRES 05/31/17

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KELLOGG CREEK SUBDIVISION

PLANTING PLAN - OVERALL

BROWNSTONE DEVELOPMENT
MILWAUKIE, OREGON
SE1/7 NE1/4 SEC. 6 T2S R2E W.M. EXISTING TAXLOTS 600, 700, 900, 901

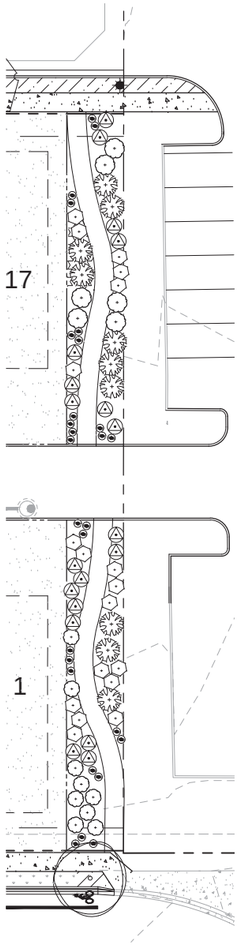
PROJECT	14258-01
DATE	07/07/2017

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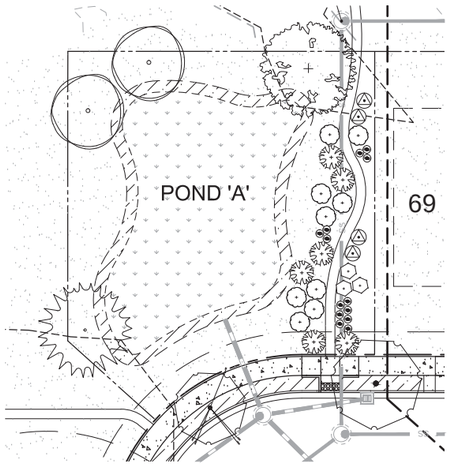
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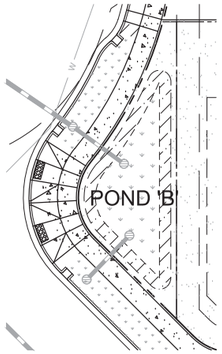
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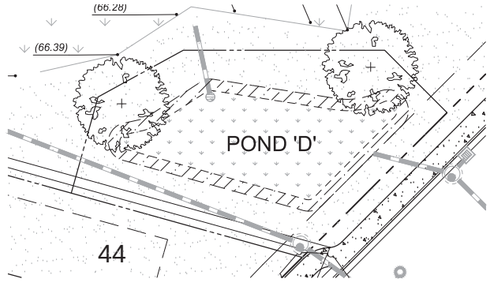
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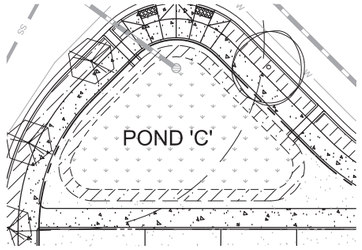


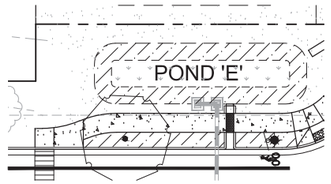
A OPEN SPACE TRACTS





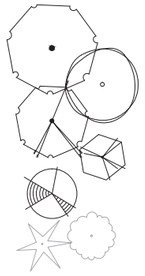






B WATER QUALITY FACILITIES

FRONTAGE AND OPEN SPACE MATERIALS LEGEND



TREES

ITEM	SIZE / SPACING	QUANTITY
A. TRUN. x A. PLAT. 'WARRENRED' PACIFIC SUNSET MAPLE	1.5" CAL. / B&B AS SHOWN	8
ACER GRISEUM PAPERBARK MAPLE	1.5" CAL. / B&B AS SHOWN	27
GINKGO BILOBA 'PRINCETON SENTRY' PRINCETON SENTRY GINKGO	1.5" CAL. / B&B AS SHOWN	10
CARPINUS BETULUS 'FRANS FONTAINE' FRANS FONTAINE HORNBEAM	1.5" CAL. / B&B AS SHOWN	12
THUJA PLICATA WESTERN RED CEDAR	4' HEIGHT MINIMUM	8
EXISTING TREE TO REMAIN	AS NOTED	

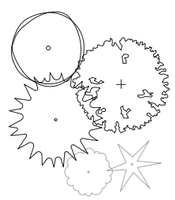
SHRUBS & ACCENTS

ITEM	SIZE / SPACING	QUANTITY
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RIBES SANGUINEUM RED-FLOWERING CURRENT	3 GAL. AS SHOWN	31
VACCINIUM OVATUM EVERGREEN HUCKLEBERRY	3 GAL. AS SHOWN	23
ROSMARINUS OFFICINALIS 'ARP' ARP ROSEMARY	1 GAL. AS SHOWN	29
CAL. ACUTIFLORA 'KARL FOERSTER' KARL FOERSTER REED GRASS	1 GAL. AS SHOWN	47

GROUNDCOVERS & MISCELANEOUS

ITEM	SIZE / SPACING	QUANTITY
ARCTO. UVA-URSI 'MASSACHUSETTS' MASSACHUSETTS KINNICKINNICK	1 GALLON 3'-0" O.C.	8,279 SF - PLANTS
NATIVE EROSION CONTROL GRASS MIX SUNMARK SEEDS - FAIRVIEW, OR	SEED @ 1 LBS. / 1,000 SF	215,368 SF 215 LBS
CROCUS V. 'GIANT DUTCH' & N. TETE-A-TETE GIANT CROCUS & TETE-A-TETE DAFFODIL	BULBS 20 / 100 SF	120 SF 24 BULBS
SOFT SURFACE TRAIL	2'-6" WIDTH	

WATER QUALITY FACILITY MATERIALS LEGEND



TREES

ITEM	SIZE / SPACING	QUANTITY
ACER GRISEUM PAPERBARK MAPLE	1.5" CAL. / B&B AS SHOWN	2
ALNUS RUBRA RED ALDER	1.5" CAL. / B&B AS SHOWN	3
PSEUDOTSUGA MENZIESII DOUGLAS FIR	6' HT / B&B AS SHOWN	1
EXISTING TREES TO REMAIN	AS NOTED	

SHRUBS & ACCENTS

ITEM	SIZE / SPACING	QUANTITY
MAHONIA AQUIFOLIUM OREGON GRAPE	2 GALLON 7 PLANTS / 100 SF	-
CORNUS SERICEA RED TWIG DOGWOOD	2 GALLON 7 PLANTS / 100 SF	-
ROSA NOOTKANA NOOTKA ROSE	2 GALLON 7 PLANTS / 100 SF	-

GROUNDCOVERS & MISCELANEOUS

ITEM	SIZE / SPACING	QUANTITY
ARCTO. UVA-URSI 'MASSACHUSETTS' MASSACHUSETTS KINNICKINNICK	1 GALLON 70 / 100 SF	2,580 SF 1,806 PLANTS
SEDGE / RUSH MIX 50% CAREX STIPATA 50% JUNCUS PATENS	1 GALLON 80 PLANTS / 100 SF	7,422 SF 5,938 PLANTS

STORMWATER FACILITY REQUIREMENTS:

ZONE A TOTALS: 7,422 SF
REQUIRES: 80 HERBACEOUS / 100 SF = 5,938 HERBACEOUS
PROPOSED: 5,938 HERBACEOUS

ZONE B TOTALS: 2,580 SF
REQUIRES: 7 SHRUBS / 100 SF = 1,81 SHRUBS
PROPOSED: 181 SHRUBS (MIX OF SPECIES)

20 0 20
SCALE IN FEET

N

REGISTERED LANDSCAPE ARCHITECT
OREGON
PATRICK GILMOR
749
EXPIRES 05/31/17
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05/13/17

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KELLOGG CREEK SUBDIVISION

PLANTING PLAN - ENLARGEMENTS

BROWNSTONE DEVELOPMENT
MILWAUKIE, OREGON
SE1/7 NE1/4 SEC. 6 T2S R2E W.M. EXISTING TAXLOTS 600, 700, 900, 901

PROJECT	14258-01
DATE	07/07/2017

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SHEET
L110

RS283

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FRONT LOAD UNITS



ALLEY LOAD UNITS

RS284

REGISTERED PROFESSIONAL ENGINEER
OREGON
J. SCOTT EMMENS
EXPIRES: 12/31/2017

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KELLOGG CREEK SUBDIVISION

TOWNHOME RENDERINGS

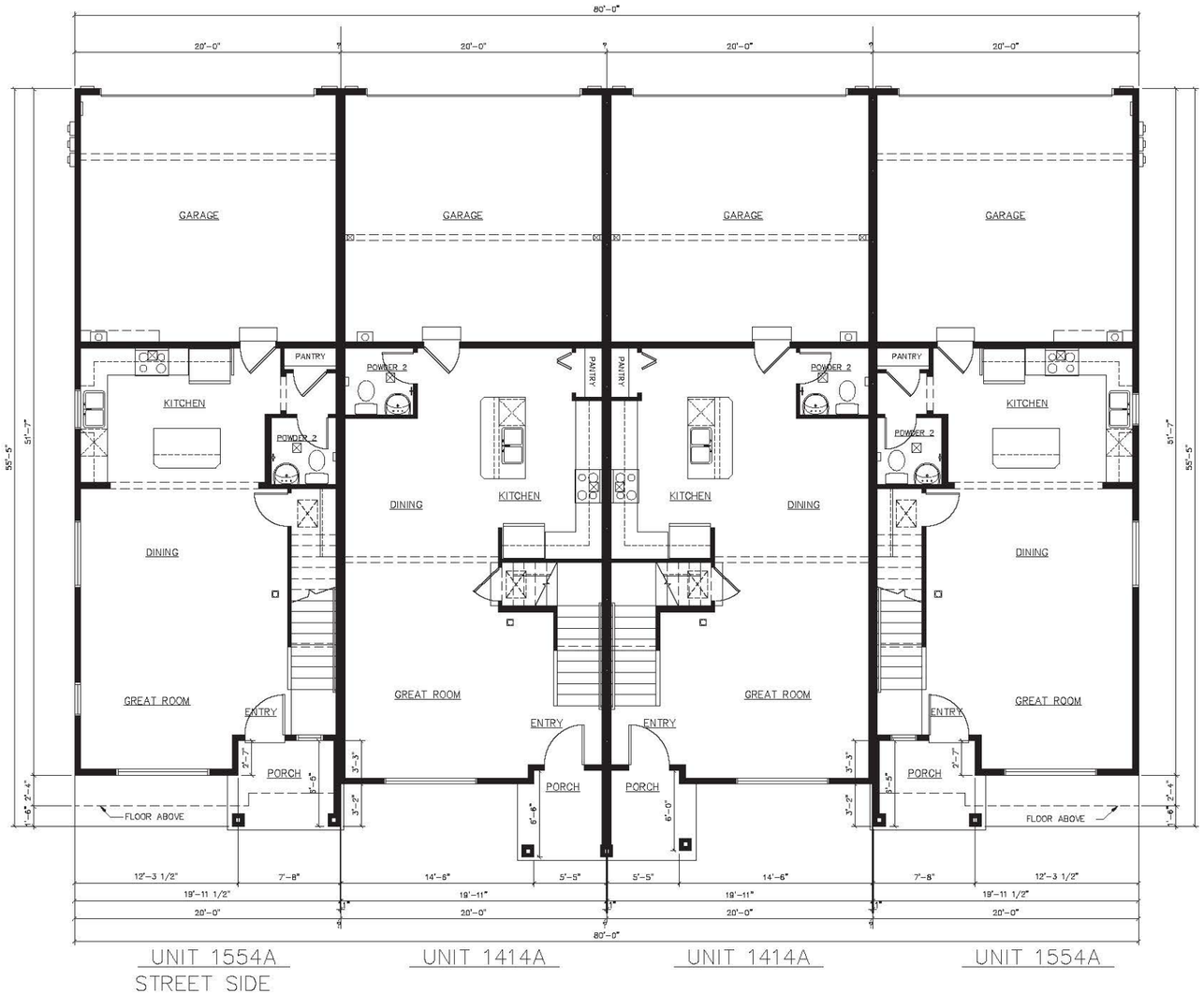
BROWNSTONE DEVELOPMENT
MILWAUKIE, OREGON
SE1/7 NE1/4 SEC. 6 T2S R2E W.M. EXISTING TAXLOTS 600, 700, 900, 901

PROJECT	14258-01
DATE	06/12/2017

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SHEET
A100

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MAIN FLOOR PLANS 4-PLEX BUILDING TYPE A1

SCALE 3/16" = 1'-0"

RS285

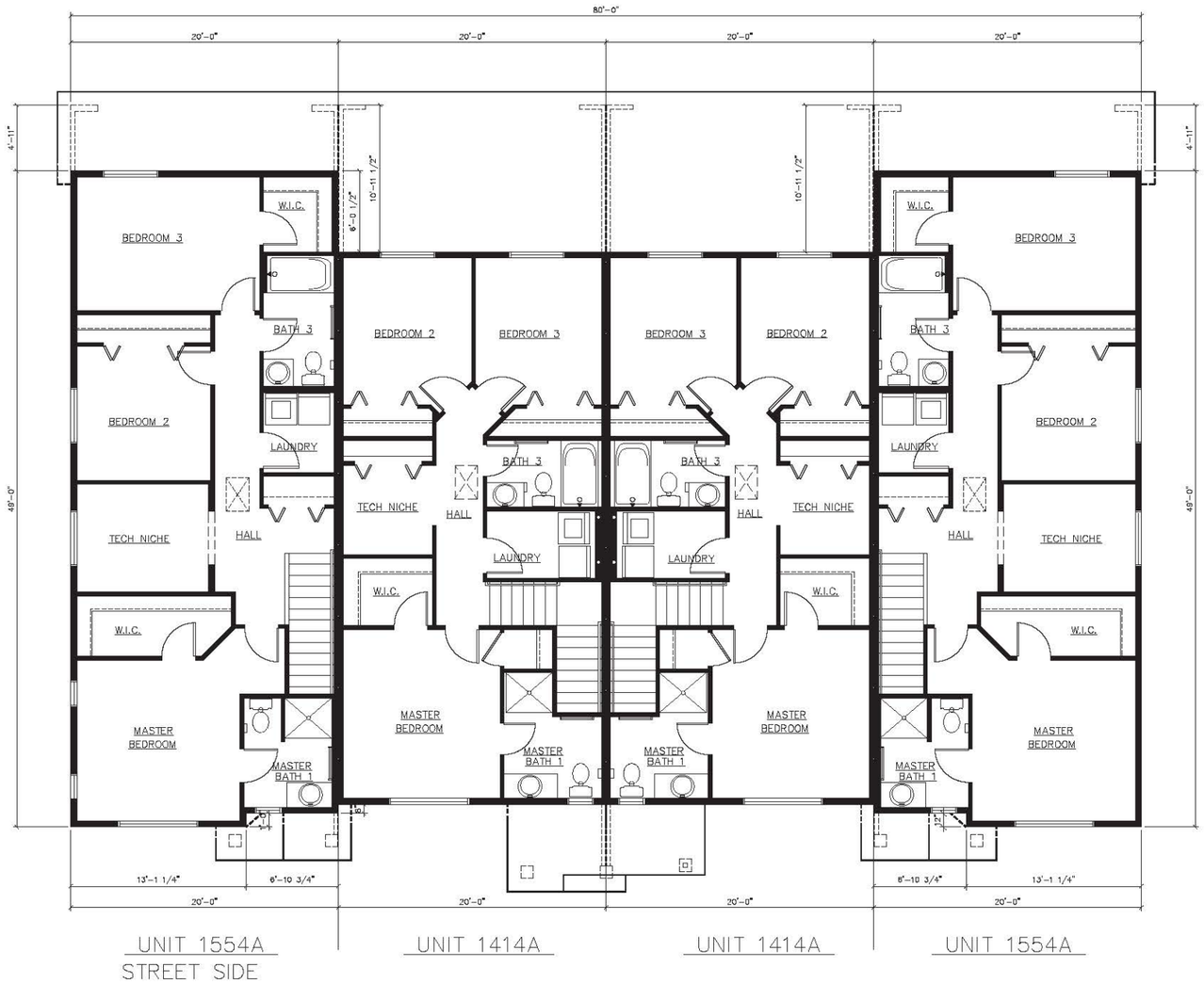
STRUCTURAL DESIGN:
VOELKER ENGINEERING
1911 116th Ave. NE
Bellevue, WA 98004
425-451-4946

BUILDER/DESIGNER:
D.R. HORTON
4380 SW Macadam Ave, Suite 100
Portland, OR 97239
503-222-3719

KELLOGG CREEK ALLEY
MAIN FLOOR

8/05/15

A2



UPPER FLOOR PLANS TYPE A1

SCALE 3/16" = 1'-0"

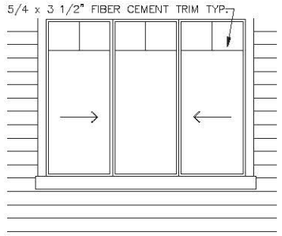
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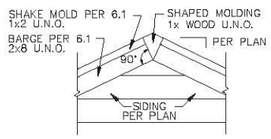
STRUCTURAL DESIGN:
VOELKER ENGINEERING
1911 116th Ave. NE
Bellevue, WA 98004
425-451-4946

BUILDER/DESIGNER:
D.R. HORTON
4380 SW Macadam Ave, Suite 100
Portland, OR 97239
503-222-3719

KELLOGG CREEK ALLEY
UPPER FLOOR

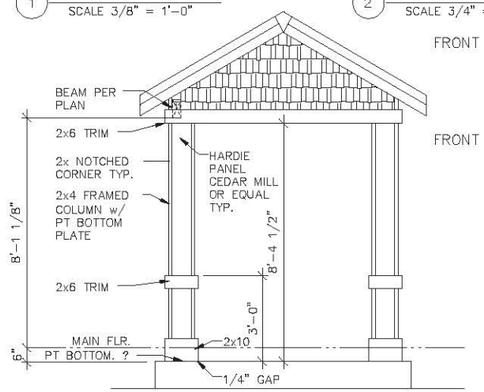
A4





1 TYP. WINDOW TRIM
SCALE 3/8" = 1'-0"

2 GABLE END TRIM
SCALE 3/4" = 1'-0"



3 PORCH DETAIL
SCALE 3/8" = 1'-0"

FRONT ELEVATION GLAZING PERCENTAGE

WALL AREA	=	1,424 SF
GLAZING AREA	=	302 SF
GLAZING %	=	21.2 %

FRONT ELEVATION SIDING PERCENTAGE

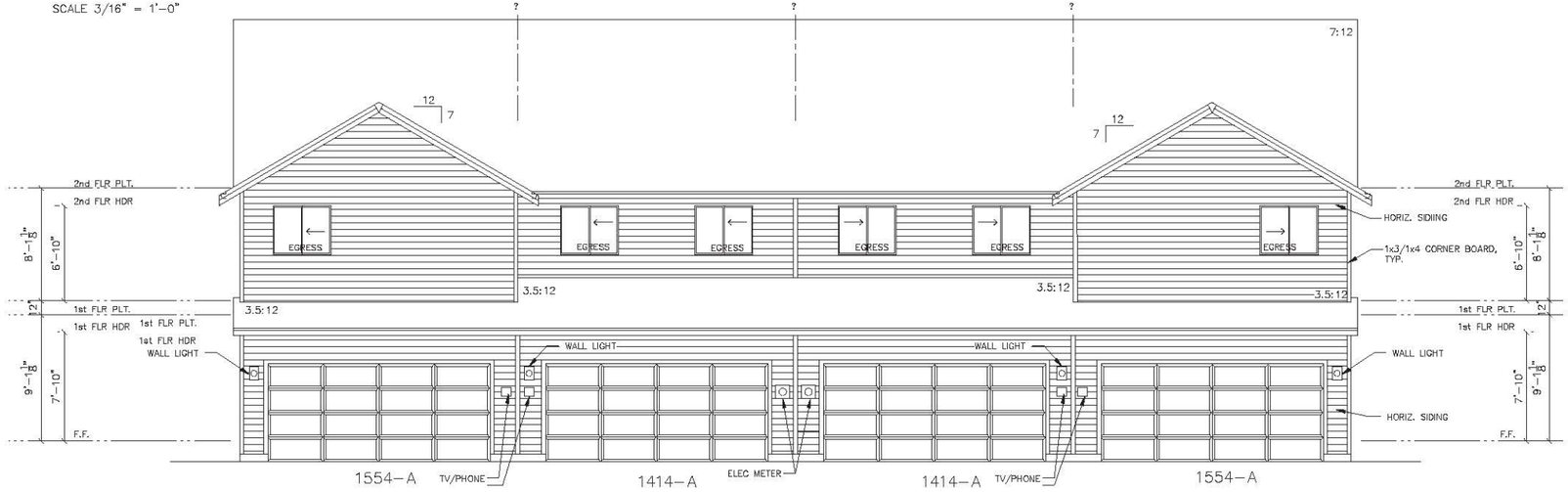
WALL AREA	=	1,424 SF
SIDING AREA	=	632 SF
SIDING %	=	44.4 %

BUILDING DETAILED DESIGN ELEMENTS PER 19.505.1.C.4:

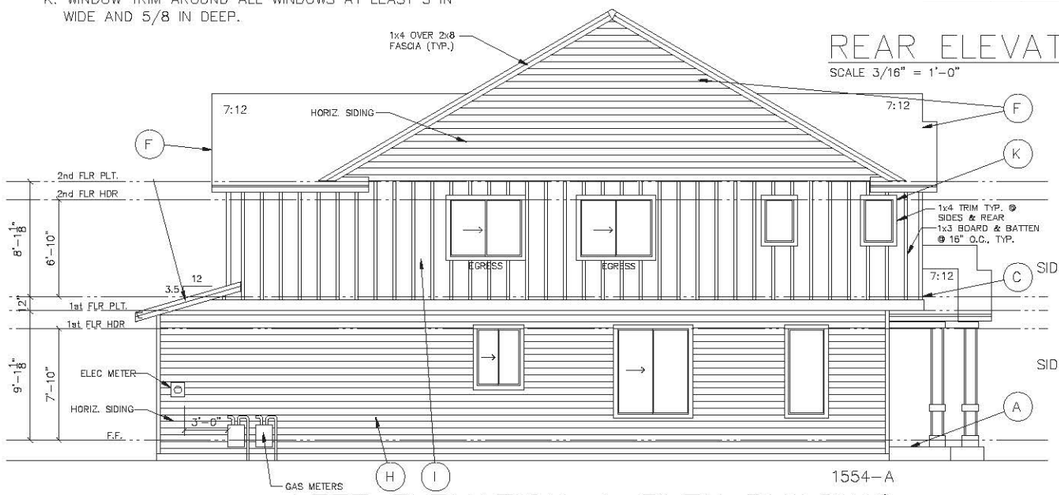
A. COVERED PORCH AT LEAST 5 FT DEEP, AS MEASURED HORIZONTALLY FROM THE FACE OF THE MAIN BUILDING FAÇADE TO THE EDGE OF THE DECK, AND AT LEAST 5 FT WIDE.
C. OFFSET ON THE BUILDING FACE OF AT LEAST 16 IN FROM 1 EXTERIOR WALL SURFACE TO THE OTHER.
F. ROOF LINE OFFSETS OF AT LEAST 2 FT FROM THE TOP SURFACE OF 1 ROOF TO THE TOP SURFACE OF THE OTHER.
H. HORIZONTAL LAP SIDING BETWEEN 3 TO 7 IN WIDE (THE VISIBLE PORTION ONCE INSTALLED). THE SIDING MATERIAL MAY BE WOOD, FIBER-CEMENT, OR VINYL.
I. BRICK, CEDAR SHINGLES, STUCCO, OR OTHER SIMILAR DECORATIVE MATERIALS COVERING AT LEAST 40% OF THE STREET-FACING FAÇADE.
K. WINDOW TRIM AROUND ALL WINDOWS AT LEAST 3 IN WIDE AND 5/8 IN DEEP.



FRONT ELEVATION 4-PLEX BUILDING
SCALE 3/16" = 1'-0"



REAR ELEVATION 4-PLEX BUILDING
SCALE 3/16" = 1'-0"



SIDE ELEVATION GLAZING PERCENTAGE

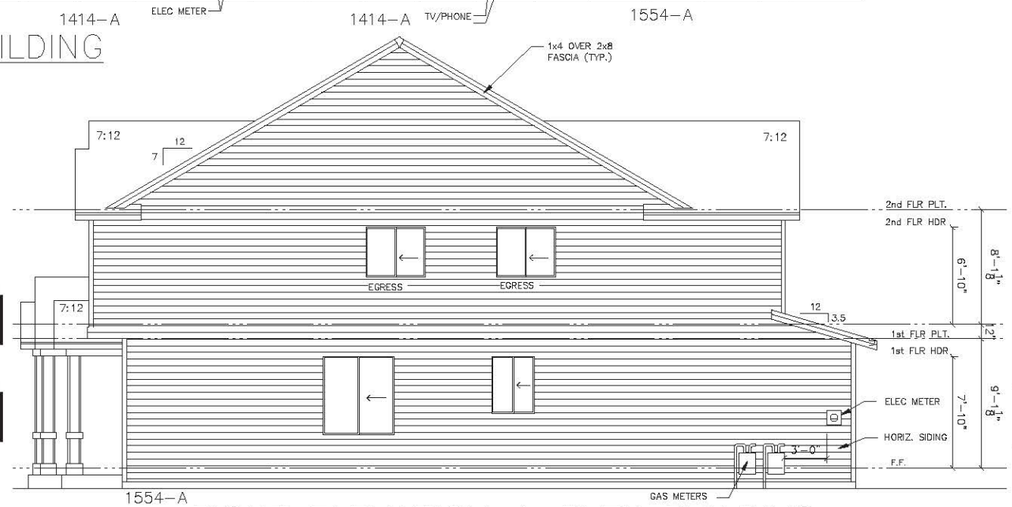
WALL AREA	=	906 SF
GLAZING AREA	=	109 SF
GLAZING %	=	12.0 %

SIDE ELEVATION SIDING PERCENTAGE

WALL AREA	=	906 SF
SIDING AREA	=	435 SF
SIDING %	=	48.0 %

LEFT ELEVATION 4-PLEX BUILDING
STREET SIDE ELEVATION
SCALE 3/16" = 1'-0"

NOTE: THIS ELEVATION TO BE ONLY AT CORNER LOTS w/ STREET EXPOSURE **RS287**



RIGHT ELEVATION 4-PLEX BUILDING
SCALE 3/16" = 1'-0"

STRUCTURAL DESIGN:
VOELKER ENGINEERING
1911 116th Ave. NE
Bellevue, WA 98004
425-451-4946

BUILDER/DESIGNER:
D.R. HORTON
4380 SW Macadam Ave, Suite 100
Portland, OR 97239
503-222-3719

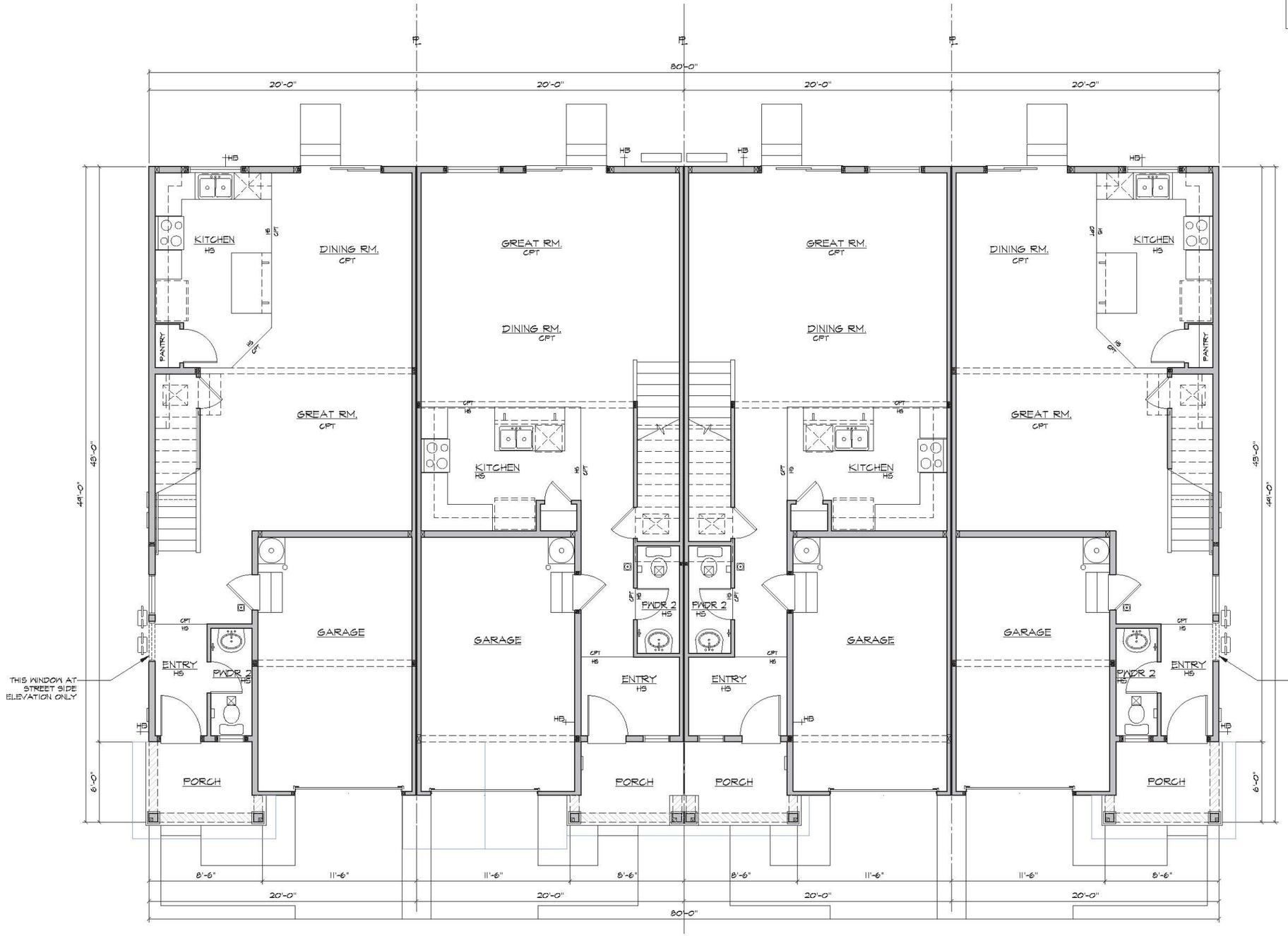
KELLOGG CREEK ALLEY
ALLEY FOUR-PLEX ELEVATIONS

BUILDING
A-1

8/05/15

A6

NOTE:
SEE PAGES 9.0-10.0 FOR UNIT PLANS WITH ADDITIONAL DIMENSIONS AND NOTES.



PLAN 1535-D
SEE SHEET 9.0

PLAN 1498-C
SEE SHEET 10.0

PLAN 1498-D
SEE SHEET 10.0

PLAN 1535-C
SEE SHEET 9.0

NOTE:
TYPICAL EXTERIOR WALL TO BE CONSTRUCTED PER SCHEDULE PAGE 3.0 AS P6 SHEARWALLS UNLESS NOTED OTHERWISE

MAIN FLOOR PLANS

SCALE 1/4" = 1'-0"

RS288

STRUCTURAL DESIGN:
VOELKER ENGINEERING
1911 116th Ave. NE
Bellevue, WA 98004
425-451-4946

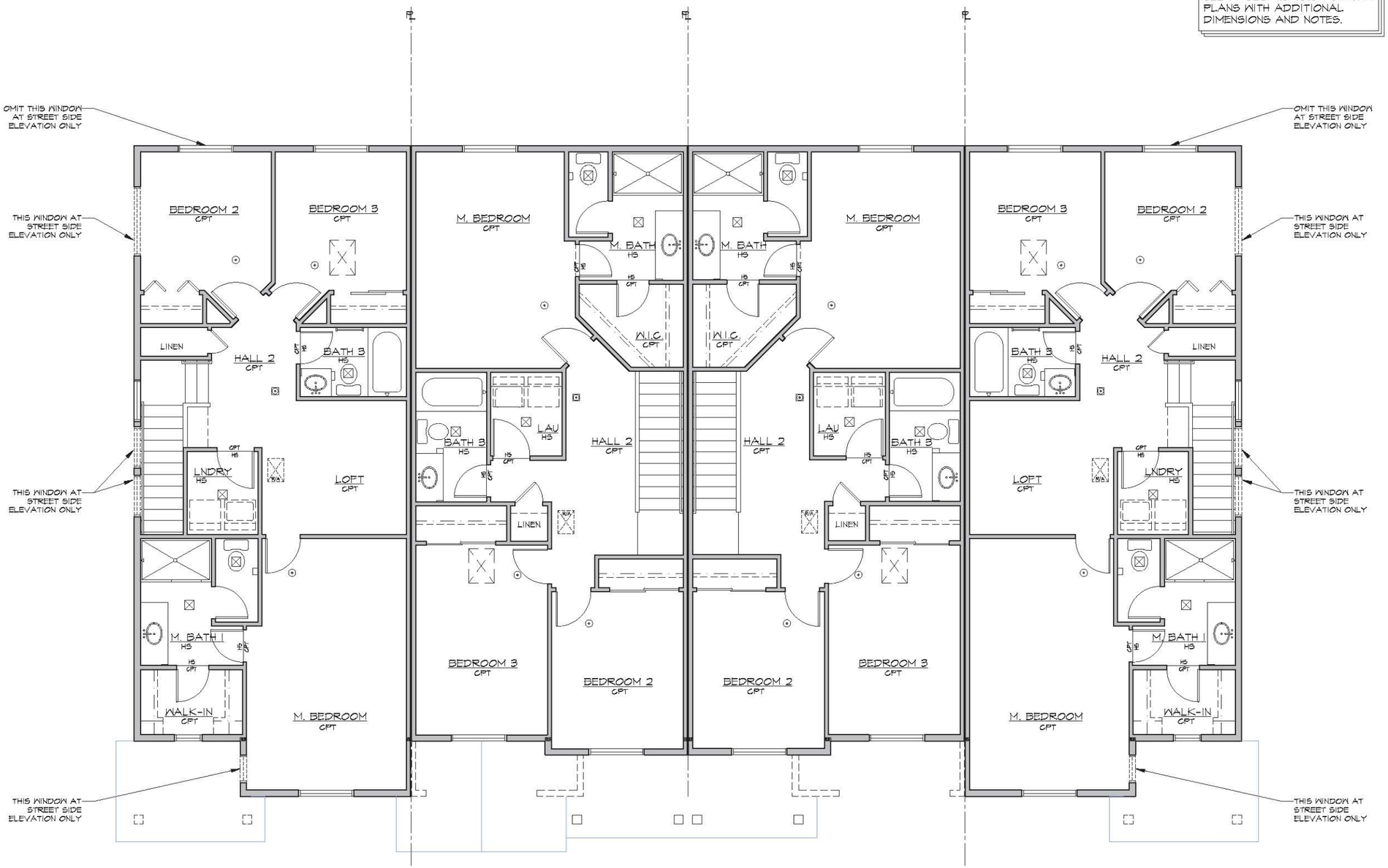
BUILDER/DESIGNER:
D.R. HORTON
4380 SW Macadam Ave, Suite 100
Portland, OR 97239
503-222-3719

KELLOGG CREEK
FOUR-PLEX MAIN FLOOR PLAN

REL 6/04/15

2.0

NOTE:
SEE PAGES 9.0-10.0 FOR UNIT PLANS WITH ADDITIONAL DIMENSIONS AND NOTES.



PLAN 1535-D
SEE SHEET 9.0

PLAN 1498-C
SEE SHEET 10.0

PLAN 1498-D
SEE SHEET 10.0

PLAN 1535-C
SEE SHEET 9.0

NOTE:
TYPICAL EXTERIOR WALL TO BE CONSTRUCTED PER SCHEDULE PAGE 3.0 AS P6 SHEARWALLS UNLESS NOTED OTHERWISE

UPPER FLOOR PLANS

SCALE 1/4" = 1'-0"

RS289

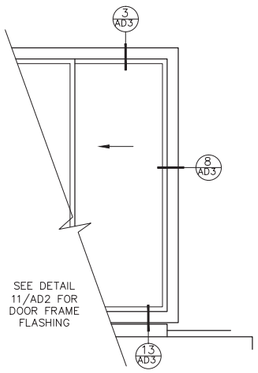
STRUCTURAL DESIGN:
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1911 116th Ave. NE
Bellevue, WA 98004
425-451-4946

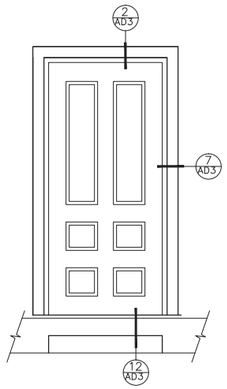
BUILDER/DESIGNER:
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Portland, OR 97239
503-222-3719

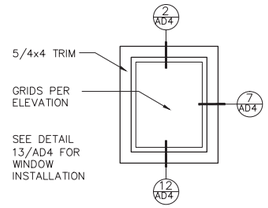
KELLOGG CREEK
FOUR-PLEX UPPER FLOOR PLAN

REL 6/04/15

4.0







DOORS AND WINDOWS

SCALE 1/2" = 1'–0"

1 NOT USED

4 NOT USED

BUILDING DETAILED DESIGN ELEMENTS PER 19.505.1.C.4:

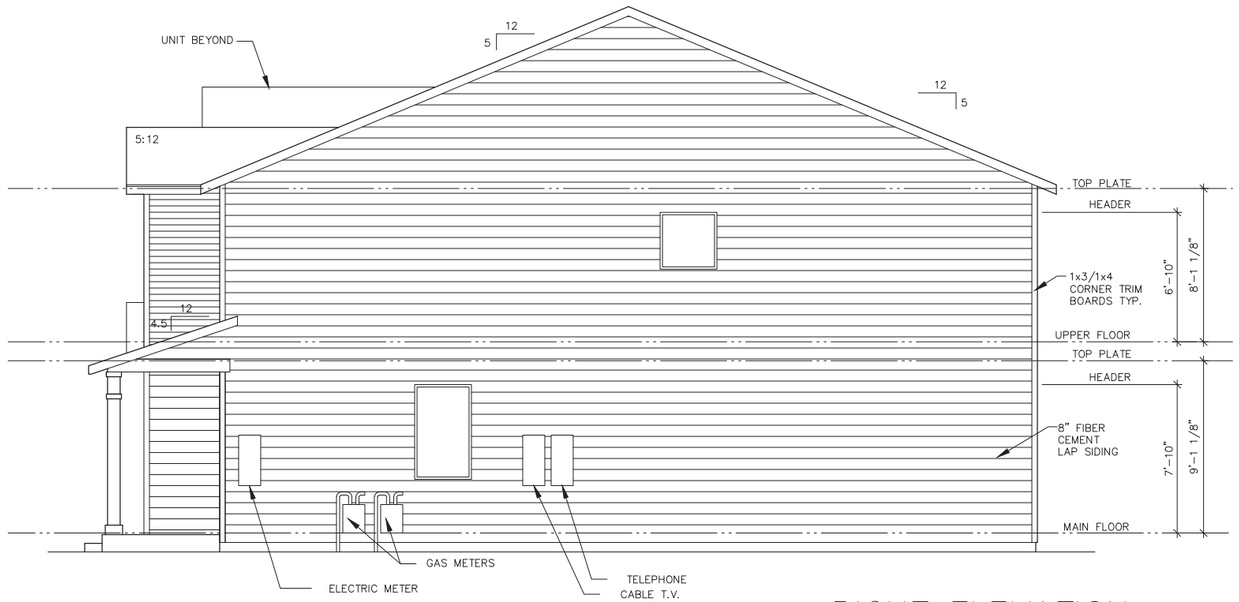
A. COVERED PORCH AT LEAST 5 FT DEEP, AS MEASURED HORIZONTALLY FROM THE FACE OF THE MAIN BUILDING FAÇADE TO THE EDGE OF THE DECK, AND AT LEAST 5 FT WIDE.

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K. WINDOW TRIM AROUND ALL WINDOWS AT LEAST 3 IN WIDE AND 5/8 IN DEEP.



RIGHT ELEVATION

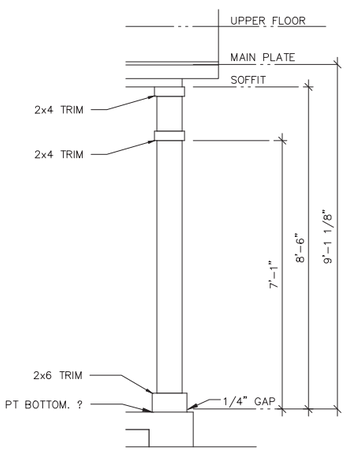
SCALE 1/4" = 1'–0"

FRONT ELEVATION GLAZING PERCENTAGE

WALL AREA	=	1,424 SF
GLAZING AREA	=	302 SF
GLAZING %	=	21.2 %

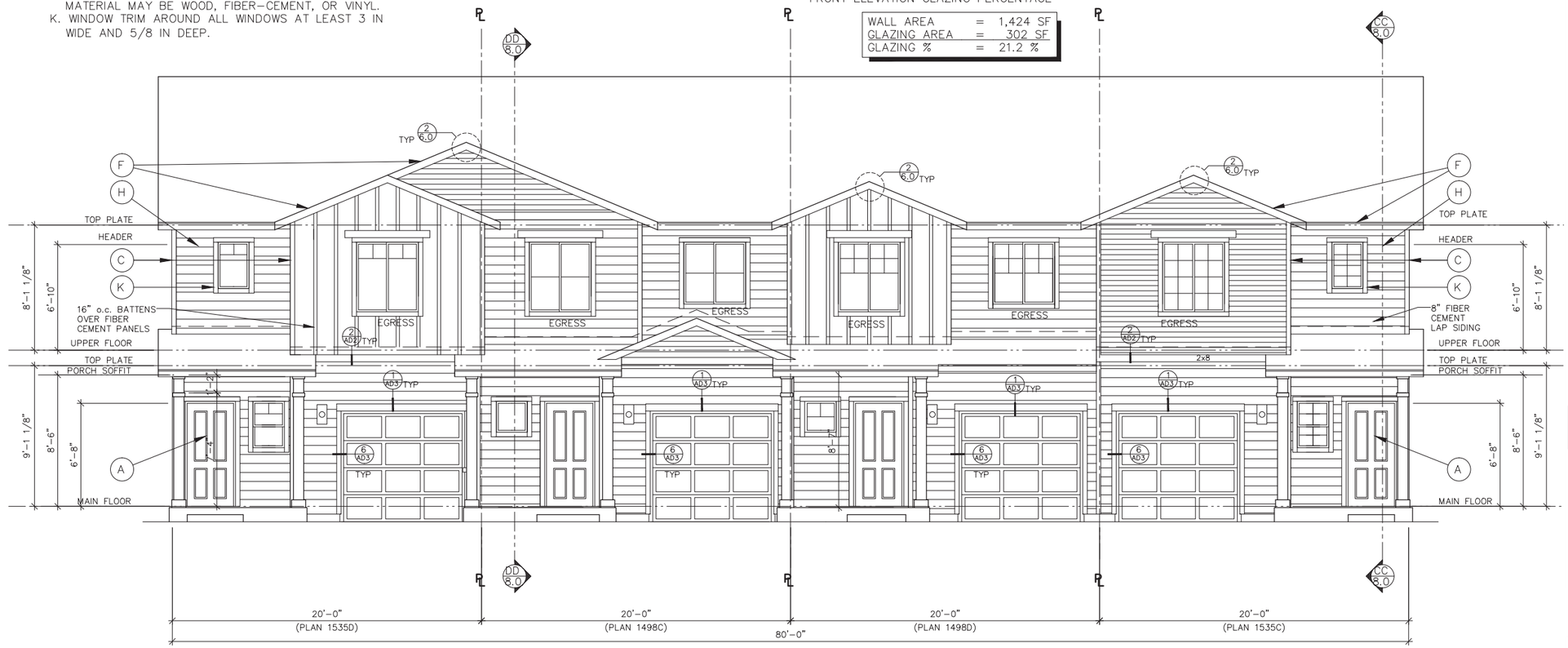
2 GABLE END TRIM

SCALE 3/4" = 1'–0"



3 PORCH COLUMN DETAIL

SCALE 1/2" = 1'–0"



NOTE:
SEE SHEETS AD0 THROUGH AD4 FOR WATER INTRUSION AND FLASHING DETAILS.

FRONT ELEVATION

SCALE 1/4" = 1'–0"

RS290

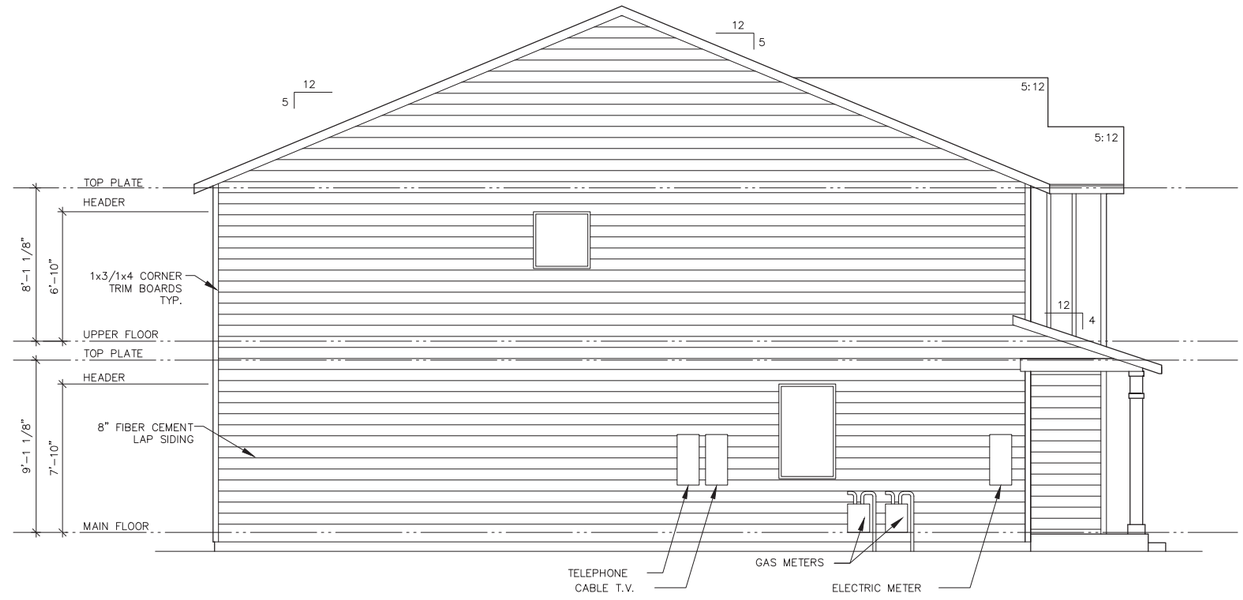
STRUCTURAL DESIGN:
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1911 116th Ave. NE
Bellevue, WA 98004
425–451–4946

BUILDER/DESIGNER:
D.R. HORTON
4380 SW Macadam Ave, Suite 100
Portland, OR 97239
503–222–3719

KELLOGG CREEK
FOUR–PLEX ELEVATIONS

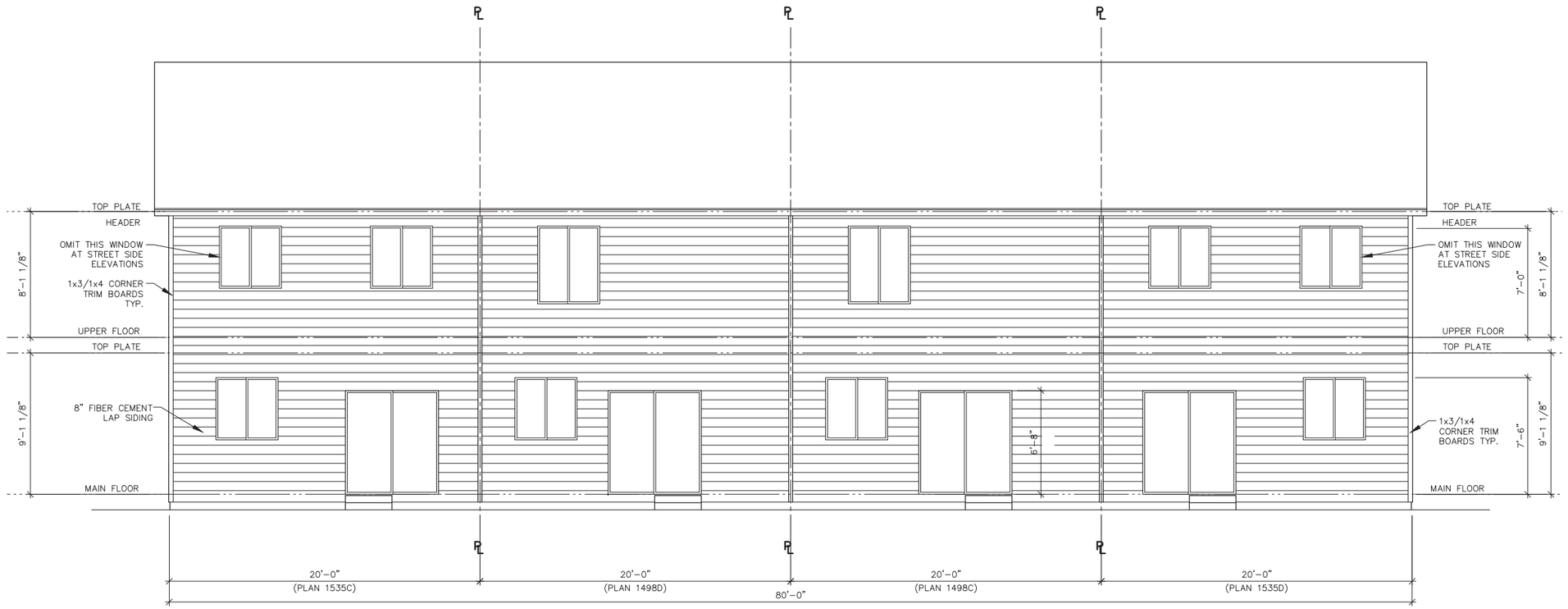
REL 2/22/16

6.0



LEFT ELEVATION

SCALE 1/4" = 1'-0"



REAR ELEVATION

SCALE 1/4" = 1'-0"

RS291

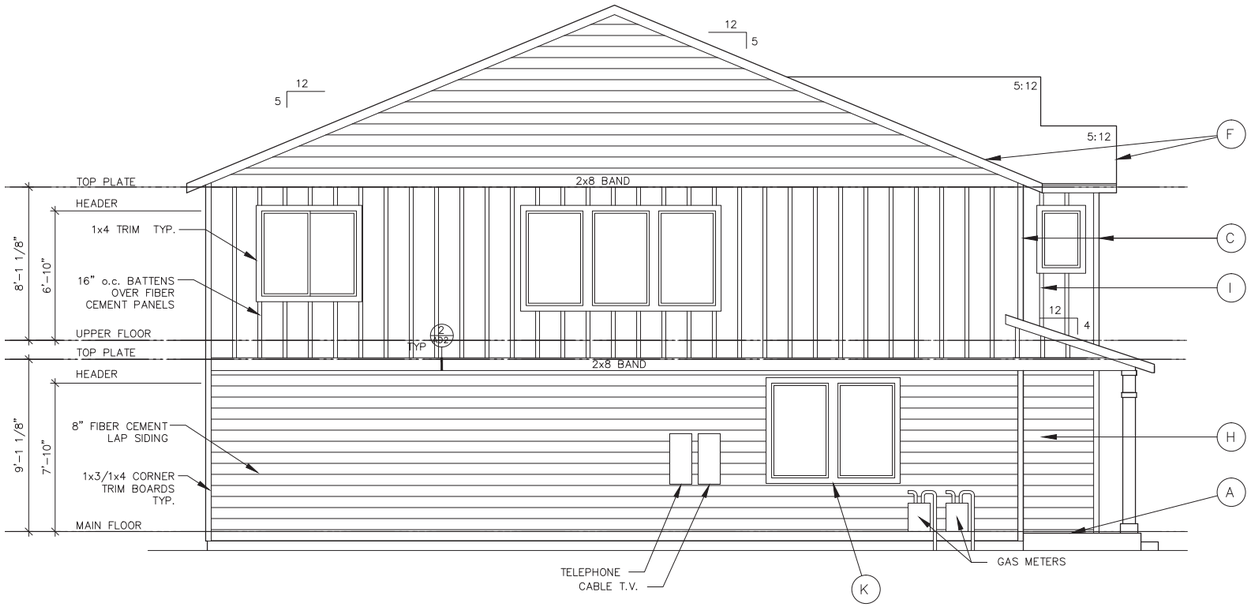
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Portland, OR 97239
503-222-3719

KELLOGG CREEK
FOUR-PLEX ELEVATIONS

REL 2/22/16

7.0



STREET SIDE LEFT ELEVATION

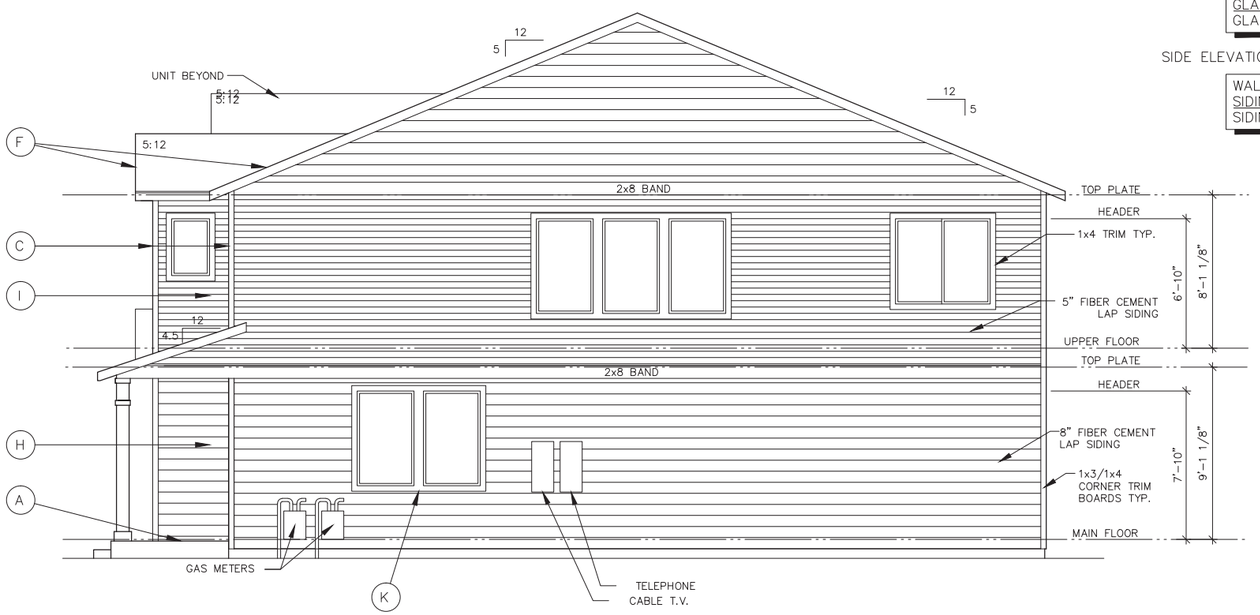
SCALE 1/4" = 1'-0"

SIDE ELEVATION GLAZING PERCENTAGE

WALL AREA	=	858 SF
GLAZING AREA	=	103.5 SF
GLAZING %	=	12.1 %

SIDE ELEVATION SIDING PERCENTAGE

WALL AREA	=	858 SF
SIDING AREA	=	425 SF
SIDING %	=	49.5 %



STREET SIDE RIGHT ELEVATION

SCALE 1/4" = 1'-0"

RS292

BUILDING DETAILED DESIGN ELEMENTS PER 19.505.1.C.4:

A. COVERED PORCH AT LEAST 5 FT DEEP, AS MEASURED HORIZONTALLY FROM THE FACE OF THE MAIN BUILDING FAÇADE TO THE EDGE OF THE DECK, AND AT LEAST 5 FT WIDE.

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425-451-4946

BUILDER/DESIGNER:
D.R. HORTON
4380 SW Macadam Ave, Suite 100
Portland, OR 97239
503-222-3719

KELLOGG CREEK
FOUR-PLEX STREET SIDE ELEVATIONS

REL 3/16/16

7.1

Exhibit B

August 30, 2016

Read Stapleton
DOWL
720 SW Washington Street Suite 750
Portland Oregon 97205

Re: Preapplication Report

Dear Read:

Enclosed is the Preapplication Report Summary from your meeting with the City on August 11, 2016, concerning your proposal for action on property located at 13333 SE Rusk Road.

A preapplication conference is required prior to submittal of certain types of land use applications in the City of Milwaukie. Where a preapplication conference is required, please be advised of the following:

- Preapplication conferences are valid for a period of 2 years from the date of the conference. If a land use application or development permit has not been submitted within 2 years of the conference date, the Planning Director may require a new preapplication conference.

- If a development proposal is significantly modified after a preapplication conference occurs, the Planning Director may require a new preapplication conference.

If you have any questions concerning the content of this report, please contact the appropriate City staff.

Sincerely,

Joyce B. Stahly
Administrative Specialist II

Enclosure

cc: Ben Williams
Andy Tiemann
Serah Breakstone
File
Scott Emmens
John Van Steveren
Randy Myers

CITY OF MILWAUKIE

PreApp Project ID #: 16-021PA

PRE-APPLICATION CONFERENCE REPORT

This report is provided as a follow-up to a meeting that was held on 8/11/2016 at 10:00AM

Applicant Name:	**READ STAPLETON**
Company:	**DOWL**
Applicant 'Role':	Architect
Address Line 1:	720 SW WASHINGTON STREET
Address Line 2:	SUITE 750
City, State Zip:	PORTLAND OR 97205
Project Name:	**PROPOSED PLANNED DEVELOPMENT WITH 100 DWELLING UNITS**
Description:	**A PLANNED DEVELOPMENT WITH 100 DEWLLING U NITS (77 IN THE R3 ZONE AND 23 IN THE R10 ZONE) IS PROPOSED.**
ProjectAddress:	**13333 SE RUSK RD**
Zone:	Residential R-3 and R-10
Occupancy Group:	
ConstructionType:	
Use:	Medium Density (MD) and Low Density (LD)
Occupant Load:	
AppsPresent:	Ben Williams, Andy Tiemann, Serah Breakstone, Scott Emmens, John Van Staveren, Randy Myers
Staff Attendance:	Brett Kelver, Alex Roller, Matt Amos

BUILDING ISSUES

ADA:	
Structural:	The habitable space must be 2 feet above the base flood elevation.
Mechanical:	
Plumbing:	
Plumb Site Utilities:	
Electrical:	
Notes:	

Please note all drawings must be individually rolled. If the drawings are small enough to fold they must be individually folded.

FIRE MARSHAL ISSUES

Fire Sprinklers: Any building containing an "R" (residential) mulit family occupancy shall be sprinkled.

Fire Alarms:

Fire Hydrants:

Turn Arounds:

Addressing:

Fire Protection:

Fire Access:

Hazardous Mat.:

Fire Marshal Notes: See attached letter.

PUBLIC WORKS ISSUES

Water: An unknown size Clackamas River Water main on SE Kellogg Creek Drive is available to provide connection to serve the proposed development. The applicant shall construct adequately sized water mainline within the right of way of the new public street to provide residential service, as well as fire service (via hydrants or sprinklers) to all residential units. Mainline construction will conform to Clackamas River Water standards. Betty Johnson (503-723-2571) at CRW will be your contact for construction and SDC requirements. Construction of any main line improvement within the public right-of-way shall be completed prior to final plat approval.

The water System Development Charge (SDC) is based on the demand required by the development. The water SDC will be assessed and collected at the time the building permits are issued.

Sewer: An unknown size Clackamas County wastewater main located on the western property line is available for connection to serve the proposed development. The applicant shall construct an 8" PVC within the right-of-way of the new public street. Currently, the wastewater System Development Charge (SDC) is comprised of two components. The first component is the City's SDC charge of $1075.00 and the second component is the County's SDC for treatment of $4,904 that the City collects and forwards to the County. Both SDC charges are per connection unit. The wastewater SDC will be assessed and collected at the time the building permits are issued.

Storm: Submission of a storm water management plan by a qualified professional engineer is required as part of the proposed development. The plan shall conform to Section 2 - Stormwater Design Standards of the City of Milwaukie Pubic Works Standards.
The storm water management plan shall demonstrate that the post-development runoff does not exceed the pre-development, including any existing storm water management facilities serving the development property. Also, the plan shall demonstrate compliance with water quality standards. The City of Milwaukie has adopted the most current version of the City of Portland Stormwater Management Manual for design of water quality facilities.

All new impervious surfaces, including replacement of impervious surface with new impervious surfaces, are subject to the water quality standards. See City of Milwaukie Public Works Standards for design and construction standards and detailed drawings.

The storm SDC is based on the amount of new impervious surface constructed at the site. One storm SDC unit is the equivalent of 2,706 square feet of impervious surface. The storm SDC is currently $844 per unit. The storm SDC will be assessed and collected at the time the building permits are issued.

Street: The proposed development fronts the north side of SE Kellogg Creek Drive. The portion of SE Kellogg Creek Drive fronting the proposed development has a right-of-way width of 40 to 50 feet, has a 5' wide curb tight sidewalk on the north side, and is unimproved on the south side.

Frontage: Chapter 19.700 of the Milwaukie Municipal Code (MMC), hereafter referred to as "Code", applies to partitions, subdivisions, and new construction.

Transportation Facility Requirements, Code Section 19.708, states that all rights-of-way, streets, sidewalks, necessary public improvements, and other public transportation facilities located in the public right-of-way and abutting the development site shall be adequate at the time of development or shall be made adequate in a timely manner.

SE KELLOGG CREEK DRIVE
Improvements required on the Kellogg Creek Drive frontage will be determined by the required traffic impact study.

NEW PRIVATE STREET
The proposed cross section of 5' sidewalk, 5.5' planter, 7' parking, and 10' travel does conform to code requirements.

Per MMC table 19.708.1 – the minimum intersection spacing on local roads is 100' and the maximum distance is 530'. Kellogg Creek Dr has a local street classification. The spacing between the eastern proposed road and Rusk road may create a traffic impact. This will be addressed in the traffic impact study.

Right of Way: The existing right-of-way on SE Kellogg Creek Drive fronting the proposed development is 40 feet, and 55 feet on the Rusk Frontage. The required traffic impact study will determine whether or not dedication will be required.

Driveways: Code Section 12.16.040.A states that access to private property shall be permitted with the use of driveway curb cuts and driveways shall meet all applicable guidelines of the Americans with Disabilities Act (ADA). Driveway approaches shall be improved to meet the requirements of Milwaukie's Public Works Standards.

Erosion Control: Per Code Section 16.28.020(C), an erosion control permit is required prior to placement of fill, site clearing, or land disturbances, including but not limited to grubbing, clearing or removal of ground vegetation, grading, excavation, or other activities, any of which results in the disturbance or exposure of soils exceeding five hundred square feet.

Code Section 16.28.020(E) states that an erosion control permit is required prior to issuance of building permits or approval of construction plans. Also, Section 16.28.020(B) states that an erosion control plan that meets the requirements of Section 16.28.030 is required prior to any approval of an erosion control permit.

Traffic Impact Study: Code Section 19.704.1(A) states that the City will determine whether a transportation impact study (TIS) is required. In the event the proposed development will significantly increase the intensity of use,

a transportation impact study will be required. The City of Milwaukie Engineering Director will make this determination based on proposed preliminary subdivision design and the number of lots created.

If required, the transportation impact study triggers a Transportation Facilities Review (TFR) Land Use Application to be filed concurrent with the land use application. Once the scope of the proposed development is determined and a deposit of $1000.00 is paid, the City of Milwaukie will provide a detailed transportation impact study scope for the traffic study. When the traffic impact study is completed in accordance with the TIS scope, the applicant shall schedule a second pre-application meeting with Milwaukie Engineering Staff. The second pre-application meeting will allow Engineering Staff to review and comment on the applicant's traffic impact study prior to submission of any land use applications. The fee for the second pre-application meeting is $100.00 and a deposit of $2500.00. Upon completion of the second pre-application meeting, the applicant may submit their land use applications.

The City has determined that a Traffic Impact Study will be required.

PW Notes:

TRANSPORTATION SDC
The Transportation SDC will be based on the increase in trips generated by the new use per the Trip Generation Handbook from the Institute of Transportation Engineers. The SDC for transportation is $1,921 per trip generated. Credits will be given for any demolished structures, which shall be based upon the existing use of the structures.

PARKS & RECREATION SDC
The parks & recreation System Development Charge (SDC) is triggered when application for a building permit on a new dwelling is received. Currently, the parks and recreation SDC for each Multi-Family Residence is $3,608.00, and $3,985 for Single-Family Residences. Credit is applied to any demolished structures and is based upon the existing use of the structures. The parks and recreation SDC will be assessed and collected at the time the building permits are issued.

REQUIREMENTS AT FINAL PLAT
- Engineered plans for public improvements (street, sidewalk, and utility) are to be submitted and approved prior to start of construction. Full-engineered design is required along the frontage of the proposed development, as well as the interior streets and utilities.

- The applicant shall pay an inspection fee of 5.5% of the cost of public improvements prior to start of construction.

- The applicant shall provide a payment and performance bond for 100% of the cost of the public improvements prior to the start of construction.

- The applicant shall provide a final approved set of Mylar "As Constructed" drawings to the City of Milwaukie prior to the final inspection.

- The applicant shall provide a maintenance bond for 100% of the cost of the public improvements prior to the final inspection

PLANNING ISSUES

Setbacks:

Front and rear yards in the Residential R-3 zone must be at least 15 ft, side yards at least 5 ft (for interior lots), and street-side yards at least 15 ft (for corner lots), as per Milwaukie Municipal Code (MMC) Subsection 19.302.4. In the R-10 zone, front and rear yards must be at least 20 ft, side yards at

least 10 ft, and street-side yards at least 20 ft, as per MMC Subsection 19.301.4.

For side yards in both the R-3 and R-10 zones, there is a height plane limit of 20 ft at the minimum setback, with a slope of 45 degrees. See the definition of "side yard height plane" in MMC Section 19.201 for an illustration of this principle. MMC Subsection 19.501.3.B establishes some allowable exceptions to the side yard height plane, including limited minor encroachments for roof overhangs or eaves, gable ends of roofs, and dormers.

For a Planned Development (PD), setbacks may be adjusted as needed to accommodate the additional density or alternative housing types that may be allowed. (See the "Notes" section below for more information about circumstances in which a formal variance request may be required). Along the periphery of a PD zone, additional yard depth, buffering, or screening may be required. Peripheral yards shall be at least as deep as the required front yard in the underlying zone(s), as per MMC Subsection 19.311.3.D.

Landscape:

In both the R-3 and R-10 zones, a minimum of 35% of the site must be landscaped. In addition, at least 40% of the front yard area must be vegetated (measured from the front property line to the front face of a house). Vegetated areas may be planted in trees, grass, shrubs, or bark dust for planting beds, with no more than 20% of the landscaped area finished in bark dust (as per MMC Subsection 19.504.7). In the R-3 zone, a maximum of 40% of the site may be covered by structures, including decks or patios over 18 in above grade; in the R-10 zone, the maximum lot coverage allowed is 30%.

All Planned Deveopments must have at least one-third of the gross site area devoted to open space, suitable for scenic, landscaping, or open recreational purposes within the development. MMC Subsection 19.311.3.E outlines the requirements for open space, including that at least half of the required open space be of the same general character as the area containing dwelling units (e.g., at least half of the open space should be developed in such a way as to be usable as yard or recreational space rather than left in a natural state). Floodplain areas, which are subtracted from gross area for purposes of calculating maximum allowed density, may be utilized/designated as required open space areas, subject to the 50% standard for open space character noted above.

Parking:

For rowhouse development, a minimum of 1 off-street parking space per dwelling unit is required (see MMC Table 19.605.1). MMC Subsection 19.605.2 establishes the process for requesting modifications of the parking ratios.

Specific standards for residential parking areas are established in MMC Subsection 19.607.1 and include a provision that required off-street parking spaces must be located somewhere other than the required front or street-side yard. Uncovered parking spaces and maneuvering areas cannot exceed 50% of the front yard area and 30% of the required street-side yard area. No more than 3 residential parking spaces are allowed within the required front yard. Parking areas and driveways on the property shall align with the approved driveway approach and shall not be wider than the approach within 10 ft of the right-of-way boundary.

Transportation Review:

The proposed new development triggers the requirements of MMC Chapter 19.700 Public Facility Improvements, including provisions for evaluating transportation impacts. Please see the Public Works notes or contact the City's Engineering Department for information about the requirements of MMC 19.700, including any required street improvements or right-of-way dedications, as well as whether a Transportation Impact Study (TIS) will be necessary and what process and costs would be involved.

Application Procedures:

The subject property is comprised of four tax lots that appear to represent the boundaries of four legal lots of record. Part of the proposal effectively involves adjusting the current property boundaries to place the existing church facilities (e.g., buildings and parking areas) on one parcel and consolidating the remaining portion of the site into another parcel that will be the focus of the Planned Development

(PD). These boundary adjustments could be processed independently of the PD as a minor land partition; they could also be handled in conjunction with the subdivision plat for the proposed PD. However, unless the church portion of the property is being redeveloped, it would not be considered part of the PD and would not be re-zoned.

PDs are governed by the standards in MMC Section 19.311, which establish a two-step process for approval. First, a preliminary development plan is reviewed by the Planning Commission through the Type III process (MMC Section 19.1006). If any variances are required beyond the types of adjustments that are considered with the PD (such as those related to the density increase allowed by MMC 19.311), a Variance Request application would be required and processed concurrently with the preliminary development plan, with the specific variances subject to the standards of MMC Section 19.911 (see the "Notes" section below for more information). Likewise, due to the designated natural resource areas on the site, a Natural Resource review application will also be required, subject to the applicable standards of MMC Section 19.402 and processed concurrently with the preliminary development plan. Finally, if a Transportation Impact Study (TIS) is required (as per MMC Section 19.704), a Transportation Facilities Review (TFR) application would also be submitted to demonstrate compliance with MMC Chapter 19.700. The TFR application requires Type II review but would be consolidated with the other Type III applications and processed concurrently.

Once the Planning Commission approves the preliminary development plan, the applicant has 6 months to file a final development plan and application for zone change to add the PD designation to the property. If land will be subdivided as part of the PD, a preliminary subdivision plat application is required in conjunction with the final development plan. The final plan, zone change, and subdivision (if applicable) is then processed with Type IV review (MMC Section 19.1007), with initial review by the Planning Commission, which makes a recommendation to City Council for a final decision.

If Council opts to approve the final development plan and program as the standards and requirements for the new PD zone, it will adopt an ordinance to apply the PD zone designation to the property. With the adopting ordinance, Council will also effectively accept or reject all or part of the proposed dedications of public facilities, land, and open space. Alternately, Council may also continue consideration and refer the proposal back to Planning Commission with recommendations for change, or may reject the proposal altogether.

Current application fees for the various applications are the following:
•Planned Development—Preliminary Plan Review (Type III) = $4,400
•Other Type III applications (e.g., Type III Natural Resource review, Type III Variance if needed) = $2,000 each
•Type II applications (e.g., Transportation Facilities Review, Type II Variance if applicable) = $1,000 each
•Planned Development—Final Plan Review (Type IV) = $5,700
•Subdivision preliminary plat = $4,400 plus $100/lot over 4 lots
•No additional fee for Zone Change (cost absorbed in Final Plan Review fee)
•Minor Land Partition preliminary plat (if needed for initial lot reconfiguration) = $2,000
•Type I applications (e.g., Final Plat, Type I Natural Resource Review) = $200 each
•25% discount on fees for multiple applications being reviewed concurrently, after the most expensive application

For the City's initial review, the applicant should submit 5 complete copies of the application (preliminary development plan, natural resource review, and any formally requested variances), including all required forms and checklists. A determination of the application's completeness will be issued within 30 days. If deemed incomplete, additional information will be requested. If deemed complete, additional copies of the application may be required for referral to other departments, the

Lake Road Neighborhood District Association (NDA), and other relevant parties and agencies. City staff will inform the applicant of the total number of copies needed.

For the Type III review stage, once the application submittal has been deemed complete, a public hearing with the Planning Commission will be scheduled. Staff will determine the earliest available date that allows time for preparation of a staff report (including a recommendation regarding approval) as well as provision of the required public notice to property owners and residents within 300 ft of the subject property, at least 20 days prior to the public hearing. A sign giving notice of the application must be posted on the subject property at least 14 days prior to the hearing.

For the Type IV review stage, the completeness review will be repeated for the new submittal (5 copies of the final development plan, zone change request, and subdivision if applicable). As the applicable public hearings are scheduled, public notice will be sent at least 20 days prior to each hearing (Planning Commission first, then City Council), to property owners and residents within 400 ft of the subject property.

Regardless of review level, issuance of a decision starts a 15-day appeal period for the applicant and any party who establishes standing.

A rough estimated timeline for Type III review is approximately 3 to 5 months, from initial submittal through completeness review to the Planning Commission hearing. For Type IV review, one could estimate approximately 3 to 5 additional months from application submittal through completeness review to Planning Commission and City Council hearings. These timelines may vary, depending on the completeness of the initial submittal and the nature of testimony and discussion at any of the public hearings.

Prior to submitting the application, particularly if it will trigger a public hearing, the applicant is encouraged to present the project at a regular meeting of the Lake Road NDA, at 6:30 p.m. on the second Wednesday of every month at Rowe Middle School (3606 SE Lake Rd).

Natural Resource Review: The subject property includes Mt Scott Creek, with a significant area of designated Water Quality Resource (WQR) and Habitat Conservation Area (HCA). In addition, there may be wetlands that have not been formally delineated.

Lot Geography: The subject property is comprised of four tax lots that mirror what appear to be underlying lots of record, established by deed in the 1970s or earlier. With the exception of tax lot 900, none of the lots are strictly rectilinear, though they would be if not for their various frontages along Highway 224 (which runs at an angle northwest to southeast) and/or Rusk Road (which has a curved radius where it turns from a north-south alignment to an east-west alignment at the southeast corner of tax lot 600).

Planning Notes: The materials submitted for the preliminary development plan and program should include whatever information is necessary to demonstrate how the proposed Planned Development would be laid out and the standards and requirements that would apply. Although the language of MMC Section 19.311 does not provide specific guidance, it seems reasonable to include plans showing the layout of proposed lots, structure types, building setbacks, building elevations and basic design elements, description of open space character, detail of proposed street cross-sections, fire access, etc.

Density = The process for calculating maximum allowed density is outlined in MMC Section 19.202.4.E. From the gross area of the site being developed, the following areas are subtracted: 100-year floodplain areas, right-of-way dedications, open spaces that will be publically or commonly owned, and slopes in excess of 25%. Any required right-of-way dedications along Kellogg Creek Drive and/or Rusk Road can be confirmed as part of the TIS review. The area of the church portion of the site is committed to a non-residential use; it is not considered part of the development area and will not be

included in the calculation of allowable residential density.

For purposes of determining the allowable density of the overall site, the density is calculated separately for the square footages of each zone on the property, subtracting the floodplain area and proposed right-of-way dedications for each, as well as the required open space areas proportional to each. Using the combined total allowable density figure, the development may effectively "blend" the densities for the two zones by distributing structures across the site regardless of the specific zoning boundary.

Design = As per MMC Subsection 19.311.3.C, the Planned Development zone allows a residential density up to 20% greater than what would ordinarily be permitted in the underlying zone. However, that allowance is not a given, but rather is predicated on the proposed development being "outstanding in planned land use and design and provid[ing] exceptional advantages in living conditions and amenities not found in similar developments constructed under regular zoning." Based on the initial site plan submitted, staff has a few observations and/or suggestions for improving the proposed design include the following (note that these are ideas, not requirements):

1) Consider providing access to the northern open space through the northernmost tier of structures by continuing the pattern of the "green alley" shown running north-south through the middle of the 15-unit central blocks.

2) Likewise, consider increasing the width of the gap between the northernmost tier of structures and the perpendicular line of structures on the eastern side of the proposed development, in order to provide greater access to the open space in the northeast portion of the site.

3) Consider revising the number and scale of units proposed along the Kellogg Creek Drive frontage to provide a buffer or transition between the new development and the existing single-story single-family detached dwellings on the south side of the street.

4) Describe or otherwise indicate what exceptional advantages in living conditions and amenities would be provided for residents of the new development, in the context of demonstrating how the proposal is distinguished from similar developments that would be constructed under the regular zoning standards.

Whatever form of residential housing is proposed for the Planned Development must meet the applicable building design standards established in MMC Section 19.505, whether for single-family, multifamily, rowhouse, or other housing types.

Variance Requests = The Planned Development zone designation allows for an increase of up to 20% in allowable density. Proposed adjustments to standards that relate to an allowable increase in density would not require a formal variance request and could include the following examples: housing types that would not otherwise be allowed in the underlying zone(s), reduced lot dimensions and areas, and setbacks reduced as necessary to allow proposed housing types, etc. Where it is unclear whether a proposed adjustment is sufficiently related to an allowed increase in density, a formal variance may be required, subject to the standards and criteria established in MMC Section 19.911. For example, a proposal to reduce a front yard setback would probably be difficult justify as being necessary to achieve the allowed density or an alternative housing type and would most likely require a formal variance request for review and approval.

ADDITIONAL NOTES AND ISSUES

County Health Notes:

Other Notes:

This is only preliminary preapplication conference information based on the applicant's proposal and does not cover all possible development scenarios. Other requirements may be added after an applicant submits land use applications or building permits. City policies and code requirements are subject to change. If you have any questions, please contact the City staff that attended the conference (listed on Page 1). Contact numbers for these staff are City staff listed at the end of the report.

Sincerely,

City of Milwaukie Development Review Team

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CLACKAMAS FIRE DISTRICT
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Clackamas County Fire District #1
Fire Prevention Office

E-mail Memorandum

To: City of Milwaukie Planning Department

From: Matt Amos, Fire Inspector, Clackamas Fire District #1

Date: 8/30/2016

Re: 100 Dwelling Unit Proposal 13333 SE Rusk Rd. 16-021PA

This review is based upon the current version of the Oregon Fire Code (OFC), as adopted by the Oregon State Fire Marshal's Office. The scope of review is typically limited to fire apparatus access and water supply, although the applicant must comply with all applicable OFC requirements. The following items should be addressed by the applicant:

A Fire Access and Water Supply plan is required for subdivisions and commercial buildings over 1000 square feet in size or when required by Clackamas Fire District #1. The plan shall show fire apparatus access, fire lanes, fire hydrants, fire lines, available fire flow, FDC location (if applicable), building square footage, and type of construction. The applicant shall provide fire flow tests per NFPA 291, and shall be no older than 12 months. Work to be completed by experienced and responsible persons and coordinated with the local water authority.

Access:

1) Provide address numbering that is clearly visible from the street.
2) The inside turning radius and outside turning radius for a 20' wide road shall not be less than 28 feet and 48 feet respectively, measured from the same center point.
3) Buildings exceeding 30 feet in height shall require extra width and proximity provisions for aerial apparatus.
4) Access streets between 26 feet and less than 32 feet in width must have parking restricted to one side of the street. Access streets less than 26 feet in width must have parking restricted on both sides of the street. No parking restrictions for access roads 32 feet wide or more.

Water Supply:

1) Fire Hydrants, Commercial Buildings: Where a portion of the building is more than 400 feet from a hydrant on a fire apparatus access road, as measured in an approved

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route around the exterior of the building, on-site fire hydrants and mains shall be provided.
Note: This distance may be increased to 600 feet for buildings equipped throughout with an approved automatic sprinkler system.

2) All new buildings shall have a firefighting water supply that meets the fire flow requirements of the Fire Code. Maximum spacing between hydrants on street frontage shall not exceed 500 feet. Additional private on-site fire hydrants may be required for larger buildings. Fire sprinklers may reduce the water supply requirements.
3) Prior to the start of combustible construction required fire hydrants shall be operational and accessible.
4) The fire department connection (FDC) for any fire sprinkler system shall be placed as near as possible to the street, and within 100 feet of a fire hydrant.

Exhibit C

Memo to File

To: **Code Interpretations folder**
From: **Denny Egner, Planning Director**
Date: **October 4, 2016**
Re: **Review Process for Planned Development Applications (MMC 19.311)**

The last land use application for a Planned Development in Milwaukie was in 1992, so it is not a process that is exceedingly familiar to the Planning Department. Furthermore, the review process outlined in the zoning code is not as clear as would be useful. The intent of this memo is to clarify the Planned Development review process.

Established in Milwaukie Municipal Code (MMC) Section 19.311, the Planned Development (PD) zone is intended to provide some flexibility in residential development on parcels of 2 acres or greater. The PD standards allow for a mix of housing types and land uses, as well as a 20% increase in maximum density, in exchange for creative design, special or oversized utilities (if needed), peripheral yards, and provision of open space. The PD designation is a type of zone and replaces the original zone designation, so the review process involves an application for zone change. In some cases, a PD proposal may also involve land division.

In essence, there are two steps in the PD review process: (1) conditional approval of the preliminary development plan by the Planning Commission; and (2) adoption of an ordinance to apply the PD zone to the subject property as well as approval of the final development plan by the City Council, based on a recommendation from the Planning Commission.

Preliminary Development Plan
MMC Subsection 19.311.6 makes reference to a "meeting" of the Planning Commission for consideration of the preliminary development plan, after which the Commission shall inform the applicant whether it believes the preliminary plan satisfies the provisions of MMC 19.311 or shall advise the applicant of any perceived deficiencies. Continuances or multiple meetings may be needed before the Commission decides that the preliminary plan (with any needed modifications) is approvable. Once the Commission has approved the preliminary plan and any modifications "in principle," the applicant is free to submit a final development plan and zone change application, and in fact must make that submittal within 6 months.

Although the code does not identify a specific review type for this portion of the process, it seems reasonable to suggest that any related applications should be considered by the Planning Commission as part of the preliminary development plan. For example, if a proposal involves a subdivision and/or an issue such as disturbance of designated natural resources, transportation facilities review, or a variance request beyond the flexibility of the PD standards, those elements of the proposal should be presented for consideration as part of the preliminary development plan. No formal decision on these additional aspects would be issued at this preliminary stage, but the Commission would advise the applicant of any recommended revisions that would make the proposal more approvable "in principle."

Final Development Plan
MMC Subsection 19.311.10 provides a slightly clearer review path for the final development plan. The applicant would submit the final plan with an application for zone change and any needed subdivision. The Type IV review process (MMC Section 19.1007) would be engaged, with an initial public hearing by the Planning Commission (with public notice to properties within 400 ft, provided 20 days in advance). The Commission would determine whether the final proposal is consistent with the "approved-in-principle" preliminary plan and would also make a recommendation regarding the proposed PD zone change for the subject property.

According to MMC Subsection 19.311.10.B, at this point in the process the Commission would make a decision regarding preliminary plat approval of any proposed subdivision. This could be done if the subdivision application was processed using the procedures for Type III review. Ostensibly, any additional applications for

such issues as natural resource review, transportation facilities review, or variance would also be formally included with the submittal for a subdivision (if needed) and could be decided at the same time, with conditions that require approval of the PD (final development plan and zone change) to become effective.

The final development plan and zone change would proceed through the Type IV process, with a public hearing with the City Council scheduled to consider these items (again, with public notice provided 20 days in advance). The Council would decide whether to adopt an ordinance that would approve the zone change and the final development plan, which would provide the standards for the new PD zone. According to MMC Subsection 19.311.11.D, the Council could also refer the application back to Planning Commission with a recommendation for amendment, or it may choose to reject the proposal and abandon further proceedings.

Standard Process Outline

In an attempt to interpret the intent of the current code language with respect to process, see below for what Planning staff believes is a reasonable process outline, with the preliminary development plan being handled through Type III review and the final development plan handled through Type IV review:

1. Required preapplication conference with City staff (including 2 weeks for preparation and 2 weeks for City to complete meeting notes)
2. Application submittal (Type III) = Including preliminary development plan, proposed zone change, any related subdivision, natural resource review, transportation facilities review, variance request, etc.
3. Completeness review (up to 30 days) = Completeness determination starts a 120-day clock for issuing a decision.
4. Public notice for Planning Commission hearing (Type III) = Once the application is deemed complete, it is referred for comment (to other departments & agencies, neighborhood association, etc.) and a public hearing is scheduled with Planning Commission. Public notice is sent according to Type III process (300-ft notice, 20 days in advance of hearing).
5. Planning Commission hearing (Type III process) = Consideration of preliminary development plan and proposed zone change, including any related subdivision, natural resource review, transportation facilities review, and/or variance requests. The Commission determines whether it can approve the preliminary plan in principle—if so, a Notice of Decision is issued and a 6-month clock starts on the requirement to submit the final development plan in the Type IV process. The Commission can also issue a Type III decision for any subdivision, natural resource review, transportation facilities review, variance request, etc., with conditions requiring approval of the PD (final development plan and zone change) by City Council to become effective.
6. Application submittal (Type IV) = Final development plan and proposed zone change.
7. Completeness review (up to 30 days) = Completeness determination starts a new 120-day clock for the Type IV review process.
8. Public notice for Planning Commission hearing (Type IV) = Once the application is deemed complete, it is again referred for comment (to other departments & agencies, neighborhood association, etc.) and a public hearing is scheduled with Planning Commission. Public notice is sent according to Type IV process (400-ft notice, 20 days in advance of hearing).
9. Planning Commission hearing (Type IV) = The Commission evaluates the final proposal and determines whether it is consistent with the preliminary approval and with the intent and requirements of MMC 19.311. If so, it makes a recommendation for approval to the City Council.
10. Public notice for Council hearing (Type IV) = Additional public notice is sent to properties within 400 ft of the site, at least 20 days prior to Council hearing.

11. City Council hearing = Council could either adopt an ordinance to establish the PD zone and establish the final development plan as providing the standards for the new zone, or refer the matter back to Planning Commission for modifications, or reject the proposal.

12. Final Plat submittal (Type I review)

Alternative for Streamlining the Process

In the interest of moving a proposal through the review process without unnecessary delay but without reducing the opportunities for public participation and input, and, given the current code language, see below for an alternative timeline that would merge the Type III process with the Type IV process:

1. Required preapplication conference

2. Application submittal = Two sets of concurrent applications are submitted. One set has the preliminary development plan and proposed zone change. Another set of includes those for any related subdivision, natural resource review, transportation facilities review, and/or variance request.

3. Completeness review (up to 30 days) = Completeness determination starts the 120-day clock. For this alternative process, the City would request that the applicant provide an initial waiver of the 120-day clock by at least 60 additional days, to allow adequate time for the entire process (including a potential appeal).

4. Public notice for initial Planning Commission hearing = Once the application is deemed complete, it is referred for comment and an initial public hearing is scheduled with Planning Commission. Public notice is sent according to Type IV process (400-ft notice, 20 days in advance of first hearing).

5. Planning Commission hearing #1 = Consideration of preliminary development plan and proposed zone change, including any related subdivision, natural resource review, transportation facilities review, and/or variance requests. If the Commission decides the preliminary plan can be recommended for approval, this initial hearing could suffice as the recommendation hearing required by the Type IV process—and the Commission could make a formal recommendation on what becomes considered as the final development plan.

   At this time, the Commission could also issue a Type III decision for any subdivision, natural resource review, transportation facilities review, and/or variance request, with conditions requiring approval of the PD (final development plan and zone change) by City Council to become effective. The standard 15-day appeal period would need to pass before the 20-day public notice would be sent out for the City Council hearing. If an appeal to the Type III decision was filed, the Council hearing could probably serve as the Type III appeal hearing as well as the required Type IV hearing on the final development plan. Note that, in the case of an appeal, the 20-day public notice period may not be adequate time to allow staff sufficient time to prepare the necessary staff report for Council, and additional time between the Commission and Council hearings may be needed.

6. Planning Commission hearing #2 (if needed) = If the Commission recommends modifications to the preliminary development plan, the initial hearing could essentially be continued to a date certain in order to obtain a recommendation for approval on what would be considered the final development plan. No additional 20-day notice would be required, and the second/continued hearing could happen as soon as the next Commission meeting (2-3 weeks, depending on the calendar).

7. City Council hearing (Type IV decision) = Once the Planning Commission recommends approval of the final development plan, a Council hearing could be scheduled and 20-day public notice provided. The Council could either adopt an ordinance to establish the PD zone and establish the final development plan as providing the standards for the new zone, or refer the matter back to Planning Commission for modifications, or reject the proposal.

8. Final Plat submittal (Type I review)

Exhibit D

Wetland Delineation for a Proposed Development Site North of SE Kellogg Creek Drive in Milwaukie, Clackamas County, Oregon

(Township 2 South, Range 2 East, Section 6AD,
TL 600 and Portions of 700, 900 and 901)

Prepared for

Brownstone Development, Inc.
Attn: Randy Myers
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Lake Oswego, OR 97035

Prepared by

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PHS Project Number: 5975

January 16, 2017

RS316

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I. INTRODUCTION

Pacific Habitat Services, Inc. (PHS) conducted a wetland delineation on a proposed development site located north of SE Kellogg Creek Drive in Milwaukie, Clackamas County, Oregon (Township 2 South, Range 2 East, Section 6AD, Tax Lot 600 and portions of Tax Lots 700, 900, 901). The study area consists of approximately 15.58 acres.

This report presents the results of PHS's field work. Figures, including a map depicting the location of wetlands within the study area, are located in Appendix A. Data sheets documenting on-site conditions are provided in Appendix B. Ground-level photos of the study area are in Appendix C. Historic aerial photographs are in Appendix D. The geotechnical evaluation report for the site is included in Appendix E. A discussion of the methodology is provided in Appendix F for the client.

II. RESULTS AND DISCUSSION

A. Landscape Setting and Land Use

The site is located southwest of Highway 224 (Pacific Highway); north of SE Kellogg Creek Drive, and north and west of SE Rusk Road. Mt. Scott Creek flows to the west along the northern edge of the study area, and the North Clackamas Park Milwaukie Center borders the western edge. The site is located within a residential area; undeveloped woodland is located immediately to the north and northwest of the study area, and the Turning Point Church is located in the southeast corner of the site at 13333 SE Rusk Road. The eastern half of the property, near the church, is relatively level; however, the western half descends abruptly to a lower woodland area. Site elevations range from approximately 80 feet National Geodetic Vertical Datum (NGVD) in the eastern half of the site, to approximately 66 feet NGVD in the lower reaches of the western half of the site.

B. Site Alterations

The site has not been subject to recent construction activities; however, it appears that the substrate throughout much of the central and eastern half of the site consists of fill material, likely associated with the construction of the church, over two decades ago.

C. Precipitation Data and Analysis

Table 1 compares the average monthly precipitation to the observed monthly precipitation at the Portland International Airport National Weather Service Station in the three months prior to PHS's wetland delineation field work. Table 1 also compares the observed precipitation to be within the normal precipitation range, as identified in the NRCS WETS table for the Oregon City station.

As shown in Table 1, observed precipitation was below normal and normal range in August. Observed precipitation was above normal but within normal range in September; however, in October observed precipitation was considerably above normal and normal range. It should be noted that the observed precipitation total for November in Table 1 is the amount of precipitation recorded in the first 20 days of the month, prior to the day of PHS's wetland delineation field work.

Table 1. Comparison of Average and Observed Precipitation for the Three Months Prior to the Wetland Delineation Field Work

Month	Average Precipitation[a] (in.)	30% Chance Will Have		Observed Precipitation[b] (in.)	Percent of Normal
		Less Than Average[a]	More Than Average[a]		
August	1.00	0.21	1.16	0.09	13
September	1.93	0.86	2.41	1.69	115
October	3.48	1.85	4.25	8.31	277
November	6.79	4.43	8.16	2.79[c]	50[d]

Notes:
a. Source: NRCS WETS Table for Oregon City WETS station
b. Observed precipitation is the precipitation recorded at the Portland International Airport weather station. Source: National Weather Service.
c. Observed precipitation is for the period November 1-20, 2016, prior to PHS's November 21, 2016 field work.
d. The percent of normal precipitation is for the first twenty days in November prior to PHS's November 21, 2016 field work. This estimate assumes that precipitation is spread evenly across the month and that the average precipitation in the first twenty days of November is 2.79 inches.

Precipitation in the months preceding PHS's wetland delineation field work fluctuated widely. However, based on this and other observations of hydrologic conditions during the site visit, it is PHS's opinion that the drier than normal conditions in August and the wetter than normal conditions in September and October did not affect the hydrological indicators observed at the time of PHS's wetland delineation field work.

D. Methods

PHS conducted the wetland investigation and data collection on November 21, 2016. PHS identified jurisdictional wetlands in the study area based on the presence of wetland hydrology, hydric soils, and hydrophytic vegetation, in accordance with the Routine On-site Determination, as described in the *Corps of Engineers Wetland Delineation Manual, Wetlands Research Program Technical Report Y-87-1* ("The 1987 Manual") and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region*.

PHS delineated the limits of ordinary high water (OHW) along the south bank of Mt. Scott Creek based on an evaluation of observed physical characteristics, as described in the U.S. Army Corps of Engineers' Regulatory Guidance Letter No. 05-05 (December 7, 2005). PHS flagged the limits of OHW with blue flags placed at the limits of the OHW, as indicated by the point below which woody vegetation is absent and at the break in the slope angle of the bank.

E. Description of All Wetlands and Other Non-Wetland Waters

PHS identified and delineated one potential wetland area (Wetland A) and Mt. Scott Creek (south bank only), as well as six potentially, artificially created wetland areas (Wetlands B through G). Brief descriptions of the on-site wetlands and non-wetland waters are provided below.

Mt. Scott Creek

Mt. Scott Creek, a tributary to Kellogg Creek and the Willamette River, is a perennial stream that generally flows to the west along the northern boundary of the study area. The stream banks are relatively well defined and near vertical at the location of the OHW line. The plant community of the riparian area along the creek includes a deciduous overstory of big-leaf maple (*Acer macrophyllum*, FACU), Oregon white oak (*Quercus garryana*, FACU), Oregon ash (*Fraxinus latifolia*, FACW), and red alder (*Alnus rubra*, FAC); and a shrub and herbaceous understory composed of species such as snowberry (*Symphoricarpos albus*, FACU), Pacific ninebark (*Physocarpus capitatus*, FACW), Scouler's willow (*Salix scouleriana*, FAC), English hawthorn (*Crataegus monogyna*, FAC), Fuller's teasel (*Dipsacus fullonum*, FAC), and spreading bentgrass (*Agrostis stolonifera*, FAC). The Cowardin Classification for Mt. Scott Creek is Riverine Upper Perennial Unconsolidated Bottom Permanently Flooded (R3UBH) and Riverine Unknown Perennial Unconsolidated Bottom Permanently Flooded (R5UBH). The Hydrogeomorphic (HGM) Classification is Riverine Flow-Through. Mt. Scott Creek continues outside the study area to the north, west and east.

Wetland A

Wetland A consists of approximately 30,386 square feet (0.70 acre) located in the western half of the site, south of Mt. Scott Creek. The plant community within Wetland A (characterized by Sample Points 3, 5, 7) is a combination of deciduous woodland bordered by open fields. Dominant species within the woodland include an overstory of Oregon ash and black cottonwood (*Populus balsamifera*, FAC), with a woody understory of Oregon ash, black cottonwood, red-osier dogwood (*Cornus alba*, FACW), snowberry, and Himalayan blackberry (*Rubus armeniacus*, FAC). The open fields include reed canarygrass (*Phalaris arundinacea*, FACW), creeping buttercup (*Ranunculus repens*, FAC), big leaf avens (*Geum macrophyllum*, FAC), slender rush (*Juncus tenuis*, FAC), rough bluegrass (*Poa trivialis*, FAC), bitter dock (*Rumex obtusifolius*, FAC), and common dandelion (*Taraxacum officinale*, FACU).

The adjacent upland areas (characterized by Sample Points 2, 6, 8) include Oregon ash, Himalayan blackberry, snowberry, English hawthorn, reed canarygrass, Fuller's teasel, large leaf avens, bull thistle (*Cirsium vulgare*, FACU), fringed willowherb (*Epilobium ciliatum*, FACW), Dewey sedge (*Carex deweyana*, FAC), common selfheal (*Prunella vulgaris*, FACU), Western swordfern (*Polystichum munitum*, FACU), lentil vetch (*Vicia tetrasperma*, NOL), creeping buttercup, spreading bentgrass, field horsetail (*Equisetum arvense*, FAC), narrow-leaf goosefoot (*Chenopodium leptophyllum*, FACU), spotted cat's ear (*Hypochaeris radicata*, FACU), European centaury (*Centaurium erythraea*, FAC), wild carrot (*Daucus carota*, FACU), tansy ragwort (*Senecio jacobaea*, FACU), and colonial bentgrass (*Agrostis capillaris*, FAC).

Hydrology within Wetland A is likely supported by a seasonally high groundwater table, surface runoff and precipitation. At the time of PHS's wetland delineation field work, the soils in Wetland A were typically saturated to the surface or within twelve inches of the surface, with free water observed at four inches below the soil surface or at the surface; inundation was also commonly present within Wetland A. The low-chroma matrix of the soil with contrasting redox concentrations meets the redox dark surface indicator for hydric soils. The Cowardin Classification for Wetland A is Palustrine Emergent, Persistent, Seasonally Flooded/Saturated (PEM1E). The HGM Classification is Slope. Wetland A continues outside the study area to the west.

<u>Wetlands B – G</u> (Artificially Created Wetlands)

Wetlands B through G generally consist of small, shallow, isolated depressions. Table 2 lists the area of each wetland.

Wetland	Area (square feet / acres)
B	905 / 0.02
C	176 / 0.004
D	172 / 0.004
E	998 / 0.02
F	301 / 0.007
G	666 / 0.02
Total	**3,218 / 0.07**

All six of these wetlands are similar in character, and therefore, a representative pair of wetland/upland sample points (9 and 10, respectively) were taken at Wetland E. These wetlands are located in the central portion of the site, west of the church and several feet above the lower woodland area further to the west. The plant communities in both the wetland and upland areas are primarily composed of weedy grasses and herbs; the wetland areas include reed canarygrass, spreading bentgrass, soft rush (*Juncus effusus*, FACW), spotted cat's ear, and oxeye daisy (*Chrysanthemum vulgare*, FACU), and the adjacent upland areas include wild carrot, curly dock (*Rumex crispus*, FAC), colonial bentgrass, bluegrass (*Poa sp*., FAC), common velvet grass (*Holcus lanatus*, FAC), tall fescue (*Schedonorus arundinaceus*, FAC), yellow glandweed (*Parentucellia viscosa*, FAC), and English plantain (*Plantago lanceolata*, FACU).

Hydrology within Wetlands B through G primarily consists of surface runoff and precipitation. As discussed in the *Subsurface Conditions* section of the geotechnical evaluation report (Appendix E), fill material on the site ranges in thickness up to more than 12 feet, with approximately 10 feet in the central portion of the site, and groundwater was not encountered in the test pits in the vicinity of these wetlands. Therefore, it is reasonable to assume that these artificially created wetlands are not hydrologically connected to the water table. At the time of PHS's wetland delineation field work, the soils within these wetlands were typically saturated to the surface, with free water observed at or near the surface, and included some areas of inundation, which likely was perched on compacted substrate resulting in diminished permeability. The redox dark surface indicator for hydric soils was met with low-chroma matrix soils with contrasting redox concentrations. The Cowardin Classification for Wetlands B through G is Palustrine Emergent, Nonpersistent, Seasonally Flooded/Saturated (PEM2E). The HGM Classification is Slope.

As mentioned previously in Section B, *Site Alterations*, it appears that the substrate throughout much of the central and eastern half of the site consists of fill material, likely associated with the construction of the church. In addition, based on a review of historic aerial photographs (Appendix D), it appears that Wetlands B through G have been artificially created on compacted fill material resulting from activities associated with construction of the church and on-going activities associated with the church property over the years.

F. Deviation from LWI or NWI

With the exception of Mt. Scott Creek, which the US Fish and Wildlife Service's National Wetlands Inventory (NWI) maps as Riverine Upper Perennial Unconsolidated Bottom Permanently Flooded (R3UBH) and Riverine Unknown Perennial Unconsolidated Bottom Permanently Flooded (R5UBH) wetland, it does not indicate the presence of any wetlands on the site. NWI maps are generated primarily through the interpretation of color infrared aerial photographs (scale of 1:58,000), with limited "ground truthing" to confirm the interpretations. The canopy cover over much of Wetland A, the small size of Wetlands B through G, and the scale of the aerial photographs used to prepare the NWI maps are likely reasons for the discrepancy between the wetlands mapping and the existing on-site conditions. In addition, as Wetlands B though G appear to be artificially created, their presence and absence over the years are likely to have been dependent upon the construction and various activities on the church property, which have varied over the period of time in which the aerial photographs were taken.

G. Mapping Method

PHS flagged the wetland boundaries and limits of OHW with blue flagging. Sample points were flagged with lime green surveyor's tape. The wetland boundary and OHW flagging were survey-located by TerraCalc Land Surveying, Inc. Sample points were GPS-located by PHS, which subsequently transferred this information onto a base map provided by TerraCalc Land Surveying. The estimated survey accuracy is sub-centimeter and the sample point accuracy is approximately +/- 3 feet.

H. Additional Information

None

I. Results and Conclusions

Within the study area, PHS identified and delineated a total of approximately 0.70 acres of potentially jurisdictional wetland, approximately 0.07 acres of potentially artificially created wetland, and the OHW line along the south bank of Mt. Scott Creek, as detailed in Table 3.

Table 3: Summary of Potentially Jurisdictional and Artificially Created Wetland, and Other Waters within the Study Area

Resource	Area (square feet/acreage)	Cowardin Class	HGM Class
Wetland A	30,386 / 0.70	PEM1E	Slope
Wetland B (Artificially Created)	905 / 0.02	PEM2E	Slope
Wetland C (Artificially Created)	176 / 0.004	PEM2E	Slope
Wetland D (Artificially Created)	172 / 0.004	PEM2E	Slope

Resource	Area (square feet/acreage)	Cowardin Class	HGM Class
Wetland E (Artificially Created)	998 / 0.02	PEM2E	Slope
Wetland F (Artificially Created)	301 / 0.007	PEM2E	Slope
Wetland G (Artificially Created)	666 / 0.02	PEM2E	Slope
Mt. Scott Creek (OHW line south bank only)	-	R3UBH R5UBH	Riverine Flow-Through
Total (Potentially Jurisdictional Wetland)	**30,386 (0.70 acres)**		
Total (Potentially Artificially Created Wetland)	**3,218 (0.07 acres)**		

J. Required Disclaimer

This report documents the investigation, best professional judgment and conclusions of the investigators. It is correct and complete to the best of our knowledge. It should be considered a Preliminary Jurisdictional Determination of wetlands and other waters and used at your own risk unless it has been reviewed and approved in writing by the Oregon Department of State Lands in accordance with OAR 141-090-0005 through 141-090-0055.

III. REFERENCES

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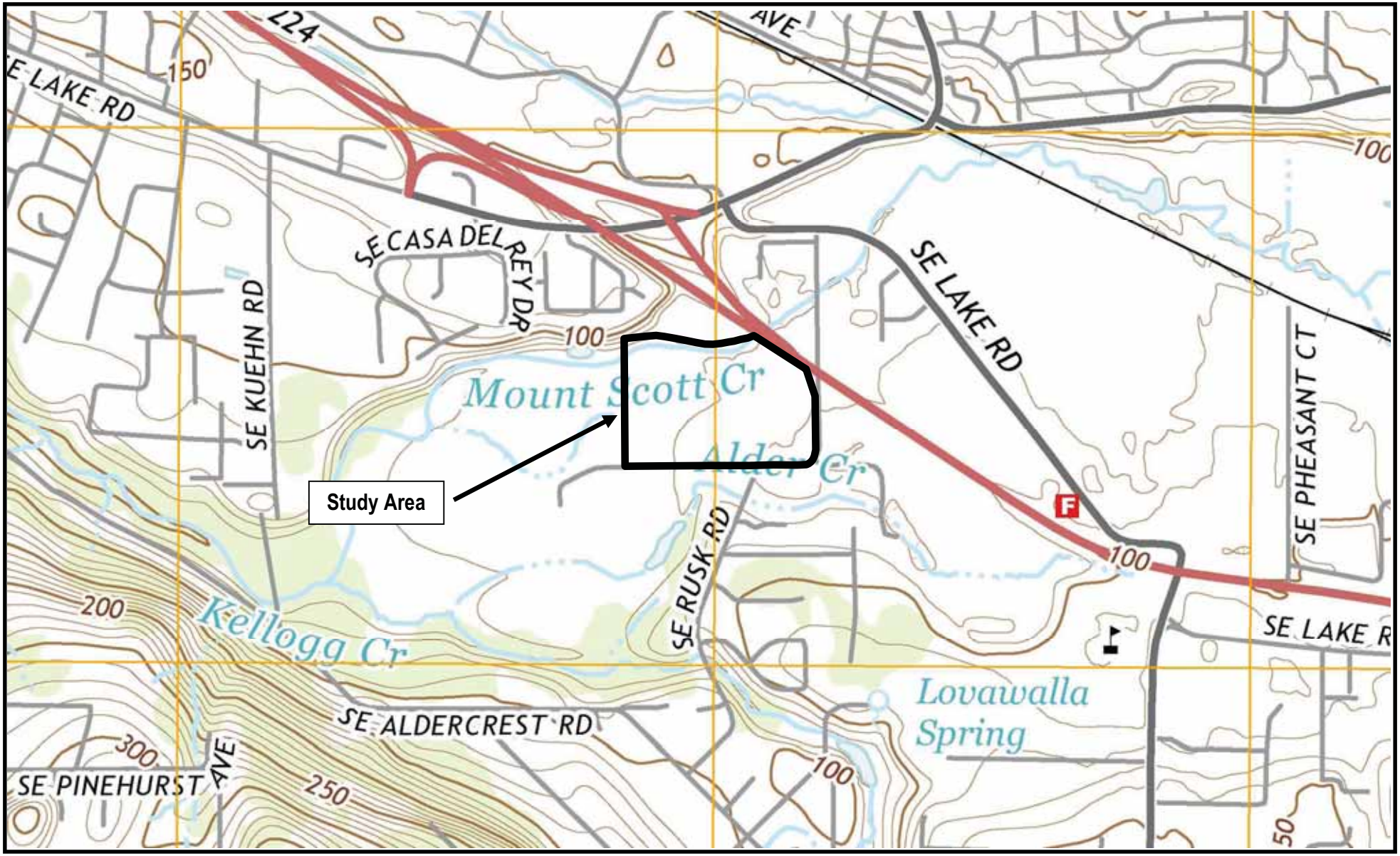
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Appendix A

Figures





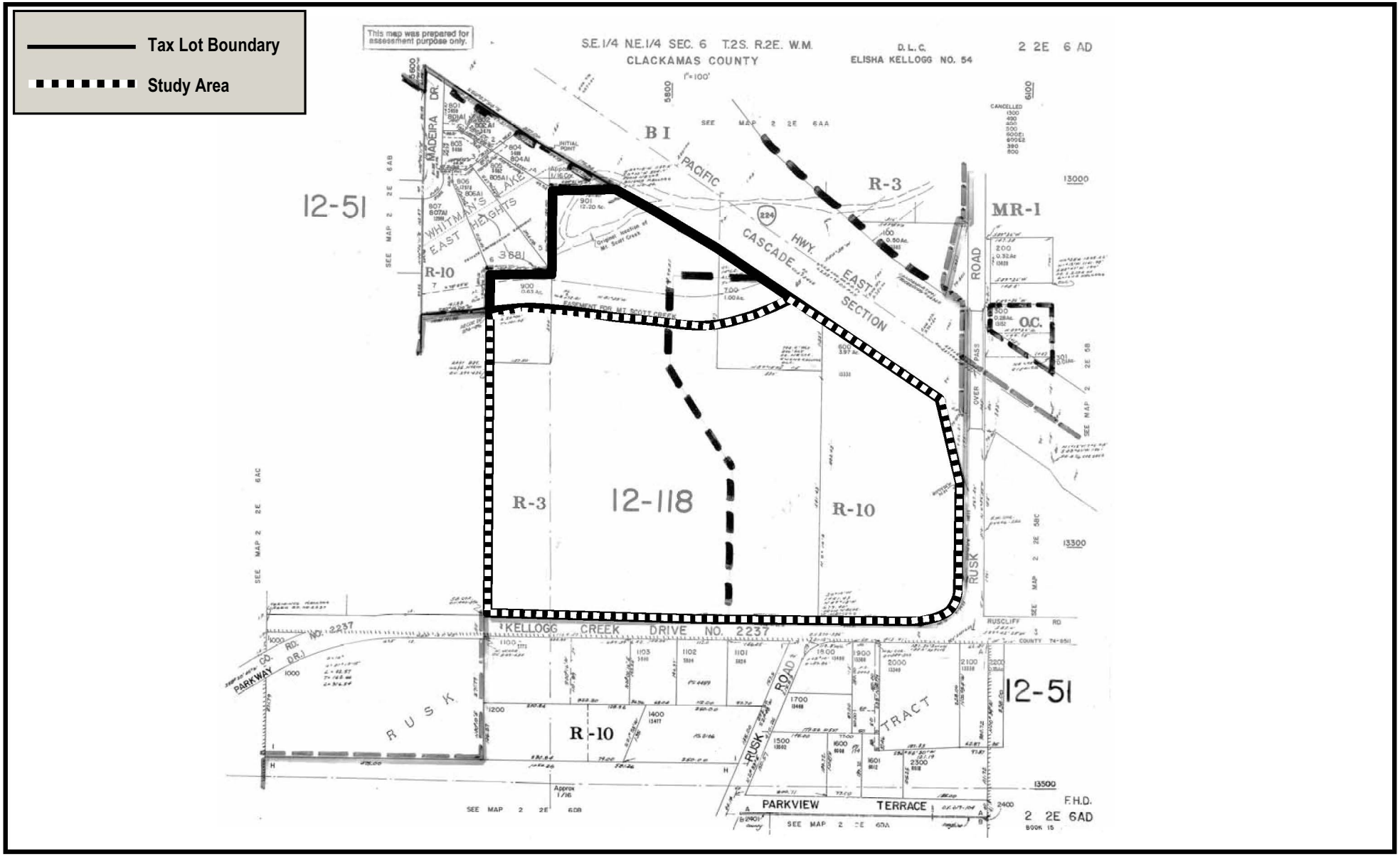
5975
1/16/2017

PHS

Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

General Location and Topography
SE Kellogg Creek Drive - Milwaukie, Oregon
United States Geological Survey (USGS), Gladstone, Oregon, 7.5 Quadrangle, 2014
(viewer/nationalmap.gov/basic)

FIGURE
1

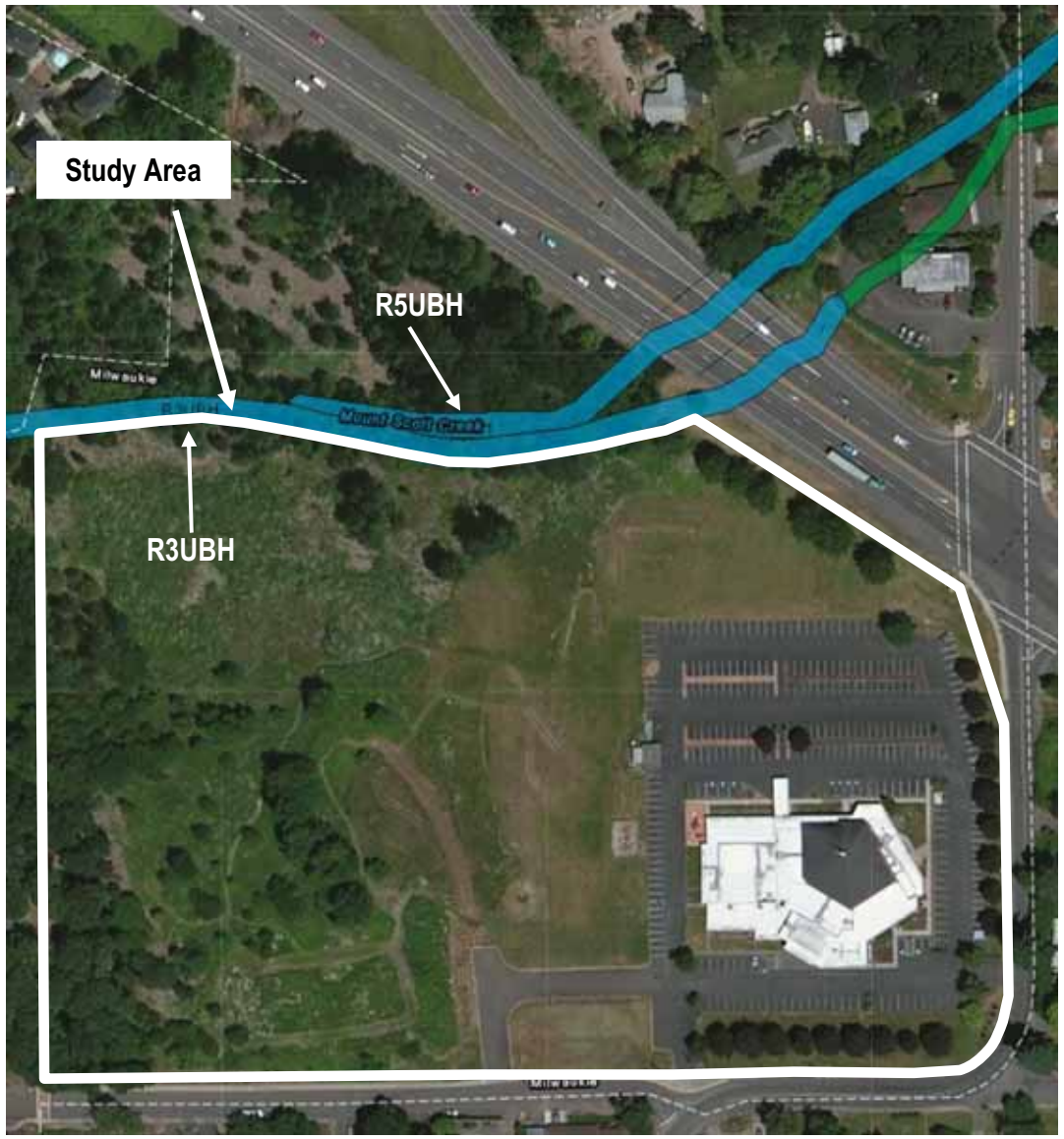


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Wilsonville, OR 97070

Tax Lot Map
SE Kellogg Creek Drive - Milwaukie, Oregon
The Oregon Map (ormap.net)

FIGURE
2



LEGEND

Wetlands

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

R3UBH: Riverine Upper Perennial Unconsolidated Bottom Permanently Flooded

R5UBH: Riverine Unknown Perennial Unconsolidated Bottom Permanently Flooded

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National Wetlands Inventory Map
SE Kellogg Creek Drive - Milwaukie, Oregon
U.S. Fish and Wildlife Service, Online Wetland Mapper V2, 2016

FIGURE
3

Soil Map Units

25 - Cove silty clay loam (hydric)

84 - Wapato silty clay loam (hydric)

91B - Woodburn silt loam, 3 to 8% slopes



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Soils Map
SE Kellogg Creek Drive - Milwaukie, Oregon
Natural Resources Conservation Services, Web Soil Survey, 2016

(websoilsurvey.sc.egov.usda.gov)

FIGURE
4

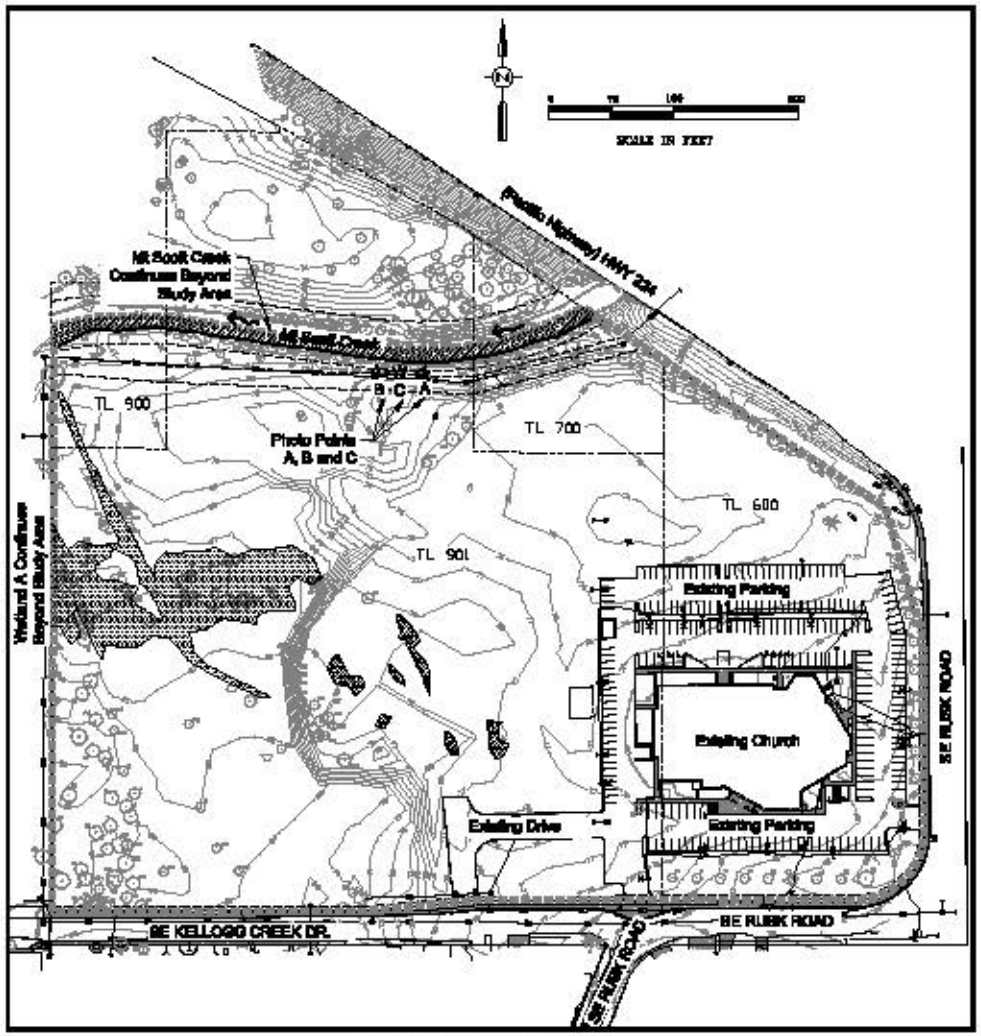


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12/21/2016

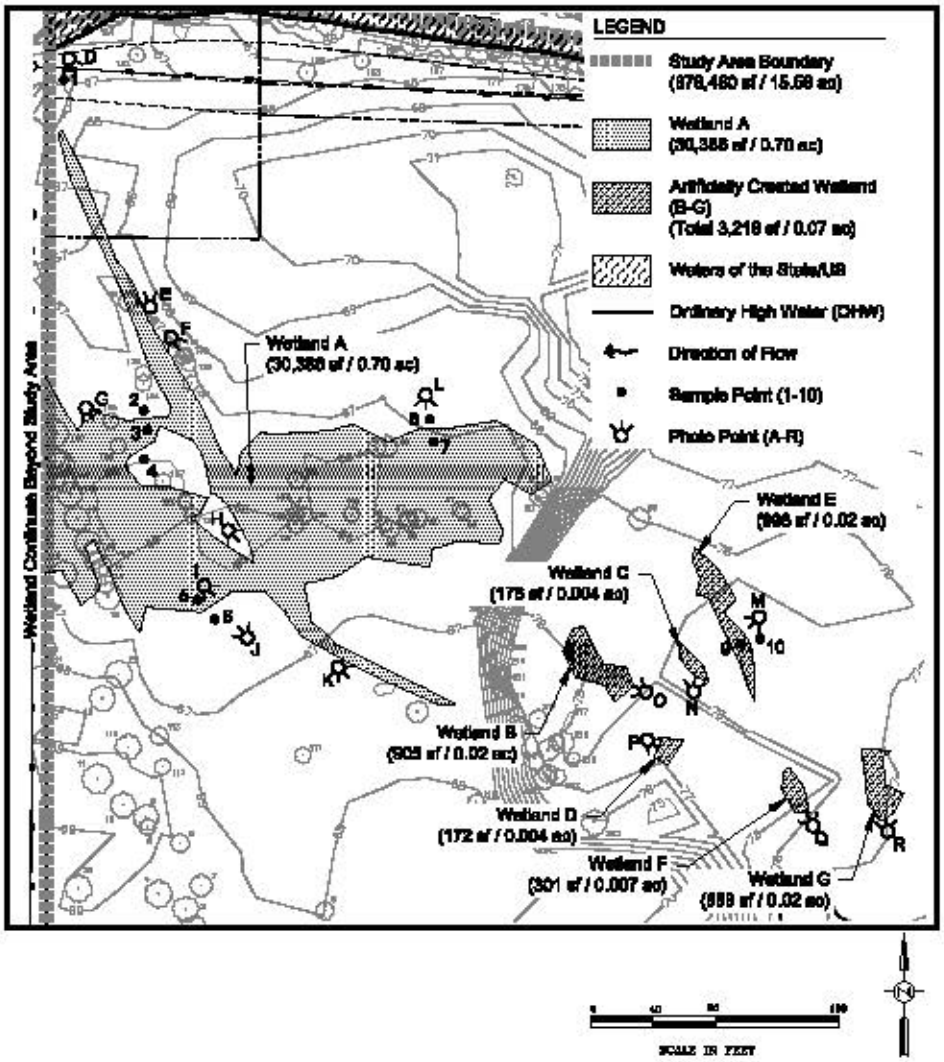
Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

Aerial Photo
SE Kellogg Creek Drive - Milwaukie, Oregon
Google Earth, 2016

FIGURE
5



TAX LOT OVERVIEW



Survey provided by
TerraCalo Land Surveying, Inc., 2016
Survey accuracy is sub-centimeter and
Sample Point accuracy is ± 5 feet.

Wetland Delineation
SE Kellogg Creek Drive - Milwaukie, Oregon

FIGURE 6

1-18-2017

RS331

Appendix B

Wetland Delineation Data Sheets



RS332

PHS # 5975

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: SE Kellogg Creek Drive | City/County: Milwaukie/Clackamas | Sampling Date: 11/21/2016

Applicant/Owner: Brownstone Development, Inc. | State: OR | Sampling Point: 1

Investigator(s): Caroline R./Craig T. | Section, Township, Range: Section 6AD, T 2S, R 2E

Landform (hillslope, terrace, etc.): | Local relief (concave, convex, none): | Slope (%):

Subregion (LRR): LRRA | Lat: 45.427379 | Long: -122.603487 | Datum: WGS 84

Soil Map Unit Name: Wapato silty clay loam | NWI Classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ (if no, explain in Remarks)

Are vegetation ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y

Are vegetation ____ Soil ____ or Hydrology ____ naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	X	No		
Hydric Soil Present?	Yes		No	X	**Is Sampled Area within a Wetland?** Yes ____ No X
Wetland Hydrology Present?	Yes	X	No		

Remarks:
Floodplain adjacent to Mt. Scott Creek.

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (plot size: 30)			
1 *Quercus garryana*	30	X	FACU
2			
3			
4			
	30	= Total Cover	
Sapling/Shrub Stratum (plot size: 5)			
1 *Salix sitchensis*	15	X	FACW
2 *Fraxinus latifolia*	5	X	FACW
3 *Rubus armeniacus*	5	X	FAC
4			
5			
	25	= Total Cover	
Herb Stratum (plot size: 5)			
1 *Rumex crispus*	5		FAC
2 *Carex deweyana*	5		FAC
3 *Taraxacum officinale*	2		FACU
4 *Dipsacus fullonum*	6		FAC
5 *Geum macrophyllum*	3		FAC
6 *Agrostis stolonifera*	15	X	FAC
7 *Lapsana communis*	10	X	FACU
8 *Leucanthemum vulgare*	2		FACU
	48	= Total Cover	
Woody Vine Stratum (plot size:)			
1			
2			
	0	= Total Cover	

% Bare Ground in Herb Stratum 40

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL Species		x 1 =	0
FACW species		x 2 =	0
FAC Species		x 3 =	0
FACU Species		x 4 =	0
UPL Species		x 5 =	0
Column Totals	0 (A)		0 (B)

Prevalence Index =B/A = #DIV/0!

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

X 2- Dominance Test is >50%

____ 3-Prevalence Index is ≤ 3.0[1]

____ 4-Morphological Adaptations[1] (provide supporting data in Remarks or on a separate sheet)

____ 5- Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

RS333

SOIL PHS # 5975 Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(Inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/2	100					Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: **Compacted rock/gravel/cobble**

Depth (inches): **12"**

Hydric Soil Present? Yes ___ **No X**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water stained Leaves (B9) **(Except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- **X** Water stained Leaves (B9) **(MLRA1, 2, 4A, and 4B)**
- **X** Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Fac-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	___	No **X**	Depth (inches):	
Water Table Present?	Yes	___	No **X**	Depth (inches):	**> 12**
Saturation Present? (includes capillary fringe)	Yes	___	No **X**	Depth (inches):	**> 12**

Wetland Hydrology Present?

Yes X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

PHS # 5975

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: **SE Kellogg Creek Drive** City/County: **Milwaukie/Clackamas** Sampling Date: **11/21/2016**

Applicant/Owner: **Brownstone Development, Inc.** State: **OR** Sampling Point: **2**

Investigator(s): **Caroline R./Craig T.** Section, Township, Range: **Section 6AD, T 2S, R 2E**

Landform (hillslope, terrace, etc.:) Local relief (concave, convex, none): Slope (%):

Subregion (LRR): **LRRA** Lat: **45.427379** Long: **-122.603487** Datum: **WGS 84**

Soil Map Unit Name: **Cove silty clay loam** NWI Classification: **None**

Are climatic/hydrologic conditions on the site typical for this time of year? Yes **X** No (if no, explain in Remarks)

Are vegetation Soil or Hydrology significantly disturbed? Are "Normal Circumstances" present? (Y/N) **Y**

Are vegetation Soil or Hydrology naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **X**	No	**Is Sampled Area within a Wetland?**	Yes	No **X**
Hydric Soil Present?	Yes	No **X**			
Wetland Hydrology Present?	Yes	No **X**			

Remarks:

VEGETATION - Use scientific names of plants.

		absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (plot size:)				
1	***Fraxinus latifolia***	**10**	**X**	**FACW**
2				
3				
4				
		10	= Total Cover	
Sapling/Shrub Stratum (plot size:)				
1	***Fraxinus latifolia***	**5**	**X**	**FACW**
2	***Prunus sp.***	**1**		**(FAC)**
3	***Rubus armeniacus***	**5**	**X**	**FAC**
4				
5				
		11	= Total Cover	
Herb Stratum (plot size:)				
1	***Phalaris arundinacea***	**70**	**X**	**FACW**
2	***Dipsacus fullonum***	**15**		**FAC**
3	***Geum macrophyllum***	**2**		**FAC**
4	***Cirsium vulgare***	**1**		**FACU**
5	***Epilobium ciliatum***	**1**		**FACW**
6				
7				
8				
		89	= Total Cover	
Woody Vine Stratum (plot size:)				
1				
2				
		0	= Total Cover	

% Bare Ground in Herb Stratum

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: **4** (A)

Total Number of Dominant Species Across All Strata: **4** (B)

Percent of Dominant Species That are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL Species		x 1 =	**0**
FACW species		x 2 =	**0**
FAC Species		x 3 =	**0**
FACU Species		x 4 =	**0**
UPL Species		x 5 =	**0**
Column Totals	**0** (A)		**0** (B)

Prevalence Index =B/A = **#DIV/0!**

Hydrophytic Vegetation Indicators:

- 1- Rapid Test for Hydrophytic Vegetation
- **X** 2- Dominance Test is >50%
- 3-Prevalence Index is ≤ 3.0[1]
- 4-Morphological Adaptations[1] (provide supporting data in Remarks or on a separate sheet)
- 5- Wetland Non-Vascular Plants[1]
- Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes **X** No

Remarks:

RS335

SOIL PHS # 5975 Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(Inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 3/2	100					Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) **(except MLRA 1)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes _____ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water stained Leaves (B9) **(Except MLRA 1, 2, 4A, and 4B)**
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Plowed Soils (C6)
- Stunted or Stressed Plants (D1) **(LRR A)**
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water stained Leaves (B9) **(MLRA1, 2, 4A, and 4B)**
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Fac-Neutral Test (D5)
- Raised Ant Mounds (D6) **(LRR A)**
- Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	_____	No X	Depth (inches):	_____
Water Table Present?	Yes	_____	No X	Depth (inches):	> 18
Saturation Present? (includes capillary fringe)	Yes	_____	No X	Depth (inches):	> 18

Wetland Hydrology Present?

Yes _____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

PHS # 5975

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: **SE Kellogg Creek Drive** City/County: **Milwaukie/Clackamas** Sampling Date: **11/21/2016**

Applicant/Owner: **Brownstone Development, Inc.** State: **OR** Sampling Point: **3**

Investigator(s): **Caroline R./Craig T.** Section, Township, Range: **Section 6AD, T 2S, R 2E**

Landform (hillslope, terrace, etc.:) **Swale** Local relief (concave, convex, none): Slope (%):

Subregion (LRR): **LRRA** Lat: **45.427379** Long: **-122.603487** Datum: **WGS 84**

Soil Map Unit Name: **Cove silty clay loam** NWI Classification: **None**

Are climatic/hydrologic conditions on the site typical for this time of year? Yes **X** No (if no, explain in Remarks)

Are vegetation Soil or Hydrology significantly disturbed? Are "Normal Circumstances" present? (Y/N) **Y**

Are vegetation Soil or Hydrology naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	**X**	No		
Hydric Soil Present?	Yes	**X**	No	**Is Sampled Area within a Wetland?**	Yes **X** No
Wetland Hydrology Present?	Yes	**X**	No		

Remarks:

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (plot size:)			
1 ***Fraxinus latifolia***	**5**	**X**	**FACW**
2			
3			
4			
	5	= Total Cover	
Sapling/Shrub Stratum (plot size:)			
1 ***Fraxinus latifolia***	**15**	**X**	**FACW**
2 ***Rubus armeniacus***	**5**	**X**	**FAC**
3			
4			
5			
	20	= Total Cover	
Herb Stratum (plot size:)			
1 ***Phalaris arundinacea***	**50**	**X**	**FACW**
2 ***Ranunculus repens***	**30**	**X**	**FAC**
3 ***Geum macrophyllum***	**1**		**FAC**
4			
5			
6			
7			
8			
	81	= Total Cover	
Woody Vine Stratum (plot size:)			
1			
2			
	0	= Total Cover	

% Bare Ground in Herb Stratum

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: **5** (A)

Total Number of Dominant Species Across All Strata: **5** (B)

Percent of Dominant Species That are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL Species		x 1 =	**0**
FACW species		x 2 =	**0**
FAC Species		x 3 =	**0**
FACU Species		x 4 =	**0**
UPL Species		x 5 =	**0**
Column Totals	**0** (A)		**0** (B)

Prevalence Index =B/A = **#DIV/0!**

Hydrophytic Vegetation Indicators:

- 1- Rapid Test for Hydrophytic Vegetation
- **X** 2- Dominance Test is >50%
- 3-Prevalence Index is ≤ 3.0[1]
- 4-Morphological Adaptations[1] (provide supporting data in Remarks or on a separate sheet)
- 5- Wetland Non-Vascular Plants[1]
- Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes X** **No**

Remarks:

RS337

SOIL PHS # 5975 Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(Inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/1	100					Silty Clay Loam	
8-18	10YR 2/1	98	10YR 4/4	2	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

	Histosol (A1)		Sandy Redox (S5)
	Histic Epipedon (A2)		Stripped Matrix (S6)
	Black Histic (A3)		Loamy Mucky Mineral (F1) **(except MLRA 1)**
	Hydrogen Sulfide (A4)		Loamy Gleyed Matrix (F2)
	Depleted Below Dark Surface (A11)		Depleted Matrix (F3)
	Thick Dark Surface (A12)	X	Redox Dark Surface (F6)
	Sandy Mucky Mineral (S1)		Depleted Dark Surface (F7)
	Sandy Gleyed Matrix (S4)		Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

	2 cm Muck (A10)
	Red Parent Material (TF2)
	Very Shallow Dark Surface (TF12)
	Other (explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes X **No**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)			Secondary Indicators (2 or more required)
	Surface Water (A1)	Water stained Leaves (B9) **(Except MLRA 1, 2, 4A, and 4B)**	Water stained Leaves (B9) **(MLRA1, 2, 4A, and 4B)**
X	High Water Table (A2)		
X	Saturation (A3)	Salt Crust (B11)	Drainage Patterns (B10)
	Water Marks (B1)	Aquatic Invertebrates (B13)	Dry-Season Water Table (C2)
	Sediment Deposits (B2)	Hydrogen Sulfide Odor (C1)	Saturation Visible on Aerial Imagery (C9)
	Drift Deposits (B3)	Oxidized Rhizospheres along Living Roots (C3)	Geomorphic Position (D2)
	Algal Mat or Crust (B4)	Presence of Reduced Iron (C4)	Shallow Aquitard (D3)
	Iron Deposits (B5)	Recent Iron Reduction in Plowed Soils (C6)	Fac-Neutral Test (D5)
	Surface Soil Cracks (B6)	Stunted or Stressed Plants (D1) **(LRR A)**	Raised Ant Mounds (D6) **(LRR A)**
	Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Frost-Heave Hummocks (D7)
	Sparsely Vegetated Concave Surface (B8)		

Field Observations:

Surface Water Present?	Yes		No X	Depth (inches):	
Water Table Present?	Yes	X	No	Depth (inches):	8
Saturation Present? (includes capillary fringe)	Yes	X	No	Depth (inches):	10

Wetland Hydrology Present? Yes X **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

PHS # 5975

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: SE Kellogg Creek Drive | City/County: Milwaukie/Clackamas | Sampling Date: 11/21/2016

Applicant/Owner: Brownstone Development, Inc. | State: OR | Sampling Point: 4

Investigator(s): Caroline R./Craig T. | Section, Township, Range: Section 6AD, T 2S, R 2E

Landform (hillslope, terrace, etc.:) | Local relief (concave, convex, none): | Slope (%):

Subregion (LRR): LRRA | Lat: 45.427379 | Long: -122.603487 | Datum: WGS 84

Soil Map Unit Name: Cove silty clay loam | NWI Classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ (if no, explain in Remarks)

Are vegetation ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y

Are vegetation ____ Soil ____ or Hydrology ____ naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes		No	X	**Is Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes		No	X	
Wetland Hydrology Present?	Yes		No	X	

Remarks:

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (plot size: 30)			
1 *Fraxinus latifolia*	3		FACW
2			
3			
4			
	3	= Total Cover	
Sapling/Shrub Stratum (plot size: 5)			
1 *Fraxinus latifolia*	3		FACW
2 *Rubus armeniacus*	20	X	FAC
3 *Crataegus monogyna*	10	X	FAC
4 *Rubus laciniatus*	15	X	FACU
5			
	48	= Total Cover	
Herb Stratum (plot size: 5)			
1 *Geum macrophyllum*	5	X	FAC
2 *Lapsana communis*	10	X	FACU
3 *Polystichum munitum*	5	X	FACU
4			
5			
6			
7			
8			
	20	= Total Cover	
Woody Vine Stratum (plot size:)			
1 *Rubus ursinus*	60	X	FACU
2 *Solanum dulcamara*	5		FAC
	65	= Total Cover	

% Bare Ground in Herb Stratum

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 43% (A/B)

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL Species		x 1 =	0
FACW species		x 2 =	0
FAC Species		x 3 =	0
FACU Species		x 4 =	0
UPL Species		x 5 =	0
Column Totals	0 (A)		0 (B)

Prevalence Index =B/A = #DIV/0!

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2- Dominance Test is >50%

____ 3-Prevalence Index is ≤ 3.0[1]

____ 4-Morphological Adaptations[1] (provide supporting data in Remarks or on a separate sheet)

____ 5- Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:

RS339

SOIL PHS # 5975 Sampling Point: 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(Inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/2	100					Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) **(except MLRA 1)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes _____ **No X**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water stained Leaves (B9) **(Except MLRA 1, 2, 4A, and 4B)**
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Plowed Soils (C6)
- Stunted or Stressed Plants (D1) **(LRR A)**
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water stained Leaves (B9) **(MLRA1, 2, 4A, and 4B)**
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Fac-Neutral Test (D5)
- Raised Ant Mounds (D6) **(LRR A)**
- Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes		No **X**	Depth (inches):	
Water Table Present?	Yes		No **X**	Depth (inches):	**> 16**
Saturation Present? (includes capillary fringe)	Yes		No **X**	Depth (inches):	**> 16**

Wetland Hydrology Present?

Yes _____ **No X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

PHS # 5975

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: SE Kellogg Creek Drive | City/County: Milwaukie/Clackamas | Sampling Date: 11/21/2016

Applicant/Owner: Brownstone Development, Inc. | State: OR | Sampling Point: 5

Investigator(s): Caroline R./Craig T. | Section, Township, Range: Section 6AD, T 2S, R 2E

Landform (hillslope, terrace, etc.:) Depression | Local relief (concave, convex, none): | Slope (%):

Subregion (LRR): LRRA | Lat: 45.427379 | Long: -122.603487 | Datum: WGS 84

Soil Map Unit Name: Cove silty clay loam | NWI Classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ (if no, explain in Remarks)

Are vegetation ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y

Are vegetation ____ Soil ____ or Hydrology ____ naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is Sampled Area within a Wetland?**	Yes X No
Hydric Soil Present?	Yes X	No		
Wetland Hydrology Present?	Yes X	No		

Remarks:

VEGETATION - Use scientific names of plants.

		absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (plot size:)				
1	*Fraxinus latifolia*	60	X	FACW
2				
3				
4				
		60	= Total Cover	
Sapling/Shrub Stratum (plot size:)				
1	*Fraxinus latifolia*	5	X	FACW
2	*Cornus alba*	1		FACW
3	*Symphoricarpos albus*	1		FACU
4				
5				
		7	= Total Cover	
Herb Stratum (plot size:)				
1	*Poa trivialis*	30	X	FAC
2	*Juncus tenuis*	2		FAC
3	*Rumex obtusifolius*	1		FAC
4	*Geum macrophyllum*	1		FAC
5	*Taraxacum officinale*	1		FACU
6				
7				
8				
		35	= Total Cover	
Woody Vine Stratum (plot size:)				
1				
2				
		0	= Total Cover	

% Bare Ground in Herb Stratum

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL Species		x 1 =	0
FACW species		x 2 =	0
FAC Species		x 3 =	0
FACU Species		x 4 =	0
UPL Species		x 5 =	0
Column Totals	0 (A)		0 (B)

Prevalence Index =B/A = #DIV/0!

Hydrophytic Vegetation Indicators:

- ____ 1- Rapid Test for Hydrophytic Vegetation
- X 2- Dominance Test is >50%
- ____ 3-Prevalence Index is ≤ 3.0[1]
- ____ 4-Morphological Adaptations[1] (provide supporting data in Remarks or on a separate sheet)
- ____ 5- Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No

Remarks:

RS341

SOIL PHS # 5975 Sampling Point: 5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(Inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1-6	10YR 3/1	100					Silty Clay Loam	
6-8	10YR 2/1	95	10YR 4/4	5	C	M	Clay	
8-18	10YR 2/1	100					Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water stained Leaves (B9) **(Except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water stained Leaves (B9) **(MLRA1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Fac-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	___	No X	Depth (inches):	___
Water Table Present?	Yes	X	No ___	Depth (inches):	4
Saturation Present? (includes capillary fringe)	Yes	X	No ___	Depth (inches):	9

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

PHS # 5975

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: SE Kellogg Creek Drive | City/County: Milwaukie/Clackamas | Sampling Date: 11/21/2016

Applicant/Owner: Brownstone Development, Inc. | State: OR | Sampling Point: 6

Investigator(s): Caroline R./Craig T. | Section, Township, Range: Section 6AD, T 2S, R 2E

Landform (hillslope, terrace, etc.:) | Local relief (concave, convex, none): | Slope (%):

Subregion (LRR): LRRA | Lat: 45.427379 | Long: -122.603487 | Datum: WGS 84

Soil Map Unit Name: Cove silty clay loam | NWI Classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ (if no, explain in Remarks)

Are vegetation ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y

Are vegetation ____ Soil ____ or Hydrology ____ naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	X	No		
Hydric Soil Present?	Yes		No	X	**Is Sampled Area within a Wetland?** Yes ____ No X
Wetland Hydrology Present?	Yes		No	X	

Remarks:

VEGETATION - Use scientific names of plants.

		absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (plot size: 30)				
1	*Fraxinus latifolia*	50	X	FACW
2				
3				
4				
		50	= Total Cover	
Sapling/Shrub Stratum (plot size: 5)				
1	*Fraxinus latifolia*	20	X	FACW
2	*Symphoricarpos albus*	5		FACU
3	*Crataegus monogyna*	15	X	FAC
4	*Rubus armeniacus*	2		FAC
5				
		42	= Total Cover	
Herb Stratum (plot size: 5)				
1	*Carex deweyana*	70	X	FAC
2	*Prunella vulgaris*	3		FACU
3	*Polystichum munitum*	3		FACU
4	*Vicia tetrasperma*	5		(NOL)
5	*Ranunculus repens*	10		FAC
6	*Dipsacus fullonum*	3		FAC
7	*Agrostis stolonifera*	10		FAC
8	*Equisetum arvense*	1		FAC
		105	= Total Cover	
Woody Vine Stratum (plot size: ____)				
1				
2				
		0	= Total Cover	

% Bare Ground in Herb Stratum

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL Species		x 1 =	0
FACW species		x 2 =	0
FAC Species		x 3 =	0
FACU Species		x 4 =	0
UPL Species		x 5 =	0
Column Totals	0 (A)		0 (B)

Prevalence Index =B/A = #DIV/0!

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

X 2- Dominance Test is >50%

____ 3-Prevalence Index is ≤ 3.0[1]

____ 4-Morphological Adaptations[1] (provide supporting data in Remarks or on a separate sheet)

____ 5- Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

RS343

SOIL PHS # 5975 Sampling Point: 6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(Inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/2	100					Sandy Loam	
6-16	10YR 3/2	60					Sandy Clay Loam	
	10YR 3/1	20					Sandy Clay Loam	
	10YR 4/3	20					Sandy Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) **(except MLRA 1)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes _____ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water stained Leaves (B9) **(Except MLRA 1, 2, 4A, and 4B)**
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Plowed Soils (C6)
- Stunted or Stressed Plants (D1) **(LRR A)**
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water stained Leaves (B9) **(MLRA1, 2, 4A, and 4B)**
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Fac-Neutral Test (D5)
- Raised Ant Mounds (D6) **(LRR A)**
- Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes		No X	Depth (inches):	
Water Table Present?	Yes		No X	Depth (inches):	> 16
Saturation Present? (includes capillary fringe)	Yes		No X	Depth (inches):	> 16

Wetland Hydrology Present?

Yes _____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

PHS # 5975

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: SE Kellogg Creek Drive | City/County: Milwaukie/Clackamas | Sampling Date: 11/21/2016

Applicant/Owner: Brownstone Development, Inc. | State: OR | Sampling Point: 7

Investigator(s): Caroline R./Craig T. | Section, Township, Range: Section 6AD, T 2S, R 2E

Landform (hillslope, terrace, etc.): | Local relief (concave, convex, none): | Slope (%):

Subregion (LRR): LRRA | Lat: 45.427379 | Long: -122.603487 | Datum: WGS 84

Soil Map Unit Name: Cove silty clay loam | NWI Classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ (if no, explain in Remarks)

Are vegetation ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y

Are vegetation ____ Soil ____ or Hydrology ____ naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is Sampled Area within a Wetland?**	Yes X No
Hydric Soil Present?	Yes X	No		
Wetland Hydrology Present?	Yes X	No		

Remarks:

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (plot size: ____)			
1 *Populus balsamifera*	10	X	FAC
2			
3			
4			
	10	= Total Cover	
Sapling/Shrub Stratum (plot size: ____)			
1 *Populus balsamifera*	15	X	FAC
2			
3			
4			
5			
	15	= Total Cover	
Herb Stratum (plot size: ____)			
1 *Phalaris arundinacea*	100	X	FACW
2			
3			
4			
5			
6			
7			
8			
	100	= Total Cover	
Woody Vine Stratum (plot size: ____)			
1			
2			
	0	= Total Cover	

% Bare Ground in Herb Stratum

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL Species		x 1 =	0
FACW species		x 2 =	0
FAC Species		x 3 =	0
FACU Species		x 4 =	0
UPL Species		x 5 =	0
Column Totals	0 (A)		0 (B)

Prevalence Index =B/A = #DIV/0!

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

X 2- Dominance Test is >50%

____ 3-Prevalence Index is ≤ 3.0[1]

____ 4-Morphological Adaptations[1] (provide supporting data in Remarks or on a separate sheet)

____ 5- Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No

Remarks:

RS345

SOIL PHS # 5975 Sampling Point: 7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(Inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/2	100					Silty Clay Loam	
4-7	10YR 3/2	95	7.5YR 4/6	5	C	M	Silty Clay Loam	
7-18	10YR 2/2	98	10YR 3/4	2	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water stained Leaves (B9) **(Except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water stained Leaves (B9) **(MLRA1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Fac-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	X	No ___	Depth (inches):	2
Water Table Present?	Yes	X	No ___	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes	X	No ___	Depth (inches):	0

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Small ponded area in ~5% of plot

PHS # 5975

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: SE Kellogg Creek Drive | City/County: Milwaukie/Clackamas | Sampling Date: 11/21/2016

Applicant/Owner: Brownstone Development, Inc. | State: OR | Sampling Point: 8

Investigator(s): Caroline R./Craig T. | Section, Township, Range: Section 6AD, T 2S, R 2E

Landform (hillslope, terrace, etc.:) Fill | Local relief (concave, convex, none): | Slope (%):

Subregion (LRR): LRRA | Lat: 45.427379 | Long: -122.603487 | Datum: WGS 84

Soil Map Unit Name: Cove silty clay loam | NWI Classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ (if no, explain in Remarks)

Are vegetation ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y

Are vegetation ____ Soil ____ or Hydrology ____ naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes		No	X	**Is Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes		No	X	
Wetland Hydrology Present?	Yes		No	X	

Remarks:

VEGETATION - Use scientific names of plants.

		absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (plot size: ____)				
1				
2				
3				
4				
		0	= Total Cover	
Sapling/Shrub Stratum (plot size: ____)				
1				
2				
3				
4				
5				
		0	= Total Cover	
Herb Stratum (plot size: 5)				
1	*Phalaris arundinacea*	20	X	FACW
2	*Chenopodium leptophyllum*	25	X	FACU
3	*Lotus corniculatus*	10		FAC
4	*Ranunculus repens*	5		FAC
5	*Hypochaeris radicata*	10		FACU
6	*Centaurium erythraea*	5		FAC
7	*Daucus carota*	15	X	FACU
8	*Senecio jacobaea*	10		FACU
		105	= Total Cover	
Woody Vine Stratum (plot size: ____)				
1				
2				
		0	= Total Cover	

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL Species		x 1 =	0
FACW species		x 2 =	0
FAC Species		x 3 =	0
FACU Species		x 4 =	0
UPL Species		x 5 =	0
Column Totals	0 (A)		0 (B)

Prevalence Index =B/A = #DIV/0!

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2- Dominance Test is >50%

____ 3-Prevalence Index is ≤ 3.0[1]

____ 4-Morphological Adaptations[1] (provide supporting data in Remarks or on a separate sheet)

____ 5- Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:

Herb Stratum also contains: Agrostis capillaris (FAC) 5%

RS347

SOIL PHS # 5975 Sampling Point: 8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(Inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/3	100					Sandy Loam	
4-8	10YR 4/4	60					Sandy Loam	
	10YR 3/2	40					Sandy Loam	
8-16	10YR 3/1	100					Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) **(except MLRA 1)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes _____ **No X**

Remarks:

0-16" - a jumble of mixed disturbed fill, rocks and gravel throughout

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water stained Leaves (B9) **(Except MLRA 1, 2, 4A, and 4B)**
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Plowed Soils (C6)
- Stunted or Stressed Plants (D1) **(LRR A)**
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water stained Leaves (B9) **(MLRA1, 2, 4A, and 4B)**
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Fac-Neutral Test (D5)
- Raised Ant Mounds (D6) **(LRR A)**
- Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes		No X	Depth (inches):	
Water Table Present?	Yes		No X	Depth (inches):	> 16
Saturation Present? (includes capillary fringe)	Yes		No X	Depth (inches):	> 16

Wetland Hydrology Present?

Yes _____ **No X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

PHS # 5975

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: **SE Kellogg Creek Drive** City/County: **Milwaukie/Clackamas** Sampling Date: **11/21/2016**

Applicant/Owner: **Brownstone Development, Inc.** State: **OR** Sampling Point: **9**

Investigator(s): **Caroline R./Craig T.** Section, Township, Range: **Section 6AD, T 2S, R 2E**

Landform (hillslope, terrace, etc.:) **depression** Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): **LRRA** Lat: **45.427379** Long: **-122.603487** Datum: **WGS 84**

Soil Map Unit Name: **Cove silty clay loam** NWI Classification: **None**

Are climatic/hydrologic conditions on the site typical for this time of year? Yes **X** No _____ (if no, explain in Remarks)

Are vegetation ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) **Y**

Are vegetation ____ Soil ____ or Hydrology ____ naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	**X**	No		**Is Sampled Area within a Wetland?** Yes **X** No _____
Hydric Soil Present?	Yes	**X**	No		
Wetland Hydrology Present?	Yes	**X**	No		

Remarks:

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (plot size: _____)			
1			
2			
3			
4			
	0	= Total Cover	
Sapling/Shrub Stratum (plot size: _____)			
1			
2			
3			
4			
5			
	0	= Total Cover	
Herb Stratum (plot size: _____)			
1 ***Phalaris arundinacea***	**25**	**X**	**FACW**
2 ***Agrostis stolonifera***	**40**	**X**	**FAC**
3 ***Juncus effusus***	**10**		**FACW**
4 ***Hypochaeris radicata***	**10**		**FACU**
5 ***Leucanthemum vulgare***	**5**		**FACU**
6			
7			
8			
	90	= Total Cover	
Woody Vine Stratum (plot size: _____)			
1			
2			
	0	= Total Cover	

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: **2** (A)

Total Number of Dominant Species Across All Strata: **2** (B)

Percent of Dominant Species That are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL Species		x 1 =	**0**
FACW species		x 2 =	**0**
FAC Species		x 3 =	**0**
FACU Species		x 4 =	**0**
UPL Species		x 5 =	**0**
Column Totals	**0** (A)		**0** (B)

Prevalence Index =B/A = **#DIV/0!**

Hydrophytic Vegetation Indicators:

- _____ 1- Rapid Test for Hydrophytic Vegetation
- **X** 2- Dominance Test is >50%
- _____ 3-Prevalence Index is ≤ 3.0[1]
- _____ 4-Morphological Adaptations[1] (provide supporting data in Remarks or on a separate sheet)
- _____ 5- Wetland Non-Vascular Plants[1]
- _____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes **X** No _____

Remarks:

RS349

SOIL PHS # 5975 Sampling Point: 9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(Inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	2.5YR 3/2	90	7.5YR 4/6	10	C	M	Silt Loam	
6-14	2.5YR 5/2	80	7.5YR 4/6	20	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water stained Leaves (B9) **(Except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water stained Leaves (B9) **(MLRA1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Fac-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	X	No	___	Depth (inches):	2
Water Table Present?	Yes	X	No	___	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes	X	No	___	Depth (inches):	0

Wetland Hydrology Present? Yes X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

PHS # 5975

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: SE Kellogg Creek Drive | City/County: Milwaukie/Clackamas | Sampling Date: 11/21/2016

Applicant/Owner: Brownstone Development, Inc. | State: OR | Sampling Point: 10

Investigator(s): Caroline R./Craig T. | Section, Township, Range: Section 6AD, T 2S, R 2E

Landform (hillslope, terrace, etc.): | Local relief (concave, convex, none): | Slope (%):

Subregion (LRR): LRRA | Lat: 45.427379 | Long: -122.603487 | Datum: WGS 84

Soil Map Unit Name: Cove silty clay loam | NWI Classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ (if no, explain in Remarks)

Are vegetation ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y

Are vegetation ____ Soil ____ or Hydrology ____ naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes		No	X	**Is Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes		No	X	
Wetland Hydrology Present?	Yes		No	X	

Remarks:

VEGETATION - Use scientific names of plants.

		absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (plot size: ____)				
1				
2				
3				
4				
		0	= Total Cover	
Sapling/Shrub Stratum (plot size: ____)				
1				
2				
3				
4				
5				
		0	= Total Cover	
Herb Stratum (plot size: 5)				
1	*Daucus carota*	25	X	FACU
2	*Chenopodium leptophyllum*	20	X	FACU
3	*Agrostis capillaris*	20	X	FAC
4	*Hypochaeris radicata*	15		FACU
5	*Holcus lanatus*	10		FAC
6	*Bromus sp.*	20	X	(FAC)
7	*Parentucellia viscosa*	10		FAC
8	*Plantago lanceolata*	15		FACU
		160	= Total Cover	
Woody Vine Stratum (plot size: ____)				
1				
2				
		0	= Total Cover	

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL Species		x 1 =	0
FACW species		x 2 =	0
FAC Species		x 3 =	0
FACU Species		x 4 =	0
UPL Species		x 5 =	0
Column Totals	0 (A)		0 (B)

Prevalence Index =B/A = #DIV/0!

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2- Dominance Test is >50%

____ 3-Prevalence Index is ≤ 3.0[1]

____ 4-Morphological Adaptations[1] (provide supporting data in Remarks or on a separate sheet)

____ 5- Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:

Herb Stratum also contains: Poa sp. (FAC) 10%, Rumex crispus (FAC) 5%, Cirsium arvense (FAC) 5%, Schedonorus arundinaceus, FAC 5%

SOIL PHS # 5975 Sampling Point: 10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(Inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/3	100					Sandy Loam	
3-16	10YR 4/4	60					Sandy Loam	
	10YR 4/2	40					Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) **(except MLRA 1)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes _____ **No X**

Remarks:

0-16 - jumble of mixed/disturbed fill

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water stained Leaves (B9) **(Except MLRA 1, 2, 4A, and 4B)**
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Plowed Soils (C6)
- Stunted or Stressed Plants (D1) **(LRR A)**
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water stained Leaves (B9) **(MLRA1, 2, 4A, and 4B)**
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Fac-Neutral Test (D5)
- Raised Ant Mounds (D6) **(LRR A)**
- Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes		No X	Depth (inches):	
Water Table Present?	Yes		No X	Depth (inches):	> 16
Saturation Present? (includes capillary fringe)	Yes		No X	Depth (inches):	> 16

Wetland Hydrology Present?

Yes _____ **No X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Appendix C

Site Photos





Photo A

Looking east along south bank of Mt. Scott Creek

Photo B

Looking west along south bank of Mt. Scott Creek



#5975
11/22/2016

Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

Photodocumentation
SE Kellogg Creek Drive, Milwaukie, Oregon
Both photos taken on October 18, 2016

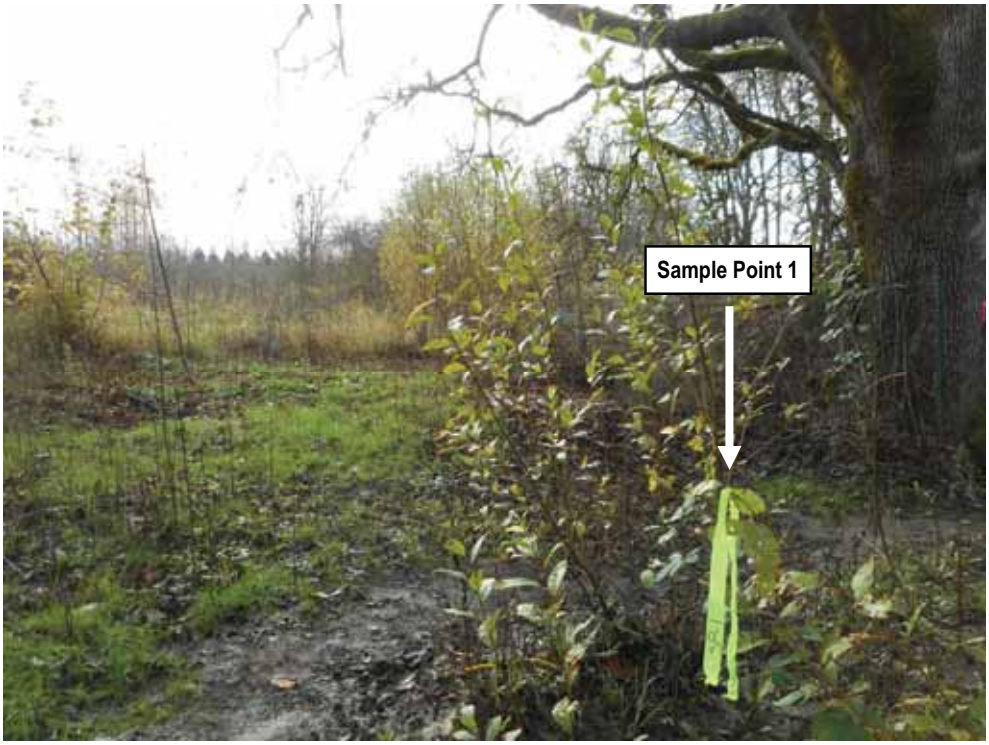


Photo C

Looking north across
Mt. Scott Creek

Photo D

Looking southeast toward
Wetland A



#57975
711/22/2016

Pacific Habitat Services, Inc.
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Wilsonville, OR 97070

Photodocumentation
SE Kellogg Creek Drive, Milwaukie, Oregon
Photo C taken on October 18, 2016, Photo D taken on November 21, 2016



Photo E

Looking northwest toward north end of Wetland A

Photo F

Looking southeast toward center of Wetland A



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11/22/2016

Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

Photodocumentation
SE Kellogg Creek Drive, Milwaukie, Oregon
Both photos taken on November 17, 2016

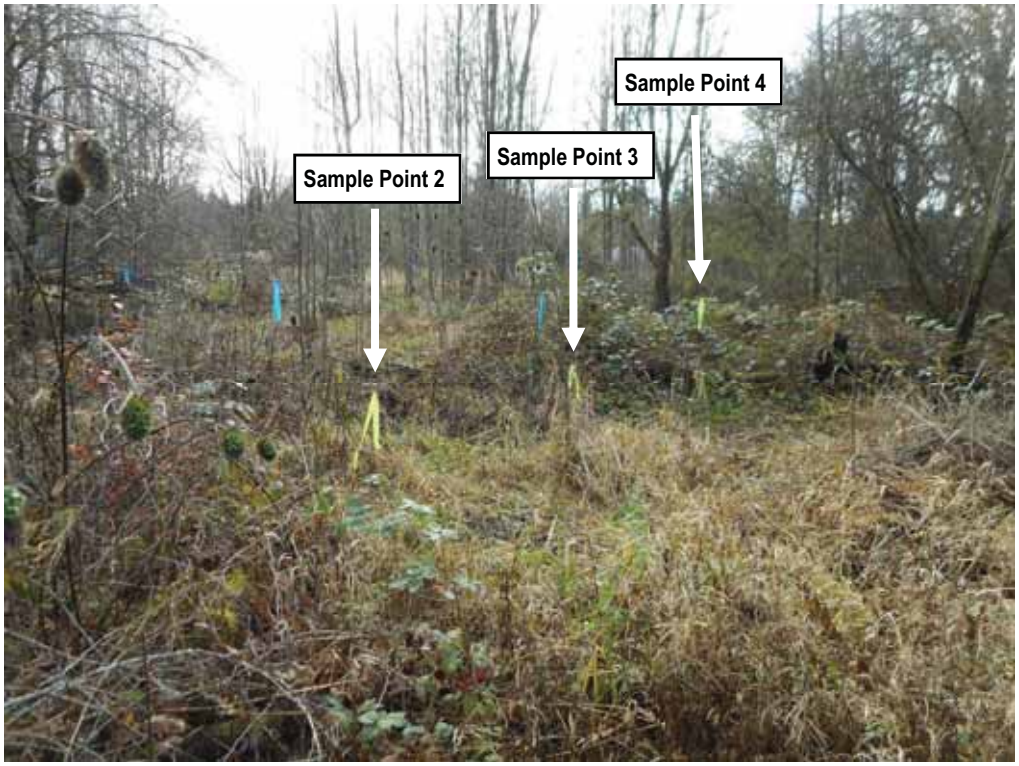


Photo G

Looking southeast toward upland island (Sample Point 4) and center of Wetland A

Photo H

Looking southeast toward southern portion of Wetland A from south end of upland island



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11/22/2016

Pacific Habitat Services, Inc.
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Wilsonville, OR 97070

Photodocumentation
SE Kellogg Creek Drive, Milwaukie, Oregon
Both photos taken on November 21, 2016

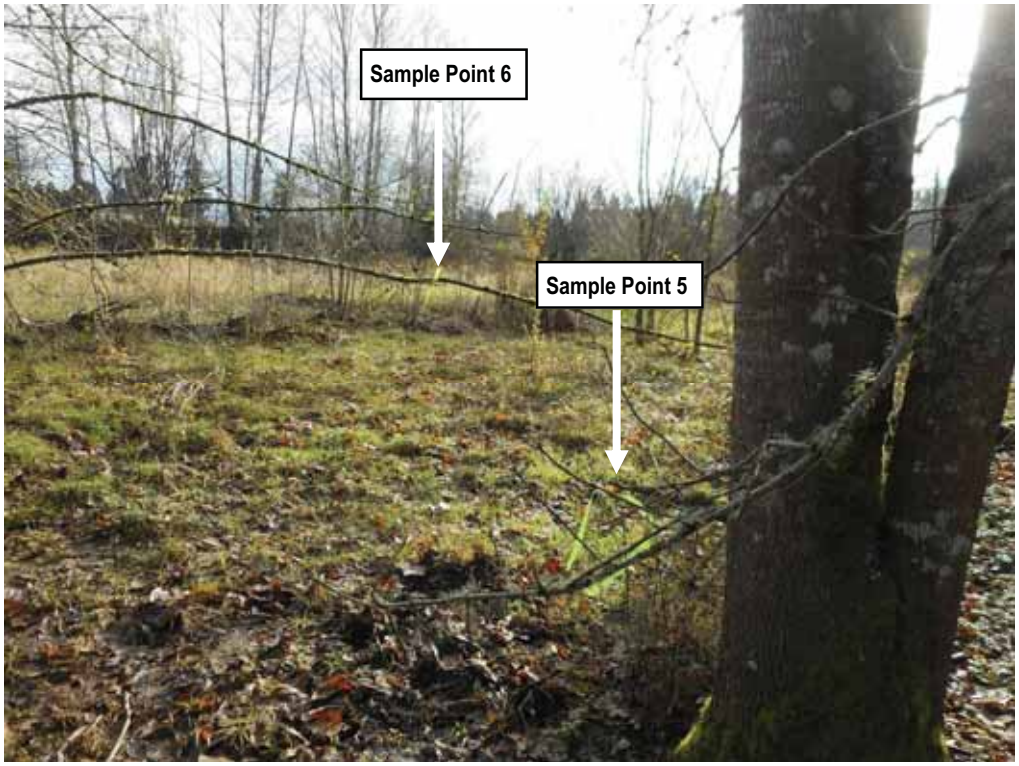
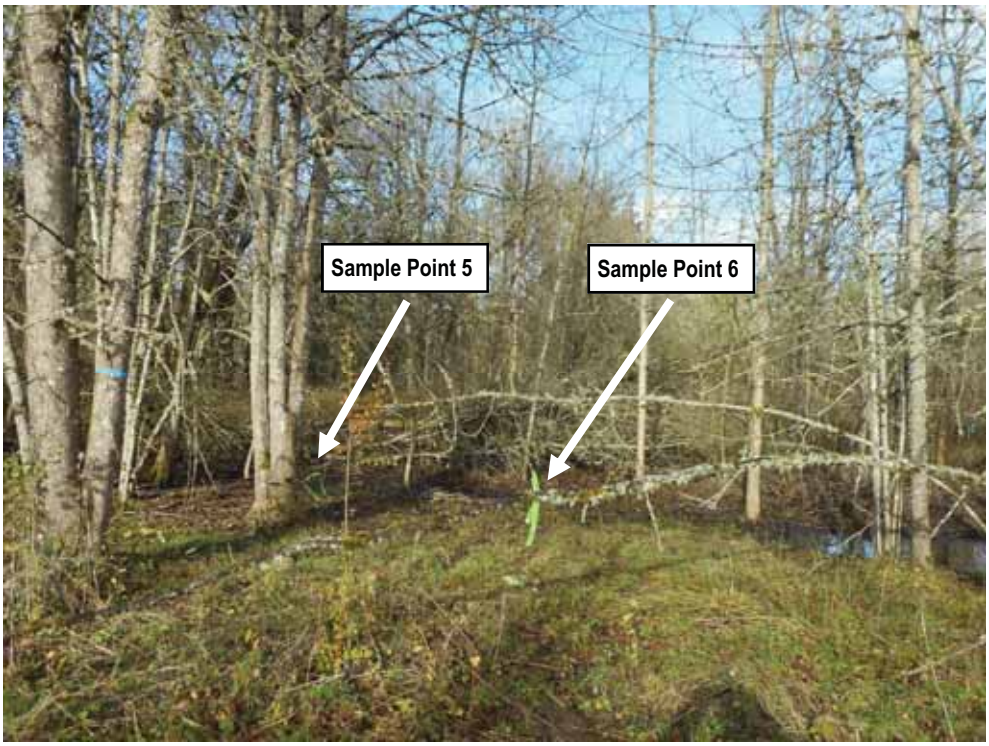


Photo I

Looking southeast toward southern boundary of Wetland A

Photo J

Looking toward the northwest portion of Wetland A from its southern boundary.



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11/22/2016

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Photodocumentation
SE Kellogg Creek Drive, Milwaukie, Oregon
Both photos taken on November 21, 2016

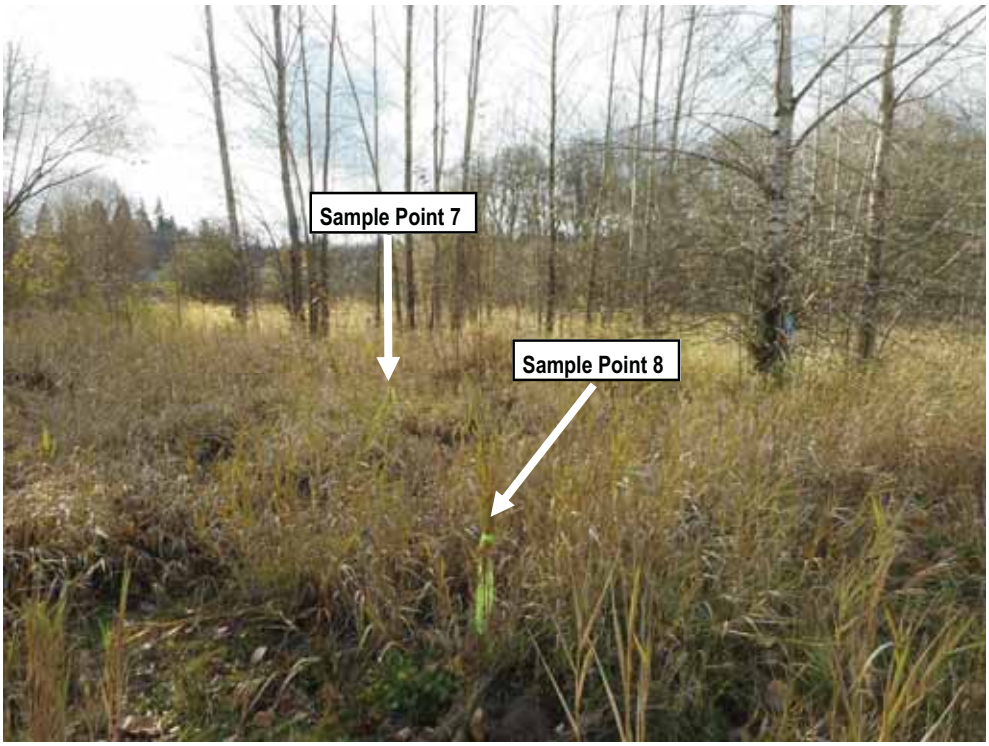


Photo K

Looking southeast at south end of Wetland A

Photo L

Looking south at eastern portion of Wetland A



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11/22/2016

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Wilsonville, OR 97070

Photodocumentation
SE Kellogg Creek Drive, Milwaukie, Oregon
Both photos taken on November 21, 2016

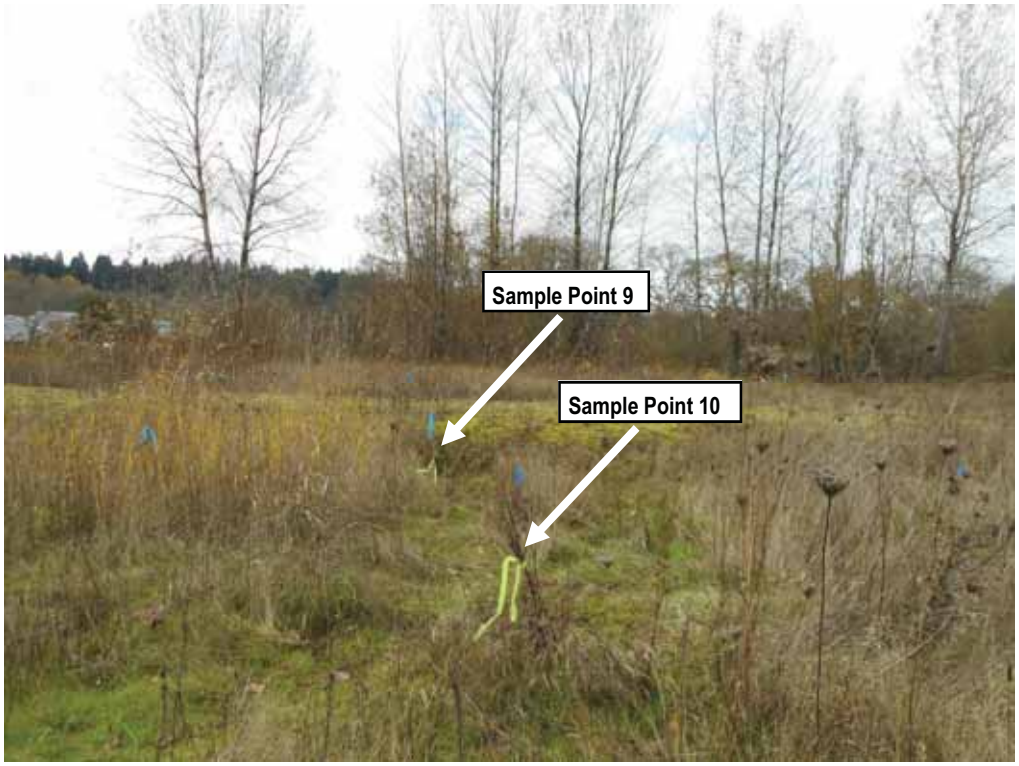


Photo M

Looking southwest across Wetland E

Photo N

Looking north at Wetland C



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11/22/2016

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Wilsonville, OR 97070

Photodocumentation
SE Kellogg Creek Drive, Milwaukie, Oregon
Both photos taken on November 21, 2016



Photo O

Looking northwest at Wetland B

Photo P

Looking southeast at Wetland D



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11/22/2016

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Wilsonville, OR 97070

Photodocumentation
SE Kellogg Creek Drive, Milwaukie, Oregon
Both photos taken on November 21, 2016



Photo Q

Looking northwest at Wetland F

Photo R

Looking north at Wetland G



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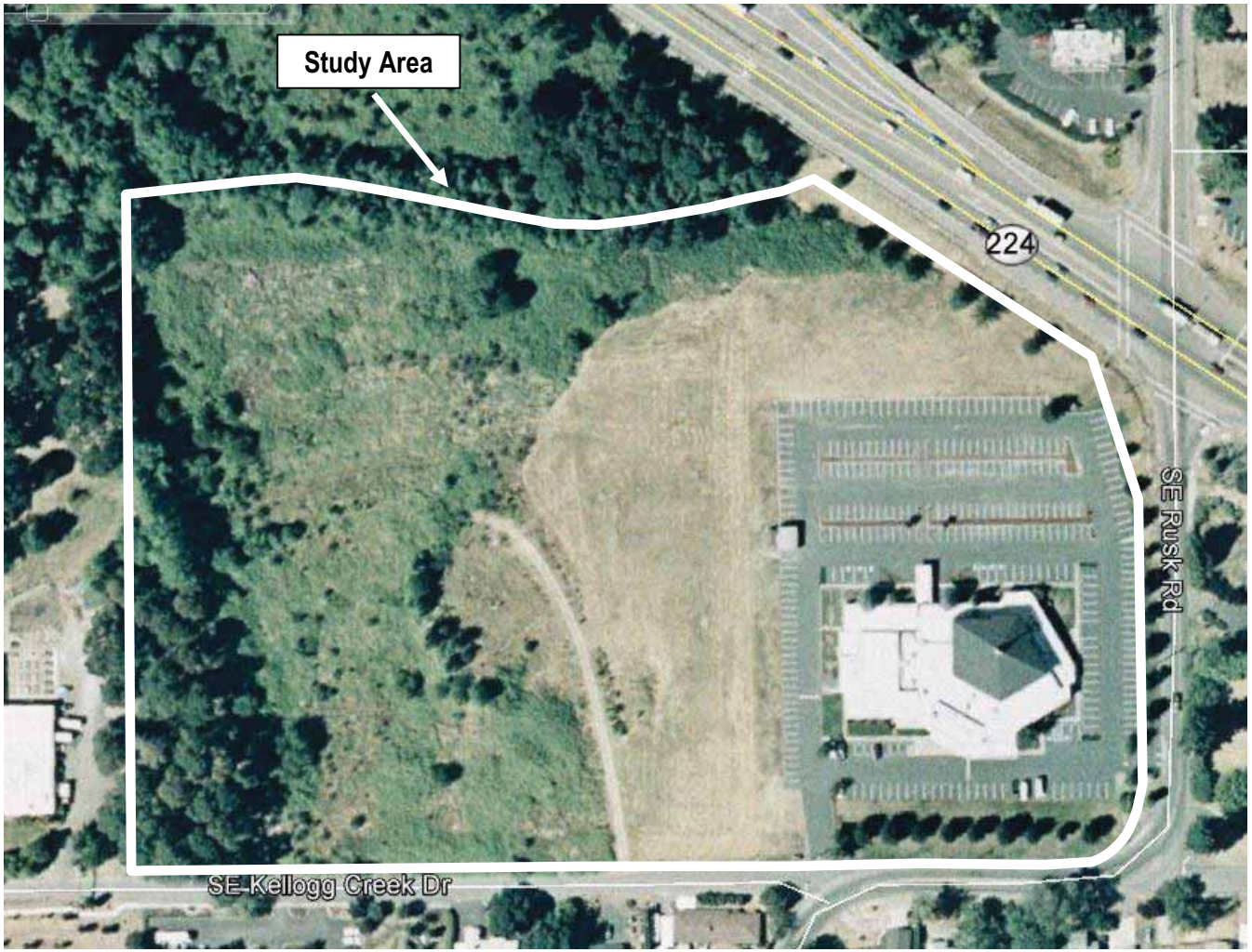
Photodocumentation
SE Kellogg Creek Drive, Milwaukie, Oregon
Both photos taken on November 21, 2016

Appendix D

Historic Aerial Photographs



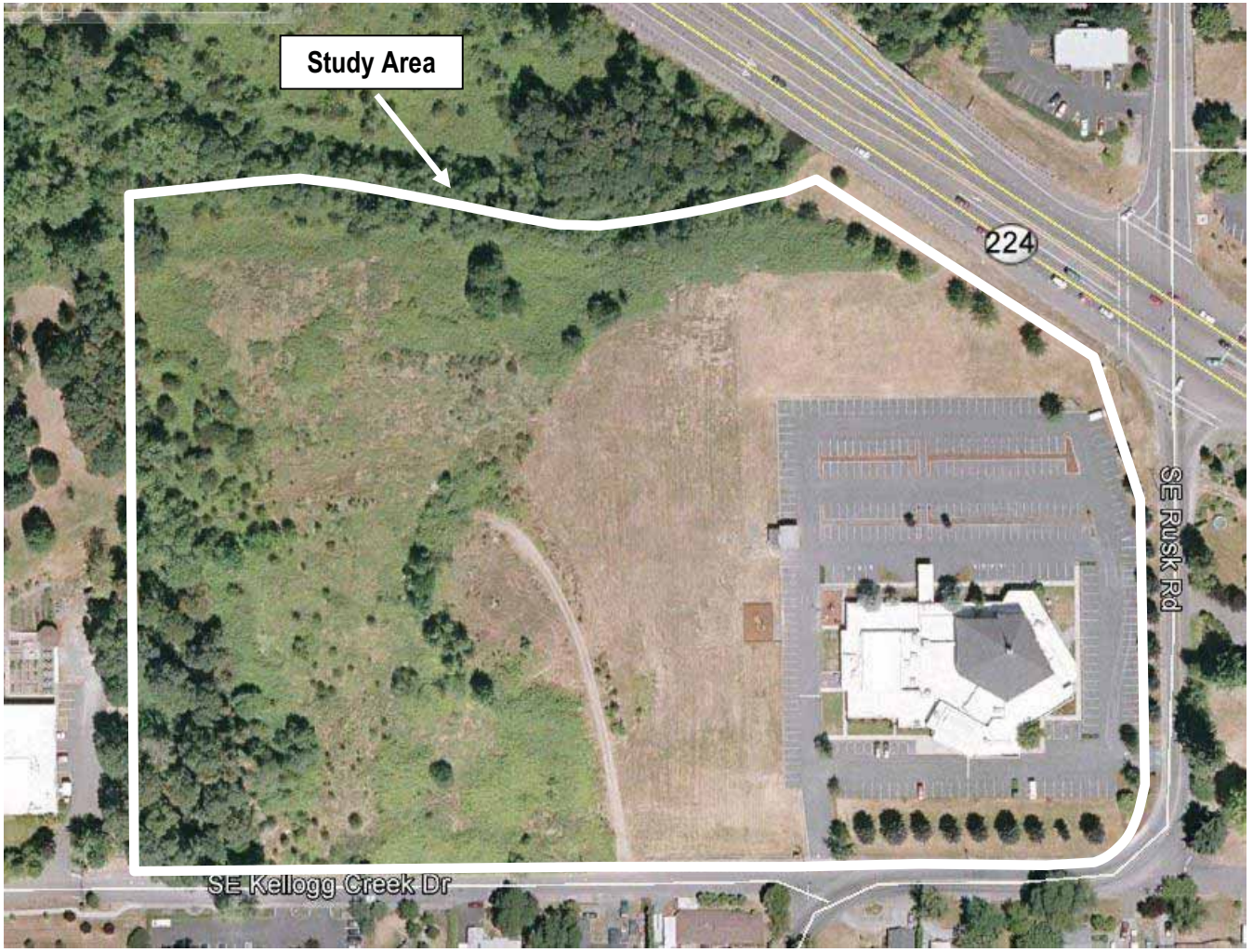
RS363



5975
12/21/2016

Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

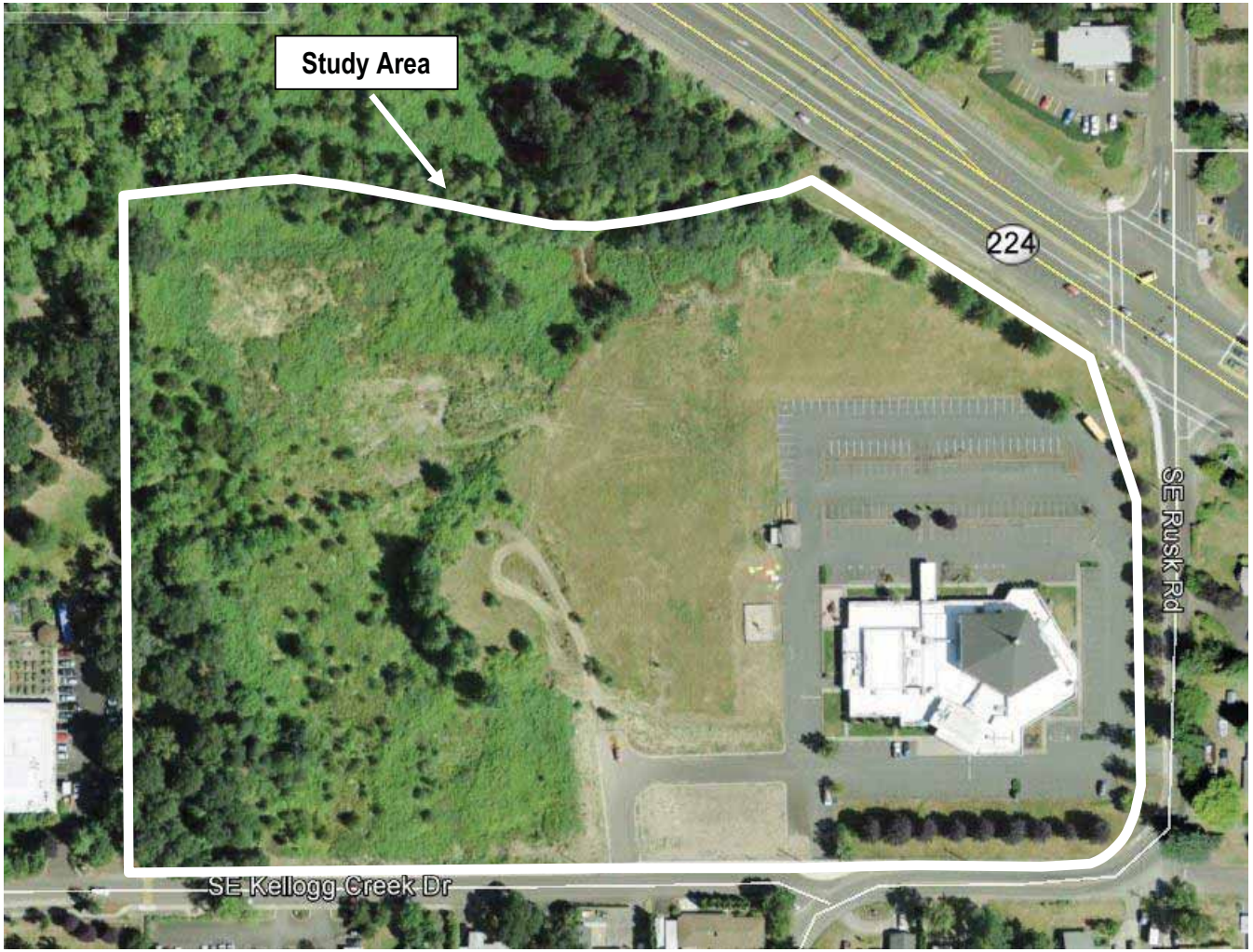
Historic Aerial Photo
SE Kellogg Creek Drive, Milwaukie, Oregon
Google Earth, August 14, 2002



5975
12/21/2016

Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

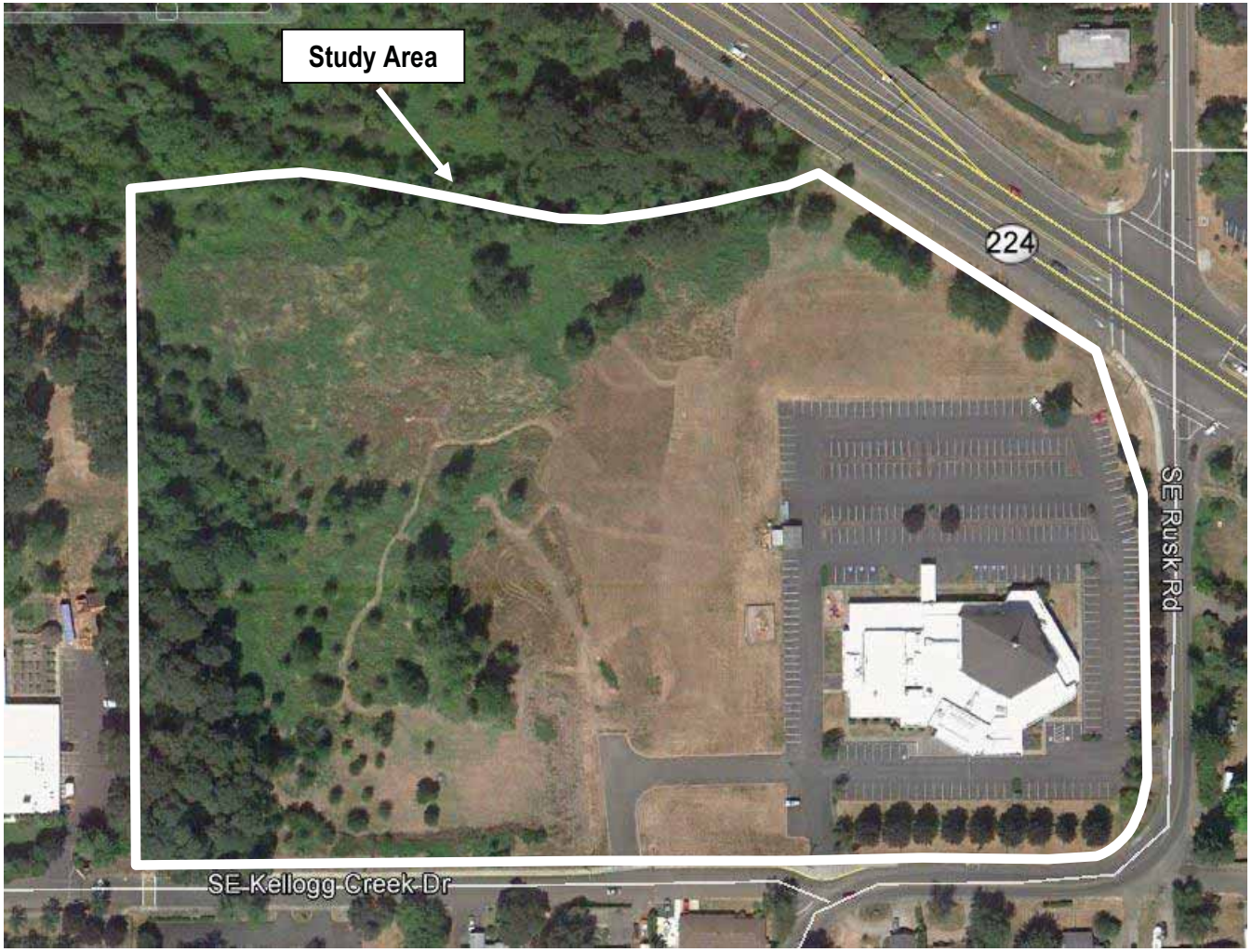
Historic Aerial Photo
SE Kellogg Creek Drive, Milwaukie, Oregon
Google Earth, July 2003



5975
12/21/2016

Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

Historic Aerial Photo
SE Kellogg Creek Drive, Milwaukie, Oregon
Google Earth, July 2007



5975
12/21/2016

Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

Historic Aerial Photo
SE Kellogg Creek Drive, Milwaukie, Oregon
Google Earth, August 2010

Appendix E

Geotechnical Evaluation Report



RS368

Appendix F

Wetland Definitions, Methodology, and References



RS369

WATERS OF THE STATE AND WETLAND DEFINITION AND CRITERIA

Regulatory Jurisdiction

Wetlands and water resources in Oregon are regulated by the Oregon Department of State Lands (DSL) under the Removal-Fill Law (ORS 196.800-196.990) and by the U.S. Army Corps of Engineers (COE) through Section 404 of the Clean Water Act.

The primary source document for wetland delineations within Oregon is the *Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1* (Environmental Laboratory 1987) which is recognized by both DSL and COE.

Waters of the State and Wetland Definition

Waters of the State are defined as "natural waterways including all tidal and nontidal bays, intermittent streams, constantly flowing streams, lakes, wetlands and other bodies of water in this state, navigable and nonnavigable...". "Natural waterways" is further defined as waterways created naturally by geological and hydrological processes, waterways that would be natural but for human-caused disturbances (e.g. channelized or culverted streams, impounded waters, partially drained wetlands or ponds created in wetlands)..."(DSL, 2001).

Wetland*s* are defined as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (DSL, 2001).

Wetland Criteria

Based on the above definition, three major factors characterize a wetland: hydrology, substrate, and biota.

Wetland Hydrology

Wetland hydrology is related to duration of saturation, frequency of saturation, and critical depth of saturation. The 1987 manual defines wetland hydrology as inundation or saturation within a major portion of the root zone (usually above 12 inches), typically for at least 12.5% of the growing season. The wetland hydrology criterion can be met, however, if saturation within the major portion of the root zone is present for only 5% of the growing season, depending on other evidence.

The growing season is defined as the portion of the year when soil temperatures at 19.7 inches below the soil surface are higher than biological zero (41 degrees Fahrenheit, 5 degrees Celsius), but also allows approximation from frost free days, based on air temperature. The growing season for any given site or location is determined from US Natural Resources Conservation Service, (formerly Soil Conservation Service) data and information.

Wetland hydrologic indicators include the following: visual observation of inundation or saturation, watermarks, drift lines, sediment deposits, drainage pattern, and/or oxidized rhizospheres with living roots. Oxidized rhizospheres are defined as yellowish-red zones around the roots and rhizomes of some plants that grow in frequently saturated soils.

Wetland Substrate (Soils)

Most wetlands are characterized by hydric soils. Hydric soils are those that are ponded, flooded, or saturated for long enough during the growing season to develop anaerobic conditions. Periodic saturation of soils causes alternation of reduced and oxidized conditions, which leads to the formation of redoximorphic features (gleying and mottling). Mineral hydric soils will be either gleyed or will have bright mottles and/or low matrix chroma. The redoximorphic feature known as gley is a result of greatly reduced soil conditions, which result in a characteristic grayish, bluish or greenish soil color. The term mottling is used to describe areas of contrasting color within a soil matrix. The soil matrix is the portion of the soil layer that has the predominant color. Soils that have brightly colored mottles and a low matrix chroma are indicative of a fluctuating water table.

Hydric soil indicators include: organic content of greater than 50% by volume, sulfidic material or “rotten egg” odor, and/or presence of redoximorphic features and dark soil matrix, as determined by the use of a Munsell Soil Color Chart. This chart establishes the chroma, value and hue of soils based on comparison with color chips. Mineral hydric soils usually have a matrix chroma of 2 or less in mottled soils, or a matrix chroma of 1 or less in unmottled soils.

Wetland Biota (Vegetation)

Wetland biota is defined as hydrophytic vegetation. A hydrophyte is a plant species that is capable of growing in substrates that are periodically deficient in oxygen as a result of saturated soil conditions. The U.S. Fish and Wildlife Service, in the *National List of Plant Species that Occur in Wetlands*, has established five basic groups of vegetation based on their frequency of occurrence in wetlands. These categories, referred to as the "wetland indicator status”, are as follows: obligate wetland plants (OBL), facultative wetland (FACW), facultative (FAC), facultative upland (FACU), and obligate upland (UPL). Table 1 gives a definition of the plant indicator codes.

Table 1. Description of Wetland Plant Indicator Status Codes

Indicator Code	Status
OBL	Obligate wetland. Estimated to occur almost exclusively in wetlands (>99%)
FACW	Facultative wetland. Estimated to occur 67-99% of the time in wetlands.
FAC	Facultative. Occur equally in wetlands and non-wetlands (34-66%).
FACU	Facultative upland. Usually occur in non-wetlands (67-99%).
UPL	Obligate upland. Estimated to occur almost exclusively in non-wetlands (>99%). If a species is not assigned to one of the four groups described above it is assumed to be obligate upland.
NI	Has not yet received a wetland indicator status, but is probably not obligate upland.

Observations of hydrology, soils, and vegetation, were made using the "Routine On-site" delineation method as defined in the 1987 manual for areas that were not currently in agricultural production. One-foot diameter soil pits were excavated to 16 inches and soil profiles were examined for hydric soil and wetland hydrology field indicators. In addition, a visual percent-

cover estimate of the dominant species of the plant community was performed using soil pit locations as a center of reference. Dominant plant species are based on estimates of percent cover for herbaceous, woody vine, and shrub species within a 5 foot radius of the sample point, and basal area cover for tree species within a 30 foot radius of the sample point. Plant species in each vegetative layer, which are estimated at less than 20%, are not considered to be dominant. The wetland indicator status is then used to determine if there is an overall dominance (greater than 50%) of wetland or upland plant species.

During data collection, the soil profiles were examined for hydric soil and wetland hydrology field indicators. Plant species and cover were recorded. Data was recorded on standard data sheets which contain the information specified in the 1987 Corps manual.

Exhibit E

Preliminary Drainage Report

Kellogg Creek Planned Development

2322.14258.01

Prepared for

Brownstone Development, Inc.

47 S State Street

PO Box 2375

Lake Oswego, Oregon 97934

June 12, 2017

Revised from February 8, 2017

RS375

Prepared for	Brownstone Development, Inc.
Project Name	Preliminary Drainage Report
Job Number	2322.14258.01
Date	June 12, 2017

DOWL
720 SW Washington Street, Suite 750
Portland, Oregon
97205

Telephone: 971-280-8641
Facsimile: 800-865-9847
araskin@dowl.com

Name	Title	Date	Revision	Reviewer
Atalia Raskin	WR Project Manager	2/8/2017	1	Scott Emmens
Atalia Raskin	WR Project Manager	6/12/2017	2	Scott Emmens

Executive Summary

The proposed Kellogg Creek residential development is located at 13333 Rusk Road in Milwaukie, Oregon (See Figure 1-1 Vicinity Map. The subdivision is approximately 14 acres and will include the construction of 92 new lots intended for single-family attached homes (rowhouses). Two public streets are proposed, these streets are identified as Street A and Street B. Frontage improvements to SE Kellogg Creek Drive will also be completed as part of this project.

Stormwater Management Standards

The proposed storm design will meet the requirements of the City of Milwaukie as listed in the *Public Works Standards* dated February 2015. The City of Milwaukie follows the current City of Portland's *Stormwater Management Manual* for water quality facility design.

The proposed project will fill wetlands located on the site. Therefore, the project must comply with the National Marine Fisheries Service (NMFS) criteria as part of the March 2014 Programmatic Biological Opinion and Essential Fish Habitat Consultation for Revisions to Standard Local Operating Procedures for Endangered Species (SLOPES V) as part of the Wetland Fill Permit with the Army Corp of Engineers.

Additionally, the project is located within the 100-year floodplain of Mt. Scott Creek. All fill placed on the site will be balanced with an equal amount of soil removed per City of Milwaukie Municipal Code 18.04.150 F Balanced Cut and Fill. Excavation will occur within the property boundary.

Water Quality

The project will discharge into Mt. Scott Creek, a tributary of Kellogg Creek and the Willamette River. Mt. Scott and Kellogg Creek are not listed as water quality limited and the Willamette River is listed for E. Coli. Typical pollutants from single -family residential projects include: nutrients, pesticides, metals, oil, grease and other petroleum products, and sediment. Dissolved copper, dissolved zinc, and PAHs are generally the primary constituents of concern for stormwater runoff in Oregon streams for their impact on ESA listed species. These pollutants are specially targeted for treatment in the selected stormwater management systems.

Water quality treatment will occur through stormwater bioretention basins, planters and a pond. These facilities are landscaped reservoirs that collect and treat stormwater runoff through vegetation and soil media. They provide pollution reduction and flow attenuation to reduce hydraulic impacts from urban developments on downstream rivers. Specific elements are incorporated into the design to increase the effectiveness of this stormwater facility type. Design elements include trapped catch basins to remove coarse sediment, soil media to provide stormwater filtration, and vegetation to will provide plant uptake.

The basins are designed using the BMP Sizing Tool developed by Clackamas County. This continuous simulation software is a regional tool for the Portland metro area. City of Milwaukie standards were checked using the City of Portland Presumptive Approach Calculator (PAC). The stormwater facilities were designed to the standards below:

- Water Quality: 50% of the cumulative rainfall from the 2-year storm event. (Using a continuous rainfall/runoff model).

The calculated peak water quality flow from the 5.47 ac of impervious area is 1.08 cfs with an approximate 15,531 cf runoff volume.

Water Quantity

Water quantity control will occur within the proposed bioretention facilities. Control structures will be placed within each facility to limit runoff to the SLOPES V criteria listed below. The City of Milwaukie does not require water quantity control for this project as the site discharge location into Mt. Scott Creek and Kellogg Creek.

- City of Milwaukie = Match existing flow rate to proposed flow from the 2 through 25-year storm event. – Not required for this project.
- SLOPES V = limit pre-developed discharge rates using a continuous simulation for flows between 42% of the 2-year event and the 10-year flow event.

The calculated water quantity volume is approximate 14,168 cf volume.

Conveyance

The proposed conveyance system will be designed using the 100-year storm event in the final Drainage Report.

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RS380

1 Project Overview

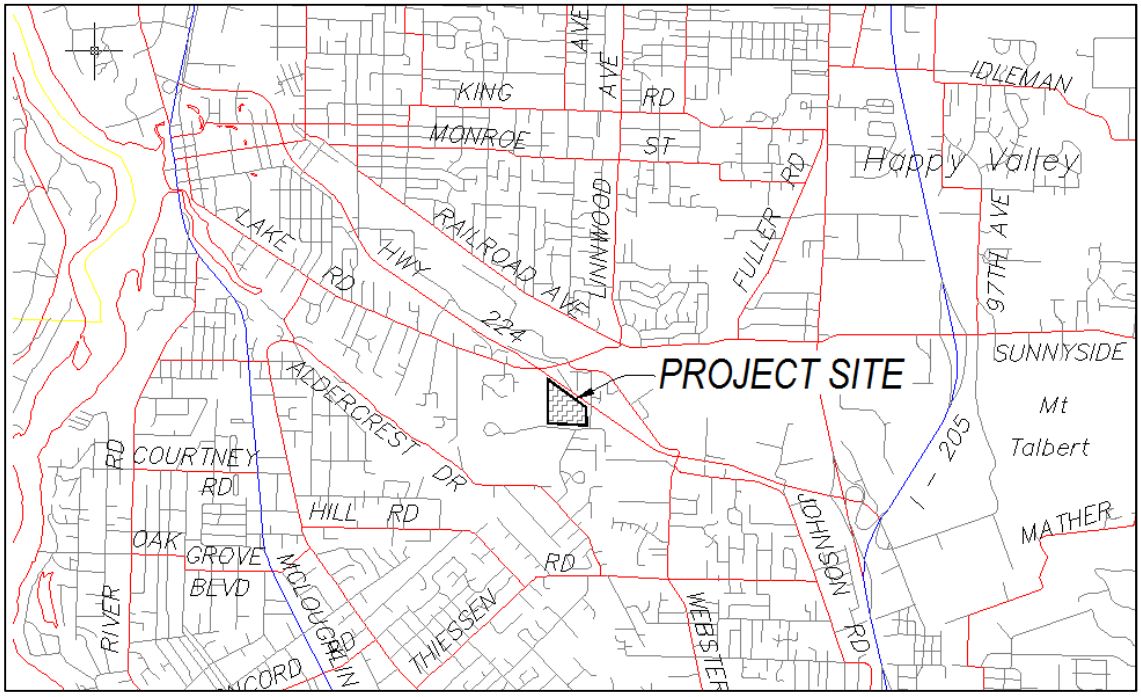
1.1 Project Overview

The Kellogg Creek residential subdivision is approximately 14 acres and will include the construction of 92 new lots intended for single-family attached homes (rowhouses). Two public streets are proposed, these streets are identified as Street A and Street B. Frontage improvements to SE Kellogg Creek Drive will also be completed as part of this project.

1.2 Location

The proposed project is located at 13333 Rusk Road in Milwaukie, Oregon (See Figure 1-1 Vicinity Map). The property includes the following tax lots: TL 22E 06AD 600, TL 22E 06AD 700, TL 22E 06AD 900, and TL 22E 06AD 901.

Figure 1-1 Vicinity Map



1.3 Methodology

The proposed storm design will meet the requirements of the City of Milwaukie as listed in the *Public Works Standards* dated February 2015. The City of Milwaukie follows the current City of Portland's *Stormwater Management Manual* for water quality facility design.

Additionally, the project must conform to Standard Local Operating Procedures for Endangered Species (SLOPES V) as part of the Wetland Fill Permit with the Army Corp of Engineers.

2 Existing Conditions

2.1 Topography

The existing site contains a driveway entrance for the adjacent Turning Point Church, grass, blackberry bushes and a scattering of trees. Fill material was previously placed at the site adjacent to the church parking lot. Mt. Scott Creek runs through the northern portion of the site. The site has gradual slopes between 0.5 and 5% and generally drains towards the northwest - west. Steeper slopes occur at the end of fill placed at the site and along Mt. Scott Creek. The highest elevation within the project area is 78; located along the southeast property corner. The lowest elevation of 66 is located in the western property boundary.

2.2 Climate

The site is in Milwaukie, Oregon and is located approximately 65 miles inland from the Pacific Ocean. There is a gradual change in seasons with defined seasonal characteristics. Average daily temperatures range from 36°F to 83°F. Record temperatures recorded for this region of the state are -3°F and 107°F. Average annual rainfall recorded in this area is 42-inches. Average annual snowfall is approximately 1-inches between December and February.

2.3 Site Geology

The underlying soil types on the site, as classified by the United States Department of Agriculture Soil Survey of Clackamas County, Oregon are identified in Table 2-1 (See Technical Appendix: Hydrologic Soils Map - Clackamas County).

Table 2-1 Soil Characteristics

Soil Type	Hydrologic Group
Cove Silty Clay Loam	D
Salem Silt Loam	B
Wapato Silty Clay Loam	C/D
Woodburn Silt Loam	C

A majority of the site is classified as Cove Silty Clay Loam. Therefore, the entire site has conservatively been assigned a soil Group D. Group D soils have very slow infiltration rates when thoroughly saturated.

Groundwater was encountered during the geotechnical evaluation completed by GEO Consultants Northwest. Groundwater depths varied across the site from 3 to12 below the ground surface. This variation of groundwater depths is a result of the varying amount of existing fill at the site. The elevation of groundwater is approximately 65 ft across the site.

2.4 Curve Number

The curve number represents runoff potential from the soil. The major factors for determining the curve number values are hydrologic soil group, cover type, hydrologic condition and antecedent runoff condition. The pervious curve numbers of 79 representing Woods-Grass Combination in Good Condition was used at the site. A pre-development condition of forested was used in conformance with SLOPES V criteria. (See Technical Appendix: Table 2-2c – Technical Release 55-Urban Hydrology for Small Watersheds).

2.5 Time of Concentration

The time of concentration (T_C) as described in NEH-4 Chapter 15 is defined in two ways; the time for runoff to travel from the furthermost point of the watershed to the point in question, and the time from the end of excess rainfall to the point of inflection on the trailing limb of the unit hydrograph. Time of concentration can be estimated from the following formulas. The time of concentration was calculated to be 24 minutes (See Technical Appendix: Time of Concentration Calculation).

Sheet Flow

$$T_t = \frac{0.007(nL)^{0.8}}{(P_2)^{0.5} s^{0.4}}$$

T_t = Travel Time (hours) n = Manning's "n" of slope
L = Length of flow (ft) P_2 = 2-Year, 24-hour rainfall (in)
s = Slope (ft / ft)

Shallow Concentrated Flow

$$T_t = \frac{L}{3600V}$$

T_t = Travel Time (hours) L = Flow Length (ft)
V = Average Velocity (ft / s) 3600 = seconds / hour

2.6 Hydrology

Stormwater runoff from the site sheet flows north to Mt. Scott Creek with the exception of the church driveway entrance and a small area of pervious area. Catch basins collect this impervious area and the adjacent church and sends runoff south to a public storm sewer in SE Kellogg Creek Dr. The SE Kellogg Creek Dr. storm sewer heads south and outfalls into a tributary of Kellogg Creek. Water quality treatment is not provided at the site.

2.7 Basin Area

Impervious and pervious surface areas for the existing conditions are shown in Table 2-2. The site is 1.4% impervious. Approximately 1.466 acres of the site drains south to Kellogg Creek (See Technical Appendix: Figure 1 – Existing Basin Delineation).

Table 2-2 Existing Basin Areas

Basin	Impervious Area, ac	Pervious Area, ac	Total Area, ac
Site (Mt Scott Creek)	0.202	13.846	14.048
Kellogg Creek Dr.	0.319	0.044	0.363
Total	0.521	13.890	14.411

3 Proposed Conditions

3.1 Curve Number

The pervious curve numbers of 80 representing Open Space in Good Condition was used at the site. (See Technical Appendix: Table 2-2a – Technical Release 55-Urban Hydrology for Small Watersheds).

3.2 Time of Concentration

A time of concentration of 5 minutes was used for the delineated basins.

3.3 Hydrology

Stormwater runoff outside the limits of work will continue to sheet flow to Mt. Scott Creek. Floodplain grading will occur so that floodwaters will recede back into the creek channel. Two new outfalls are proposed as part of this project. These outfalls are included as part of the wetland fill permit. The church entrance will be modified as part of this project.

Water quality treatment and quantity facilities will be added to the site. A summary of each facility is provided below.

- Bioretention Basin A: Bioretention Pond, Outfall to Mt. Scott Creek
- Bioretention Basin B, C & D: Bioretention Pond, Outfall to Mt. Scott Creek through a flow dispersion trench. Note Basin B, includes street planters identified as Planter C within the calculations.
- Pond E: Extended Dry Pond to the tributary of Kellogg Creek
- Planters A and B: Bioretention Planters, Outfall to Kellogg Creek. Planters A will treat proposed onsite street A. Planter B is located along Kellogg Creek Drive.
- Untreated: Street grading constraints and protected trees prohibit this portion of the street from flowing to a treatment facility.

3.4 Basin Area

Impervious and pervious surface areas for proposed conditions are shown in Table 3-1. The site is 36.7 % impervious in proposed conditions. The majority of the project will occur at the site, although some work is being done within church property. Street improvements to SE Kellogg Creek Dr. will also occur as part of this project. The Creek basin will not be developed but includes grading to balance the floodplain. The amount of area draining to the tributary of Kellogg Creek is 1.83 acres, slightly more than in existing conditions (See Technical Appendix: Figure 2 – proposed Basin Delineation).

Table 3-1 Proposed Basin Areas

Basin	Impervious Area, ac	Pervious Area, ac	Total Area, ac
Basin A	1.815	0.871	2.686
Basin B	0.830	0.237	1.067
Basin C	0.692	0.329	1.021
Basin D	0.725	0.290	1.015
Pond E	0.465	0.163	0.628
Planter A	0.133	0.035	0.168
Planter B	0.539	0.187	0.726
Mt. Scott Creek	0.000	6.788	6.788
Kellogg Creek	0.086	0.226	0.312
Total	5.285	9.126	14.411

4 Hydrologic and Hydraulic Analysis

4.1 Design Guidelines

The proposed storm design will meet the requirements of the City of Milwaukie as listed in the *Public Works Standards* dated February 2015. Section 2.0013 describes the allowable flow determination methods including the selected Unity Hydrograph Method.

4.2 Hydrologic Method

The Santa Barbara Urban Hydrograph (SBUH) was used for this analysis. The SBUH method is based on the curve number (CN) approach, and uses the Natural Resources Conservation Service's (NRCS) equations for computing soil absorption and precipitation excess.

The SBUH method converts the incremental runoff depths into instantaneous hydrographs, which are then routed through an imaginary reservoir with a time delay equal to the basin time of concentration.

The runoff function of xpswmm generates surface and subsurface runoff based on design or measured rainfall conditions, land use and topography. xpswmm Version 17.1 was used for our hydrology and hydraulics analysis. xpswmm is based on the public EPA SWMM program. xpswmm is an approved method of analysis by City of Milwaukie.

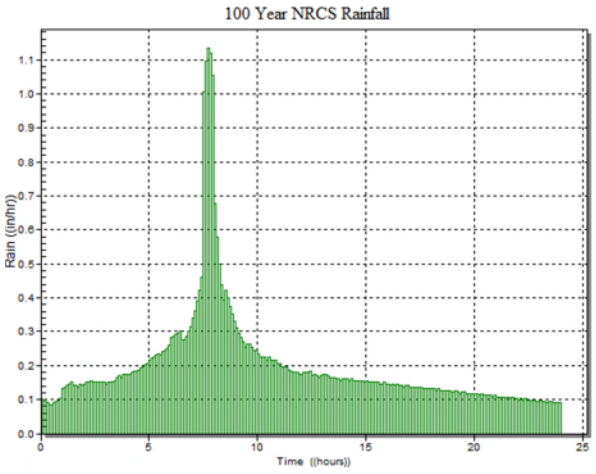
4.3 Design Storm

The rainfall distribution to be used within the City of Milwaukie jurisdiction is the design storm of 24-hour duration based on the standard Type 1A rainfall distribution. Table 4-1 shows total precipitation depths for different storm events. The NRCS Distribution for a type 1A 24-hour rainfall distribution for a 25-year storm event is shown in Figure 4-1.

Table 4-1 Precipitation Depth

Recurrence interval (years)	Total Precipitation Depth (in)
2	2.40
10	3.50
25	4.00
100	4.70

Figure 4-1 100-Year Type 1A Rainfall Ditribution



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4.4 Basin Runoff

Table 4-2 lists the runoff rates for existing and proposed conditions for the site during the 2, 10, 25 and 100-year storm events. These values do not include onsite detention. (See Technical Appendix: Existing and Proposed Hydrographs).

Table 4-2 Runoff Rates

Recurrence Interval (years)	Existing Peak Runoff Rate (cfs)	Proposed Peak Runoff Rate (cfs)
2	1.310	4.253
5	2.469	6.045
10	3.569	7.621
25	4.749	9.251
100	6.499	11.602

5 Conveyance Analysis

5.1 Design Guidelines

The analysis and design criteria described in this section will follow the City of Milwaukie's *Public Works Standards.* The manual requires storm drainage system and facilities be designed to convey the 100-year storm event.

5.2 System Capacity

The proposed conveyance system was designed to convey and contain the peak runoff from a 100-year design storm.

5.3 System Performance

A complete conveyance analysis will be completed in the final Drainage Report.

6 Water Quality & Quantity

6.1 Design Guidelines

The proposed water quality and quantity facilities were designed per the City of Milwaukie requirements as listed in the *Public Works Standards* dated February 2015. The City of Milwaukie follows the current City of Portland's *Stormwater Management Manual* for water quality facility design. The City of Milwaukie requires the proposed discharge rate for the 2, 5, 10, and 25-year events to be that of the existing discharge rate. The City of Milwaukie does not require water quantity control for this project as the site discharge location into Mt. Scott Creek and Kellogg Creek.

Detention is also required to meet SLOPES V criteria. SLOPES V limits the proposed discharge rates using a continuous simulation for flows between 42% of the 2-year event and the 10-year flow event of existing flows. Existing conditions are assumed to be forested.

6.2 Water Quality and Quantity Facilities

The project will discharge into Mt. Scott Creek, a tributary of Kellogg Creek and the Willamette River. Mt. Scott and Kellogg Creek are not listed as water quality limited and the Willamette River is listed for E. Coli. Typical pollutants from single-family residential projects include: nutrients, pesticides, metals, oil, grease and other petroleum products, and sediment. Dissolved copper, dissolved zinc, and PAHs are generally the primary constituents of concern for stormwater runoff in Oregon streams for their impact on ESA listed species. These pollutants are specially targeted for treatment in the selected stormwater management systems.

Water quality treatment will occur through stormwater bioretention basins, planters and a pond. These facilities are landscaped reservoirs that collect and treat stormwater runoff through vegetation and soil media. They provide pollution reduction and flow attenuation to reduce hydraulic impacts from urban developments on downstream rivers. Specific elements are incorporated into the design to increase the effectiveness of this stormwater facility type. Design elements include trapped catch basins to remove coarse sediment, soil media to provide stormwater filtration, and vegetation to will provide plant uptake.

The basins are designed using the BMP Sizing Tool developed by Clackamas County. This continuous simulation software is a regional tool for the Portland metro area. City of Milwaukie standards were checked using the City of Portland Presumptive Approach Calculator (PAC).

Bioretention facilities are designed to incorporate the following criteria:

- Water Depth: 10 to 18 inches
- Drain Rock Depth: 6 to 18 inches
- Growing Medium Depth: 18 inches
- Minimum Freeboard: 2 inches
- Perforated Pipe Under Drain
- Minimum Orifice Size: 1 inch

There are seven (7) proposed bioretention facilities located in the proposed project. Each facility was designed to maximize water contact with vegetation for biological treatment. A control structure with one or two orifices will control the allowable release rate. Appropriate vegetation will be planted in the basin as specified by the City of Portland's *Stormwater Management Manual* (See Technical Appendix: WES BMP Sizing Report). Table 6-1 provides a summary of each facility.

Table 6-1 Bioretention Facility Summary

Basin ID	Facility Type	Minimum Top Area (not including Freeboard) (sf)	Minimum Bottom Area (sf)	Water Depth (in)	Soil Depth (in)	Rock Depth (in)	Total Depth (in)
Basin A	Bioretention Basin	3,102	2,445	12	18	6	36
Basin B	Bioretention Basin	849	607	12	18	6	36
Basin C	Bioretention Basin	1,193	887	12	18	6	36
Basin D	Bioretention Basin	1,879	1,397	12	18	6	36
Pond E*	Dry Pond	1,084	507	18	0	0	18
Planter A	Planter	215	-	10	18	7	35
Planter B	Planter	1,497	-	10	18	7	35

* Pond E will include soil media and plantings at the bottom of the pond.

6.3 Flow Dispersion

A flow dispersion trench will be used at the outfall of Bioretention Basin B, C and D. This flow spreader was designed to disperse flow over a large area in an effort to reduce erosive velocities of the stormwater discharge entering the wetland during the 100-year event. The flow spreader will be a gravel filled trench with a perforation pipe in the bottom of the trench.

Soils in the proposed discharge location were conservatively assumed to consist of silty clay loam. This soil type has a maximum permissible velocity of 0.5-fps, which was used to determine the facility length (See Technical Appendix: Chow – Fig. 7-3 U.S. and U.S.S.R. data on Permissible Velocities for Non-cohesive Soils). The flow spreader was treated as a broad crested weir with a weir coefficient of 2.4. The broad crested weir equation is shown below.

$$q = 2.4H^{3/2}$$

Where:

q= Volumetric flow rate per unit length, cfs/ft

H= Depth of flow over weir

Table 6-2 Flow Dispersion Trench

Length (ft)	Discharge (cfs)	Depth (ft)	q (cfs/ft)	Velocity (fps)
135	3.01	0.04	0.02	0.50

7 Floodplain Analysis

FEMA Flood Insurance Rate Maps were used to determine the 10, 25 and 100-year flood stage for Mt. Scott Creek. The site is located on map number FM41005C0036D, with an effective date of June 17, 2008. Elevations are provided in the NAVD 1988 datum, the same as used for this project. The upstream most cross section is C located just downstream of Hwy 224. The 100-year elevation at cross section C is 69.9.

The 25-year elevation was interpolated from the FEMA profile. These elevations were used to balance the floodplain and determine the elevation of the stormwater facilities. FEMA determined elevations are listed in Table 7-1 (See Technical Appendix: Flood Insurance Study, Clackamas County - Mt. Scott Creek Profile).

Table 7-1 Mt. Scott Creek Water Surface Elevations

Recurrence Interval (years)	Water Surface Elevation	
	Upstream Property Boundary	Downstream Property Boundary
10	69.4	67.5
25	69.7	67.3
100	69.9	67.3

8 Operation & Maintenance

Maintenance of water quality and quantity facilities is very important to ensure they operate as designed. Inadequate maintenance can be attributed to premature failures of these facilities. Stormwater facilities for the site will be maintained and operated privately by the homeowners. Prior to creation of an HOA, please contact Randy Myers at 503-358-4460 or Randy@Brownstonehomes.net about inspection and maintenance of the proposed stormwater facilities.

The owners must insure the water quality systems efficiently perform their function of removing petroleum hydrocarbons, sediments, metals, bacteria and nutrients from stormwater runoff and that the water quantity system performs their function of regulating the rate and volume of stormwater runoff leaving the property.

The Operation and Maintenance Plan is provided within the Technical Appendix.

9 Summary

The proposed water quality and quantity facility design follows the City of Milwaukie's *Public Works Standards* dated February 2015. The City of Milwaukie follows the current City of Portland's *Stormwater Management Manual* for water quality facility design.

Additionally, the project must comply with the National Marine Fisheries Service (NMFS) criteria as part of the March 2014 Programmatic Biological Opinion and Essential Fish Habitat Consultation for Revisions to Standard Local Operating Procedures for Endangered Species (SLOPES V) as part of the Wetland Fill Permit with the Army Corp of Engineers.

Bioretention facilities are proposed to provide a high level of treatment and detention.

Technical Appendix

Technical Appendix

- Figure 1 – Existing Basin Delineation
- Figure 2 – Proposed Basin Delineation

- Hydrologic Soil Map – Washington County
- Table 2-2c – Runoff Curve Numbers for Other Agricultural Lands
- Table 2-2a – Runoff Curve Numbers for Urban Areas
- Time of Concentration
- WES BMP Sizing Report
- PAC
- Existing & Proposed Hydrographs
- Flood Insurance Study, Clackamas County - Mt. Scott Creek Profile
- Chow – Fig. 7-3 U.S. and U.S.S.R. data on Permissible Velocities for Non-cohesive Soils
- Operation and Maintenance Plan
- Geotechnical Evaluation – Kellogg Creek Development, GEO Consultants Northwest, October 7, 2016.

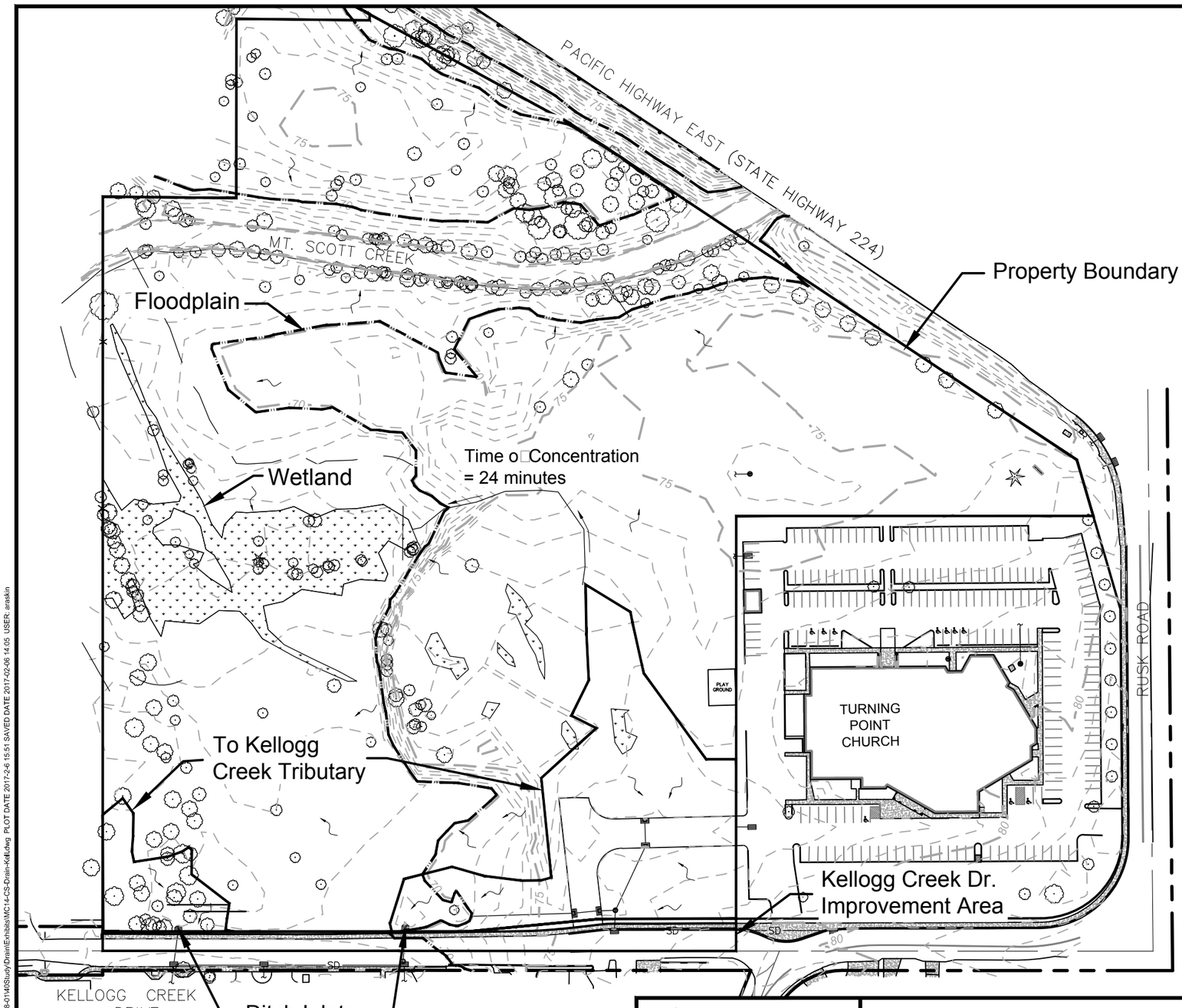
References

Flood Insurance Study (FIS) – Clackamas County, Oregon and Incorporated Areas, FEMA, June 17, 2008.

Public Works Standards, City of Milwaukie, February 2015.

Stormwater Management Manual, City of Portland, August 2016.

Programmatic Biological Opinion and Essential Fish Habitat Consultation for Revisions to Standard Local Operating Procedures for Endangered Species (SLOPES V), National Marine Fisheries Service (NMFS), March 2014.



Existing Basin Area
Impervious Area = 0.201 acres
Pervious Area = 13.815 acres
Total Area = 14.016 acres

Kellogg Creek Dr. Improvement Area
Impervious Area = 0.321 acres
Pervious Area = 0.043 acres
Total Area = 0.364 acres

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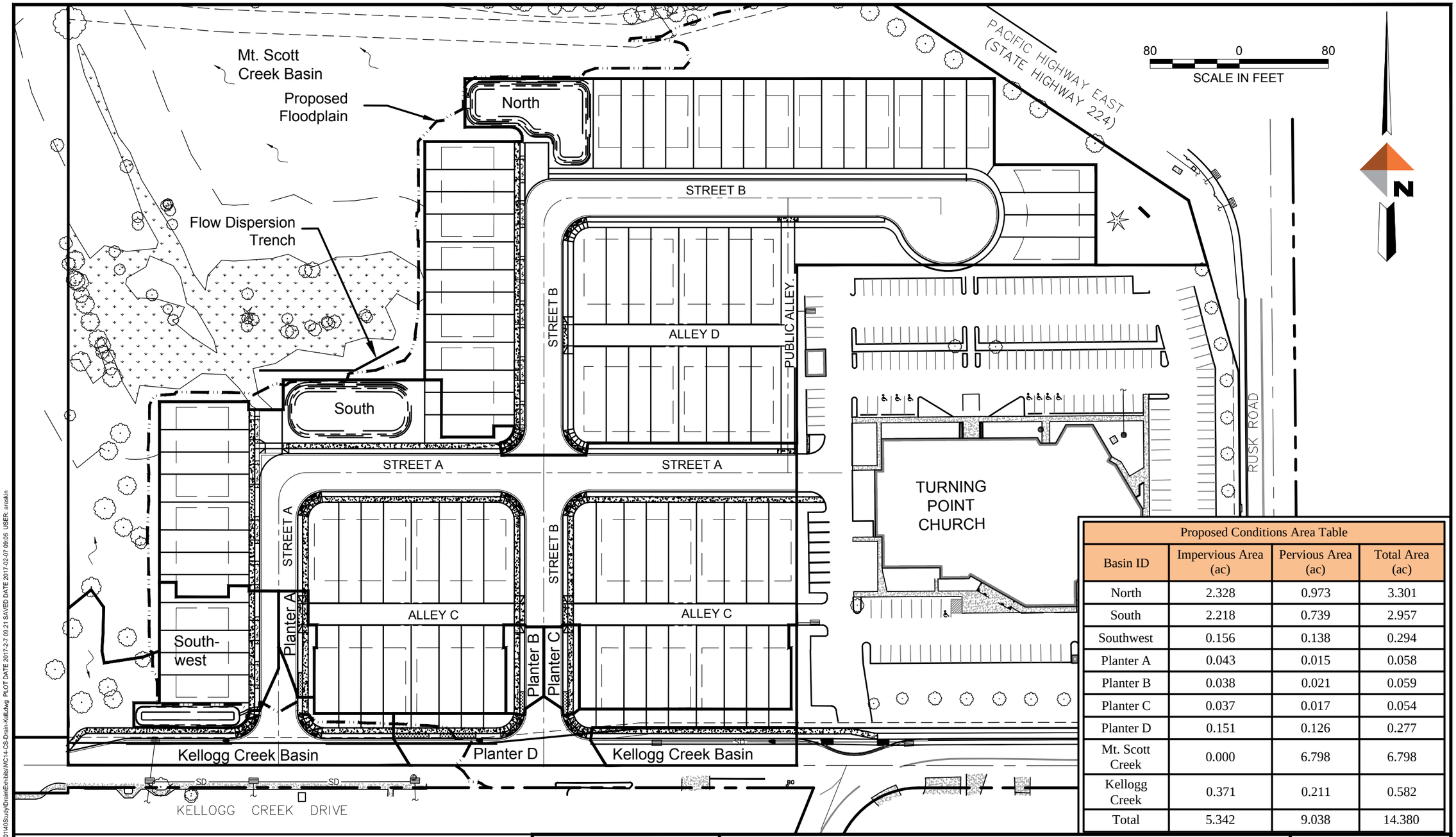
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EXISTING BASIN DELINEATION
KELLOGG CREEK SUBDIVISION
MILWAUKIE OREGON

PROJECT	14258.01
DATE	02/08/2017
	ASR

FIGURE 1



Proposed Conditions Area Table			
Basin ID	Impervious Area (ac)	Pervious Area (ac)	Total Area (ac)
North	2.328	0.973	3.301
South	2.218	0.739	2.957
Southwest	0.156	0.138	0.294
Planter A	0.043	0.015	0.058
Planter B	0.038	0.021	0.059
Planter C	0.037	0.017	0.054
Planter D	0.151	0.126	0.277
Mt. Scott Creek	0.000	6.798	6.798
Kellogg Creek	0.371	0.211	0.582
Total	5.342	9.038	14.380

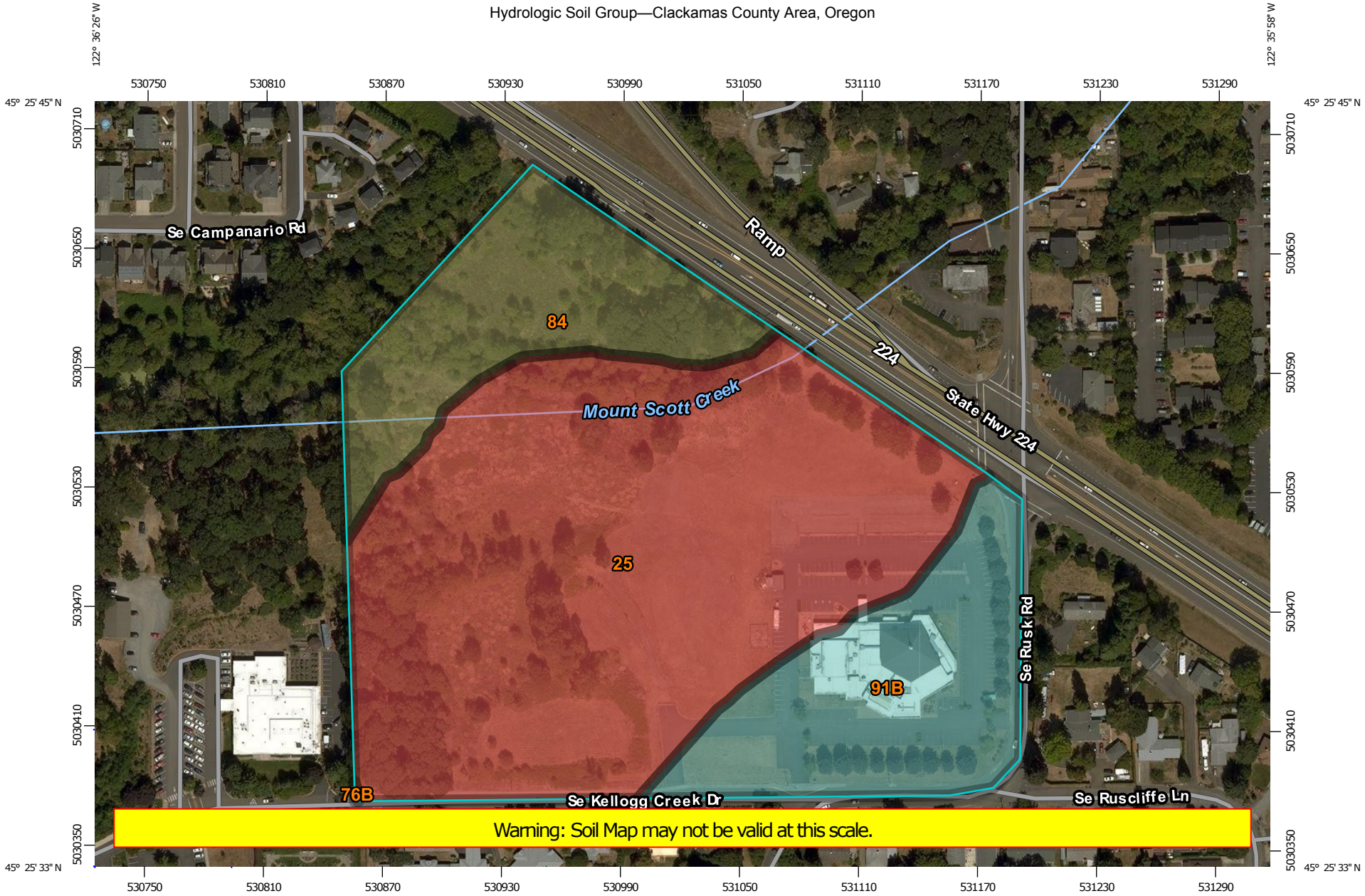
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PROPOSED BASIN DELINEATION
KELLOGG CREEK SUBDIVISION
MILWAUKIE OREGON

PROJECT	14258.01
DATE	02/08/2017
	ASR

FIGURE 2

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Map Scale: 1:2,710 if printed on A landscape (11" x 8.5") sheet.

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Meters: 0 40 80 160 240

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Clackamas County Area, Oregon
Survey Area Data: Version 10, Sep 18, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 26, 2014—Sep 5, 2014

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Hydrologic Soil Group— Summary by Map Unit — Clackamas County Area, Oregon (OR610)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
25	Cove silty clay loam	D	12.9	63.1%
76B	Salem silt loam, 0 to 7 percent slopes	B	0.0	0.0%
84	Wapato silty clay loam	C/D	3.6	17.6%
91B	Woodburn silt loam, 3 to 8 percent slopes	C	4.0	19.3%
Totals for Area of Interest			**20.5**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Table 2-2c Runoff curve numbers for other agricultural lands [1/]

Cover description		Curve numbers for hydrologic soil group			
Cover type	Hydrologic condition	A	B	C	D
Pasture, grassland, or range—continuous forage for grazing. [2/]	Poor	68	79	86	89
	Fair	49	69	79	84
	Good	39	61	74	80
Meadow—continuous grass, protected from grazing and generally mowed for hay.	—	30	58	71	78
Brush—brush-weed-grass mixture with brush the major element. [3/]	Poor	48	67	77	83
	Fair	35	56	70	77
	Good	30 [4/]	48	65	73
Woods—grass combination (orchard or tree farm). [5/]	Poor	57	73	82	86
	Fair	43	65	76	82
	Good	32	58	72	79
Woods. [6/]	Poor	45	66	77	83
	Fair	36	60	73	79
	Good	30 [4/]	55	70	77
Farmsteads—buildings, lanes, driveways, and surrounding lots.	—	59	74	82	86

1 Average runoff condition, and $I_a = 0.2S$.

2 *Poor:* <50%) ground cover or heavily grazed with no mulch.
Fair: 50 to 75% ground cover and not heavily grazed.
Good: > 75% ground cover and lightly or only occasionally grazed.

3 *Poor:* <50% ground cover.
Fair: 50 to 75% ground cover.
Good: >75% ground cover.

4 Actual curve number is less than 30; use CN = 30 for runoff computations.

5 CN's shown were computed for areas with 50% woods and 50% grass (pasture) cover. Other combinations of conditions may be computed from the CN's for woods and pasture.

6 *Poor:* Forest litter, small trees, and brush are destroyed by heavy grazing or regular burning.
Fair: Woods are grazed but not burned, and some forest litter covers the soil.
Good: Woods are protected from grazing, and litter and brush adequately cover the soil.

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Table 2-2a Runoff curve numbers for urban areas [1/]

Cover description: Cover type and hydrologic condition	Average percent impervious area [2/]	Curve numbers for hydrologic soil group: A	B	C	D
Fully developed urban areas (vegetation established)					
Open space (lawns, parks, golf courses, cemeteries, etc.) [3/]:					
Poor condition (grass cover < 50%)		68	79	86	89
Fair condition (grass cover 50% to 75%)		49	69	79	84
Good condition (grass cover > 75%)		39	61	74	80
Impervious areas:					
Paved parking lots, roofs, driveways, etc. (excluding right-of-way)		98	98	98	98
Streets and roads:					
Paved; curbs and storm sewers (excluding right-of-way)		98	98	98	98
Paved; open ditches (including right-of-way)		83	89	92	93
Gravel (including right-of-way)		76	85	89	91
Dirt (including right-of-way)		72	82	87	89
Western desert urban areas:					
Natural desert landscaping (pervious areas only) [4/]		63	77	85	88
Artificial desert landscaping (impervious weed barrier, desert shrub with 1- to 2-inch sand or gravel mulch and basin borders)		96	96	96	96
Urban districts:					
Commercial and business	85	89	92	94	95
Industrial	72	81	88	91	93
Residential districts by average lot size:					
1/8 acre or less (town houses)	65	77	85	90	92
1/4 acre	38	61	75	83	87
1/3 acre	30	57	72	81	86
1/2 acre	25	54	70	80	85
1 acre	20	51	68	79	84
2 acres	12	46	65	77	82
Developing urban areas					
Newly graded areas (pervious areas only, no vegetation) [5/]		77	86	91	94
Idle lands (CN's are determined using cover types similar to those in table 2-2c).					

[1] Average runoff condition, and $I_a = 0.2S$.

[2] The average percent impervious area shown was used to develop the composite CN's. Other assumptions are as follows: impervious areas are directly connected to the drainage system, impervious areas have a CN of 98, and pervious areas are considered equivalent to open space in good hydrologic condition. CN's for other combinations of conditions may be computed using figure 2-3 or 2-4.

[3] CN's shown are equivalent to those of pasture. Composite CN's may be computed for other combinations of open space cover type.

[4] Composite CN's for natural desert landscaping should be computed using figures 2-3 or 2-4 based on the impervious area percentage (CN = 98) and the pervious area CN. The pervious area CN's are assumed equivalent to desert shrub in poor hydrologic condition.

[5] Composite CN's to use for the design of temporary measures during grading and construction should be computed using figure 2-3 or 2-4 based on the degree of development (impervious area percentage) and the CN's for the newly graded pervious areas.

RS398

Time of Concentration

SUBJECT	Time of Concentration				
PROJECT NO.	2322.14258.01	**BY**	ASR	**DATE**	2/8/2017

	Existing	
SHEET FLOW		
INPUT	**VALUE**	
Surface Description	**Type**	**5**
	Grass (short prairie)	
Manning's "n"	**0.15**	
Flow Length, L (<300 ft)	**163**	ft
2-Yr 24 Hour Rainfall, P_2	**2.6**	in
Land Slope, s	**0.01**	ft/ft
OUTPUT		
Travel Time	0.35	hr
SHALLOW CONCENTRATED FLOW		
INPUT	**VALUE**	
Surface Description	**Unpaved**	
Flow Length, L	**100**	ft
Watercourse Slope*, s	**0.615**	ft/ft
OUTPUT		
Average Velocity, V	12.65	ft/s
Travel Time	0.002	hr
SHALLOW CONCENTRATED FLOW		
INPUT	**VALUE**	
Surface Description	**Unpaved**	
Flow Length, L	**219**	ft
Watercourse Slope*, s	**0.01**	ft/ft
OUTPUT		
Average Velocity, V	1.61	ft/s
Travel Time	0.038	hr
Watershed or Subarea T_c =	**0.39**	**hr**
Watershed or Subarea T_c =	**24**	**minutes**

WES BMP Sizing Report

Project Information

Project Name	Kellogg Creek
Project Type	SingleFamily
Location	13333 Rusk Road in Milwaukie, Oregon
Stormwater Management Area	0
Project Applicant	Brownstone Development, Inc.
Jurisdiction	OutofDistrict

Drainage Management Area

Name	Area (sq-ft)	Pre-Project Cover	Post-Project Cover	DMA Soil Type	BMP
North - Imp	101,408	Forested	ConventionalConcrete	D	Bioretention Pond North
North - Perv	42,384	Forested	Grass	D	Bioretention Pond North
South - Imp	96,616	Forested	ConventionalConcrete	D	Bioretention Pond South
South - Perv	32,191	Forested	Grass	D	Bioretention Pond South

LID Facility Sizing Details

Pond Sizing Details

Pond ID	Design Criteria(1)	Facility Soil Type	Max Depth (ft)(2)	Top Area (sq-ft)	Side Slope (1:H)	Facility Vol. (cu-ft)(3)	Water Storage Vol. (cu-ft)(4)	Adequate Size?
Bioretention Pond North	FCWQT	Lined	3.00	6,190.0	3	14,646.1	5,858.4	Yes
Bioretention Pond South	FCWQT	Lined	3.00	5,500.0	3	12,819.0	5,127.6	Yes

1. FCWQT = Flow control and water quality treatment, WQT = Water quality treatment only

2. Depth is measured from the bottom of the facility and includes the three feet of media (drain rock, separation layer and growing media).

3. Maximum volume of the facility. Includes the volume occupied by the media at the bottom of the facility.

4. Maximum water storage volume of the facility. Includes water storage in the three feet of soil media assuming a 40 percent porosity.

Simple Pond Geometry Configuration

Pond ID: Bioretention Pond North
Design: FlowControlAndTreatment

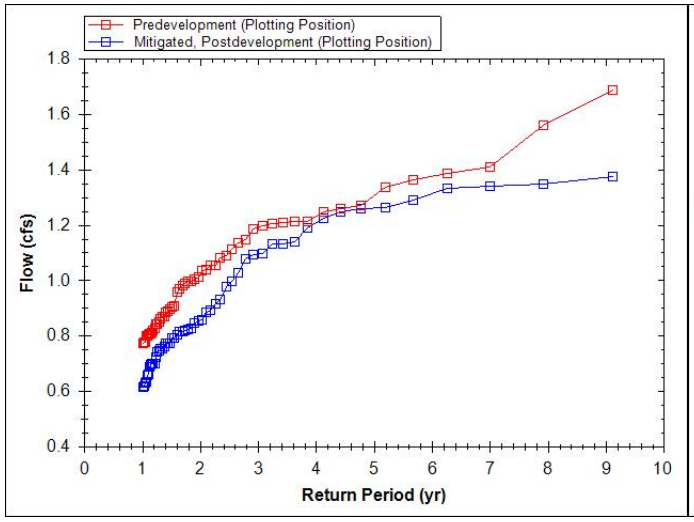
Shape Curve

Depth (ft)	Area (sq ft)
3.0	6,190.0

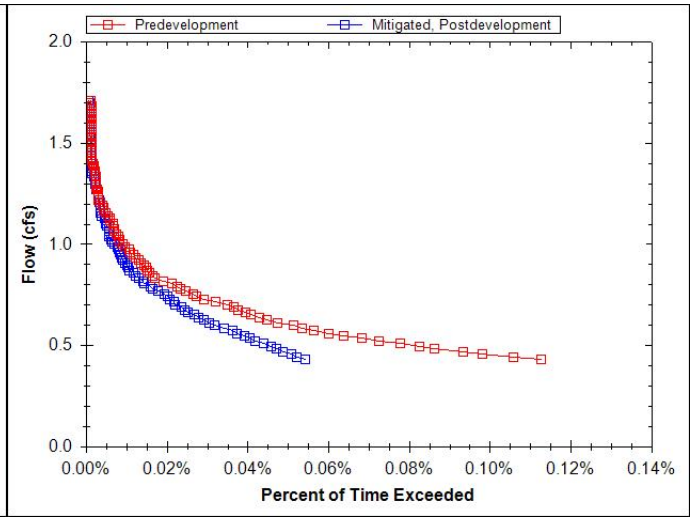
Outlet Structure Details

Lower Orifice Invert (ft)	0.0
Lower Orifice Dia (in)	3.1
Upper Orifice Invert(ft)	2.0
Upper Orifice Dia (in)	7.0
Overflow Weir Invert(ft)	3.0
Overflow Weir Length (ft)	6.3

Flow Frequency Chart



Flow Duration Chart



Simple Pond Geometry Configuration

Pond ID: Bioretention Pond South
Design: FlowControlAndTreatment

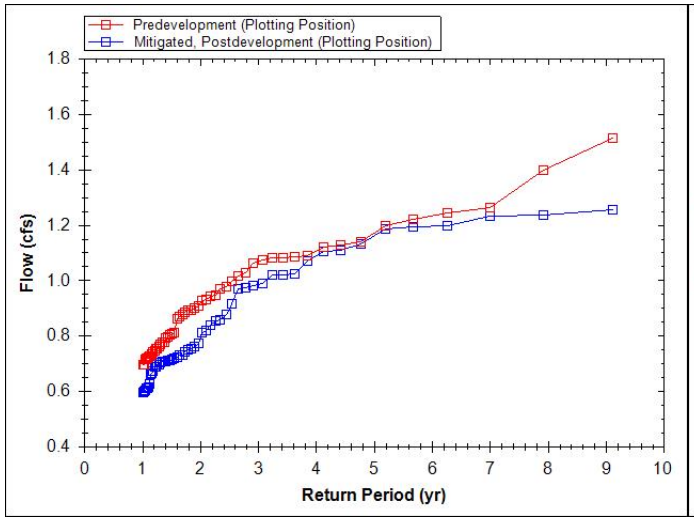
Shape Curve

Depth (ft)	Area (sq ft)
3.0	5,500.0

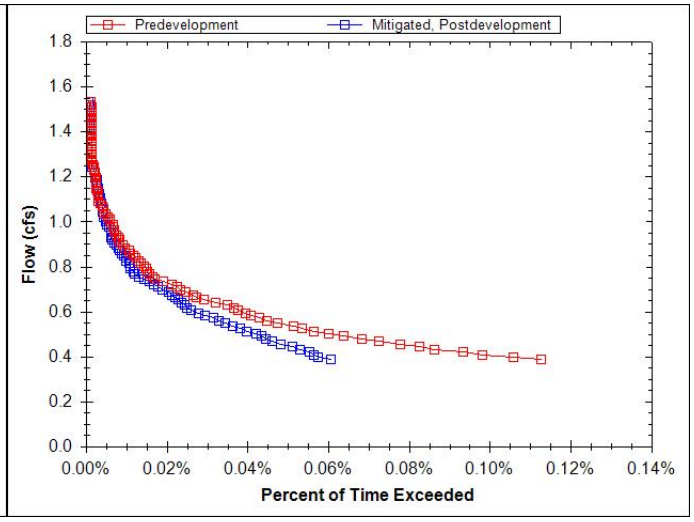
Outlet Structure Details

Lower Orifice Invert (ft)	0.0
Lower Orifice Dia (in)	2.9
Upper Orifice Invert(ft)	2.0
Upper Orifice Dia (in)	6.7
Overflow Weir Invert(ft)	3.0
Overflow Weir Length (ft)	6.3

Flow Frequency Chart



Flow Duration Chart



WES BMP Sizing Report

Project Information

Project Name	Kellogg Creek
Project Type	SingleFamily
Location	13333 Rusk Road in Milwaukie, Oregon
Stormwater Management Area	0
Project Applicant	Brownstone Development, Inc.
Jurisdiction	OutofDistrict

Drainage Management Area

Name	Area (sq-ft)	Pre-Project Cover	Post-Project Cover	DMA Soil Type	BMP
Planter A - Imp	1,873	Forested	ConventionalConcrete	D	Planter A
Planter A - Per	653	Forested	Grass	D	Planter A
Planter B - Imp	1,655	Forested	ConventionalConcrete	D	Planter B
Planter B - Per	915	Forested	Grass	D	Planter B
Planter C - Imp	1,612	Forested	ConventionalConcrete	D	Planter C
Planter C - Per	741	Forested	Grass	D	Planter C
Southwest - Imp	6,795	Forested	ConventionalConcrete	D	Southwest Extended Pond
Southwest - Per	6,011	Forested	Grass	D	Southwest Extended Pond
Planter D - Imp	6,578	Forested	ConventionalConcrete	D	Planter D
Planter D - Per	5,489	Forested	Grass	D	Planter D

LID Facility Sizing Details

LID ID	Design Criteria	BMP Type	Facility Soil Type	Minimum Area (sq-ft)	Planned Areas (sq-ft)	Orifice Diameter (in)
Planter C	FlowControlAndTreatment	Stormwater Planter - Filtration	Lined	54.8	83.0	0.5
Planter A	FlowControlAndTreatment	Stormwater Planter -	Lined	61.9	88.0	0.6

		Filtration				
Planter B	FlowControlAndTreatment	Stormwater Planter - Filtration	Lined	57.6	83.0	0.6
Planter D	FlowControlAndTreatment	Stormwater Planter - Filtration	Lined	245.1	256.0	1.2

Pond Sizing Details

Pond ID	Design Criteria(1)	Facility Soil Type	Max Depth (ft)(2)	Top Area (sq-ft)	Side Slope (1:H)	Facility Vol. (cu-ft)(3)	Water Storage Vol. (cu-ft)(4)	Adequate Size?
Southwest Extended Pond	FCWQT	Lined	3.00	1,446.0	3	2,608.5	1,043.4	Yes

1. FCWQT = Flow control and water quality treatment, WQT = Water quality treatment only

2. Depth is measured from the bottom of the facility and includes the three feet of media (drain rock, separation layer and growing media).

3. Maximum volume of the facility. Includes the volume occupied by the media at the bottom of the facility.

4. Maximum water storage volume of the facility. Includes water storage in the three feet of soil media assuming a 40 percent porosity.

Simple Pond Geometry Configuration

Pond ID: Southwest Extended Pond
Design: FlowControlAndTreatment

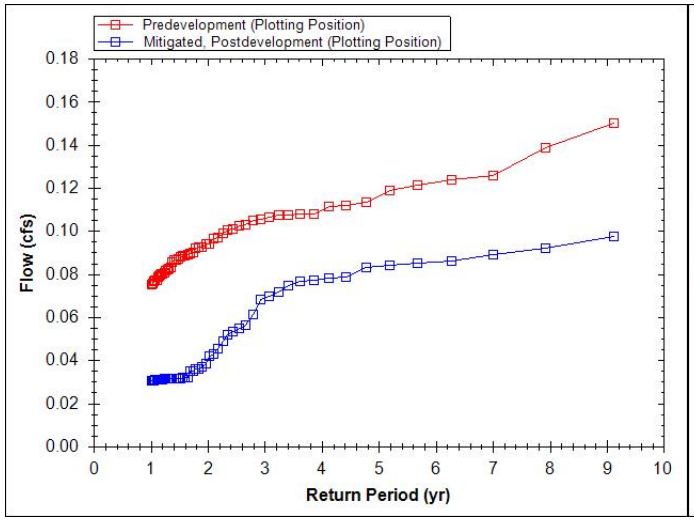
Shape Curve

Depth (ft)	Area (sq ft)
3.0	1,446.0

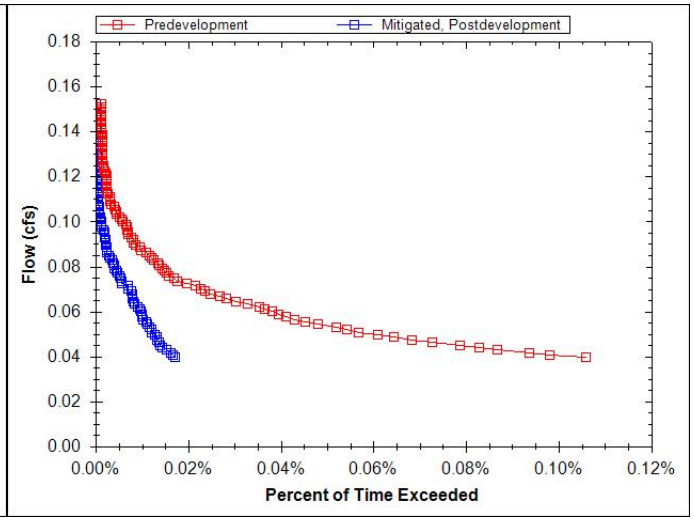
Outlet Structure Details

Lower Orifice Invert (ft)	0.0
Lower Orifice Dia (in)	0.9
Upper Orifice Invert(ft)	2.0
Upper Orifice Dia (in)	2.1
Overflow Weir Invert(ft)	3.0
Overflow Weir Length (ft)	6.3

Flow Frequency Chart

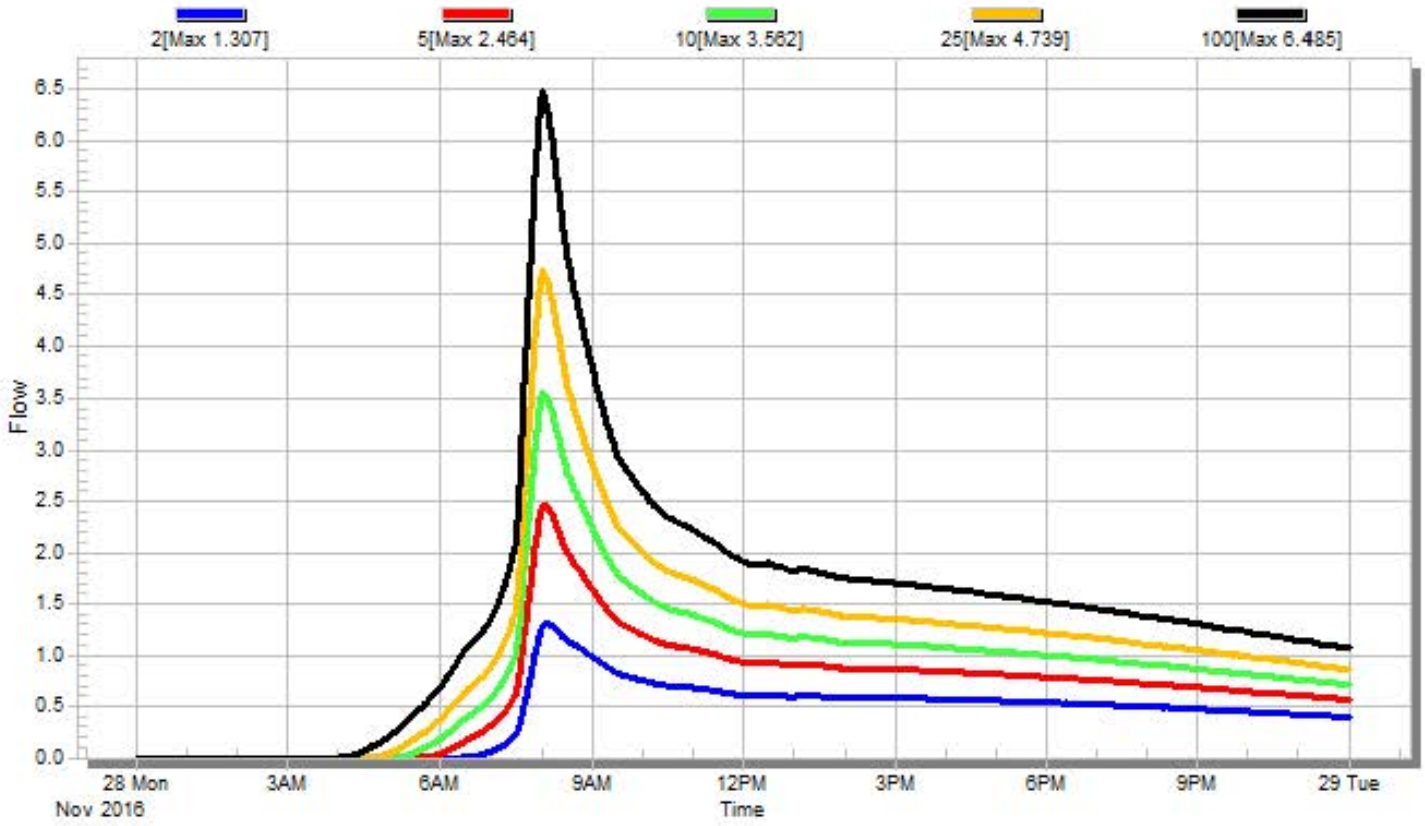


Flow Duration Chart

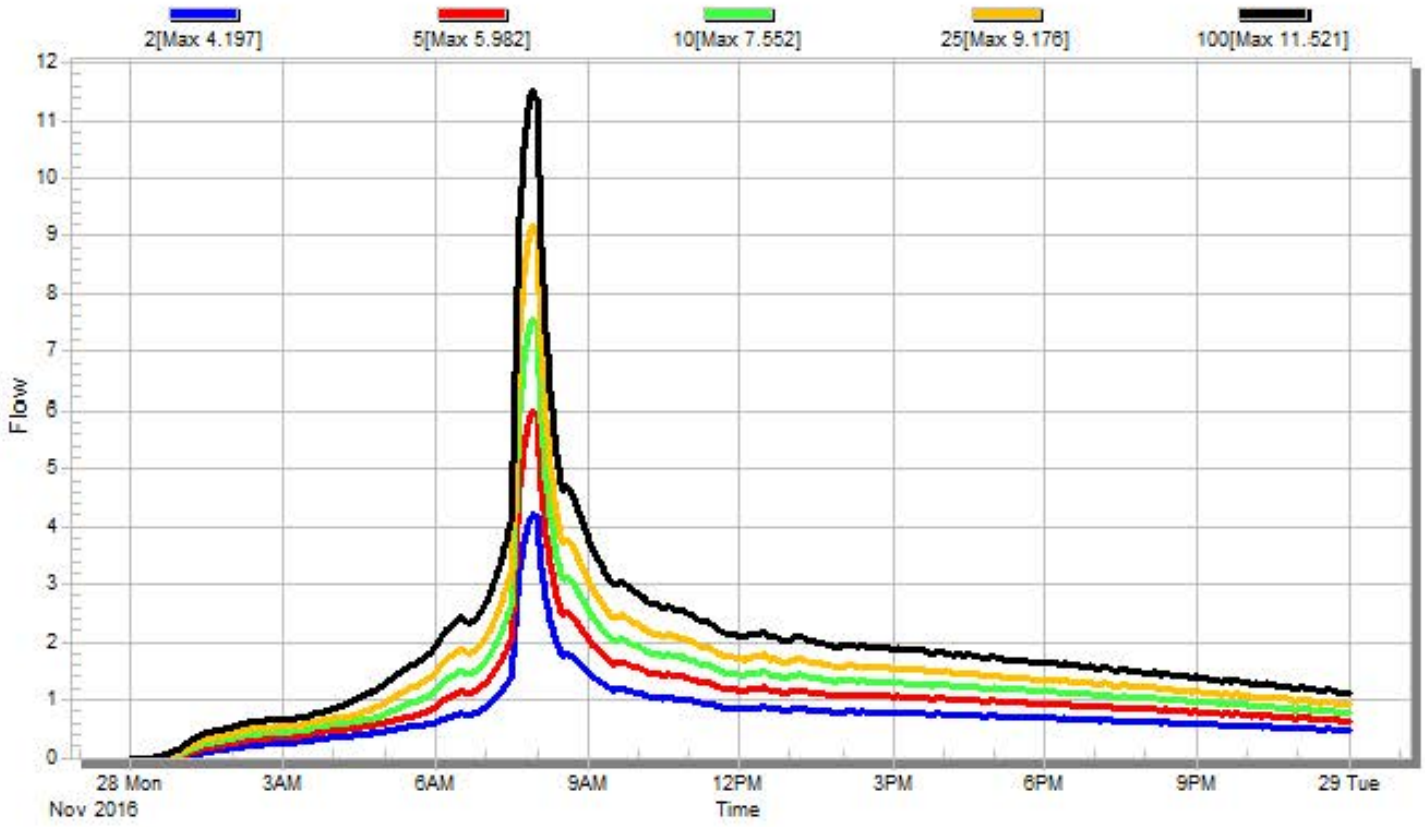


Kellogg Creek Planned Development — Hydrographs

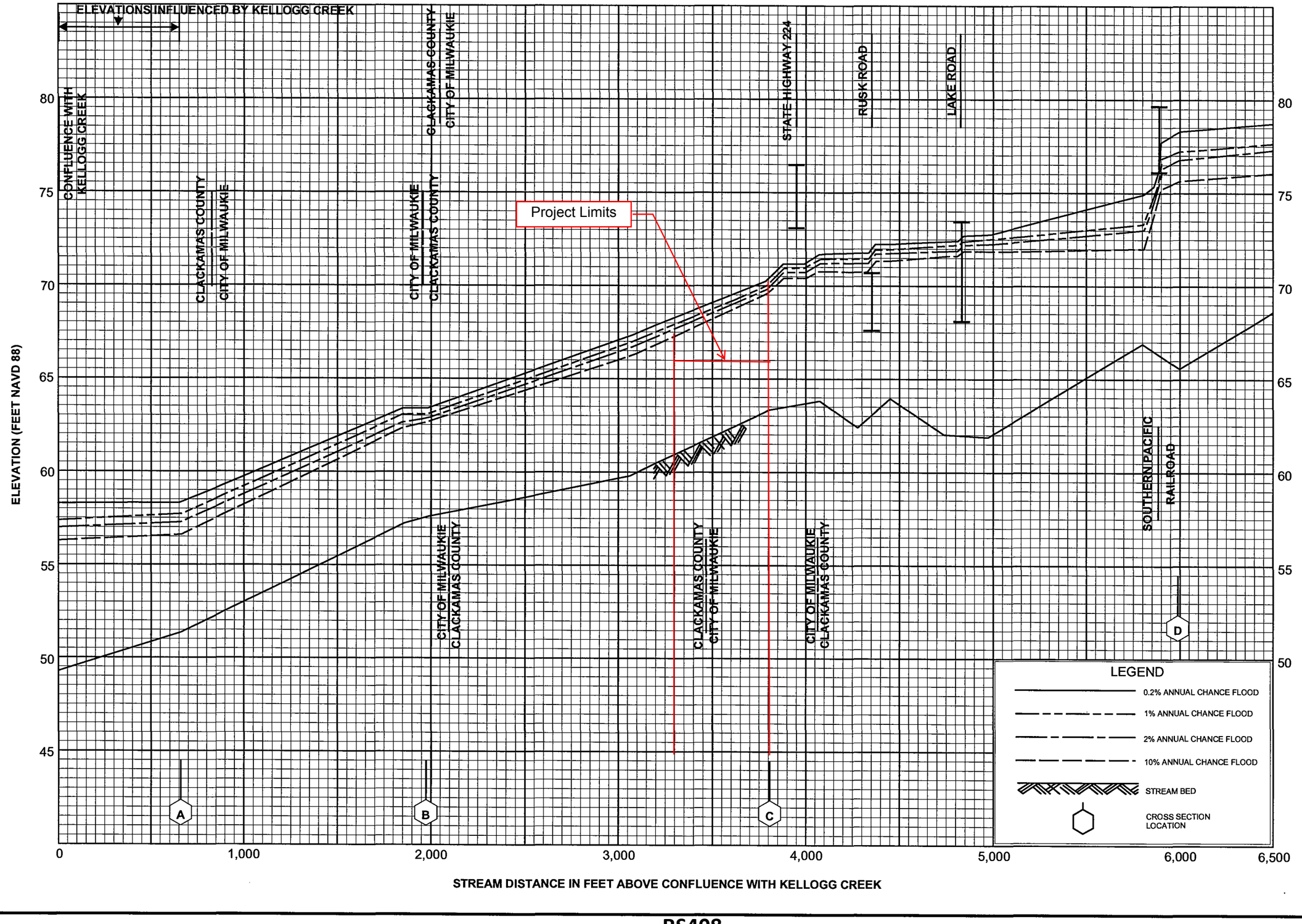
Existing



Proposed



RS407



FLOOD PROFILES

MT SCOTT CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

CLACKAMAS COUNTY, OR

AND INCORPORATED AREAS

53P

RS408

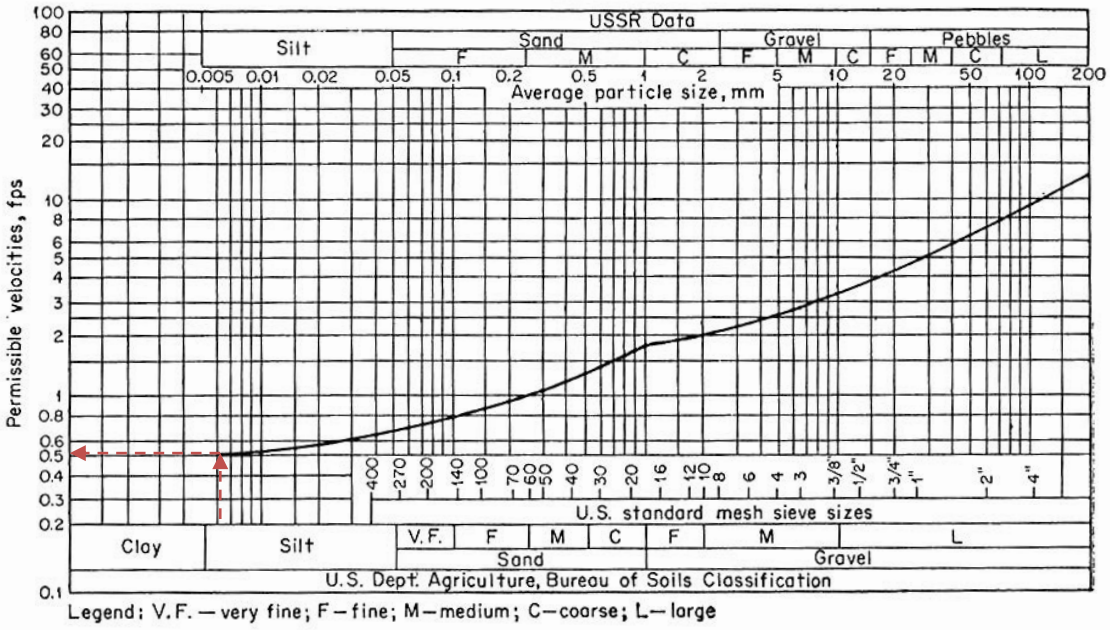


FIG. 7-3. U.S. and U.S.S.R. data on permissible velocities for noncohesive soils.

Source: Chow, V.T., 1959: *Open-channel hydraulics*. New York: McGraw-Hill. Page 166

Operation & Maintenance Plan

Kellogg Creek Planned Development

2322.14258.01

Prepared for

Brownstone Development, Inc.

47 S State Street
PO Box 2375
Lake Oswego, Oregon 97934

January 10, 2017

RS410

Prepared for	Brownstone Development, Inc.
Project Name	Operation & Maintenance Plan
Job Number	2322.14258.01
Date	January 10, 2017

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Portland, Oregon
97205

Telephone: 971-280-8641
Facsimile: 800-865-9847
araskin@dowl.com

Name	Title	Date	Revision	Reviewer
Atalia Raskin	WR Project Manager	01/10/2017	1	Scott Emmens

RS411

EXECUTIVE SUMMARY

Maintenance of water quality facilities is very important to ensure they operate as designed. Inadequate maintenance can be attributed to premature failures of these facilities. This Operation and Maintenance Plan provides guidance on how to maintain your facility, control source pollution, frequency of inspection and maintenance, potential problems with each facility, different conditions to check for, and the actual conditions that should exist. Maintenance guidelines and checklists have been provided in the Technical Appendix of this document.

The purpose of this Operation and Maintenance Plan is to describe the required type and frequency of long-term maintenance of the stormwater facilities and to identify the responsible maintenance organization. Several sources were used for obtaining maintenance information including City of Portland's *Stormwater Management Manual* dated August 2016.

This Plan should be kept onsite or within reasonable access to the site. Maintenance logs must be kept and made available for City inspection.

I. STORMWATER APPROACH DECRIPTION

I.1 Stormwater Approach

Water quality treatment and flow control at Kellogg Creek site will be accomplished through bioretention ponds and planters. All stormwater runoff will be released to Mt. Scott Creek and the public storm sewer in Kellogg Creek Drive. The Technical Appendix of this manual contains stormwater plans showing facility locations.

Table I-1 Stormwater Facility Summary

Facility	Facility Type	Facility Parameters	Stormwater Source	Contributing Impervious Area (ac)	Latitude	Longitude	Discharge Point
North	Pond	Volume: 5,923 cf Depth: 36 inch	Roof & Roadway	2.55	45.42782	-122.60406	Mt. Scott Creek
South	Pond	Volume: 5,161 cf Depth: 36 inch	Roof & Roadway	2.23	45.42713	-122.60453	Mt. Scott Creek
Southwest	Pond	Volume: 860 cf Depth: 12 inch	Roof & Roadway	0.16	45.42629	-122.60488	SE Kellogg Creek Dr.
Planter A	Planter	Area: 75 sf	Roadway	0.04	45.42648	-122.60477	SE Kellogg Creek Dr.
Planter B	Planter	Area: 58 sf	Roadway	0.04	45.42648	-122.60379	SE Kellogg Creek Dr.
Planter C	Planter	Area: 55 sf	Roadway	0.04	45.42649	-122.60368	SE Kellogg Creek Dr.
Planter D	Planter	Area: 312 sf	Roadway	0.15	45.42626	-122.60432	SE Kellogg Creek Dr.

II. INSPECTION

II.1 Inspection Schedule

In accordance with SLOPES V, inspection and maintenance will be required at least

- Quarterly for the first three (3) years.
- Twice a year thereafter.
- Within 48 hours of major rainfall events (defined as more than one inch of rain over a 24-hour period).

A recommended maintenance calendar is provided below.

Recommended Maintenance Schedule													
Purpose of Visit	**Frequency**	**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**	**O**	**N**	**D**
Routine inspection	Min. 4/year (first 3 years)			✓		✓					✓		✓
Vegetation	Min. 12/year	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Soil	Min. 8/year	✓	✓	✓	✓	✓					✓	✓	✓
Sediment & Trash	Min. 2/year				✓						✓		
Flow Control Structures	Min. 2/year				✓						✓		

III. MAINTENANCE ACTIVIES AND VISUAL INDICATORS OF DIMINISHED PERFORMANCE

Site Best Management Practices

Onsite maintenance practices can reduce maintenance needs for stormwater facilities. Good housekeeping procedures such as trash or source control practices can reduce spills and prevent pollutants from entering facilities.

Remove trash, debris and sediment from catch basins. Identify sources of visible pollutants or spills and clean up sources to protect the stormwater system. Sweep or vacuum driveways or other ground-level surfaces. Report all spills that threaten or enter the public sanitary or storm system.

Sediment and Oil Removal and Disposal

Stormwater facilities are designed to remove pollutants by capturing sediment, dirt, leaves and litter. Removing sediment and oil helps maintain facility infiltration rates, provide good water quality treatment, and prevent clogging and flooding.

In vegetated facilities, sediment should be removed when it reaches a depth of four inches, when the quantity reaches 30 percent of total capacity (as designed or measured) or when accumulated sediment is impeding facility function. Examples include when sediment is damaging vegetation, preventing the facility from draining, blocking inlets or causing bypass.

Remove sediment by hand unless professionals are needed because of confined space entry requirements or the need for a vactor truck. Dispose of sediment per solid waste disposal requirements. Removing sediment during dry periods is easier because the material weighs substantially less.

Vegetation Management

Healthy plants play important roles: the root systems absorb stormwater, help maintain infiltration rates, prevent erosion, and capture pollutants. If a vegetated stormwater facility has bare soil, or if vegetation is stressed, unhealthy, or dead, replant per the approved planting plan and/or address cause of stress. Remove nuisance and invasive plants.

Healthy vegetation must cover at least 90% of stormwater facility surface area. Grass must be mowed to keep it four to nine inches tall. Prune or trim vegetation or roots to ensure free conveyance of stormwater or improve sight lines. Remove leaves or other debris. Use weed-free mulch to inhibit weeds. Irrigate as needed.

The use of fertilizers and pesticides (including herbicides) is strongly discouraged in stormwater management facilities because of the potential for negative impacts to downstream systems. Integrated Pest Management strategies are encouraged to reduce or eliminate the need for pesticides. If pesticides are required, use the services of a licensed applicator and products approved for aquatic use.

Erosion, Bank Failure, and Channel Formation

Erosion in the flow path, inside or outside a facility, can clog inlets and outlets and reduce both conveyance efficiency and infiltration rates. Forms of erosion include channels, undercutting, scouring, and slumping. Any area with erosion more than two inches deep must be addressed. Install long-term erosion control practices and fill the eroded areas.

Structural Repairs

Structural components control the conveyance of stormwater. Examples include inlets, outlets, trash racks, concrete curbs, retaining walls, manholes and check dams. Repair or replace items when damaged, loose, broken, cracked, or askew. Monitor minor damage such as dents, rust, or minor cracks in concrete for indications of when repair or replacement is required.

Ponding Water

Most stormwater facilities are designed to drain in a certain amount of time. The facilities have an anticipated ponding depth of 10 to 12 inches are designed to have a long-term infiltration rate of 2 inches/hour. The anticipated drawdown time is approximately 24 hours, after the completion of the storm event. When the facility does not drain as anticipated, inspect the facility to determine the cause. Clearly clogged inlets or outlets, remove sediment that may be preventing infiltration, or add vegetation.

Pests

Stormwater facilities are designed to drain quickly enough to avoid providing breeding areas for pests. If mosquitos are found, the stormwater facility may be ponding water longer than the approved design but also search for nearby sources of standing water. If rodents are found, remove plant debris, fruit or nuts that are providing shelter and food and contact the appropriate county vector control office for trapping and removal.

Safety

Stormwater facilities must be maintained to protect workers, visitors, and the general public. Vegetation should be pruned for adequate visual clearance. Avoid maintenance in wet weather to reduce potential injuries from slipping and always use appropriate safety gear. Only personnel approved for confined space entry should enter underground stormwater facilities.

IV. FINANCIAL RESPONSIBILITY

Stormwater facilities for the property site will be maintained and operated privately by the home owners association (HOA). The proposed property is located at 13333 Rusk Road in Milwaukie, Oregon.

The owner must ensure that the water quality systems efficiently perform their function of removing petroleum hydrocarbons, sediments, metals, bacteria and nutrients from stormwater runoff and that detention systems perform their function of detaining runoff onsite.

All appropriate property owners should be knowledgeable regarding stormwater operation and maintenance. They should recognize that protection and successful operation of the stormwater drainage system is essential to the continued successful operation of the system and to protecting the natural environment.

This plan should be reviewed and adjusted as needed. After the first year, evaluate if additional maintenance practices are necessary.

V. INSPECTION AND MAINTENANCE LOG

Maintenance Logs are to be kept for stormwater facilities by the property owner. Maintenance logs should be completed at the time of stormwater facility maintenance, and must be kept onsite.

The checklist included in the Technical Appendix should be used to determine the frequency of inspection/maintenance, the different drainage system feature to be inspected/maintained, the potential problem with the particular drainage feature, different conditions to check for and the actual conditions that should exist for that drainage feature.

The Maintenance Log has been included in this manual that can be used for catch basins, pipes, landscaping and detention facilities. Additionally, manufacture maintenance guidance documents have been included in the Technical Appendix.

VI. TECHNICAL APPENDIX

- *Operations and Maintenance Specifications – Catch Basins* – 2008 City of Portland Stormwater Management Manual
- *Standard O&M Plan and Maintenance Log - Planters* - 2016 City of Portland Stormwater Management Manual
- *Standard O&M Plan and Maintenance Log - Basins* - 2016 City of Portland Stormwater Management Manual

- Civil Plans

Catch Basins

The performance of catch basins for removing sediment and other pollutants depends on routine maintenance to retain the storage available in the sump in order to capture sediment and most floatables.

- Remove debris and sediment every 6 months (or when one-third full of sediment).
- Dewater and dispose of sediment properly. Test sediment that has a heavy oil sheen and/or odors to determine the appropriate disposal.
- Maintain the hooded outlet to prevent floatable materials, such as trash and debris, from entering the storm drain system.
- Maintain the grate as designed for safety reasons and to prevent trash and debris from collecting in the catch basin.
- Repair/seal cracks. Replace when repair is insufficient.
- Keep a log of the amount of sediment collected and the date of removal.

3.1.1.8. Planters

Structural components must be operated and maintained in accordance with the design specifications.		
	MAINTENANCE INDICATOR	**CORRECTIVE ACTION**
	Clogged inlets or outlets	Remove sediment and debris from catch basins, trench drains, curb inlets, and pipes; maintain at least 50% conveyance at all times.
	Broken inlets or outlets	Repair/replace broken downspouts, curb cuts, standpipes, and screens.
	Damaged liners and walls	Extend and secure liner to planter walls above the high water mark. The facility must be water tight to protect abutting foundations from moisture damage.
	Cracked or exposed drain pipes	Repair or seal cracks. Replace when repair is insufficient. Cover with 6 inches of growing medium to prevent freeze/thaw and UV damage
Vegetation must cover at least 90% of the facility at maturity.		
	MAINTENANCE INDICATOR	**CORRECTIVE ACTION**
	Dead or stressed vegetation	Replant per original planting plan, or substitute from the plant list in Section 2.4.1. Irrigate and mulch as needed; prune tall, dry grasses and remove clippings.
	Tall grass and vegetation	Maintain grass height at 6”-9”. Trim to allow sight lines and foot traffic, also to ensure inlets and outlets freely convey stormwater into and/or out of facility.
	Weeds	Manually remove weeds.
Growing medium must sustain healthy plant cover and infiltrate within 48 hours.		
	MAINTENANCE INDICATOR	**CORRECTIVE ACTION**
	Gullies, erosion, exposed soils, sediment accumulations	Fill in and lightly compact areas of erosion with City-approved soil mix (see Section 2.3.6) and replant according to planting plan or substitute from the plant list in Section 2.4.1. Sediment more than 4 inches deep must be removed.
	Scouring at the inlet(s)	Ensure splash blocks or inlet gravel/rock are adequate.
	Ponding	Rake, till, or amend soil surface with City-approved soil mix to restore infiltration rate. Remove and replace sediment at entrances.

Annual Maintenance Schedule

Summer	Make structural repairs; clean gutters and downspouts; remove any build-up of weeds or organic debris.
Fall	Replant exposed soil and replace dead plants. Remove sediment and plant debris.
Winter	Clear gutters and downspouts.
Spring	Remove sediment and plant debris. Replant exposed soil and replace dead plants.
All seasons	Weed as necessary.

Maintenance Records: All facility operators are required to keep an inspection and maintenance log. Record date, description, and contractor (if applicable) for all repairs, landscape maintenance, and facility cleanout activities. Keep work orders and invoices on file and make available upon request of the City inspector.

Fertilizers/Pesticides/Herbicides: Their use is strongly discouraged because of the potential for damage to downstream systems. If pesticides or herbicides are required, use the services of a licensed applicator and products approved for aquatic use.

Access: Maintain ingress/egress per design standards.

Infiltration/Flow Control: All facilities must drain within 48 hours. Record time/date, weather, and conditions when ponding occurs.

Pollution Prevention: All sites must implement Best Management Practices to prevent contamination of stormwater. Call 503-823-7180 to report spills. Never wash spills into a stormwater facility. If contamination occurs, document the circumstances and the corrective action taken; include the time/date, weather, and site conditions.

Vectors (Mosquitoes and Rats): Stormwater facilities must not harbor mosquito larvae or rodents that pose a threat to public health or that undermine facility structures. Record the time/date, weather, and site conditions when vector activity observed. Record when vector abatement started and ended.

Operations and Maintenance Log

Date	Work Performed By	Type of Work Performed					Notes	Initials
		Clean inlets and Outlets	Sediment and Trash Removal	Plant Replacement type, location	Structural Repairs – type, location	Other		

3.1.1.9. Basins

Structural components must be operated and maintained in accordance with the design specifications.		
	MAINTENANCE INDICATOR	**CORRECTIVE ACTION**
	Clogged inlets or outlets	Remove sediment, debris, and blockages from catch basins, trench drains, curb inlets, and pipes to maintain at least 50% conveyance at all times
	Broken inlets or outlets, including grates	Repair or replace broken downspouts, curb cuts, standpipes, and screens as needed.
	Cracked or exposed drain pipes	Repair or seal cracks. Replace when repair is insufficient. Cover with 6 inches of growing medium to prevent freeze/thaw and UV damage.
	Check dams missing/broken	Maintain or replace rock check dams as per design specifications.
	Perforated liner	Replace or repair liner as needed.
Vegetation must cover at least 90% of the facility at maturity.		
	MAINTENANCE INDICATOR	**CORRECTIVE ACTION**
	Dead or stressed vegetation	Replant per original planting plan, or substitute from the plant list in Section 2.4.1. Irrigate and mulch as needed; prune tall, dry grasses and remove clippings.
	Tall grass and vegetation	Maintain grass height at 6”-9”. Trim to allow sight lines and foot traffic, also to ensure inlets and outlets freely convey stormwater into and/or out of facility.
	Weeds	Manually remove weeds.
Growing medium must sustain healthy plant cover and infiltrate within 48 hours.		
	MAINTENANCE INDICATOR	**CORRECTIVE ACTION**
	Gullies, erosion, exposed soil, sediment accumulation	Fill in and lightly compact areas of erosion with City-approved soil mix (see Section 2.3.6) and replant according to planting plan or substitute from the plant list in Section 2.4.1. Erosion more than 2 inches deep must be addressed. Sediment more than 4 inches deep must be removed.
	Scouring at the inlet(s)	Ensure splash blocks or inlet gravel/rock are adequate.
	Slope slippage	Stabilize 3:1 slopes/banks with plantings from the original planting plan or from the plant list in Section 2.4.1.
	Ponding	Rake, till, or amend soil surface with City-approved soil mix to restore infiltration rate. Remove sediment at entrance.

Annual Maintenance Schedule

Summer	Make structural repairs; clean gutters and downspouts; remove any build-up of weeds or organic debris.
Fall	Replant exposed soil and replace dead plants. Remove sediment and plant debris.
Winter	Clear gutters and downspouts.
Spring	Remove sediment and plant debris. Replant exposed soil and replace dead plants.
All seasons	Weed as necessary.

Maintenance Records: All facility operators are required to keep an inspection and maintenance log. Record date, description, and contractor (if applicable) for all repairs, landscape maintenance, and facility cleanout activities. Keep work orders and invoices on file and make available upon request of the City inspector.

Fertilizers/Pesticides/Herbicides. Their use is strongly discouraged because of the potential for damage to downstream systems. If pesticides or herbicides are required, use the services of a licensed applicator and products approved for aquatic use.

Access: Maintain ingress/egress per design standards.

Infiltration/Flow Control: All facilities must drain within 48 hours. Record time/date, weather, and conditions when ponding occurs.

Pollution Prevention: All sites must implement Best Management Practices to prevent contamination of stormwater. Call 503-823-7180 to report spills. Never wash spills into a stormwater facility. If contamination occurs, document the circumstances and the corrective action taken; include the time/date, weather, and site conditions.

Vectors (Mosquitoes and Rats): Facilities must not harbor mosquito larvae or rodents. Record the time/date, weather, and site conditions when vector activity is observed. Record when vector abatement started and ended.

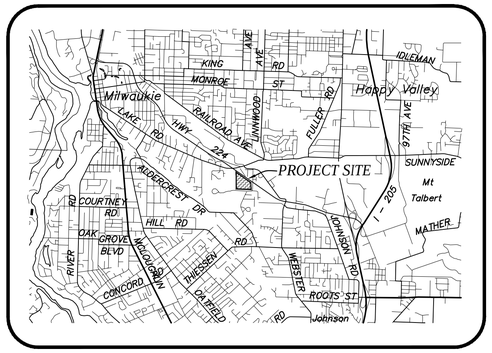
Operations and Maintenance Log

Date	Work Performed By	Type of Work Performed					Notes	Initials
		Clean inlets and Outlets	Sediment and Trash Removal	Plant Replacement type, location	Structural Repairs – type, location	Other		

KELLOGG CREEK

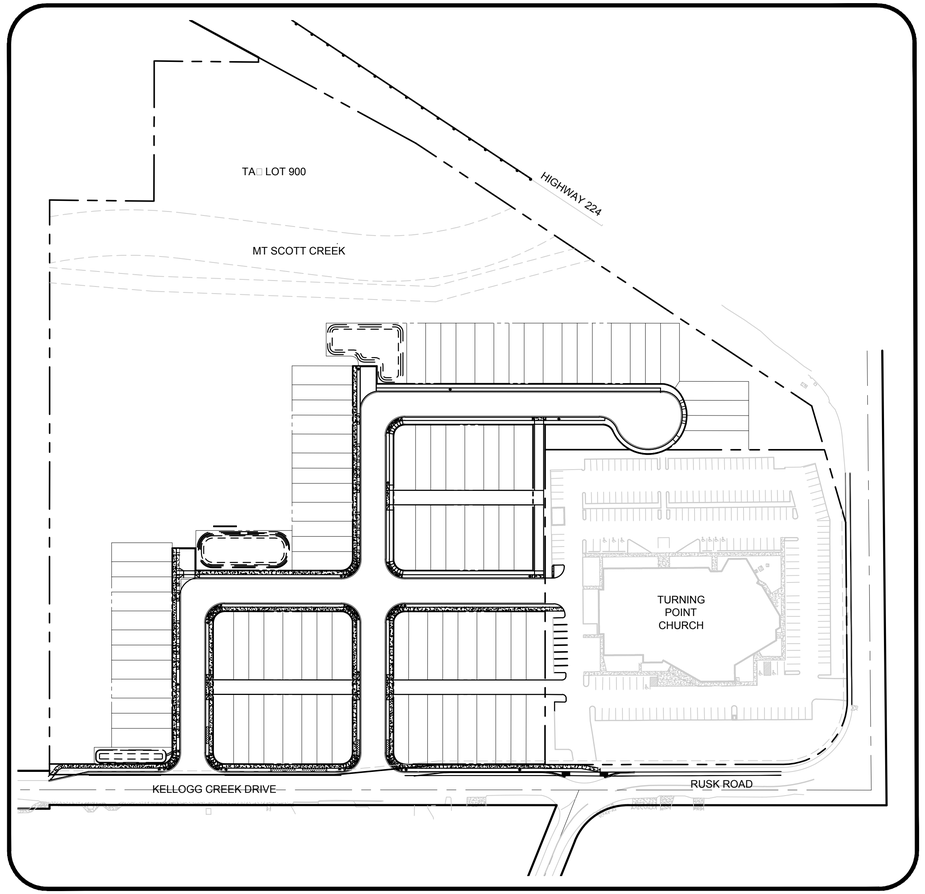
Planned Development Subdivision Application
Milwaukie, Oregon

February, 2017



VICINITY MAP

SCALE: NTS



SITE MAP

SCALE: NTS

SHEET INDEX

C000	COVER SHEET
C100	EXISTING CONDITIONS
C101	TREE PROTECTION & REMOVAL PLAN
C102	TREE PROTECTION & REMOVAL PLAN
C200	PRELIMINARY LOT LINE ADJUSTMENT
C201	PRELIMINARY PLAT
C202	TYPICAL STREET SECTIONS
C300	GRADING PLAN
C400	COMPOSITE UTILITY PLAN
C500	PUBLIC IMPROVEMENT PLAN
L100	LANDSCAPE PLAN
A100	BUILDING PLANS AND ELEVATIONS
A2	ALLEY MAIN FLOOR
A4	ALLEY UPPER FLOOR
A6	ALLEY FOUR-PLEX ELEVATIONS
2.0	FOUR-PLEX MAIN FLOOR PLAN
4.0	FOUR-PLEX UPPER FLOOR PLAN
6.0	FOUR-PLEX ELEVATIONS
7.0	FOUR-PLEX ELEVATIONS
7.1	FOUR-PLEX STREET SIDE ELEVATIONS

PROJECT TEAM

APPLICANT/OWNER
BROWNSTONE DEVELOPMENT INC.
ATTN:RANDY MYERS
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P.O. BOX 2375
LAKE OSWEGO OR 97934
(503) 358-4460

CIVIL ENGINEER
DOWL
ATTN:SCOTT EMMENS P.E.
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PORTLAND OR 97205
(971) 280-8641

LAND USE PLANNER
DOWL
ATTN:SERAH BREAKSTONE
720 SW WASHINGTON AVE SUITE 750
PORTLAND OR 97205
(971) 280-8641

LANDSCAPE ARCHITECT
DOWL
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TERRACALC LAND SURVEYING INC.
ATTN: DARREN HARR PLS
1615 N.E. MILLER STREET
MCMINNVILLE OR 97128
OFFICE: (503) 857-0935

TRAFFIC ENGINEER
KITTELSON & ASSOCIATES INC.
ATTN: ZACHARY HOROWITZ P.E.
610 SW ALDER STREET SUITE 700
PORTLAND OR 97205
503-228-5230

ENVIRONMENTAL
PACIFIC HABITAT SERVICES
ATTN:JOHN VAN STAVEREN
9450 SW COMMERCE CIRCLE SUITE 180
WILSONVILLE OR 97070
(503) 570-0800

GEOTECHNICAL ENGINEER
GEO CONSULTANTS NORTHWEST
ATTN:BRAD HUPY P.E. G.E.
824 SE 12TH AVE
PORTLAND OR 97214
(503) 616-9425

REGISTERED PROFESSIONAL ENGINEER
OREGON
J. SCOTT EMMENS
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KELLOGG CREEK SUBDIVISION

COVER SHEET

BROWNSTONE DEVELOPMENT
MILWAUKIE OREGON
SE1/7 NE1/4 SEC. 6 T2S R2E W.M. EXISTING TA LOTS 600 700 900 901

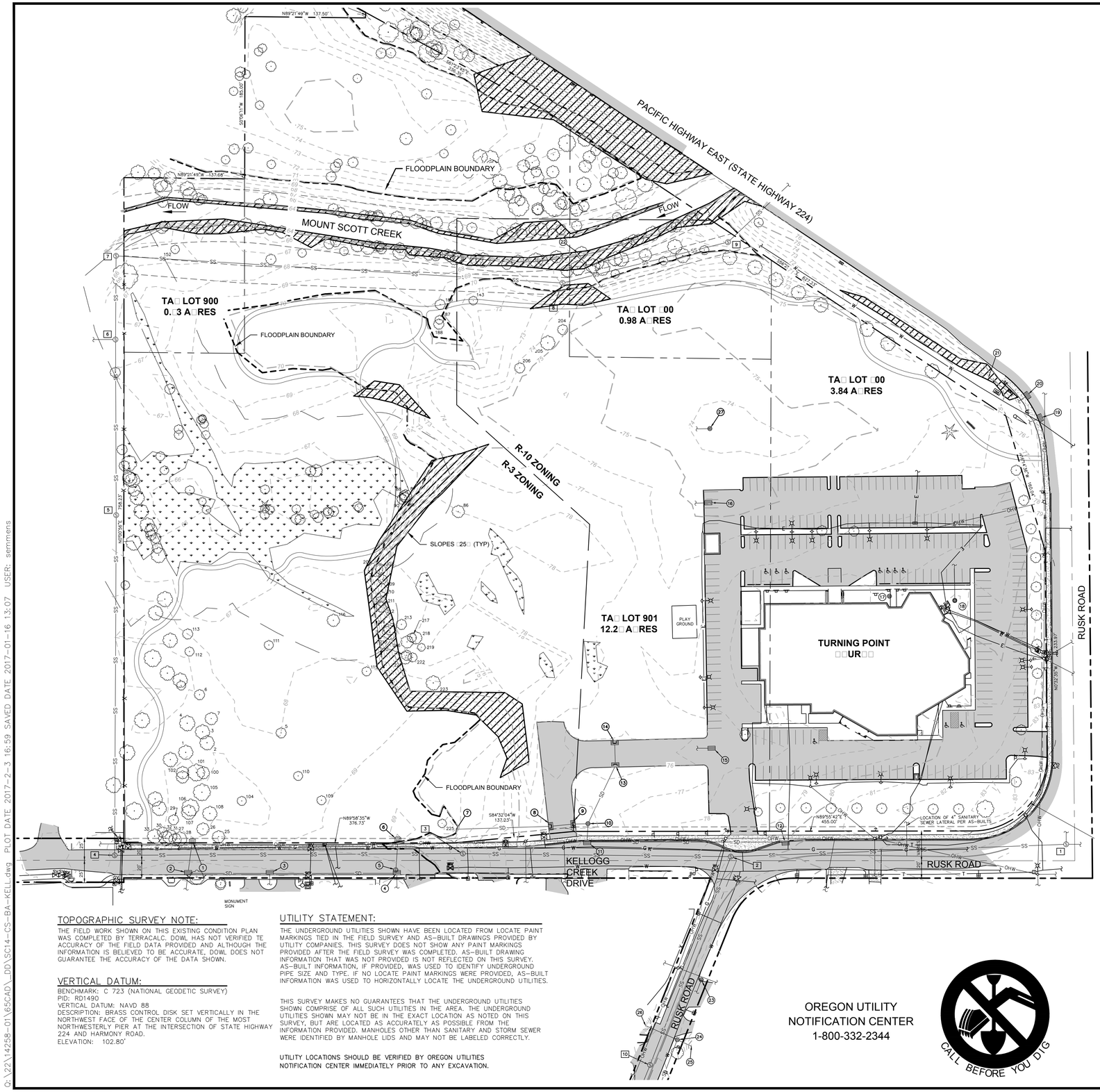
PROJECT	14258-01
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LEGEND:

- – EXISTING ASPHALT
- – EXISTING CONCRETE
- – EXISTING GRAVEL
- – EXISTING SLOPES GREATER THAN 25%
- – EXISTING EXISTING WETLAND
- SD – STORM DRAINAGE LINE
- SS – SANITARY SEWER LINE
- T – UNDERGROUND TELECOMMUNICATION LINE
- E – UNDERGROUND ELECTRIC LINE
- W – UNDERGROUND WATER LINE
- X – FENCE
- OHW – OVERHEAD POWER LINE
- G – GAS LINE
- – DECIDUOUS TREE
- – CONIFEROUS TREE
- – SIGN
- – TRAFFIC SIGNAL POLE
- – SANITARY SEWER MANHOLE
- – STORM DRAINAGE MANHOLE
- – CATCH BASIN
- – AREA DRAIN
- – DITCH INLET
- – ELECTRICAL VAULT
- – COMMUNICATIONS VAULT
- – WATER VAULT
- – ELECTRICAL METER
- – ELECTRICAL RISER
- – WATER VALVE
- – WATER METER
- – FIRE HYDRANT
- – FIRE DEPARTMENT CONNECTION
- – SPRINKLER VALVE
- – GAS VALVE
- – COMMUNICATIONS RISER
- – ELECTRIC JUNCTION BOX
- – SIGNAL JUNCTION BOX
- – BOLLARD
- – LIGHT POLE
- – SIGNAL POLE
- – PEDESTRIAN SIGNAL POLE
- – UTILITY POLE
- – GUY ANCHOR
- – HANDICAPPED PARKING SPACE
- 75 – EXTG MAJOR CONTOUR
- 74 – EXTG MINOR CONTOUR
- – FLOOD PLAIN (100 YEAR)
- – LOT LINE
- – BOUNDARY LINE
- – RIGHT OF WAY LINE
- – CENTERLINE
- – ZONING DELINEATION

SANITARY SEWER TABLE:

1. SANITARY SEWER MANHOLE
RIM=82.78'
IE 8" CONC (N)=68.77'
IE 12" CONC (E)=68.54'
IE 12" CONC (W)=68.50'
2. SANITARY SEWER MANHOLE
RIM=79.05'
IE 8" CONC (S)=68.12'
IE 12" CONC (E)=67.60'
IE 12" CONC (W)=67.55'
3. SANITARY SEWER MANHOLE
RIM=71.50'
IE 12" CONC (E)=63.83'
IE 12" CONC (W)=63.83'
4. SANITARY SEWER MANHOLE
RIM=68.97'
IE 12" CONC (E)=62.99'
IE 12" CONC (N)=62.54'
5. SANITARY SEWER MANHOLE
RIM=66.79'
IE 12" CONC (S)=60.82'
IE 12" CONC (N)=60.78'
6. SANITARY SEWER MANHOLE
RIM=66.57'
IE 12" CONC (S)=53.59'
IE 42" CONC (N)=51.77'
IE 42" CONC (W)=51.68'
7. SANITARY SEWER MANHOLE
RIM=65.51'
IE 42" CONC (E)=',
IE 42" CONC (S)='
8. SANITARY SEWER MANHOLE
RIM=69.73'
IE 42" CONC (E)=52.94'
IE 42" CONC (W)=52.94'
9. SANITARY SEWER MANHOLE
RIM=70.91'
IE 42" CONC (NE)=53.40'
IE 42" CONC (W)=53.21'

STORM DRAINAGE TABLE:

1. DITCH INLET
GRATE=','
IE 12" CPP (S)=66.15'
2. CATCH BASIN
GRATE=67.40'
IE 6" PVC (S)=65.95'
IE 12" CPP (N)=65.93'
IE 12" CONC (E)=65.88'
3. CATCH BASIN
GRATE=67.79'
IE 8" PVC (S)=65.72'
IE 12" CONC (W)=65.62'
IE 12" CONC (E)=65.62'
4. CATCH BASIN
GRATE=68.47'
IE 12" CONC (W)=65.22'
IE 12" CONC (NW)=65.42'
IE 12" CONC (S)=65.17'
5. STORM DRAINAGE MANHOLE
RIM=68.65'
IE 12" CONC (N)=65.29'
IE 12" CONC (SE)=65.58'
6. DITCH INLET
GRATE=67.83'
IE 12" CONC (S)=65.69'
7. IE 12" CPP (E)=69.69'
8. CATCH BASIN
GRATE=75.17'
IE 12" CPP (E)=70.89'
IE 12" CPP (W)=70.89'
9. CATCH BASIN
GRATE=75.11'
IE 12" CPP (E)=71.41'
IE 12" CPP (W)=71.41'
10. AREA DRAIN
GRATE=75.57'
IE 12" CPP (N)=72.36'
IE 12" CONC (S)=72.23'
IE 12" CPP (W)=71.86'
11. CATCH BASIN
GRATE=76.05'
IE 12" CONC (E)=74.27'
IE 12" CONC (N)=73.25'
12. CATCH BASIN
GRATE=79.51'
IE 12" CONC (W)=76.32'
13. CATCH BASIN
GRATE=75.01'
IE 12" CPP (N)=72.42'
IE 12" CPP (S)=72.59'
14. CATCH BASIN
GRATE=75.03'
IE 12" CPP (S)=72.70'
15. CATCH BASIN/OIL TRAP
GRATE=76.12'
WATER LEVEL=75.00'
COULD NOT OPEN TRAP
16. CATCH BASIN/OIL TRAP
GRATE=73.86'
WATER LEVEL=73.16'
COULD NOT OPEN TRAP
17. AREA DRAIN
GRATE=77.52'
18. AREA DRAIN/OIL TRAP
GRATE=77.60'
WATER LEVEL=76.89'
COULD NOT OPEN TRAP
19. CATCH BASIN
GRATE=76.41'
IE 12" CONC (SW)=74.65'
20. CATCH BASIN
GRATE=76.14'
IE 12" CONC (SW)=74.09'
21. IE 16" CPP (E)=72.59'
22. IE 12" PVC (SE)=64.71'
23. AREA DRAIN
GRATE=77.39'
IE 3" PVC (S)=76.74'
24. AREA DRAIN
GRATE=76.08'
IE 24" CONC (E&W)=71.42'
25. IE 24" CONC (W)=71.63'
26. IE 24" CONC (E)=70.95'
27. AREA DRAIN
GRATE=72.78'
WATER LEVEL=72.03'
COULD NOT OPEN TRAP

TOPOGRAPHIC SURVEY NOTE:

THE FIELD WORK SHOWN ON THIS EXISTING CONDITION PLAN WAS COMPLETED BY TERRACALC. DOWL HAS NOT VERIFIED TE ACCURACY OF THE FIELD DATA PROVIDED AND ALTHOUGH THE INFORMATION IS BELIEVED TO BE ACCURATE, DOWL DOES NOT GUARANTEE THE ACCURACY OF THE DATA SHOWN.

VERTICAL DATUM:

BENCHMARK: C 723 (NATIONAL GEODETIC SURVEY)
PID: RD1490
VERTICAL DATUM: NAVD 88
DESCRIPTION: BRASS CONTROL DISK SET VERTICALLY IN THE NORTHWEST FACE OF THE CENTER COLUMN OF THE MOST NORTHWESTERLY PIER AT THE INTERSECTION OF STATE HIGHWAY 224 AND HARMONY ROAD.
ELEVATION: 102.80'

UTILITY STATEMENT:

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM LOCATE PAINT MARKINGS TIED IN THE FIELD SURVEY AND AS-BUILT DRAWINGS PROVIDED BY UTILITY COMPANIES. THIS SURVEY DOES NOT SHOW ANY PAINT MARKINGS PROVIDED AFTER THE FIELD SURVEY WAS COMPLETED. AS-BUILT DRAWING INFORMATION THAT WAS NOT PROVIDED IS NOT REFLECTED ON THIS SURVEY. AS-BUILT INFORMATION, IF PROVIDED, WAS USED TO IDENTIFY UNDERGROUND PIPE SIZE AND TYPE. IF NO LOCATE PAINT MARKINGS WERE PROVIDED, AS-BUILT INFORMATION WAS USED TO HORIZONTALLY LOCATE THE UNDERGROUND UTILITIES.

THIS SURVEY MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE OF ALL SUCH UTILITIES IN THE AREA. THE UNDERGROUND UTILITIES SHOWN MAY NOT BE IN THE EXACT LOCATION AS NOTED ON THIS SURVEY, BUT ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE INFORMATION PROVIDED. MANHOLES OTHER THAN SANITARY AND STORM SEWER WERE IDENTIFIED BY MANHOLE LIDS AND MAY NOT BE LABELED CORRECTLY.

UTILITY LOCATIONS SHOULD BE VERIFIED BY OREGON UTILITIES NOTIFICATION CENTER IMMEDIATELY PRIOR TO ANY EXCAVATION.

OREGON UTILITY
NOTIFICATION CENTER
1-800-332-2344

CALL BEFORE YOU DIG

N

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KELLOGG CREEK SUBDIVISION

E□ISTING CONDITIONS

BROWNSTONE DEVELOPMENT
MILWAUKIE, OREGON
SE1/7 NE1/4 SEC. 6 T2S R2E W.M. E□ISTING TA□ LOTS 600, 700, 900, 901

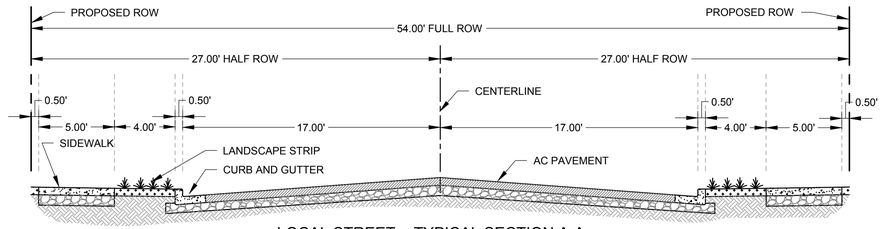
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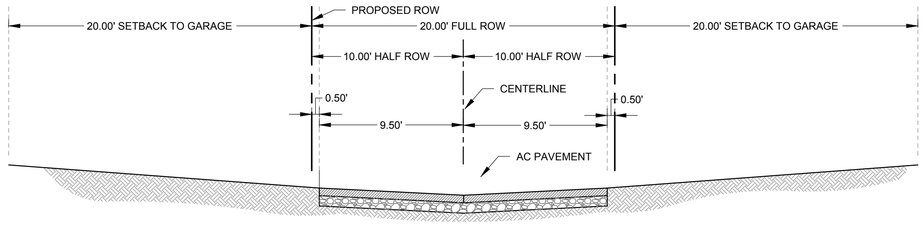
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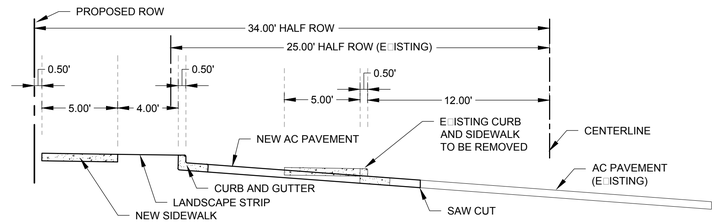
LOCAL STREET - TYPICAL SECTION A-A

HORIZONTAL SCALE: 1" = 5'



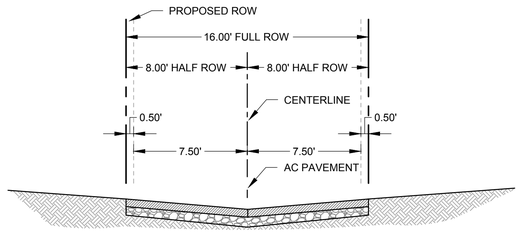
ALLEY - TYPICAL SECTION B-B

HORIZONTAL SCALE: 1" = 5'



KELLOGG CREEK DRIVE - TYPICAL SECTION C-C

HORIZONTAL SCALE: 1" = 5'



PUBLIC ALLEY - TYPICAL SECTION D-D

HORIZONTAL SCALE: 1" = 5'

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 9, 2004
J. SCOTT EMMENS
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TYPICAL STREET SECTIONS

BROWNSTONE DEVELOPMENT
MILWAUKIE, OREGON
SE1/7 NE1/4 SEC. 6 T2S R2E W.M. E□ISTING TA. LOTS 600, 700, 900, 901

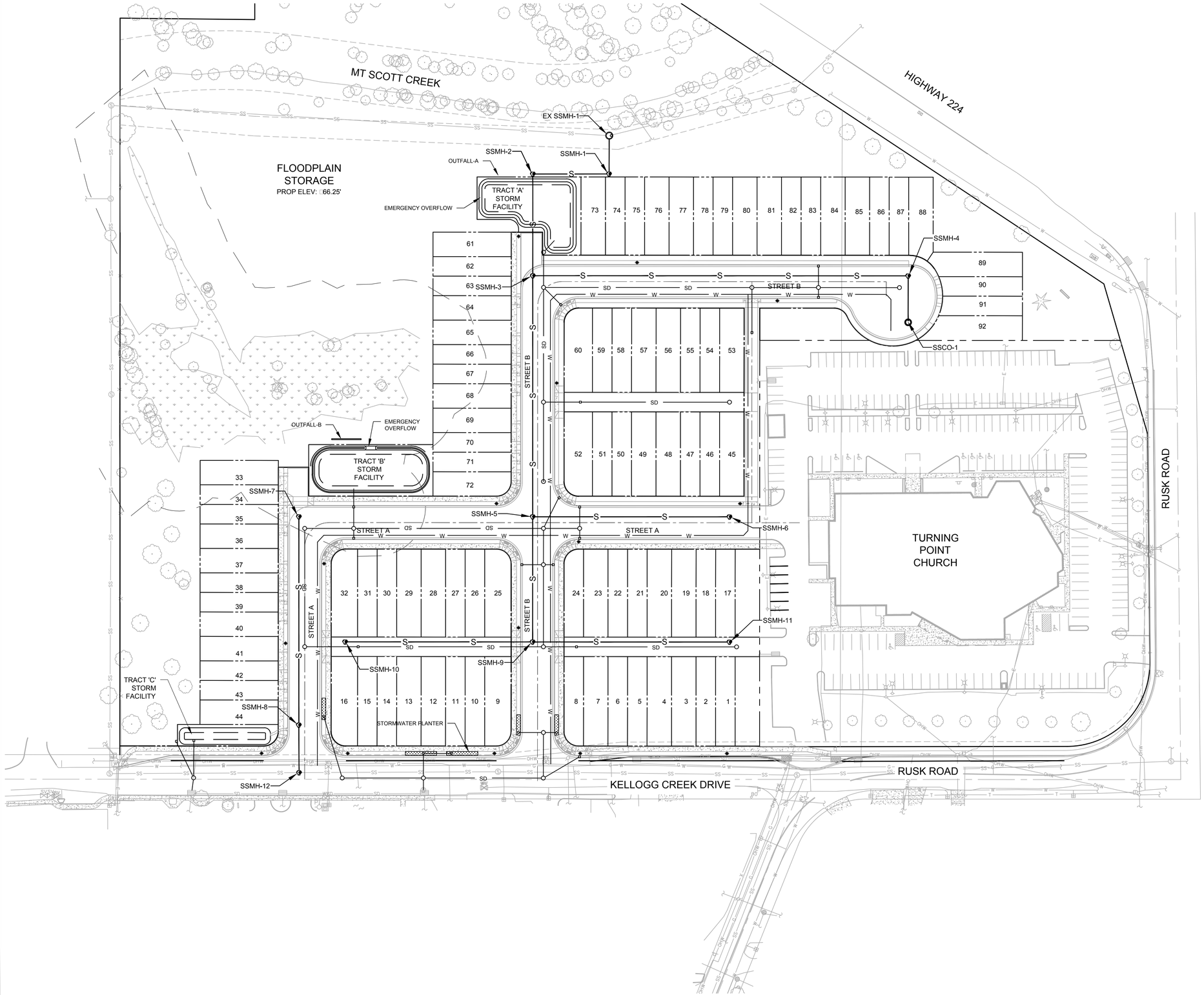
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LEGEND:

- S - E□ISTING SANITARY SEWER LINE
- SD - E□ISTING STORM LINE
- W - E□ISTING WATER LINE
- E□ISTING STORM MAN HOLE
- E□ISTING SANITARY MAN HOLE
- E□ISTING CATCH BASIN
- E□ISTING WATER VALVE
- S - PROPOSED SANITARY SEWER LINE
- SD - PROPOSED STORM LINE
- W - PROPOSED WATER LINE
- PROPOSED SANITARY MAN HOLE
- PROPOSED STORM MAN HOLE
- PROPOSED CATCH BASIN
- PROPOSED STORMWATER PLANTER

NOTES:

1. OUTFALL A AND B: SEE SECTION '6.3 FLOW DISPERSION' OF THE STORM WATER REPORT DATED JANUARY 12□2017 PREPARED BY DOWL.

MANHOLE DATA

E□ SSMH-1
RIM: 69.06
IE IN (8"S) = 55.04
IE IN (42"W) = 52.94
IE OUT (42"E) = 52.94

SSCO-1
RIM: 76.47
IE OUT (8"N) = 67.80

SSMH-1
RIM: 72.57
IE IN (8"W) = 55.28
IE OUT (8"N) = 55.28

SSMH-2
RIM: 73.00
IE IN (8"S) = 55.75
IE OUT (8"E) = 55.75

SSMH-3
RIM: 73.69
IE IN (8"E) = 64.64
IE IN (8"S) = 56.37
IE OUT (8"N) = 56.37

SSMH-4
RIM: 76.49
IE IN (8"S) = 67.52
IE OUT (8"W) = 67.52

SSMH-5
RIM: 74.54
IE IN (8"E) = 65.22
IE IN (8"S) = 63.51
IE OUT (8"N) = 57.85

SSMH-6
RIM: 77.28
IE OUT (8"W) = 68.61

SSMH-7
RIM: 73.52
IE OUT (8"S) = 65.57

SSMH-8
RIM: 70.14
IE IN (8"N) = 64.29
IE OUT (8"S) = 64.09

SSMH-9
RIM: 74.93
IE IN (8"E) = 65.64
IE IN (8"W) = 64.28
IE OUT (8"N) = 64.28

SSMH-10
RIM: 74.10
IE OUT (8"E) = 65.43

SSMH-11
RIM: 76.32
IE OUT (8"W) = 67.65

SSMH-12
RIM: 68.66
IE IN (8"N) = 63.60

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COMPOSITE UTILITY PLAN

BROWNSTONE DEVELOPMENT
MILWAUKIE, OREGON
SE1/7 NE1/4 SEC. 6 T2S R2E W.M. E□ISTING TA□ LOTS 600, 700, 900, 901

PROJECT	14258-01
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LEGEND:

- E□ISTING MINOR CONTOUR
- E□ISTING MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR

OREGON HWY 224

PARCEL II

SHED

EXISTING CHURCH BUILDING

VEHICLES THAT ARE E□ITING THE CHURCH PROPERTY WILL BE DIRECTED TO USE THE PUBLIC STREET THAT LEADS TO SE KELLOGG CREEK DRIVE.

INSTALL GATE TO PRIVATE ALLEY.

INSTALL 'NO E□IT' SIGN AND DEMOLISH THE E□IT LANE. INSTALL CURB AND STRIPING TO DETER MOTORISTS FROM E□ITING.

14.50'

14.00'

10.00'

15.50'

SOUTH BOUND TRAVEL LANE

NORTH BOUND TRAVEL LANE

END BIKE LANE STRIPING

5.00'

PROVIDE BIKE LANE STRIPING

SE KELLOGG CREEK DR

INSTALL BICYCLE RAMP FOR WEST BOUND TRAFFIC.

5.00'

PROVIDE BIKE LANE STRIPING

SE RUSK RD

INSTALL BICYCLE RAMP FOR WEST BOUND TRAFFIC.

SE RUSK RD

N

10 0 10

SCALE IN FEET

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OREGON
JULY 9, 2004
J. SCOTT EMMENS
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KELLOGG CREEK SUBDIVISION

PUBLIC INTERSECTION

BROWNSTONE DEVELOPMENT
MILWAUKIE, OREGON
SE1/7 NE1/4 SEC. 6 T2S R2E W.M. E□ISTING TA. LOTS 600, 700, 900, 901

PROJECT	14258-01
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Redmond
Seattle

WYOMING
Gillette
Lander
Laramie
Sheridan

MEMORANDUM

To: Brett Kelver, AICP, Associate Planner, City of Milwaukie

From: Atalia Raskin, PE WR Project Manager

Date: March 27, 2017

Subject: Incompleteness Stormwater Comment – Site 13333 SE Rusk Rd.

The preliminary drainage report describes the proposed stormwater management approach that includes the use of bioretention basins and planters. These types of stormwater management facilities are approved by the City of Portland.

The WES Tool was selected for the stormwater facility sizing to meet SLOPES V standards for the wetland fill permit. SLOPES V guidance are more stringent than the City of Portland methodology (hydrograph based).

The water quality storm as defined by the City of Portland is 0.83 inch precipitation depth. This is less than the WES Tool, which uses a water quality storm precipitation depth of 1.0 inch.

SLOPES requires continuous simulation for flows from 50% of the 2-yr through the 10-yr. The WES Tool is the only continuous simulation tool developed for use within Clackamas County. Therefore, by meeting SLOPES V standards we'll also be meeting City of Portland's (and City of Milwaukie's) standards. Additional information on how the proposed facilities meet the City of Milwaukie's standards can be provided during the construction documents submittal.

Office Locations

ALASKA
Anchorage
Juneau
Fairbanks
Ketchikan
Kodiak
Palmer

ARIZONA
Tempe
Tucson

COLORADO
Golden
Gunnison
Montrose

MONTANA
Billings
Bozeman
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NORTH DAKOTA
Dickinson

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Bend
Portland

WASHINGTON
Redmond
Seattle

WYOMING
Gillette
Lander
Laramie
Sheridan

MEMORANDUM

TO: Brett Kelver, AICP, City of Milwaukie

FROM: Scott Emmens, PE Senior Project Manager

DATE: January 23, 2017

SUBJECT: Kellogg Creek Subdivision – Floodplain Analysis

This memorandum summarizes the Kellogg Creek Subdivision floodplain impacts. The proposed project will construct an approximately 14 acre subdivision and will include the construction of 92 new lots intended for single-family attached homes (rowhouses). In order to construct the homes, fill is required to be placed on the site to bring the building elevation above the floodplain elevation.

The proposed design follows City of Milwaukie Municipal Code, Chapter 18.04 Flood Hazard Areas. Provided below is a summary of our responses to the relevant code sections.

18.04.150 General Standards

D. Subdivision Proposals

1. All subdivision proposals shall be consistent with the need to minimize flood damage.

Response: The proposed project was designed to minimize flood damage by elevating the site at least one foot above the floodplain. Fill is placed outside the bankfull channel and away from an existing lower elevation area on the western side of the site.

2. All subdivision proposals shall have public utilities and facilities such as sewer, gas, electrical, and water systems located and constructed to minimize or eliminate flood damage.

Response: All public utilities are located outside the floodplain with the exception of the sanitary sewer connection to the existing sanitary sewer located within the existing floodplain, as well as public utilities to be located in the existing Kellogg Creek Drive, a portion of which lies within the existing floodplain.

3. All subdivision proposals shall have adequate drainage provided to reduce exposure to flood damage.

Response: The site is graded to provide positive drainage to reduce exposure to flood damage. Proposed street grades meet or exceed the minimum grade allowed by the City of Milwaukie Public Works Standards, and street cross sections match typical sections provided by the City of Milwaukie to ensure proper drainage.

4. Base flood elevation data shall be provided for subdivision proposals and other proposed development which contain at least fifty (50) lots or five (5) acres (whichever is less).

Response: The project proposes more than 50 lots. The existing floodplain is shown on Sheet C100 and the proposed grading is shown on Sheet C400 of the land-use application (attached). The base flood

elevation is 69.9 located at cross section C on FEMA map number FM41005C0036D (NAVD 1988 datum).

F. Balanced Cut and Fill

The displacement of flood storage area by the placement of fill or structures (including building foundations) shall conform to the following standards for balanced cut and fill:

1. The placement of fill or structures that displaces ten (10) cubic yards or less of flood storage area is exempt from the requirements of subsection 2 below.

Response: More than 10 cu-yds of fill will be displaced. See response below.

2. The placement of fill or structures that displaces more than ten (10) cubic yards of flood storage area shall comply with the following standards:

a. No net fill in any floodplain is allowed.

Response: All fill added to the floodplain will be balanced with an equal amount of soil removed from the floodplain meeting the "no net fill" requirement. Supporting earthwork exhibits are attached.

b. All fill placed in a floodplain shall be balanced with at least an equal amount of soil material removal.

Response: See response above.

c. Any excavation below bankfull stage shall not count toward compensating for fill.

Response: Excavation will not occur below the bankfull stage.

d. Excavation to balance a fill shall be located on the same parcel as the fill unless it is not reasonable or practicable to do so. In such cases, the excavation may be located in the same drainage basin and as close as possible to the fill site subject to the following:

(1) The proposed excavation and fill will not increase flood impacts for surrounding properties as determined through hydrologic and hydraulic analysis;

(2) The proposed excavation is authorized under applicable municipal code provisions including Section 19.402 Natural Resources; and

(3) Measures to ensure the continued protection and preservation of the excavated area for providing balanced cut and fill shall be approved by the City.

Response: Excavation will occur within the same parcel as the project.

e. Temporary fills permitted during construction shall be removed at the end of construction.

Response: Temporary fill permits will be removed at the end of construction.

f. New culverts, stream crossings, and transportation projects shall be designed as balanced cut and fill projects or designed not to significantly raise the design flood elevation. Such projects shall be designed to minimize the area of fill in flood management areas and to minimize erosive velocities. Stream crossings shall be as close to perpendicular to the stream as practicable. Bridges shall be used instead of culverts wherever practicable.

Response: The project does not include a creek crossing.

g. Excavation and fill required for the construction of detention facilities or structures, and other facilities, shall be designed to reduce or mitigate flood impacts and improve water quality. Levees shall not be used to create vacant buildable lands.

Response: The proposed stormwater ponds are designed to improve water quality and reduce hydromodification of the Mt. Scott Creek. The bottom elevations of the ponds are set above the 25-year creek stage to provide detention and the top of the ponds are set above the floodplain so as to not trap fish when floodwaters recede. The project does not create levees to create buildable land.

18.04.160 SPECIFIC STANDARDS

In all special flood hazard and flood management areas where base flood elevation data has been provided as set forth in Section 18.04.050 and Subsection 18.04.120.B, the following provisions are required:

A. Residential Construction

New construction and substantial improvement of any residential structure shall have the lowest floor, including basement, elevated one (1) foot above base flood elevation.

Response: The proposed residential structure will be located at least one foot above the base flood elevation.

Conclusion

The Kellogg Creek Subdivision is required to balance the cut and fill impacts from the proposed development. In order to offset the volume of fill being placed at the site, area surrounding the wetland will be excavated. Additionally, the site was designed to minimize impacts to the surrounding area and protect proposed property and public utilities.

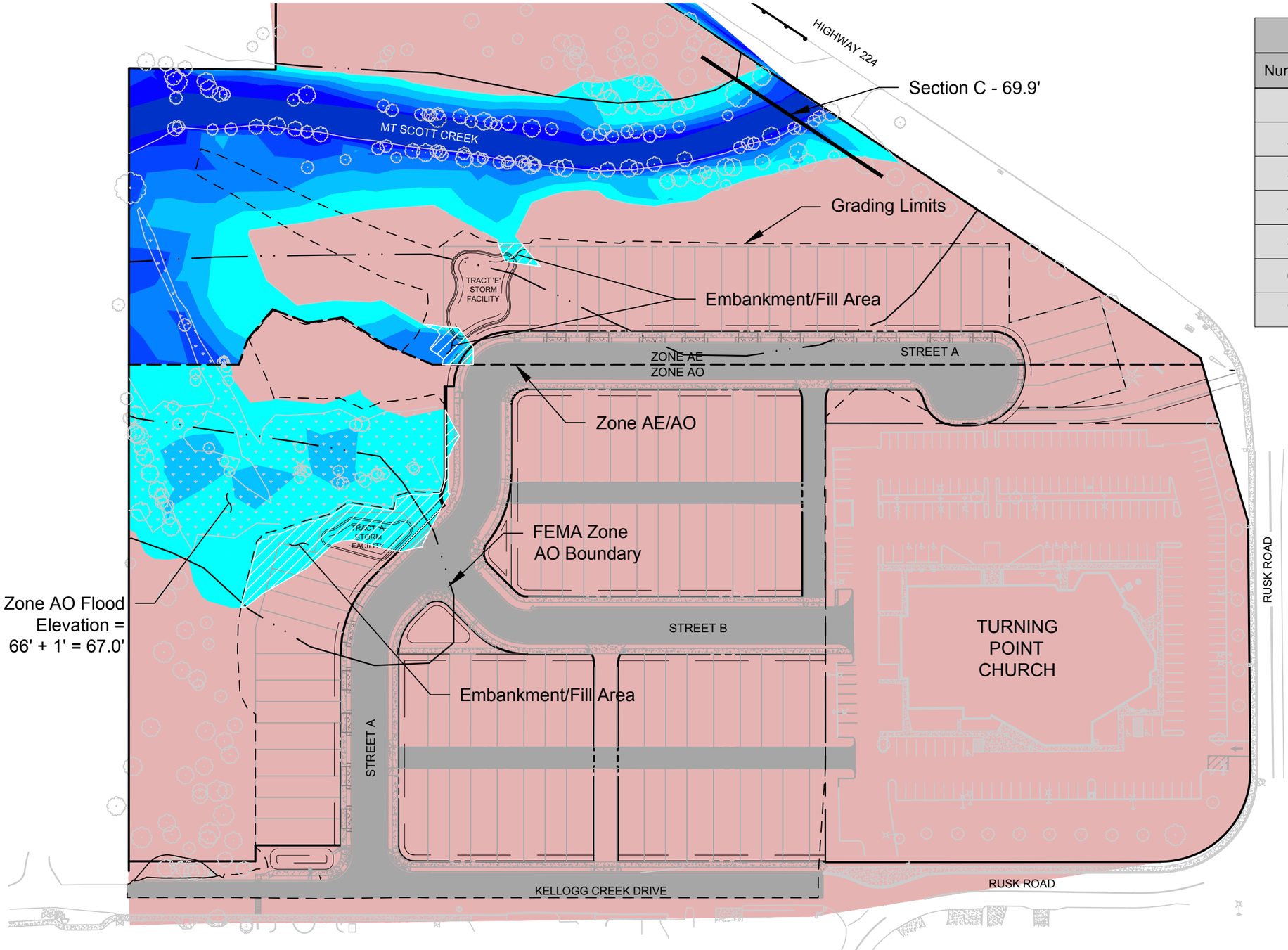
Floodplain Capacity Analysis

The following summarizes the floodplain capacity analysis. In order to determine the net change in floodplain storage, two calculations were made. One calculation determined the existing floodplain storage within a boundary that encompasses the subject property as well as all other disturbed area. The second calculation determined the floodplain storage of the developed site within the same boundary. This data was calculated by comparing the existing/future ground surface within the project limits to the floodplain elevation of 69.9. Volumes registered as a "fill" are floodplain storage, while volumes registered as a "cut" are soil amounts above the floodplain elevation (does not affect floodplain storage). The existing ground surface was determined from a site topographic survey in 2016, while the proposed grades were created in AutoCAD Civil 3D. A final comparison was completed between the two sets of data. A comparison using the proposed grade showing more "fill" volume than the existing grade comparison means an increase in the floodplain volume.

The following capacity analysis data was calculated using AutoCADs Volume analyze tool. The tool completes the comparison at each tin point within the surface.

<u>Volume Comparisons</u>
The Existing Grade Comparison = 24,492 CY Fill
The Proposed Grade Comparison = 25,113 CY Fill
Net Comparison = Net +621 CY Floodplain Storage

Since the net comparison is positive, the project will generate a slight increase in the floodplain storage at the site.



Existing Floodplain Depth Table			
Number	Minimum Depth	Maximum Depth	Color
1	Above Floodplain		
2	0.000	1.000	
3	1.000	2.000	
4	2.000	3.000	
5	3.000	4.000	
6	4.000	6.000	
7	6.000	8.500	

Floodplain Impact (FILL)

Floodplain Summary

Zone AO: *BASE FLOOD EL: 66' + 1'*
Impact = -117 CY

Zone AE: *BASE FLOOD EL: 69.9'*
Impact = -20 CY

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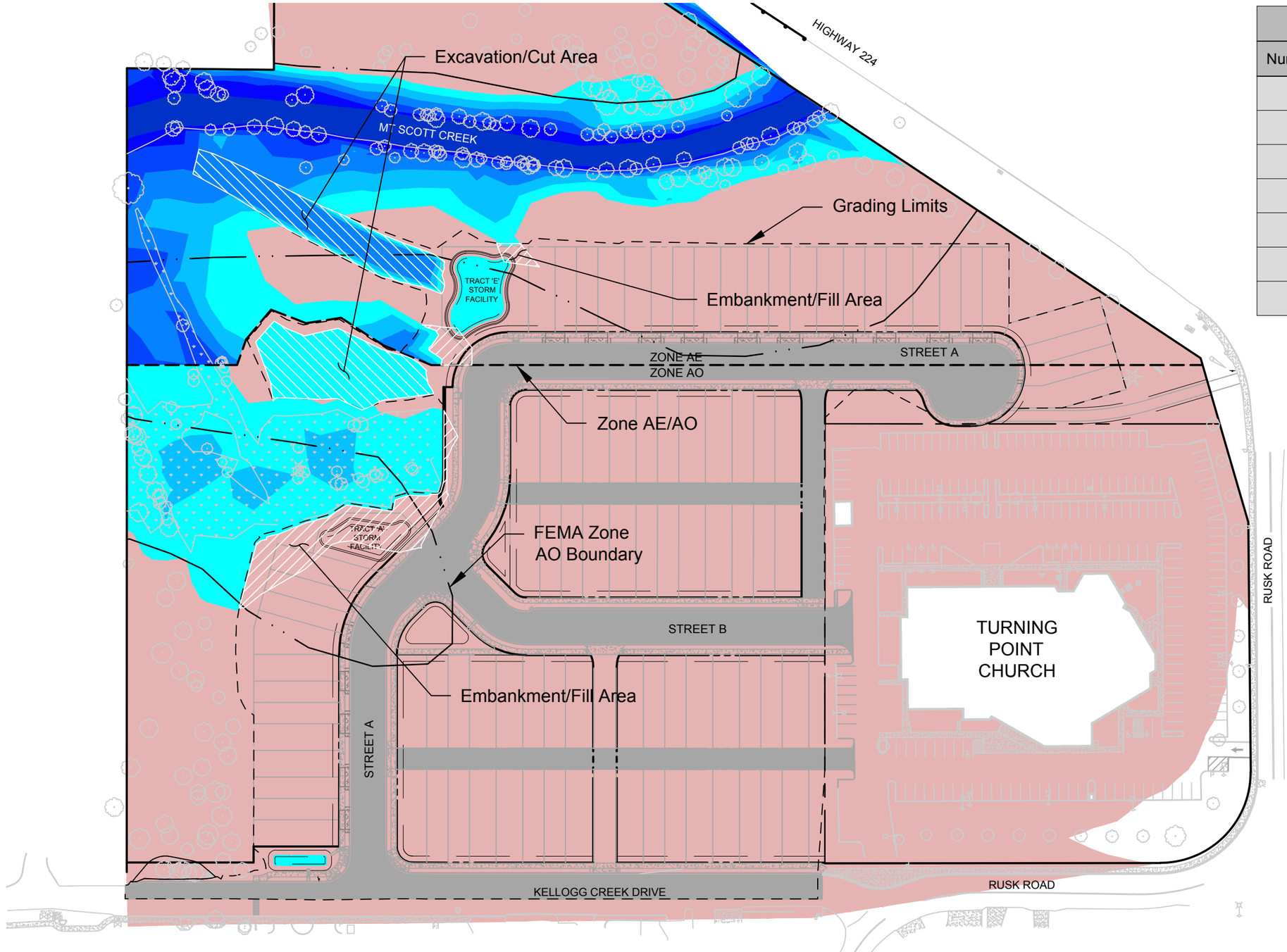
KELLOGG CREEK SUBDIVISION
EXISTING FLOODPLAIN

PROJECT	14258.01
DATE	7/12/2017

FIGURE 1/2

RS431

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Proposed Floodplain Depth Table			
Number	Minimum Depth	Maximum Depth	Color
1	Above Floodplain		
2	0.00	1.00	
3	1.00	2.00	
4	2.00	3.00	
5	3.00	4.00	
6	4.00	6.00	
7	6.00	8.50	

Floodplain Mitigation (CUT)

Floodplain Impact (FILL)

Floodplain Summary

Zone AO:

Impact	= -117 CY
Mitigation	= +126 CY
Surplus	= + 9 CY

Zone AE

Impact	= -20 CY
Mitigation	= +501 CY
Surplus	= + 481 CY

Net Floodplain Surplus = +490 CY

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KELLOGG CREEK SUBDIVISION
FLOODPLAIN IMPACTS & MITIGATION

PROJECT	14258.01
DATE	7/13/2017

FIGURE 2/2

RS432

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Exhibit F

GEO CONSULTANTS NORTHWEST

October 7, 2016

Brownstone Homes LLC
P.O. Box 2375
Lake Oswego, Oregon 97035

Attn: Randy Myers

Subject: Geotechnical Evaluation
Kellogg Creek Development
GCN Project 1121

This report presents the results of our preliminary geotechnical investigation for the proposed Kellogg Creek Development in Milwaukie, Oregon. This report was prepared in accordance with our proposal letter dated July 27, 2016. The report summarizes the work accomplished and provides our conclusions and recommendations for site development.

PROJECT INFORMATION

Brownstone Homes is considering purchase of the Kellogg Creek site in Milwaukie, Oregon for construction of a residential development. The property is Zoned for R-3 and R-10 residential building construction. The site relative to surrounding features is shown in Figure 1.

Site development plans have not yet been prepared for the project. A site topographic and boundary survey was in progress at the time this report was written. We expect that development will include single-family and multi-family buildings, public and private streets, underground utilities. Storm water will be detained on-site before flowing to Mount Scott Creek. The site layout is shown in Figure 2.

SCOPE OF WORK

The purpose of our services was to explore the site and provide conclusions and recommendations for design and construction. The following describes our specific scope of services:

- Coordinate and manage the field investigation, including utility locates, authorization for site access, access preparation, scheduling of subcontractors and GCN staff.
- Observe excavation of 15 shallow test pits to depths up to 12 feet below the existing ground surface. Maintain a log of soil, rock, and groundwater encountered and obtain soil samples for return to our laboratory for further evaluation and testing. We classify soil in general accordance with the Unified Soil Classification System.
- Determine the moisture content and dry unit weight of select samples obtained from the explorations in general conformance with ASTM D2216 and ASTM D2937 respectively.
- Provide a written Geotechnical Report summarizing our explorations, geotechnical analysis, conclusions, and recommendations that include:
  - A discussion on the regional geology and the seismic setting of the site that includes the general geologic features of the surface and underlying deposits, and provide seismic design criteria in accordance with the Oregon Structural Specialty Code.

- Recommendations for site preparation, grading and drainage, compaction criteria, and wet-weather earthwork procedures.
- Recommendations for excavation, utility trenches, backfill materials, and backfill compaction.
- Recommendations for design and construction of shallow-spread foundations, including allowable design bearing pressures, minimum footing depth and width, lateral resistance to sliding, and estimates of settlement.
- Geotechnical engineering recommendations for the design and construction of concrete floor slabs, including an anticipated value for subgrade modulus.
- Design criteria for cast –in-place embedded building walls including lateral earth pressure, drainage, backfill material, and backfill compaction.
- A discussion of groundwater conditions on the site and recommendations for subsurface drainage of foundations, floor slabs, and pavement.

SITE CONDITIONS

The approximate 18 acre site is bisected Mount Scott Creek, a perennial drainage channel that flows to Kellogg Creek and then to the Willamette River, about 2 miles to the west. The once nearly flat site has been partially filled from off-site sources, creating irregular terrain. The site was The following paragraphs describe the site geology, seismic setting, and both surface and subsurface features of the site.

SITE GEOLOGY

The site is located in the Portland Basin in an area filled with sediment deposited during glacial outburst flooding of the Columbia River and its tributaries[1]. The floods deposited gravel, silt and sand with a total thickness of several hundred feet in some areas. The last of the events is believed to have occurred at the end of the last glacial period 9,000 to 10,000 years ago[2]. The glacial flood deposits are overlain with a thin mantle of younger alluvial sediment deposited over the last 10,000 years.

The near surface flood deposits are underlain by a thick sequence of basalt flows belonging to the Miocene age Columbia River Basalt Group (CRBG). Geologic structure mapping indicates that the basalt lies about 300 feet below the ground surface (Madin, 1990).

SEISMIC SETTING

The Portland area is subject to seismic events stemming from three possible sources: the Cascadia Subduction Zone (CSZ) , intraslab faults within the Juan de Fuca Plate, and crustal faults in the North American Plate.

[1] Madin, I.P., 1990, Earthquake Hazard Geology Maps of the Portland Metropolitan Area, Oregon; Oregon Department of Geology and Mineral Industries, Open File Report O-90-02, map scale 1:24,000.

[2] Waitt, R. B. Jr., 1985, Case for Periodic Colossal Jokulhlaups from Pleistocene Lake Missoula; Geological Society of America Bulletin, v. 96, no. 10, p. 1271-1286.

Maximum magnitude for a CSZ event is expected to be in the range of Moment Magnitude (MW) 9.0. Intraslab events have occurred on a frequent basis in the Puget Sound, contributing small magnitude ground motions in Western Oregon.

Quaternary crustal faults within 8 miles of the site are the East Bank Fault about 3 miles to the northeast, and the Portland Hills and Oatfield Faults about 0.2 and 1.5 miles to the southwest, respectively.

The contribution of potential earthquake-induced ground motion from all known sources, including the faults described above, are included in probabilistic ground motion maps developed by the USGS. Seismic site characterization and design recommendations based on USGS mapping and analysis are implemented in the International Building Code. Seismic design parameters for the project site are provided in Table 1 below.

TABLE 1 – SEISMIC DESIGN PARAMETERS

2012 IBC CODE BASED RESPONSE SPECTRUM MCE_R GROUND MOTION - 5% DAMPING 1% IN 50 YEARS PROBABILITY OF COLLAPSE	
S_S	0.966g
S_1	0.412g
MAPPED MAXIMUM CONSIDERED EARTHQUAKE SPECTRAL RESPONSE ACCELERATION PARAMETER (SITE CLASS C)	
F_a	1.014
F_v	1.388
S_{MS}	0.979g
S_{M1}	0.572g
DESIGN SPECTRAL RESPONSE ACCELERATION PARAMETER	
S_{DS}	0.653g
S_{D1}	0.381g

SURFACE CONDITIONS

The approximate 18 acre Kellogg Creek site is located on relatively flat land that is currently undeveloped. The site is bordered by Highway 224 on the north, Kellogg Creek Drive on the south, North Clackamas City Park on the west and a church property on the east. The site is currently undeveloped, vegetated with open grassland, brush, and clusters of young to moderate age deciduous trees.

The elevation of the property ranges from about 60 to 75 feet above mean sea level. Embankment slopes about 8 feet tall lie adjacent to Mount Scott Creek.

Fill has been placed on the site at some point in the past. Historical USGS topographic maps indicate the fill was likely not present in 1981. Historical aerial photos show the fill was present in 1995.

The fill ranges in thickness up to more than 12 feet as observed in our test pit explorations. An approximate 10-foot-tall fill zone in the central portion of the site terminates at its western extend with steep constructed slope that is inclined at about 2H:1V (horizontal to vertical).

SUBSURFACE CONDITIONS

We explored subsurface conditions at the site by observing the excavation of fifteen shallow test pits (TP-1through TP-15) on August 24, 2016 at the approximate locations shown in Figure 2. The test pits were excavated to depths up to 12 feet below ground surface (bgs).

Soil samples obtained from the test pits were returned to our soil laboratory for additional evaluation. Selected samples were used to determine soil moisture content and dry unit weight. The exploration logs and descriptions of field and laboratory procedures are included in Attachment A.

We encountered fill in thirteen test pits, ranging from 1-1/2 to more than 12 feet thick. Native soil beneath the fill consisted of 2-1/2 to 6 foot thick layer of loose to medium dense fine sand and silty sand, that was in turn underlain by gravel and boulders attributed to the Missoula Floods. Each layer is discussed below.

MAN MADE FILL

We encountered fill in 13 of 15 test pits extending from the ground surface to depths varying from 1-1/2 feet to greater than 12 feet. Subtle differences color and gravel content suggest the fill was paced at two different times using material from at least two sources.

South of the Mt. Scott Creek on the western side of the site, the fill appeared to include just one of the materials source materials. The fill in this area was up 3-1/2 feet thick.

The fill in the remainder of the site, north of Mt. Scott Creek and on the eastern side south of the creek, the fill included the underlying thinner fill with a thicker layer of less gravelly fill.

In general the upper fill material was stiff to very-stiff with trace to some sand, gravel and cobbles. There were isolated zones of soft and medium-stiff fill, particularly near the native/fill interface.

Field strength tests of the fill (pocket penetrometer) and the moisture content of samples returned to our laboratory indicated the fill was likely placed as structural fill. The fill at the fill/native interface that had high moisture and low compacted density. The fill included trace amounts of fine organic material and debris consisting of concrete and asphalt up to 12 inches in diameter. There were a few boulders up to 2 feet in diameter encountered in one test pit and some wire in another.

The moisture content and dry unit weight of seven samples of the fill obtained from thin wall (Shelby) tubes are presented in Table 2.

TABLE 2 – MOISTURE AND DENSITY OF FILL SAMPLES

TEST PIT	DEPTH (FT)	SOIL TYPE	MOISTURE CONTENT (%)	DRY UNIT WEIGHT (PCF)
TP-7	2	SILT WITH TRACE GRAVEL	16	101
TP-8	8	SILT WITH TRACE SAND	26	96
TP-10	8	SILT WITH TRACE GRAVEL	22	96
TP-11	8	SILT WITH TRACE GRAVEL	19	109
TP-12	5	SILT WITH TRACE GRAVEL	15	105
TP-13	5	SILT WITH TRACE SAND	33	86
TP-14	3	SILT WITH TRACE SAND AND GRAVEL	17	85

It is our understanding that the fill was from a nearby construction project. Documentation of the fill placement is not available. Historical aerial photographs spanning the period of 1995 to 2014 show the will was placed prior to 1995.

NATIVE SAND AND SILTY SAND

We encountered native sand and silty sand below the fill that ranged from 2-1/2 to 6 feet thick. There was no fill encountered in test pits TP-4 and TP-15.

The sand and silty sand was loose to medium dense with moisture contents ranging from 20 to 50 percent of the dry soil weight. The dry unit weight of four select samples obtained in this unit varied between 78 and 98 pounds per cubic foot (pcf).

DENSE GRAVEL

We encountered dense sandy gravel beneath the native sand and silty sand. The gravel corresponds to coarse Missoula Flood deposits.

GROUNDWATER

We encountered groundwater in seven of the fifteen test pits at depths of 3 to 12 feet below the ground surface. The test pits were excavated on August 24, 2016 near the end of the dry season.

USGS mapping[3] indicates that regional groundwater in the vicinity of the site is about 65 to 70 feet above mean sea. This corresponds to existing ground surface elevations on the site.

CONCLUSIONS AND RECOMMENDATIONS

Based on the results of our field explorations and engineering analysis, it is our opinion that the site can be developed as proposed.

[3] USGS Scientific Investigations Report 2008-5059, *Estimated Depth to Groundwater and Configuration of the Water Table in the Portland, Oregon Area*.

The primary geotechnical considerations for the site are the widespread presence of potentially unsuitable fill that could include zones of soft soil. We understand that mass grading will result in movement of much of the existing fill and that low areas will be filled in with the existing soil on the site. We recommend that the ground surface in all areas where old fill will remain that it be reprocessed to a depth of two feet below subgrade elevation.

Soft alluvial soil with shallow groundwater underlies the western portion of the site in the vicinity of TP-3, TP-4 and TP-15. We expect that this area will likely receive structural fill to raise the grade above the FEMA flood plain elevation. It may be necessary to stabilize the ground surface before structural fill can be placed. In very dry conditions the surface could potentially be scarified and compacted. Alternate approaches include placement of a granular blanket as a capillary break and amendment of the area with portland cement.

Subsurface soil includes a layer of loose sand at the ground surface that existed before the fill was placed. This sand will likely be unstable if encountered in utility trenches and will run when beneath water. Underground utility construction in areas that penetrate to the native soil surface may require dewatering.

Our recommendations for project design and construction are provided below.

1. Site Preparation

The existing heavily rooted zone of grass and organics should be stripped and removed from the site in all proposed building and pavement areas and for a 5-foot margin around such areas. Based on our explorations, the depth of stripping will be about 4 inches although greater stripping depths may be required to remove localized zones of loose or organic soil. The actual stripping depth should be based on field observations at the time of construction. Stripped material should be transported off site for disposal or used in landscaped areas.

Existing fill ranging from 3 feet to greater than 12 feet thick underlies about three quarters of the site. In areas that will not otherwise be processed, we recommend removing or scarifying the stripped ground surface to depth of 24 inches. The scarified soil should be compacted as recommended for structural fill.

Trees, shrubs, and brush should be removed from all building and paved areas. Root balls should be grubbed out to a depth such that all roots or parts of roots greater than ½-inch in diameter are removed. The depth of excavation to remove root balls of trees could exceed 5 feet bgs.

The on-site silt can be sensitive to small changes in moisture content and may be difficult to compact adequately during wet weather. Accordingly, scarification and compaction of the subgrade may only be possible during extended dry periods and following moisture conditioning of the soil.

After stripping, scarification and required site cutting have been completed, we recommend proofrolling the subgrade with a fully loaded dump truck or similar size, rubber-tire construction equipment to identify areas of excessive yielding. The proofrolling should be observed by a member of our geotechnical staff, who will evaluate the subgrade. If areas of excessive yielding are identified, the material should be excavated and replaced with compacted materials recommended for structural fill. Areas that appear to be too wet and soft to support proofrolling

equipment should be prepared in accordance with the recommendations for wet weather construction presented in the following section of this report.

The test pits excavations were backfilled using relatively minimal compactive effort. Therefore, soft spots can be expected at these locations. We recommend that these relatively uncompacted soils be removed from the test pits located within the proposed building and paved areas to a depth of 3-feet below finished subgrade. The resulting excavation should be brought back to grade with structural fill.

2. Wet Weather Construction Considerations

Fine-grained soils on the site are easily disturbed during the wet season. If not carefully executed, site preparation, utility trench work, and roadway excavation can create extensive soft areas and significant repair costs can result. Earthwork should be planned and executed to minimize subgrade disturbance.

The base rock thickness for project streets, as described below in the section titled "Pavement Recommendations," are intended to support post construction design traffic loads. The base rock thickness determined for post construction traffic will not support construction traffic or pavement construction when the subgrade soils are wet. Accordingly, if construction is planned for periods when the subgrade soils are not dry and firm, then an increased thickness of base rock or other methods to support construction traffic will be required.

If construction occurs during wet conditions, site preparation activities may need to be accomplished using track-mounted equipment, loading removed material into trucks supported on granular haul roads. The use of granular haul roads or staging areas will be necessary for support of construction traffic during wet conditions.

Wetland areas and forested areas may require prolonged periods of dry weather to moisture condition the underlying soil before fill can be placed and compacted. The project schedule should consider timing of mass grading to coincide with the dry weather months.

We recommend that a minimum of 2-inch thickness of granular material be placed at the base of footing excavations made in wet weather conditions. The granular material reduces water softening of subgrade soils and reduces subgrade disturbance during placement of forms and reinforcement.

3. Excavations

The stability of temporary excavation slopes is a function of many factors, including soil type, soil density, slope inclination, slope height, the presence of groundwater, and the duration of exposure. Generally, the likelihood of slope failure increases as the cut is deepened and as the duration of exposure increases. For this reason, we recommend that the excavation contractor maintain adequate slopes and setbacks.

Temporary slope safety should remain the responsibility of the contractor, who is continually present at the site and is able to monitor the performance of the excavation and modify construction practices to reflect varying conditions.

Regardless of inclination, temporary slopes should be protected from surface runoff of storm water. This can typically be accomplished using berms or swales located along the top of the slope, and by placing plastic tarpaulins over the slope.

Temporary cut slopes for the construction of the embedded foundation walls should be limited to 1H:1V. Permanent cut and fill slopes should be limited to 2H:1V or flatter.

4. Utility Trench Excavations

The sand and silty sand encountered at the original ground surface are susceptible to slumping and running if below the water table. The silt contents of these units decrease with depth and it is likely that clean sands will be encountered. It may be necessary to dewater utility trench excavations that extend below the water table. We recommend that additional explorations be conducted to determine the character of soils at the depths of the utilities and permeability testing should be conducted to determine parameters for dewatering system design.

5. Structural Fill

General. All fill within building, pavement, and sidewalk areas should be placed as compacted structural fill. All structural fill materials should be compacted to at least 95% of the maximum dry density as determined by ASTM D 698.

The earthwork contractor's compactive effort should be evaluated on the basis of field observations, and lift thicknesses should be adjusted accordingly to meet compaction requirements. The moisture content for compaction should be within about 3% of optimum.

No brush, roots, construction debris, or other deleterious material should be placed within the structural fills. Additional information regarding specific types of fill is provided below.

On-Site Soil. The on-site soil is suitable for use as structural fill provided it can be moisture-conditioned, separated from concentrations of organics and other unsuitable material, and compacted to the specified density. The fill should be placed in lifts with a maximum loose thickness of 8 inches and compacted to not less than 92 percent of the maximum dry density as determined by ASTM D 698.

Imported Granular Material. Imported granular fill material may include sand, gravel, or fragmental rock with a maximum size on the order of 4 inches and with not more than about 5% passing the No. 200 sieve (washed analysis). Material satisfying these requirements can usually be placed during periods of wet weather. The first lift of granular fill placed over a fine-grained subgrade should be about 18 in. thick and subsequent lifts about 12 inches thick when using medium- to heavy-weight vibratory rollers. Granular structural fill should be limited to a maximum size of about 1-½ inch when compacted with hand-operated equipment.

Utility Trench Backfill. Utility trench backfill should consist of granular fill limited to a maximum size of about 1 ½ inch. The granular trench backfill should be compacted to at least 95% of the maximum dry density as determined by ASTM D 698 in the upper 3 feet of the trench and to at least 90% of this density below this depth. Lift thicknesses should be evaluated on the basis of field density tests; however, particular care should be taken when operating hoe-mounted compactors to prevent damage to the newly placed conduits. Flooding or jetting to compact the trench backfill should not be permitted. Native materials can be used for trench backfill in unimproved areas where a soft trench and future settlement of the backfill can be tolerated.

Free-Draining Fill. Free-draining material should have less than 2% passing the No. 200 sieve (washed analysis). Examples of materials that would satisfy this requirement include ¾ to ¼ inch, 1½ to ¾ inch, or 3- to 1-in. crushed rock.

6. Cement Amended Fill

Portland cement can be used to stabilize and strengthen soils or to permit use of native soils when moisture contents are above optimum. The amount of cement used to amend the soils generally varies with moisture content and clay content. For planning purposes, we expect acceptable soil strength will be obtained using an amendment rate of 5 pounds portland cement tilled to a depth of 12 inches.

The permeability of amended soil is extremely low. Accordingly, amendment should not be completed in landscape areas or, the amended material should be removed from landscape areas prior to planting.

7. Shallow Foundations

In our opinion, the proposed structures can be supported on continuous or isolated column footings founded on reprocessed and new structural fill.

Continuous wall and spread footings and retaining wall footings should be proportioned for an allowable bearing pressure of 1,500 pounds per square foot (psf). Footing embedment should be as required by the Oregon Structural Specialty Code. For this allowable bearing pressure, foundations should be at least 14 inches wide.

The recommended allowable bearing pressure applies to the total of dead plus long-term live loads. The allowable bearing pressure may be increased by a factor of 3 for short-term wind or seismic loads.

The allowable bearing capacity is provided to limit differential and total settlement to ½ inch and 1inch respectively, for static loading conditions.

8. Slab-on-Grade Floors

Satisfactory subgrade support for lightly-loaded building floor slabs can be obtained on the undisturbed native soil or on engineered structural fill. A subgrade modulus of 100 pounds per cubic inch may be used to design floor slabs.

A minimum 6-inch-thick layer of free draining fill should be placed and compacted over the prepared subgrade to assist as a capillary break and blanket drain. The free draining fill layer may be capped with a 1- to 2-inch-thick layer of clean ¾ inch minus crushed rock that contains no more than 5% fines.

A vapor retarder manufactured for use beneath floor slabs should be installed above the free draining fill in inhabited spaces and spaces that will receive floor coverings. Careful attention should be made during construction to prevent perforating the retarder and to seal edges and utility penetrations. We recommend following ACI 302.1, Chapter 3 with regard to installing a vapor retarder.

9. Retaining Walls & Embedded Building Walls

The following recommendations assume that the walls are less than 12 feet in height, backfill extends a distance behind the wall equal to the wall height, and that the backfill is well drained and meets the requirements detailed above for imported granular material. Reevaluation of our recommendations will be required if retaining walls vary from these assumptions.

In general, cantilever retaining walls yield under lateral loads and should be designed with active lateral earth pressures. Restrained walls, such as embedded building walls and vaults should be designed to withstand at-rest lateral earth pressures. We recommend using the lateral earth pressures shown in Table 3. The loads are provided as equivalent fluid density (G). Diagrams showing use of the lateral earth pressures in design calculations are provided in Figure 3.

TABLE 3 – EQUIVALENT FLUID DENSITY (G) ACTING ON RETAINING WALLS

WALL TYPE	BACKFILL CONDITION	BACKFILL COMPONENT (PCF)	SURCHARGE COMPONENT (PSF)	SEISMIC COMPONENT (PCF)
YIELDING WALL	FLAT	30	80	*
	2H:1V	45		*
NON-YIELDING WALL	FLAT	50	120	*
	2H:1V	70		*

* Seismic components are not necessary for cast in place retaining walls less than 12 feet tall that are designed with a static factor of safety equal to 1.5[4].

Static lateral earth pressures acting on a retaining wall should be increased to account for surcharge loadings resulting from any traffic, construction equipment, material stockpiles, or structures located within a horizontal distance equal to the wall height. We have included lateral earth pressures for surcharge loads up to 250 psf placed as a distributed load within the distance H from the wall face.

Retaining wall drains should consist of a perforated drainpipe embedded in a minimum 1-foot-wide zone of free draining fill that is wrapped 360 degrees around by a geotextile filter that overlaps a minimum of 6 inches. The geotextile filter should be placed between the granular materials and the native soil to prevent movement of fines into the clean granular material. The geotextile filter should be a non-woven fabric with an apparent opening size between the U.S. Standard No. 70 and No. 100 Sieve sizes and a water permittivity of greater than 1.5 sec^{-1}.

Backfill for retaining walls should extend a horizontal distance of H from the back of wall, where H is the embedded height, and compacted as recommended for structural fill, with the exception of backfill placed immediately adjacent to walls. To reduce pressure on walls, backfill located within a horizontal distance of 3 feet from retaining walls should be compacted to approximately 90% of the maximum dry density, as determined by ASTM D698, and should be compacted in lifts less than 6 inches thick using hand-operated tamping equipment.

[4] Sitar, Mikola and Candia, "Seismically Induced Lateral Earth Pressure on Retaining Structures and Basement Walls", GeoCongress 2012.

10. Lateral Resistance

Lateral loads of buildings and retaining walls can be resisted by passive earth pressure on the sides of footings or by friction on the base of the footings but not both. We recommend using the equivalent fluid pressures and coefficients of friction provided in Table 4 for design of foundations.

TABLE 4 – LATERAL RESISTANCE FACTORS

SOIL TYPE	EQUIVALENT FLUID PRESSURE (γ – PCF)	FRICTION COEFFICIENT (μ)
ON-SITE SILT	350	0.4
IMPORTED CRUSHED ROCK	800	0.6

In order to develop the tabulated capacity for passive resistance using on-site silt, concrete must be placed directly against the walls of the footing excavations. When using the value for imported crushed rock, the rock should extend a minimum horizontal distance equal to half of the footing embedment (Embedment/2) and should be compacted to not less than 95% of the dry density as determined by ASTM D698. Adjacent floor slabs, pavements, or the upper 12-inch depth of adjacent, unpaved areas should not be considered when calculating passive resistance.

11. Site Drainage

As a matter of good construction practice, we recommend that perimeter drains be installed for all buildings. Perimeter drains should consist of perforated drainpipe embedded in a zone of free draining fill that is wrapped in a non-woven geotextile filter. The pipe should be connected to a tightline drainpipe leading to storm drain facilities.

Foundation and crawl space drainage should be sloped to drain to a sump or low point drain outlet. Water should not be allowed to pond within crawl spaces.

Roof drains be connected to a tightline drainpipe leading to storm drain outlet facilities. Pavement surfaces and open space areas should be sloped such that surface water runoff is collected and routed to suitable discharge points. Ground surfaces adjacent to buildings should be sloped to drain away from the buildings.

12. French Drains

French drains should be installed if groundwater seepage is encountered during construction. The drains should consist of a 3-inch diameter perforated pipe within an envelope of uniformly graded drain rock with a maximum particle size of 3 inches, and less than 2 percent passing the U.S. Standard No. 200 Sieve. The drain rock should extend at least 6 inches on all sides of the pipe.

The gravel envelope should extend upward to the top of the slope and should be wrapped with filter fabric to reduce the migration of fines from the surrounding soil. The geotextile filter should be a non-woven fabric with an AOS between the U.S. Standard No. 70 and No. 100 Sieve size and a water permittivity of greater than 1.5 sec-1. Details for construction of french drains are provided in Figure 4.

13. On-Site Asphalt Pavement

The pavement subgrade should be prepared in accordance with the previously described recommendations described in the "Site Preparation," "Wet Weather Construction," and "Structural Fill" sections of this report.

Our pavement recommendations are based on a subgrade stiffness using a California Bearing Ratio value of 3. We do not have specific information on the frequency and type of vehicles that will use the area; however, we have assumed that post construction traffic conditions will consist of no more than five heavy trucks per day.

Our analysis shows that a pavement section consisting of a minimum of 4 inches of AC pavement underlain by a minimum of 10.0 inches of crushed rock base will be required to support anticipated traffic loads over a design life of 20 years.

These thicknesses are intended to be the minimum acceptable and are based on the assumption that construction will be completed during an extended period of dry weather. Construction of pavement when subgrade soils are wet will require an increased thickness of crushed rock base or stabilized subgrade as described above in the "Cement Amended Fill" section of this report. If subgrade is stabilized with portland cement, the crushed rock base thickness can be reduced to 6.0 inches in the public roadways of the project and 4.0 inches in the private roadways.

The AC pavement should conform to Section 0074 of the Standard Specification for Highway Construction, Oregon Highway Specifications. We recommend half inch dense graded Hot Mix Asphalt Concrete for Design Level 2 using Performance Grade Asphalt PG-70-22. The aggregate base should conform to Section 02630 of the specifications with the addition that no more than 5 percent of the material by dry weight passes a U.S. Standard No. 200 Sieve.

Aggregate base should be placed in one lift and compacted to not less than 95% of the modified Proctor maximum dry density (ASTM D1557). Aggregate base should be placed in one lift and compacted to not less than 95 percent of the maximum dry density as determined by ASTM D 698. Aggregate base contaminated with soil during construction should be removed and replaced before paving.

ADDITIONAL SERVICES

Because the future performance and integrity of the structural elements will depend largely on proper site preparation, drainage, fill placement, and construction procedures, monitoring and testing (geotechnical special inspection) by experienced geotechnical personnel should be considered an integral part of the design and construction process. Consequently, we recommend that GCN be retained to provide the following post-investigation services:

- Review construction plans and specifications to verify that our design criteria presented in this report have been properly integrated into the design.
- Attend a pre-construction conference with the design team and contractor to discuss geotechnical related construction issues.
- Observe fill areas and footing subgrade both before fill material or base rock is placed and before footings are constructed in order to verify the soil conditions.

- Prepare a post-construction letter-of-compliance summarizing our field observations, inspections, and test results.

LIMITATIONS

This report was prepared for the exclusive use of Brownstone Homes and members of the design team for this specific project. It should be made available to prospective contractors for information on the factual data only, and not as a warranty of subsurface conditions, such as those interpreted from the explorations and discussed in this report.

The recommendations contained in this report are preliminary, and are based on information derived through site reconnaissance, subsurface testing, and knowledge of the site area. Variation of conditions within the area and the presence of unsuitable materials are possible and cannot be determined until exposed during construction. Accordingly, GCN's recommendations can be finalized only through GCN's observation of the project's earthwork construction. GCN accepts no responsibility or liability for any party's reliance on GCN's preliminary recommendations.

Unanticipated soil conditions are commonly encountered and cannot fully be determined by exploratory methods. Such unexpected conditions frequently require that additional expenditures be made to attain properly-constructed projects. Therefore, a contingency fund is recommended to accommodate the potential for extra costs.

Within the limitations of the scope of work, schedule, and budget, the analyses, conclusions, and recommendations presented in this report were prepared in accordance with generally-accepted professional geotechnical engineering principles and practice in this area at the time this report was prepared. We make no warranty, either express or implied.

. . .

We appreciate the opportunity to be of continued service to you. Please call if you have questions concerning this report or if we can provide additional services.

Sincerely,
GEO Consultants Northwest, Inc.



EXPIRES 06/30/2017

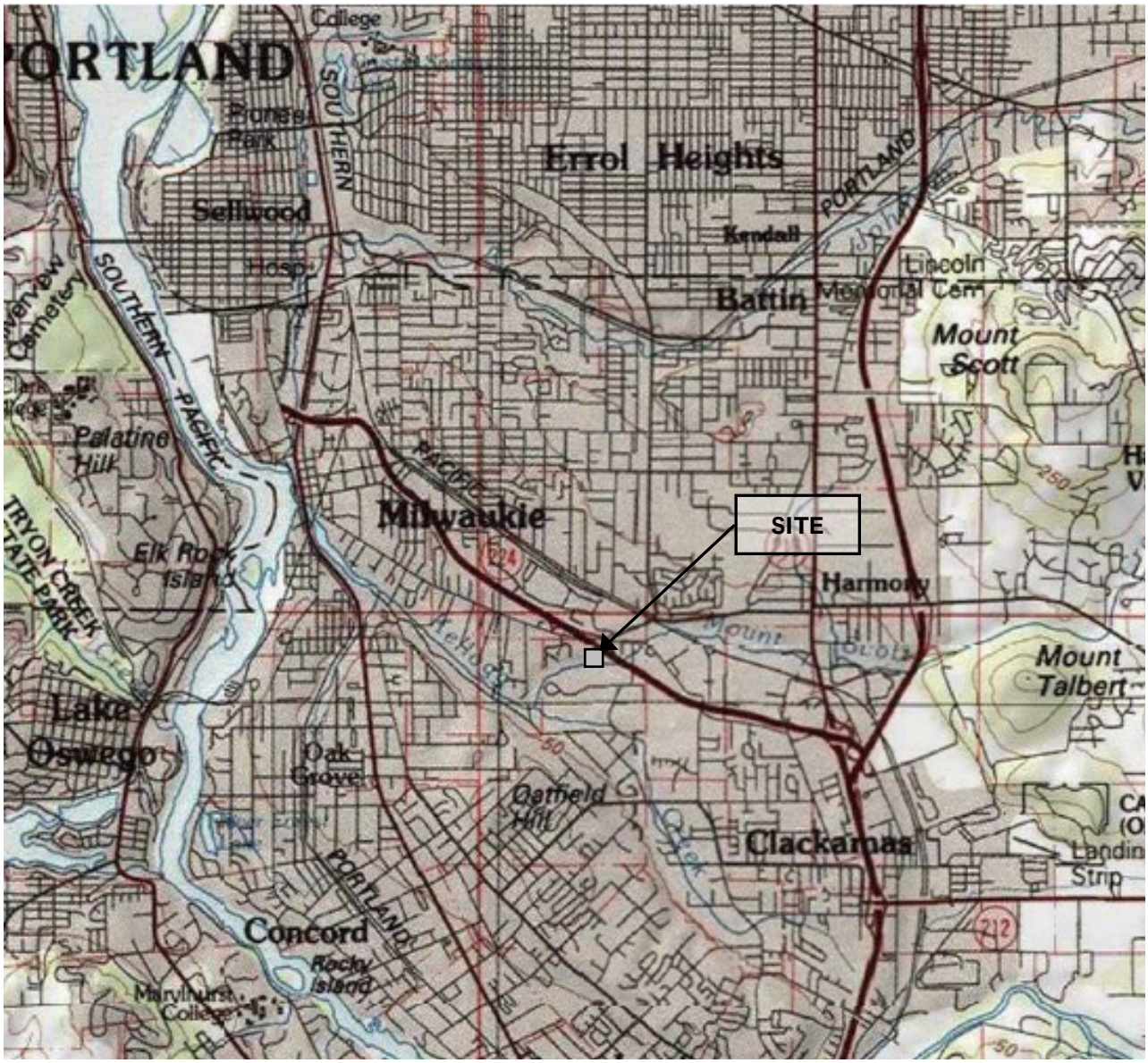
Brad L. Hupy, PE, GE
Principal

Britton W. Gentry, PE, GE
Principal

Brad L. Hupy, PE, GE

Figures: Figure 1 – Site Vicinity
Figure 2 – Preliminary Site Layout with Explorations
Figure 3 – Retaining Wall Pressures
Figure 4 – French Drain Details

Attachments: Attachment A – Field Exploration and Laboratory Testing



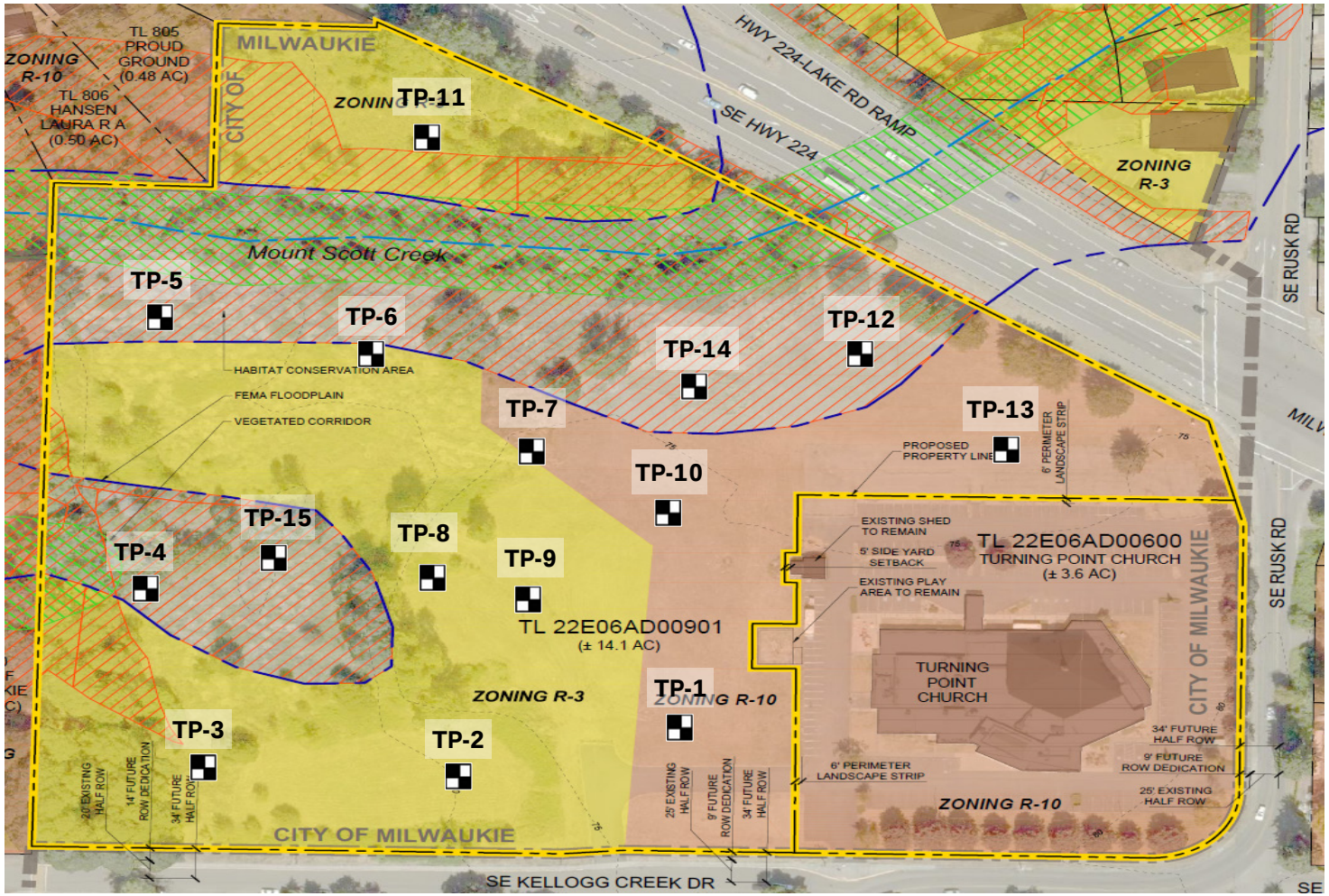
GLADSTONE QUADRANGLE - 2015 PROVIDED BY
ACME MAPPER 2.1

LAT 45.426 N, LON 122.603 W, T2S, R2E, SEC 6

N

GEO CONSULTANTS NORTHWEST	SEPT 2016	**1121 - BROWNSTONE KELLOGG CREEK**	
824 SE 12th Avenue Portland, OR 97214	Drawn By: TAC	**SITE VICINITY**	**FIGURE 1**

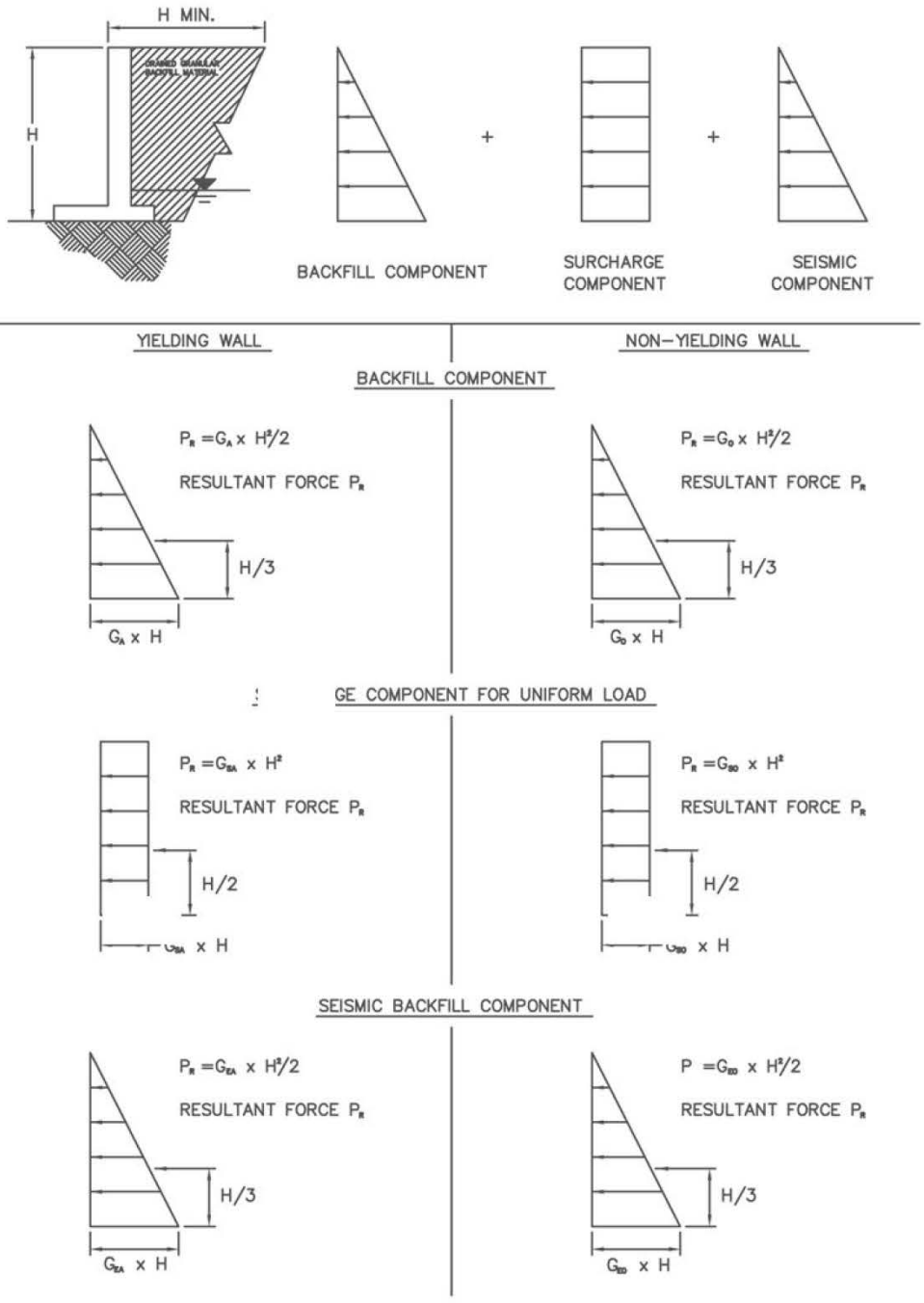
RS448



TP-1 TEST PITS EXCAVATED AUGUST 24, 2016 – LOCATIONS APPROXIMATE

BASE DRAWING "CONCEPTUAL SITE PLAN" PREPARED BY DOWL, DATED JULY 6, 2016

GEO CONSULTANTS NORTHWEST	OCT 2016	**1121 - BROWNSTONE KELLOGG CREEK**	
824 SE 12th Avenue Portland, OR 97214	Drawn By: TAC	**SITE LAYOUT & EXPLORATION**	**FIGURE 2**



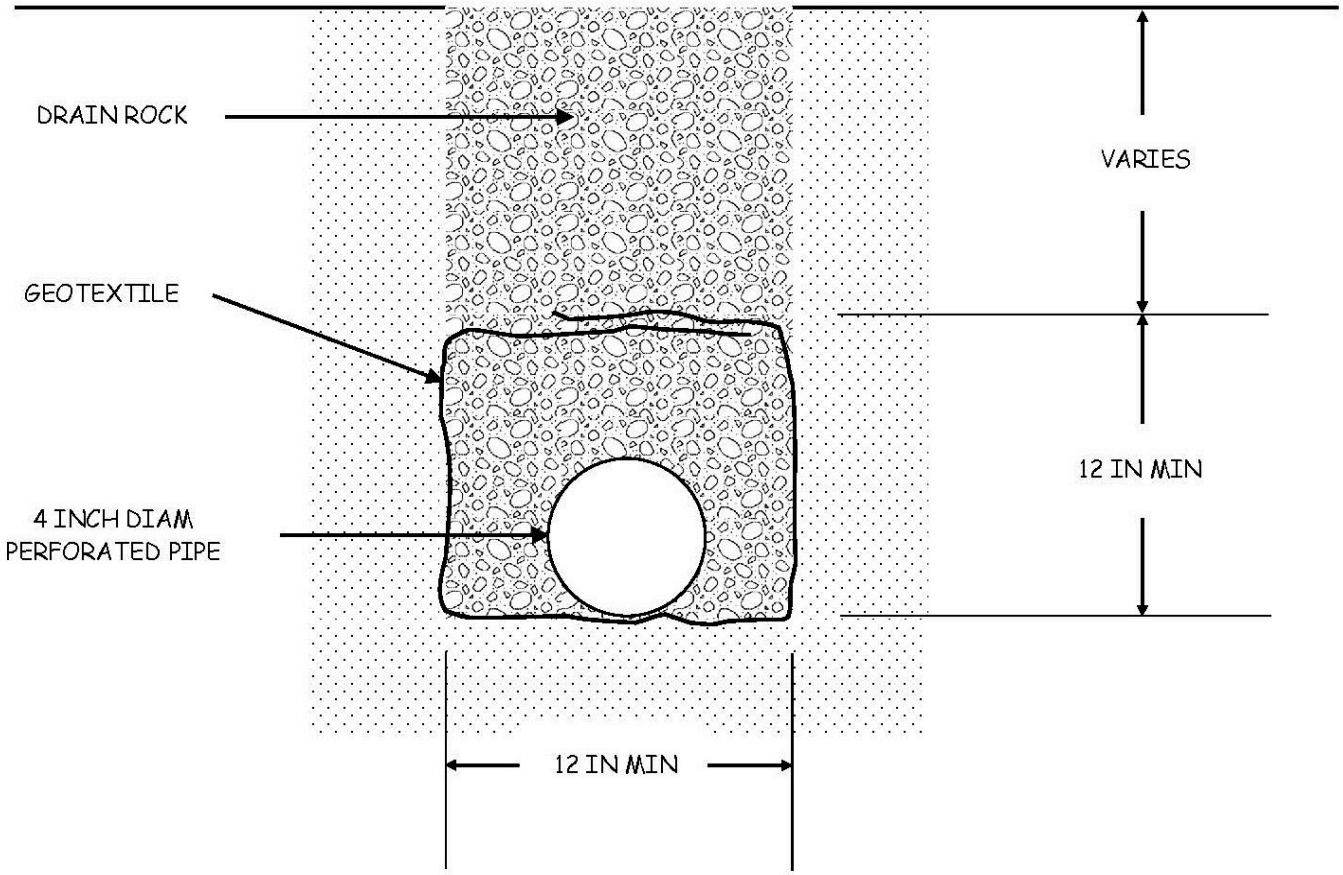
NOTE:

1. SEE REPORT TEXT FOR VALUE OF G.

A: ACTIVE O: AT–REST S: SURCHARGE E: EARTHQUAKE

GEO CONSULTANTS NORTHWEST	OCT 2016	**1121 - BROWNSTONE KELLOGG CREEK**	
824 SE 12th Avenue Portland, OR 97214	Drawn By: BLH	**RETAINING WALL PRESSURES**	**FIGURE 3**

RS450



1. INSTALL A GEOTEXTILE FILTER IN TRENCH TO WRAP DRAIN ROCK WITH OVERLAP AT THE TOP AS SHOWN.
2. DRAIN ROCK SHALL BE PEA GRAVEL OR WASHED DRAIN ROCK. EXTEND TO GROUND SURFACE ABOVE GEOTEXTILE FILTER TO DESIGN SUBGRADE ELEVATION.
3. USE A NON-WOVEN GEOTEXTILE FILTER WITH AN APPARENT OPENING SIZE BETWEEN THE U.S. STANDARD NO. 70 AND NO. 100 SIEVES, AND A WATER PERMITTIVITY OF GREATER THAN 1.5 SEC^{-1}.

GEO CONSULTANTS NORTHWEST	OCT 2016	**1121 - BROWNSTONE KELLOGG CREEK**	
824 SE 12th Avenue Portland, OR 97214	Drawn By: BLH	**FRENCH DRAIN DETAIL**	**FIGURE 4**

ATTACHMENT A

FIELD EXPLORATION PROCEDURES

LABORATORY TESTING PROCEDURES

KEY TO BORING AND TEST PIT LOGS

TEST PIT LOGS

FIELD EXPLORATION PROCEDURES

GENERAL

We explored subsurface conditions at the site by excavating fifteen test pits (TP-1 through TP-15) to depths of up to 12 feet below ground surface (bgs) on August 24, 2016. The test pits were excavated with a rubber-tire excavator operated by Fischer Excavating of Banks, Oregon. The approximate test pit locations are shown in Figure 2.

A member of GCN's staff was present during the explorations to record soil, rock, and groundwater conditions encountered in our boring and to obtain soil samples for laboratory testing.

SOIL SAMPLING

Representative grab samples of the soil observed in the explorations were obtained from the test pit walls and/or base using the excavator bucket. Relatively undisturbed soil samples were obtained using a standard Shelby tube in general accordance with guidelines presented in ASTM D 1587, the Standard Practice for Thin-walled Tube Sampling of Soils. Samples obtained in the exploration were sealed in airtight, plastic bags or the Shelby tubes to retain moisture and returned to our laboratory for additional examination and testing. The test pits were loosely backfilled.

FIELD CLASSIFICATION

Soil samples were initially classified visually in the field. Consistency, color, relative moisture, degree of plasticity, peculiar odors, and other distinguishing characteristics of the soil samples were noted. The terminology used is described in the key and glossary that follow.

SUMMARY EXPLORATION LOGS

Results from the test pits are shown in the summary exploration logs. The left-hand portion of a log provides our interpretation of the soil encountered, sample depths, and groundwater information. The right-hand, graphic portion of a log shows the results of pocket penetrometer and laboratory testing. Soil descriptions and interfaces between soil types shown in summary logs are interpretive, and actual transitions may be gradual.

LABORATORY TESTING PROCEDURES

Soil samples obtained during field explorations are examined in our laboratory, and representative samples may be selected for further testing. The testing program included visual-manual classification and natural moisture content.

VISUAL-MANUAL CLASSIFICATION

Soil samples are classified in general accordance with guidelines presented in ASTM D2488, *Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)*. The physical characteristics of the samples are noted and the field classifications are modified, where necessary, in accordance with ASTM terminology, though certain terminology that incorporates current local engineering practice may be used. The term which best described the major portion of the sample is used to describe the soil type.

NATURAL MOISTURE CONTENT

Natural moisture content is determined in general accordance with guidelines presented in ASTM D2216, *Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass*. The natural moisture content is the ratio, expressed as a percentage, of the weight of water in a given amount of soil to the weight of solid particles.

DRY UNIT WEIGHT (IN-PLACE DRY DENSITY)

Dry unit weight (in-place dry density) testing is performed in general accordance with guidelines presented in ASTM D2937, Standard Test Method for Density of Soil in Place by the Drive-Cylinder Method. The dry unit weight is defined as the ratio of the dry weight of the soil sample to the volume of that sample. The dry unit weight typically is expressed in pounds per cubic foot.

BORING AND TEST PIT LOGS

DISTINCTION BETWEEN FIELD LOGS AND FINAL LOGS

A field log is prepared for exploration by our field representative. The log contains information concerning soil and groundwater encountered, sampling depths, sampler types used and identification of samples selected for laboratory analysis. The final logs presented in this report represent our interpretation of subsurface conditions based on the contents of the field logs, observations made during explorations, and the results of laboratory testing. Our recommendations are based on the contents of the final logs and the information contained therein, and not on the field logs.

SOIL CLASSIFICATION SYSTEM

Soil samples are classified in the field in general accordance with the United Soil Classification System (USCS) presented in ASTM D2488 "Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)." Final logs reflect field soil classifications and laboratory testing results. A summary of the USCS is provided on page 3. Classifications and sampling intervals are shown in the logs.

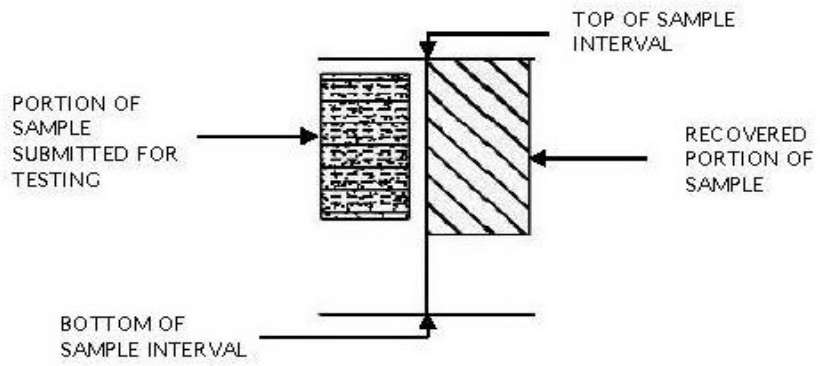
VARIATION OF SOIL BETWEEN EXPLORATIONS

The final logs and related information depict subsurface conditions only at the specific location and on the date(s) indicated. Those using the information contained herein should be aware that soil conditions at other locations or on other dates may differ.

TRANSITION BETWEEN SOIL AND ROCK CLASSIFICATIONS

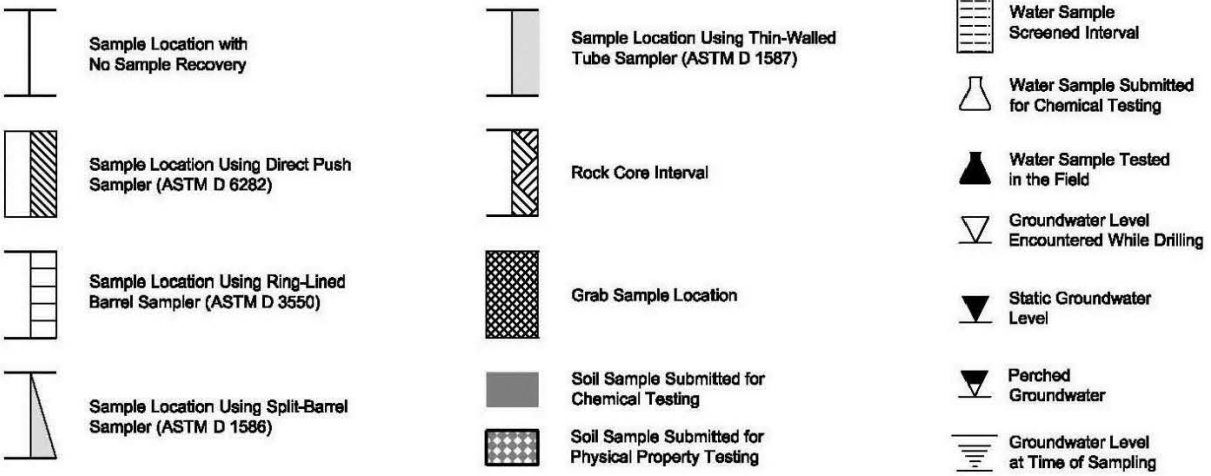
The lines designating the interface between soil, fill, or rock on the final logs and on the subsurface profiles presented in the report are determined by interpolation and are, therefore, approximate. The transition between the materials may be abrupt or gradual. Only at specific exploration locations should profiles be considered as reasonably accurate and then only to the degree implied by the notes.

BORING LOG SAMPLES



GEO CONSULTANTS NORTHWEST	2016	KEY TO BORING AND TEST PIT LOGS	
824 SE 12th Avenue Portland, OR 97214	Drawn By: GCN	GENERAL INFORMATION	1/5

EXPLORATION LOG SYMBOLS



SOIL CHARACTER

Granular Soil		Cohesive Soil		
Density	Standard Penetration Test *	Consistency	Standard Penetration Test*	Unconfined Compressive Strength (tsf)
Very Loose	0 - 4	Very Soft	Less Than 2	Less Than 0.25
Loose	4 - 10	Soft	2 - 4	0.25 - 0.5
Medium Dense	10 - 30	Medium Stiff	4 - 8	0.50 - 1.0
Dense	30 - 50	Stiff	8 - 16	1.0 - 2.0
Very Dense	Greater Than 50	Very Stiff	16 - 32	2.0 - 4.0
Blows Required to Drive a Split-Barrel Sampler 12 inches		Hard	Greater Than 32	Greater Than 4.0

DEFINITIONS AND ABBREVIATIONS

AT	ATTERBERG LIMITS TEST	ND	NON DETECT	PPB	PARTS PER BILLION
BGS	BELOW GROUND SURFACE	NEG	NEGATIVE RESULT	PPM	PARTS PER MILLION
CO	CONSOLIDATION TEST	NS	NO VISIBLE SHEEN	PSF	POUNDS PER SQUARE FOOT
DS	DIRECT SHEAR TEST	OC	ORGANIC CONTENT	RS	SOIL RESISTIVITY TEST
DW	DRY UNIT WEIGHT	P	PUSHED SAMPLE	S4	SUDAN IV SOIL TEST
GS	MECHANICAL GRAIN SIZE TEST	P200	P200 FINES CONTENT TEST	SG	SPECIFIC GRAVITY TEST
HS	HEAVY SHEEN	PCF	POUNDS PER CUBIC FOOT	SPT	STD. PENETRATION TEST
HYD	HYDROMETER TEST	PH	SOIL pH	SS	SLIGHT SHEEN
MC	MOISTURE CONTENT	PID	PHOTOIONIZATION DETECTOR	TO	TOREVANE
MG/KG	MILLIGRAMS PER KILOGRAM	POS	POSITIVE RESULT	TSF	TONS PER SQUARE FOOT
MS	MODERATE SHEEN	PP	POCKET PENETROMETER	UV	ULTRAVIOLET LIGHT TEST

GRAIN SIZE DEFINITIONS			MINOR FRACTIONS IN FINE GRAINED SOIL		GROUNDWATER SEEPAGE	
SAND	FINE	No. 200 to No. 40	No Mention (CLAY, SILT)	< 15 percent	Slow	< 1 gpm
	MEDIUM	No. 40 to No. 10	With Sand, With Gravel	15 to 30 percent	Moderate	1-3 gpm
	COARSE	No. 10 to No. 4	Sandy, Gravelly	30 to 49 percent	Rapid	> 3 gpm
GRAVEL	FINE	No. 4 to 3/4-inch	FIELD MOISTURE OBSERVATION		CAVING	
	COARSE	3/4- to 3-inch	Dry	Absence of moisture, dusty, dry to touch	Minor	
COBBLE		3-inches to 12-inches	Moist	Damp but no visible water.	Moderate	
BOULDER		> 12-inches	Wet	Saturated, below groundwater	Severe	

GEO CONSULTANTS NORTHWEST

2016

KEY TO BORING AND TEST PIT LOGS

824 SE 12th Avenue
Portland, OR 97214

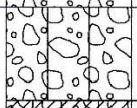
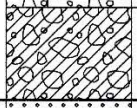
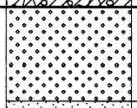
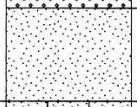
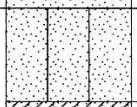
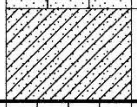
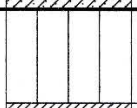
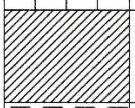
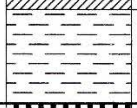
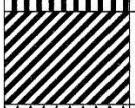
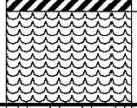
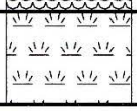
Drawn By: GCN

SYMBOLS AND ABBREVIATIONS

2/5

RS456

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

MAJOR DIVISIONS			SYMBOLS: GRAPH	SYMBOLS: LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS — MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS — MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS — MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS — MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

GEO CONSULTANTS NORTHWEST

2016

KEY TO BORING AND TEST PIT LOGS

824 SE 12th Avenue
Portland, OR 97214

Drawn By: GCN

SOIL CLASSIFICATION

3/5

RS457

ROCK CLASSIFICATION GUIDELINES

HARDNESS		DESCRIPTION
Very soft	(RH-0)	For plastic material only
Soft	(RH-1)	Carved or gouged with a knife
Moderate	(RH-2)	Scratched with a knife
Hard	(RH-3)	Difficult to scratch with a knife
Very hard	(RH-4)	Rock scratches metal; rock cannot be scratched with a knife

STRENGTH	DESCRIPTION
Plastic	Easily deformable with finger pressure
Friable	Crumbles by rubbing with fingers
Weak	Crumbles only under light hammer blows
Moderately Strong	Few heavy hammer blows before breaking
Strong	Withstands few heavy hammer blows and yields large fragments
Very Strong	Withstands many heavy hammer blows, yields dust and small fragments

WEATHERING	DESCRIPTION
Severe	Rock decomposed; thorough discoloration; all fractures extensively coated with clay, oxides, or carbonates.
Moderate	Intense localized discoloration of rock; fracture surfaces coated with weathering minerals.
Little	Slight and intermittent discoloration of rock; few stains on fracture surfaces.
Fresh	Rock unaffected by weathering

FRACTURING	FRACTURE SPACING
Crushed	Less than 5/8 inch to contains clay
Highly Fractured	5/8 inch to 2 inches
Closely Fractured	2 inches to 6 inches
Moderately fractured	6 inches to 1 foot
Little Fractured	1 foot to 4 feet
Massive	Greater than 4 feet

JOINT SPACING	DESCRIPTION
Papery	Less than 1/8 inch
Shaley or Platey	1/8 inch to 5/8 inch
Very Close	5/8 inch to 3 inches
Close	3 inches to 2 feet
Blocky	2 to 4 feet
Massive	Greater than 4 feet

GLOSSARY

Alluvial – Made up of or found in the materials that are left by the water of rivers, streams, floods, etc.

Bearing pressure – The total stress transferred from the structure to the foundation, then to the soil below the foundation.

Bulk density (Soil density) – The total mass of water and soil particles contained in a unit volume of soil: lb/ft^3.

Coefficient of active earth pressure – The ratio of the minimum horizontal effective stress of a soil to the vertical effective stress at a single point in a soil mass retained by a retaining wall as the wall moves away from the soil.

Cohesive soil – Clay type soil with angles of internal friction close to zero. Cohesion is the force that holds together molecules or like-particles within a substance.

Colluvium – A loose accumulation of soil and rock fragments deposited through the action of gravity, such as erosion and soil creep.

Differential settlement – The vertical displacement due to settlement of one point in a foundation with respect to another point of the foundation.

Engineered fill – Soil used as fill, such as retaining wall backfill, foundation support, dams, slopes, etc., that are to be placed in accordance with engineered specifications. These specifications may delineate soil grain-size, plasticity, moisture, compaction, angularity, and many other index properties depending on the application.

Excess pore pressure – That increment of pore water pressures greater than hydro-static values, produced by consolidation stresses in compressible materials or by shear strain; excess pore pressure is dissipated during consolidation.

Factor of safety – The ratio of a limiting value of a quantity to the design value of that quantity.

Fines – Material by weight passing the U.S. Standard No. 200 Sieve by washed analysis.

Fluvial – Produced by the action of rivers or streams.

Homogenous soil – A mass of soil where the soil is of one characteristic having the same engineering and index properties.

In situ – Undisturbed, existing field conditions.

Lacustrine – Of a lake, e.g., the depositional environment of a lake.

Liquefaction – The sudden, large decrease of shear strength of cohesionless soil caused by collapse of the soil structure, produced by small shear strains associated with sudden but temporary increase of pore water pressure. Usually a problem in submerged, poorly graded sands within the upper 50 feet of subgrade in earthquake-prone environments.

Maximum dry density – A soil property obtained in the laboratory from a Proctor test. Density of soil at 100% compaction.

Overbank deposit – Sediment that has been deposited on the floodplain of a river or stream by flood waters that have broken through or overtopped the banks.

Permeability – A measure of continuous voids in a soil. The property which allows the flow of water through a soil. See also coefficient of permeability.

Porosity (Pore space) – The ratio of the volume of voids to the total volume: unitless or expressed as a percentage.

Residual soil – Soil that has been formed in place by rock decay.

Shear strength – The maximum shear stress which a soil can sustain under a given set of conditions. For clay, shear strength = cohesion. For sand, shear strength = the product of effective stress and the tangent of the angle of internal friction.

Surcharge – An additional force applied at the exposed upper surface of a restrained soil.

Tuff – An igneous rock (from molten material) that forms from the debris ejected by an explosive volcanic eruption.

Unit weight – The ratio of the total weight of soil to the total volume of a unit of soil: lb/ft^3.

GEO CONSULTANTS NORTHWEST	2016	KEY TO BORING AND TEST PIT LOGS	
824 SE 12th Avenue Portland, OR 97214	Drawn By: GCN	GLOSSARY	5/5

RS459

DEPTH (feet bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	GROUND WATER	WATER CONTENT (percent)	FIELD TESTING	TESTING AND LABORATORY DATA
		ML	Very stiff, light brown SILT FILL with trace sand and trace subrounded to angular gravel; moist. (2-inch thick heavily rooted zone at the ground surface)	1		14	PP=4.0 PP=4.0	
				2		14	PP=4.0 PP=3.5	
5		ML	Very stiff to stiff, brown SILT FILL with some subrounded gravel, trace sand and trace fine organics; moist.	3		27	PP=3.5 PP=3.5	
			Encountered 6 inch diameter storm drain pipeline at 6 feet.					
		SM	Medium dense, brown-gray and orange mottled gray, fine SILTY SAND; moist.	4		31		
10			**ALLUVIUM**					
		GW	Dense, light brown, subrounded GRAVEL with sand and cobbles to 6 inch diameter; moist.	5		30		
			End at 12 feet in dense native gravel. No caving and no groundwater observed to the depth explored.					
15								

Station: See Figure 2 **Logged By: Paul Crenna, CEG**

Approximate Elevation:

Excavation Started: 8/24/16 **Excavation Completed: 8/24/16**

LOG OF TEST PIT TP-01

DEPTH (feet bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	GROUND WATER	WATER CONTENT (percent)	FIELD TESTING	TESTING AND LABORATORY DATA
		ML	Medium stiff, brown SILT FILL with trace sand and some subrounded to subangular gravel and cobbles, trace construction debris (asphalt); moist. (3-inch thick heavily rooted zone at the ground surface)	1		6		
		SM	Medium dense, orange and gray mottled light brown SILTY SAND; moist.	2		20	PP=4.0 PP=3.5	DD = 98 pcf
			ALLUVIUM					
5				3	▼ TS			
		GW	Dense, light brown, subrounded GRAVEL with sand and cobbles to 6 inch diameter; moist to wet.	4		27		
			MISSOULA FLOOD DEPOSITS	5		15		
10								
			End at 11 feet in dense native gravel. Minor sidewall caving below 5 feet. Rapid groundwater seepage below 6 feet.					
15								

Station: See Figure 2 **Logged By: Paul Crenna, CEG**

Approximate Elevation:

Excavation Started: 8/24/16 **Excavation Completed: 8/24/16**

LOG OF TEST PIT TP-02

TESTPIT 2_PER_PAGE REV1 1121 BROWNSTONE - KELLOGG CREEK.GPJ NGC.GDT 10/07/16

Brownstone - Kellogg Creek

1121

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GEO CONSULTANTS NORTHWEST

LOGS OF TEST PITS

DEPTH (feet bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	GROUND WATER	WATER CONTENT (percent)	FIELD TESTING	TESTING AND LABORATORY DATA
		GM	Medium dense, brown, silty, subrounded GRAVEL FILL with cobbles and organics (fine rootlets throughout); moist. (3-inch thick heavily rooted zone at the ground surface)	1		19	PP=3.5 PP=3.0	
				2	▼ TS	15		
		ML	Soft, blue-gray SILT with trace fine sand; wet.	3		45	PP=0.25	DD = 78 pcf
5			**ALLUVIUM**					
		SP	Loose, blue-gray fine SAND with trace silt; wet.	4		42		
			ALLUVIUM					
10		GW	Dense, brown, subrounded GRAVEL with sand and cobbles to 6 inch diameter; wet.					
			MISSOULA FLOOD DEPOSITS					
			End at 12 feet in dense native gravel.					
			Severe sidewall caving.					
			Rapid groundwater seepage below 6 feet.					
15								

Station: See Figure 2 **Logged By: Paul Crenna, CEG**

Approximate Elevation:

Excavation Started: 8/24/16 **Excavation Completed: 8/24/16**

LOG OF TEST PIT TP-03

DEPTH (feet bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	GROUND WATER	WATER CONTENT (percent)	FIELD TESTING	TESTING AND LABORATORY DATA
		ML	Medium stiff, dark brown SILT with some fine organics and trace subrounded gravel; moist. (4-inch thick heavily rooted zone at the ground surface)	1		28	PP=1.5 PP=1.0	
		SM	Soft to medium stiff, blue-gray fine SILY SAND with trace fine organics (fragments of carbonized wood); moist to wet.	2	▼ TS	45	PP=0.5	
			ALLUVIUM					
5		SM	Loose to medium dense, blue-gray, fine SILTY SAND; wet.	3		50		
			ALLUVIUM					
		GW	Dense, brown, subrounded GRAVEL with sand and cobbles to 6 inch diameter; wet.					
10			**MISSOULA FLOOD DEPOSITS**					
			End at 12 feet in dense gravel.					
			Moderate sidewall caving.					
			Rapid groundwater seepage below 3 feet.					
15								

Station: See Figure 2 **Logged By: Paul Crenna, CEG**

Approximate Elevation:

Excavation Started: 8/24/16 **Excavation Completed: 8/24/16**

LOG OF TEST PIT TP-04

TESTPIT 2_PER_PAGE REV1 1121 BROWNSTONE - KELLOGG CREEK.GPJ NGC.GDT 10/07/16

Brownstone - Kellogg Creek

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LOGS OF TEST PITS

DEPTH (feet bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	GROUND WATER	WATER CONTENT (percent)	FIELD TESTING	TESTING AND LABORATORY DATA
		ML	Stiff, brown SILT FILL with some subrounded to angular gravel; moist. (4-inch thick heavily rooted zone at the ground surface)	1		16	PP=4.0	
			Encountered trace metal wire at 3 feet.	2		22	PP=3.5 PP=4.0	
5		GW	Dense, brown, subrounded GRAVEL with sand and cobbles to 6 inch diameter; moist.	3		11		
			MISSOULA FLOOD DEPOSIT	4		4		
10			End at 10 feet in dense native gravel.	5		8		
			No caving and no groundwater observed to the depth explored.					
15								

Station: See Figure 2 **Logged By: Paul Crenna, CEG**

Approximate Elevation:

Excavation Started: 8/24/16 **Excavation Completed: 8/24/16**

LOG OF TEST PIT TP-05

DEPTH (feet bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	GROUND WATER	WATER CONTENT (percent)	FIELD TESTING	TESTING AND LABORATORY DATA
		ML	Stiff, brown, subrounded gravelly SILT FILL with trace construction debris (metal, asphalt, concrete) up to 8 inch diameter; moist. (3-inch thick heavily rooted zone at the ground surface)	1		13		
			Encountered occasional boulders to 2 feet diameter.	2		14		
5		ML	Stiff, light brown SILT with trace fine sand; moist.				PP=4.0	
			ALLUVIUM	3		21		
		GW	Dense, brown, subrounded GRAVEL with sand and cobbles to 6 inch diameter; wet.	4	▼ TS	11		
10			**MISSOULA FLOOD DEPOSIT**					
			End at 12 feet in dense native gravel.					
			Moderate sidewall caving.					
15			Slow goundwater seepage below 8 feet.					

Station: See Figure 2 **Logged By: Paul Crenna, CEG**

Approximate Elevation:

Excavation Started: 8/24/16 **Excavation Completed: 8/24/16**

LOG OF TEST PIT TP-06

TESTPIT 2_PER_PAGE REV1 1121 BROWNSTONE - KELLOGG CREEK.GPJ NGC.GDT 10/07/16

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LOGS OF TEST PITS

DEPTH (feet bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	GROUND WATER	WATER CONTENT (percent)	FIELD TESTING	TESTING AND LABORATORY DATA
		ML	Very stiff, light brown SILT FILL with trace angular gravel; moist.	1		12	PP=4.0	
				2		16	PP=4.0	DD = 101 pcf
				3		12	PP=4.0	
							PP=2.0	
5		ML	Medium stiff to stiff, brown SILT FILL with trace subrounded gravel and trace construction debris (metal); moist.	4		32		
			Encountered dark brown layer with trace fine organics from 6 to 7 feet. Becomes blue-gray below 7 feet.	5		38		
10				6		42		
				7		37		
			End at 12 feet in stiff silt fill.					
			No caving and no groundwater observed to the depth explored.					
15								

Station: See Figure 2 **Logged By: Paul Crenna, CEG**

Approximate Elevation:

Excavation Started: 8/24/16 **Excavation Completed: 8/24/16**

LOG OF TEST PIT TP-07

DEPTH (feet bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	GROUND WATER	WATER CONTENT (percent)	FIELD TESTING	TESTING AND LABORATORY DATA
		ML	Very stiff, light brown SILT FILL with trace fine sand; moist. (2-inch thick heavily rooted zone at the ground surface)	1		13	PP=4.0	
							PP=4.0	
				2		20	PP=4.0	
							PP=4.0	
5		ML	Stiff, blue-gray and brown-gray SILT FILL with trace fine organics; moist.	3		16		
				4		26		DD = 96 pcf
				5		25		
10								
			Encountered trace construction debris (concrete and asphalt) up to 18 inch diameter at 11 to 12 feet.	6		30		
			End at 12 feet in stiff silt fill. No caving and no groundwater observed to the depth explored.					
15								

Station: See Figure 2 **Logged By: Paul Crenna, CEG**

Approximate Elevation:

Excavation Started: 8/24/16 **Excavation Completed: 8/24/16**

LOG OF TEST PIT TP-08

TESTPIT 2_PER_PAGE REV1 1121 BROWNSTONE - KELLOGG CREEK.GPJ NGC.GDT 10/07/16

Brownstone - Kellogg Creek

1121

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LOGS OF TEST PITS

DEPTH (feet bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	GROUND WATER	WATER CONTENT (percent)	FIELD TESTING	TESTING AND LABORATORY DATA
		ML	Very stiff, light brown SILT FILL with trace sand and angular gravel; moist. (2-inch thick heavily rooted zone at the ground surface)	1		10	PP=4.0 PP=4.0	
				2		12	PP=4.0 PP=4.0	
5		ML	Stiff, blue-gray SILT FILL with trace sand; moist.	3		25		
			Encountered 3-inch thick grass root zone at 6 feet.					
			Encountered some subrounded gravel and cobbles from 6 to 10 feet.	4		18		
10				5		34		
			Encountered dark brown-gray layer with trace fine organics at 11 to 12 feet.	6		48		
			End at 12 feet in stiff silt fill. Minor caving at 6 to 7 feet.					
15			No groundwater observed to the depth explored.					

Station: See Figure 2 **Logged By: Paul Crenna, CEG**

Approximate Elevation:

Excavation Started: 8/24/16 **Excavation Completed: 8/24/16**

LOG OF TEST PIT TP-09

DEPTH (feet bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	GROUND WATER	WATER CONTENT (percent)	FIELD TESTING	TESTING AND LABORATORY DATA
		ML	Very stiff, light brown SILT FILL with trace fine sand and angular gravel; moist. (2-inch thick heavily rooted zone at the ground surface)				PP=4.0 PP=4.0	
				1		16	PP=4.0 PP=4.0	
5		ML	Stiff, dark brown-gray SILT FILL with trace subrounded gravel and cobbles, trace fine organics; moist.	2		22		
				3		22		DD = 96 pcf
			Encountered plastic particles at 8 feet.					
10			Encountered dark brown layer with trace fine organics at 11 to 12 feet.	4		42		
			End at 12 feet in stiff silt fill. No caving and no groundwater observed to the depth explored.					
15								

Station: See Figure 2 **Logged By: Paul Crenna, CEG**

Approximate Elevation:

Excavation Started: 8/24/16 **Excavation Completed: 8/24/16**

LOG OF TEST PIT TP-10

TESTPIT 2_PER_PAGE REV1 1121 BROWNSTONE - KELLOGG CREEK.GPJ NGC.GDT 10/07/16

Brownstone - Kellogg Creek

1121

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LOGS OF TEST PITS

DEPTH (feet bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	GROUND WATER	WATER CONTENT (percent)	FIELD TESTING	TESTING AND LABORATORY DATA
		ML	Very stiff, dark brown and brown, subrounded gravelly SILT FILL with cobbles to 4 inch diameter; moist. (4-inch thick heavily rooted zone at the ground surface)	1		14		
				2		14		
5				3		23		
		ML	Stiff, blue-gray SILT FILL with trace subrounded gravel and cobbles, trace fine organics; moist.	4		27		
				5		19		DD = 109 pcf
10				6		28		
			End at 12 feet in stiff silt fill.					
			No caving and no groundwater observed to the depth explored.					
15								

Station: See Figure 2 **Logged By: Paul Crenna, CEG**

Approximate Elevation:

Excavation Started: 8/24/16 **Excavation Completed: 8/24/16**

LOG OF TEST PIT TP-11

DEPTH (feet bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	GROUND WATER	WATER CONTENT (percent)	FIELD TESTING	TESTING AND LABORATORY DATA
		ML	Stiff, light brown SILT FILL with trace angular gravel; moist. (3-inch thick heavily rooted zone at the ground surface)	1		13	PP=4.0	
				2		16	PP=4.0 PP=4.0	
5				3		15		DD = 105 pcf
		ML	Stiff, blue-gray and brown-gray SILT FILL with trace subrounded gravel and cobbles; moist.	4		8		
10		SP	Loose to medium dense, fine to medium SAND with trace silt; wet.		▼ TS			
				5		34		
			ALLUVIUM					
			End at 12 feet in medium dense native sand. Minor caving below 10 feet.					
			Slow groundwater seepage below 10 1/2 feet.					
15								

Station: See Figure 2 **Logged By: Paul Crenna, CEG**

Approximate Elevation:

Excavation Started: 8/24/16 **Excavation Completed: 8/24/16**

LOG OF TEST PIT TP-12

TESTPIT 2_PER_PAGE REV1 1121 BROWNSTONE - KELLOGG CREEK.GPJ NGC.GDT 10/07/16

Brownstone - Kellogg Creek

1121

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LOGS OF TEST PITS

DEPTH (feet bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	GROUND WATER	WATER CONTENT (percent)	FIELD TESTING	TESTING AND LABORATORY DATA
		ML	Very stiff, light brown SILT FILL with trace sand and subrounded gravel and cobbles; moist. (3-inch thick heavily rooted zone at the ground surface)	1		27	PP=4.0 PP=4.0	
				2		42	PP=4.0 PP=3.5	
5		ML	Stiff, blue-gray SILT FILL; moist.	3		33		DD = 86 pcf
		SM	Medium dense, light brown fine SILTY SAND grading to fine sand; moist.	4		32		
			ALLUVIUM	5		37		
10		GW	Dense, light brown, subrounded GRAVEL with sand; moist.					
			MISSOULA FLOOD DEPOSIT					
			End at 12 feet in dense native gravel. No caving and no groundwater observed to the depth explored.					
15								

Station: See Figure 2 **Logged By: Paul Crenna, CEG**

Approximate Elevation:

Excavation Started: 8/24/16 **Excavation Completed: 8/24/16**

LOG OF TEST PIT TP-13

DEPTH (feet bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	GROUND WATER	WATER CONTENT (percent)	FIELD TESTING	TESTING AND LABORATORY DATA
		ML	Very stiff, light brown and brown SILT FILL with trace sand and angular to subrounded gravel and cobbles; moist. (3-inch thick heavily rooted zone at the ground surface)	1		12	PP=4.0 PP=4.0	
				2		17	PP=4.0 PP=3.5	DD = 85 pcf
			Encountered occasional debris (asphalt to 12 inch diameter) at 4 feet.					
5				3		28		
				4		38		DD = 79 pcf
		ML	Stiff, dark brown-gray to blue-gray SILT with trace fine organics in upper foot; moist to wet.					
				5	▼ TS	37		
10			**ALLUVIUM**					
		GW	Dense, brown, subrounded GRAVEL with sand and cobbles; wet.	6				
			MISSOULA FLOOD DEPOSIT					
			End at 12 feet in dense native gravel. Minor caving below 10 feet.					
			Rapid groundwater seepage below 9 feet.					
15								

Station: See Figure 2 **Logged By: Paul Crenna, CEG**

Approximate Elevation:

Excavation Started: 8/24/16 **Excavation Completed: 8/24/16**

LOG OF TEST PIT TP-14

TESTPIT 2_PER_PAGE REV1 1121 BROWNSTONE - KELLOGG CREEK.GPJ NGC.GDT 10/07/16

Brownstone - Kellogg Creek

1121

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LOGS OF TEST PITS

DEPTH (feet bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	GROUND WATER	WATER CONTENT (percent)	FIELD TESTING	TESTING AND LABORATORY DATA
		ML	Medium stiff, dark brown SILT with organics (fine rootlets); moist. (4-inch thick heavily rooted zone at the ground surface)	1		19		
		SM	Medium dense, orange and gray mottled light brown, fine SILTY SAND; moist.	2		43	PP=2.0	DD = 78 pcf
			ALLUVIUM				PP=2.0	
5		GW	Dense, brown, subrounded GRAVEL with sand and cobbles to 6 inch diameter; wet.		▼ TS			
			MISSOULA FLOOD DEPOSIT	3				
10			End at 10 feet in dense gravel.					
			Moderate caving below 6 feet.					
			Rapid groundwater seepage below 5 feet.					
15								

Station: See Figure 2 **Logged By: Paul Crenna, CEG**

Approximate Elevation:

Excavation Started: 8/24/16 **Excavation Completed: 8/24/16**

LOG OF TEST PIT TP-15

TESTPIT 2_PER_PAGE REV1 1121 BROWNSTONE - KELLOGG CREEK.GPJ NGC.GDT 10/07/16

Brownstone - Kellogg Creek **1121**	**GEO Consultants Northwest** **824 SE 12th Avenue** **Portland, Oregon 97214** **Tel 503-616-9425** **Fax**	GEO CONSULTANTS NORTHWEST	**LOGS OF TEST PITS**

Exhibit G

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING / PLANNING
610 SW Alder Street, Suite 700, Portland, OR 97205 P 503.228.5230 F 503.273.8169

MEMORANDUM

Date: February 7, 2017 Project #: 20703

To: Brett Kelver, AICP, City of Milwaukie
Rick Nys, PE, PTOE and Christian Snuffin, PE, PTOE, Clackamas County
Avi Tayar, PE and Andy Jeffrey, PE, ODOT
Mat Dolata, PE, PTP, DKS

CC: Serah Breakstone and Scott Emmons, PE, DOWL

From: Kristine Connolly, Zachary Horowitz, and Chris Brehmer, PE, Kittelson & Associates, Inc.

Project: Kellogg Creek Townhomes

Subject: Traffic Impact Study

Brownstone Homes, Inc. is proposing to develop property located at 1333 Rusk Road. The site is located within the City of Milwaukie, south of the Milwaukie Expressway (referred to as OR-224 in the remainder of this report), west of SE Rusk Road, and north of SE Kellogg Creek Drive. Today, the site is primarily open space though the southeast corner of the site is occupied by the Turning Point Church. After construction, the site will include 92 townhome units in addition to the church. A zoning map change is required as part of the Planned Development (PD) process being pursued with the project site application because the PD increases the site density, but the Comprehensive Plan designation remains unchanged. This traffic impact study report documents the transportation impacts associated with site redevelopment in the near-term opening year.

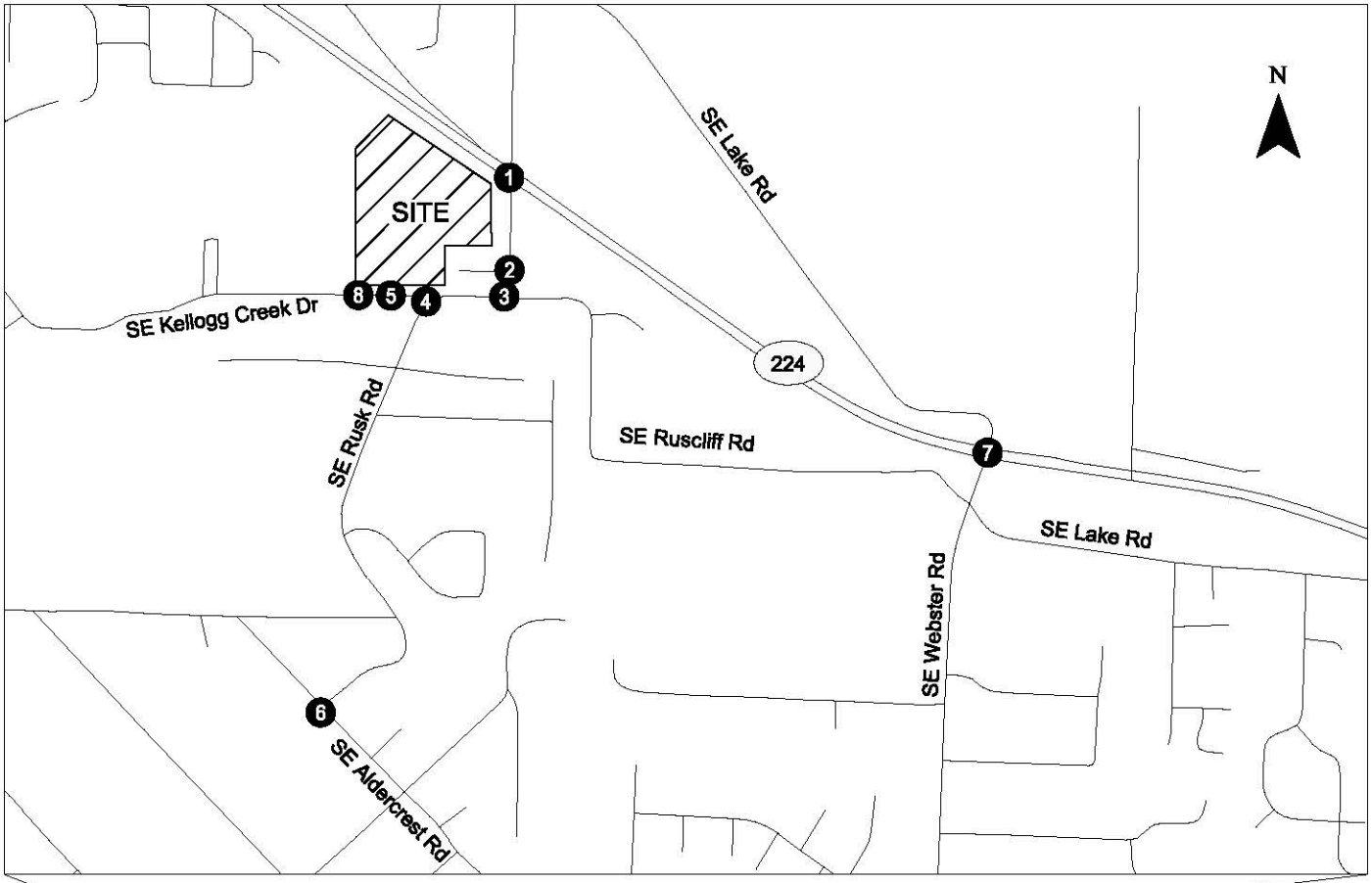
SUMMARY OF FINDINGS

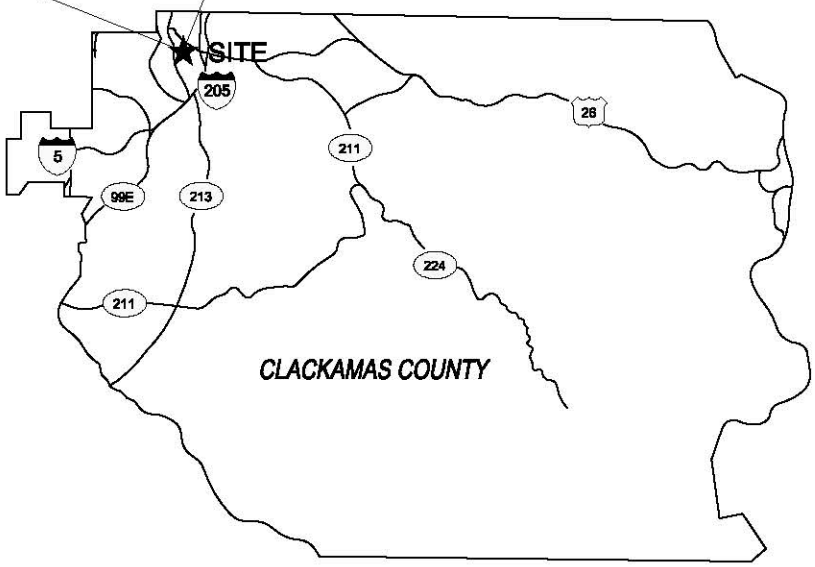
The primary findings of the analysis include:

- All study intersections are forecast to operate within the applicable review agency operational standards under existing and site opening year 2018 scenarios studied during the weekday AM, midday, and PM peak hours.
- Historical crash data for the study area intersections indicate no patterns or trends that require mitigation associated with this project.
- Projected 95th percentile queues can be accommodated within the existing storage areas at the study intersections, with the exception of the intersection of OR-224/SE Webster Road, where existing and background weekday peak hour 95th percentile queues exceed the available storage for the westbound left-turn (weekday PM peak hour) and the northbound left-turn (weekday AM, midday, and PM peak hours).
- Landscaping, signage, and utilities should be located and maintained to ensure adequate intersection sight lines are available.
- The proposed zoning map amendment with site development does not result in a net increase in the overall trip generation potential of the site on a daily or weekday peak hour basis above what is allowed by the City of Milwaukie's Comprehensive Plan.

- The proposed zoning map amendment will not require changes to the functional classification of existing or planned transportation facilities, will not require a change to the standards implementing the comprehensive plan, and will not significantly affect a transportation facility. Accordingly, because the proposed zoning map amendment does not increase the density of the site above what is allowed by the City of Milwaukie's Comprehensive Plan or result in a significant effect on the transportation system, no review of mitigation for Transportation Planning Rule (TPR) purposes is necessary.

The site location and overall vicinity are shown in **Figure 1**, and a conceptual site plan is shown in **Figure 2**.



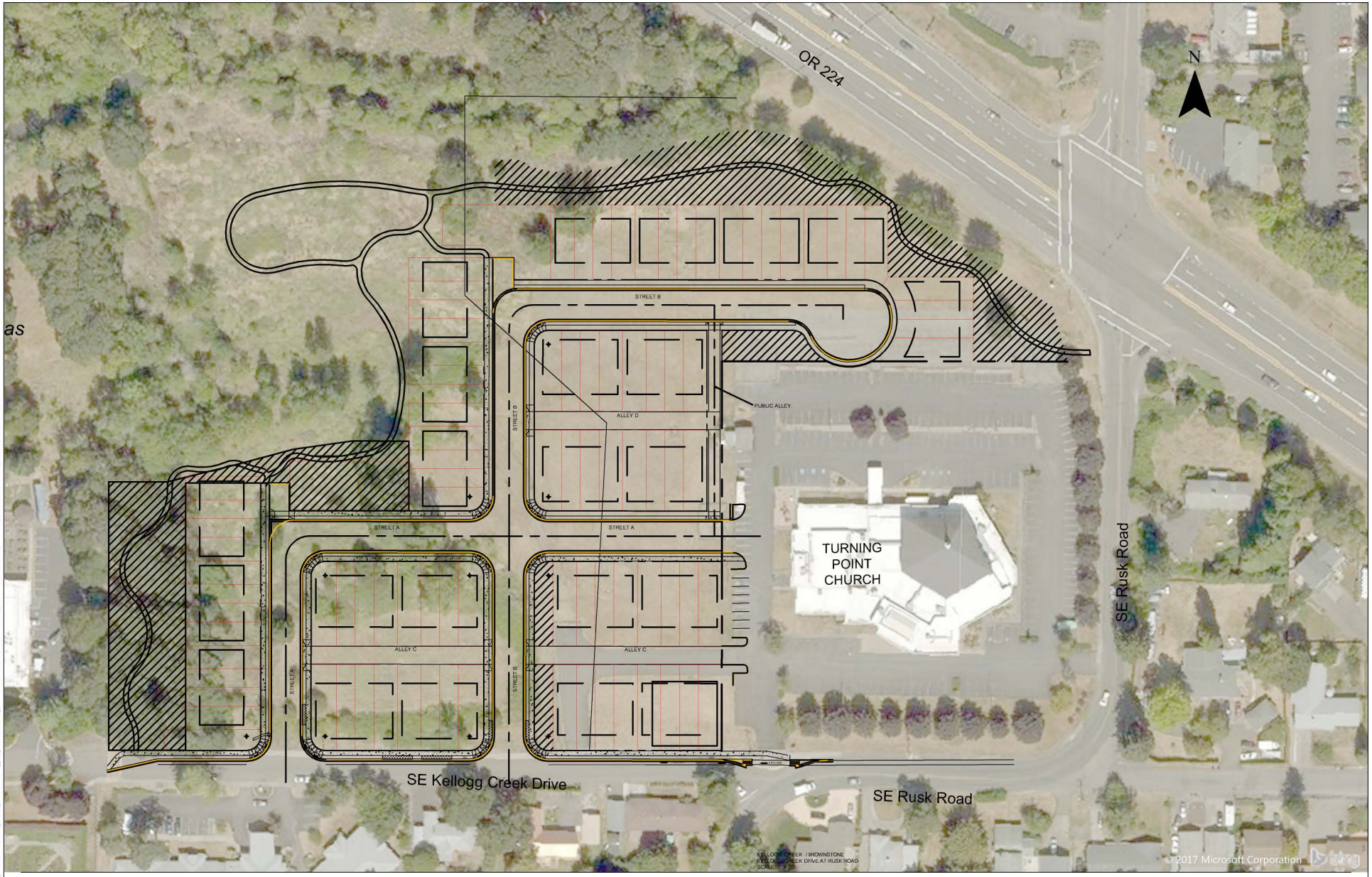


(##) - Study Intersections

Site Vicinity Map
Milwaukie, Oregon

Figure
1

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Site Plan Provided By DOWL 2017-02-06

Proposed Site Plan
Milwaukie, Oregon

Figure
2

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KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING/PLANNING

RS473

SCOPE OF THE REPORT

This report identifies the transportation-related impacts associated with the proposed development and was prepared in accordance with the City of Milwaukie, Clackamas County, and ODOT requirements. Per City, County, and ODOT staff direction, operational analyses were performed at the following study intersections during the weekday AM, midday, and PM peak periods:

- SE Rusk Road/OR-224
- SE Kellogg Creek Drive/SE Ruscliff Road
- SE Kellogg Creek Drive/Rusk Road
- SE Rusk Road/SE Aldercrest Road
- SE Kellogg Creek Drive/Church Driveway (this existing driveway become the East Site Driveway access once the development is complete)
- SE Kellogg Creek Drive/West Site Driveway (new)
- SE Rusk Road/Church Driveway
- OR-224/SE Webster Road

This report evaluates the following transportation issues:

- Existing land use and transportation system conditions within the site vicinity during the weekday AM, midday, and PM peak periods;
- Forecast year 2018 background traffic conditions during the weekday AM, midday, and PM peak periods, considering other development and transportation improvements planned in the study area;
- Trip generation and distribution estimates for the proposed development;
- Forecast year 2018 total traffic conditions during the weekday AM, midday and PM peak periods with build-out of the site;
- Review of applicable City of Milwaukie requirements, including sight distance, access standards, and turn-lane warrants; and
- Findings and recommendations.

Analysis Methodology

All level-of-service analyses described in this report were performed in accordance with the procedures stated in the *2000 Highway Capacity Manual* (HCM) (Reference 1). The peak 15-minute flow rates were used in the evaluation of all intersection levels of service (LOS) and volume-to-capacity ratios (v/c). For this reason, the analyses reflect conditions that are only likely to occur for 15 minutes out of each average peak hour (*refer to Attachment A for additional details*). Traffic conditions during typical weekday hours are expected to operate with lower levels of delay than

those described in this report. The operations analysis presented in this report was completed using Synchro 8 software.

Applicable Operating Standards

Chapter 8 of the *City of Milwaukie Transportation System Plan* (Reference 2) defines the minimum acceptable measure of effectiveness for intersections during the peak hour as LOS "D" for both signalized and stop-controlled intersections.

Chapter 5 of the *Clackamas County Comprehensive Plan* (Reference 3) sets performance evaluation standards for the urban area (Table 5-2a). Per these standards, a maximum volume-to-capacity ratio of 0.90 must be maintained during the midday peak hour and a maximum of 0.99 during the weekday PM peak hour.

The *Oregon Highway Plan* (OHP) (Reference 4) requires a maximum volume-to-capacity ratio of 0.99 at ODOT-maintained intersections.

Table 1 lists the study intersections, the responsible jurisdiction, and the corresponding operating standard.

Table 1. Operating Standards at Study Intersections

Study Intersection	Jurisdiction	Intersection Operating Standard
SE Rusk Road/OR-224	ODOT	Intersection V/C ≤ 0.99
SE Kellogg Creek Drive/SE Ruscliff Road	City of Milwaukie & Clackamas County	LOS "D" & Midday V/C ≤ 0.90, PM V/C ≤ 0.99
SE Kellogg Creek Drive/Rusk Road	City of Milwaukie & Clackamas County	LOS "D" & Midday V/C ≤ 0.90, PM V/C ≤ 0.99
SE Rusk Road/SE Aldercrest Road	City of Milwaukie & Clackamas County	LOS "D" & Midday V/C ≤ 0.90, PM V/C ≤ 0.99
SE Kellogg Creek Drive/Church Driveway	City of Milwaukie	LOS "D"
SE Kellogg Creek Drive/West Site Driveway (new)	City of Milwaukie	LOS "D"
SE Rusk Road/Church Driveway	City of Milwaukie & Clackamas County	LOS "D" & Midday V/C ≤ 0.90, PM V/C ≤ 0.99
OR-224/SE Webster Road	ODOT	Intersection V/C ≤ 0.99

EXISTING CONDITIONS

This section summarizes the existing characteristics of the transportation system and adjacent land uses in the vicinity of the proposed development, including an inventory of the existing multimodal transportation facilities and options, an evaluation of existing intersection operations for motor vehicles at the study intersections, and a summary of recent study intersection crash history.

Site Conditions and Adjacent Land Uses

The proposed site is located in the City of Milwaukie, although SE Rusk Road, the adjacent street to the property is one of the dividing lines between the City and unincorporated Clackamas County. The site is mostly open space, but includes the Turning Point Church and its surface parking lot. Today, there are two access points that serve the church: one located at the east end of the property on SE Rusk Road and one located on the south side of the property on SE Kellogg Creek Drive.

Transportation Facilities

Figure 3 illustrates the existing lane configurations and traffic control devices at the study intersections. **Table 2** summarizes the attributes of key roadways in the vicinity.

Table 2. Street Characteristics in Site Vicinity

Street	Classification	Motor Vehicle Travel Lanes	Posted Speed (mph)	Sidewalks	Striped Bicycle Lanes	On-Street Parking
OR-224	Regional Route[1] Principal Expressway[2]	5-6[3]	50	No	No	No
SE Rusk Road	Collector [1,2]	2	30	Partial[4]	No	Yes[5]
SE Kellogg Creek Drive	Local Street[1]	2	25	Yes[6]	No	South side
SE Ruscliff Road	Local Street[2]	2	25	No	No	Yes
SE Aldercrest Road	Local Street[2]	2	30	No	No	Yes[5]

[1]Per *City of Milwaukie Transportation System Plan*, Table 8-1 (Reference 2)

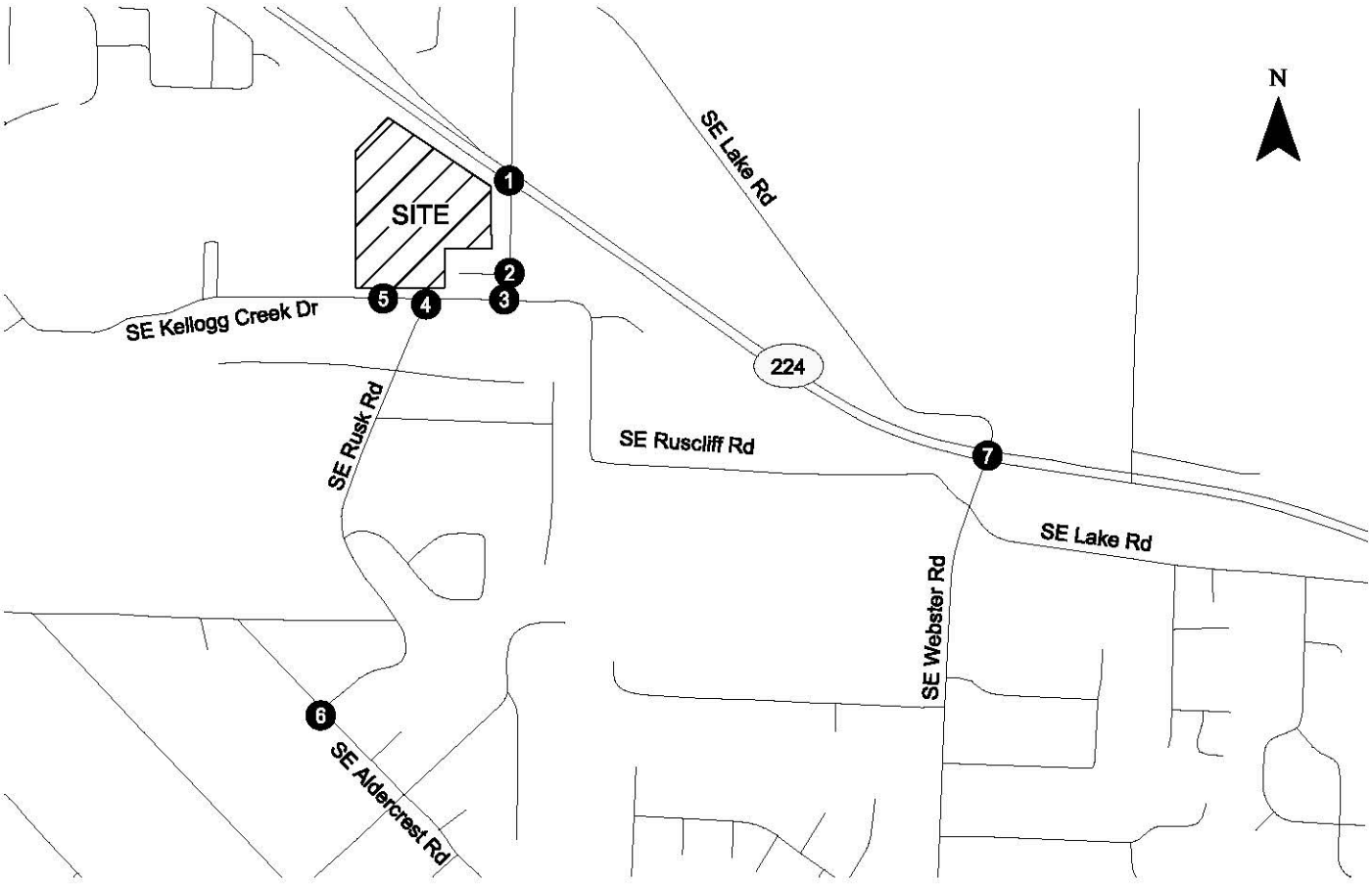
[2]Per *Clackamas County Comprehensive Plan*, Map 5-4a (Reference 3)

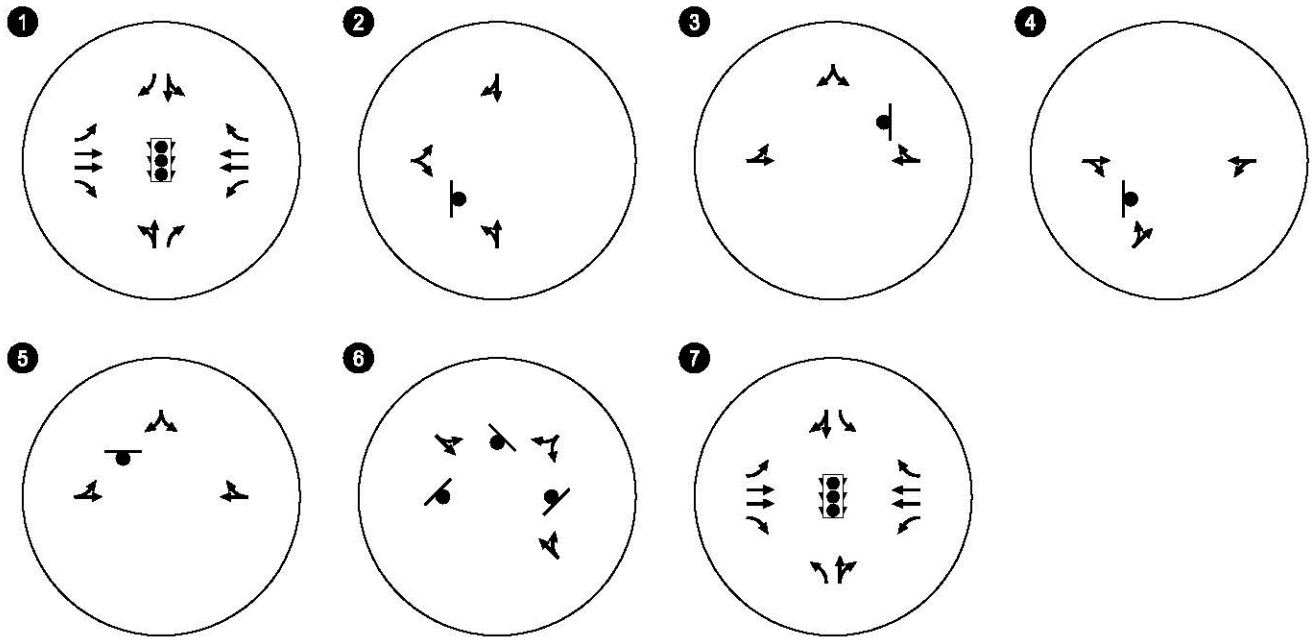
[3]OR-224 widens to a six-lane cross-section at the intersections of SE Rusk Rd and SE Webster to accommodate right-turn lanes.

[4]There is a sidewalk on the east side of SE Rusk Road between SE Eastbrook Drive and SE Robhil Drive. There is a sidewalk on the west side of SE Rusk Road from SE Eric Street north approximately 250'. There is a sidewalk on the north and west sides of SE Rusk Road from SE Kellogg Creek Drive to OR-224.

[5]Some on-street parking is available in front of homes and/or sections of sidewalk.

[6]There is no sidewalk on the south side of SE Kellogg Creek Drive between Deerfield Village Assisted Living and SE Rusk Road.





- STOP SIGN
- TRAFFIC SIGNAL

Existing Lane Configurations & Traffic Control Devices
Milwaukie, Oregon

Figure 3

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Roadway Cross Section Standards

The City of Milwaukie maintains typical cross-sections for roadways based on functional classification, as detailed in the City's *Transportation System Plan* (Reference 2). The typical cross-sections for collectors and local/neighborhood streets such as SE Rusk Road and SE Kellogg Creek Drive are shown in **Figure 4**.

Figure 4. Typical Collector and Local/Neighborhood Street Cross-Sections

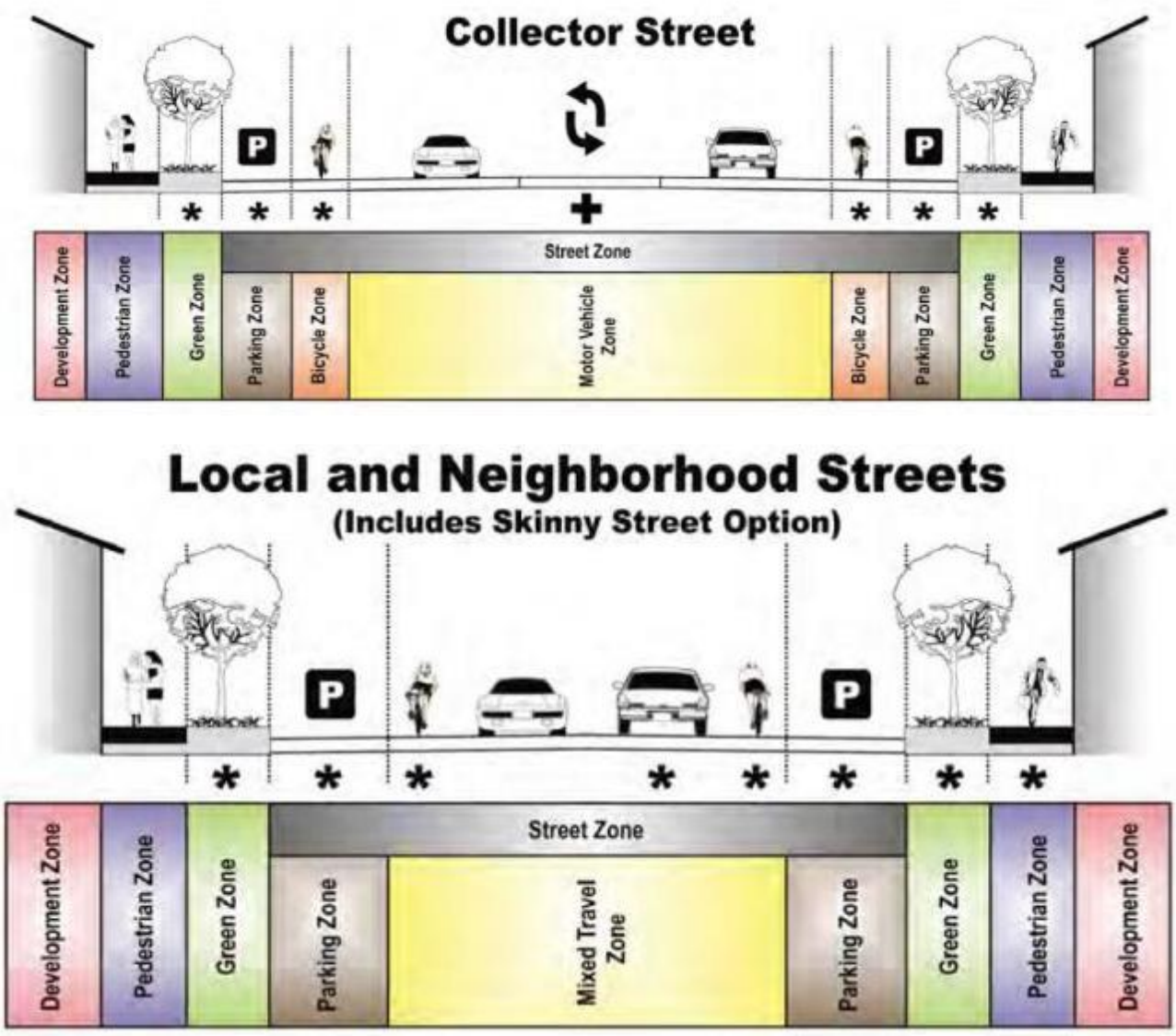


Image Source: City of Milwaukie *Transportation System Plan*, Figure 10-1

The asterisks shown in **Figure 4** indicate optional elements for constrained right-of-ways. The site frontages on SE Rusk Road and SE Kellogg Creek Drive abut a 25-foot existing half-street right-of-way and contain the sidewalk and a single travel lane. Subject to final City and County direction, the Applicant proposes to construct and dedicate an additional nine feet along the site's frontage consistent with this local and neighborhood street cross section. The Applicant's design team will

work closely with City and County staff to develop appropriate frontage improvements to the existing roadway sections along the site frontage.

Pedestrian Facilities

The entire site frontages on both SE Rusk Road and SE Kellogg Creek Drive have sidewalks along their lengths. There are painted crosswalks on three approaches (none on the eastern approach) of the OR-224/SE Rusk Road intersection. The north side of SE Rusk Road at the three-legged intersection with SE Kellogg Creek Drive has a curb bulb-out. The North Clackamas Park and the Milwaukie Community Center can be reached via sidewalk from the site, and there is a marked crosswalk at the entrance to the park. The closest pedestrian crossing of Mt. Scott Creek is via a trail through the park, which provides access to SE Casa Del Rey Drive and then a completed sidewalk access route to SE Lake Road west of OR-224.

Bicycle Facilities

No striped on-street bicycle facilities are provided within the project vicinity.

Transit Facilities

Per TriMet's online schedule, (Reference 5) weekday bus service is provided by TriMet Route 152 (Milwaukie) along SE Kellogg Creek Drive and SE Rusk Road between downtown Milwaukie and Clackamas Town Center from 6:30 AM to 6:30 PM. Headways change throughout the day and range from approximately 30 minutes during the AM, midday, and PM peak periods to 90 minutes during the late morning hours. The closest stop is across SE Kellogg Creek Drive from the site in front of the Deerfield Village Assisted Living facility (south of the study site).

TriMet Route 29 (Lake/Webster Road) operates along SE Lake Road between downtown Milwaukie and Clackamas Town Center approximately every 75 minutes on weekdays from 5:30 AM to 8:00 PM. The closest stop to the site is at the intersection of SE Rusk Road/SE Lake Road on the north side of OR-224, slightly less than ½-mile away.

TriMet Route 30 (Estacada) operates along OR-224 between Estacada and downtown Portland via Clackamas Town Center once per weekday in each direction. The closest stop to the site is at the intersection of SE Webster Road/SE Lake Road.

Safe Walk Paths to Schools

Alder Creek Middle School is the only school in the North Clackamas School District that is located within a one-mile walk of the proposed development. According to the Safe Walk Paths to School area of the North Clackamas School District website (Reference 6), there is no route that been identified as safe from the proposed development to Alder Creek Middle School. The closest point on a route that has been identified begins on SE Eric Street east of the intersection with SE Rusk Road.

From this locations, students can walk east on SE Eric Street, south on SE Briarfield Court, and then east on a combination of off-street dirt paths to reach the west side of the school near the ball fields.

Crash History Analysis

Reported crash history for each study intersection was reviewed in an effort to identify potential intersection safety issues. Reported crash data for the study intersections were obtained from ODOT for the three-year period from January 1, 2012 through December 31, 2014. **Table 3** summarizes the crashes reported at the study intersections. The majority of the reported crashes observed in the site vicinity have occurred at the intersection of OR-224/SE Webster Road. *Attachment "B" contains the ODOT crash data.*

Table 3. Intersection Crash History (January 1, 2012 through December 31, 2014)

Intersection	Collision Type					Severity			Total Crashes
	Rear End	Turning	Sideswipe	Angle	Back	PDO[1]	Injury	Fatality	
OR-224/ SE Rusk Road	2	0	0	1	0	1	2	0	3
OR-224/ SE Webster Road	8	11	6	3	0	12	16	0	28
SE Rusk Road/ SE Ruscliff Road	0	1	0	0	0	1	0	0	1
SE Rusk Road/ SE Kellogg Creek Drive	0	2	0	0	0	2	0	0	2
SE Rusk Road/ SE Aldercrest Road	0	0	0	0	0	0	0	0	0

[1]PDO – Property damage only

Critical crash rates were calculated for each of the study intersections following the analysis methodology presented in ODOT's *SPR 667 Assessment of Statewide Intersection Safety Performance* (Reference 7). SPR 667 provided average crash rates at a variety of intersection configurations in Oregon based on number of approaches and traffic control types. The average crash rate represents the approximate number of crashes that are "expected" at a study intersection. Additionally, this average crash rate was used to calculate the critical crash rate for each study intersection, based on the *Highway Safety Manual* methodology (Reference 8). The critical crash rate is calculated for each intersection based on the average crash rate for each facility and serves as a threshold for further analysis.

Table 4 summarizes the critical crash rate for each intersection and compares those values to the observed crash rate. Per ODOT, if the observed crash rate at the study location exceeds the critical rate, it is a possible indication that the location is exceeding average crash rates. As shown in **Table 4**, the observed crash rate at all intersections is less than the critical crash rates.

Table 4. Intersection Crash Rate Assessment

Location	Total Crashes	Critical Crash Rate by Intersection	Critical Crash Rate by Volume	Observed Crash Rate at Intersection	Observed Crash Rate>Critical Crash Rate?
OR-224/SE Rusk Road	3	0.67	0.58	0.05	No
OR-224/SE Webster Road	28	0.66	0.57	0.37	No
SE Rusk Road /SE Ruscliff Road	1	0.48	0.50	0.11	No
SE Rusk Road/SE Kellogg Creek Drive	2	0.46	0.48	0.20	No
SE Rusk Road/SE Aldercrest Road	0	0.48	0.50	0.00	No

No safety-based mitigations were identified for implementation in conjunction with the proposed Kellogg Creek Townhome development based on review of the historic crash data alone. A review of intersection sight distance is provided below.

Existing Access Point Sight Distance

Section 240 of the *Clackamas County Roadway Design Standards* (Reference 9) establishes the intersection sight distance requirements associated with the existing church/shared site driveway on SE Kellogg Creek Drive and the driveway on SE Rusk Road[1]. Based on the field-measured sight distance, neither existing access point meets the County's sight distance requirements for a side street left-turn from a stop as documented in **Table 5**.

Table 5. Existing Intersection Sight Distances

Intersection	Measured Sight Distance - Facing Right (feet)	Measured Sight Distance - Facing Left (feet)	Speed (MPH)[1]	Desired Minimum Intersection Sight Distance (feet)[2]	Adequate?
SE Rusk Road/Church East Driveway	150	350	35	390[2]	No
SE Kellogg Creek Drive/Church South Driveway	> 500	215	30	335[2]	No

[1] MPH = miles per hour
[2] Desired minimum sight distance based on Clackamas County Roadway Standards, Section 240 and design speed per Section 250.1.2.c.2

The existing SE Rusk Road church driveway is signed for one-way inbound movement and has sufficient sight distance for one-way ingress only. Egress movements were recorded at the driveway despite the one-way signing. Regardless of the proposed site development, it may be appropriate for

[1] Clackamas County Roadway Standards Section 250.1.2.c.2 defines the design speed of roadways as the existing regulatory speed plus five mph. Per Section 240 Table 2-6, a roadway with a design speed of 30 mph (SE Kellogg Creek Drive) shall have an intersection sight distance of 335 feet for a left-turn from a stop while a roadway with a design speed of 35 mph (SE Rusk Road) shall have an intersection sight distance of 390 feet for a left-turn from a stop. Per Section 240.4, intersection sight distance shall typically be measured from a driver's eye height of 3.5 feet and 14.5 feet from the edge of the nearest travel lane to an object height of 3.5 feet above the roadway surface.

the church to provide additional signage or a physical barrier to prevent vehicles from exiting the church driveway onto SE Rusk Road. Signage could include a "DO NOT ENTER" (R5-1) and/or a "ONE WAY" (R6-1) installed as per the MUTCD (Reference 10).

While the existing church access location onto SE Kellogg Creek Drive does not satisfy County sight distance standards per *Clackamas County Roadway Standards* Section 240.4, it is proposed to be vacated and relocated further west as described later in this report.

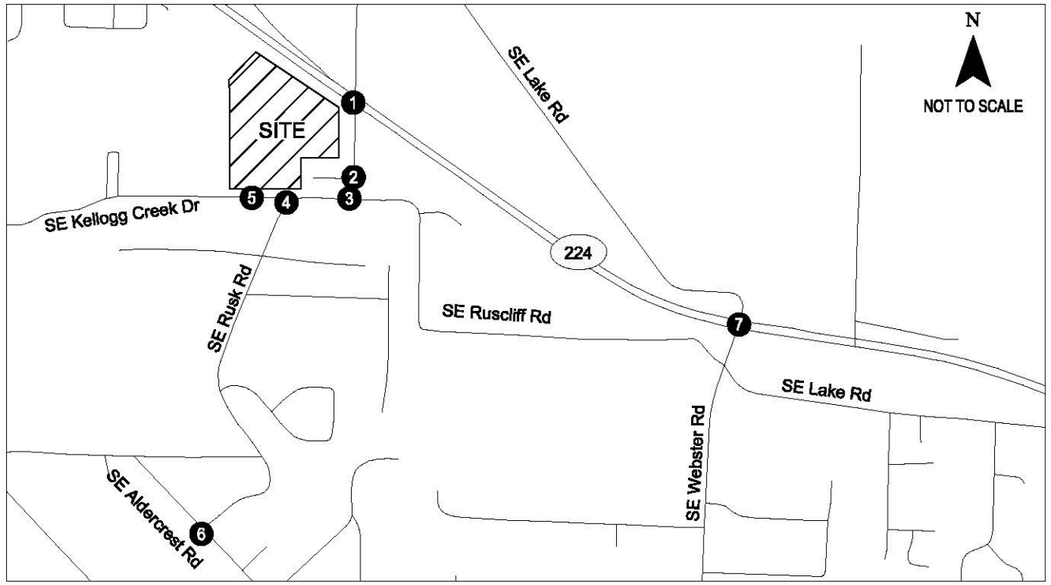
Existing Conditions Operational Analysis

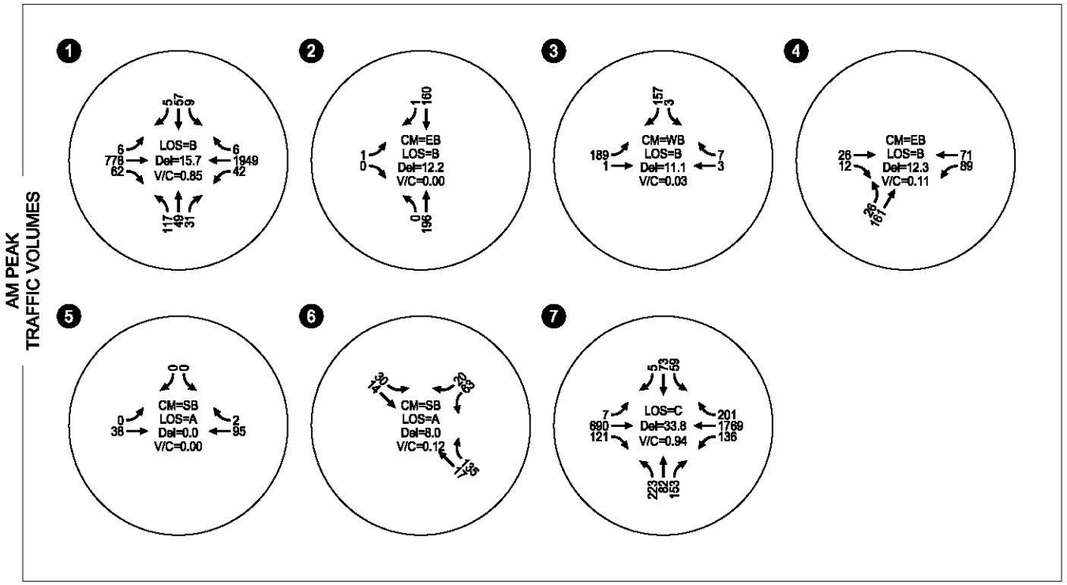
Manual turning movement counts were collected at the study intersections in November 2016. Traffic counts were collected during the weekday morning (7:00 AM to 9:00 AM), midday (11:00 AM to 1:00 PM), and evening (4:00 PM to 6:00 PM) peak periods. ODOT provided traffic signal phasing and timing for the OR-224/SE Rusk Road and OR-224/SE Webster Road intersections.

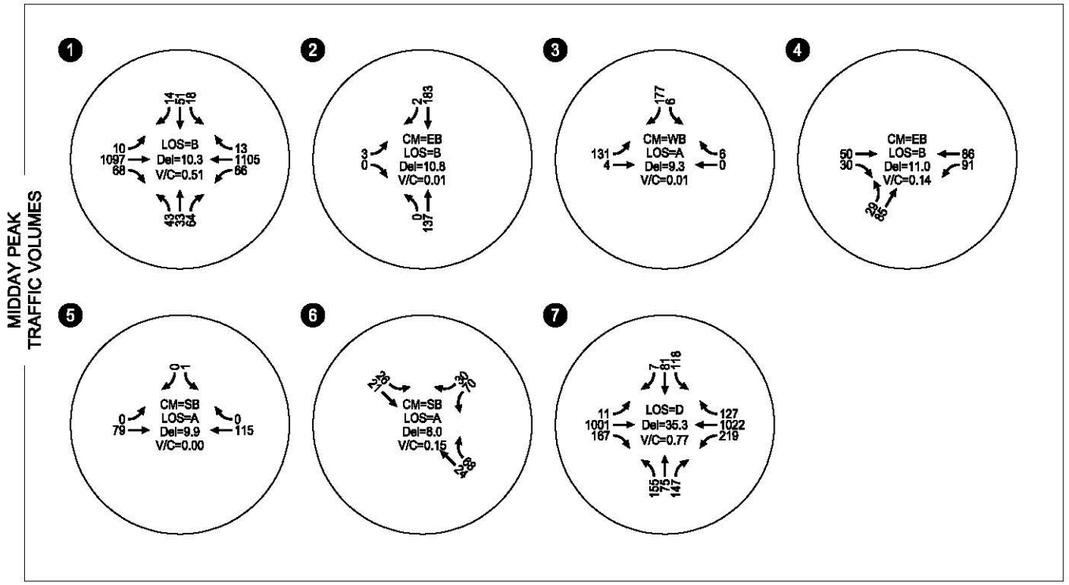
Per the traffic counts collected, weekday morning, midday, and evening operations were evaluated using system-wide peak hours of 7:35 AM to 8:35 AM, 11:55 AM and 12:55 PM, and 4:25 PM to 5:25 PM, respectively. *Attachment C contains the traffic count worksheets.*

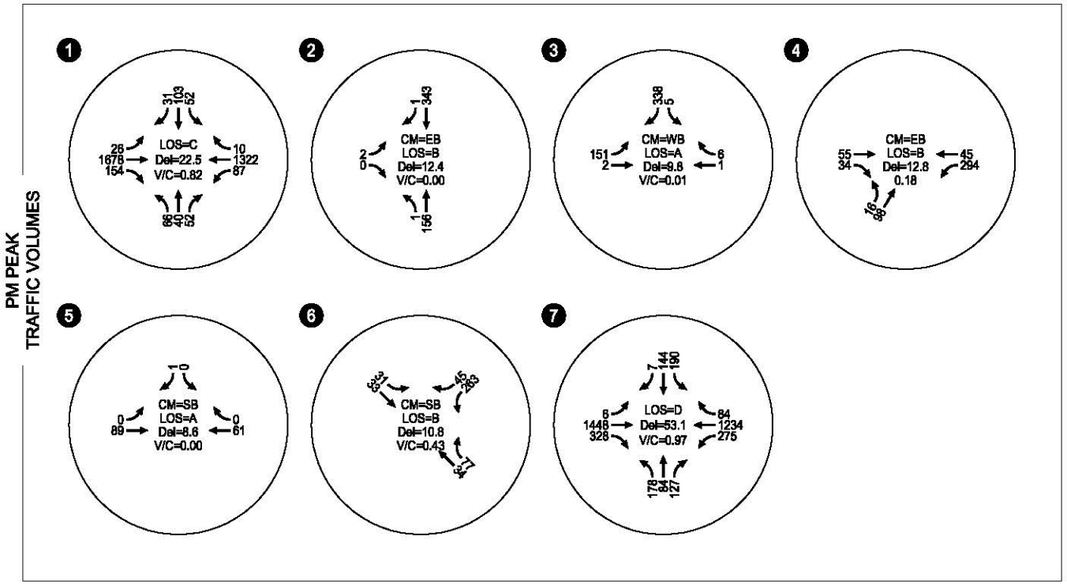
Figure 5 summarizes the existing traffic conditions at the study intersections during the weekday AM, midday, and PM peak hours. As shown in **Figure 5**, all intersections operate within applicable City, County, and ODOT standards during all three peak hours. *Attachment D includes the existing operations analysis worksheets.*

West of the site on SE Kellogg Creek Drive, there is access to North Clackamas Park. The counts conducted in November did not capture peak summer park activity. However, the SE Kellogg Creek Drive/SE Rusk Road intersection operates at LOS "B" during the weekday AM, midday, and PM peak hours. The increased summer park traffic is not expected to degrade peak hour intersection operations below acceptable levels (LOS "D") in part because the typical peak for park users is after the evening (4:00 PM to 6:00 PM) peak for adjacent street traffic.









CM = CRITICAL MOVEMENT (TWSC)
LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED/AWSC) / CRITICAL MOVEMENT LEVEL OF SERVICE (TWSC)
Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED/AWSC) / CRITICAL MOVEMENT CONTROL DELAY (TWSC)
V/C = CRITICAL VOLUME-TO-CAPACITY RATIO
TWSC = TWO-WAY STOP CONTROL
AWSC= ALL-WAY STOP CONTROL

Existing Traffic Conditions
AM, Midday & PM Peak Hours
Milwaukie, Oregon

Figure
5

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TRAFFIC IMPACT ANALYSIS

The traffic impact analysis identifies how the study area's transportation system would operate in the year 2018 upon development of the site. This section of the report includes analysis of 2018 background traffic volumes and operations, an estimate of site-generated trips, and analysis of 2018 total traffic volumes and operations with the proposed development.

2018 Background Operational Analysis

Background traffic volumes include changes in volumes due to added trips from in-process developments in the vicinity of the site as well as general regional growth. Per direction from City of Milwaukie staff, no planned transportation improvements or in-process developments are included in the background traffic analysis and a 0.61 percent compounded annual growth rate[2] was applied to the existing traffic volumes to reflect near-term growth. This results in a background growth rate of 1.22 percent.

Figure 6 illustrates the 2018 background traffic volumes and corresponding operational analysis for the weekday AM, midday, and PM peak hours. As shown, all of the intersections are expected to continue to satisfy applicable City, County, and ODOT standards under background conditions. *Attachment E includes the 2018 background operations analysis worksheets.*

PROPOSED DEVELOPMENT PLAN

The proposed site redevelopment will provide a total of 92 townhomes. The existing access point on SE Kellogg Creek Drive will be vacated and replaced with two new access points farther to the west.

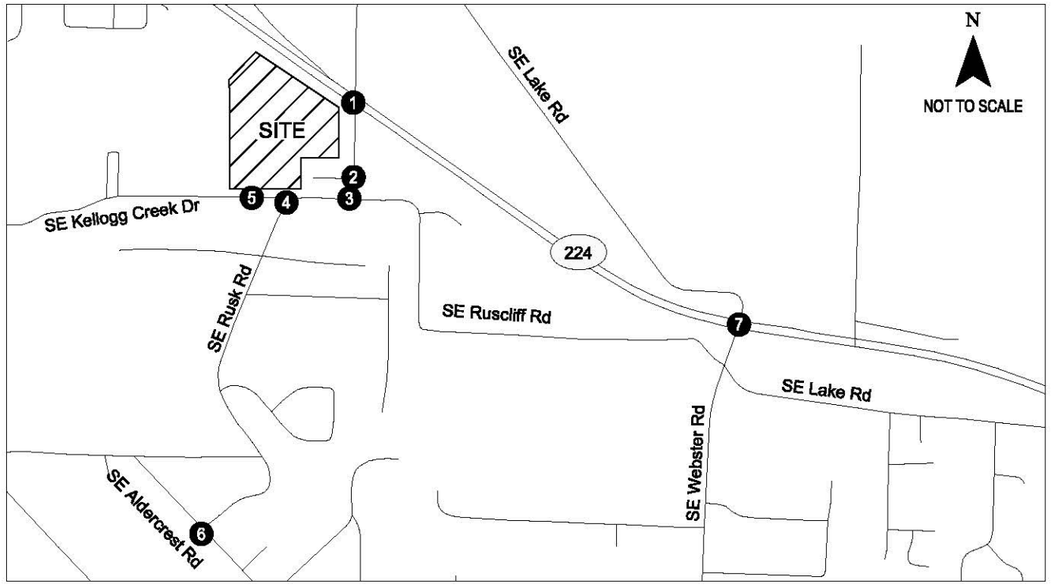
Trip Generation Estimate

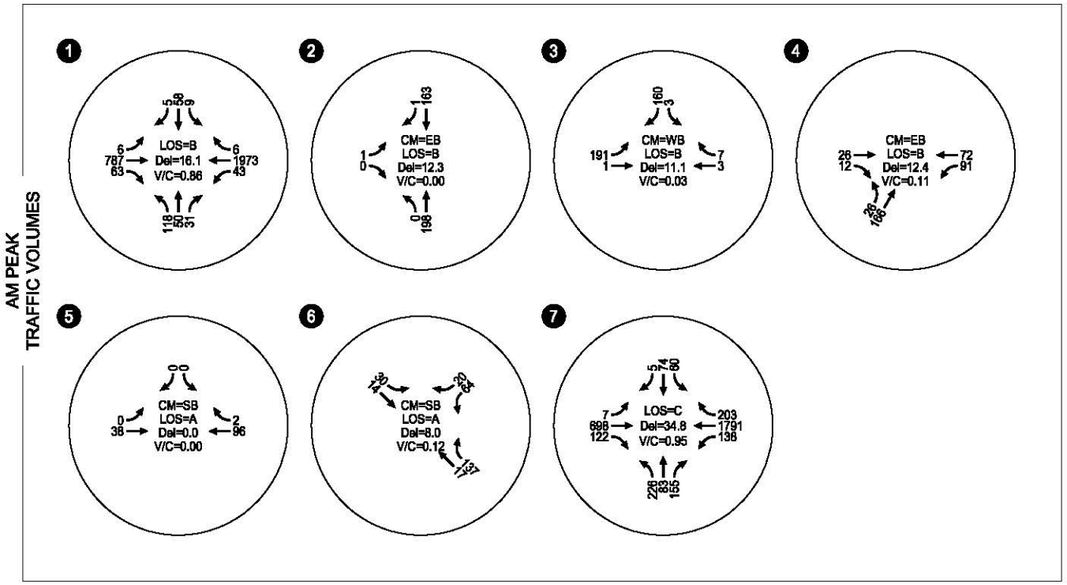
Trip generation estimates associated with the proposed townhomes were developed based on townhome trip rates included in the *Trip Generation Manual*, 9th Edition (Institute of Transportation Engineers, 2012) (Reference 11). **Table 6** summarizes the estimated trip generation for the proposed development. Based on direction from Clackamas County, the weekday PM peak hour trip generation rates were used for the weekday midday peak hour estimates as shown in **Table 6.** Midday trip rate data is not available through the *Trip Generation Manual*.

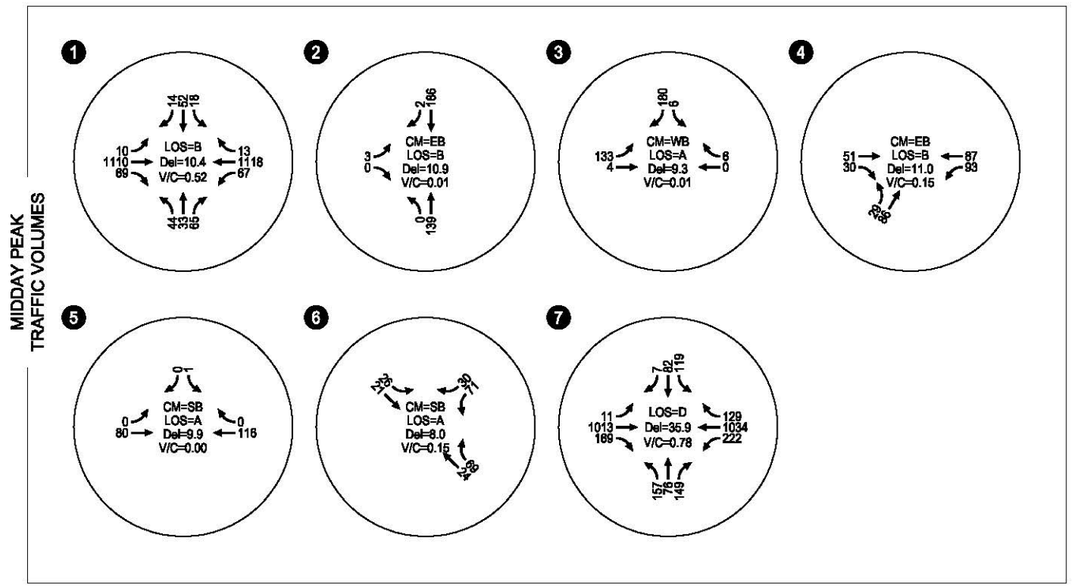
Table 6. Trip Generation with Development

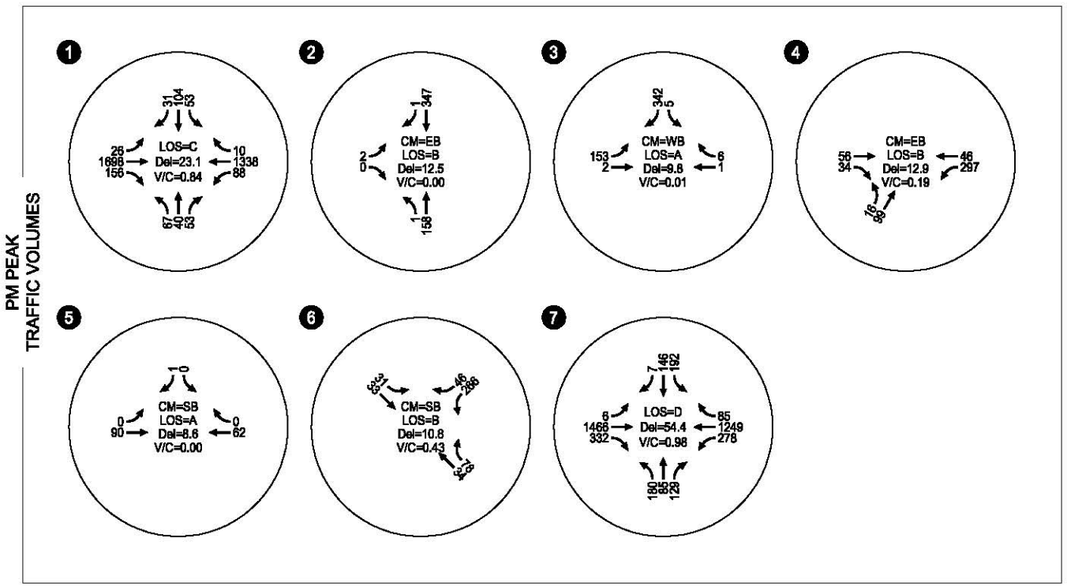
Land Use	ITE Code	Size	Total Daily Trips	Weekday AM Peak Hour			Weekday Midday Peak Hour			Weekday PM Peak Hour		
				Total Trips	In	Out	Total Trips	In	Out	Total Trips	In	Out
Townhome	230	92 units	536	40	7	33	48	32	16	48	32	16

[2] Annual traffic growth rate as described in the City of Milwaukie's *Transportation System Plan*. Chapter 4, page 4-6. November 2013.









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2018 Background Traffic Conditions
AM, Midday & PM Peak Hours
Milwaukie, Oregon

Figure
6

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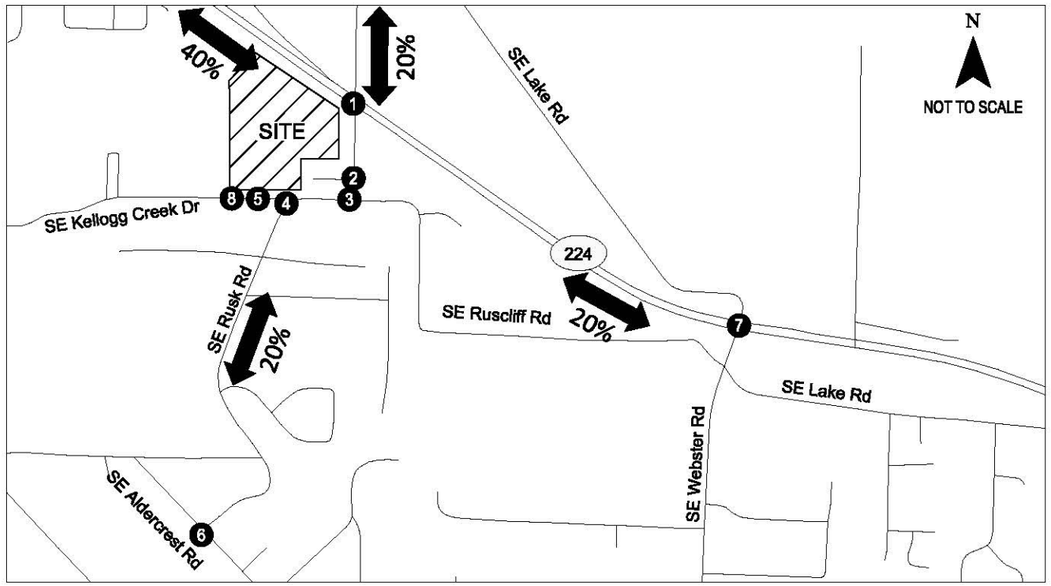
Trip Distribution/Assignment

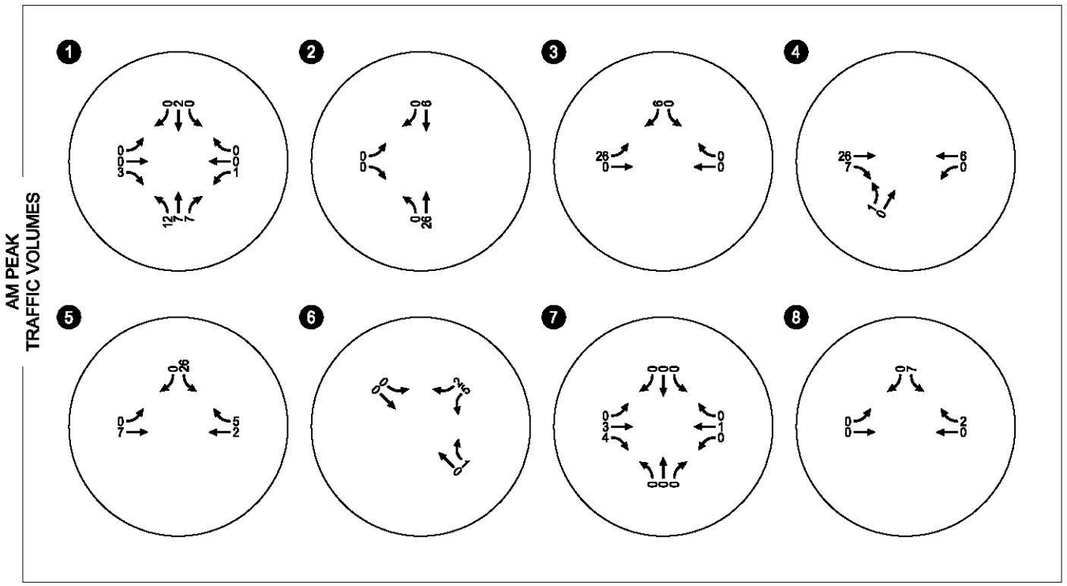
A trip distribution pattern was identified for the site considering existing traffic patterns at the study intersections. The traffic assignment at the intersection of OR-224/SE Rusk Road was determined based on the existing trip distribution shown from the turning movements counts collected for the traffic impact study. Approximately 20 percent of site-generated traffic was assigned to travel south on SE Rusk Road, which is approximately the same percentage of existing trips that turn right onto SE Rusk Road from SE Kellogg Creek Drive. Site-generated traffic was assigned to the study intersections based on the estimated distribution pattern. **Figure 7** shows the proposed trip distribution and the net new site-generated trips at each study intersection for the weekday AM, midday, and PM peak hours.

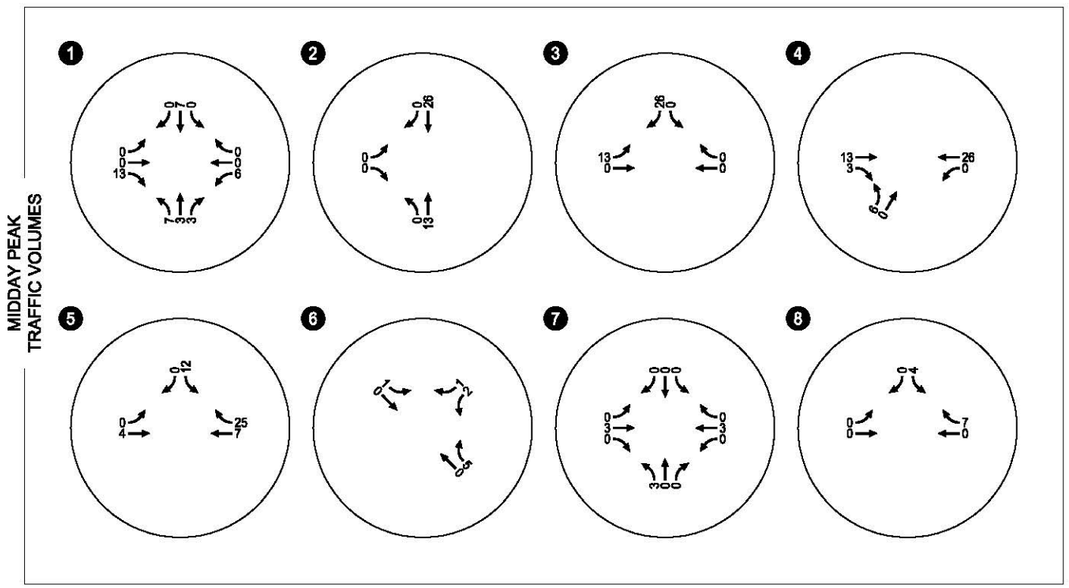
Year 2018 Total Traffic Conditions

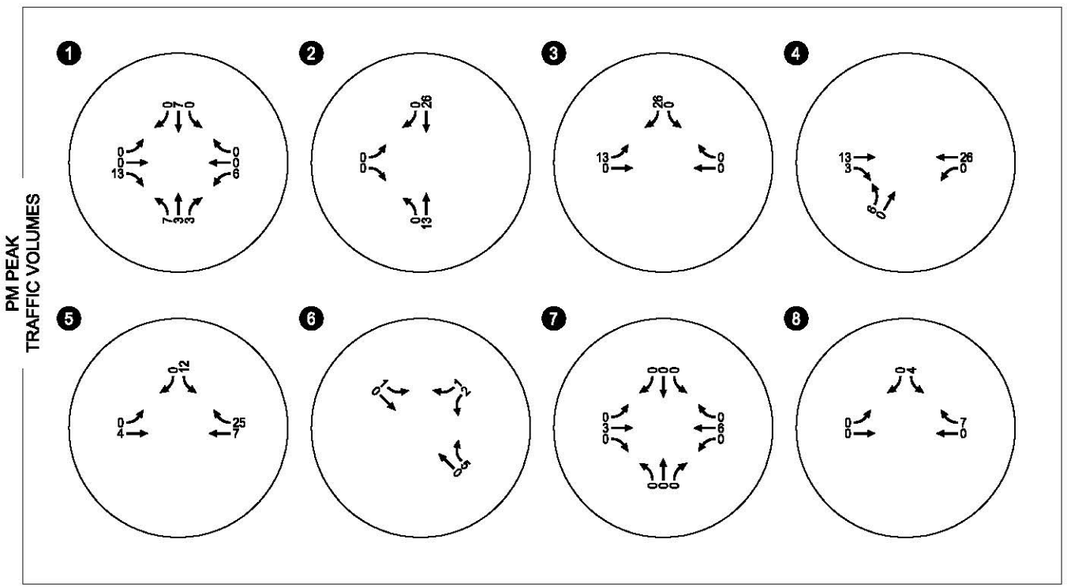
The total traffic conditions analysis forecasts the operation of the study area's transportation system with the inclusion of traffic generated by the proposed site development. Total traffic conditions were determined by adding the estimated site-generated traffic to the year 2018 background volumes for the weekday AM, midday, and PM peak hours. **Figure 8** illustrates the 2018 total traffic conditions and corresponding operational analysis for the weekday AM, midday, and PM peak hours.

As shown, all of the intersections are expected to continue to satisfy applicable City, County, and ODOT standards under background conditions. The intersection of SE Kellogg Creek Drive/SW Rusk Road would operate at LOS "B" during the weekday AM, midday, and PM peak hours, satisfying the operating standard of LOS "D". In addition, the v/c ratio at this location would be well below the Clackamas County operating standard for the weekday midday and PM peak hours. *Attachment F includes the 2018 total traffic operations analysis worksheets.*





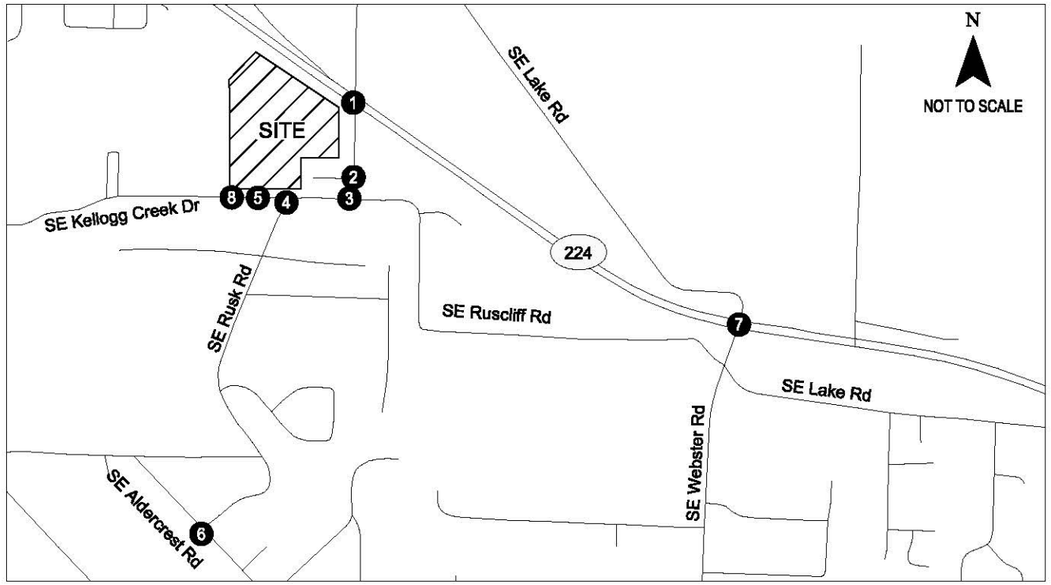




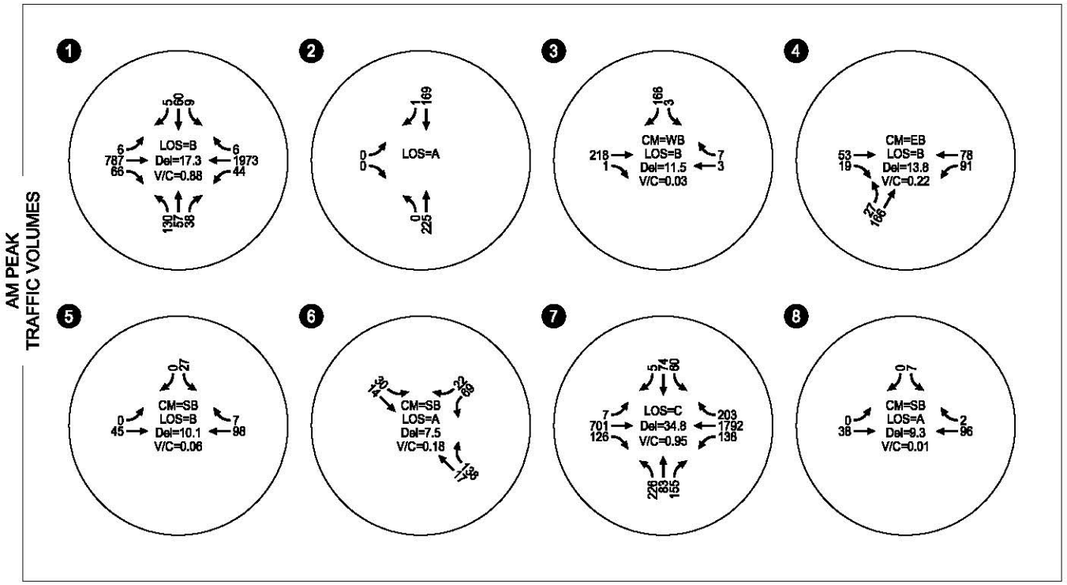
Estimated Trip Distribution Pattern and Site-Generated Trip Assignment
AM, Midday & PM Peak Hours
Milwaukie, Oregon

Figure
7

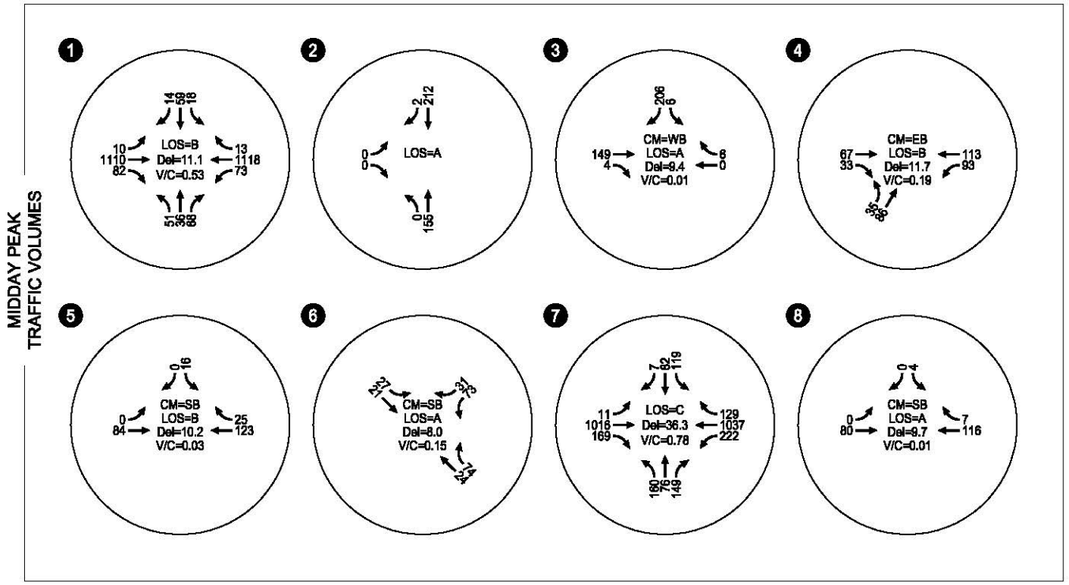
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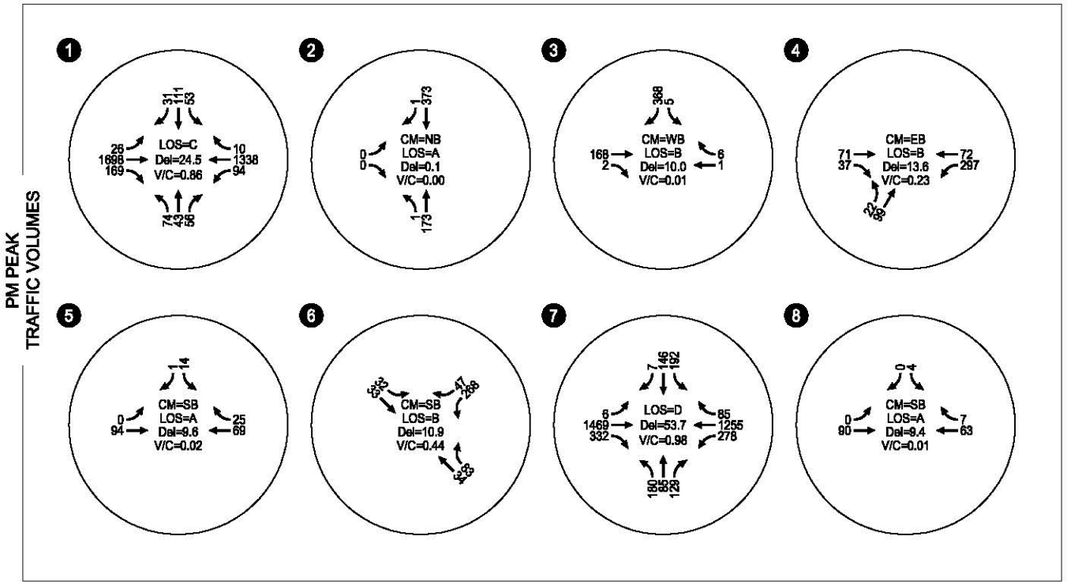
AM PEAK TRAFFIC VOLUMES



MIDDAY PEAK TRAFFIC VOLUMES



PM PEAK TRAFFIC VOLUMES



CM = CRITICAL MOVEMENT (TWSC)
LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED/AWSC) / CRITICAL MOVEMENT LEVEL OF SERVICE (TWSC)
Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED/AWSC) / CRITICAL MOVEMENT CONTROL DELAY (TWSC)
V/C = CRITICAL VOLUME-TO-CAPACITY RATIO
TWSC = TWO-WAY STOP CONTROL
AWSC= ALL-WAY STOP CONTROL

2018 Total Traffic Conditions
AM, Midday & PM Peak Hours
Milwaukie, Oregon

Figure 8

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Year 2018 Queuing Analysis

Per Section 19.704.3 and Section 295.16 of the *City of Milwaukie Municipal Code* (Reference 12) and the *Clackamas County Roadway Design Standards*, respectively, 95th percentile queuing at the study intersections site were assessed during the weekday AM, midday, and PM peak hours. The results of this 95th percentile queue length analysis are included in **Table 7**. As shown in the table, the all but two of the projected 95th percentile queues can be accommodated at the study intersections.

Table 7. Summary of 95th Percentile Queues, 2018 Total Traffic Conditions

Intersection	Movement	Available Queue Storage (feet)	95th Percentile Queue (feet)			Queue Storage Adequate?
			Weekday AM Peak Hour	Weekday Midday Peak Hour	Weekday PM Peak Hour	
OR-224/ SE Rusk Road	EBL	470	25	25	55	Yes
	EBR	110	25	25	80	Yes
	WBL	455	40	95	130	Yes
	WBR	100	0	0	0	Yes
	NBLT	415	265	100	190	Yes
	NBR	50	0	35	35	Yes
	SBLT	745	95	90	205	Yes
	SBR	75	0	0	25	Yes
SE Rusk Road/ SE Ruscliff Road	WBLR	360	25	25	25	Yes
SE Rusk Road/ SE Kellogg Creek Drive	EBLR	> 100	25	25	25	Yes
SE Rusk Road/ East Site Driveway	SBLR	75	25	25	25	Yes
SE Rusk Road/ West Site Driveway	SBLR	75	25	25	25	Yes
SE Rusk Road/ SE Aldercrest Road	EBLT	Continuous	-	-	-	Yes
	WBTR	Continuous	-	-	-	Yes
	SBLR	Continuous	-	-	-	Yes
OR-224/ SE Webster Road	EBL	500	25	25	25	Yes
	EBR	360	25	115	130	Yes
	WBL	295	175	220	410	No
	WBR	150	70	35	25	Yes
	NBL	155	360	215	290	No
	SBL	330	105	150	315	Yes

Where: EB = eastbound, WB = westbound, NB = northbound, SB = southbound, L = left-turn, T= through, R = right-turn

As shown in **Table 7**, all 95th percentile queues during year 2018 total traffic conditions would be accommodated by the available storage with the exception of the westbound left-turn lane on OR-224 at SE Webster Road during the weekday PM peak hour and the northbound left-turn lane on OR-224 at SE Webster Road during all three weekday peak hours.

The westbound left-turn on OR-224 at SE Webster Road currently exceeds the available storage during existing weekday PM peak hour conditions as well as year 2018 background conditions. The

westbound left-turn 95th percentile queue during the weekday PM peak hour year 2018 background conditions is estimated at approximately 410 feet long. The proposed development would not add any additional vehicles to the westbound left-turn movement during the weekday PM peak hour under year 2018 total traffic conditions and the 95th percentile queue length would not be expected to increase as a function of site development.

The northbound left-turn on OR-224 at SE Webster Road currently exceeds the available storage during all three existing peak hour conditions and extends south of the signalized intersection of SE Webster Road/SE Lake Road. The reported available storage (155 feet) was measured as the distance between the OR-224/SE Webster Road intersection and SE Webster Road/SE Lake Road, the intersection to the south. The 95th percentile queue would continue to exceed the available storage during all three peak hour year 2018 background conditions. The proposed development would add three additional vehicles to the northbound left-turn movement under year 2018 total traffic conditions during the weekday midday peak hour and the 95th percentile queue length would be expected to increase by less than a vehicle length as a function of site development.

Intersection Sight Distance

Section 240 of the *Clackamas County Roadway Design Standards* (Reference 9) establishes the intersection sight distance requirements associated with the proposed driveways along SE Kellogg Creek Drive. Per Table 2-6 of Section 240 of the *Clackamas County Roadway Design Standards,* an intersection sight distance of 335 feet shall be provided for a left turn from a stop on a road with a 30 mile per hour design speed (posted 25 mph speed).

Intersection sight distance was observed at the proposed west site driveway on SE Kellogg Creek Drive and was found to be in excess of 400 feet in both directions, which would satisfy the County standard. Intersection sight distance was observed at the proposed east site driveway on SE Kellogg Creek Drive and was found to be at least 400 feet to the west and at least 400 feet to the east for vehicles traveling west on SE Rusk Road. However, sight distance for a southbound left-turn at the driveway would be approximately 300 feet facing east towards a vehicle northbound on SE Rusk Road turning left onto SE Kellogg Creek Drive. The northbound left-turn vehicles on SE Rusk Road are required to yield to southbound vehicles on SE Rusk Road. Based on a field review of traffic and vehicular speeds entering SE Kellogg Creek Drive from SE Rusk Road, 300 feet is sufficient intersection sight distance for the southbound left-turn at the driveway because vehicles negotiating a left turn onto SE Kellogg Creek Drive would be operating at less than 20 miles per hour. The 25-foot radius of the curve corresponds to a design speed of approximately 11 miles per hour (NCHRP Report 6-72, Reference 15). Furthermore, the required minimum stopping sight distance for a northbound left-turn vehicle traveling at 20 miles per hour is 115 feet per Table 2-10 of Section 240 of the *Clackamas County Roadway Design Standards,* which will be satisfied.

Analysis of Access Standards

Per Section 12.16.040 of the *City of Milwaukie Municipal Code* (Reference 12) driveway access to the nearest intersecting street face shall be a minimum of 45 feet. The nearest proposed driveway on SE

Kellogg Creek Drive is located approximately 275 feet from SE Rusk Road, which satisfies the City standard.

Evaluation of Compliance with Metro RTFP Requirements

Metro's *Regional Transportation Functional Plan* (RTFP) (Reference 13) describes the requirements for developable lots and parcels of five or more acres in Sections 3.08.110.D and 3.08.110.E. In regards to Subsection D, the proposed development identifies a logical and direct connection to the public street system at SE Kellogg Creek Drive. In regards to Subsection E, the proposed development will be providing street connections that are no more than 530 feet between connections, and a cul-de-sac design that is limited to connect to the existing street system because of an existing barrier (OR-224), is less than 200 feet in length, and contains fewer than 25 dwellings.

TRANSPORTATION PLANNING RULE (TPR) COMPLIANCE

The TPR implements Statewide Planning Goal 12, "Transportation." OAR Section 660-012-0060(1) and (2) apply to zoning map changes. OAR 660-012-0060(9) exempts zoning map amendments in cities with acknowledge transportation system plans ("TSPs") that implement the plan map designations. This section addresses both requirements.

OAR 660-012-0060(1) and (2) established a two-step process for evaluating an amendment's impacts on roadway facilities. The first step in assessing an amendment's potential transportation impact is to compare the trip generation potential of the site assuming a "reasonable worst-case" development scenario under the existing and proposed zoning. If the trip generation potential increases under the proposed zoning, additional operational analysis is required to assess whether the rezone will "significantly affect" the transportation system. Conversely, if the trip generation under the proposed zoning is equal to or less than that under the existing zoning, no additional operational analysis is necessary to conclude that the proposal does not "significantly affect" the transportation system.

Zoning Map Amendment

Under the City of Milwaukie's current zoning code, the existing site is allowed to develop 96 units of townhome housing. The Applicant proposes to develop 92 units using a Planned Development (PD) process that increases the site density but retains the existing Comprehensive Plan designation. Therefore, further operations assessment under TPR is not necessary.

FINDINGS AND RECOMMENDATIONS

Based on the results of the traffic impact analysis, the proposed development can be constructed while maintaining acceptable operations at the study intersections. The analysis developed the following findings and recommendations.

Findings

- All study intersections are forecast to operate within the applicable review agency operational standards under existing and site opening year 2018 scenarios studied during the weekday AM, midday, and PM peak hours.
- Historical crash data for the study area intersections indicate no patterns or trends that require mitigation associated with this project.
- Projected 95th percentile queues can be accommodated within the existing storage areas at the study intersections, with the exception of the intersection of OR-224/SE Webster Road, where existing and background weekday peak hour 95th percentile queues exceed the available storage for the westbound left-turn (weekday PM peak hour) and the northbound left-turn (weekday AM, midday, and PM peak hours).
- Landscaping, signage, and utilities should be located and maintained to ensure adequate intersection sight lines are available.
- The proposed zoning map amendment with site development does not result in a net increase in the overall trip generation potential of the site on a daily or weekday peak hour basis above what is allowed by the City of Milwaukie's Comprehensive Plan.
- The proposed zoning map amendment will not require changes to the functional classification of existing or planned transportation facilities, will not require a change to the standards implementing the comprehensive plan, and will not significantly affect a transportation facility. Accordingly, because the proposed zoning map amendment does not increase the density of the site above what is allowed by the City of Milwaukie's Comprehensive Plan or result in a significant effect on the transportation system, no review of mitigation for Transportation Planning Rule (TPR) purposes is necessary.

Recommendations

- Regardless of the proposed development, "DO NOT ENTER" and/or "ONE WAY" signs should be installed per the MUTCD at the SE Rusk Road/Church driveway to restrict vehicles from exiting the church driveway onto SE Rusk Road. In addition, the driveway should be modified so that only one-way ingress is allowed.

Recommended transportation improvements to mitigate the direct impacts of the site development include the following:

- Standard half-street improvements should be constructed along the site frontage on SE Kellogg Creek Drive, and standard full-street improvements along new on-site roadways.
- Intersection sight distance should be provided at the proposed new site accesses per applicable City of Milwaukie, and Clackamas County design requirements. Landscaping, above ground utilities, and signing should be located and maintained in a manner that preserves adequate intersection sight distance.

Please contact us if you need any additional information regarding our analyses.

REFERENCES

1. Transportation Research Board. *2000 Highway Capacity Manual*. 2000.
2. *City of Milwaukie Transportation System Plan*. November 2013.
3. *Clackamas County Comprehensive Plan*. Amended March 1, 2014.
4. Oregon Department of Transportation. *1999 Oregon Highway Plan.* Amended May 2015.
5. TriMet. "Bus Services." Accessed on-line at www.trimet.org. November 2016.
6. Safe Walk Paths to School. North Clackamas School District. Last modified November 2015. Accessed November 2016.
7. Oregon Department of Transportation Research Section. *SPR 667 Assessment of Statewide Intersection Safety Performance*. June 2011.
8. American Association of State Highway and Transportation Officials. *Highway Safety Manual*. 2010.
9. *Clackamas County Roadway Design Standards*. February, 2013
10. *Manual on Uniform Traffic Control Devices*. USDOT, Federal Highway Administration. 2009, Revision 2, May 2012.
11. Institute of Transportation Engineers. *Trip Generation, 9th Edition.* 2012.
12. *City of Milwaukie Municipal Code*. Last modified in 2009. Accessed November 2016.
13. *Regional Transportation Functional Plan*. Metro. September 2012. Accessed December 2016.

14. Metro Exhibit A to Ordinance No 14-1340, *Technical Appendix for the Regional Transportation Plan,* Adopted July 17, 2014, Appendix 1.1 – 2014 RTP Project List

15. Transportation Research Board of the National Academies. *National Cooperative Highway Research Program (NCHRP) Report 672 Roundabouts: An Informational Guide*. Exhibit 6-52, Speed-Radius Relationship. Page 6-57.

ATTACHMENTS

Attachment A – Description of Level-of-Service and Volume-to-Capacity Methods and Criteria

Attachment B – Crash Data

Attachment C – Traffic Count Data

Attachment D – Existing Traffic Level-of-Service Worksheets

Attachment E – 2018 Background Traffic Level-of-Service Worksheets

Attachment F – 2018 Total Traffic Level-of-Service Worksheets



Attachment A - Description of Level-of-Service and Volume-to-Capacity Methods and Criteria

RS495

Attachment A Level-of-Service and Volume-to-Capacity Concepts

LEVEL-OF-SERVICE CONCEPT

Level of service (LOS) is a concept developed to quantify the degree of comfort (including such elements as travel time, number of stops, total amount of stopped delay, and impediments caused by other vehicles) afforded to drivers as they travel through an intersection or roadway segment. Six grades are used to denote the various level of service from "A" to "F."[3]

Signalized Intersections

The six level-of-service grades are described qualitatively for signalized intersections in Table A1. Additionally, Table A2 identifies the relationship between level of service and average control delay per vehicle. Control delay is defined to include initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. Using this definition, Level of Service "D" is generally considered to represent the minimum acceptable design standard.

Table A1 Level-of-Service Definitions (Signalized Intersections)

Level of Service	Average Delay per Vehicle
A	Very low average control delay, less than 10 seconds per vehicle. This occurs when progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
B	Average control delay is greater than 10 seconds per vehicle and less than or equal to 20 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. More vehicles stop than for a level of service A, causing higher levels of average delay.
C	Average control delay is greater than 20 seconds per vehicle and less than or equal to 35 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
D	Average control delay is greater than 35 seconds per vehicle and less than or equal to 55 seconds per vehicle. The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle length, or high volume/capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	Average control delay is greater than 55 seconds per vehicle and less than or equal to 80 seconds per vehicle. This is usually considered to be the limit of acceptable delay. These high delay values generally (but not always) indicate poor progression, long cycle lengths, and high volume/capacity ratios. Individual cycle failures are frequent occurrences.
F	Average control delay is in excess of 80 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with oversaturation. It may also occur at high volume/capacity ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also contribute to such high delay values.

[3]Most of the material in this appendix is adapted from the Transportation Research Board, *Highway Capacity Manual*, 2000.

Table A2 Level-of-Service Criteria for Signalized Intersections

Level of Service	Average Control Delay per Vehicle (Seconds)
A	<10.0
B	>10 and ≤20
C	>20 and ≤35
D	>35 and ≤55
E	>55 and ≤80
F	>80

Unsignalized Intersections

Unsignalized intersections include two-way stop-controlled (TWSC) and all-way stop-controlled (AWSC) intersections. The *2000 Highway Capacity Manual* (HCM) provides models for estimating control delay at both TWSC and AWSC intersections. A qualitative description of the various service levels associated with an unsignalized intersection is presented in Table A3. A quantitative definition of level of service for unsignalized intersections is presented in Table A4. Using this definition, Level of Service "E" is generally considered to represent the minimum acceptable design standard.

Table A3 Level-of-Service Definitions (Unsignalized Intersections)

Level of Service	Average Delay per Vehicle to Minor Street
A	• Nearly all drivers find freedom of operation. • Very seldom is there more than one vehicle in queue.
B	• Some drivers begin to consider the delay an inconvenience. • Occasionally there is more than one vehicle in queue.
C	• Many times, there is more than one vehicle in queue. • Most drivers feel restricted, but not objectionably so.
D	• Often there is more than one vehicle in queue. • Drivers feel quite restricted.
E	• Represents a condition in which the demand is near or equal to the probable maximum number of vehicles that can be accommodated by the movement. • There is almost always more than one vehicle in queue. • Drivers find the delays approaching intolerable levels.
F	• Forced flow. • Represents an intersection failure condition that is caused by geometric and/or operational constraints external to the intersection.

Table A4 Level-of-Service Criteria for Unsignalized Intersections

Level of Service	Average Control Delay per Vehicle (Seconds)
A	<10.0
B	>10.0 and ≤ 15.0
C	>15.0 and ≤ 25.0
D	>25.0 and ≤ 35.0
E	>35.0 and ≤ 50.0
F	>50.0

It should be noted that the level-of-service criteria for unsignalized intersections are somewhat different than the criteria used for signalized intersections. The primary reason for this difference is that drivers expect different levels of performance from different kinds of transportation facilities. The expectation is that a signalized intersection is designed to carry higher traffic volumes than an unsignalized intersection. Additionally, there are a number of driver behavior considerations that combine to make delays at signalized intersections less galling than at unsignalized intersections. For example, drivers at signalized intersections are able to relax during the red interval, while drivers on the minor street approaches to TWSC intersections must remain attentive to the task of identifying acceptable gaps and vehicle conflicts. Also, there is often much more variability in the amount of delay experienced by individual drivers at unsignalized intersections than signalized intersections. For these reasons, it is considered that the control delay threshold for any given level of service is less for an unsignalized intersection than for a signalized intersection. While overall intersection level of service is calculated for AWSC intersections, level of service is only calculated for the minor approaches and the major street left turn movements at TWSC intersections. No delay is assumed to the major street through movements. For TWSC intersections, the overall intersection level of service remains undefined: level of service is only calculated for each minor street lane.

In the performance evaluation of TWSC intersections, it is important to consider other measures of effectiveness (MOEs) in addition to delay, such as v/c ratios for individual movements, average queue lengths, and 95^{th}–percentile queue lengths. By focusing on a single MOE for the worst movement only, such as delay for the minor-street left turn, users may make inappropriate traffic control decisions. The potential for making such inappropriate decisions is likely to be particularly pronounced when the HCM level-of-service thresholds are adopted as legal standards, as is the case in many public agencies.

Attachment B - Crash Data

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CRASH SUMMARIES BY YEAR BY COLLISION TYPE

OR 224 Clackamas Highway (171) & Rusk Road

January 1, 2010 through December 31, 2014

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2014														
ANGLE	0	0	1	1	0	0	0	0	1	1	0	1	0	0
REAR-END	0	2	0	2	0	2	0	1	1	2	0	2	0	0
2014 TOTAL	0	2	1	3	0	2	0	1	2	3	0	3	0	0
YEAR: 2011														
REAR-END	0	2	0	2	0	2	0	1	1	2	0	2	0	0
TURNING MOVEMENTS	0	2	0	2	0	2	0	0	2	0	2	2	0	0
2011 TOTAL	0	4	0	4	0	4	0	1	3	2	2	4	0	0
YEAR: 2010														
REAR-END	0	0	1	1	0	0	0	1	0	1	0	1	0	0
2010 TOTAL	0	0	1	1	0	0	0	1	0	1	0	1	0	0
FINAL TOTAL	0	6	2	8	0	6	0	3	5	6	2	8	0	0

Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

171 CLACKAMAS

OR 224 Clackamas Highway (171) & Rusk Road
January 1, 2010 through December 31, 2014

SER# / INVEST / UNLOC?	SPEED	ALCOHOL	DRUGS	SCHL BUS	WORK ZONE	DATE / DAY / TIME	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC / CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
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																02	NONE 0	STOP										
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																	PSNGR CAR		01	DRVR	INJC	33	M	OR-Y		000	000	00
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CITY						Wed 4P		MN 0		SE		TRF SIGNAL	N	DRY	REAR		PRVTE	NW SE									000	00
							PORTLAND UA	2.72		05	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	62	F	OR-Y		043,026	000	07,10
No	*45 25 40.02*	*-122 36 4.56*						017100100S00																OR<25				
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																	PSNGR CAR		01	DRVR	INJC	53	F	OR-Y		000	000	00
																								OR<25				
04018	Y	N	N	N	N	10/28/2011	CLACKAMAS	1 12		INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT										01,07
CITY						Fri 3P		MN 0		NW		TRF SIGNAL	N	WET	REAR		PRVTE	NW SE									000	00
							PORTLAND UA	2.72		06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	59	M	OR-Y		026,047	000	01,07
No	*45 25 40.02*	*-122 36 4.56*						017100100S00																OR<25				
																02	NONE 0	STOP										
																	PRVTE	NW SE									011	00
																	PSNGR CAR		01	DRVR	INJC	37	M	OR-Y		000	000	00
																								OR<25				
04317	N	N	N			11/14/2011	CLACKAMAS	1 12		INTER	CROSS	N	N	CLD	O-1 L-TURN	01	NONE 0	TURN-L										04
CITY						Mon 6P		MN 0		CN		TRF SIGNAL	N	WET	TURN		PRVTE	S W									000	00
							PORTLAND UA	2.72		01	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	85	M	OR-Y		020,004	000	04
No	*45 25 40.02*	*-122 36 4.56*						017100100S00																OR<25				
																02	NONE 0	STRGHT										
																	PRVTE	N S									000	00
																	PSNGR CAR		01	DRVR	INJC	28	F	OR-Y		000	000	00
																								OR<25				

171 CLACKAMAS

OR 224 Clackamas Highway (171) & Rusk Road
January 1, 2010 through December 31, 2014

SER# / INVEST / UNLOC?	SPEED	ALCHL	DRUGS	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES) / CROSS	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
00765	N	N	N	N	N	02/21/2014	CLACKAMAS	1	12	INTER	CROSS	N	N	CLD	ANGL-OTH	01	NONE	0	STRGHT									04
CITY						Fri 7A		MN	0	CN		TRF SIGNAL	N	WET	ANGL		PRVTE	S N									000	00
							PORTLAND UA	2.72		02	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	53	F	OR-Y		000	000	00
No	*45*	*25*	*40.02*	*-122*	*36*	*4.56*		017100100S00																OR<25				
																02	NONE	0	STRGHT									
																	PRVTE		E W								000	00
																	PSNGR CAR			01	DRVR	NONE	27	M	OTH-Y		020	000	04
																									N-RES				

CLACKAMAS COUNTY

OR 224 Clackamas Highway (171) & Rusk Road

January 1, 2010 through December 31, 2014

SER# / INVEST / UNLOC?	SPEED	ALC	DRUGS	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	MILEPNT / DIST FROM / INTERSECT	COUNTY ROADS FIRST STREET / SECOND STREET / INTERSECTION SEQ #	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFF-RD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
01538	N	N	N			4/22/2014	0.56	SE RUSK RD	INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT											07
NONE						Tue 11A			S		UNKNOWN	N	WET	REAR		PRVTE	S N										000	00
No						*45 25 40.02 -122 36 4.56*			06	2		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	69	M	OR-Y		026	000		07
																								OR<25				
															02	NONE 0	STOP											
																PRVTE	S N										011	00
																PSNGR CAR		01	DRVR	INJC	56	M	OR-Y		000	000		00
																								OR<25				
01893	N	N	N			5/16/2014	0.56	SE RUSK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29,27
NONE						Fri 5P			S		TRF SIGNAL	N	DRY	REAR		PRVTE	S N										000	00
No						*45 25 40.02 -122 36 4.56*			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	54	M	OR-Y		016,026	038		29,27
																								OR<25				
															02	NONE 0	STOP											
																PRVTE	S N										011	00
																PSNGR CAR		01	DRVR	INJC	60	M	OR-Y		000	000		00
																								OR<25				

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

OR 224 Clackamas Highway (171) & SE Webster Rd / SE Lake Rd
January 1, 2012 through December 31, 2014

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2014														
ANGLE	0	1	0	1	0	1	0	0	1	1	0	1	0	0
REAR-END	0	4	1	5	0	4	1	4	1	5	0	5	0	0
SIDESWIPE - OVERTAKING	0	1	3	4	0	1	3	4	0	1	3	4	0	0
TURNING MOVEMENTS	0	1	1	2	0	1	0	2	0	2	0	2	0	0
2014 TOTAL	0	7	5	12	0	7	4	10	2	9	3	12	0	0
YEAR: 2013														
REAR-END	0	2	0	2	0	2	0	2	0	2	0	2	0	0
SIDESWIPE - OVERTAKING	0	0	2	2	0	0	0	2	0	0	2	2	0	0
TURNING MOVEMENTS	0	1	3	4	0	1	0	1	3	2	1	4	0	0
2013 TOTAL	0	3	5	8	0	3	0	5	3	4	3	8	0	0
YEAR: 2012														
ANGLE	0	1	1	2	0	2	0	2	0	2	0	2	0	0
REAR-END	0	1	0	1	0	1	0	1	0	0	1	1	0	0
TURNING MOVEMENTS	0	4	1	5	0	4	0	2	3	2	3	5	0	0
2012 TOTAL	0	6	2	8	0	7	0	5	3	4	4	8	0	0
FINAL TOTAL	0	16	12	28	0	17	4	20	8	17	10	28	0	0

Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

171 CLACKAMAS OR 224 Clackamas Highway (171) & SE Webster Rd / SE Lake Rd
January 1, 2012 through December 31, 2014

SER# / INVEST / UNLOC?	SPEED	ALCHL	DRUGS	WORK ZONE	DATE / DAY/TIME	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC / CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF-CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
01293	N	N	N		04/03/2014	CLACKAMAS	1 12		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 1	TURN-L						OTH-Y				10
NONE					Thu 2P		MN 0		N		TRF SIGNAL	N	DRY	SS-O		PRVTE	N E						N-RES			000	00
						PORTLAND UA	3.20		06	0		N	DAY	PDO		SEMI TOW		01	DRVR	NONE	00	M			080	000	10
No	*45 25 27.78*	*-122 35 33.50*					017100100S00																				
															02	NONE 0	STOP										
																PRVTE	N S									011	00
																PSNGR CAR		01	DRVR	NONE	52	M	OTH-Y		000	000	00
																							N-RES				
02270	N	N	N	N	06/24/2012	CLACKAMAS	1 12		INTER	CROSS	N	N	CLD	ANGL-STP	01	NONE 0	TURN-R										08
STATE					Sun 5P		MN 0		E		TRF SIGNAL	N	DRY	TURN		PRVTE	S E									000	00
						PORTLAND UA	3.20		06	0		N	DAY	INJ		MTRCYCLE		01	DRVR	INJB	50	F	OR-Y		001	000	08
No	*45 25 27.78*	*-122 35 33.50*					017100100S00																OR<25				
															02	NONE 0	STOP										
																PRVTE	E W									012	00
																PSNGR CAR		01	DRVR	NONE	39	M	OR-Y		000	000	00
																							OR<25				
															03	NONE 0	STOP										
																PRVTE	E W									022	00
																PSNGR CAR		01	DRVR	NONE	52	M	OR-Y		000	000	00
																							OR<25				
03526	N	N	N	N	09/22/2012	CLACKAMAS	1 12		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										07,32
STATE					Sat 11P		MN 0		E		TRF SIGNAL	N	DRY	REAR		PRVTE	E W									000	00
						PORTLAND UA	3.20		06	0		N	DARK	INJ		PSNGR CAR		01	DRVR	INJC	48	M	OR-Y		026,052	000	07,32
No	*45 25 27.78*	*-122 35 33.50*					017100100S00																OR<25				
															02	NONE 0	STOP										
																PRVTE	E W									011	00
																PSNGR CAR		01	DRVR	NONE	23	F	OR-Y		000	000	00
																							OR<25				
																		02	PSNG	NO<5	01	F			000	000	00
00977	N	N	N	N	03/10/2014	CLACKAMAS	1 12		INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT										32,07,04
STATE					Mon 2P		MN 0		E		TRF SIGNAL	N	WET	REAR		PRVTE	E W									000	00
						PORTLAND UA	3.20		06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	22	F	OR-Y		052,026,020	000	32,07,04
No	*45 25 27.78*	*-122 35 33.50*					017100100S00																OR<25				
															02	NONE 0	STOP										
																PRVTE	E W									011	00
																PSNGR CAR		01	DRVR	NONE	34	F	OR-Y		000	000	00
																							OR<25				
04034	Y	N	N	Y	10/27/2012	CLACKAMAS	1 12		INTER	CROSS	N	N	RAIN	ANGL-STP	01	NONE 0	TURN-R										01,08
COUNTY					Sat 5P		MN 0		S		TRF SIGNAL	N	WET	TURN		PRVTE	W S									000	00
						PORTLAND UA	3.20		06	0		N	DUSK	INJ		PSNGR CAR		01	DRVR	NONE	23	M	OR-Y		047,001	000	01,08
No	*45 25 27.78*	*-122 35 33.50*					017100100S00																OR<25				

171 CLACKAMAS — OR 224 Clackamas Highway (171) & SE Webster Rd / SE Lake Rd
January 1, 2012 through December 31, 2014

SER# / INVEST / UNLOC?	SPEED	ALCHL	DRUGS	SCHL ZN	WORK ZN	DATE / DAY/TIME / LAT/LONG	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC / CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
																02	NONE 0 PRVTE	STOP S N									012		00
																	PSNGR CAR		01	DRVR	INJC	36	M	OR-Y OR<25		000	000		00
01541 NONE	Y	N	N			04/26/2012 Thu 1P	CLACKAMAS PORTLAND UA	1 12 MN 0 3.20		INTER SW 06	CROSS TRF SIGNAL 0	N N N	N N N	CLR DRY DAY	ANGL-STP TURN INJ	01	NONE 0 PRVTE PSNGR CAR	TURN-R E N	01	DRVR	NONE	48	M	OR-Y OR<25		047,001	000 017		01,08 00 01,08
No	*45 25 27.78*					*-122 35 33.50*		017100100S00																					
																02	NONE 0 PRVTE	STOP N S									012		00
																	PSNGR CAR		01	DRVR	INJC	34	M	OR-Y OR<25		000	000		00
																			02	PSNG	NO<5	04	M			000	000		00
01194 NONE	N	N	N			03/27/2014 Thu 7P	CLACKAMAS PORTLAND UA	1 12 MN 0 3.20		INTER W 06	CROSS TRF SIGNAL 0	N N N	N N N	CLR DRY DUSK	S-1STOP SS-O INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT W E	01	DRVR	NONE	29	F	OR-Y OR<25		045	000 000		13 00 13
No	*45 25 27.78*					*-122 35 33.50*		017100100S00																					
																02	NONE 0 PRVTE	STOP W E									011		00
																	PSNGR CAR		01	DRVR	INJB	38	M	OR-Y OR<25		000	000		00
00215 NONE	N	N	N			01/17/2012 Tue 5P	CLACKAMAS PORTLAND UA	1 12 MN 0 3.20		INTER CN 01	CROSS TRF SIGNAL 0	N N N	N N N	RAIN WET DUSK	O-1 L-TURN TURN PDO	01	NONE 0 PRVTE PSNGR CAR	STRGHT N S	01	DRVR	NONE	19	M	OR-Y OR<25		000	000 000		02 00 00
No	*45 25 27.78*					*-122 35 33.50*		017100100S00																					
																02	NONE 0 PRVTE	TURN-L S W									000		00
																	PSNGR CAR		01	DRVR	NONE	49	F	OR-Y OR<25		028,004	000		02
03468 STATE	N	N	N	N	N	09/18/2012 Tue 6P	CLACKAMAS PORTLAND UA	1 12 MN 0 3.20		INTER CN 01	CROSS TRF SIGNAL 0	N N N	N N N	CLR DRY DAY	ANGL-OTH ANGL PDO	01	NONE 0 PRVTE PSNGR CAR	STRGHT N S	01	DRVR	NONE	16	F	OR-Y OR<25		000	001 000		04 00 00
No	*45 25 27.78*					*-122 35 33.50*		017100100S00																					
																02	NONE 0 PRVTE	STRGHT E W									001		00
																	PSNGR CAR		01	DRVR	NONE	28	F	OR-Y OR<25		020	000		04
01247 NO RPT	N	N	N			03/31/2014 Mon 10A	CLACKAMAS PORTLAND UA	1 12 MN 0 3.20		INTER CN 02	CROSS TRF SIGNAL 0	N N N	N N N	CLR DRY DAY	S-OTHER TURN INJ	01	NONE 0 PRVTE PSNGR CAR	TURN-R E N	01	DRVR	INJC	43	F	OR-Y OR<25		000	013 000		06,08 00 00
No	*45 25 27.78*					*-122 35 33.50*		017100100S00																					

171 CLACKAMAS OR 224 Clackamas Highway (171) & SE Webster Rd / SE Lake Rd
January 1, 2012 through December 31, 2014

SER# / INVEST / UNLOC?	SPEED	ALCHL	DRUGS	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC / CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF-CNTL	OFFRD RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
																02	NONE 0 PRVTE	TURN-R E N									031	013	00
																	PSNGR CAR		01	DRVR	NONE	54	F	OR-Y OR<25		034,006	000		06,08
																03	NONE 0 PRVTE	STOP N S									022		00
																	PSNGR CAR		01	DRVR	NONE	68	M	OR-Y OR<25		000	000		00
02139 STATE	N	N	N	N	N	06/13/2012 Wed 9A	CLACKAMAS PORTLAND UA	1 12 MN 0 3.20		INTER CN 03	CROSS 0	N TRF SIGNAL	N N N	CLD DRY DAY	ANGL-OTH ANGL INJ	01	NONE 0 PRVTE	STRGHT N S											04 00
																	PSNGR CAR		01	DRVR	INJB	20	F	OR-Y OR<25		020	000		04
No	*45 25 27.78*		*-122 35 33.50*					017100100S00											02	PSNG	INJC	13	F			000	000		00
																02	NONE 0 PRVTE	STRGHT W E									000		00
																	PSNGR CAR		01	DRVR	NONE	74	F	OR-Y OR<25		000	000		00
04887 COUNTY	N	N	N			12/17/2012 Mon 7A	CLACKAMAS PORTLAND UA	1 12 MN 0 3.20		INTER CN 04	CROSS 0	N TRF SIGNAL	N N N	RAIN WET DAWN	O-1 L-TURN TURN INJ	01	NONE 0 PRVTE	STRGHT S N											02 00
																	PSNGR CAR		01	DRVR	INJC	43	F	OR-Y OR<25		000	000		00
No	*45 25 27.78*		*-122 35 33.50*					017100100S00																					
																02	NONE 0 UNKN	TURN-L N E									000		00
																	UNKNOWN		01	DRVR	NONE	00	U	UNK UNK		028	000		02
00477 NONE	N	N	N			02/09/2013 Sat 6P	CLACKAMAS PORTLAND UA	1 12 MN 0 3.20		INTER CN 04	CROSS 0	N TRF SIGNAL	N N N	RAIN WET DLIT	O-1 L-TURN TURN PDO	01	NONE 0 PRVTE	STRGHT S N											02 00
																	PSNGR CAR		01	DRVR	NONE	36	M	OR-Y OR<25		000	000		00
No	*45 25 27.78*		*-122 35 33.50*					017100100S00																					
																02	NONE 0 PRVTE	TURN-L N E									000		00
																	PSNGR CAR		01	DRVR	NONE	36	M	OR-Y OR<25		028,004	000		02

CLACKAMAS COUNTY

OR 224 Clackamas Highway (171) & SE Webster Rd / SE Lake Rd

January 1, 2012 through December 31, 2014

SER# / INVEST / UNLOC?	SPEED	ALC	DRUGS	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	MILEPNT / DIST FROM / INTERSECT	COUNTY ROADS FIRST STREET / SECOND STREET / INTERSECTION SEQ #	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFF-RD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
05037	N	N	N			12/26/2013	0.58	SE LAKE RD-OLD 22062	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	TURN-L											10
NONE						Thu 7P			N		TRF SIGNAL	N	DRY	SS-O		UNKN	N E										000		00
No						*45 25 27.78 -122 35 33.50*			06	0		N	DARK	PDO		UNKNOWN		01	DRVR	NONE	00	U	UNK		080	000		10
																								UNK				
															02	NONE 0	STOP											
																PUBLC	N S									011		00
																UNKNOWN		01	DRVR	NONE	34	M	OR-Y		000	000		00
																							OR<25					
00405	N	N	N			1/31/2014	0.58	SE LAKE RD-OLD 22062	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 1	TURN-L											08
COUNTY						Fri 8P			N		L-GRN-SIG	N	DRY	SS-O		PRVTE	N E										000		00
No						*45 25 27.78 -122 35 33.50*			06	0		N	DLIT	PDO		SEMI TOW		01	DRVR	NONE	52	M	OR-Y		001	000		08
																							OR<25					
															02	NONE 0	STOP											
																PRVTE	N S									011		00
																PSNGR CAR		01	DRVR	NONE	68	F	OTH-Y		000	000		00
																							OR<25					
02006	N	N	N	N	N	5/27/2014	0.58	SE LAKE RD-OLD 22062	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										013	07
COUNTY						Tue 11A			N		TRF SIGNAL	N	DRY	REAR		PRVTE	N S										000		00
No						*45 25 27.78 -122 35 33.50*			06	0		N	DAY	INJ		TRUCK		01	DRVR	NONE	28	M	OTH-Y		026	000		07
																							OR<25					
															02	NONE 0	STOP											
																PRVTE	N S									011	013	00
																PSNGR CAR		01	DRVR	NONE	20	F	OR-Y		000	000		00
																							OR<25					
															03	NONE 0	STOP											
																PRVTE	N S									022		00
																PSNGR CAR		01	DRVR	INJC	51	M	OR-Y		000	000		00
																							OR<25					
03944	N	N	N	N	N	10/6/2014	0.58	SE LAKE RD-OLD 22062	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 1	TURN-L											08
COUNTY						Mon 8P			N		TRF SIGNAL	N	DRY	SS-O		PRVTE	N E										000		00
No						*45 25 27.78 -122 35 33.50*			06	0		N	DLIT	PDO		SEMI TOW		01	DRVR	NONE	00	U	UNK		001	000		08
																								UNK				
															02	NONE 0	STOP											
																PRVTE	N S									011		00
																PSNGR CAR		01	DRVR	NONE	35	F	OR-Y		000	000		00
																							OR<25					
04996	N	N	N			12/11/2014	0.58	SE LAKE RD-OLD 22062	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
NONE						Thu 11A			SE		TRF SIGNAL	N	DRY	REAR		PRVTE	SE NW										000		00
No						*45 25 50.25 -122 36 12.41*			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	39	F	OR-Y		026	000		29
																							OR<25					

RS508

CLACKAMAS COUNTY — OR 224 Clackamas Highway (171) & SE Webster Rd / SE Lake Rd

January 1, 2012 through December 31, 2014

SER# / INVEST / UNLOC?	SPED	ALC	DRUG	SCHL	WORK	DATE / DAY/TIME / LAT/LONG	MILEPNT / DIST FROM / INTERSECT	COUNTY ROADS / FIRST STREET / SECOND STREET / INTERSECTION SEQ #	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFF-RD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
															02	NONE 0	STOP										011		00
																PRVTE	SE NW												
																PSNGR CAR		01	DRVR	INJC	16	M	OR-Y		000	000		00
																							OR<25						
01958	N	N	N			5/22/2014	0.58	SE LAKE RD-OLD 22062	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT												29
NONE						Thu 3P			S		TRF SIGNAL	N	DRY	REAR		PRVTE	S N										000		00
No						*45 25 21.54 -122 34 55.69*			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	00	M	OR-Y		026	000		29
																							UNK						
															02	NONE 0	STOP										011		00
																PRVTE	S N												
																PSNGR CAR		01	DRVR	INJC	51	M	OR-Y		000	000		00
																							OR<25						
02332	N	N	N			6/18/2014	0.00	SE WEBSTER RD	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT												29
NONE						Wed 1P			N		L-GRN-SIG	N	DRY	REAR		PRVTE	N S										000		00
No						*45 25 25.40 -122 35 34.74*			06	1		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	21	M	OR-Y		026	000		29
																							OR<25						
															02	NONE 0	STOP										012		00
																PRVTE	N S												
																PSNGR CAR		01	DRVR	INJC	52	F	OR-Y		000	000		00
																							OR<25						
01486	N	N	N			5/1/2013	0.00	SE WEBSTER RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT												07
NONE						Wed 3P			S		TRF SIGNAL	N	DRY	REAR		PRVTE	S N										000		00
No						*45 25 27.78 -122 35 33.50*			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	39	M	OR-Y		026	000		07
																							OR<25						
															02	NONE 0	STOP										011		00
																PRVTE	S N												
																PSNGR CAR		01	DRVR	INJC	56	F	OR-Y		000	000		00
																							OR<25						
01476	N	N	N			4/30/2013	0.00	SE WEBSTER RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT												07
NONE						Tue 3P			SW		TRF SIGNAL	N	DRY	REAR		PRVTE	SW NE										000		00
No						*45 25 27.78 -122 35 33.50*			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	74	F	OR-Y		026	000		07
																							OR<25						
															02	NONE 0	STOP										011		00
																PRVTE	SW NE												
																PSNGR CAR		01	DRVR	INJC	36	M	OR-Y		000	000		00
																							OR<25						
01116	N	N	N			4/2/2013	0.00	SE WEBSTER RD	INTER	3-LEG	N	N	CLR	S-STRGHT	01	NONE 0	STRGHT												13
NO RPT						Tue 6P			CN		TRF SIGNAL	N	DRY	SS-O		PRVTE	S N										000		00
No						*45 25 25.40 -122 35 34.74*			04	1		N	DUSK	PDO		PSNGR CAR		01	DRVR	NONE	35	M	OR-Y		045	000		13
																							OR<25						

CLACKAMAS COUNTY

OR 224 Clackamas Highway (171) & SE Webster Rd / SE Lake Rd

January 1, 2012 through December 31, 2014

SER# / INVEST / UNLOC?	SPE	ALC	DRG	SUC	WHR	DATE / DAY/TIME / *LAT/LONG*	MILEPNT / DIST FROM / INTERSECT	COUNTY ROADS FIRST STREET / SECOND STREET / INTERSECTION SEQ #	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFF-RD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
															02	NONE 0 / PRVTE / PSNGR CAR	STRGHT / S N	01	DRVR	NONE	30	M	OR-Y / OR<25		000	000		00
01273	N	N	N	N	N	4/14/2013 / Sun 3P	0.00	SE WEBSTER RD	INTER / CN / 04	3-LEG / 1	N / TRF SIGNAL	N / N / N	RAIN / WET / DAY	O-1 L-TURN / TURN / PDO	01	NONE 0 / PRVTE / PSNGR CAR	STRGHT / S N	01	DRVR	NONE	37	M	OR-Y / OR<25		000	000		02
COUNTY																											000		00
No						*45 25 25.40 -122 35 34.74*																					000		00
															02	NONE 0 / PRVTE / PSNGR CAR	TURN-L / N E	01	DRVR	NONE	44	F	OR-Y / OR<25		028,004	000		02
																											000		00
01571	N	N	N			5/7/2013 / Tue 4P	0.00	SE WEBSTER RD	INTER / CN / 04	3-LEG / 1	N / TRF SIGNAL	N / N / N	CLR / DRY / DAY	O-1 L-TURN / TURN / PDO	01	NONE 0 / PRVTE / PSNGR CAR	STRGHT / S N	01	DRVR	NONE	65	F	OR-Y / OR<25		000	000		02
NONE																											000		00
No						*45 25 25.40 -122 35 34.74*																					000		00
															02	NONE 0 / PRVTE / PSNGR CAR	TURN-L / N E	01	DRVR	NONE	00	F	OR-Y / OR<25		028,004	000		02
																											000		00
03248	N	N	N	N	N	9/3/2013 / Tue 7A	0.00	SE WEBSTER RD	INTER / CN / 04	3-LEG / 1	N / TRF SIGNAL	N / N / N	CLD / WET / UNK	O-1 L-TURN / TURN / INJ	01	NONE 0 / PRVTE / PSNGR CAR	STRGHT / S N	01	DRVR	NONE	66	F	OR-Y / OR<25		020	000		04
COUNTY																											000		00
No						*45 25 25.40 -122 35 34.74*																					000		00
															02	NONE 0 / PRVTE / PSNGR CAR	TURN-L / N E	01	DRVR	INJA	37	F	OR-Y / OR<25		000	000		00
																											000		00
01250	N	N	N			3/31/2014 / Mon 5P	0.00	SE WEBSTER RD	INTER / CN / 04	3-LEG / 0	N / TRF SIGNAL	N / Y / N	CLR / DRY / DAY	ANGL-OTH / TURN / PDO	01	NONE 0 / PRVTE / PSNGR CAR	TURN-L / W N	01	DRVR	NONE	45	M	OR-Y / OR<25		097	018		02
NONE																											000		00
No						*45 25 25.40 -122 35 34.74*																					000		00
															02	NONE 0 / PRVTE / PSNGR CAR	TURN-L / S W	01	DRVR	NONE	00	M	OR-Y / OR<25		097	019		00
																											000		00
03531	N	N	N	Y	N	7/23/2014 / Wed 12P	0.00	SE WEBSTER RD	INTER / CN / 04	3-LEG / 1	N / NONE	N / Y / Y	RAIN / WET / DAY	ANGL-OTH / ANGL / INJ	01	NONE 0 / PRVTE / PSNGR CAR	STRGHT / S N	01	DRVR	NONE	00	F	UNK / UNK		020	000		04
COUNTY																											000		00
No						*45 25 25.40 -122 35 34.74*																					000		04

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CLACKAMAS COUNTY

OR 224 Clackamas Highway (171) & SE Webster Rd / SE Lake Rd

January 1, 2012 through December 31, 2014

SER# / INVEST / UNLOC?	SPED	ALC	DRUGS	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	MILEPNT / DIST FROM / INTERSECT	COUNTY ROADS: FIRST STREET / SECOND STREET / INTERSECTION SEQ #	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFF-RD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
															02	NONE 0	STRGHT										018		00
																PRVTE	W E												
																PSNGR CAR		01	DRVR	INJC	58	F	OR-Y		000	000		00
																							OR<25						

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Rusk Road & Ruscliffe Rd

January 1, 2010 through December 31, 2014

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2013														
TURNING MOVEMENTS	0	0	1	1	0	0	0	1	0	1	0	1	0	0
2013 TOTAL	0	0	1	1	0	0	0	1	0	1	0	1	0	0
FINAL TOTAL	0	0	1	1	0	0	0	1	0	1	0	1	0	0

Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

COUNTY ROAD CRASH LISTING

CLACKAMAS COUNTY

Rusk Road & Ruscliffe Rd

January 1, 2010 through December 31, 2014

SER# / INVEST / UNLOC?	SPEED	ALC	DRUGS	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	MILEPNT / DIST FROM / INTERSECT	COUNTY ROADS FIRST STREET / SECOND STREET / INTERSECTION SEQ #	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFF-RD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
02270	N	N	N			6/26/2013	0.45	SE RUSK RD	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 0	TURN-L											08
NONE						Wed 7P			CN		STOP SIGN	N	DRY	TURN		PRVTE	N E										000	00
No						*45 25 34.62 -122 36 5.01*			03	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	73	F	OR-Y OR<25		002	000		08
															02	NONE 0	STOP											
																PRVTE	E W										011	00
																PSNGR CAR		01	DRVR	NONE	58	M	OR-Y OR<25		000	000		00

RS513

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Rusk Road & Kellogg Creek Drive

January 1, 2010 through December 31, 2014

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2013														
TURNING MOVEMENTS	0	0	2	2	0	0	0	2	0	2	0	2	0	0
2013 TOTAL	0	0	2	2	0	0	0	2	0	2	0	2	0	0
FINAL TOTAL	0	0	2	2	0	0	0	2	0	2	0	2	0	0

Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

CLACKAMAS COUNTY

Rusk Road & Kellogg Creek Drive

January 1, 2010 through December 31, 2014

SER# / INVEST / UNLOC?	SPEED	ALCHL	DRUGS	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	MILEPNT / DIST FROM / INTERSECT	COUNTY ROADS FIRST STREET / SECOND STREET / INTERSECTION SEQ #	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFF-RD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
00069	N	N	N			1/7/2013	0.00	SE KELLOGG CREEK DR	INTER		N	N	CLR	ANGL-OTH	01	NONE 0	TURN-R											02
NONE						Mon 9A			CN		STOP SIGN	N	DRY	TURN		PRVTE	NW SW										015	00
No						*45 25 34.17 -122 36 9.48*			03	2		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	37	F	OR-Y		028	000		02
																								OR<25				
															02	NONE 0	STRGHT										000	00
																PRVTE	NE SW											
																PSNGR CAR		01	DRVR	NONE	75	M	OR-Y		000	000		00
																							OR<25					
02232	N	N	N			6/23/2013	0.40	SE RUSK RD	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 0	TURN-L											02
NONE						Sun 5P			CN		STOP SIGN	N	DRY	TURN		PRVTE	NW NE										015	00
No						*45 25 34.17 -122 36 9.48*			04	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK		028	000		02
																							UNK					
															02	NONE 0	STRGHT										000	00
																PRVTE	SW NE											
																PSNGR CAR		01	DRVR	NONE	48	M	OR-Y		000	000		00
																							OR<25					

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Rusk Road & Aldercrest Rd
January 1, 2010 through December 31, 2014

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR:														
TOTAL														
FINAL TOTAL														

Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

ACTION CODE TRANSLATION LIST

ACTION CODE	SHORT DESCRIPTION	LONG DESCRIPTION
000	NONE	NO ACTION OR NON-WARRANTED
001	SKIDDED	SKIDDED
002	ON/OFF V	GETTING ON OR OFF STOPPED OR PARKED VEHICLE
003	LOAD OVR	OVERHANGING LOAD STRUCK ANOTHER VEHICLE, ETC.
006	SLOW DN	SLOWED DOWN
007	AVOIDING	AVOIDING MANEUVER
008	PAR PARK	PARALLEL PARKING
009	ANG PARK	ANGLE PARKING
010	INTERFERE	PASSENGER INTERFERING WITH DRIVER
011	STOPPED	STOPPED IN TRAFFIC NOT WAITING TO MAKE A LEFT TURN
012	STP/L TRN	STOPPED BECAUSE OF LEFT TURN SIGNAL OR WAITING, ETC.
013	STP TURN	STOPPED WHILE EXECUTING A TURN
015	GO A/STOP	PROCEED AFTER STOPPING FOR A STOP SIGN/FLASHING RED.
016	TRN A/RED	TURNED ON RED AFTER STOPPING
017	LOSTCTRL	LOST CONTROL OF VEHICLE
018	EXIT DWY	ENTERING STREET OR HIGHWAY FROM ALLEY OR DRIVEWAY
019	ENTR DWY	ENTERING ALLEY OR DRIVEWAY FROM STREET OR HIGHWAY
020	STR ENTR	BEFORE ENTERING ROADWAY, STRUCK PEDESTRIAN, ETC. ON SIDEWALK OR SHOULDER
021	NO DRVR	CAR RAN AWAY - NO DRIVER
022	PREV COL	STRUCK, OR WAS STRUCK BY, VEHICLE OR PEDESTRIAN IN PRIOR COLLISION BEFORE ACC. STABILIZED
023	STALLED	VEHICLE STALLED OR DISABLED
024	DRVR DEAD	DEAD BY UNASSOCIATED CAUSE
025	FATIGUE	FATIGUED, SLEEPY, ASLEEP
026	SUN	DRIVER BLINDED BY SUN
027	HDLGHTS	DRIVER BLINDED BY HEADLIGHTS
028	ILLNESS	PHYSICALLY ILL
029	THRU MED	VEHICLE CROSSED, PLUNGED OVER, OR THROUGH MEDIAN BARRIER
030	PURSUIT	PURSUING OR ATTEMPTING TO STOP A VEHICLE
031	PASSING	PASSING SITUATION
032	PRKOFFRD	VEHICLE PARKED BEYOND CURB OR SHOULDER
033	CROS MED	VEHICLE CROSSED EARTH OR GRASS MEDIAN
034	X N/SGNL	CROSSING AT INTERSECTION - NO TRAFFIC SIGNAL PRESENT
035	X W/ SGNL	CROSSING AT INTERSECTION - TRAFFIC SIGNAL PRESENT
036	DIAGONAL	CROSSING AT INTERSECTION - DIAGONALLY
037	BTWN INT	CROSSING BETWEEN INTERSECTIONS
038	DISTRACT	DRIVER'S ATTENTION DISTRACTED
039	W/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER WITH TRAFFIC
040	A/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER FACING TRAFFIC
041	W/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT WITH TRAFFIC
042	A/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT FACING TRAFFIC
043	PLAYINRD	PLAYING IN STREET OR ROAD
044	PUSH MV	PUSHING OR WORKING ON VEHICLE IN ROAD OR ON SHOULDER
045	WORK ON	WORKING IN ROADWAY OR ALONG SHOULDER
046	W/ TRAFIC	NON-MOTORIST WALKING, RUNNING, RIDING, ETC. WITH TRAFFIC
047	A/ TRAFIC	NON-MOTORIST WALKING, RUNNING, RIDING, ETC. FACING TRAFFIC
050	LAY ON RD	STANDING OR LYING IN ROADWAY
051	ENT OFFRD	ENTERING / STARTING IN TRAFFIC LANE FROM OFF ROAD
052	MERGING	MERGING
055	SPRAY	BLINDED BY WATER SPRAY
088	OTHER	OTHER ACTION

ACTION CODE TRANSLATION LIST

ACTION CODE	SHORT DESCRIPTION	LONG DESCRIPTION
099	UNK	UNKNOWN ACTION

CAUSE CODE TRANSLATION LIST

CAUSE CODE	SHORT DESCRIPTION	LONG DESCRIPTION
00	NO CODE	NO CAUSE ASSOCIATED AT THIS LEVEL
01	TOO-FAST	TOO FAST FOR CONDITIONS (NOT EXCEED POSTED SPEED
02	NO-YIELD	DID NOT YIELD RIGHT-OF-WAY
03	PAS-STOP	PASSED STOP SIGN OR RED FLASHER
04	DIS SIG	DISREGARDED TRAFFIC SIGNAL
05	LEFT-CTR	DROVE LEFT OF CENTER ON TWO-WAY ROAD; STRADDLING
06	IMP-OVER	IMPROPER OVERTAKING
07	TOO-CLOS	FOLLOWED TOO CLOSELY
08	IMP-TURN	MADE IMPROPER TURN
09	DRINKING	ALCOHOL OR DRUG INVOLVED
10	OTHR-IMP	OTHER IMPROPER DRIVING
11	MECH-DEF	MECHANICAL DEFECT
12	OTHER	OTHER (NOT IMPROPER DRIVING)
13	IMP LN C	IMPROPER CHANGE OF TRAFFIC LANES
14	DIS TCD	DISREGARDED OTHER TRAFFIC CONTROL DEVICE
15	WRNG WAY	WRONG WAY ON ONE-WAY ROAD; WRONG SIDE DIVIDED RO
16	FATIGUE	DRIVER DROWSY/FATIGUED/SLEEPY
17	ILLNESS	PHYSICAL ILLNESS
18	IN RDWY	NON-MOTORIST ILLEGALLY IN ROADWAY
19	NT VISBL	NON-MOTORIST NOT VISIBLE; NON-REFLECTIVE CLOTHIN
20	IMP PKNG	VEHICLE IMPROPERLY PARKED
21	DEF STER	DEFECTIVE STEERING MECHANISM
22	DEF BRKE	INADEQUATE OR NO BRAKES
24	LOADSHFT	VEHICLE LOST LOAD OR LOAD SHIFTED
25	TIREFAIL	TIRE FAILURE
26	PHANTOM	PHANTOM / NON-CONTACT VEHICLE
27	INATTENT	INATTENTION
28	NM INATT	NON-MOTORIST INATTENTION
29	F AVOID	FAILED TO AVOID VEHICLE AHEAD
30	SPEED	DRIVING IN EXCESS OF POSTED SPEED
31	RACING	SPEED RACING (PER PAR)
32	CARELESS	CARELESS DRIVING (PER PAR)
33	RECKLESS	RECKLESS DRIVING (PER PAR)
34	AGGRESV	AGGRESSIVE DRIVING (PER PAR)
35	RD RAGE	ROAD RAGE (PER PAR)
40	VIEW OBS	VIEW OBSCURED
50	USED MDN	IMPROPER USE OF MEDIAN OR SHOULDER

COLLISION TYPE CODE TRANSLATION LIST

COLL CODE	SHORT DESCRIPTION	LONG DESCRIPTION
&	OTH	MISCELLANEOUS
-	BACK	BACKING
0	PED	PEDESTRIAN
1	ANGL	ANGLE
2	HEAD	HEAD-ON
3	REAR	REAR-END
4	SS-M	SIDESWIPE - MEETING
5	SS-O	SIDESWIPE - OVERTAKING
6	TURN	TURNING MOVEMENT
7	PARK	PARKING MANEUVER
8	NCOL	NON-COLLISION
9	FIX	FIXED OBJECT OR OTHER OBJECT

CRASH TYPE CODE TRANSLATION LIST

CRASH TYPE	SHORT DESCRIPTION	LONG DESCRIPTION
&	OVERTURN	OVERTURNED
0	NON-COLL	OTHER NON-COLLISION
1	OTH RDWY	MOTOR VEHICLE ON OTHER ROADWAY
2	PRKD MV	PARKED MOTOR VEHICLE
3	PED	PEDESTRIAN
4	TRAIN	RAILWAY TRAIN
6	BIKE	PEDALCYCLIST
7	ANIMAL	ANIMAL
8	FIX OBJ	FIXED OBJECT
9	OTH OBJ	OTHER OBJECT
A	ANGL-STP	ENTERING AT ANGLE - ONE VEHICLE STOPPED
B	ANGL-OTH	ENTERING AT ANGLE - ALL OTHERS
C	S-STRGHT	FROM SAME DIRECTION - BOTH GOING STRAIGHT
D	S-1TURN	FROM SAME DIRECTION - ONE TURN, ONE STRAIGHT
E	S-1STOP	FROM SAME DIRECTION - ONE STOPPED
F	S-OTHER	FROM SAME DIRECTION-ALL OTHERS, INCLUDING PARKING
G	O-STRGHT	FROM OPPOSITE DIRECTION - BOTH GOING STRAIGHT
H	O-1 L-TURN	FROM OPPOSITE DIRECTION-ONE LEFT TURN,ONE STRAIGHT
I	O-1STOP	FROM OPPOSITE DIRECTION - ONE STOPPED
J	O-OTHER	FROM OPPOSITE DIRECTION-ALL OTHERS INCL. PARKING

DRIVER LICENSE CODE TRANSLATION LIST

LIC CODE	SHORT DESC	LONG DESCRIPTION
0	NONE	NOT LICENSED (HAD NEVER BEEN LICENSED)
1	OR-Y	VALID OREGON LICENSE
2	OTH-Y	VALID LICENSE, OTHER STATE OR COUNTRY
3	SUSP	SUSPENDED/REVOKED

DRIVER RESIDENCE CODE TRANSLATION LIST

RES CODE	SHORT DESC	LONG DESCRIPTION
1	OR<25	OREGON RESIDENT WITHIN 25 MILE OF HOME
2	OR>25	OREGON RESIDENT 25 OR MORE MILES FROM HOME
3	OR-?	OREGON RESIDENT - UNKNOWN DISTANCE FROM HOME
4	N-RES	NON-RESIDENT
9	UNK	UNKNOWN IF OREGON RESIDENT

ERROR CODE TRANSLATION LIST

ERROR CODE	SHORT DESCRIPTION	FULL DESCRIPTION
000	NONE	NO ERROR
001	WIDE TRN	WIDE TURN
002	CUT CORN	CUT CORNER ON TURN
003	FAIL TRN	FAILED TO OBEY MANDATORY TRAFFIC TURN SIGNAL, SIGN OR LANE MARKINGS
004	L IN TRF	LEFT TURN IN FRONT OF ONCOMING TRAFFIC
005	L PROHIB	LEFT TURN WHERE PROHIBITED
006	FRM WRNG	TURNED FROM WRONG LANE
007	TO WRONG	TURNED INTO WRONG LANE
008	ILLEG U	U-TURNED ILLEGALLY
009	IMP STOP	IMPROPERLY STOPPED IN TRAFFIC LANE
010	IMP SIG	IMPROPER SIGNAL OR FAILURE TO SIGNAL
011	IMP BACK	BACKING IMPROPERLY (NOT PARKING)
012	IMP PARK	IMPROPERLY PARKED
013	UNPARK	IMPROPER START LEAVING PARKED POSITION
014	IMP STRT	IMPROPER START FROM STOPPED POSITION
015	IMP LGHT	IMPROPER OR NO LIGHTS (VEHICLE IN TRAFFIC)
016	INATTENT	INATTENTION (FAILURE TO DIM LIGHTS PRIOR TO 4/1/97)
017	UNSF VEH	DRIVING UNSAFE VEHICLE (NO OTHER ERROR APPARENT)
018	OTH PARK	ENTERING/EXITING PARKED POSITION W/ INSUFFICIENT CLEARANCE; OTHER IMPROPER PARKING MANEUVER
019	DIS DRIV	DISREGARDED OTHER DRIVER'S SIGNAL
020	DIS SGNL	DISREGARDED TRAFFIC SIGNAL
021	RAN STOP	DISREGARDED STOP SIGN OR FLASHING RED
022	DIS SIGN	DISREGARDED WARNING SIGN, FLARES OR FLASHING AMBER
023	DIS OFCR	DISREGARDED POLICE OFFICER OR FLAGMAN
024	DIS EMER	DISREGARDED SIREN OR WARNING OF EMERGENCY VEHICLE
025	DIS RR	DISREGARDED RR SIGNAL, RR SIGN, OR RR FLAGMAN
026	REAR-END	FAILED TO AVOID STOPPED OR PARKED VEHICLE AHEAD OTHER THAN SCHOOL BUS
027	BIKE ROW	DID NOT HAVE RIGHT-OF-WAY OVER PEDALCYCLIST
028	NO ROW	DID NOT HAVE RIGHT-OF-WAY
029	PED ROW	FAILED TO YIELD RIGHT-OF-WAY TO PEDESTRIAN
030	PAS CURV	PASSING ON A CURVE
031	PAS WRNG	PASSING ON THE WRONG SIDE
032	PAS TANG	PASSING ON STRAIGHT ROAD UNDER UNSAFE CONDITIONS
033	PAS X-WK	PASSED VEHICLE STOPPED AT CROSSWALK FOR PEDESTRIAN
034	PAS INTR	PASSING AT INTERSECTION
035	PAS HILL	PASSING ON CREST OF HILL
036	N/PAS ZN	PASSING IN "NO PASSING" ZONE
037	PAS TRAF	PASSING IN FRONT OF ONCOMING TRAFFIC
038	CUT-IN	CUTTING IN (TWO LANES - TWO WAY ONLY)
039	WRNGSIDE	DRIVING ON WRONG SIDE OF THE ROAD (2-WAY UNDIVIDED ROADWAYS)
040	THRU MED	DRIVING THROUGH SAFETY ZONE OR OVER ISLAND
041	F/ST BUS	FAILED TO STOP FOR SCHOOL BUS

ERROR CODE TRANSLATION LIST

ERROR CODE	SHORT DESCRIPTION	FULL DESCRIPTION
042	F/SLO MV	FAILED TO DECREASE SPEED FOR SLOWER MOVING VEHICLE
043	TOO CLOSE	FOLLOWING TOO CLOSELY (MUST BE ON OFFICER'S REPORT)
044	STRDL LN	STRADDLING OR DRIVING ON WRONG LANES
045	IMP CHG	IMPROPER CHANGE OF TRAFFIC LANES
046	WRNG WAY	WRONG WAY ON ONE-WAY ROADWAY; WRONG SIDE DIVIDED ROAD
047	BASCRULE	DRIVING TOO FAST FOR CONDITIONS (NOT EXCEEDING POSTED SPEED)
048	OPN DOOR	OPENED DOOR INTO ADJACENT TRAFFIC LANE
049	IMPEDING	IMPEDING TRAFFIC
050	SPEED	DRIVING IN EXCESS OF POSTED SPEED
051	RECKLESS	RECKLESS DRIVING (PER PAR)
052	CARELESS	CARELESS DRIVING (PER PAR)
053	RACING	SPEED RACING (PER PAR)
054	X N/SGNL	CROSSING AT INTERSECTION, NO TRAFFIC SIGNAL PRESENT
055	X W/SGNL	CROSSING AT INTERSECTION, TRAFFIC SIGNAL PRESENT
056	DIAGONAL	CROSSING AT INTERSECTION - DIAGONALLY
057	BTWN INT	CROSSING BETWEEN INTERSECTIONS
059	W/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER WITH TRAFFIC
060	A/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER FACING TRAFFIC
061	W/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT WITH TRAFFIC
062	A/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT FACING TRAFFIC
063	PLAYINRD	PLAYING IN STREET OR ROAD
064	PUSH MV	PUSHING OR WORKING ON VEHICLE IN ROAD OR ON SHOULDER
065	WORK IN RD	WORKING IN ROADWAY OR ALONG SHOULDER
070	LAY ON RD	STANDING OR LYING IN ROADWAY
071	NM IMP USE	IMPROPER USE OF TRAFFIC LANE BY NON-MOTORIST
073	ELUDING	ELUDING / ATTEMPT TO ELUDE
079	F NEG CURV	FAILED TO NEGOTIATE A CURVE
080	FAIL LN	FAILED TO MAINTAIN LANE
081	OFF RD	RAN OFF ROAD
082	NO CLEAR	DRIVER MISJUDGED CLEARANCE
083	OVRSTEER	OVER-CORRECTING
084	NOT USED	CODE NOT IN USE
085	OVRLOAD	OVERLOADING OR IMPROPER LOADING OF VEHICLE WITH CARGO OR PASSENGERS
097	UNA DIS TC	UNABLE TO DETERMINE WHICH DRIVER DISREGARDED TRAFFIC CONTROL DEVICE

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
001	FEL/JUMP	OCCUPANT FELL, JUMPED OR WAS EJECTED FROM MOVING VEHICLE
002	INTERFER	PASSENGER INTERFERED WITH DRIVER
003	BUG INTF	ANIMAL OR INSECT IN VEHICLE INTERFERED WITH DRIVER
004	INDRCT PED	PEDESTRIAN INDIRECTLY INVOLVED (NOT STRUCK)
005	SUB-PED	"SUB-PED": PEDESTRIAN INJURED SUBSEQUENT TO COLLISION, ETC.
006	INDRCT BIK	PEDALCYCLIST INDIRECTLY INVOLVED (NOT STRUCK)
007	HITCHIKR	HITCHHIKER (SOLICITING A RIDE)
008	PSNGR TOW	PASSENGER OR NON-MOTORIST BEING TOWED OR PUSHED ON CONVEYANCE
009	ON/OFF V	GETTING ON/OFF STOPPED/PARKED VEHICLE (OCCUPANTS ONLY; MUST HAVE PHYSICAL CONTACT W/ VEHIC
010	SUB OTRN	OVERTURNED AFTER FIRST HARMFUL EVENT
011	MV PUSHD	VEHICLE BEING PUSHED
012	MV TOWED	VEHICLE TOWED OR HAD BEEN TOWING ANOTHER VEHICLE
013	FORCED	VEHICLE FORCED BY IMPACT INTO ANOTHER VEHICLE, PEDALCYCLIST OR PEDESTRIAN
014	SET MOTN	VEHICLE SET IN MOTION BY NON-DRIVER (CHILD RELEASED BRAKES, ETC.)
015	RR ROW	AT OR ON RAILROAD RIGHT-OF-WAY (NOT LIGHT RAIL)
016	LT RL ROW	AT OR ON LIGHT-RAIL RIGHT-OF-WAY
017	RR HIT V	TRAIN STRUCK VEHICLE
018	V HIT RR	VEHICLE STRUCK TRAIN
019	HIT RR CAR	VEHICLE STRUCK RAILROAD CAR ON ROADWAY
020	JACKNIFE	JACKKNIFE; TRAILER OR TOWED VEHICLE STRUCK TOWING VEHICLE
021	TRL OTRN	TRAILER OR TOWED VEHICLE OVERTURNED
022	CN BROKE	TRAILER CONNECTION BROKE
023	DETACH TRL	DETACHED TRAILING OBJECT STRUCK OTHER VEHICLE, NON-MOTORIST, OR OBJECT
024	V DOOR OPN	VEHICLE DOOR OPENED INTO ADJACENT TRAFFIC LANE
025	WHEELOFF	WHEEL CAME OFF
026	HOOD UP	HOOD FLEW UP
028	LOAD SHIFT	LOST LOAD, LOAD MOVED OR SHIFTED
029	TIREFAIL	TIRE FAILURE
030	PET	PET: CAT, DOG AND SIMILAR
031	LVSTOCK	STOCK: COW, CALF, BULL, STEER, SHEEP, ETC.
032	HORSE	HORSE, MULE, OR DONKEY
033	HRSE&RID	HORSE AND RIDER
034	GAME	WILD ANIMAL, GAME (INCLUDES BIRDS; NOT DEER OR ELK)
035	DEER ELK	DEER OR ELK, WAPITI
036	ANML VEH	ANIMAL-DRAWN VEHICLE
037	CULVERT	CULVERT, OPEN LOW OR HIGH MANHOLE
038	ATENUATN	IMPACT ATTENUATOR
039	PK METER	PARKING METER
040	CURB	CURB (ALSO NARROW SIDEWALKS ON BRIDGES)
041	JIGGLE	JIGGLE BAR OR TRAFFIC SNAKE FOR CHANNELIZATION
042	GDRL END	LEADING EDGE OF GUARDRAIL
043	GARDRAIL	GUARD RAIL (NOT METAL MEDIAN BARRIER)
044	BARRIER	MEDIAN BARRIER (RAISED OR METAL)
045	WALL	RETAINING WALL OR TUNNEL WALL
046	BR RAIL	BRIDGE RAILING OR PARAPET (ON BRIDGE OR APPROACH)
047	BR ABUTMNT	BRIDGE ABUTMENT (INCLUDED "APPROACH END" THRU 2013)
048	BR COLMN	BRIDGE PILLAR OR COLUMN
049	BR GIRDR	BRIDGE GIRDER (HORIZONTAL BRIDGE STRUCTURE OVERHEAD)
050	ISLAND	TRAFFIC RAISED ISLAND
051	GORE	GORE
052	POLE UNK	POLE - TYPE UNKNOWN
053	POLE UTL	POLE - POWER OR TELEPHONE
054	ST LIGHT	POLE - STREET LIGHT ONLY
055	TRF SGNL	POLE - TRAFFIC SIGNAL AND PED SIGNAL ONLY
056	SGN BRDG	POLE - SIGN BRIDGE
057	STOPSIGN	STOP OR YIELD SIGN
058	OTH SIGN	OTHER SIGN, INCLUDING STREET SIGNS
059	HYDRANT	HYDRANT

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
060	MARKER	DELINEATOR OR MARKER (REFLECTOR POSTS)
061	MAILBOX	MAILBOX
062	TREE	TREE, STUMP OR SHRUBS
063	VEG OHED	TREE BRANCH OR OTHER VEGETATION OVERHEAD, ETC.
064	WIRE/CBL	WIRE OR CABLE ACROSS OR OVER THE ROAD
065	TEMP SGN	TEMPORARY SIGN OR BARRICADE IN ROAD, ETC.
066	PERM SGN	PERMANENT SIGN OR BARRICADE IN/OFF ROAD
067	SLIDE	SLIDES, FALLEN OR FALLING ROCKS
068	FRGN OBJ	FOREIGN OBSTRUCTION/DEBRIS IN ROAD (NOT GRAVEL)
069	EQP WORK	EQUIPMENT WORKING IN/OFF ROAD
070	OTH EQP	OTHER EQUIPMENT IN OR OFF ROAD (INCLUDES PARKED TRAILER, BOAT)
071	MAIN EQP	WRECKER, STREET SWEEPER, SNOW PLOW OR SANDING EQUIPMENT
072	OTHER WALL	ROCK, BRICK OR OTHER SOLID WALL
073	IRRGL PVMT	OTHER BUMP (NOT SPEED BUMP), POTHOLE OR PAVEMENT IRREGULARITY (PER PAR)
074	OVERHD OBJ	OTHER OVERHEAD OBJECT (HIGHWAY SIGN, SIGNAL HEAD, ETC.); NOT BRIDGE
075	CAVE IN	BRIDGE OR ROAD CAVE IN
076	HI WATER	HIGH WATER
077	SNO BANK	SNOW BANK
078	LO-HI EDGE	LOW OR HIGH SHOULDER AT PAVEMENT EDGE
079	DITCH	CUT SLOPE OR DITCH EMBANKMENT
080	OBJ FRM MV	STRUCK BY ROCK OR OTHER OBJECT SET IN MOTION BY OTHER VEHICLE (INCL. LOST LOADS)
081	FLY-OBJ	STRUCK BY ROCK OR OTHER MOVING OR FLYING OBJECT (NOT SET IN MOTION BY VEHICLE)
082	VEH HID	VEHICLE OBSCURED VIEW
083	VEG HID	VEGETATION OBSCURED VIEW
084	BLDG HID	VIEW OBSCURED BY FENCE, SIGN, PHONE BOOTH, ETC.
085	WIND GUST	WIND GUST
086	IMMERSED	VEHICLE IMMERSED IN BODY OF WATER
087	FIRE/EXP	FIRE OR EXPLOSION
088	FENC/BLD	FENCE OR BUILDING, ETC.
089	OTHR CRASH	CRASH RELATED TO ANOTHER SEPARATE CRASH
090	TO 1 SIDE	TWO-WAY TRAFFIC ON DIVIDED ROADWAY ALL ROUTED TO ONE SIDE
091	BUILDING	BUILDING OR OTHER STRUCTURE
092	PHANTOM	OTHER (PHANTOM) NON-CONTACT VEHICLE
093	CELL PHONE	CELL PHONE (ON PAR OR DRIVER IN USE)
094	VIOL GDL	TEENAGE DRIVER IN VIOLATION OF GRADUATED LICENSE PGM
095	GUY WIRE	GUY WIRE
096	BERM	BERM (EARTHEN OR GRAVEL MOUND)
097	GRAVEL	GRAVEL IN ROADWAY
098	ABR EDGE	ABRUPT EDGE
099	CELL WTNSD	CELL PHONE USE WITNESSED BY OTHER PARTICIPANT
100	UNK FIXD	FIXED OBJECT, UNKNOWN TYPE.
101	OTHER OBJ	NON-FIXED OBJECT, OTHER OR UNKNOWN TYPE
102	TEXTING	TEXTING
103	WZ WORKER	WORK ZONE WORKER
104	ON VEHICLE	PASSENGER RIDING ON VEHICLE EXTERIOR
105	PEDAL PSGR	PASSENGER RIDING ON PEDALCYCLE
106	MAN WHLCHR	PEDESTRIAN IN NON-MOTORIZED WHEELCHAIR
107	MTR WHLCHR	PEDESTRIAN IN MOTORIZED WHEELCHAIR
108	OFFICER	LAW ENFORCEMENT / POLICE OFFICER
109	SUB-BIKE	"SUB-BIKE": PEDALCYCLIST INJURED SUBSEQUENT TO COLLISION, ETC.
110	N-MTR	NON-MOTORIST STRUCK VEHICLE
111	S CAR VS V	STREET CAR/TROLLEY (ON RAILS OR OVERHEAD WIRE SYSTEM) STRUCK VEHICLE
112	V VS S CAR	VEHICLE STRUCK STREET CAR/TROLLEY (ON RAILS OR OVERHEAD WIRE SYSTEM)
113	S CAR ROW	AT OR ON STREET CAR OR TROLLEY RIGHT-OF-WAY
114	RR EQUIP	VEHICLE STRUCK RAILROAD EQUIPMENT (NOT TRAIN) ON TRACKS
115	DSTRCT GPS	DISTRACTED BY NAVIGATION SYSTEM OR GPS DEVICE
116	DSTRCT OTH	DISTRACTED BY OTHER ELECTRONIC DEVICE
117	RR GATE	RAIL CROSSING DROP-ARM GATE

RS523

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
118	EXPNSN JNT	EXPANSION JOINT
119	JERSEY BAR	JERSEY BARRIER
120	WIRE BAR	WIRE OR CABLE MEDIAN BARRIER
121	FENCE	FENCE
123	OBJ IN VEH	LOOSE OBJECT IN VEHICLE STRUCK OCCUPANT
124	SLIPPERY	SLIDING OR SWERVING DUE TO WET, ICY, SLIPPERY OR LOOSE SURFACE (NOT GRAVEL)
125	SHLDR	SHOULDER GAVE WAY
126	BOULDER	ROCK(S), BOULDER (NOT GRAVEL; NOT ROCK SLIDE)
127	LAND SLIDE	ROCK SLIDE OR LAND SLIDE
128	CURVE INV	CURVE PRESENT AT CRASH LOCATION
129	HILL INV	VERTICAL GRADE / HILL PRESENT AT CRASH LOCATION
130	CURVE HID	VIEW OBSCURED BY CURVE
131	HILL HID	VIEW OBSCURED BY VERTICAL GRADE / HILL
132	WINDOW HID	VIEW OBSCURED BY VEHICLE WINDOW CONDITIONS
133	SPRAY HID	VIEW OBSCURED BY WATER SPRAY

FUNCTIONAL CLASSIFICATION TRANSLATION LIST

FUNC CLASS	DESCRIPTION
01	RURAL PRINCIPAL ARTERIAL - INTERSTATE
02	RURAL PRINCIPAL ARTERIAL - OTHER
06	RURAL MINOR ARTERIAL
07	RURAL MAJOR COLLECTOR
08	RURAL MINOR COLLECTOR
09	RURAL LOCAL
11	URBAN PRINCIPAL ARTERIAL - INTERSTATE
12	URBAN PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXP
14	URBAN PRINCIPAL ARTERIAL - OTHER
16	URBAN MINOR ARTERIAL
17	URBAN MAJOR COLLECTOR
18	URBAN MINOR COLLECTOR
19	URBAN LOCAL
78	UNKNOWN RURAL SYSTEM
79	UNKNOWN RURAL NON-SYSTEM
98	UNKNOWN URBAN SYSTEM
99	UNKNOWN URBAN NON-SYSTEM

HIGHWAY COMPONENT TRANSLATION LIST

CODE	DESCRIPTION
0	MAINLINE STATE HIGHWAY
1	COUPLET
3	FRONTAGE ROAD
6	CONNECTION
8	HIGHWAY - OTHER

INJURY SEVERITY CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
1	KILL	FATAL INJURY
2	INJA	INCAPACITATING INJURY - BLEEDING, BROKEN BONES
3	INJB	NON-INCAPACITATING INJURY
4	INJC	POSSIBLE INJURY - COMPLAINT OF PAIN
5	PRI	DIED PRIOR TO CRASH
7	NO<5	NO INJURY - 0 TO 4 YEARS OF AGE

LIGHT CONDITION CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	DAY	DAYLIGHT
2	DLIT	DARKNESS - WITH STREET LIGHTS
3	DARK	DARKNESS - NO STREET LIGHTS
4	DAWN	DAWN (TWILIGHT)
5	DUSK	DUSK (TWILIGHT)

MEDIAN TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	NONE	NO MEDIAN
1	RSDMD	SOLID MEDIAN BARRIER
2	DIVMD	EARTH, GRASS OR PAVED MEDIAN

MILEAGE TYPE CODE TRANSLATION LIST

CODE	LONG DESCRIPTION
0	REGULAR MILEAGE
T	TEMPORARY
Y	SPUR
Z	OVERLAPPING

MOVEMENT TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	STRGHT	STRAIGHT AHEAD
2	TURN-R	TURNING RIGHT
3	TURN-L	TURNING LEFT
4	U-TURN	MAKING A U-TURN
5	BACK	BACKING
6	STOP	STOPPED IN TRAFFIC
7	PRKD-P	PARKED - PROPERLY
8	PRKD-I	PARKED - IMPROPERLY

PEDESTRIAN LOCATION CODE TRANSLATION LIST

CODE	LONG DESCRIPTION
00	AT INTERSECTION - NOT IN ROADWAY
01	AT INTERSECTION - INSIDE CROSSWALK
02	AT INTERSECTION - IN ROADWAY, OUTSIDE CROSSWALK
03	AT INTERSECTION - IN ROADWAY, XWALK AVAIL UNKNWN
04	NOT AT INTERSECTION - IN ROADWAY
05	NOT AT INTERSECTION - ON SHOULDER
06	NOT AT INTERSECTION - ON MEDIAN
07	NOT AT INTERSECTION - WITHIN TRAFFIC RIGHT-OF-WAY
08	NOT AT INTERSECTION - IN BIKE PATH OR PARKING LANE
09	NOT-AT INTERSECTION - ON SIDEWALK
10	OUTSIDE TRAFFICWAY BOUNDARIES
13	AT INTERSECTION - IN BIKE LANE
14	NOT AT INTERSECTION - IN BIKE LANE
15	NOT AT INTERSECTION - INSIDE MID-BLOCK CROSSWALK
16	NOT AT INTERSECTION - IN PARKING LANE

ROAD CHARACTER CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	INTER	INTERSECTION
2	ALLEY	DRIVEWAY OR ALLEY
3	STRGHT	STRAIGHT ROADWAY
4	TRANS	TRANSITION
5	CURVE	CURVE (HORIZONTAL CURVE)
6	OPENAC	OPEN ACCESS OR TURNOUT
7	GRADE	GRADE (VERTICAL CURVE)
8	BRIDGE	BRIDGE STRUCTURE
9	TUNNEL	TUNNEL

PARTICIPANT TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	OCC	UNKNOWN OCCUPANT TYPE
1	DRVR	DRIVER
2	PSNG	PASSENGER
3	PED	PEDESTRIAN
4	CONV	PEDESTRIAN USING A PEDESTRIAN CONVEYA
5	PTOW	PEDESTRIAN TOWING OR TRAILERING AN OB
6	BIKE	PEDALCYCLIST
7	BTOW	PEDALCYCLIST TOWING OR TRAILERING AN
8	PRKD	OCCUPANT OF A PARKED MOTOR VEHICLE
9	UNK	UNKNOWN TYPE OF NON-MOTORIST

TRAFFIC CONTROL DEVICE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
000	NONE	NO CONTROL
001	TRF SIGNAL	TRAFFIC SIGNALS
002	FLASHBCN-R	FLASHING BEACON - RED (STOP)
003	FLASHBCN-A	FLASHING BEACON - AMBER (SLOW)
004	STOP SIGN	STOP SIGN
005	SLOW SIGN	SLOW SIGN
006	REG-SIGN	REGULATORY SIGN
007	YIELD	YIELD SIGN
008	WARNING	WARNING SIGN
009	CURVE	CURVE SIGN
010	SCHL X-ING	SCHOOL CROSSING SIGN OR SPECIAL SIGNAL
011	OFCR/FLAG	POLICE OFFICER, FLAGMAN - SCHOOL PATROL
012	BRDG-GATE	BRIDGE GATE - BARRIER
013	TEMP-BARR	TEMPORARY BARRIER
014	NO-PASS-ZN	NO PASSING ZONE
015	ONE-WAY	ONE-WAY STREET
016	CHANNEL	CHANNELIZATION
017	MEDIAN BAR	MEDIAN BARRIER
018	PILOT CAR	PILOT CAR
019	SP PED SIG	SPECIAL PEDESTRIAN SIGNAL
020	X-BUCK	CROSSBUCK
021	THR-GN-SIG	THROUGH GREEN ARROW OR SIGNAL
022	L-GRN-SIG	LEFT TURN GREEN ARROW, LANE MARKINGS, OR SIGNAL
023	R-GRN-SIG	RIGHT TURN GREEN ARROW, LANE MARKINGS, OR SIGNAL
024	WIGWAG	WIGWAG OR FLASHING LIGHTS W/O DROP-ARM GATE
025	X-BUCK WRN	CROSSBUCK AND ADVANCE WARNING
026	WW W/ GATE	FLASHING LIGHTS WITH DROP-ARM GATES
027	OVRHD SGNL	SUPPLEMENTAL OVERHEAD SIGNAL (RR XING ONLY)
028	SP RR STOP	SPECIAL RR STOP SIGN
029	ILUM GRD X	ILLUMINATED GRADE CROSSING
037	RAMP METER	METERED RAMPS
038	RUMBLE STR	RUMBLE STRIP
090	L-TURN REF	LEFT TURN REFUGE (WHEN REFUGE IS INVOLVED)
091	R-TURN ALL	RIGHT TURN AT ALL TIMES SIGN, ETC.
092	EMR SGN/FL	EMERGENCY SIGNS OR FLARES
093	[illegible]LANE	ACCELERATION OR DECELERATION LANES
094	R-TURN PRO	RIGHT TURN PROHIBITED ON RED AFTER STOPPING

095	BUS STPSGN	BUS STOP SIGN AND RED LIGHTS
099	UNKNOWN	UNKNOWN OR NOT DEFINITE

VEHICLE TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
01	PSNGR CAR	PASSENGER CAR, PICKUP, LIGHT DELIVERY, ETC.
02	BOBTAIL	TRUCK TRACTOR WITH NO TRAILERS (BOBTAIL)
03	FARM TRCTR	FARM TRACTOR OR SELF-PROPELLED FARM EQUIPMENT
04	SEMI TOW	TRUCK TRACTOR WITH TRAILER/MOBILE HOME IN TOW
05	TRUCK	TRUCK WITH NON-DETACHABLE BED, PANEL, ETC.
06	MOPED	MOPED, MINIBIKE, SEATED MOTOR SCOOTER, MOTOR BIKE
07	SCHL BUS	SCHOOL BUS (INCLUDES VAN)
08	OTH BUS	OTHER BUS
09	MTRCYCLE	MOTORCYCLE, DIRT BIKE
10	OTHER	OTHER: FORKLIFT, BACKHOE, ETC.
11	MOTRHOME	MOTORHOME
12	TROLLEY	MOTORIZED STREET CAR/TROLLEY (NO RAILS/WIRES)
13	ATV	ATV
14	MTRSCTR	MOTORIZED SCOOTER (STANDING)
15	SNOWMOBILE	SNOWMOBILE
99	UNKNOWN	UNKNOWN VEHICLE TYPE

WEATHER CONDITION CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	CLR	CLEAR
2	CLD	CLOUDY
3	RAIN	RAIN
4	SLT	SLEET
5	FOG	FOG
6	SNOW	SNOW
7	DUST	DUST
8	SMOK	SMOKE
9	ASH	ASH

Attachment C - Traffic Count Data

Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

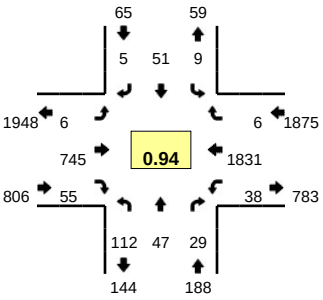
LOCATION: SE Rusk Rd -- Milwaukie Expy

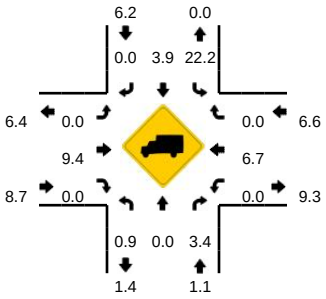
CITY/STATE: Milwaukie, OR

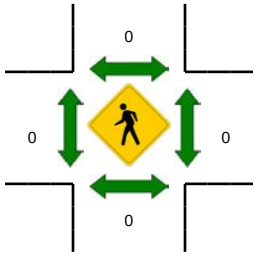
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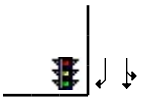
DATE: Wed, Nov 02 2016

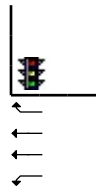
Peak-Hour: 7:35 AM -- 8:35 AM
Peak 15-Min: 8:10 AM -- 8:25 AM

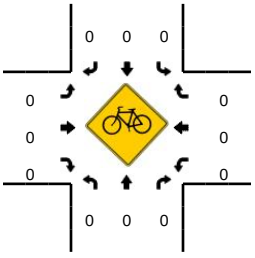


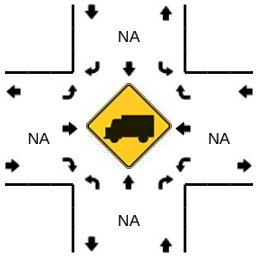


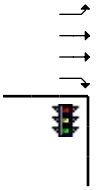




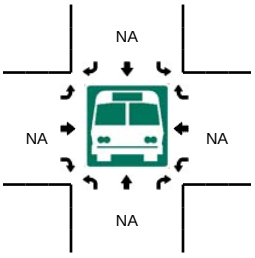












5-Min Count Period Beginning At	SE Rusk Rd (Northbound)				SE Rusk Rd (Southbound)				Milwaukie Expy (Eastbound)				Milwaukie Expy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	6	3	1	0	3	4	1	0	0	37	0	0	0	222	0	0	277	
7:05 AM	13	1	2	0	3	0	0	0	0	31	0	0	0	140	1	0	191	
7:10 AM	6	0	1	0	0	0	0	0	0	62	0	0	1	183	1	0	254	
7:15 AM	9	0	6	0	0	0	0	0	0	63	0	0	2	172	2	0	254	
7:20 AM	5	1	3	0	0	2	0	0	0	63	2	0	1	148	1	0	226	
7:25 AM	9	2	5	0	1	3	1	0	0	69	1	0	0	152	1	0	244	
7:30 AM	7	0	2	0	1	0	0	0	0	64	3	0	1	140	1	0	219	
7:35 AM	14	6	1	0	2	1	0	0	0	56	1	0	2	166	0	0	249	
7:40 AM	12	1	1	0	1	6	1	0	0	84	1	0	3	146	1	0	257	
7:45 AM	10	3	1	0	0	1	0	0	0	58	4	0	4	147	0	0	228	
7:50 AM	6	3	5	0	1	8	0	0	0	82	2	0	2	173	2	0	284	
7:55 AM	7	5	1	0	2	3	0	0	2	46	3	0	2	144	0	0	215	2898
8:00 AM	5	2	2	0	0	2	1	0	0	57	3	0	1	164	0	0	237	2858
8:05 AM	9	2	2	0	0	4	0	0	0	54	4	0	3	141	1	0	220	2887
8:10 AM	3	2	2	0	0	1	0	0	2	84	2	0	3	168	1	0	268	2901
8:15 AM	11	9	4	0	0	10	1	0	0	46	6	0	5	140	0	0	232	2879
8:20 AM	10	4	1	0	2	7	0	0	2	72	12	0	4	164	0	0	278	2931
8:25 AM	13	8	4	0	0	5	0	0	0	41	10	0	5	131	0	0	217	2904
8:30 AM	12	2	5	0	1	3	2	0	0	65	7	0	4	147	1	0	249	2934
8:35 AM	14	5	6	0	1	5	0	0	1	51	1	0	2	115	1	0	202	2887
8:40 AM	10	2	2	0	1	4	0	0	0	79	5	0	3	143	0	0	249	2879
8:45 AM	7	8	5	0	2	2	1	0	0	48	6	0	1	119	1	0	200	2851
8:50 AM	7	3	2	0	2	4	0	0	2	74	3	0	1	138	1	0	237	2804
8:55 AM	9	5	2	0	3	3	0	0	1	52	6	0	6	126	2	0	215	2804

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	96	60	28	0	8	72	4	0	16	808	80	0	48	1888	4	0	3112
Heavy Trucks	0	0	4		4	0	0		0	92	0		0	160	0		260
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/8/2016 9:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

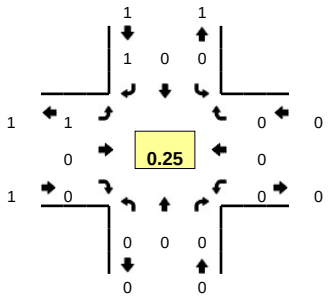
LOCATION: SE Rusk Rd -- Church Driveway

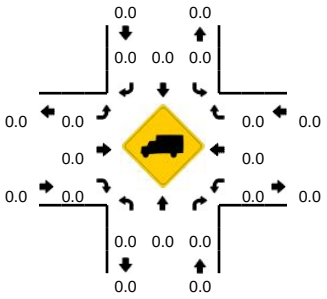
QC JOB #: 13929511

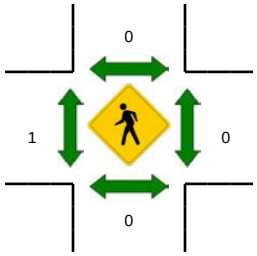
CITY/STATE: Milwaukie, OR

DATE: Wed, Nov 02 2016

Peak-Hour: 7:35 AM -- 8:35 AM
Peak 15-Min: 7:40 AM -- 7:55 AM

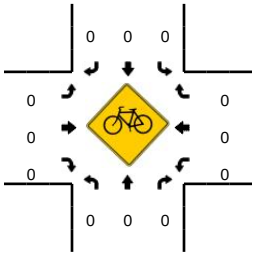


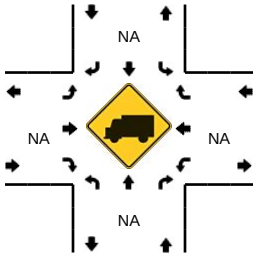


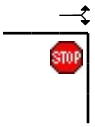


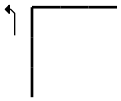


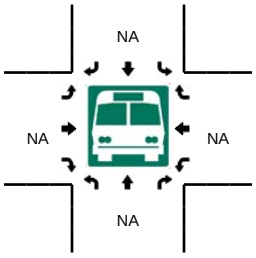












5-Min Count Period Beginning At	SE Rusk Rd (Northbound)				SE Rusk Rd (Southbound)				Church Driveway (Eastbound)				Church Driveway (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	
7:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	
7:50 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	
7:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
8:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
8:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	0	4	0	4	0	0	0	0	0	0	0	8
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/8/2016 9:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

LOCATION: SE Ruscliffe Ln -- SE Rusk Rd

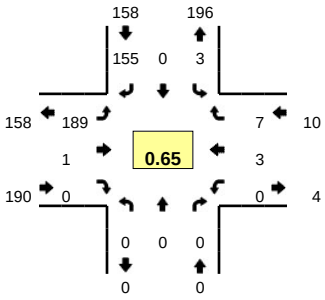
CITY/STATE: Milwaukie, OR

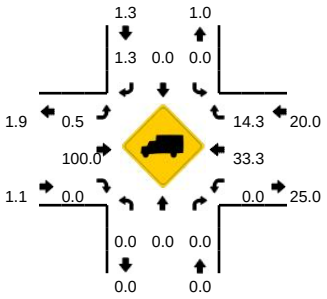
QC JOB #: 13929503

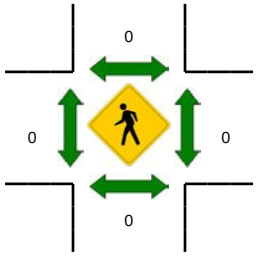
DATE: Wed, Nov 02 2016

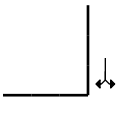
Peak-Hour: 7:35 AM -- 8:35 AM

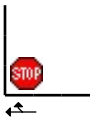
Peak 15-Min: 8:20 AM -- 8:35 AM

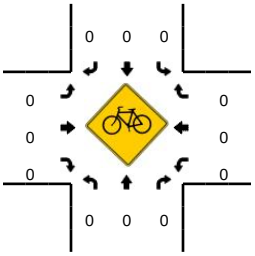


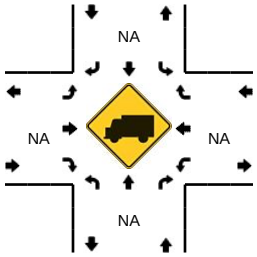


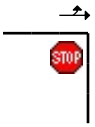


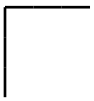


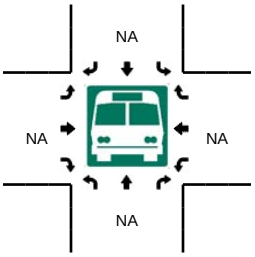












5-Min Count Period Beginning At	SE Ruscliffe Ln (Northbound)				SE Ruscliffe Ln (Southbound)				SE Rusk Rd (Eastbound)				SE Rusk Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	1	0	3	0	11	1	0	0	0	0	1	0	17	
7:05 AM	0	0	0	0	0	0	1	0	15	0	0	0	0	0	0	0	16	
7:10 AM	0	0	0	0	0	0	1	0	10	0	0	0	0	1	0	0	12	
7:15 AM	0	0	0	0	1	0	2	0	14	1	0	0	0	0	0	0	18	
7:20 AM	0	0	0	0	0	0	7	0	15	0	0	0	0	1	1	0	24	
7:25 AM	0	0	0	0	0	0	5	0	10	0	0	0	0	0	1	0	16	
7:30 AM	0	0	0	0	0	0	3	0	20	0	0	0	0	1	0	0	24	
7:35 AM	0	0	0	0	0	0	7	0	15	0	0	0	0	0	0	0	22	
7:40 AM	0	0	0	0	0	0	11	0	18	0	0	0	0	0	0	0	29	
7:45 AM	0	0	0	0	2	0	6	0	12	0	0	0	0	1	0	0	21	
7:50 AM	0	0	0	0	0	0	13	0	14	0	0	0	0	0	2	0	29	
7:55 AM	0	0	0	0	0	0	8	0	12	0	0	0	0	1	0	0	21	249
8:00 AM	0	0	0	0	0	0	6	0	10	0	0	0	0	0	1	0	17	249
8:05 AM	0	0	0	0	0	0	10	0	11	0	0	0	0	0	1	0	22	255
8:10 AM	0	0	0	0	0	0	8	0	10	0	0	0	0	1	1	0	20	263
8:15 AM	0	0	0	0	0	0	18	0	20	0	0	0	0	0	2	0	40	285
8:20 AM	0	0	0	0	0	0	28	0	21	0	0	0	0	0	0	0	49	310
8:25 AM	0	0	0	0	0	0	24	0	21	0	0	0	0	0	0	0	45	339
8:30 AM	0	0	0	0	1	0	16	0	25	1	0	0	0	0	0	0	43	358
8:35 AM	0	0	0	0	0	0	7	0	20	0	0	0	0	0	1	0	28	364
8:40 AM	0	0	0	0	0	0	14	0	18	0	0	0	0	0	0	0	32	367
8:45 AM	0	0	0	0	0	0	8	0	19	0	0	0	0	0	0	0	27	373
8:50 AM	0	0	0	0	0	0	10	0	17	0	0	0	0	3	2	0	32	376
8:55 AM	0	0	0	0	1	0	12	0	15	0	0	0	0	0	0	0	28	383

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	4	0	272	0	268	4	0	0	0	0	0	0	548
Heavy Trucks	0	0	0		0	0	0		0	4	0		0	0	0		4
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/8/2016 9:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

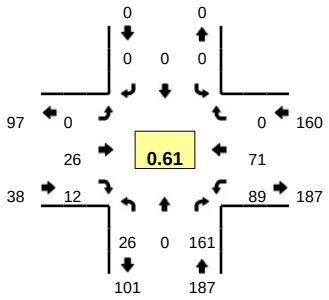
LOCATION: SE Rusk Rd -- SE Kellogg Creek Dr

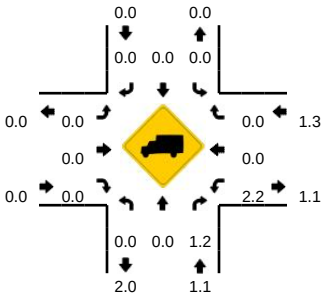
QC JOB #: 13929505

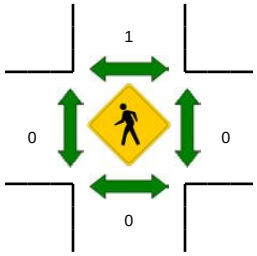
CITY/STATE: Milwaukie, OR

DATE: Wed, Nov 02 2016

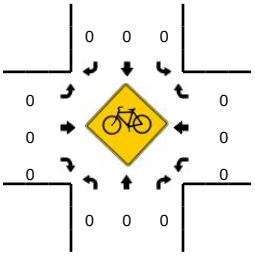
Peak-Hour: 7:35 AM -- 8:35 AM
Peak 15-Min: 8:20 AM -- 8:35 AM

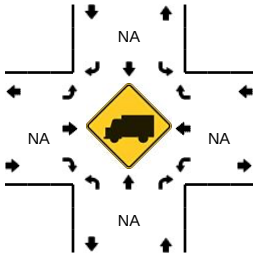




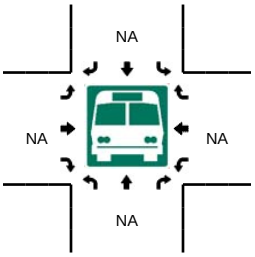












5-Min Count Period Beginning At	SE Rusk Rd (Northbound)				SE Rusk Rd (Southbound)				SE Kellogg Creek Dr (Eastbound)				SE Kellogg Creek Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	12	0	0	0	0	0	0	0	0	0	2	1	0	0	15	
7:05 AM	0	0	15	0	0	0	0	0	0	0	1	0	0	0	0	0	16	
7:10 AM	1	0	10	0	0	0	0	0	0	0	0	0	3	0	0	0	14	
7:15 AM	1	0	15	0	0	0	0	0	0	0	0	0	1	1	0	0	18	
7:20 AM	1	0	14	0	0	0	0	0	0	0	0	0	6	2	0	0	23	
7:25 AM	2	0	10	0	0	0	0	0	0	1	0	0	3	0	0	0	16	
7:30 AM	0	0	18	0	0	0	0	0	0	2	0	0	3	3	0	0	26	
7:35 AM	1	0	15	0	0	0	0	0	0	0	0	0	6	0	0	0	22	
7:40 AM	1	0	18	0	0	0	0	0	0	0	0	0	11	1	0	0	31	
7:45 AM	2	0	11	0	0	0	0	0	0	1	0	0	4	2	0	0	20	
7:50 AM	1	0	13	0	0	0	0	0	0	1	0	0	10	3	0	0	28	
7:55 AM	0	0	12	0	0	0	0	0	0	0	1	0	7	2	0	0	22	251
8:00 AM	1	0	9	0	0	0	0	0	0	1	0	0	4	3	0	0	18	254
8:05 AM	1	0	11	0	0	0	0	0	0	0	0	0	5	3	0	0	20	258
8:10 AM	0	0	10	0	0	0	0	0	0	0	0	0	5	7	0	0	22	266
8:15 AM	6	0	17	0	0	0	0	0	0	1	1	0	6	12	0	0	43	291
8:20 AM	5	0	15	0	0	0	0	0	0	6	2	0	15	13	0	0	56	324
8:25 AM	3	0	15	0	0	0	0	0	0	6	4	0	11	14	0	0	53	361
8:30 AM	5	0	15	0	0	0	0	0	0	10	4	0	5	11	0	0	50	385
8:35 AM	0	0	11	0	0	0	0	0	0	10	3	0	3	2	0	0	29	392
8:40 AM	1	0	16	0	0	0	0	0	0	2	0	0	10	6	0	0	35	396
8:45 AM	2	0	15	0	0	0	0	0	0	3	0	0	7	2	0	0	29	405
8:50 AM	2	0	16	0	0	0	0	0	0	2	1	0	8	2	0	0	31	408
8:55 AM	0	0	13	0	0	0	0	0	0	2	1	0	7	7	0	0	30	416

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	52	0	180	0	0	0	0	0	0	88	40	0	124	152	0	0	636
Heavy Trucks	0	0	4		0	0	0		0	0	0		0	0	0		4
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/8/2016 9:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

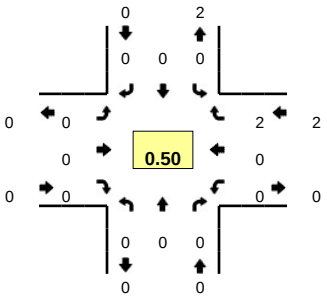
LOCATION: Church Driveway -- SE Kellogg Creek Dr

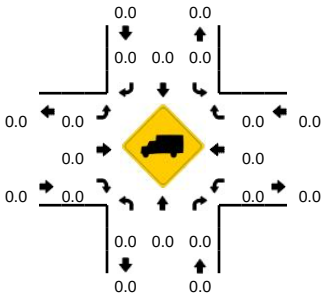
QC JOB #: 13929509

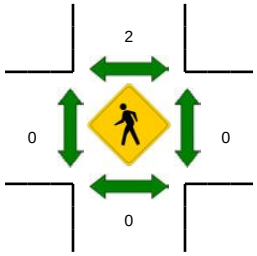
CITY/STATE: Milwaukie, OR

DATE: Wed, Nov 02 2016

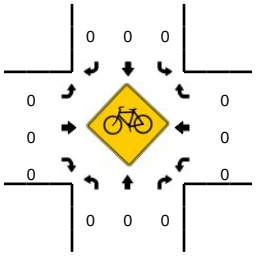
Peak-Hour: 7:35 AM -- 8:35 AM
Peak 15-Min: 8:05 AM -- 8:20 AM

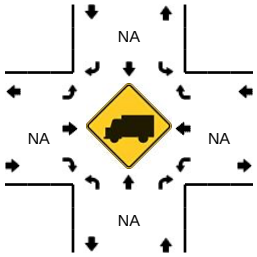




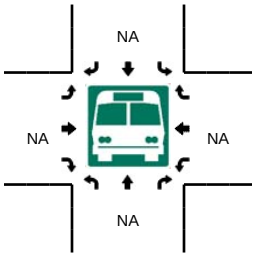












5-Min Count Period Beginning At	Church Driveway (Northbound)				Church Driveway (Southbound)				SE Kellogg Creek Dr (Eastbound)				SE Kellogg Creek Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
8:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
8:35 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	3
8:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
8:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
8:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				4				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/8/2016 9:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

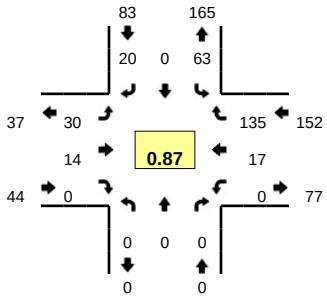
LOCATION: SE Rusk Rd -- SE Aldercrest Rd

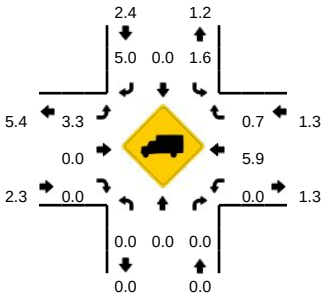
QC JOB #: 13929507

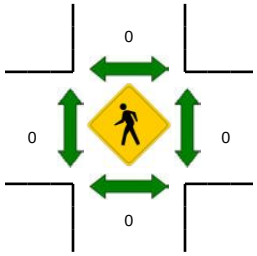
CITY/STATE: Milwaukie, OR

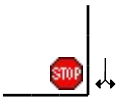
DATE: Wed, Nov 02 2016

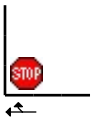
Peak-Hour: 7:35 AM -- 8:35 AM
Peak 15-Min: 8:15 AM -- 8:30 AM

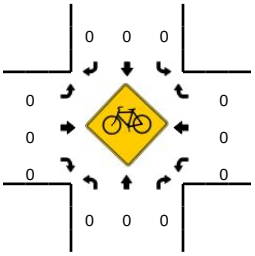


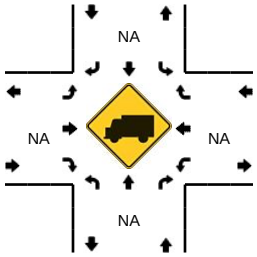


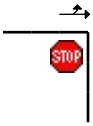




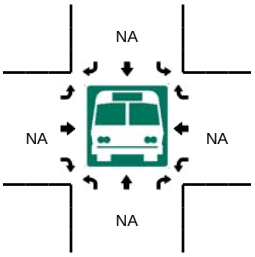












5-Min Count Period Beginning At	SE Rusk Rd (Northbound)				SE Rusk Rd (Southbound)				SE Aldercrest Rd (Eastbound)				SE Aldercrest Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	2	7	0	10	
7:05 AM	0	0	0	0	2	0	1	0	2	1	0	0	0	2	12	0	20	
7:10 AM	0	0	0	0	2	0	1	0	2	3	0	0	0	1	8	0	17	
7:15 AM	0	0	0	0	0	0	1	0	3	1	0	0	0	1	8	0	14	
7:20 AM	0	0	0	0	4	0	0	0	5	0	0	0	0	1	8	0	18	
7:25 AM	0	0	0	0	4	0	1	0	2	2	0	0	0	2	9	0	20	
7:30 AM	0	0	0	0	4	0	1	0	2	0	0	0	0	3	12	0	22	
7:35 AM	0	0	0	0	6	0	0	0	4	0	0	0	0	0	14	0	24	
7:40 AM	0	0	0	0	6	0	2	0	1	2	0	0	0	1	15	0	27	
7:45 AM	0	0	0	0	2	0	0	0	1	0	0	0	0	3	11	0	17	
7:50 AM	0	0	0	0	6	0	2	0	0	1	0	0	0	2	11	0	22	
7:55 AM	0	0	0	0	7	0	3	0	1	3	0	0	0	1	8	0	23	234
8:00 AM	0	0	0	0	4	0	0	0	1	0	0	0	0	1	8	0	14	238
8:05 AM	0	0	0	0	6	0	1	0	4	6	0	0	0	2	8	0	27	245
8:10 AM	0	0	0	0	3	0	2	0	4	0	0	0	0	3	9	0	21	249
8:15 AM	0	0	0	0	3	0	2	0	4	1	0	0	0	2	18	0	30	265
8:20 AM	0	0	0	0	8	0	1	0	3	0	0	0	0	1	12	0	25	272
8:25 AM	0	0	0	0	4	0	4	0	4	1	0	0	0	0	12	0	25	277
8:30 AM	0	0	0	0	8	0	3	0	3	0	0	0	0	1	9	0	24	279
8:35 AM	0	0	0	0	3	0	1	0	0	2	0	0	0	0	7	0	13	268
8:40 AM	0	0	0	0	8	0	3	0	3	1	0	0	0	2	11	0	28	269
8:45 AM	0	0	0	0	5	0	3	0	7	1	0	0	0	3	10	0	29	281
8:50 AM	0	0	0	0	4	0	3	0	4	2	0	0	0	1	9	0	23	282
8:55 AM	0	0	0	0	2	0	6	0	5	2	0	0	0	3	7	0	25	284

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	60	0	28	0	44	8	0	0	0	12	168	0	320
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/8/2016 9:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

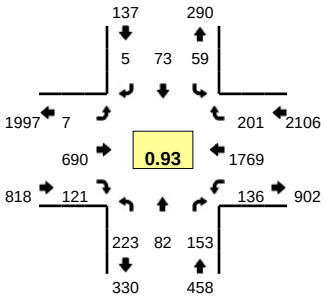
LOCATION: SE Lake Rd/SE Webster Rd -- Milwaukie Expy

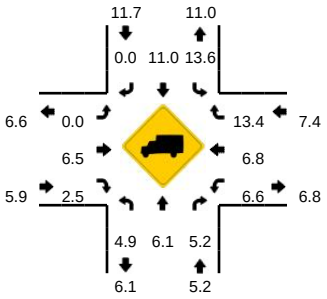
QC JOB #: 13929519

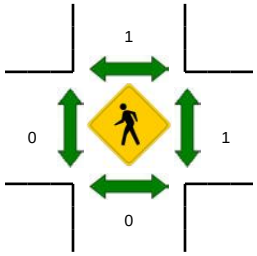
CITY/STATE: Portland, OR

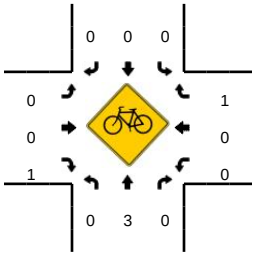
DATE: Thu, Nov 17 2016

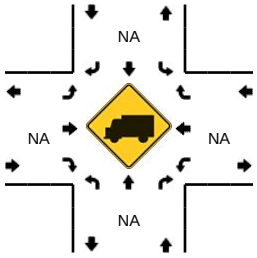
Peak-Hour: 7:35 AM -- 8:35 AM
Peak 15-Min: 7:50 AM -- 8:05 AM

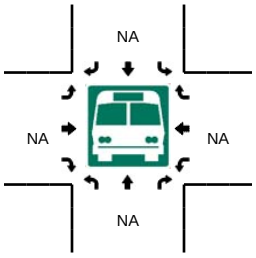


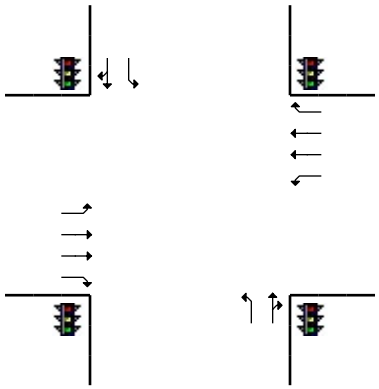












5-Min Count Period Beginning At	SE Lake Rd/SE Webster Rd (Northbound)				SE Lake Rd/SE Webster Rd (Southbound)				Milwaukie Expy (Eastbound)				Milwaukie Expy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	24	4	6	0	4	0	0	0	0	47	5	0	13	182	17	0	302	
7:05 AM	37	14	7	0	5	0	0	0	0	52	6	0	9	136	9	0	275	
7:10 AM	21	6	8	0	1	1	0	0	2	42	3	0	10	165	10	0	269	
7:15 AM	24	11	9	0	4	8	0	0	0	49	6	0	8	155	13	0	287	
7:20 AM	19	8	8	0	1	6	0	0	0	37	5	0	8	126	12	0	230	
7:25 AM	29	10	17	0	5	5	0	0	0	67	7	0	9	136	12	0	297	
7:30 AM	19	6	6	0	3	7	0	0	0	63	8	0	6	157	9	0	284	
7:35 AM	17	9	18	0	9	7	0	0	0	41	18	0	15	122	8	0	264	
7:40 AM	17	3	15	0	8	5	0	0	0	55	7	0	6	171	19	0	306	
7:45 AM	25	10	17	0	4	6	0	0	1	67	9	0	12	117	19	0	287	
7:50 AM	14	6	14	0	4	6	1	0	1	90	8	0	5	175	22	0	346	
7:55 AM	19	9	15	0	2	6	0	0	1	63	10	0	9	152	14	0	300	3447
8:00 AM	14	7	12	0	1	6	1	0	1	54	9	0	10	165	22	0	302	3447
8:05 AM	19	8	11	0	2	6	0	0	0	43	10	0	5	144	17	0	265	3437
8:10 AM	17	3	7	0	5	4	0	0	1	62	10	0	12	166	20	0	307	3475
8:15 AM	26	10	18	0	6	11	0	0	0	37	11	0	13	121	13	0	266	3454
8:20 AM	18	6	6	0	5	6	2	0	2	71	8	0	16	149	15	0	304	3528
8:25 AM	29	6	11	0	5	7	0	0	0	47	12	0	16	140	14	0	287	3518
8:30 AM	8	5	9	0	8	3	1	0	0	60	9	0	17	147	18	0	285	3519
8:35 AM	18	4	13	0	7	6	0	0	0	57	12	0	21	116	7	0	261	3516
8:40 AM	17	6	11	0	4	2	0	0	1	63	12	0	22	152	14	0	304	3514
8:45 AM	23	9	13	0	6	6	1	0	0	54	4	0	24	105	15	0	260	3487
8:50 AM	17	3	4	0	4	4	0	0	1	62	12	0	22	152	23	0	304	3445
8:55 AM	18	4	10	0	10	8	0	0	2	52	4	0	24	97	9	0	238	3383

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	188	88	164	0	28	72	8	0	12	828	108	0	96	1968	232	0	3792
Heavy Trucks	16	16	8		8	12	0		0	60	0		0	124	32		276
Pedestrians		0				0				0				4			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/8/2016 9:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

LOCATION: SE Rusk Rd -- Milwaukie Expy

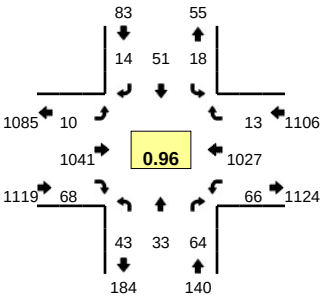
QC JOB #: 13929513

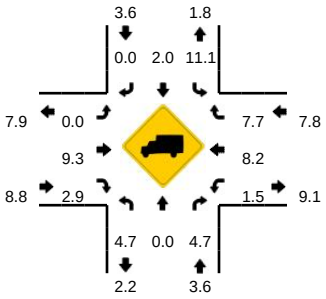
CITY/STATE: Milwaukie, OR

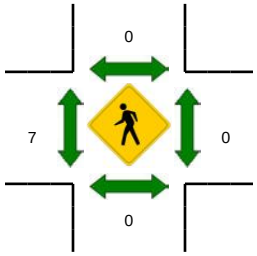
DATE: Wed, Nov 02 2016

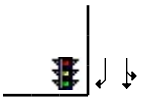
Peak-Hour: 11:55 AM -- 12:55 PM

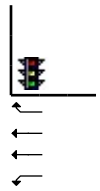
Peak 15-Min: 12:40 PM -- 12:55 PM

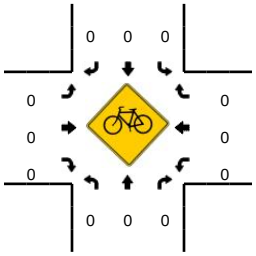


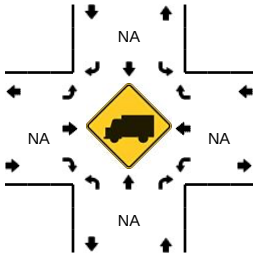


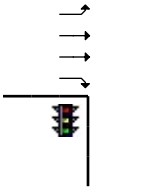




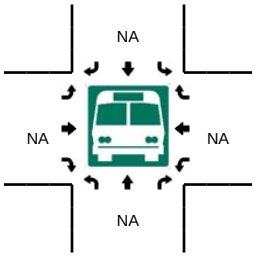












5-Min Count Period Beginning At	SE Rusk Rd (Northbound)				SE Rusk Rd (Southbound)				Milwaukie Expy (Eastbound)				Milwaukie Expy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:00 AM	7	3	4	0	0	5	0	0	1	55	2	0	4	100	0	0	181	
11:05 AM	2	1	3	0	2	4	0	0	0	69	3	0	3	79	5	0	171	
11:10 AM	6	5	7	0	1	4	1	0	0	73	4	0	3	69	0	0	173	
11:15 AM	5	4	8	0	1	1	0	0	0	93	3	0	5	99	2	0	221	
11:20 AM	1	7	5	0	1	2	0	0	0	84	0	1	2	81	0	0	184	
11:25 AM	11	5	7	0	3	1	0	0	0	78	2	0	5	95	0	0	207	
11:30 AM	2	1	2	0	3	4	0	0	0	75	7	0	3	93	0	0	190	
11:35 AM	5	1	7	0	0	1	0	0	0	88	5	0	2	95	0	0	204	
11:40 AM	10	5	6	0	0	4	1	0	1	72	3	0	1	102	0	0	205	
11:45 AM	9	2	0	0	3	4	0	0	2	82	1	1	3	91	1	0	199	
11:50 AM	4	1	7	0	1	2	2	0	0	77	6	0	5	88	2	0	195	
11:55 AM	3	5	5	0	2	6	2	0	0	98	10	0	4	78	1	0	214	2344
12:00 PM	6	1	5	0	2	4	2	0	0	69	4	0	5	70	0	0	168	2331
12:05 PM	3	1	10	0	2	1	1	0	0	95	8	1	5	98	0	0	225	2385
12:10 PM	5	2	2	0	1	6	1	0	0	82	3	0	7	88	0	0	197	2409
12:15 PM	5	1	2	0	2	6	2	0	2	103	1	0	8	78	3	0	213	2401
12:20 PM	2	1	6	0	0	2	0	0	1	93	6	0	7	85	1	0	204	2421
12:25 PM	1	2	5	0	1	4	2	0	2	82	11	0	7	74	2	0	193	2407
12:30 PM	4	3	6	0	2	5	0	0	0	81	3	0	3	91	3	0	201	2418
12:35 PM	1	5	7	0	0	7	1	0	1	89	6	0	7	69	0	1	194	2408
12:40 PM	3	6	9	0	3	4	0	0	2	97	8	0	3	97	1	0	233	2436
12:45 PM	7	2	5	0	0	3	2	0	1	84	3	0	7	85	1	0	200	2437
12:50 PM	3	4	2	0	3	3	1	0	0	68	5	0	2	114	1	0	206	2448
12:55 PM	5	2	12	0	1	4	0	0	0	93	5	0	6	78	0	0	206	2440

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	52	48	64	0	24	40	12	0	12	996	64	0	48	1184	12	0	2556
Heavy Trucks	0	0	4		0	0	0		0	108	8		0	108	0		228
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/8/2016 9:36 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

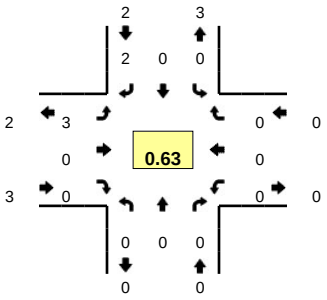
LOCATION: SE Rusk Rd -- Church Driveway

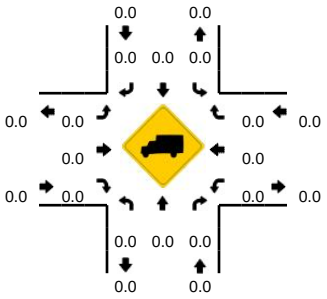
QC JOB #: 13929518

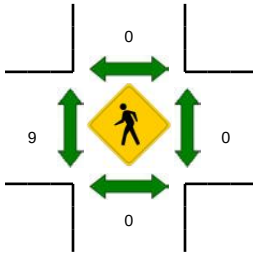
CITY/STATE: Milwaukie, OR

DATE: Wed, Nov 02 2016

Peak-Hour: 11:55 AM -- 12:55 PM
Peak 15-Min: 11:55 AM -- 12:10 PM

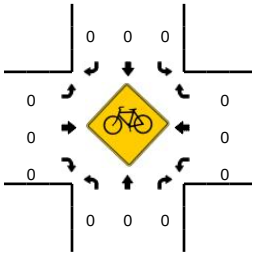


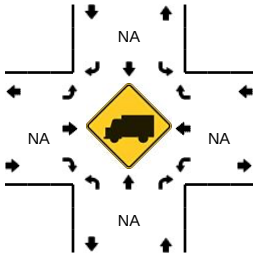


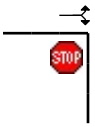


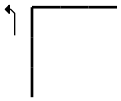


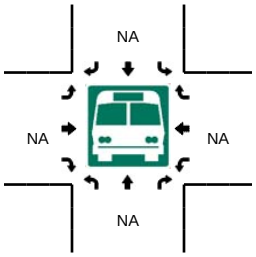












5-Min Count Period Beginning At	SE Rusk Rd (Northbound)				SE Rusk Rd (Southbound)				Church Driveway (Eastbound)				Church Driveway (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:10 AM	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
11:15 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	
11:20 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	
11:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:45 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	
11:50 AM	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2	
11:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
12:05 PM	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2	9
12:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
12:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
12:25 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	6
12:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	7
12:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
12:40 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	8
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
12:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
12:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	0	4	0	4	0	0	0	0	0	0	0	8
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				4				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/8/2016 9:36 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

RS537

Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

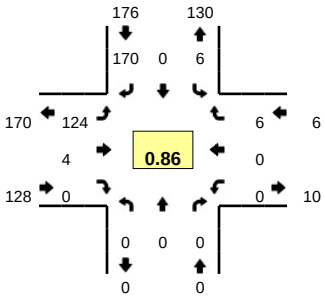
LOCATION: SE Ruscliffe Ln -- SE Rusk Rd

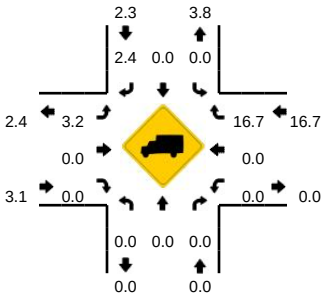
QC JOB #: 13929514

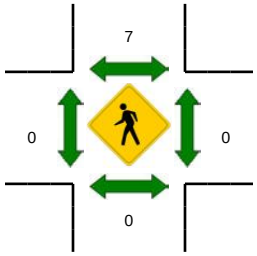
CITY/STATE: Milwaukie, OR

DATE: Wed, Nov 02 2016

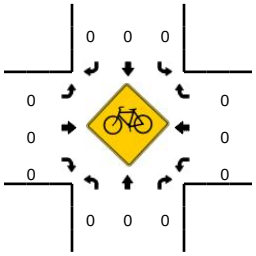
Peak-Hour: 11:55 AM -- 12:55 PM
Peak 15-Min: 12:35 PM -- 12:50 PM

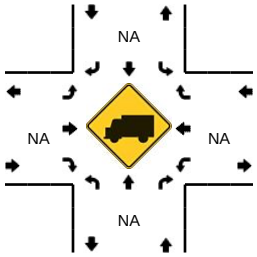




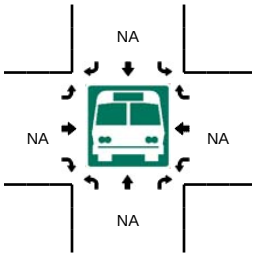












5-Min Count Period Beginning At	SE Ruscliffe Ln (Northbound)				SE Ruscliffe Ln (Southbound)				SE Rusk Rd (Eastbound)				SE Rusk Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:00 AM	0	0	0	0	0	0	10	0	14	0	0	0	0	0	0	0	24	
11:05 AM	0	0	0	0	0	0	7	0	18	0	0	0	0	0	0	0	25	
11:10 AM	0	0	0	0	0	0	12	0	9	0	0	0	0	0	0	0	21	
11:15 AM	0	0	0	0	0	0	12	0	13	0	0	0	0	0	0	0	25	
11:20 AM	0	0	0	0	0	0	5	0	14	0	0	0	0	0	0	0	19	
11:25 AM	0	0	0	0	2	0	6	0	20	0	0	0	0	0	2	0	30	
11:30 AM	0	0	0	0	0	0	15	0	5	0	0	0	0	0	0	0	20	
11:35 AM	0	0	0	0	0	0	8	0	16	0	0	0	0	0	0	0	24	
11:40 AM	0	0	0	0	2	0	6	0	18	0	0	0	0	0	2	0	28	
11:45 AM	0	0	0	0	0	0	7	0	10	0	0	0	0	0	0	0	17	
11:50 AM	0	0	0	0	0	0	13	0	10	0	0	0	0	0	2	0	25	
11:55 AM	0	0	0	0	0	0	18	0	12	0	0	0	0	0	0	0	30	288
12:00 PM	0	0	0	0	1	0	9	0	12	0	0	0	0	0	1	0	23	287
12:05 PM	0	0	0	0	0	0	11	0	10	0	0	0	0	0	0	0	21	283
12:10 PM	0	0	0	0	0	0	12	0	9	1	0	0	0	0	0	0	22	284
12:15 PM	0	0	0	0	1	0	18	0	7	1	0	0	0	0	0	0	27	286
12:20 PM	0	0	0	0	0	0	16	0	9	0	0	0	0	0	0	0	25	292
12:25 PM	0	0	0	0	2	0	20	0	7	0	0	0	0	0	2	0	31	293
12:30 PM	0	0	0	0	1	0	11	0	11	0	0	0	0	0	0	0	23	296
12:35 PM	0	0	0	0	0	0	16	0	11	1	0	0	0	0	2	0	30	302
12:40 PM	0	0	0	0	0	0	18	0	15	0	0	0	0	0	1	0	34	308
12:45 PM	0	0	0	0	0	0	12	0	14	0	0	0	0	0	0	0	26	317
12:50 PM	0	0	0	0	1	0	9	0	7	1	0	0	0	0	0	0	18	310
12:55 PM	0	0	0	0	0	0	14	0	16	1	0	0	0	0	1	0	32	312

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	0	184	0	160	4	0	0	0	0	12	0	360
Heavy Trucks	0	0	0		0	0	8		4	0	0		0	0	0		12
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/8/2016 9:36 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

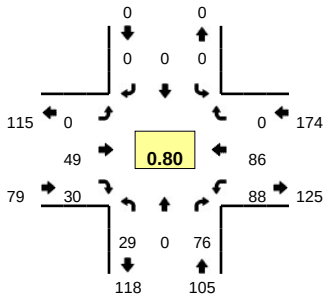
LOCATION: SE Rusk Rd -- SE Kellog Creek Dr

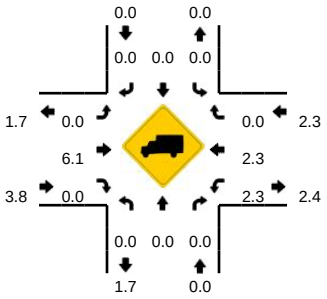
QC JOB #: 13929515

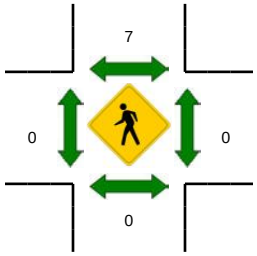
CITY/STATE: Milwaukie, OR

DATE: Wed, Nov 02 2016

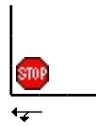
Peak-Hour: 11:55 AM -- 12:55 PM
Peak 15-Min: 12:30 PM -- 12:45 PM

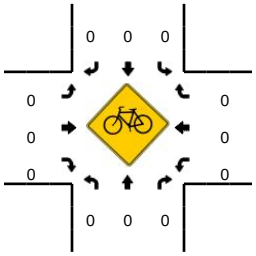


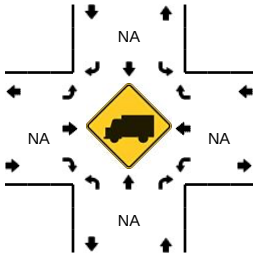


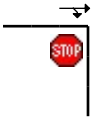


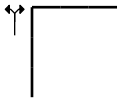


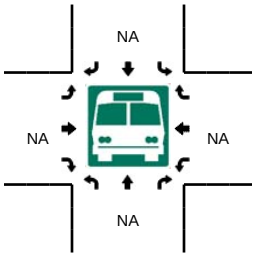












5-Min Count Period Beginning At	SE Rusk Rd (Northbound)				SE Rusk Rd (Southbound)				SE Kellog Creek Dr (Eastbound)				SE Kellog Creek Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:00 AM	2	0	1	0	0	0	0	0	0	13	2	0	7	4	0	0	29	
11:05 AM	0	0	5	0	0	0	0	0	0	13	2	0	2	4	0	0	26	
11:10 AM	0	0	8	0	0	0	0	0	0	3	2	0	8	4	0	0	25	
11:15 AM	3	0	5	0	0	0	0	0	0	7	3	0	7	5	0	0	30	
11:20 AM	0	0	9	0	0	0	0	0	0	6	3	0	3	4	0	0	25	
11:25 AM	1	0	8	0	0	0	0	0	0	11	4	0	5	1	0	0	30	
11:30 AM	1	0	4	0	0	0	0	0	0	2	1	0	9	6	0	0	23	
11:35 AM	0	0	12	0	0	0	0	0	0	4	4	0	7	1	0	0	28	
11:40 AM	0	0	11	0	0	0	0	0	0	8	1	0	4	2	0	0	26	
11:45 AM	4	0	8	0	0	0	0	0	0	1	1	0	4	2	0	0	20	
11:50 AM	1	0	7	0	0	0	0	0	0	4	0	0	8	4	0	0	24	
11:55 AM	2	0	3	0	0	0	0	0	0	7	2	0	10	9	0	0	33	319
12:00 PM	2	0	8	0	0	0	0	0	0	3	3	0	6	5	0	0	27	317
12:05 PM	1	0	8	0	0	0	0	0	0	2	7	0	9	3	0	0	30	321
12:10 PM	1	0	7	0	0	0	0	0	0	3	1	0	6	6	0	0	24	320
12:15 PM	3	0	8	0	0	0	0	0	0	2	2	0	8	10	0	0	33	323
12:20 PM	1	0	3	0	0	0	0	0	0	4	2	0	3	10	0	0	23	321
12:25 PM	3	0	4	0	0	0	0	0	0	3	2	0	8	10	0	0	30	321
12:30 PM	3	0	4	0	0	0	0	0	0	6	8	0	8	8	0	0	37	335
12:35 PM	5	0	10	0	0	0	0	0	0	3	1	0	8	7	0	0	34	341
12:40 PM	6	0	12	0	0	0	0	0	0	4	0	0	10	9	0	0	41	356
12:45 PM	1	0	4	0	0	0	0	0	0	9	2	0	3	8	0	0	27	363
12:50 PM	1	0	5	0	0	0	0	0	0	3	0	0	9	1	0	0	19	358
12:55 PM	2	0	11	0	0	0	0	0	0	5	0	0	7	3	0	0	28	353

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	56	0	104	0	0	0	0	0	0	52	36	0	104	96	0	0	448
Heavy Trucks	0	0	0		0	0	0		0	4	0		0	4	0		8
Pedestrians		0				12				0				0			12
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/8/2016 9:36 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

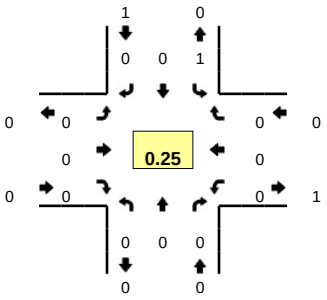
LOCATION: Church Driveway -- SE Kellog Creek Dr

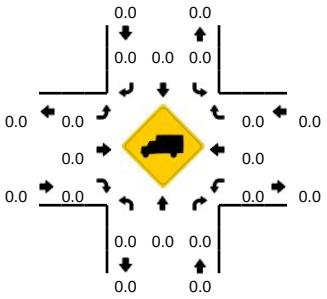
QC JOB #: 13929517

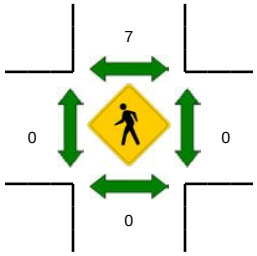
CITY/STATE: Milwaukie, OR

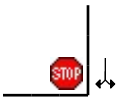
DATE: Wed, Nov 02 2016

Peak-Hour: 11:55 AM -- 12:55 PM
Peak 15-Min: 11:55 AM -- 12:10 PM

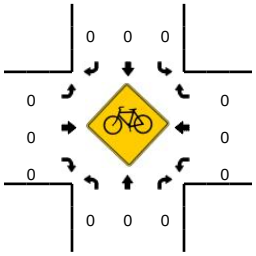


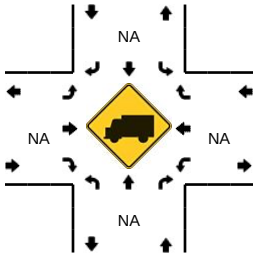


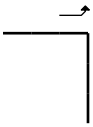




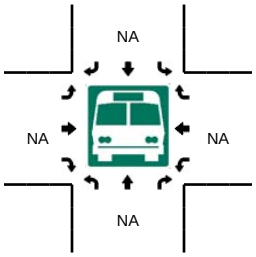












5-Min Count Period Beginning At	Church Driveway (Northbound)				Church Driveway (Southbound)				SE Kellog Creek Dr (Eastbound)				SE Kellog Creek Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	
11:05 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	
11:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	
11:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	
11:50 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	
11:55 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	6
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
12:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
12:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
12:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
12:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
12:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
12:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
12:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
12:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	4
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/8/2016 9:36 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

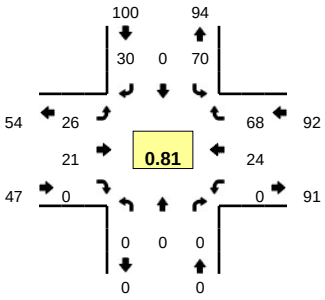
LOCATION: SE Rusk Rd -- SE Aldercrest Rd

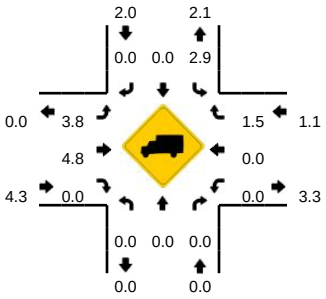
QC JOB #: 13929516

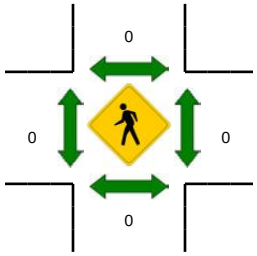
CITY/STATE: Milwaukie, OR

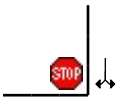
DATE: Wed, Nov 02 2016

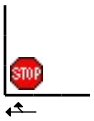
Peak-Hour: 11:55 AM -- 12:55 PM
Peak 15-Min: 12:05 PM -- 12:20 PM

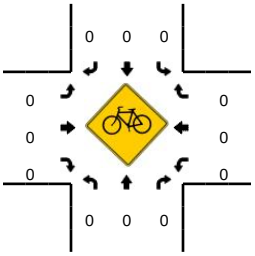


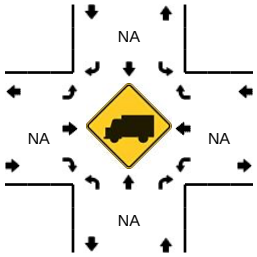


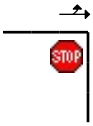




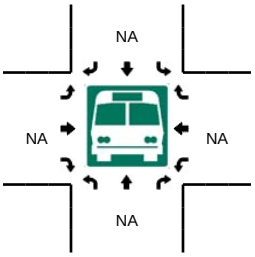












5-Min Count Period Beginning At	SE Rusk Rd (Northbound)				SE Rusk Rd (Southbound)				SE Aldercrest Rd (Eastbound)				SE Aldercrest Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:00 AM	0	0	0	0	8	0	2	0	0	0	0	0	0	3	0	0	13	
11:05 AM	0	0	0	0	3	0	1	0	0	1	0	0	0	1	9	0	15	
11:10 AM	0	0	0	0	6	0	0	0	1	1	0	0	0	2	4	0	14	
11:15 AM	0	0	0	0	4	0	5	0	1	2	0	0	0	0	9	0	21	
11:20 AM	0	0	0	0	3	0	2	0	1	0	0	0	0	3	7	0	16	
11:25 AM	0	0	0	0	6	0	1	0	4	0	0	0	0	4	3	0	18	
11:30 AM	0	0	0	0	8	0	3	0	1	4	0	0	0	2	5	0	23	
11:35 AM	0	0	0	0	6	0	3	0	2	2	0	0	0	1	9	0	23	
11:40 AM	0	0	0	0	5	0	1	0	1	1	0	0	0	1	6	0	15	
11:45 AM	0	0	0	0	4	0	2	0	2	1	0	0	0	1	11	0	21	
11:50 AM	0	0	0	0	2	0	3	0	1	1	0	0	0	2	4	0	13	
11:55 AM	0	0	0	0	8	0	0	0	0	1	0	0	0	2	6	0	17	209
12:00 PM	0	0	0	0	2	0	3	0	4	1	0	0	0	2	4	0	16	212
12:05 PM	0	0	0	0	10	0	6	0	3	5	0	0	0	2	4	0	30	227
12:10 PM	0	0	0	0	4	0	2	0	1	0	0	0	0	6	6	0	19	232
12:15 PM	0	0	0	0	5	0	3	0	3	2	0	0	0	3	9	0	25	236
12:20 PM	0	0	0	0	6	0	0	0	2	0	0	0	0	3	1	0	12	232
12:25 PM	0	0	0	0	9	0	1	0	3	3	0	0	0	2	4	0	22	236
12:30 PM	0	0	0	0	7	0	4	0	3	0	0	0	0	0	6	0	20	233
12:35 PM	0	0	0	0	4	0	3	0	1	3	0	0	0	0	8	0	19	229
12:40 PM	0	0	0	0	6	0	4	0	2	2	0	0	0	1	13	0	28	242
12:45 PM	0	0	0	0	6	0	0	0	1	2	0	0	0	1	2	0	12	233
12:50 PM	0	0	0	0	3	0	4	0	3	2	0	0	0	2	5	0	19	239
12:55 PM	0	0	0	0	1	0	8	0	6	1	0	0	0	2	4	0	22	244

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	76	0	44	0	28	28	0	0	0	44	76	0	296
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	4		4
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/8/2016 9:36 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: User-Defined

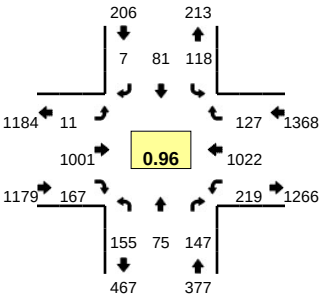
Method for determining peak hour: Total Entering Volume

LOCATION: SE Lake Rd/SE Webster Rd -- Milwaukie Expy

QC JOB #: 13929520

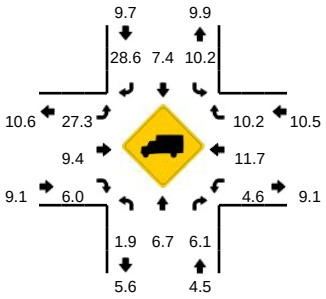
CITY/STATE: Portland, OR

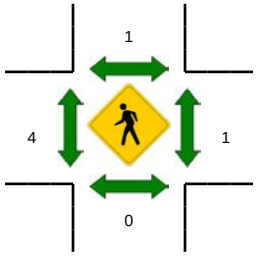
DATE: Thu, Nov 17 2016

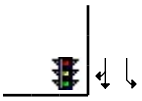


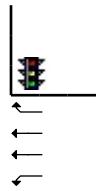
Peak-Hour: 11:55 AM -- 12:55 PM

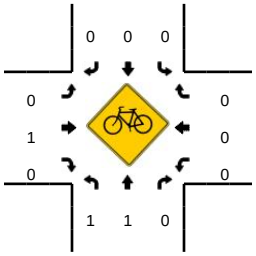
Peak 15-Min: 12:15 PM -- 12:30 PM

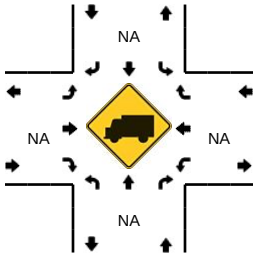


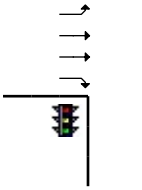




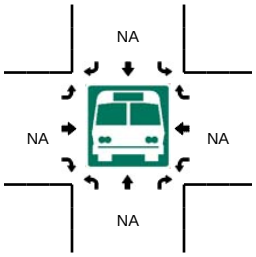












5-Min Count Period Beginning At	SE Lake Rd/SE Webster Rd (Northbound)				SE Lake Rd/SE Webster Rd (Southbound)				Milwaukie Expy (Eastbound)				Milwaukie Expy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
11:00 AM	11	3	12	0	8	7	0	0	0	53	9	0	16	63	8	0	190	
11:05 AM	19	5	18	0	8	7	1	0	0	82	13	0	22	74	4	0	253	
11:10 AM	12	6	12	0	10	8	0	0	0	70	10	0	10	78	6	0	222	
11:15 AM	8	4	12	0	14	6	1	0	1	88	15	0	12	68	5	0	234	
11:20 AM	12	8	13	0	6	4	2	0	1	85	15	0	12	96	6	0	260	
11:25 AM	9	6	15	0	13	10	2	0	3	71	14	0	19	73	7	0	242	
11:30 AM	11	2	10	0	3	7	2	0	0	53	13	0	18	91	22	0	232	
11:35 AM	14	7	19	0	9	8	0	0	0	70	17	0	16	66	2	0	228	
11:40 AM	20	7	14	0	11	10	0	0	1	76	7	0	12	67	9	0	234	
11:45 AM	17	2	19	0	11	12	0	0	2	81	11	0	18	90	3	0	266	
11:50 AM	14	1	19	0	12	11	0	0	0	87	17	0	8	60	5	0	234	
11:55 AM	14	7	9	0	7	7	1	0	0	75	11	0	15	108	5	0	259	2854
12:00 PM	19	7	11	0	6	2	0	0	1	75	14	0	15	87	6	0	243	2907
12:05 PM	14	9	13	0	15	6	1	0	4	86	16	0	16	68	7	0	255	2909
12:10 PM	9	5	17	0	12	9	0	0	2	82	12	0	14	65	3	0	230	2917
12:15 PM	17	5	12	0	5	7	0	0	1	93	25	0	21	86	9	0	281	2964
12:20 PM	11	7	12	0	14	7	1	0	0	86	15	0	12	81	21	0	267	2971
12:25 PM	9	6	8	0	9	7	0	0	0	97	16	0	23	83	10	0	268	2997
12:30 PM	10	5	20	0	9	8	1	0	2	69	8	0	21	86	13	0	252	3017
12:35 PM	18	8	10	0	13	9	1	0	1	104	2	0	14	88	10	0	278	3067
12:40 PM	7	7	10	0	8	5	1	0	0	82	16	0	21	93	15	0	265	3098
12:45 PM	14	5	16	0	10	6	0	0	0	81	17	0	19	84	15	0	267	3099
12:50 PM	13	4	9	0	10	8	1	0	0	71	15	0	28	93	13	0	265	3130
12:55 PM	14	4	13	0	8	11	0	0	3	59	10	0	20	92	7	0	241	3112

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	148	72	128	0	112	84	4	0	4	1104	224	0	224	1000	160	0	3264
Heavy Trucks	4	8	8		24	4	0		0	120	8		12	124	24		336
Pedestrians		0				0				4				0			4
Bicycles	1	0	0		0	0	0		0	0	0		0	0	0		1
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/8/2016 9:36 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

LOCATION: SE Rusk Rd -- Milwaukie Expy

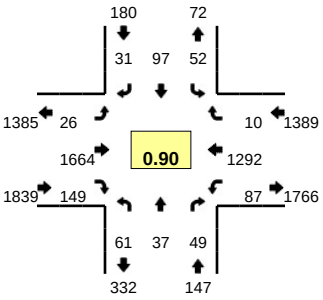
CITY/STATE: Milwaukie, OR

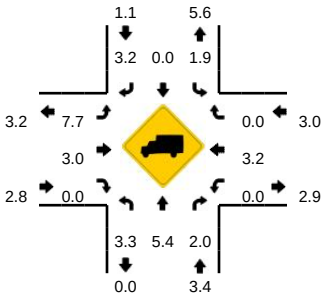
QC JOB #: 13929502

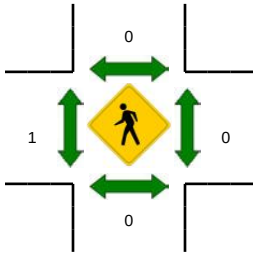
DATE: Wed, Nov 02 2016

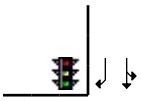
Peak-Hour: 4:25 PM -- 5:25 PM

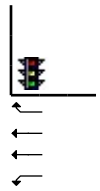
Peak 15-Min: 5:05 PM -- 5:20 PM

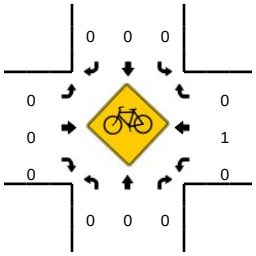


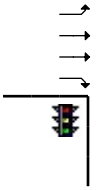




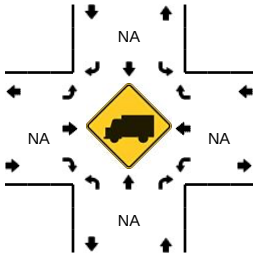


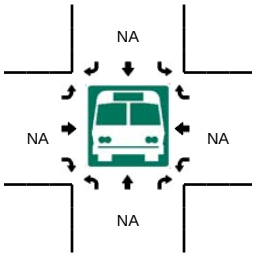












5-Min Count Period Beginning At	SE Rusk Rd (Northbound)				SE Rusk Rd (Southbound)				Milwaukie Expy (Eastbound)				Milwaukie Expy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	7	3	3	0	4	3	3	0	3	118	3	0	0	82	1	0	230	
4:05 PM	10	3	3	0	8	6	4	0	2	136	14	0	3	92	0	0	281	
4:10 PM	7	2	2	0	7	16	1	0	2	141	11	0	11	79	1	0	280	
4:15 PM	3	3	2	0	1	3	2	0	1	149	11	0	4	117	1	0	297	
4:20 PM	9	4	3	0	0	6	3	0	0	114	14	0	7	98	1	0	259	
4:25 PM	4	4	0	0	5	10	2	0	0	162	14	0	9	122	1	0	333	
4:30 PM	2	5	10	0	4	8	3	0	9	111	14	0	5	72	1	0	244	
4:35 PM	2	3	2	0	4	7	1	0	2	142	16	1	7	127	0	0	314	
4:40 PM	7	3	0	0	2	10	2	0	2	116	11	0	9	96	2	0	260	
4:45 PM	2	2	3	0	1	4	0	0	2	154	16	0	6	117	0	0	307	
4:50 PM	4	3	5	0	2	9	0	0	2	128	13	0	3	99	2	0	270	
4:55 PM	3	1	2	0	3	5	1	0	1	150	11	0	9	100	1	0	287	3362
5:00 PM	9	5	6	0	4	6	4	0	2	120	2	0	3	89	0	0	250	3382
5:05 PM	6	6	4	0	9	7	6	0	0	166	9	0	9	132	0	0	354	3455
5:10 PM	5	0	6	0	9	9	7	0	4	133	13	0	8	110	1	1	306	3481
5:15 PM	8	2	3	0	4	11	1	0	0	143	14	0	8	131	0	0	325	3509
5:20 PM	9	3	8	0	5	11	4	0	1	139	16	0	10	97	2	0	305	3555
5:25 PM	4	2	4	0	4	4	1	0	0	160	16	0	5	105	1	0	306	3528
5:30 PM	4	6	2	0	2	4	4	0	4	137	12	0	10	98	1	0	284	3568
5:35 PM	4	1	2	0	3	2	1	0	4	125	7	0	4	87	0	0	240	3494
5:40 PM	5	0	8	0	3	4	2	0	2	126	5	0	3	111	2	0	271	3505
5:45 PM	2	2	4	0	0	2	1	0	0	140	16	0	5	113	2	0	287	3485
5:50 PM	1	1	3	0	5	7	1	0	2	130	10	0	8	64	0	0	232	3447
5:55 PM	3	2	2	0	1	5	0	0	1	136	9	0	1	93	2	0	255	3415

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	76	32	52	0	88	108	56	0	16	1768	144	0	100	1492	4	4	3940
Heavy Trucks	0	8	0		4	0	0		4	56	0		0	36	0		108
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/8/2016 9:35 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

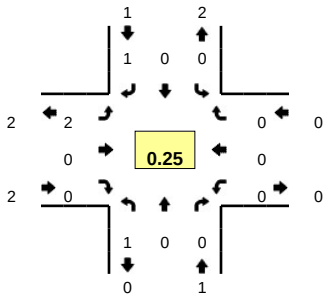
LOCATION: SE Rusk Rd -- Church Driveway

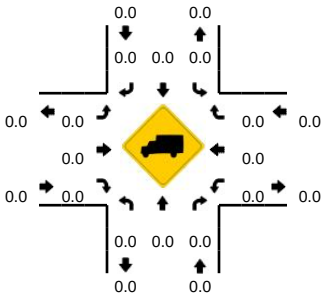
QC JOB #: 13929512

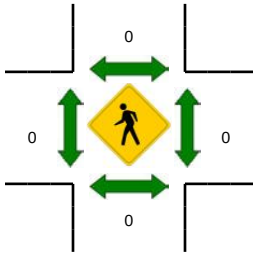
CITY/STATE: Milwaukie, OR

DATE: Wed, Nov 02 2016

Peak-Hour: 4:25 PM -- 5:25 PM
Peak 15-Min: 4:25 PM -- 4:40 PM

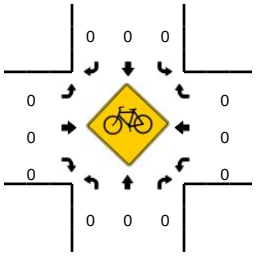


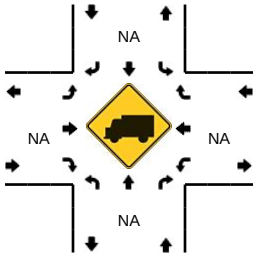


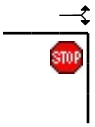


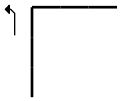


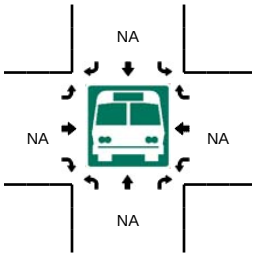












5-Min Count Period Beginning At	SE Rusk Rd (Northbound)				SE Rusk Rd (Southbound)				Church Driveway (Eastbound)				Church Driveway (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:20 PM	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2	
4:25 PM	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2	
4:30 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
4:35 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	
4:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
5:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
5:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
5:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
5:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	2
5:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:55 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	2

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	0	0	0	0	0	4	0	8	0	0	0	0	0	0	0	16
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/8/2016 9:35 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

LOCATION: SE Ruscliffe Ln -- SE Rusk Rd

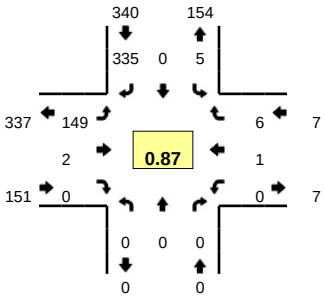
QC JOB #: 13929504

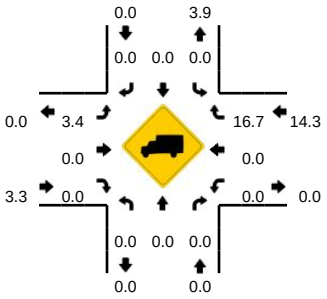
CITY/STATE: Milwaukie, OR

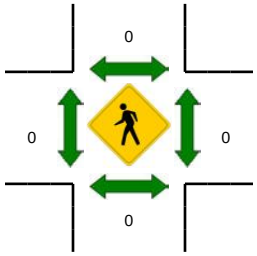
DATE: Wed, Nov 02 2016

Peak-Hour: 4:25 PM -- 5:25 PM

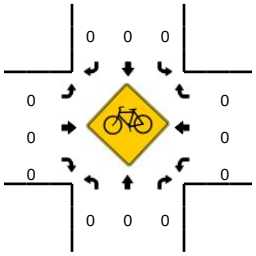
Peak 15-Min: 5:10 PM -- 5:25 PM

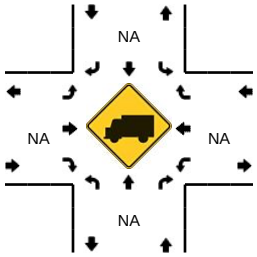




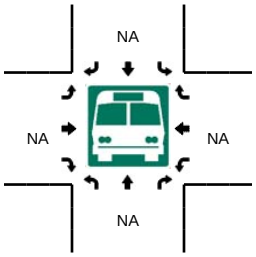












5-Min Count Period Beginning At	SE Ruscliffe Ln (Northbound)				SE Ruscliffe Ln (Southbound)				SE Rusk Rd (Eastbound)				SE Rusk Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	1	0	6	0	9	0	0	0	0	0	1	0	17	
4:05 PM	0	0	0	0	0	0	23	0	18	0	0	0	0	0	0	0	41	
4:10 PM	0	0	0	0	2	0	31	0	8	0	0	0	0	0	1	0	42	
4:15 PM	0	0	0	0	0	0	28	0	8	0	0	0	0	0	0	0	36	
4:20 PM	0	0	0	0	0	0	24	0	13	0	0	0	0	0	0	0	37	
4:25 PM	0	0	0	0	1	0	36	0	12	0	0	1	0	0	0	0	50	
4:30 PM	0	0	0	0	0	0	24	0	11	2	0	0	0	0	1	0	38	
4:35 PM	0	0	0	0	1	0	35	0	8	0	0	0	0	0	0	0	44	
4:40 PM	0	0	0	0	0	0	24	0	10	0	0	0	0	1	0	0	35	
4:45 PM	0	0	0	0	0	0	27	0	9	0	0	0	0	0	0	0	36	
4:50 PM	0	0	0	0	0	0	27	0	11	0	0	0	0	0	0	0	38	
4:55 PM	0	0	0	0	0	0	28	0	10	0	0	0	0	0	0	0	38	452
5:00 PM	0	0	0	0	0	0	11	0	17	0	0	0	0	0	2	0	30	465
5:05 PM	0	0	0	0	1	0	25	0	20	0	0	0	0	0	0	0	46	470
5:10 PM	0	0	0	0	0	0	32	0	6	0	0	0	0	0	1	0	39	467
5:15 PM	0	0	0	0	1	0	30	0	22	0	0	0	0	0	1	0	54	485
5:20 PM	0	0	0	0	1	0	36	0	12	0	0	0	0	0	1	0	50	498
5:25 PM	0	0	0	0	1	0	29	0	13	0	0	0	0	0	0	0	43	491
5:30 PM	0	0	0	0	0	0	19	0	8	0	0	0	0	0	1	0	28	481
5:35 PM	0	0	0	0	0	0	18	0	6	0	0	0	0	0	1	0	25	462
5:40 PM	0	0	0	0	0	0	11	0	10	0	0	0	0	0	1	0	22	449
5:45 PM	0	0	0	0	1	0	26	0	8	0	0	0	0	0	0	0	35	448
5:50 PM	0	0	0	0	0	0	22	0	4	0	0	0	0	0	0	0	26	436
5:55 PM	0	0	0	0	0	0	18	0	10	1	0	0	0	0	0	0	29	427

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	8	0	392	0	160	0	0	0	0	0	12	0	572
Heavy Trucks	0	0	0		0	0	0		4	0	0		0	0	0		4
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/8/2016 9:35 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

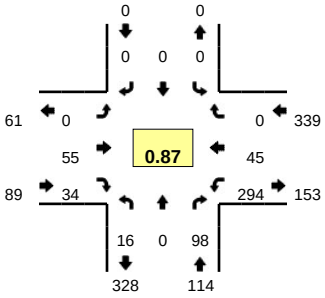
LOCATION: SE Rusk Rd -- SE Kellogg Creek Dr

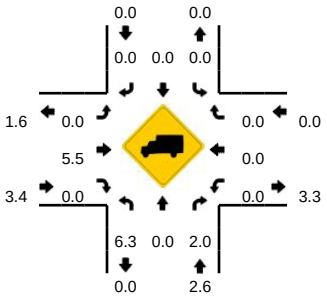
QC JOB #: 13929506

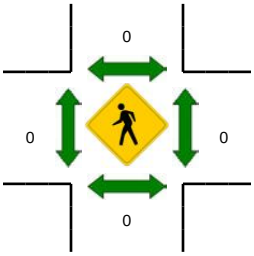
CITY/STATE: Milwaukie, OR

DATE: Wed, Nov 02 2016

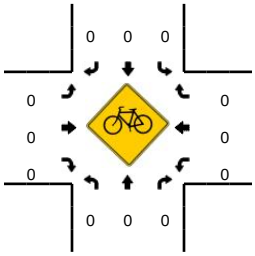
Peak-Hour: 4:25 PM -- 5:25 PM
Peak 15-Min: 5:10 PM -- 5:25 PM

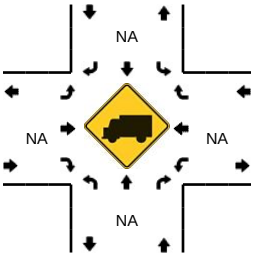




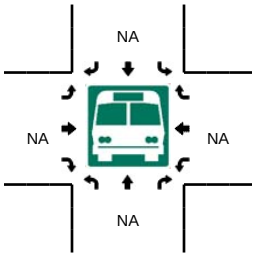












5-Min Count Period Beginning At	SE Rusk Rd (Northbound)				SE Rusk Rd (Southbound)				SE Kellogg Creek Dr (Eastbound)				SE Kellogg Creek Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	3	0	4	0	0	0	0	0	0	5	3	0	4	1	0	0	20	
4:05 PM	0	0	10	0	0	0	0	0	0	9	3	0	22	1	0	0	45	
4:10 PM	1	0	7	0	0	0	0	0	0	1	2	0	23	5	0	0	39	
4:15 PM	2	0	6	0	0	0	0	0	0	2	2	0	30	2	0	0	44	
4:20 PM	0	0	12	0	0	0	0	0	0	1	1	0	17	2	0	0	33	
4:25 PM	0	0	8	0	0	0	0	0	0	5	1	0	34	7	0	0	55	
4:30 PM	0	0	10	0	0	0	0	0	0	3	1	0	20	4	0	0	38	
4:35 PM	3	0	5	0	0	0	0	0	0	3	2	0	28	7	0	0	48	
4:40 PM	1	0	7	0	0	0	0	0	0	3	2	0	20	4	0	0	37	
4:45 PM	3	0	6	0	0	0	0	0	0	3	1	0	23	5	0	0	41	
4:50 PM	0	0	11	0	0	0	0	0	0	1	1	0	20	3	0	0	36	
4:55 PM	1	0	7	0	0	0	0	0	0	3	3	0	31	1	0	0	46	482
5:00 PM	2	0	6	0	0	0	0	0	0	12	5	0	9	1	0	0	35	497
5:05 PM	1	0	11	0	0	0	0	0	0	9	3	0	24	2	0	0	50	502
5:10 PM	3	0	4	0	0	0	0	0	0	2	0	0	27	3	0	0	39	502
5:15 PM	1	0	13	0	0	0	0	0	0	7	6	0	28	3	0	0	58	516
5:20 PM	1	0	10	0	0	0	0	0	0	4	9	0	30	5	0	0	59	542
5:25 PM	1	0	11	0	0	0	0	0	0	2	1	0	25	4	0	0	44	531
5:30 PM	3	0	6	0	0	0	0	0	0	2	1	0	19	1	0	0	32	525
5:35 PM	0	0	2	0	0	0	0	0	0	2	3	0	14	3	0	0	24	501
5:40 PM	2	0	9	0	0	0	0	0	0	1	2	0	6	2	0	0	22	486
5:45 PM	1	0	8	0	0	0	0	0	0	0	1	0	24	5	0	0	39	484
5:50 PM	1	0	1	0	0	0	0	0	0	3	2	0	14	5	0	0	26	474
5:55 PM	0	0	8	0	0	0	0	0	0	2	0	0	19	2	0	0	31	459

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	20	0	108	0	0	0	0	0	0	52	60	0	340	44	0	0	624
Heavy Trucks	0	0	4		0	0	0		0	0	0		0	0	0		4
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/8/2016 9:35 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

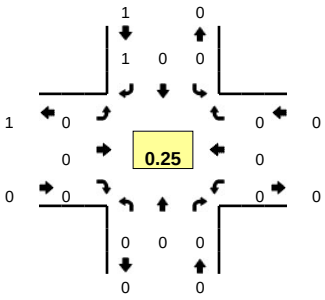
LOCATION: Church Driveway -- SE Kellogg Creek Dr

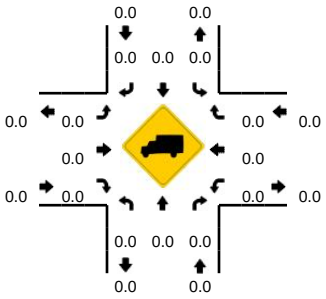
QC JOB #: 13929510

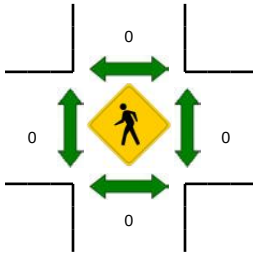
CITY/STATE: Milwaukie, OR

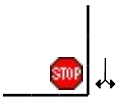
DATE: Wed, Nov 02 2016

Peak-Hour: 4:25 PM -- 5:25 PM
Peak 15-Min: 4:55 PM -- 5:10 PM

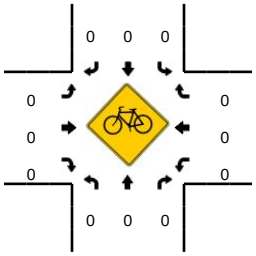


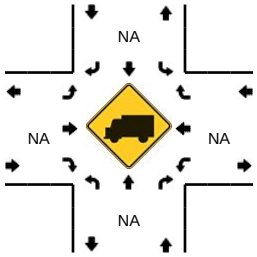


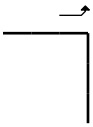




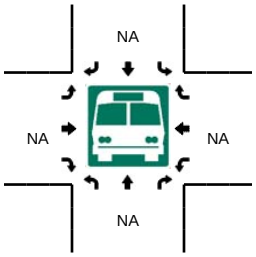












5-Min Count Period Beginning At	Church Driveway (Northbound)				Church Driveway (Southbound)				SE Kellogg Creek Dr (Eastbound)				SE Kellogg Creek Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	
4:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:05 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1
5:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	4
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/8/2016 9:35 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

LOCATION: SE Rusk Rd -- SE Aldercrest Rd

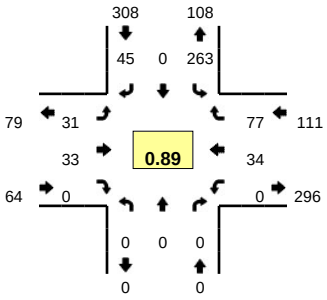
QC JOB #: 13929508

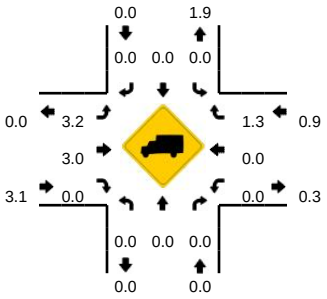
CITY/STATE: Milwaukie, OR

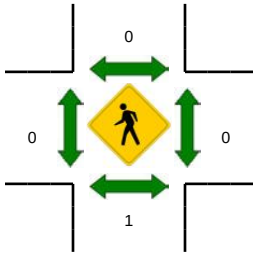
DATE: Wed, Nov 02 2016

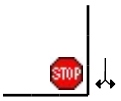
Peak-Hour: 4:25 PM -- 5:25 PM

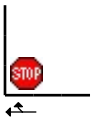
Peak 15-Min: 5:10 PM -- 5:25 PM

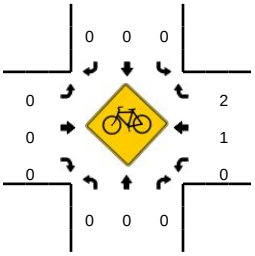


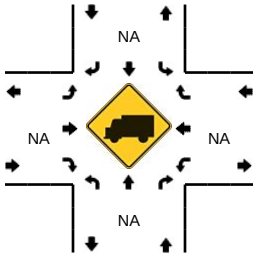


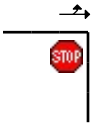




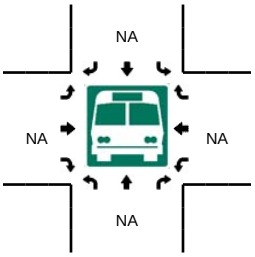












5-Min Count Period Beginning At	SE Rusk Rd (Northbound)				SE Rusk Rd (Southbound)				SE Aldercrest Rd (Eastbound)				SE Aldercrest Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	8	0	3	0	1	1	0	0	0	0	8	0	21	
4:05 PM	0	0	0	0	21	0	3	0	2	3	0	0	0	3	8	0	40	
4:10 PM	0	0	0	0	17	0	3	0	5	4	0	0	0	4	7	0	40	
4:15 PM	0	0	0	0	32	0	4	0	1	3	0	0	0	2	4	0	46	
4:20 PM	0	0	0	0	16	0	2	0	3	4	0	0	0	2	11	0	38	
4:25 PM	0	0	0	0	26	0	1	0	0	2	0	0	0	3	8	0	40	
4:30 PM	0	0	0	0	21	0	4	0	3	3	0	0	0	3	7	0	41	
4:35 PM	0	0	0	0	26	0	3	0	2	3	0	0	0	4	5	0	43	
4:40 PM	0	0	0	0	16	0	7	0	2	3	0	0	0	4	8	0	40	
4:45 PM	0	0	0	0	20	0	0	0	3	3	0	0	0	3	6	0	35	
4:50 PM	0	0	0	0	21	0	1	0	3	5	0	0	0	3	3	0	36	
4:55 PM	0	0	0	0	22	0	4	0	5	1	0	0	0	2	7	0	41	461
5:00 PM	0	0	0	0	12	0	8	0	2	4	0	0	0	3	6	0	35	475
5:05 PM	0	0	0	0	15	0	5	0	1	3	0	0	0	3	10	0	37	472
5:10 PM	0	0	0	0	23	0	6	0	1	2	0	0	0	2	4	0	38	470
5:15 PM	0	0	0	0	29	0	3	0	5	3	0	0	0	1	10	0	51	475
5:20 PM	0	0	0	0	32	0	3	0	4	1	0	0	0	3	3	0	46	483
5:25 PM	0	0	0	0	22	0	1	0	1	5	0	0	0	0	9	0	38	481
5:30 PM	0	0	0	0	15	0	2	0	2	5	0	0	0	3	3	0	30	470
5:35 PM	0	0	0	0	17	0	1	0	0	2	0	0	0	3	3	0	26	453
5:40 PM	0	0	0	0	4	0	3	0	3	1	0	0	0	3	10	0	24	437
5:45 PM	0	0	0	0	15	0	5	0	2	2	0	0	0	2	6	0	32	434
5:50 PM	0	0	0	0	13	0	3	0	2	5	0	0	0	4	2	0	29	427
5:55 PM	0	0	0	0	17	0	2	0	1	1	0	0	0	0	7	0	28	414

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	336	0	48	0	40	24	0	0	0	24	68	0	540
Heavy Trucks	0	0	0		0	0	0		4	4	0		0	0	0		8
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/8/2016 9:35 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

RS548

Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

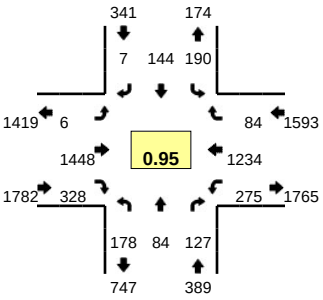
LOCATION: SE Lake Rd/SE Webster Rd -- Milwaukie Expy

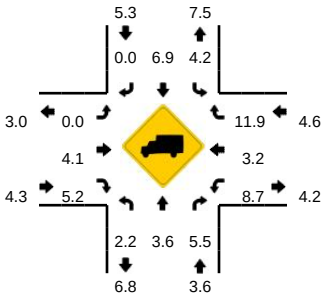
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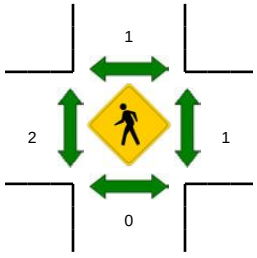
CITY/STATE: Portland, OR

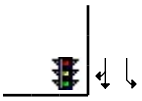
DATE: Thu, Nov 17 2016

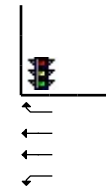
Peak-Hour: 4:25 PM -- 5:25 PM
Peak 15-Min: 4:40 PM -- 4:55 PM

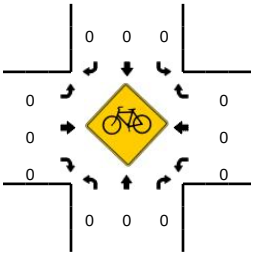


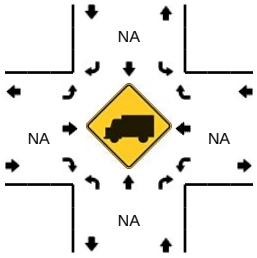


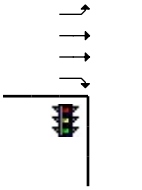


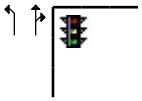


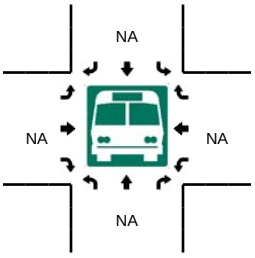












5-Min Count Period Beginning At	SE Lake Rd/SE Webster Rd (Northbound)				SE Lake Rd/SE Webster Rd (Southbound)				Milwaukie Expy (Eastbound)				Milwaukie Expy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	16	8	9	0	9	7	0	0	0	142	25	0	12	120	8	0	356	
4:05 PM	15	7	17	0	18	15	1	0	0	109	21	0	26	81	4	0	314	
4:10 PM	12	4	15	0	11	13	0	0	1	152	25	0	20	105	8	0	366	
4:15 PM	24	5	21	0	17	19	0	0	1	104	30	0	24	102	6	0	353	
4:20 PM	11	5	9	0	15	11	1	0	0	152	37	0	21	131	7	0	400	
4:25 PM	20	6	13	0	20	13	2	0	0	103	17	0	30	77	10	0	311	
4:30 PM	10	3	8	0	13	8	1	0	3	150	23	0	14	128	10	0	371	
4:35 PM	26	4	11	0	31	22	1	0	0	99	21	0	17	76	6	0	314	
4:40 PM	13	6	8	0	14	9	0	0	0	148	32	0	22	116	6	0	374	
4:45 PM	16	12	9	0	19	13	0	0	1	96	40	0	27	91	8	0	332	
4:50 PM	13	4	10	0	10	8	0	0	1	132	47	0	13	127	12	0	377	
4:55 PM	14	5	12	0	13	12	0	0	0	98	26	0	34	90	8	0	312	4180
5:00 PM	8	5	8	0	11	10	1	0	0	152	26	0	15	117	3	0	356	4180
5:05 PM	21	11	14	0	16	11	1	0	0	101	17	0	32	82	5	0	311	4177
5:10 PM	6	7	11	0	22	19	1	0	0	126	28	0	20	109	7	0	356	4167
5:15 PM	18	11	15	0	10	7	0	0	0	101	31	0	27	92	4	0	316	4130
5:20 PM	13	10	8	0	11	12	0	0	1	142	20	0	24	129	5	0	375	4105
5:25 PM	16	7	13	0	19	11	1	0	0	97	31	0	32	92	6	0	325	4119
5:30 PM	9	2	7	0	11	10	1	0	1	153	26	0	22	119	3	0	364	4112
5:35 PM	16	8	15	0	12	14	3	0	1	106	36	0	35	90	3	0	339	4137
5:40 PM	7	5	5	0	6	6	0	0	0	141	41	0	20	107	5	0	343	4106
5:45 PM	16	9	16	0	11	12	1	0	1	75	25	0	33	89	4	0	292	4066
5:50 PM	14	8	6	0	5	9	0	0	0	114	38	0	24	108	4	0	330	4019
5:55 PM	11	9	14	0	9	14	0	0	0	98	20	0	34	73	7	0	289	3996

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	168	88	108	0	172	120	0	0	8	1504	476	0	248	1336	104	0	4332
Heavy Trucks	8	0	0		8	8	0		0	64	32		32	36	12		200
Pedestrians		0				0				4				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

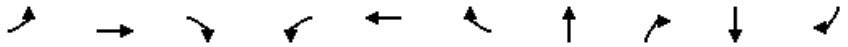
Comments:

Report generated on 12/8/2016 9:35 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Attachment D - Existing Traffic Level-of-Service Worksheets

RS550



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	6	828	66	45	2073	6	176	33	71	5
v/c Ratio	0.07	0.37	0.06	0.36	0.83	0.00	0.80	0.10	0.27	0.01
Control Delay	55.5	10.3	1.5	51.1	11.3	0.0	74.6	0.6	45.9	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.5	10.3	1.5	51.1	11.3	0.0	74.6	0.6	45.9	0.0
Queue Length 50th (ft)	5	148	0	36	264	0	131	0	48	0
Queue Length 95th (ft)	19	210	13	m40	m#482	m0	#222	0	91	0
Internal Link Dist (ft)		263			2471		389		744	
Turn Bay Length (ft)	470		110	455		100		50		75
Base Capacity (vph)	165	2225	1112	315	2501	1209	255	369	311	377
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.37	0.06	0.14	0.83	0.00	0.69	0.09	0.23	0.01

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

RS551

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	778	62	42	1949	6	117	49	31	9	57	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97	1.00		0.99	1.00
Satd. Flow (prot)	1805	3312	1615	1805	3374	1615		1823	1568		1771	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.74	1.00		0.95	1.00
Satd. Flow (perm)	1805	3312	1615	1805	3374	1615		1396	1568		1699	1615
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	6	828	66	45	2073	6	124	52	33	10	61	5
RTOR Reduction (vph)	0	0	22	0	0	2	0	0	28	0	0	4
Lane Group Flow (vph)	6	828	44	45	2073	4	0	176	5	0	71	1
Heavy Vehicles (%)	0%	9%	0%	0%	7%	0%	1%	0%	3%	22%	4%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8		8	4		4
Actuated Green, G (s)	1.4	79.8	79.8	7.3	85.7	85.7		18.9	18.9		18.9	18.9
Effective Green, g (s)	1.4	79.8	79.8	7.3	85.7	85.7		18.9	18.9		18.9	18.9
Actuated g/C Ratio	0.01	0.66	0.66	0.06	0.71	0.71		0.16	0.16		0.16	0.16
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	21	2202	1073	109	2409	1153		219	246		267	254
v/s Ratio Prot	0.00	0.25		c0.02	c0.61							
v/s Ratio Perm			0.03			0.00		c0.13	0.00		0.04	0.00
v/c Ratio	0.29	0.38	0.04	0.41	0.86	0.00		0.80	0.02		0.27	0.00
Uniform Delay, d1	58.8	9.0	6.9	54.3	12.7	4.9		48.8	42.7		44.5	42.6
Progression Factor	1.00	1.00	1.00	0.91	0.76	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	7.4	0.5	0.1	1.2	2.0	0.0		18.9	0.0		0.5	0.0
Delay (s)	66.2	9.5	7.0	50.3	11.6	4.9		67.6	42.8		45.0	42.6
Level of Service	E	A	A	D	B	A		E	D		D	D
Approach Delay (s)		9.7			12.4			63.7			44.8	
Approach LOS		A			B			E			D	

Intersection Summary			
HCM 2000 Control Delay	15.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	79.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	1	0	0	196	160	1
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.65	0.65	0.65	0.65	0.65	0.65
Hourly flow rate (vph)	2	0	0	302	246	2
Pedestrians	1					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	0					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					469	
pX, platoon unblocked	0.99	0.99	0.99			
vC, conflicting volume	549	248	249			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	544	241	242			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	500	798	1328			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	2	302	248
Volume Left	2	0	0
Volume Right	0	0	2
cSH	500	1328	1700
Volume to Capacity	0.00	0.00	0.15
Queue Length 95th (ft)	0	0	0
Control Delay (s)	12.2	0.0	0.0
Lane LOS	B		
Approach Delay (s)	12.2	0.0	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	20.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Volume (veh/h)	189	1	3	157	3	7
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.65	0.65	0.65	0.65	0.65	0.65
Hourly flow rate (vph)	291	2	5	242	5	11
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				553		
pX, platoon unblocked						
vC, conflicting volume			292		542	292
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			292		542	292
tC, single (s)			4.1		6.7	6.3
tC, 2 stage (s)						
tF (s)			2.2		3.8	3.4
p0 queue free %			100		99	99
cM capacity (veh/h)			1281		450	720

Direction, Lane #	EB 1	WB 1	NW 1
Volume Total	292	246	15
Volume Left	0	5	5
Volume Right	2	0	11
cSH	1700	1281	610
Volume to Capacity	0.17	0.00	0.03
Queue Length 95th (ft)	0	0	2
Control Delay (s)	0.0	0.2	11.1
Lane LOS		A	B
Approach Delay (s)	0.0	0.2	11.1
Approach LOS			B

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	20.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	26	12	26	161	89	71
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.61	0.61	0.61	0.61	0.61	0.61
Hourly flow rate (vph)	43	20	43	264	146	116
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					923	
pX, platoon unblocked						
vC, conflicting volume	553	204	262			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	553	204	262			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	91	98	97			
cM capacity (veh/h)	481	842	1314			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	62	307	262
Volume Left	43	43	0
Volume Right	20	0	116
cSH	556	1314	1700
Volume to Capacity	0.11	0.03	0.15
Queue Length 95th (ft)	9	3	0
Control Delay (s)	12.3	1.3	0.0
Lane LOS	B	A	
Approach Delay (s)	12.3	1.3	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	32.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	38	95	2	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.61	0.61	0.61	0.61	0.61	0.61
Hourly flow rate (vph)	0	62	156	3	0	0
Pedestrians					2	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	161				222	159
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	161				222	159
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1428				770	890

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	62	159	0
Volume Left	0	0	0
Volume Right	0	3	0
cSH	1428	1700	1700
Volume to Capacity	0.00	0.09	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	9.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	30	14	17	135	63	20
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	34	16	20	155	72	23

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	51	175	95
Volume Left (vph)	34	0	72
Volume Right (vph)	0	155	23
Hadj (s)	0.17	-0.51	0.05
Departure Headway (s)	4.5	3.7	4.4
Degree Utilization, x	0.06	0.18	0.12
Capacity (veh/h)	781	953	774
Control Delay (s)	7.7	7.5	8.0
Approach Delay (s)	7.7	7.5	8.0
Approach LOS	A	A	A

Intersection Summary			
Delay	7.7		
Level of Service	A		
Intersection Capacity Utilization	27.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	8	742	130	146	1902	216	240	253	63	83
v/c Ratio	0.09	0.43	0.15	0.67	0.87	0.23	0.98	0.84	0.58	0.66
Control Delay	50.4	16.2	1.0	63.8	22.9	4.7	105.8	61.3	75.1	77.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.4	16.2	1.0	63.8	22.9	4.7	105.8	61.3	75.1	77.5
Queue Length 50th (ft)	6	118	0	109	542	23	188	148	48	62
Queue Length 95th (ft)	m0	143	12	171	#933	70	#354	#309	#101	#132
Internal Link Dist (ft)		2471			585			201		465
Turn Bay Length (ft)	500		360	295		150			330	
Base Capacity (vph)	180	1710	882	323	2198	954	244	302	118	132
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.43	0.15	0.45	0.87	0.23	0.98	0.84	0.53	0.63

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	690	121	136	1769	201	223	82	153	59	73	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	2000	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	6.0	3.8	4.8		4.0	4.8	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.90		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3374	1583	1687	3374	1397	1810	1609		1583	1706	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3374	1583	1687	3374	1397	1810	1609		1583	1706	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	8	742	130	146	1902	216	240	88	165	63	78	5
RTOR Reduction (vph)	0	0	65	0	0	48	0	55	0	0	2	0
Lane Group Flow (vph)	8	742	65	146	1902	168	240	198	0	63	81	0
Confl. Peds. (#/hr)	1					1			1	1		
Confl. Bikes (#/hr)									3			
Heavy Vehicles (%)	0%	7%	2%	7%	7%	13%	5%	6%	5%	14%	11%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						
Actuated Green, G (s)	1.5	60.0	60.0	15.6	74.1	74.1	16.0	18.5		7.1	9.6	
Effective Green, g (s)	1.5	60.0	60.0	15.6	74.1	74.1	16.2	18.5		7.1	9.6	
Actuated g/C Ratio	0.01	0.50	0.50	0.13	0.62	0.62	0.13	0.15		0.06	0.08	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	4.8		4.0	4.8	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	22	1687	791	219	2083	862	244	248		93	136	
v/s Ratio Prot	0.00	0.22		c0.09	c0.56		c0.13	c0.12		0.04	0.05	
v/s Ratio Perm			0.04			0.12						
v/c Ratio	0.36	0.44	0.08	0.67	0.91	0.20	0.98	0.80		0.68	0.60	
Uniform Delay, d1	58.8	19.2	15.6	49.7	20.1	10.0	51.8	49.0		55.3	53.3	
Progression Factor	0.90	0.78	0.49	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.5	0.8	0.2	7.5	7.6	0.5	52.7	16.2		17.8	6.9	
Delay (s)	62.5	15.9	7.9	57.2	27.7	10.5	104.4	65.2		73.1	60.2	
Level of Service	E	B	A	E	C	B	F	E		E	E	
Approach Delay (s)		15.1			28.0			84.3			65.8	
Approach LOS		B			C			F			E	

Intersection Summary			
HCM 2000 Control Delay	33.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.8
Intersection Capacity Utilization	85.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	10	1143	71	69	1151	14	79	67	72	15
v/c Ratio	0.09	0.48	0.06	0.42	0.43	0.01	0.52	0.29	0.42	0.06
Control Delay	45.6	9.8	3.3	53.4	2.7	0.0	53.5	11.2	48.0	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.6	9.8	3.3	53.4	2.7	0.0	53.5	11.2	48.0	0.5
Queue Length 50th (ft)	6	177	3	42	56	0	48	0	44	0
Queue Length 95th (ft)	23	290	22	m85	69	m0	92	32	84	0
Internal Link Dist (ft)		263			2471		389		741	
Turn Bay Length (ft)	470		110	455		100		50		75
Base Capacity (vph)	198	2363	1134	200	2687	1212	259	339	294	348
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.48	0.06	0.34	0.43	0.01	0.31	0.20	0.24	0.04

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

RS560

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	1097	68	66	1105	13	43	33	64	18	51	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97	1.00		0.99	1.00
Satd. Flow (prot)	1805	3312	1568	1770	3343	1495		1792	1538		1797	1588
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.78	1.00		0.90	1.00
Satd. Flow (perm)	1805	3312	1568	1770	3343	1495		1444	1538		1638	1588
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	10	1143	71	69	1151	14	45	34	67	19	53	15
RTOR Reduction (vph)	0	0	17	0	0	3	0	0	61	0	0	14
Lane Group Flow (vph)	10	1143	54	69	1151	11	0	79	6	0	72	1
Confl. Peds. (#/hr)							7					7
Heavy Vehicles (%)	0%	9%	3%	2%	8%	8%	5%	0%	5%	11%	2%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8		8	4		4
Actuated Green, G (s)	1.5	68.5	68.5	8.1	75.1	75.1		9.4	9.4		9.4	9.4
Effective Green, g (s)	1.5	68.5	68.5	8.1	75.1	75.1		9.4	9.4		9.4	9.4
Actuated g/C Ratio	0.02	0.68	0.68	0.08	0.75	0.75		0.09	0.09		0.09	0.09
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	27	2268	1074	143	2510	1122		135	144		153	149
v/s Ratio Prot	0.01	c0.35		c0.04	0.34							
v/s Ratio Perm			0.03			0.01		c0.05	0.00		0.04	0.00
v/c Ratio	0.37	0.50	0.05	0.48	0.46	0.01		0.59	0.04		0.47	0.01
Uniform Delay, d1	48.8	7.6	5.1	43.9	4.7	3.1		43.4	41.2		42.9	41.1
Progression Factor	1.00	1.00	1.00	1.11	0.48	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	8.4	0.8	0.1	2.1	0.5	0.0		6.3	0.1		2.3	0.0
Delay (s)	57.2	8.4	5.2	51.0	2.8	3.1		49.8	41.3		45.2	41.1
Level of Service	E	A	A	D	A	A		D	D		D	D
Approach Delay (s)		8.6			5.5			45.9			44.5	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	10.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	61.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

RS561



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	3	0	0	137	183	2
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	3	0	0	159	213	2
Pedestrians	9					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	1					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					469	
pX, platoon unblocked						
vC, conflicting volume	382	223	224			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	382	223	224			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	619	815	1346			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	3	159	215
Volume Left	3	0	0
Volume Right	0	0	2
cSH	619	1346	1700
Volume to Capacity	0.01	0.00	0.13
Queue Length 95th (ft)	0	0	0
Control Delay (s)	10.8	0.0	0.0
Lane LOS	B		
Approach Delay (s)	10.8	0.0	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	20.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	6	131	4	6	177
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	0	7	152	5	7	206
Pedestrians						7
Lane Width (ft)						12.0
Walking Speed (ft/s)						4.0
Percent Blockage						1
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						553
pX, platoon unblocked						
vC, conflicting volume	374	162			157	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	374	162			157	
tC, single (s)	6.4	6.4			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.5			2.2	
p0 queue free %	100	99			100	
cM capacity (veh/h)	628	841			1435	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	7	157	213
Volume Left	0	0	7
Volume Right	7	5	0
cSH	841	1700	1435
Volume to Capacity	0.01	0.09	0.00
Queue Length 95th (ft)	1	0	0
Control Delay (s)	9.3	0.0	0.3
Lane LOS	A		A
Approach Delay (s)	9.3	0.0	0.3
Approach LOS	A		

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	26.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	50	30	29	85	91	86
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	62	38	36	106	114	108
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					922	
pX, platoon unblocked						
vC, conflicting volume	346	168	221			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	346	168	221			
tC, single (s)	6.5	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	90	96	97			
cM capacity (veh/h)	625	882	1360			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	100	142	221
Volume Left	62	36	0
Volume Right	38	0	108
cSH	702	1360	1700
Volume to Capacity	0.14	0.03	0.13
Queue Length 95th (ft)	12	2	0
Control Delay (s)	11.0	2.1	0.0
Lane LOS	B	A	
Approach Delay (s)	11.0	2.1	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	30.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	79	115	0	1	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	0	99	144	0	1	0
Pedestrians					7	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	151				250	151
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	151				250	151
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1434				739	896

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	99	144	1
Volume Left	0	0	1
Volume Right	0	0	0
cSH	1434	1700	739
Volume to Capacity	0.00	0.08	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	9.9
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.9
Approach LOS			A

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	17.6%	ICU Level of Service	A
Analysis Period (min)	15		

RS565



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	26	21	24	68	70	30
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	32	26	30	84	86	37

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	58	114	123
Volume Left (vph)	32	0	86
Volume Right (vph)	0	84	37
Hadj (s)	0.19	-0.43	0.00
Departure Headway (s)	4.5	3.8	4.3
Degree Utilization, x	0.07	0.12	0.15
Capacity (veh/h)	775	911	810
Control Delay (s)	7.8	7.3	8.0
Approach Delay (s)	7.8	7.3	8.0
Approach LOS	A	A	A

Intersection Summary			
Delay	7.7		
Level of Service	A		
Intersection Capacity Utilization	21.6%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	11	1043	174	228	1065	132	161	231	123	91
v/c Ratio	0.12	0.78	0.24	0.77	0.56	0.15	0.59	0.87	0.68	0.51
Control Delay	36.0	38.1	13.1	57.1	14.5	3.3	51.5	59.8	61.4	51.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.0	38.1	13.1	57.1	14.5	3.3	51.5	59.8	61.4	51.3
Queue Length 50th (ft)	7	253	0	138	186	5	99	99	75	54
Queue Length 95th (ft)	m13	446	115	217	320	35	#201	#256	#147	106
Internal Link Dist (ft)		2471			585			201		465
Turn Bay Length (ft)	500		360	295		150			330	
Base Capacity (vph)	170	1345	714	343	1908	896	274	267	199	193
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.78	0.24	0.66	0.56	0.15	0.59	0.87	0.62	0.47

Intersection Summary

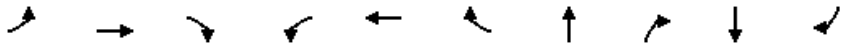
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

RS567

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	1001	167	219	1022	127	155	75	147	118	81	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	4.8		4.0	4.8	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.90		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1421	3312	1504	1719	3223	1436	1770	1594		1641	1726	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1421	3312	1504	1719	3223	1436	1770	1594		1641	1726	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	11	1043	174	228	1065	132	161	78	153	123	84	7
RTOR Reduction (vph)	0	0	105	0	0	50	0	68	0	0	3	0
Lane Group Flow (vph)	11	1043	69	228	1065	82	161	163	0	123	88	0
Confl. Peds. (#/hr)	1					1	4		1	1		4
Confl. Bikes (#/hr)			1						1			
Heavy Vehicles (%)	27%	9%	6%	5%	12%	10%	2%	7%	6%	10%	7%	29%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						
Actuated Green, G (s)	1.6	39.5	39.5	17.2	55.1	55.1	15.5	13.4		11.1	9.0	
Effective Green, g (s)	1.6	39.5	39.5	17.2	55.1	55.1	15.5	13.4		11.1	9.0	
Actuated g/C Ratio	0.02	0.40	0.40	0.17	0.55	0.55	0.16	0.13		0.11	0.09	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	4.8		4.0	4.8	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	22	1308	594	295	1775	791	274	213		182	155	
v/s Ratio Prot	0.01	c0.31		c0.13	0.33		c0.09	c0.10		c0.07	0.05	
v/s Ratio Perm			0.05			0.06						
v/c Ratio	0.50	0.80	0.12	0.77	0.60	0.10	0.59	0.76		0.68	0.57	
Uniform Delay, d1	48.8	26.7	19.2	39.5	15.1	10.7	39.3	41.8		42.7	43.6	
Progression Factor	0.77	1.27	3.77	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	15.2	4.6	0.4	11.9	1.5	0.3	3.2	14.9		9.5	4.7	
Delay (s)	52.6	38.5	72.7	51.4	16.6	11.0	42.5	56.7		52.2	48.4	
Level of Service	D	D	E	D	B	B	D	E		D	D	
Approach Delay (s)		43.5			21.6			50.9			50.6	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	35.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	18.8
Intersection Capacity Utilization	75.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	29	1864	171	97	1469	11	117	58	172	34
v/c Ratio	0.28	0.83	0.16	0.58	0.60	0.01	0.95	0.20	0.81	0.12
Control Delay	59.4	22.3	6.8	64.9	10.7	0.5	119.4	10.1	75.9	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.4	22.3	6.8	64.9	10.7	0.5	119.4	10.1	75.9	3.2
Queue Length 50th (ft)	22	551	30	61	406	0	91	0	131	0
Queue Length 95th (ft)	53	#877	71	m113	m570	m0	#173	32	198	9
Internal Link Dist (ft)		263			2471		389		767	
Turn Bay Length (ft)	470		110	455		100		50		75
Base Capacity (vph)	153	2244	1057	181	2462	1125	184	405	318	397
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.83	0.16	0.54	0.60	0.01	0.64	0.14	0.54	0.09

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

RS569

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	1678	154	87	1322	10	66	40	52	52	103	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98		1.00	1.00		1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97	1.00		0.98	1.00
Satd. Flow (prot)	1671	3505	1615	1805	3505	1582		1775	1583		1856	1548
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.45	1.00		0.75	1.00
Satd. Flow (perm)	1671	3505	1615	1805	3505	1582		818	1583		1414	1548
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	29	1864	171	97	1469	11	73	44	58	58	114	34
RTOR Reduction (vph)	0	0	23	0	0	3	0	0	49	0	0	29
Lane Group Flow (vph)	29	1864	148	97	1469	8	0	117	9	0	172	5
Confl. Peds. (#/hr)							1					1
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	8%	3%	0%	0%	3%	0%	3%	5%	2%	2%	0%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8		8	4		4
Actuated Green, G (s)	5.2	76.8	76.8	11.1	82.7	82.7		18.1	18.1		18.1	18.1
Effective Green, g (s)	5.2	76.8	76.8	11.1	82.7	82.7		18.1	18.1		18.1	18.1
Actuated g/C Ratio	0.04	0.64	0.64	0.09	0.69	0.69		0.15	0.15		0.15	0.15
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	72	2243	1033	166	2415	1090		123	238		213	233
v/s Ratio Prot	0.02	c0.53		c0.05	0.42							
v/s Ratio Perm			0.09			0.00		c0.14	0.01		0.12	0.00
v/c Ratio	0.40	0.83	0.14	0.58	0.61	0.01		0.95	0.04		0.81	0.02
Uniform Delay, d1	55.9	16.6	8.6	52.2	10.0	5.8		50.5	43.5		49.3	43.4
Progression Factor	1.00	1.00	1.00	1.03	0.87	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	3.7	3.8	0.3	4.2	0.9	0.0		65.7	0.1		19.6	0.0
Delay (s)	59.5	20.4	8.8	57.8	9.7	5.8		116.2	43.6		68.9	43.4
Level of Service	E	C	A	E	A	A		F	D		E	D
Approach Delay (s)		20.0			12.6			92.2			64.7	
Approach LOS		B			B			F			E	

Intersection Summary			
HCM 2000 Control Delay	22.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	78.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

RS570

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	2	0	1	156	343	1
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	2	0	1	179	394	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					469	
pX, platoon unblocked	0.96	0.96	0.96			
vC, conflicting volume	576	395	395			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	536	346	347			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	487	672	1172			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	2	180	395
Volume Left	2	1	0
Volume Right	0	0	1
cSH	487	1172	1700
Volume to Capacity	0.00	0.00	0.23
Queue Length 95th (ft)	0	0	0
Control Delay (s)	12.4	0.1	0.0
Lane LOS	B	A	
Approach Delay (s)	12.4	0.1	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	28.1%	ICU Level of Service	A
Analysis Period (min)	15		

RS571

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	1	6	151	2	5	338
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	1	7	174	2	6	389
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						553
pX, platoon unblocked	0.97					
vC, conflicting volume	575	175			176	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	542	175			176	
tC, single (s)	6.4	6.4			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.5			2.2	
p0 queue free %	100	99			100	
cM capacity (veh/h)	486	831			1413	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	8	176	394
Volume Left	1	0	6
Volume Right	7	2	0
cSH	755	1700	1413
Volume to Capacity	0.01	0.10	0.00
Queue Length 95th (ft)	1	0	0
Control Delay (s)	9.8	0.0	0.1
Lane LOS	A		A
Approach Delay (s)	9.8	0.0	0.1
Approach LOS	A		

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	31.8%	ICU Level of Service	A
Analysis Period (min)	15		

RS572



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	55	34	16	98	294	45
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	63	39	18	113	338	52
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					920	
pX, platoon unblocked						
vC, conflicting volume	513	364	390			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	513	364	390			
tC, single (s)	6.4	6.2	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	88	94	98			
cM capacity (veh/h)	508	686	1147			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	102	131	390
Volume Left	63	18	0
Volume Right	39	0	52
cSH	563	1147	1700
Volume to Capacity	0.18	0.02	0.23
Queue Length 95th (ft)	16	1	0
Control Delay (s)	12.8	1.3	0.0
Lane LOS	B	A	
Approach Delay (s)	12.8	1.3	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	30.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	89	61	0	0	1
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	0	102	70	0	0	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	70				172	70
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	70				172	70
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1543				822	998

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	102	70	1
Volume Left	0	0	0
Volume Right	0	0	1
cSH	1543	1700	998
Volume to Capacity	0.00	0.04	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	8.6
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.6
Approach LOS			A

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	14.7%	ICU Level of Service	A
Analysis Period (min)	15		

RS574

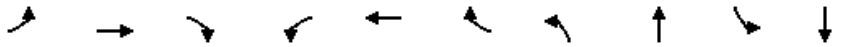


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	31	33	34	77	263	45
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	35	37	38	87	296	51

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	72	125	346
Volume Left (vph)	35	0	296
Volume Right (vph)	0	87	51
Hadj (s)	0.15	-0.40	0.08
Departure Headway (s)	5.0	4.4	4.5
Degree Utilization, x	0.10	0.15	0.43
Capacity (veh/h)	657	748	782
Control Delay (s)	8.6	8.2	10.8
Approach Delay (s)	8.6	8.2	10.8
Approach LOS	A	A	B

Intersection Summary			
Delay	9.9		
Level of Service	A		
Intersection Capacity Utilization	34.1%	ICU Level of Service	A
Analysis Period (min)	15		

RS575



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	6	1524	345	289	1299	88	187	222	200	159
v/c Ratio	0.07	0.98	0.39	0.99	0.58	0.09	0.91	0.84	0.99	0.88
Control Delay	64.3	52.2	10.0	99.3	14.2	2.4	95.4	65.1	114.5	94.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.3	52.2	10.0	99.3	14.2	2.4	95.4	65.1	114.5	94.7
Queue Length 50th (ft)	4	666	104	226	264	0	145	130	157	122
Queue Length 95th (ft)	m5	#792	m140	#406	421	22	#283	#265	#311	#251
Internal Link Dist (ft)		2471			585			201		465
Turn Bay Length (ft)	500		360	295		150			330	
Base Capacity (vph)	180	1561	881	293	2245	934	206	265	202	181
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.98	0.39	0.99	0.58	0.09	0.91	0.84	0.99	0.88

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

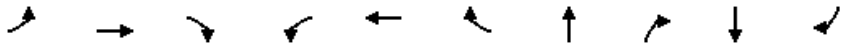
RS576

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	1448	328	275	1234	84	178	84	127	190	144	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	2000	1900	1900
Total Lost time (s)	4.0	6.0	6.0	3.8	6.0	6.0	4.0	4.8		0.7	4.8	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.91		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3471	1538	1656	3505	1410	1770	1630		1827	1768	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3471	1538	1656	3505	1410	1770	1630		1827	1768	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	6	1524	345	289	1299	88	187	88	134	200	152	7
RTOR Reduction (vph)	0	0	190	0	0	34	0	46	0	0	2	0
Lane Group Flow (vph)	6	1524	155	289	1299	54	187	176	0	200	157	0
Confl. Peds. (#/hr)	1					1	2		1	1		2
Heavy Vehicles (%)	0%	4%	5%	9%	3%	12%	2%	4%	6%	4%	7%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						
Actuated Green, G (s)	1.4	54.0	54.0	21.0	73.6	73.6	14.0	16.2		10.0	12.2	
Effective Green, g (s)	1.4	54.0	54.0	21.2	73.6	73.6	14.0	16.2		13.3	12.2	
Actuated g/C Ratio	0.01	0.45	0.45	0.18	0.61	0.61	0.12	0.13		0.11	0.10	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	4.8		4.0	4.8	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	21	1561	692	292	2149	864	206	220		202	179	
v/s Ratio Prot	0.00	c0.44		c0.17	0.37		0.11	c0.11		c0.11	0.09	
v/s Ratio Perm			0.10			0.04						
v/c Ratio	0.29	0.98	0.22	0.99	0.60	0.06	0.91	0.80		0.99	0.88	
Uniform Delay, d1	58.8	32.4	20.2	49.3	14.3	9.3	52.4	50.3		53.3	53.2	
Progression Factor	1.17	1.23	4.39	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.2	12.5	0.4	49.3	1.3	0.1	37.8	18.5		60.3	35.0	
Delay (s)	73.3	52.2	89.1	98.6	15.5	9.5	90.2	68.9		113.6	88.2	
Level of Service	E	D	F	F	B	A	F	E		F	F	
Approach Delay (s)		59.1			29.5			78.6			102.4	
Approach LOS		E			C			E			F	

Intersection Summary			
HCM 2000 Control Delay	53.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.8
Intersection Capacity Utilization	93.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Attachment E – 2018 Background Traffic Level-of-Service Worksheets

RS578



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	6	837	67	46	2099	6	179	33	72	5
v/c Ratio	0.07	0.38	0.06	0.36	0.84	0.00	0.81	0.10	0.27	0.01
Control Delay	55.5	10.5	1.6	51.1	11.7	0.0	75.1	0.6	45.8	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.5	10.5	1.6	51.1	11.7	0.0	75.1	0.6	45.8	0.0
Queue Length 50th (ft)	5	152	0	37	286	0	133	0	49	0
Queue Length 95th (ft)	19	214	13	m40	m#966	m0	#230	0	92	0
Internal Link Dist (ft)		263			2471		389		744	
Turn Bay Length (ft)	470		110	500		100		50		75
Base Capacity (vph)	165	2218	1108	315	2495	1206	255	369	311	377
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.38	0.06	0.15	0.84	0.00	0.70	0.09	0.23	0.01

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

RS579

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	787	63	43	1973	6	118	50	31	9	58	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97	1.00		0.99	1.00
Satd. Flow (prot)	1805	3312	1615	1805	3374	1615		1823	1568		1772	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.74	1.00		0.95	1.00
Satd. Flow (perm)	1805	3312	1615	1805	3374	1615		1391	1568		1700	1615
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	6	837	67	46	2099	6	126	53	33	10	62	5
RTOR Reduction (vph)	0	0	23	0	0	2	0	0	28	0	0	4
Lane Group Flow (vph)	6	837	44	46	2099	4	0	179	5	0	72	1
Heavy Vehicles (%)	0%	9%	0%	0%	7%	0%	1%	0%	3%	22%	4%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8		8	4		4
Actuated Green, G (s)	1.4	79.5	79.5	7.4	85.5	85.5		19.1	19.1		19.1	19.1
Effective Green, g (s)	1.4	79.5	79.5	7.4	85.5	85.5		19.1	19.1		19.1	19.1
Actuated g/C Ratio	0.01	0.66	0.66	0.06	0.71	0.71		0.16	0.16		0.16	0.16
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	21	2194	1069	111	2403	1150		221	249		270	257
v/s Ratio Prot	0.00	0.25		c0.03	c0.62							
v/s Ratio Perm			0.03			0.00		c0.13	0.00		0.04	0.00
v/c Ratio	0.29	0.38	0.04	0.41	0.87	0.00		0.81	0.02		0.27	0.00
Uniform Delay, d1	58.8	9.1	7.0	54.2	13.1	5.0		48.7	42.6		44.3	42.4
Progression Factor	1.00	1.00	1.00	0.91	0.76	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	7.4	0.5	0.1	1.1	2.2	0.0		19.3	0.0		0.5	0.0
Delay (s)	66.2	9.7	7.1	50.3	12.1	5.0		68.0	42.6		44.8	42.4
Level of Service	E	A	A	D	B	A		E	D		D	D
Approach Delay (s)		9.8			12.9			64.0			44.7	
Approach LOS		A			B			E			D	

Intersection Summary			
HCM 2000 Control Delay	16.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	80.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	1	0	0	198	163	1
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.65	0.65	0.65	0.65	0.65	0.65
Hourly flow rate (vph)	2	0	0	305	251	2
Pedestrians	1					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	0					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					469	
pX, platoon unblocked	0.99	0.99	0.99			
vC, conflicting volume	557	253	253			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	551	245	245			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	495	793	1323			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	2	305	252
Volume Left	2	0	0
Volume Right	0	0	2
cSH	495	1323	1700
Volume to Capacity	0.00	0.00	0.15
Queue Length 95th (ft)	0	0	0
Control Delay (s)	12.3	0.0	0.0
Lane LOS	B		
Approach Delay (s)	12.3	0.0	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	20.4%	ICU Level of Service	A
Analysis Period (min)	15		

RS581



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	3	7	191	1	3	160
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.65	0.65	0.65	0.65	0.65	0.65
Hourly flow rate (vph)	5	11	294	2	5	246
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						553
pX, platoon unblocked						
vC, conflicting volume	550	295			295	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	550	295			295	
tC, single (s)	6.7	6.3			4.1	
tC, 2 stage (s)						
tF (s)	3.8	3.4			2.2	
p0 queue free %	99	98			100	
cM capacity (veh/h)	445	717			1278	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	15	295	251
Volume Left	5	0	5
Volume Right	11	2	0
cSH	606	1700	1278
Volume to Capacity	0.03	0.17	0.00
Queue Length 95th (ft)	2	0	0
Control Delay (s)	11.1	0.0	0.2
Lane LOS	B		A
Approach Delay (s)	11.1	0.0	0.2
Approach LOS	B		

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	20.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	26	12	26	166	91	72
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.61	0.61	0.61	0.61	0.61	0.61
Hourly flow rate (vph)	43	20	43	272	149	118
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					920	
pX, platoon unblocked						
vC, conflicting volume	566	208	267			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	566	208	267			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	91	98	97			
cM capacity (veh/h)	473	837	1308			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	62	315	267
Volume Left	43	43	0
Volume Right	20	0	118
cSH	549	1308	1700
Volume to Capacity	0.11	0.03	0.16
Queue Length 95th (ft)	10	3	0
Control Delay (s)	12.4	1.3	0.0
Lane LOS	B	A	
Approach Delay (s)	12.4	1.3	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	32.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	38	96	2	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.61	0.61	0.61	0.61	0.61	0.61
Hourly flow rate (vph)	0	62	157	3	0	0
Pedestrians					2	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	163				223	161
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	163				223	161
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1426				768	888

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	62	161	0
Volume Left	0	0	0
Volume Right	0	3	0
cSH	1426	1700	1700
Volume to Capacity	0.00	0.09	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	9.0%	ICU Level of Service	A
Analysis Period (min)	15		

RS584



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	30	14	17	137	64	20
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	34	16	20	157	74	23

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	51	177	97
Volume Left (vph)	34	0	74
Volume Right (vph)	0	157	23
Hadj (s)	0.17	-0.51	0.06
Departure Headway (s)	4.5	3.7	4.4
Degree Utilization, x	0.06	0.18	0.12
Capacity (veh/h)	780	952	772
Control Delay (s)	7.8	7.5	8.0
Approach Delay (s)	7.8	7.5	8.0
Approach LOS	A	A	A

Intersection Summary			
Delay	7.7		
Level of Service	A		
Intersection Capacity Utilization	27.5%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	8	751	131	148	1926	218	243	255	65	85
v/c Ratio	0.09	0.44	0.15	0.67	0.88	0.23	1.00	0.84	0.60	0.67
Control Delay	50.1	16.3	1.0	63.8	23.6	4.8	108.8	62.3	76.0	78.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.1	16.3	1.0	63.8	23.6	4.8	108.8	62.3	76.0	78.7
Queue Length 50th (ft)	6	120	0	111	558	24	191	150	50	64
Queue Length 95th (ft)	m0	144	12	173	#952	71	#359	#314	#104	#135
Internal Link Dist (ft)		2471			585			201		465
Turn Bay Length (ft)	500		360	295		150			330	
Base Capacity (vph)	180	1706	880	323	2198	954	244	302	118	132
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.44	0.15	0.46	0.88	0.23	1.00	0.84	0.55	0.64

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

RS586

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	698	122	138	1791	203	226	83	154	60	74	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	2000	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	6.0	3.8	4.8		4.0	4.8	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.90		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3374	1583	1687	3374	1397	1810	1609		1583	1707	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3374	1583	1687	3374	1397	1810	1609		1583	1707	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	8	751	131	148	1926	218	243	89	166	65	80	5
RTOR Reduction (vph)	0	0	66	0	0	48	0	55	0	0	2	0
Lane Group Flow (vph)	8	751	65	148	1926	170	243	200	0	65	83	0
Confl. Peds. (#/hr)	1					1			1	1		
Confl. Bikes (#/hr)									3			
Heavy Vehicles (%)	0%	7%	2%	7%	7%	13%	5%	6%	5%	14%	11%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						
Actuated Green, G (s)	1.5	59.9	59.9	15.8	74.2	74.2	16.0	18.4		7.1	9.5	
Effective Green, g (s)	1.5	59.9	59.9	15.8	74.2	74.2	16.2	18.4		7.1	9.5	
Actuated g/C Ratio	0.01	0.50	0.50	0.13	0.62	0.62	0.13	0.15		0.06	0.08	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	4.8		4.0	4.8	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	22	1684	790	222	2086	863	244	246		93	135	
v/s Ratio Prot	0.00	0.22		c0.09	c0.57		c0.13	c0.12		0.04	0.05	
v/s Ratio Perm			0.04			0.12						
v/c Ratio	0.36	0.45	0.08	0.67	0.92	0.20	1.00	0.81		0.70	0.62	
Uniform Delay, d1	58.8	19.4	15.7	49.6	20.4	10.0	51.9	49.1		55.4	53.5	
Progression Factor	0.90	0.78	0.49	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.5	0.8	0.2	7.4	8.4	0.5	56.1	18.2		20.5	8.1	
Delay (s)	62.2	16.0	7.9	57.0	28.7	10.5	108.0	67.3		75.9	61.6	
Level of Service	E	B	A	E	C	B	F	E		E	E	
Approach Delay (s)		15.2			28.8			87.2			67.8	
Approach LOS		B			C			F			E	

Intersection Summary			
HCM 2000 Control Delay	34.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.8
Intersection Capacity Utilization	86.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	10	1156	72	70	1165	14	80	68	73	15
v/c Ratio	0.09	0.49	0.06	0.43	0.43	0.01	0.52	0.29	0.42	0.06
Control Delay	45.6	10.0	2.3	54.2	2.7	0.0	53.6	11.3	48.0	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.6	10.0	2.3	54.2	2.7	0.0	53.6	11.3	48.0	0.5
Queue Length 50th (ft)	6	182	0	42	57	0	49	0	44	0
Queue Length 95th (ft)	23	296	18	m86	67	m0	92	33	85	0
Internal Link Dist (ft)		263			2471		389		741	
Turn Bay Length (ft)	470		455	500		100		50		75
Base Capacity (vph)	198	2359	1137	200	2685	1211	259	339	295	348
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.49	0.06	0.35	0.43	0.01	0.31	0.20	0.25	0.04

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

RS588

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	1110	69	67	1118	13	44	33	65	18	52	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97	1.00		0.99	1.00
Satd. Flow (prot)	1805	3312	1568	1770	3343	1495		1791	1538		1798	1588
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.78	1.00		0.90	1.00
Satd. Flow (perm)	1805	3312	1568	1770	3343	1495		1440	1538		1641	1588
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	10	1156	72	70	1165	14	46	34	68	19	54	15
RTOR Reduction (vph)	0	0	23	0	0	3	0	0	62	0	0	14
Lane Group Flow (vph)	10	1156	49	70	1165	11	0	80	6	0	73	1
Confl. Peds. (#/hr)							7					7
Heavy Vehicles (%)	0%	9%	3%	2%	8%	8%	5%	0%	5%	11%	2%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8		8	4		4
Actuated Green, G (s)	1.5	68.5	68.5	8.1	75.1	75.1		9.4	9.4		9.4	9.4
Effective Green, g (s)	1.5	68.5	68.5	8.1	75.1	75.1		9.4	9.4		9.4	9.4
Actuated g/C Ratio	0.02	0.68	0.68	0.08	0.75	0.75		0.09	0.09		0.09	0.09
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	27	2268	1074	143	2510	1122		135	144		154	149
v/s Ratio Prot	0.01	c0.35		c0.04	0.35							
v/s Ratio Perm			0.03			0.01		c0.06	0.00		0.04	0.00
v/c Ratio	0.37	0.51	0.05	0.49	0.46	0.01		0.59	0.04		0.47	0.01
Uniform Delay, d1	48.8	7.6	5.1	44.0	4.8	3.1		43.5	41.2		43.0	41.1
Progression Factor	1.00	1.00	1.00	1.13	0.47	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	8.4	0.8	0.1	2.2	0.5	0.0		6.8	0.1		2.3	0.0
Delay (s)	57.2	8.4	5.2	51.9	2.7	3.1		50.3	41.3		45.3	41.1
Level of Service	E	A	A	D	A	A		D	D		D	D
Approach Delay (s)		8.6			5.5			46.2			44.5	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	10.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	3	0	0	139	186	2
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	3	0	0	162	216	2
Pedestrians	9					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	1					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					469	
pX, platoon unblocked						
vC, conflicting volume	388	226	228			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	388	226	228			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	615	812	1342			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	3	162	219
Volume Left	3	0	0
Volume Right	0	0	2
cSH	615	1342	1700
Volume to Capacity	0.01	0.00	0.13
Queue Length 95th (ft)	0	0	0
Control Delay (s)	10.9	0.0	0.0
Lane LOS	B		
Approach Delay (s)	10.9	0.0	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	20.8%	ICU Level of Service	A
Analysis Period (min)	15		

RS590

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	6	133	4	6	180
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	0	7	155	5	7	209
Pedestrians						7
Lane Width (ft)						12.0
Walking Speed (ft/s)						4.0
Percent Blockage						1
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						553
pX, platoon unblocked						
vC, conflicting volume	380	164			159	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	380	164			159	
tC, single (s)	6.4	6.4			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.5			2.2	
p0 queue free %	100	99			100	
cM capacity (veh/h)	623	838			1432	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	7	159	216
Volume Left	0	0	7
Volume Right	7	5	0
cSH	838	1700	1432
Volume to Capacity	0.01	0.09	0.00
Queue Length 95th (ft)	1	0	0
Control Delay (s)	9.3	0.0	0.3
Lane LOS	A		A
Approach Delay (s)	9.3	0.0	0.3
Approach LOS	A		

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	26.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	51	30	29	86	93	87
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	64	38	36	108	116	109
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					923	
pX, platoon unblocked						
vC, conflicting volume	351	171	225			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	351	171	225			
tC, single (s)	6.5	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	90	96	97			
cM capacity (veh/h)	622	878	1356			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	101	144	225
Volume Left	64	36	0
Volume Right	38	0	109
cSH	697	1356	1700
Volume to Capacity	0.15	0.03	0.13
Queue Length 95th (ft)	13	2	0
Control Delay (s)	11.0	2.1	0.0
Lane LOS	B	A	
Approach Delay (s)	11.0	2.1	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	31.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	80	116	0	1	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	0	100	145	0	1	0
Pedestrians					7	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	152				252	152
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	152				252	152
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1433				737	894

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	100	145	1
Volume Left	0	0	1
Volume Right	0	0	0
cSH	1433	1700	737
Volume to Capacity	0.00	0.09	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	9.9
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.9
Approach LOS			A

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	17.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	26	21	24	69	71	30
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	32	26	30	85	88	37

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	58	115	125
Volume Left (vph)	32	0	88
Volume Right (vph)	0	85	37
Hadj (s)	0.19	-0.43	0.00
Departure Headway (s)	4.5	3.8	4.3
Degree Utilization, x	0.07	0.12	0.15
Capacity (veh/h)	774	910	809
Control Delay (s)	7.8	7.3	8.0
Approach Delay (s)	7.8	7.3	8.0
Approach LOS	A	A	A

Intersection Summary			
Delay	7.7		
Level of Service	A		
Intersection Capacity Utilization	21.6%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	11	1055	176	231	1077	134	164	234	124	92
v/c Ratio	0.12	0.79	0.25	0.78	0.56	0.15	0.59	0.87	0.69	0.52
Control Delay	35.3	38.8	13.3	57.4	14.5	3.4	51.7	61.3	62.3	52.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.3	38.8	13.3	57.4	14.5	3.4	51.7	61.3	62.3	52.1
Queue Length 50th (ft)	7	257	1	140	186	5	102	~102	76	55
Queue Length 95th (ft)	m13	451	115	220	325	36	#207	#261	#150	106
Internal Link Dist (ft)		2471			585			201		465
Turn Bay Length (ft)	500		360	295		150			330	
Base Capacity (vph)	170	1339	712	343	1909	896	276	268	198	190
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.79	0.25	0.67	0.56	0.15	0.59	0.87	0.63	0.48

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	1013	169	222	1034	129	157	76	149	119	82	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	4.8		4.0	4.8	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.90		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1421	3312	1504	1719	3223	1436	1770	1594		1641	1726	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1421	3312	1504	1719	3223	1436	1770	1594		1641	1726	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	11	1055	176	231	1077	134	164	79	155	124	85	7
RTOR Reduction (vph)	0	0	107	0	0	50	0	68	0	0	3	0
Lane Group Flow (vph)	11	1055	69	231	1077	84	164	166	0	124	89	0
Confl. Peds. (#/hr)	1					1	4		1	1		4
Confl. Bikes (#/hr)			1						1			
Heavy Vehicles (%)	27%	9%	6%	5%	12%	10%	2%	7%	6%	10%	7%	29%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						
Actuated Green, G (s)	1.6	39.4	39.4	17.3	55.1	55.1	15.6	13.4		11.1	8.9	
Effective Green, g (s)	1.6	39.4	39.4	17.3	55.1	55.1	15.6	13.4		11.1	8.9	
Actuated g/C Ratio	0.02	0.39	0.39	0.17	0.55	0.55	0.16	0.13		0.11	0.09	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	4.8		4.0	4.8	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	22	1304	592	297	1775	791	276	213		182	153	
v/s Ratio Prot	0.01	c0.32		c0.13	0.33		c0.09	c0.10		c0.08	0.05	
v/s Ratio Perm			0.05			0.06						
v/c Ratio	0.50	0.81	0.12	0.78	0.61	0.11	0.59	0.78		0.68	0.58	
Uniform Delay, d1	48.8	27.0	19.3	39.5	15.1	10.7	39.3	41.9		42.7	43.8	
Progression Factor	0.75	1.28	3.85	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	15.1	5.0	0.4	12.1	1.6	0.3	3.4	16.2		10.0	5.6	
Delay (s)	51.8	39.4	74.5	51.6	16.7	11.0	42.7	58.1		52.8	49.3	
Level of Service	D	D	E	D	B	B	D	E		D	D	
Approach Delay (s)		44.5			21.8			51.7			51.3	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	35.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	18.8
Intersection Capacity Utilization	76.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	29	1887	173	98	1487	11	118	59	175	34
v/c Ratio	0.28	0.84	0.16	0.59	0.61	0.01	0.97	0.20	0.82	0.12
Control Delay	59.4	23.1	6.9	64.8	10.9	0.5	122.7	10.3	76.7	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.4	23.1	6.9	64.8	10.9	0.5	122.7	10.3	76.7	3.2
Queue Length 50th (ft)	22	569	31	62	417	0	92	0	133	0
Queue Length 95th (ft)	53	#896	73	m114	m583	m0	#175	32	201	9
Internal Link Dist (ft)		263			2471		389		767	
Turn Bay Length (ft)	470		110	455		100		50		75
Base Capacity (vph)	153	2238	1055	181	2457	1122	181	405	317	397
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.84	0.16	0.54	0.61	0.01	0.65	0.15	0.55	0.09

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

RS597

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	1698	156	88	1338	10	67	40	53	53	104	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98		1.00	1.00		1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97	1.00		0.98	1.00
Satd. Flow (prot)	1671	3505	1615	1805	3505	1582		1775	1583		1856	1548
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.44	1.00		0.75	1.00
Satd. Flow (perm)	1671	3505	1615	1805	3505	1582		806	1583		1410	1548
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	29	1887	173	98	1487	11	74	44	59	59	116	34
RTOR Reduction (vph)	0	0	24	0	0	3	0	0	50	0	0	29
Lane Group Flow (vph)	29	1887	149	98	1487	8	0	118	9	0	175	5
Confl. Peds. (#/hr)							1					1
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	8%	3%	0%	0%	3%	0%	3%	5%	2%	2%	0%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8		8	4		4
Actuated Green, G (s)	5.2	76.6	76.6	11.1	82.5	82.5		18.3	18.3		18.3	18.3
Effective Green, g (s)	5.2	76.6	76.6	11.1	82.5	82.5		18.3	18.3		18.3	18.3
Actuated g/C Ratio	0.04	0.64	0.64	0.09	0.69	0.69		0.15	0.15		0.15	0.15
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	72	2237	1030	166	2409	1087		122	241		215	236
v/s Ratio Prot	0.02	c0.54		c0.05	0.42							
v/s Ratio Perm			0.09			0.00		c0.15	0.01		0.12	0.00
v/c Ratio	0.40	0.84	0.15	0.59	0.62	0.01		0.97	0.04		0.81	0.02
Uniform Delay, d1	55.9	17.0	8.6	52.3	10.2	5.9		50.6	43.3		49.2	43.2
Progression Factor	1.00	1.00	1.00	1.02	0.87	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	3.7	4.1	0.3	4.5	1.0	0.0		70.5	0.1		20.5	0.0
Delay (s)	59.5	21.1	8.9	57.8	9.8	5.9		121.1	43.4		69.7	43.3
Level of Service	E	C	A	E	A	A		F	D		E	D
Approach Delay (s)		20.6			12.7			95.2			65.4	
Approach LOS		C			B			F			E	

Intersection Summary			
HCM 2000 Control Delay	23.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	79.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	2	0	1	158	347	1
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	2	0	1	182	399	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					469	
pX, platoon unblocked	0.96	0.96	0.96			
vC, conflicting volume	583	399	400			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	541	349	349			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	483	668	1167			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	2	183	400
Volume Left	2	1	0
Volume Right	0	0	1
cSH	483	1167	1700
Volume to Capacity	0.00	0.00	0.24
Queue Length 95th (ft)	0	0	0
Control Delay (s)	12.5	0.1	0.0
Lane LOS	B	A	
Approach Delay (s)	12.5	0.1	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	28.3%	ICU Level of Service	A
Analysis Period (min)	15		

RS599



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	1	6	153	2	5	342
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	1	7	176	2	6	393
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						553
pX, platoon unblocked	0.96					
vC, conflicting volume	582	177			178	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	548	177			178	
tC, single (s)	6.4	6.4			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.5			2.2	
p0 queue free %	100	99			100	
cM capacity (veh/h)	481	829			1410	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	8	178	399
Volume Left	1	0	6
Volume Right	7	2	0
cSH	751	1700	1410
Volume to Capacity	0.01	0.10	0.00
Queue Length 95th (ft)	1	0	0
Control Delay (s)	9.8	0.0	0.1
Lane LOS	A		A
Approach Delay (s)	9.8	0.0	0.1
Approach LOS	A		

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	32.0%	ICU Level of Service	A
Analysis Period (min)	15		

RS600



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	56	34	16	99	297	46
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	64	39	18	114	341	53
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					937	
pX, platoon unblocked						
vC, conflicting volume	518	368	394			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	518	368	394			
tC, single (s)	6.4	6.2	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	87	94	98			
cM capacity (veh/h)	504	682	1143			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	103	132	394
Volume Left	64	18	0
Volume Right	39	0	53
cSH	559	1143	1700
Volume to Capacity	0.19	0.02	0.23
Queue Length 95th (ft)	17	1	0
Control Delay (s)	12.9	1.3	0.0
Lane LOS	B	A	
Approach Delay (s)	12.9	1.3	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	30.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	90	62	0	0	1
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	0	103	71	0	0	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	71				175	71
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	71				175	71
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1542				820	997

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	103	71	1
Volume Left	0	0	0
Volume Right	0	0	1
cSH	1542	1700	997
Volume to Capacity	0.00	0.04	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	8.6
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.6
Approach LOS			A

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	14.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	31	33	34	78	266	46
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	35	37	38	88	299	52

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	72	126	351
Volume Left (vph)	35	0	299
Volume Right (vph)	0	88	52
Hadj (s)	0.15	-0.41	0.08
Departure Headway (s)	5.1	4.4	4.5
Degree Utilization, x	0.10	0.16	0.43
Capacity (veh/h)	655	746	782
Control Delay (s)	8.6	8.3	10.8
Approach Delay (s)	8.6	8.3	10.8
Approach LOS	A	A	B

Intersection Summary			
Delay	10.0		
Level of Service	A		
Intersection Capacity Utilization	34.3%	ICU Level of Service	A
Analysis Period (min)	15		

RS603

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	6	1543	349	293	1315	89	189	225	202	161
v/c Ratio	0.07	0.99	0.39	1.00	0.59	0.10	0.92	0.85	1.00	0.89
Control Delay	63.7	54.0	9.8	103.2	14.3	2.4	97.3	66.5	117.1	96.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.7	54.0	9.8	103.2	14.3	2.4	97.3	66.5	117.1	96.1
Queue Length 50th (ft)	4	675	106	~230	269	0	147	133	159	124
Queue Length 95th (ft)	m5	#807	m137	#412	429	23	#288	#272	#316	#254
Internal Link Dist (ft)		2471			585			201		465
Turn Bay Length (ft)	500		360	295		150			330	
Base Capacity (vph)	180	1561	884	292	2243	934	206	265	202	181
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.99	0.39	1.00	0.59	0.10	0.92	0.85	1.00	0.89

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

RS604

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	1466	332	278	1249	85	180	85	129	192	146	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	2000	1900	1900
Total Lost time (s)	4.0	6.0	6.0	3.8	6.0	6.0	4.0	4.8		0.7	4.8	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.91		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3471	1538	1656	3505	1410	1770	1629		1827	1768	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3471	1538	1656	3505	1410	1770	1629		1827	1768	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	6	1543	349	293	1315	89	189	89	136	202	154	7
RTOR Reduction (vph)	0	0	192	0	0	34	0	46	0	0	2	0
Lane Group Flow (vph)	6	1543	157	293	1315	55	189	179	0	202	159	0
Confl. Peds. (#/hr)	1					1	2		1	1		2
Heavy Vehicles (%)	0%	4%	5%	9%	3%	12%	2%	4%	6%	4%	7%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						
Actuated Green, G (s)	1.4	54.0	54.0	21.0	73.6	73.6	14.0	16.2		10.0	12.2	
Effective Green, g (s)	1.4	54.0	54.0	21.2	73.6	73.6	14.0	16.2		13.3	12.2	
Actuated g/C Ratio	0.01	0.45	0.45	0.18	0.61	0.61	0.12	0.13		0.11	0.10	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	4.8		4.0	4.8	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	21	1561	692	292	2149	864	206	219		202	179	
v/s Ratio Prot	0.00	c0.44		c0.18	0.38		0.11	c0.11		c0.11	0.09	
v/s Ratio Perm			0.10			0.04						
v/c Ratio	0.29	0.99	0.23	1.00	0.61	0.06	0.92	0.82		1.00	0.89	
Uniform Delay, d1	58.8	32.7	20.2	49.4	14.4	9.3	52.4	50.5		53.4	53.2	
Progression Factor	1.16	1.22	4.29	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.1	14.4	0.4	53.5	1.3	0.1	40.0	20.6		63.3	37.3	
Delay (s)	72.4	54.2	87.2	102.9	15.7	9.5	92.5	71.0		116.7	90.6	
Level of Service	E	D	F	F	B	A	F	E		F	F	
Approach Delay (s)		60.3			30.4			80.8			105.1	
Approach LOS		E			C			F			F	

Intersection Summary			
HCM 2000 Control Delay	54.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.8
Intersection Capacity Utilization	94.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Attachment F – 2018 Total Traffic Level-of-Service Worksheets

RS606

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	6	837	70	47	2099	6	199	40	74	5
v/c Ratio	0.07	0.38	0.06	0.37	0.85	0.01	0.85	0.12	0.26	0.01
Control Delay	55.5	10.9	1.7	51.1	12.2	0.0	79.5	0.7	45.1	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.5	10.9	1.7	51.1	12.2	0.0	79.5	0.7	45.1	0.0
Queue Length 50th (ft)	5	157	0	37	298	0	148	0	49	0
Queue Length 95th (ft)	19	214	15	m41	m#966	m0	#267	0	95	0
Internal Link Dist (ft)		263			2471		389		744	
Turn Bay Length (ft)	470		110	455		100		50		75
Base Capacity (vph)	165	2188	1094	315	2466	1192	255	369	311	377
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.38	0.06	0.15	0.85	0.01	0.78	0.11	0.24	0.01

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

RS607

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	787	66	44	1973	6	130	57	38	9	60	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97	1.00		0.99	1.00
Satd. Flow (prot)	1805	3312	1615	1805	3374	1615		1824	1568		1773	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.74	1.00		0.95	1.00
Satd. Flow (perm)	1805	3312	1615	1805	3374	1615		1390	1568		1701	1615
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	6	837	70	47	2099	6	138	61	40	10	64	5
RTOR Reduction (vph)	0	0	24	0	0	2	0	0	33	0	0	4
Lane Group Flow (vph)	6	837	46	47	2099	4	0	199	7	0	74	1
Heavy Vehicles (%)	0%	9%	0%	0%	7%	0%	1%	0%	3%	22%	4%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8		8	4		4
Actuated Green, G (s)	1.4	78.5	78.5	7.4	84.5	84.5		20.1	20.1		20.1	20.1
Effective Green, g (s)	1.4	78.5	78.5	7.4	84.5	84.5		20.1	20.1		20.1	20.1
Actuated g/C Ratio	0.01	0.65	0.65	0.06	0.70	0.70		0.17	0.17		0.17	0.17
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	21	2166	1056	111	2375	1137		232	262		284	270
v/s Ratio Prot	0.00	0.25		c0.03	c0.62							
v/s Ratio Perm			0.03			0.00		c0.14	0.00		0.04	0.00
v/c Ratio	0.29	0.39	0.04	0.42	0.88	0.00		0.86	0.03		0.26	0.00
Uniform Delay, d1	58.8	9.6	7.4	54.2	13.9	5.3		48.6	41.8		43.5	41.6
Progression Factor	1.00	1.00	1.00	0.91	0.75	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	7.4	0.5	0.1	1.1	2.4	0.0		25.4	0.0		0.5	0.0
Delay (s)	66.2	10.1	7.5	50.3	12.8	5.3		74.0	41.8		44.0	41.6
Level of Service	E	B	A	D	B	A		E	D		D	D
Approach Delay (s)		10.3			13.6			68.6			43.8	
Approach LOS		B			B			E			D	

Intersection Summary			
HCM 2000 Control Delay	17.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	81.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	225	169	1
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.65	0.65	0.65	0.65	0.65	0.65
Hourly flow rate (vph)	0	0	0	346	260	2
Pedestrians	1					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	0					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					469	
pX, platoon unblocked	0.99	0.99	0.99			
vC, conflicting volume	608	262	263			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	601	252	253			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	463	785	1313			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	346	262
Volume Left	0	0	0
Volume Right	0	0	2
cSH	1700	1313	1700
Volume to Capacity	0.00	0.00	0.15
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	15.2%	ICU Level of Service	A
Analysis Period (min)	15		

RS609

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Volume (veh/h)	218	1	3	166	3	7
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.65	0.65	0.65	0.65	0.65	0.65
Hourly flow rate (vph)	335	2	5	255	5	11
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				553		
pX, platoon unblocked						
vC, conflicting volume			337		601	336
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			337		601	336
tC, single (s)			4.1		6.7	6.3
tC, 2 stage (s)						
tF (s)			2.2		3.8	3.4
p0 queue free %			100		99	98
cM capacity (veh/h)			1234		415	679

Direction, Lane #	EB 1	WB 1	NW 1
Volume Total	337	260	15
Volume Left	0	5	5
Volume Right	2	0	11
cSH	1700	1234	570
Volume to Capacity	0.20	0.00	0.03
Queue Length 95th (ft)	0	0	2
Control Delay (s)	0.0	0.2	11.5
Lane LOS		A	B
Approach Delay (s)	0.0	0.2	11.5
Approach LOS			B

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	21.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	53	19	27	166	91	78
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.61	0.61	0.61	0.61	0.61	0.61
Hourly flow rate (vph)	87	31	44	272	149	128
Pedestrians					1	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					923	
pX, platoon unblocked						
vC, conflicting volume	575	213	277			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	575	213	277			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	81	96	97			
cM capacity (veh/h)	466	832	1297			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	118	316	277
Volume Left	87	44	0
Volume Right	31	0	128
cSH	528	1297	1700
Volume to Capacity	0.22	0.03	0.16
Queue Length 95th (ft)	21	3	0
Control Delay (s)	13.8	1.4	0.0
Lane LOS	B	A	
Approach Delay (s)	13.8	1.4	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	33.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	45	98	7	27	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.61	0.61	0.61	0.61	0.61	0.61
Hourly flow rate (vph)	0	74	161	11	44	0
Pedestrians					2	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	174				242	168
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	174				242	168
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				94	100
cM capacity (veh/h)	1412				749	879

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	74	172	44
Volume Left	0	0	44
Volume Right	0	11	0
cSH	1412	1700	749
Volume to Capacity	0.00	0.10	0.06
Queue Length 95th (ft)	0	0	5
Control Delay (s)	0.0	0.0	10.1
Lane LOS			B
Approach Delay (s)	0.0	0.0	10.1
Approach LOS			B

Intersection Summary			
Average Delay		1.5	
Intersection Capacity Utilization		16.1%	ICU Level of Service A
Analysis Period (min)		15	

RS612



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	30	14	17	138	69	22
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	34	16	20	159	79	25

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	51	178	105
Volume Left (vph)	34	0	79
Volume Right (vph)	0	159	25
Hadj (s)	0.17	-0.51	0.05
Departure Headway (s)	4.5	3.7	4.4
Degree Utilization, x	0.06	0.18	0.13
Capacity (veh/h)	775	946	772
Control Delay (s)	7.8	7.5	8.1
Approach Delay (s)	7.8	7.5	8.1
Approach LOS	A	A	A

Intersection Summary			
Delay	7.7		
Level of Service	A		
Intersection Capacity Utilization	27.9%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	8	754	135	148	1927	218	243	256	65	85
v/c Ratio	0.09	0.44	0.15	0.67	0.88	0.23	1.00	0.85	0.60	0.67
Control Delay	49.6	16.4	1.2	63.8	23.7	4.8	108.8	62.7	76.0	78.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.6	16.4	1.2	63.8	23.7	4.8	108.8	62.7	76.0	78.7
Queue Length 50th (ft)	6	121	0	111	558	24	191	151	50	64
Queue Length 95th (ft)	m0	146	13	173	#954	71	#359	#316	#104	#135
Internal Link Dist (ft)		2471			585			201		465
Turn Bay Length (ft)	500		360	295		150			330	
Base Capacity (vph)	180	1706	880	323	2198	954	244	302	118	132
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.44	0.15	0.46	0.88	0.23	1.00	0.85	0.55	0.64

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	701	126	138	1792	203	226	83	155	60	74	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	2000	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	6.0	3.8	4.8		4.0	4.8	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.90		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3374	1583	1687	3374	1397	1810	1609		1583	1707	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3374	1583	1687	3374	1397	1810	1609		1583	1707	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	8	754	135	148	1927	218	243	89	167	65	80	5
RTOR Reduction (vph)	0	0	68	0	0	48	0	55	0	0	2	0
Lane Group Flow (vph)	8	754	67	148	1927	170	243	201	0	65	83	0
Confl. Peds. (#/hr)	1					1			1	1		
Confl. Bikes (#/hr)									3			
Heavy Vehicles (%)	0%	7%	2%	7%	7%	13%	5%	6%	5%	14%	11%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						
Actuated Green, G (s)	1.5	59.9	59.9	15.8	74.2	74.2	16.0	18.4		7.1	9.5	
Effective Green, g (s)	1.5	59.9	59.9	15.8	74.2	74.2	16.2	18.4		7.1	9.5	
Actuated g/C Ratio	0.01	0.50	0.50	0.13	0.62	0.62	0.13	0.15		0.06	0.08	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	4.8		4.0	4.8	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	22	1684	790	222	2086	863	244	246		93	135	
v/s Ratio Prot	0.00	0.22		c0.09	c0.57		c0.13	c0.12		0.04	0.05	
v/s Ratio Perm			0.04			0.12						
v/c Ratio	0.36	0.45	0.09	0.67	0.92	0.20	1.00	0.82		0.70	0.62	
Uniform Delay, d1	58.8	19.4	15.7	49.6	20.4	10.0	51.9	49.2		55.4	53.5	
Progression Factor	0.89	0.78	0.50	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.4	0.8	0.2	7.4	8.4	0.5	56.1	18.5		20.5	8.1	
Delay (s)	61.5	16.0	8.1	57.0	28.8	10.5	108.0	67.7		75.9	61.6	
Level of Service	E	B	A	E	C	B	F	E		E	E	
Approach Delay (s)		15.2			28.9			87.3			67.8	
Approach LOS		B			C			F			E	

Intersection Summary			
HCM 2000 Control Delay	34.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.8
Intersection Capacity Utilization	86.3%	ICU Level of Service	E
Analysis Period (min)	15		

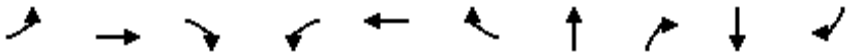
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	38	96	2	7	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	41	104	2	8	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	107				147	105
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	107				147	105
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1484				846	949

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	41	107	8
Volume Left	0	0	8
Volume Right	0	2	0
cSH	1484	1700	846
Volume to Capacity	0.00	0.06	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.0	9.3
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.3
Approach LOS			A

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	15.2%	ICU Level of Service	A
Analysis Period (min)	15		

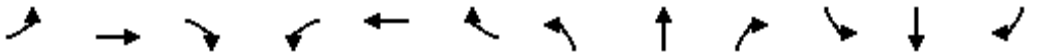


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	10	1156	85	76	1165	14	91	71	80	15
v/c Ratio	0.09	0.50	0.08	0.45	0.44	0.01	0.57	0.29	0.43	0.06
Control Delay	45.6	10.7	3.6	56.0	2.9	0.0	54.7	11.5	46.9	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.6	10.7	3.6	56.0	2.9	0.0	54.7	11.5	46.9	0.5
Queue Length 50th (ft)	6	188	5	46	55	0	56	0	48	0
Queue Length 95th (ft)	23	311	26	m93	67	m0	102	35	90	0
Internal Link Dist (ft)		263			2471		389		741	
Turn Bay Length (ft)	470		110	455		100		50		75
Base Capacity (vph)	198	2329	1121	203	2660	1201	252	339	298	348
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.50	0.08	0.37	0.44	0.01	0.36	0.21	0.27	0.04

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

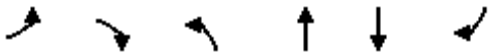
RS617



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	1110	82	73	1118	13	51	36	68	18	59	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97	1.00		0.99	1.00
Satd. Flow (prot)	1805	3312	1568	1770	3343	1495		1790	1538		1803	1588
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.76	1.00		0.91	1.00
Satd. Flow (perm)	1805	3312	1568	1770	3343	1495		1403	1538		1659	1588
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	10	1156	85	76	1165	14	53	38	71	19	61	15
RTOR Reduction (vph)	0	0	21	0	0	4	0	0	64	0	0	13
Lane Group Flow (vph)	10	1156	64	76	1165	10	0	91	7	0	80	2
Confl. Peds. (#/hr)							7					7
Heavy Vehicles (%)	0%	9%	3%	2%	8%	8%	5%	0%	5%	11%	2%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8		8	4		4
Actuated Green, G (s)	1.5	67.4	67.4	8.4	74.3	74.3		10.2	10.2		10.2	10.2
Effective Green, g (s)	1.5	67.4	67.4	8.4	74.3	74.3		10.2	10.2		10.2	10.2
Actuated g/C Ratio	0.02	0.67	0.67	0.08	0.74	0.74		0.10	0.10		0.10	0.10
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	27	2232	1056	148	2483	1110		143	156		169	161
v/s Ratio Prot	0.01	c0.35		c0.04	0.35							
v/s Ratio Perm			0.04			0.01		c0.06	0.00		0.05	0.00
v/c Ratio	0.37	0.52	0.06	0.51	0.47	0.01		0.64	0.05		0.47	0.01
Uniform Delay, d1	48.8	8.2	5.5	43.8	5.1	3.3		43.1	40.5		42.4	40.4
Progression Factor	1.00	1.00	1.00	1.17	0.47	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	8.4	0.9	0.1	2.5	0.5	0.0		8.9	0.1		2.1	0.0
Delay (s)	57.2	9.0	5.7	53.7	2.9	3.3		52.1	40.6		44.5	40.4
Level of Service	E	A	A	D	A	A		D	D		D	D
Approach Delay (s)		9.2			6.0			47.1			43.8	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	11.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

RS618



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	155	212	2
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	0	0	0	180	247	2
Pedestrians	9					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	1					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					469	
pX, platoon unblocked						
vC, conflicting volume	437	257	258			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	437	257	258			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	576	781	1309			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	180	249
Volume Left	0	0	0
Volume Right	0	0	2
cSH	1700	1309	1700
Volume to Capacity	0.00	0.00	0.15
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	15.2%	ICU Level of Service	A
Analysis Period (min)	15		

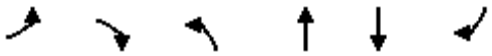
RS619



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	6	149	4	6	206
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	0	7	173	5	7	240
Pedestrians						7
Lane Width (ft)						12.0
Walking Speed (ft/s)						4.0
Percent Blockage						1
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						553
pX, platoon unblocked						
vC, conflicting volume	429	183			178	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	429	183			178	
tC, single (s)	6.4	6.4			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.5			2.2	
p0 queue free %	100	99			100	
cM capacity (veh/h)	584	818			1410	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	7	178	247
Volume Left	0	0	7
Volume Right	7	5	0
cSH	818	1700	1410
Volume to Capacity	0.01	0.10	0.00
Queue Length 95th (ft)	1	0	0
Control Delay (s)	9.4	0.0	0.3
Lane LOS	A		A
Approach Delay (s)	9.4	0.0	0.3
Approach LOS	A		

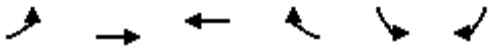
Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	27.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	67	33	35	86	93	113
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	84	41	44	108	116	141
Pedestrians					7	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					1	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					922	
pX, platoon unblocked						
vC, conflicting volume	389	187	258			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	389	187	258			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	86	95	97			
cM capacity (veh/h)	595	860	1319			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	125	151	258
Volume Left	84	44	0
Volume Right	41	0	141
cSH	662	1319	1700
Volume to Capacity	0.19	0.03	0.15
Queue Length 95th (ft)	17	3	0
Control Delay (s)	11.7	2.5	0.0
Lane LOS	B	A	
Approach Delay (s)	11.7	2.5	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	34.0%	ICU Level of Service	A
Analysis Period (min)	15		

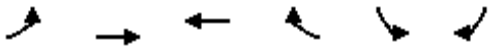


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	84	123	25	16	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	0	105	154	31	20	0
Pedestrians					7	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	192				281	176
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	192				281	176
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				97	100
cM capacity (veh/h)	1385				709	867

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	105	185	20
Volume Left	0	0	20
Volume Right	0	31	0
cSH	1385	1700	709
Volume to Capacity	0.00	0.11	0.03
Queue Length 95th (ft)	0	0	2
Control Delay (s)	0.0	0.0	10.2
Lane LOS			B
Approach Delay (s)	0.0	0.0	10.2
Approach LOS			B

Intersection Summary			
Average Delay		0.7	
Intersection Capacity Utilization		19.2%	ICU Level of Service A
Analysis Period (min)		15	

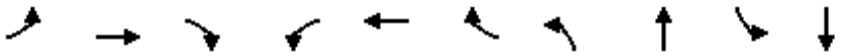
RS622



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	27	21	24	74	73	31
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	33	26	30	91	90	38

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	59	121	128
Volume Left (vph)	33	0	90
Volume Right (vph)	0	91	38
Hadj (s)	0.19	-0.44	0.00
Departure Headway (s)	4.5	3.8	4.3
Degree Utilization, x	0.07	0.13	0.15
Capacity (veh/h)	771	909	805
Control Delay (s)	7.9	7.4	8.0
Approach Delay (s)	7.9	7.4	8.0
Approach LOS	A	A	A

Intersection Summary			
Delay	7.7		
Level of Service	A		
Intersection Capacity Utilization	21.9%	ICU Level of Service	A
Analysis Period (min)	15		



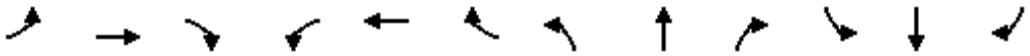
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	11	1058	176	231	1080	134	167	234	124	92
v/c Ratio	0.12	0.79	0.25	0.78	0.57	0.15	0.60	0.88	0.69	0.52
Control Delay	36.1	39.6	13.7	57.4	14.5	3.4	52.1	61.6	62.5	52.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.1	39.6	13.7	57.4	14.5	3.4	52.1	61.6	62.5	52.3
Queue Length 50th (ft)	7	274	6	140	186	5	105	~102	76	55
Queue Length 95th (ft)	m12	452	116	220	327	36	#213	#261	#150	106
Internal Link Dist (ft)		2471			585			201		465
Turn Bay Length (ft)	500		360	295		150			330	
Base Capacity (vph)	170	1340	713	343	1910	896	277	267	197	189
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.79	0.25	0.67	0.57	0.15	0.60	0.88	0.63	0.49

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

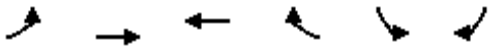


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	1016	169	222	1037	129	160	76	149	119	82	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	4.8		4.0	4.8	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.90		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1421	3312	1504	1719	3223	1436	1770	1594		1641	1726	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1421	3312	1504	1719	3223	1436	1770	1594		1641	1726	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	11	1058	176	231	1080	134	167	79	155	124	85	7
RTOR Reduction (vph)	0	0	107	0	0	50	0	68	0	0	3	0
Lane Group Flow (vph)	11	1058	69	231	1080	84	167	166	0	124	89	0
Confl. Peds. (#/hr)	1					1	4		1	1		4
Confl. Bikes (#/hr)			1						1			
Heavy Vehicles (%)	27%	9%	6%	5%	12%	10%	2%	7%	6%	10%	7%	29%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						
Actuated Green, G (s)	1.6	39.4	39.4	17.3	55.1	55.1	15.7	13.5		11.0	8.8	
Effective Green, g (s)	1.6	39.4	39.4	17.3	55.1	55.1	15.7	13.5		11.0	8.8	
Actuated g/C Ratio	0.02	0.39	0.39	0.17	0.55	0.55	0.16	0.14		0.11	0.09	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	4.8		4.0	4.8	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	22	1304	592	297	1775	791	277	215		180	151	
v/s Ratio Prot	0.01	c0.32		c0.13	0.34		c0.09	c0.10		c0.08	0.05	
v/s Ratio Perm			0.05			0.06						
v/c Ratio	0.50	0.81	0.12	0.78	0.61	0.11	0.60	0.77		0.69	0.59	
Uniform Delay, d1	48.8	27.0	19.3	39.5	15.2	10.7	39.2	41.8		42.9	43.9	
Progression Factor	0.77	1.31	3.99	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	15.1	5.0	0.4	12.1	1.6	0.3	3.7	15.6		10.5	6.1	
Delay (s)	52.7	40.3	77.3	51.6	16.7	11.0	42.9	57.3		53.3	49.9	
Level of Service	D	D	E	D	B	B	D	E		D	D	
Approach Delay (s)		45.6			21.8			51.3			51.9	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	36.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	18.8
Intersection Capacity Utilization	76.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

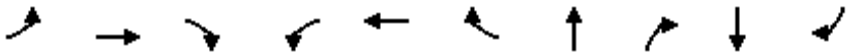
RS625



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	80	116	7	4	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	87	126	8	4	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	134				217	130
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	134				217	130
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1451				771	920

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	87	134	4
Volume Left	0	0	4
Volume Right	0	8	0
cSH	1451	1700	771
Volume to Capacity	0.00	0.08	0.01
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	9.7
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.7
Approach LOS			A

Intersection Summary			
Average Delay		0.2	
Intersection Capacity Utilization		16.5%	ICU Level of Service A
Analysis Period (min)		15	

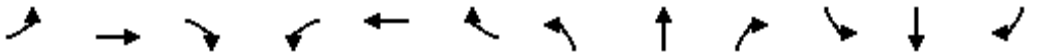


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	29	1887	188	104	1487	11	130	62	182	34
v/c Ratio	0.28	0.86	0.18	0.62	0.62	0.01	0.98	0.20	0.79	0.11
Control Delay	59.4	24.9	7.3	65.2	12.1	0.6	123.8	10.5	71.4	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.4	24.9	7.3	65.2	12.1	0.6	123.8	10.5	71.4	3.0
Queue Length 50th (ft)	22	600	35	65	429	0	101	0	137	0
Queue Length 95th (ft)	53	#896	78	m#128	m597	m0	#192	35	206	9
Internal Link Dist (ft)		263			2471		389		767	
Turn Bay Length (ft)	470		110	455		100		50		75
Base Capacity (vph)	153	2196	1038	179	2416	1104	182	405	315	397
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.86	0.18	0.58	0.62	0.01	0.71	0.15	0.58	0.09

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

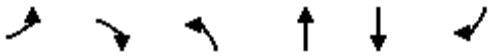
RS627



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	1698	169	94	1338	10	74	43	56	53	111	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98		1.00	1.00		1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97	1.00		0.98	1.00
Satd. Flow (prot)	1671	3505	1615	1805	3505	1582		1775	1583		1858	1548
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.44	1.00		0.74	1.00
Satd. Flow (perm)	1671	3505	1615	1805	3505	1582		809	1583		1401	1548
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	29	1887	188	104	1487	11	82	48	62	59	123	34
RTOR Reduction (vph)	0	0	27	0	0	4	0	0	52	0	0	28
Lane Group Flow (vph)	29	1887	161	104	1487	7	0	130	10	0	182	6
Confl. Peds. (#/hr)							1					1
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	8%	3%	0%	0%	3%	0%	3%	5%	2%	2%	0%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8		8	4		4
Actuated Green, G (s)	5.2	75.2	75.2	11.2	81.2	81.2		19.6	19.6		19.6	19.6
Effective Green, g (s)	5.2	75.2	75.2	11.2	81.2	81.2		19.6	19.6		19.6	19.6
Actuated g/C Ratio	0.04	0.63	0.63	0.09	0.68	0.68		0.16	0.16		0.16	0.16
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	72	2196	1012	168	2371	1070		132	258		228	252
v/s Ratio Prot	0.02	c0.54		c0.06	0.42							
v/s Ratio Perm			0.10			0.00		c0.16	0.01		0.13	0.00
v/c Ratio	0.40	0.86	0.16	0.62	0.63	0.01		0.98	0.04		0.80	0.02
Uniform Delay, d1	55.9	18.1	9.3	52.3	10.9	6.3		50.1	42.3		48.3	42.2
Progression Factor	1.00	1.00	1.00	0.99	0.89	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	3.7	4.7	0.3	5.4	1.0	0.0		73.2	0.1		17.4	0.0
Delay (s)	59.5	22.8	9.6	57.2	10.8	6.3		123.2	42.3		65.7	42.2
Level of Service	E	C	A	E	B	A		F	D		E	D
Approach Delay (s)		22.1			13.8			97.1			62.0	
Approach LOS		C			B			F			E	

Intersection Summary			
HCM 2000 Control Delay	24.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	80.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	1	173	373	1
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	0	0	1	199	429	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					469	
pX, platoon unblocked	0.95	0.95	0.95			
vC, conflicting volume	630	429	430			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	585	373	374			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	453	644	1136			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	200	430
Volume Left	0	1	0
Volume Right	0	0	1
cSH	1700	1136	1700
Volume to Capacity	0.00	0.00	0.25
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.1	0.0
Lane LOS	A	A	
Approach Delay (s)	0.0	0.1	0.0
Approach LOS	A		

Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		23.0%	ICU Level of Service A
Analysis Period (min)		15	

RS629

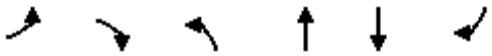


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	1	6	168	2	5	368
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	1	7	193	2	6	423
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						553
pX, platoon unblocked	0.96					
vC, conflicting volume	629	194			195	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	590	194			195	
tC, single (s)	6.4	6.4			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.5			2.2	
p0 queue free %	100	99			100	
cM capacity (veh/h)	451	810			1390	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	8	195	429
Volume Left	1	0	6
Volume Right	7	2	0
cSH	728	1700	1390
Volume to Capacity	0.01	0.11	0.00
Queue Length 95th (ft)	1	0	0
Control Delay (s)	10.0	0.0	0.1
Lane LOS	B		A
Approach Delay (s)	10.0	0.0	0.1
Approach LOS	B		

Intersection Summary			
Average Delay		0.2	
Intersection Capacity Utilization		33.4%	ICU Level of Service A
Analysis Period (min)		15	

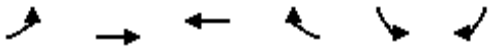
RS630



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	71	37	22	99	297	72
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	82	43	25	114	341	83
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					920	
pX, platoon unblocked	1.00	1.00	1.00			
vC, conflicting volume	547	383	424			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	545	380	422			
tC, single (s)	6.4	6.2	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	83	94	98			
cM capacity (veh/h)	490	670	1114			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	124	139	424
Volume Left	82	25	0
Volume Right	43	0	83
cSH	540	1114	1700
Volume to Capacity	0.23	0.02	0.25
Queue Length 95th (ft)	22	2	0
Control Delay (s)	13.6	1.7	0.0
Lane LOS	B	A	
Approach Delay (s)	13.6	1.7	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	37.0%	ICU Level of Service	A
Analysis Period (min)	15		

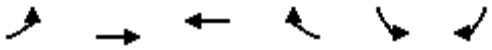


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	94	69	25	14	1
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	0	108	79	29	16	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	108				202	94
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	108				202	94
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				98	100
cM capacity (veh/h)	1495				791	969

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	108	108	17
Volume Left	0	0	16
Volume Right	0	29	1
cSH	1495	1700	801
Volume to Capacity	0.00	0.06	0.02
Queue Length 95th (ft)	0	0	2
Control Delay (s)	0.0	0.0	9.6
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.6
Approach LOS			A

Intersection Summary			
Average Delay		0.7	
Intersection Capacity Utilization		15.2%	ICU Level of Service A
Analysis Period (min)		15	

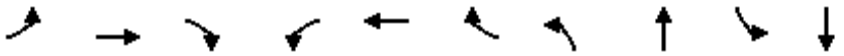
RS632



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	32	33	34	83	268	47
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	36	37	38	93	301	53

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	73	131	354
Volume Left (vph)	36	0	301
Volume Right (vph)	0	93	53
Hadj (s)	0.15	-0.41	0.08
Departure Headway (s)	5.1	4.4	4.5
Degree Utilization, x	0.10	0.16	0.44
Capacity (veh/h)	652	745	779
Control Delay (s)	8.7	8.3	10.9
Approach Delay (s)	8.7	8.3	10.9
Approach LOS	A	A	B

Intersection Summary			
Delay	10.0		
Level of Service	B		
Intersection Capacity Utilization	34.6%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	6	1546	349	293	1321	89	189	225	202	161
v/c Ratio	0.07	0.99	0.39	1.00	0.59	0.10	0.92	0.85	1.00	0.89
Control Delay	64.2	53.2	9.4	103.2	14.4	2.4	97.3	66.5	117.1	96.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.2	53.2	9.4	103.2	14.4	2.4	97.3	66.5	117.1	96.1
Queue Length 50th (ft)	4	676	109	~230	271	0	147	133	159	124
Queue Length 95th (ft)	m5	#811	m128	#412	431	23	#288	#272	#316	#254
Internal Link Dist (ft)		2471			585			201		465
Turn Bay Length (ft)	500		360	295		150			330	
Base Capacity (vph)	180	1561	884	292	2243	934	206	265	202	181
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.99	0.39	1.00	0.59	0.10	0.92	0.85	1.00	0.89

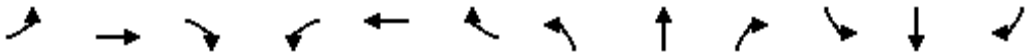
Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

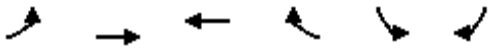
RS634



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	1469	332	278	1255	85	180	85	129	192	146	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	2000	1900	1900
Total Lost time (s)	4.0	6.0	6.0	3.8	6.0	6.0	4.0	4.8		0.7	4.8	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.91		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3471	1538	1656	3505	1410	1770	1629		1827	1768	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	3471	1538	1656	3505	1410	1770	1629		1827	1768	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	6	1546	349	293	1321	89	189	89	136	202	154	7
RTOR Reduction (vph)	0	0	192	0	0	34	0	46	0	0	2	0
Lane Group Flow (vph)	6	1546	157	293	1321	55	189	179	0	202	159	0
Confl. Peds. (#/hr)	1					1	2		1	1		2
Heavy Vehicles (%)	0%	4%	5%	9%	3%	12%	2%	4%	6%	4%	7%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						
Actuated Green, G (s)	1.4	54.0	54.0	21.0	73.6	73.6	14.0	16.2		10.0	12.2	
Effective Green, g (s)	1.4	54.0	54.0	21.2	73.6	73.6	14.0	16.2		13.3	12.2	
Actuated g/C Ratio	0.01	0.45	0.45	0.18	0.61	0.61	0.12	0.13		0.11	0.10	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	4.8		4.0	4.8	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	21	1561	692	292	2149	864	206	219		202	179	
v/s Ratio Prot	0.00	c0.45		c0.18	0.38		0.11	c0.11		c0.11	0.09	
v/s Ratio Perm			0.10			0.04						
v/c Ratio	0.29	0.99	0.23	1.00	0.61	0.06	0.92	0.82		1.00	0.89	
Uniform Delay, d1	58.8	32.7	20.2	49.4	14.4	9.3	52.4	50.5		53.4	53.2	
Progression Factor	1.17	1.19	4.10	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.9	14.5	0.4	53.5	1.3	0.1	40.0	20.6		63.3	37.3	
Delay (s)	72.8	53.3	83.3	102.9	15.7	9.5	92.5	71.0		116.7	90.6	
Level of Service	E	D	F	F	B	A	F	E		F	F	
Approach Delay (s)		58.9			30.4			80.8			105.1	
Approach LOS		E			C			F			F	

Intersection Summary			
HCM 2000 Control Delay	53.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.8
Intersection Capacity Utilization	94.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

RS635



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	90	63	7	4	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	98	68	8	4	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	76				170	72
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	76				170	72
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1523				820	990

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	98	76	4
Volume Left	0	0	4
Volume Right	0	8	0
cSH	1523	1700	820
Volume to Capacity	0.00	0.04	0.01
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	9.4
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.4
Approach LOS			A

Intersection Summary			
Average Delay		0.2	
Intersection Capacity Utilization		14.7%	ICU Level of Service A
Analysis Period (min)		15	

RS636

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June 12, 2017 Project #: 20703

Brett Kelver, AICP and Alex Roller, EI
City of Milwaukie
10722 SE Main Street
Milwaukie, OR 97222

RE: Kellogg Creek Townhomes Supplemental Traffic Operational Analysis Information

Dear Mr. Kelver and Mr. Roller,

This letter addresses comments raised at the May 23 and May 25, 2017 Planning Commission hearings that questioned two aspects of the February 7, 2017 Traffic Impact Study (TIS) report. To address the comments, the Commission and the City of Milwaukie have asked us to respond to the two points below:

1. The traffic study collected weekday AM and PM peak period traffic counts at the three following intersections on Wednesday, November 2, 2016; on that day, classes at the North Clackamas School District were not in session:
    a. OR 224/SE Rusk Road
    b. SE Rusk Road/SE Ruscliffe Road
    c. SE Rusk Rd/SE Kellogg Creek Drive
2. The northbound approach of SE Rusk Road at the intersection of OR 224/SE Rusk Road was analyzed with a shared left-through lane and a right-turn lane.

To address these comments, we have been asked to:

- Collect weekday AM and PM peak period traffic counts at the three intersections on a day when school is in session.
- Complete an AM and PM peak hour analysis for the three intersections for the existing, background, and total traffic scenarios and determine if operating standards are met.
- Complete an AM and PM peak hour analysis for the proposed site driveway.
- Analyze the northbound approach of SE Rusk Road at the intersection of OR 224/SE Rusk Road as a single lane.

As described above, this letter provides supplemental traffic analysis results that address each of the requested items, and finds that the three study intersections and the site driveway would operate acceptably in the future with site development.

DRAFT

TRAFFIC IMPACT ANALYSIS

New turning movements counts were collected at the three intersections during the weekday AM and PM peak periods on Thursday, June 1, 2017, when school was in session (in addition, seasonal activities at North Clackamas Park on SE Kellogg Drive were also active). The weekday AM and PM hour volumes are shown in Figure 1 and Figure 2, respectively, alongside the volumes (collected in November 2016) from the February 2017 traffic report.

The northbound approach on SE Rusk Road at the intersection of OR 224/SE Rusk Road was modeled with a single shared left-through-right lane per City staff's request.

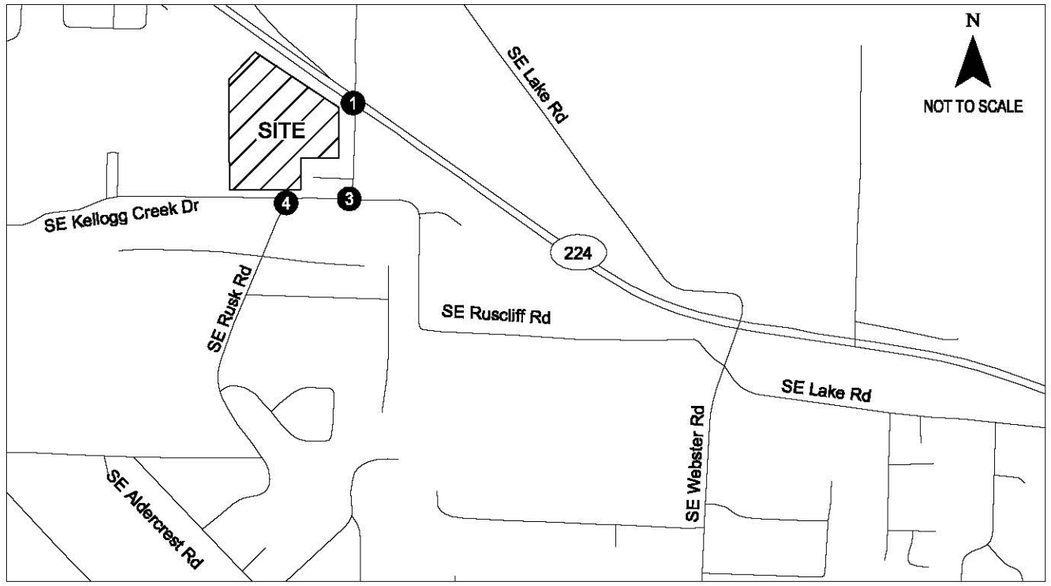
The operational analysis was conducted for the weekday AM and PM peak hours for existing conditions, background, and total traffic with the new traffic volumes and lane configuration on SE Rusk Road. The results for the weekday AM and PM peak hours are shown in Figure 1 and Figure 2, respectively, alongside the results from the February 2017 traffic report. The applicable operating standards and results are shown below in Table 1.

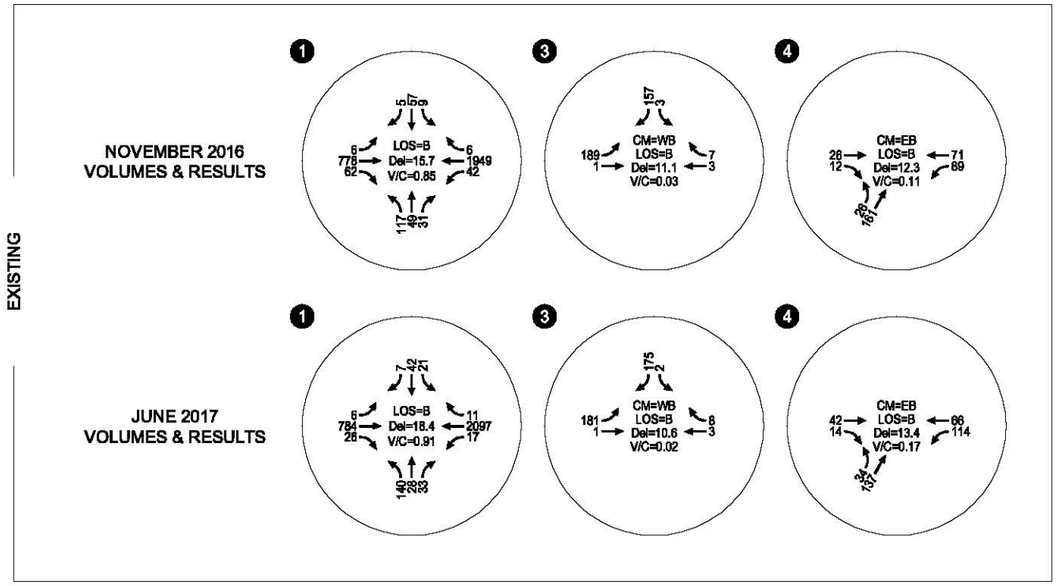
As the results indicate, all three intersections and the site driveway would meet the respective operational standards under the total traffic conditions for both the weekday AM and PM peak hours. Given that the intersections operate acceptably under total traffic conditions with site-generated trips, they will also operate acceptably under existing and background traffic conditions without the site-generated trips.

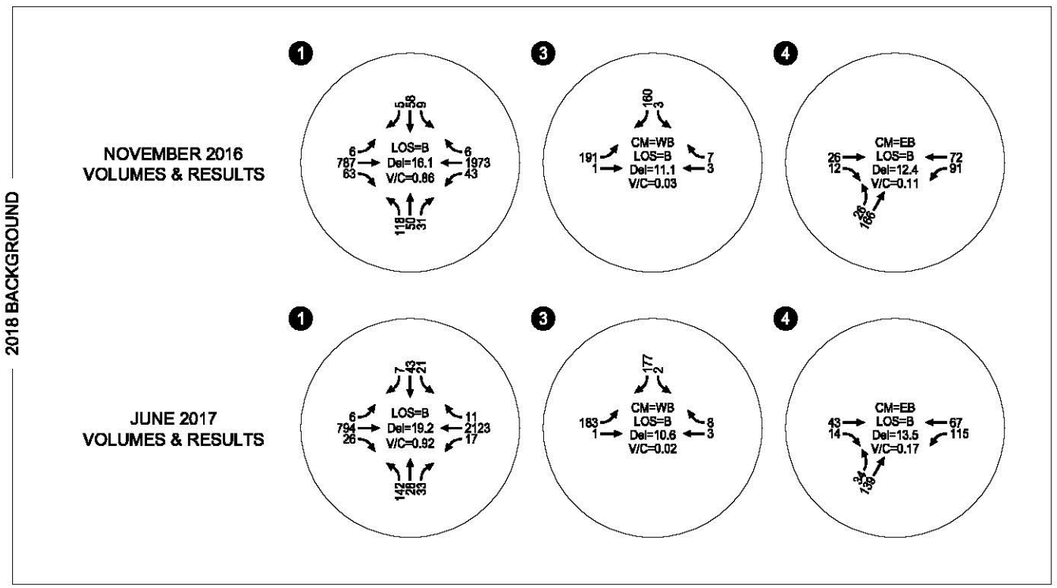
Table 1. June 1, 2017 Operational Results and Comparison to Previous

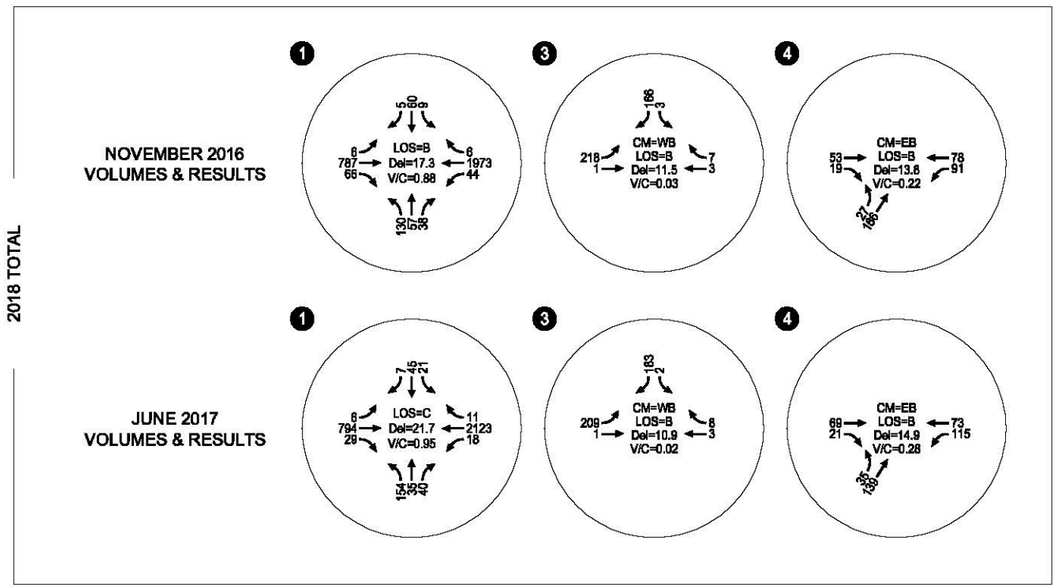
Intersection	Jurisdiction	Applicable Peak Hour Operating Standards	Previous Total Traffic Results		June 1, 2017 Total Traffic Results		Mets Standard?
			AM Peak	PM Peak	AM Peak	PM Peak	
#1 OR-224/SE Rusk Road	ODOT	Intersection V/C ≤ 0.99	0.88	0.86	0.95	0.93	Yes
#3 SE Rusk Road/SE Ruscliffe Road	City of Milwaukie & Clackamas County	LOS "D" & PM V/C ≤ 0.99	LOS "B"	LOS "B" 0.01	LOS "B"	LOS "B" 0.09	Yes
#4 SE Rusk Road/SE Kellogg Creek Drive	City of Milwaukie & Clackamas County	LOS "D" & PM V/C ≤ 0.99	LOS "B"	LOS "B" 0.23	LOS "B"	LOS "B"* 0.17*	Yes
#5 SE Kellogg Creek Drive/Site Driveway	City of Milwaukie	LOS "D"	LOS "B"	LOS "A"	LOS "B"	LOS "A"	Yes

* Note that on June 1, 2017, the volume of eastbound traffic on SE Kellogg Creek was lower than on the previous count day in November 2016 (per the February 2017 traffic report). Using the higher count from November 2016, the results for the weekday PM peak hour would be LOS "C" (16.1 seconds of per-vehicle delay) and a v/c ratio of 0.28. Both the November 2016 and June 2017 results are well within the respective operating standard.







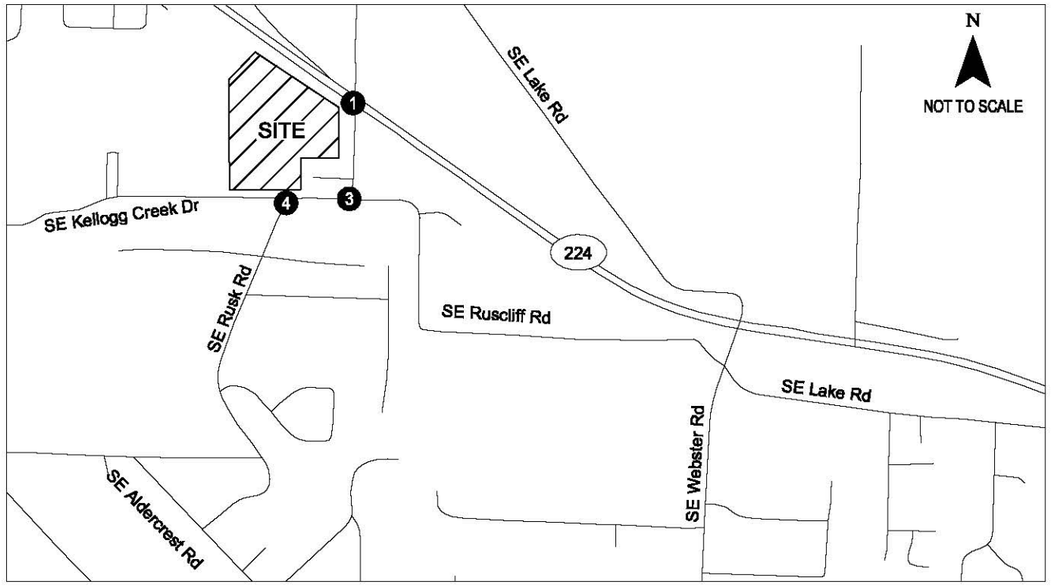


CM = CRITICAL MOVEMENT (TWSC)
LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED/AWSC) / CRITICAL MOVEMENT LEVEL OF SERVICE (TWSC)
Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED/AWSC) / CRITICAL MOVEMENT CONTROL DELAY (TWSC)
V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

Existing, 2018 Background, and 2018 Total Traffic Conditions
AM Peak Hour
Milwaukie, Oregon

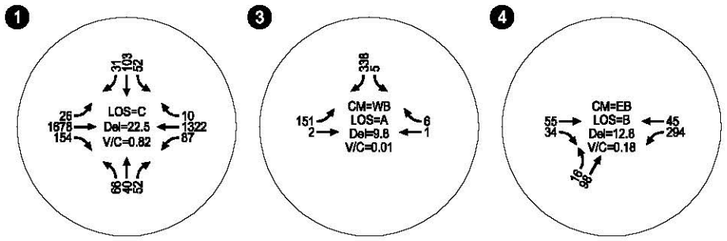
Figure 1

H:\20\20703 - Kellogg Creek\dwgs\figs\June 2017 Update 20703_Figures.dwg Jun 12, 2017 - 2:59pm - kconnolly Layout Tab: AM Peak

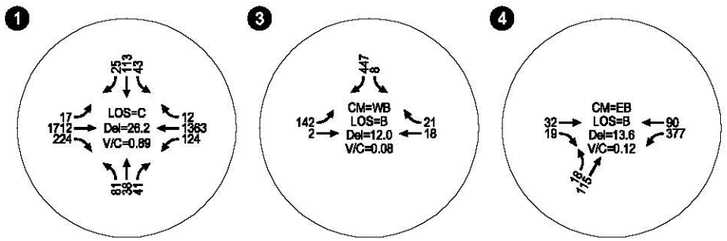


EXISTING

NOVEMBER 2016 VOLUMES & RESULTS

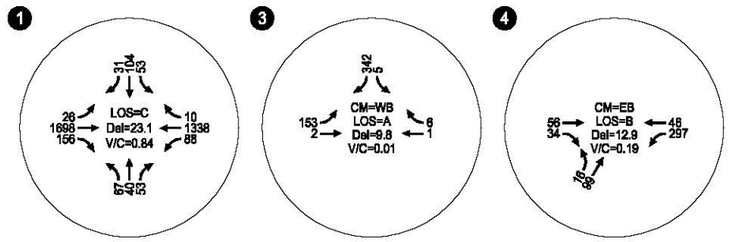


JUNE 2017 VOLUMES & RESULTS

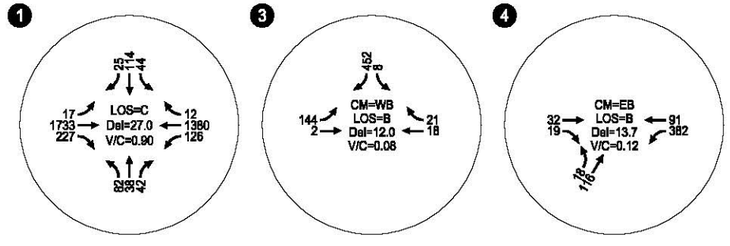


2018 BACKGROUND

NOVEMBER 2016 VOLUMES & RESULTS

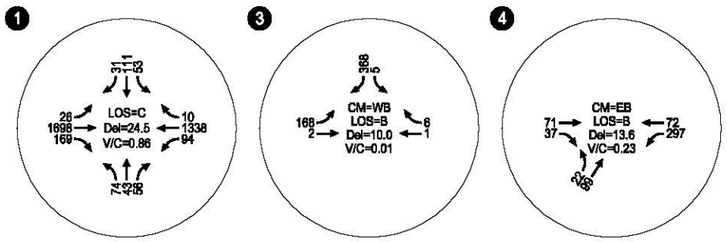


JUNE 2017 VOLUMES & RESULTS

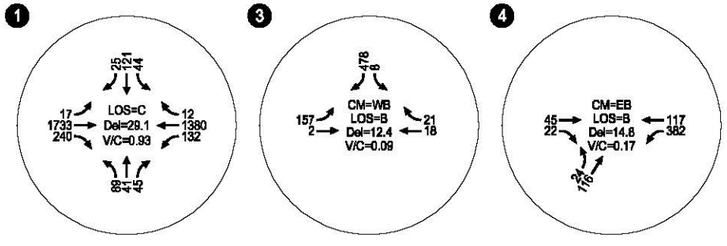


2018 TOTAL

NOVEMBER 2016 VOLUMES & RESULTS



JUNE 2017 VOLUMES & RESULTS



CM = CRITICAL MOVEMENT (TWSC)
LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED/AWSC) / CRITICAL MOVEMENT LEVEL OF SERVICE (TWSC)
Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED/AWSC) / CRITICAL MOVEMENT CONTROL DELAY (TWSC)
V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

Existing, 2018 Background, and 2018 Total Traffic Conditions
PM Peak Hour
Milwaukie, Oregon

Figure 2

H:\20\20703 - Kellogg Creek\dwgs\figs\June 2017 Update 20703_Figures.dwg Jun 12, 2017 - 3:00pm - kconnolly Layout Tab: PM Peak

SUMMARY

In summary, while there is an incremental increase in delay at each of the three study intersections due to the higher volume of weekday AM and PM peak hour trips (and the lane configuration modification on SE Rusk Road at OR 224), the intersections all would continue to operate acceptably during both of the respective analysis periods. Further, it is noted that the operations analysis presented in Figure 1 and Figure 2 are consistent with the assumptions of the TIS, including the use of existing ODOT signal timing at the OR 224/SE Rusk Road intersection. Given the staff-recommended condition of approval to provide a northbound right-turn lane on SE Rusk Road at OR 224, we would expect the OR 224/SE Rusk Road intersection operations to perform better than those presented in the TIS or this letter. The analysis worksheets are attached to this letter for your reference.

NEXT STEPS

No additional transportation mitigation needs were identified through this supplemental analysis. We believe the analysis findings presented in this letter and the February 7, 2017 Traffic Impact Study provide the City, ODOT, and Clackamas County with sufficient information to understand the traffic impacts of the proposed development. Please let us know if you have any questions about the materials presented.

Sincerely,
KITTELSON & ASSOCIATES, INC.

Zachary Horowitz
Senior Project Manager

Chris Brehmer, P.E.
Principal Engineer

Attachment: June 1, 2017 Operations Analysis Worksheets

DRAFT

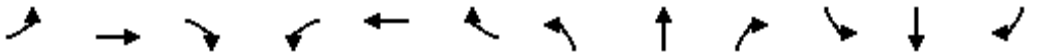


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBT	SBR
Lane Group Flow (vph)	6	825	27	18	2207	12	211	66	7
v/c Ratio	0.07	0.35	0.03	0.18	0.89	0.01	0.90	0.26	0.03
Control Delay	55.5	8.4	0.0	50.5	13.7	0.5	84.4	45.3	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.5	8.4	0.0	50.5	13.7	0.5	84.4	45.3	0.1
Queue Length 50th (ft)	5	103	0	14	312	0	155	44	0
Queue Length 95th (ft)	19	193	0	m18	m#1044	m0	#294	88	0
Internal Link Dist (ft)		263			2471		389	744	
Turn Bay Length (ft)	470		110	455		100			75
Base Capacity (vph)	165	2367	1051	315	2488	872	246	263	288
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.35	0.03	0.06	0.89	0.01	0.86	0.25	0.02

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

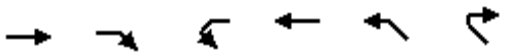
RS642



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	784	26	17	2097	11	140	28	33	21	42	7
Future Volume (vph)	6	784	26	17	2097	11	140	28	33	21	42	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0			4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	1.00		1.00			1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97			0.98	1.00
Satd. Flow (prot)	1805	3374	1463	1805	3438	1188		1693			1588	1129
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.75			0.89	1.00
Satd. Flow (perm)	1805	3374	1463	1805	3438	1188		1316			1438	1129
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	6	825	27	18	2207	12	147	29	35	22	44	7
RTOR Reduction (vph)	0	0	9	0	0	4	0	6	0	0	0	6
Lane Group Flow (vph)	6	825	18	18	2207	8	0	205	0	0	66	1
Confl. Peds. (#/hr)			1				1					
Heavy Vehicles (%)	0%	7%	8%	0%	5%	36%	5%	11%	6%	29%	12%	43%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		4
Actuated Green, G (s)	1.4	81.8	81.8	3.2	83.6	83.6		21.0			21.0	21.0
Effective Green, g (s)	1.4	81.8	81.8	3.2	83.6	83.6		21.0			21.0	21.0
Actuated g/C Ratio	0.01	0.68	0.68	0.03	0.70	0.70		0.18			0.18	0.18
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	21	2299	997	48	2395	827		230			251	197
v/s Ratio Prot	0.00	0.24		c0.01	c0.64							
v/s Ratio Perm			0.01			0.01		c0.16			0.05	0.00
v/c Ratio	0.29	0.36	0.02	0.38	0.92	0.01		0.89			0.26	0.01
Uniform Delay, d1	58.8	8.0	6.2	57.4	15.4	5.6		48.4			42.8	40.9
Progression Factor	1.00	1.00	1.00	0.91	0.72	1.00		1.00			1.00	1.00
Incremental Delay, d2	7.4	0.4	0.0	2.5	4.1	0.0		32.1			0.6	0.0
Delay (s)	66.2	8.5	6.2	54.6	15.2	5.6		80.5			43.4	40.9
Level of Service	E	A	A	D	B	A		F			D	D
Approach Delay (s)		8.8			15.4			80.5			43.1	
Approach LOS		A			B			F			D	

Intersection Summary			
HCM 2000 Control Delay	18.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	85.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

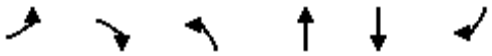


Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Volume (veh/h)	181	1	2	175	3	8
Future Volume (Veh/h)	181	1	2	175	3	8
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	248	1	3	240	4	11
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				553		
pX, platoon unblocked						
vC, conflicting volume			249		494	248
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			249		494	248
tC, single (s)			4.1		6.7	6.3
tC, 2 stage (s)						
tF (s)			2.2		3.8	3.4
p0 queue free %			100		99	99
cM capacity (veh/h)			1328		482	764

Direction, Lane #	EB 1	WB 1	NW 1
Volume Total	249	243	15
Volume Left	0	3	4
Volume Right	1	0	11
cSH	1700	1328	661
Volume to Capacity	0.15	0.00	0.02
Queue Length 95th (ft)	0	0	2
Control Delay (s)	0.0	0.1	10.6
Lane LOS		A	B
Approach Delay (s)	0.0	0.1	10.6
Approach LOS			B

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	20.8%	ICU Level of Service	A
Analysis Period (min)	15		

RS644



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	42	14	34	137	114	66
Future Volume (Veh/h)	42	14	34	137	114	66
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.64	0.64	0.64	0.64	0.64	0.64
Hourly flow rate (vph)	66	22	53	214	178	103
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					923	
pX, platoon unblocked						
vC, conflicting volume	550	230	281			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	550	230	281			
tC, single (s)	6.5	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.4	2.2			
p0 queue free %	86	97	96			
cM capacity (veh/h)	463	797	1276			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	88	267	281
Volume Left	66	53	0
Volume Right	22	0	103
cSH	517	1276	1700
Volume to Capacity	0.17	0.04	0.17
Queue Length 95th (ft)	15	3	0
Control Delay (s)	13.4	1.9	0.0
Lane LOS	B	A	
Approach Delay (s)	13.4	1.9	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	32.4%	ICU Level of Service	A
Analysis Period (min)	15		

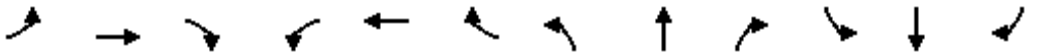


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBT	SBR
Lane Group Flow (vph)	18	1861	243	135	1482	13	174	170	27
v/c Ratio	0.19	0.90	0.25	0.74	0.61	0.01	0.96	0.61	0.08
Control Delay	57.6	29.3	8.2	70.8	11.8	0.8	101.5	53.8	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.6	29.3	8.2	70.8	11.8	0.8	101.5	53.8	0.5
Queue Length 50th (ft)	14	682	53	90	357	0	124	121	0
Queue Length 95th (ft)	38	#891	98	m#200	m580	m0	#237	187	2
Internal Link Dist (ft)		263			2471		389	767	
Turn Bay Length (ft)	470		110	455		100			75
Base Capacity (vph)	156	2067	982	184	2443	1139	224	352	385
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.90	0.25	0.73	0.61	0.01	0.78	0.48	0.07

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

RS646



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	1712	224	124	1363	12	81	38	41	43	113	25
Future Volume (vph)	17	1712	224	124	1363	12	81	38	41	43	113	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0			4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	1.00		1.00			1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.97			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.99	1.00
Satd. Flow (prot)	1703	3438	1573	1770	3505	1615		1735			1816	1495
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.53			0.85	1.00
Satd. Flow (perm)	1703	3438	1573	1770	3505	1615		950			1567	1495
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	1861	243	135	1482	13	88	41	45	47	123	27
RTOR Reduction (vph)	0	0	37	0	0	4	0	11	0	0	0	22
Lane Group Flow (vph)	18	1861	206	135	1482	9	0	163	0	0	170	5
Confl. Peds. (#/hr)			3				3					
Heavy Vehicles (%)	6%	5%	0%	2%	3%	0%	1%	5%	5%	9%	1%	8%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		4
Actuated Green, G (s)	3.3	72.1	72.1	12.4	81.2	81.2		21.5			21.5	21.5
Effective Green, g (s)	3.3	72.1	72.1	12.4	81.2	81.2		21.5			21.5	21.5
Actuated g/C Ratio	0.03	0.60	0.60	0.10	0.68	0.68		0.18			0.18	0.18
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	46	2065	945	182	2371	1092		170			280	267
v/s Ratio Prot	0.01	c0.54		c0.08	0.42							
v/s Ratio Perm			0.13			0.01		c0.17			0.11	0.00
v/c Ratio	0.39	0.90	0.22	0.74	0.63	0.01		0.96			0.61	0.02
Uniform Delay, d1	57.4	20.8	11.0	52.2	10.9	6.3		48.8			45.4	40.6
Progression Factor	1.00	1.00	1.00	0.95	0.93	1.00		1.00			1.00	1.00
Incremental Delay, d2	5.4	6.9	0.5	12.7	1.0	0.0		55.6			3.7	0.0
Delay (s)	62.8	27.7	11.5	62.4	11.1	6.3		104.4			49.1	40.6
Level of Service	E	C	B	E	B	A		F			D	D
Approach Delay (s)		26.2			15.3			104.4			47.9	
Approach LOS		C			B			F			D	

Intersection Summary			
HCM 2000 Control Delay	26.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	81.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

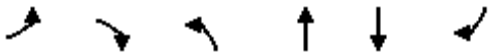
RS647



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	18	21	142	2	8	447
Future Volume (Veh/h)	18	21	142	2	8	447
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	21	25	169	2	10	532
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						553
pX, platoon unblocked						
vC, conflicting volume	722	170			171	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	722	170			171	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	97			99	
cM capacity (veh/h)	394	879			1418	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	46	171	542
Volume Left	21	0	10
Volume Right	25	2	0
cSH	563	1700	1418
Volume to Capacity	0.08	0.10	0.01
Queue Length 95th (ft)	7	0	1
Control Delay (s)	12.0	0.0	0.2
Lane LOS	B		A
Approach Delay (s)	12.0	0.0	0.2
Approach LOS	B		

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	39.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	32	19	18	115	377	90
Future Volume (Veh/h)	32	19	18	115	377	90
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	36	22	20	131	428	102
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					920	
pX, platoon unblocked						
vC, conflicting volume	650	479	530			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	650	479	530			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	92	96	98			
cM capacity (veh/h)	424	591	1048			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	58	151	530
Volume Left	36	20	0
Volume Right	22	0	102
cSH	475	1048	1700
Volume to Capacity	0.12	0.02	0.31
Queue Length 95th (ft)	10	1	0
Control Delay (s)	13.6	1.3	0.0
Lane LOS	B	A	
Approach Delay (s)	13.6	1.3	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	35.3%	ICU Level of Service	A
Analysis Period (min)	15		

RS649

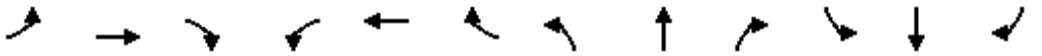


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBT	SBR
Lane Group Flow (vph)	6	836	27	18	2235	12	213	67	7
v/c Ratio	0.07	0.35	0.03	0.18	0.90	0.01	0.90	0.27	0.03
Control Delay	55.5	8.5	0.0	50.5	14.4	0.5	85.5	45.4	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.5	8.5	0.0	50.5	14.4	0.5	85.5	45.4	0.1
Queue Length 50th (ft)	5	105	0	14	317	0	157	45	0
Queue Length 95th (ft)	19	197	0	m17	m#1068	m0	#298	89	0
Internal Link Dist (ft)		263			2471		389	744	
Turn Bay Length (ft)	470		110	455		100			75
Base Capacity (vph)	165	2366	1050	315	2486	871	246	264	288
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.35	0.03	0.06	0.90	0.01	0.87	0.25	0.02

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

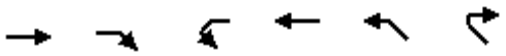
RS650



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	794	26	17	2123	11	142	28	33	21	43	7
Future Volume (vph)	6	794	26	17	2123	11	142	28	33	21	43	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0			4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	1.00		1.00			1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97			0.98	1.00
Satd. Flow (prot)	1805	3374	1463	1805	3438	1188		1693			1590	1129
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.75			0.89	1.00
Satd. Flow (perm)	1805	3374	1463	1805	3438	1188		1314			1442	1129
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	6	836	27	18	2235	12	149	29	35	22	45	7
RTOR Reduction (vph)	0	0	9	0	0	4	0	6	0	0	0	6
Lane Group Flow (vph)	6	836	18	18	2235	8	0	207	0	0	67	1
Confl. Peds. (#/hr)			1				1					
Heavy Vehicles (%)	0%	7%	8%	0%	5%	36%	5%	11%	6%	29%	12%	43%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		4
Actuated Green, G (s)	1.4	81.8	81.8	3.2	83.6	83.6		21.0			21.0	21.0
Effective Green, g (s)	1.4	81.8	81.8	3.2	83.6	83.6		21.0			21.0	21.0
Actuated g/C Ratio	0.01	0.68	0.68	0.03	0.70	0.70		0.18			0.18	0.18
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	21	2299	997	48	2395	827		229			252	197
v/s Ratio Prot	0.00	0.25		c0.01	c0.65							
v/s Ratio Perm			0.01			0.01		c0.16			0.05	0.00
v/c Ratio	0.29	0.36	0.02	0.38	0.93	0.01		0.90			0.27	0.01
Uniform Delay, d1	58.8	8.1	6.2	57.4	15.8	5.6		48.5			42.8	40.9
Progression Factor	1.00	1.00	1.00	0.91	0.72	1.00		1.00			1.00	1.00
Incremental Delay, d2	7.4	0.4	0.0	2.6	4.8	0.0		34.7			0.6	0.0
Delay (s)	66.2	8.5	6.2	54.6	16.2	5.6		83.2			43.4	40.9
Level of Service	E	A	A	D	B	A		F			D	D
Approach Delay (s)		8.9			16.4			83.2			43.2	
Approach LOS		A			B			F			D	

Intersection Summary			
HCM 2000 Control Delay	19.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	86.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

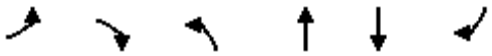


Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Volume (veh/h)	183	1	2	177	3	8
Future Volume (Veh/h)	183	1	2	177	3	8
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	251	1	3	242	4	11
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				553		
pX, platoon unblocked						
vC, conflicting volume			252		500	252
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			252		500	252
tC, single (s)			4.1		6.7	6.3
tC, 2 stage (s)						
tF (s)			2.2		3.8	3.4
p0 queue free %			100		99	99
cM capacity (veh/h)			1325		478	761

Direction, Lane #	EB 1	WB 1	NW 1
Volume Total	252	245	15
Volume Left	0	3	4
Volume Right	1	0	11
cSH	1700	1325	657
Volume to Capacity	0.15	0.00	0.02
Queue Length 95th (ft)	0	0	2
Control Delay (s)	0.0	0.1	10.6
Lane LOS		A	B
Approach Delay (s)	0.0	0.1	10.6
Approach LOS			B

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	20.9%	ICU Level of Service	A
Analysis Period (min)	15		

RS652



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	43	14	34	139	115	67
Future Volume (Veh/h)	43	14	34	139	115	67
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.64	0.64	0.64	0.64	0.64	0.64
Hourly flow rate (vph)	67	22	53	217	180	105
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					923	
pX, platoon unblocked						
vC, conflicting volume	556	232	285			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	556	232	285			
tC, single (s)	6.5	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.4	2.2			
p0 queue free %	85	97	96			
cM capacity (veh/h)	459	794	1271			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	89	270	285
Volume Left	67	53	0
Volume Right	22	0	105
cSH	513	1271	1700
Volume to Capacity	0.17	0.04	0.17
Queue Length 95th (ft)	16	3	0
Control Delay (s)	13.5	1.9	0.0
Lane LOS	B	A	
Approach Delay (s)	13.5	1.9	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	32.7%	ICU Level of Service	A
Analysis Period (min)	15		

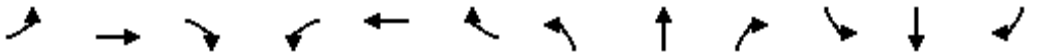


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBT	SBR
Lane Group Flow (vph)	18	1884	247	137	1500	13	176	172	27
v/c Ratio	0.19	0.91	0.25	0.76	0.62	0.01	0.96	0.61	0.08
Control Delay	57.6	30.8	8.3	73.0	12.1	0.8	100.0	53.4	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.6	30.8	8.3	73.0	12.1	0.8	100.0	53.4	0.5
Queue Length 50th (ft)	14	701	55	93	366	0	125	122	0
Queue Length 95th (ft)	38	#911	101	m#205	m590	m0	#240	189	2
Internal Link Dist (ft)		263			2471		389	767	
Turn Bay Length (ft)	470		110	455		100			75
Base Capacity (vph)	156	2060	979	181	2432	1134	224	351	385
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.91	0.25	0.76	0.62	0.01	0.79	0.49	0.07

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

RS654



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	1733	227	126	1380	12	82	38	42	44	114	25
Future Volume (vph)	17	1733	227	126	1380	12	82	38	42	44	114	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0			4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	1.00		1.00			1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.96			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.99	1.00
Satd. Flow (prot)	1703	3438	1573	1770	3505	1615		1735			1815	1495
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.53			0.85	1.00
Satd. Flow (perm)	1703	3438	1573	1770	3505	1615		950			1563	1495
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	1884	247	137	1500	13	89	41	46	48	124	27
RTOR Reduction (vph)	0	0	37	0	0	4	0	11	0	0	0	22
Lane Group Flow (vph)	18	1884	210	137	1500	9	0	165	0	0	172	5
Confl. Peds. (#/hr)			3				3					
Heavy Vehicles (%)	6%	5%	0%	2%	3%	0%	1%	5%	5%	9%	1%	8%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		4
Actuated Green, G (s)	3.3	71.9	71.9	12.2	80.8	80.8		21.9			21.9	21.9
Effective Green, g (s)	3.3	71.9	71.9	12.2	80.8	80.8		21.9			21.9	21.9
Actuated g/C Ratio	0.03	0.60	0.60	0.10	0.67	0.67		0.18			0.18	0.18
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	46	2059	942	179	2360	1087		173			285	272
v/s Ratio Prot	0.01	c0.55		c0.08	0.43							
v/s Ratio Perm			0.13			0.01		c0.17			0.11	0.00
v/c Ratio	0.39	0.92	0.22	0.77	0.64	0.01		0.95			0.60	0.02
Uniform Delay, d1	57.4	21.3	11.1	52.5	11.2	6.4		48.5			45.1	40.2
Progression Factor	1.00	1.00	1.00	0.95	0.92	1.00		1.00			1.00	1.00
Incremental Delay, d2	5.4	7.8	0.5	15.0	1.1	0.0		54.0			3.6	0.0
Delay (s)	62.8	29.2	11.7	65.1	11.4	6.4		102.5			48.6	40.3
Level of Service	E	C	B	E	B	A		F			D	D
Approach Delay (s)		27.4			15.8			102.5			47.5	
Approach LOS		C			B			F			D	

Intersection Summary			
HCM 2000 Control Delay	27.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	82.3%	ICU Level of Service	E
Analysis Period (min)	15		

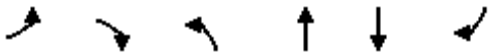
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	18	21	144	2	8	452
Future Volume (Veh/h)	18	21	144	2	8	452
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	21	25	171	2	10	538
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						553
pX, platoon unblocked						
vC, conflicting volume	730	172			173	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	730	172			173	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	97			99	
cM capacity (veh/h)	390	877			1416	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	46	173	548
Volume Left	21	0	10
Volume Right	25	2	0
cSH	558	1700	1416
Volume to Capacity	0.08	0.10	0.01
Queue Length 95th (ft)	7	0	1
Control Delay (s)	12.0	0.0	0.2
Lane LOS	B		A
Approach Delay (s)	12.0	0.0	0.2
Approach LOS	B		

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	40.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	32	19	18	116	382	91
Future Volume (Veh/h)	32	19	18	116	382	91
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	36	22	20	132	434	103
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					920	
pX, platoon unblocked						
vC, conflicting volume	658	486	537			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	658	486	537			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	91	96	98			
cM capacity (veh/h)	420	586	1041			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	58	152	537
Volume Left	36	20	0
Volume Right	22	0	103
cSH	470	1041	1700
Volume to Capacity	0.12	0.02	0.32
Queue Length 95th (ft)	10	1	0
Control Delay (s)	13.7	1.3	0.0
Lane LOS	B	A	
Approach Delay (s)	13.7	1.3	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	35.6%	ICU Level of Service	A
Analysis Period (min)	15		

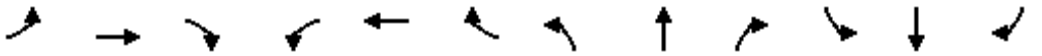


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBT	SBR
Lane Group Flow (vph)	6	836	31	19	2235	12	241	69	7
v/c Ratio	0.07	0.36	0.03	0.19	0.91	0.01	0.97	0.26	0.02
Control Delay	55.5	8.7	0.1	50.8	15.0	0.5	98.0	45.1	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.5	8.7	0.1	50.8	15.0	0.5	98.0	45.1	0.1
Queue Length 50th (ft)	5	105	0	15	317	0	182	46	0
Queue Length 95th (ft)	19	197	0	m18	m#1068	m0	#350	91	0
Internal Link Dist (ft)		263			2471		389	744	
Turn Bay Length (ft)	470		110	455		100			75
Base Capacity (vph)	165	2338	1038	315	2458	862	248	264	288
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.36	0.03	0.06	0.91	0.01	0.97	0.26	0.02

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

RS658



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	794	29	18	2123	11	154	35	40	21	45	7
Future Volume (vph)	6	794	29	18	2123	11	154	35	40	21	45	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0			4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	1.00		1.00			1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97			0.98	1.00
Satd. Flow (prot)	1805	3374	1463	1805	3438	1188		1691			1593	1129
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.76			0.89	1.00
Satd. Flow (perm)	1805	3374	1463	1805	3438	1188		1321			1440	1129
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	6	836	31	19	2235	12	162	37	42	22	47	7
RTOR Reduction (vph)	0	0	10	0	0	4	0	7	0	0	0	6
Lane Group Flow (vph)	6	836	21	19	2235	8	0	234	0	0	69	1
Confl. Peds. (#/hr)			1				1					
Heavy Vehicles (%)	0%	7%	8%	0%	5%	36%	5%	11%	6%	29%	12%	43%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		4
Actuated Green, G (s)	1.4	80.8	80.8	3.2	82.6	82.6		22.0			22.0	22.0
Effective Green, g (s)	1.4	80.8	80.8	3.2	82.6	82.6		22.0			22.0	22.0
Actuated g/C Ratio	0.01	0.67	0.67	0.03	0.69	0.69		0.18			0.18	0.18
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	21	2271	985	48	2366	817		242			264	206
v/s Ratio Prot	0.00	0.25		c0.01	c0.65							
v/s Ratio Perm			0.01			0.01		c0.18			0.05	0.00
v/c Ratio	0.29	0.37	0.02	0.40	0.94	0.01		0.97			0.26	0.01
Uniform Delay, d1	58.8	8.5	6.5	57.4	16.7	5.9		48.7			42.0	40.1
Progression Factor	1.00	1.00	1.00	0.91	0.72	1.00		1.00			1.00	1.00
Incremental Delay, d2	7.4	0.5	0.0	2.8	5.6	0.0		48.5			0.5	0.0
Delay (s)	66.2	9.0	6.5	55.1	17.5	5.9		97.2			42.6	40.1
Level of Service	E	A	A	E	B	A		F			D	D
Approach Delay (s)		9.3			17.8			97.2			42.3	
Approach LOS		A			B			F			D	

Intersection Summary			
HCM 2000 Control Delay	21.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	88.2%	ICU Level of Service	E
Analysis Period (min)	15		

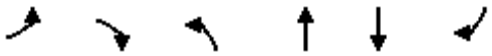
c Critical Lane Group

RS659

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Volume (veh/h)	209	1	2	183	3	8
Future Volume (Veh/h)	209	1	2	183	3	8
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	286	1	3	251	4	11
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				553		
pX, platoon unblocked						
vC, conflicting volume			287		544	286
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			287		544	286
tC, single (s)			4.1		6.7	6.3
tC, 2 stage (s)						
tF (s)			2.2		3.8	3.4
p0 queue free %			100		99	98
cM capacity (veh/h)			1287		450	727

Direction, Lane #	EB 1	WB 1	NW 1
Volume Total	287	254	15
Volume Left	0	3	4
Volume Right	1	0	11
cSH	1700	1287	624
Volume to Capacity	0.17	0.00	0.02
Queue Length 95th (ft)	0	0	2
Control Delay (s)	0.0	0.1	10.9
Lane LOS		A	B
Approach Delay (s)	0.0	0.1	10.9
Approach LOS			B

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	21.2%	ICU Level of Service	A
Analysis Period (min)	15		

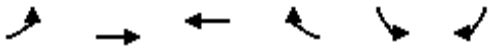


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	69	21	35	139	115	73
Future Volume (Veh/h)	69	21	35	139	115	73
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.64	0.64	0.64	0.64	0.64	0.64
Hourly flow rate (vph)	108	33	55	217	180	114
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					923	
pX, platoon unblocked						
vC, conflicting volume	564	237	294			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	564	237	294			
tC, single (s)	6.5	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.4	2.2			
p0 queue free %	76	96	96			
cM capacity (veh/h)	453	790	1262			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	141	272	294
Volume Left	108	55	0
Volume Right	33	0	114
cSH	503	1262	1700
Volume to Capacity	0.28	0.04	0.17
Queue Length 95th (ft)	28	3	0
Control Delay (s)	14.9	1.9	0.0
Lane LOS	B	A	
Approach Delay (s)	14.9	1.9	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	34.9%	ICU Level of Service	A
Analysis Period (min)	15		

RS661



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	57	101	7	33	0
Future Volume (Veh/h)	0	57	101	7	33	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.61	0.61	0.61	0.61	0.61	0.61
Hourly flow rate (vph)	0	93	166	11	54	0
Pedestrians					2	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	179				266	174
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	179				266	174
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				93	100
cM capacity (veh/h)	1407				726	874

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	93	177	54
Volume Left	0	0	54
Volume Right	0	11	0
cSH	1407	1700	726
Volume to Capacity	0.00	0.10	0.07
Queue Length 95th (ft)	0	0	6
Control Delay (s)	0.0	0.0	10.4
Lane LOS			B
Approach Delay (s)	0.0	0.0	10.4
Approach LOS			B

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	16.2%	ICU Level of Service	A
Analysis Period (min)	15		

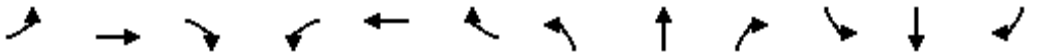


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBT	SBR
Lane Group Flow (vph)	18	1884	261	143	1500	13	191	180	27
v/c Ratio	0.19	0.94	0.27	0.82	0.63	0.01	0.95	0.58	0.08
Control Delay	57.6	33.7	8.6	79.8	12.8	0.7	97.1	50.5	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.6	33.7	8.6	79.8	12.8	0.7	97.1	50.5	0.4
Queue Length 50th (ft)	14	701	58	108	395	0	134	123	0
Queue Length 95th (ft)	38	#911	106	m#216	m591	m0	#269	198	2
Internal Link Dist (ft)		263			2471		389	767	
Turn Bay Length (ft)	470		110	455		100			75
Base Capacity (vph)	156	2014	962	175	2375	1109	225	354	385
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.94	0.27	0.82	0.63	0.01	0.85	0.51	0.07

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

RS663



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	1733	240	132	1380	12	89	41	45	44	121	25
Future Volume (vph)	17	1733	240	132	1380	12	89	41	45	44	121	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0			4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	1.00		1.00			1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.97			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98			0.99	1.00
Satd. Flow (prot)	1703	3438	1573	1770	3505	1615		1736			1818	1495
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.54			0.86	1.00
Satd. Flow (perm)	1703	3438	1573	1770	3505	1615		957			1577	1495
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	1884	261	143	1500	13	97	45	49	48	132	27
RTOR Reduction (vph)	0	0	41	0	0	4	0	10	0	0	0	22
Lane Group Flow (vph)	18	1884	220	143	1500	9	0	181	0	0	180	5
Confl. Peds. (#/hr)			3				3					
Heavy Vehicles (%)	6%	5%	0%	2%	3%	0%	1%	5%	5%	9%	1%	8%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		4
Actuated Green, G (s)	3.3	70.3	70.3	11.9	78.9	78.9		23.8			23.8	23.8
Effective Green, g (s)	3.3	70.3	70.3	11.9	78.9	78.9		23.8			23.8	23.8
Actuated g/C Ratio	0.03	0.59	0.59	0.10	0.66	0.66		0.20			0.20	0.20
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	46	2014	921	175	2304	1061		189			312	296
v/s Ratio Prot	0.01	c0.55		c0.08	0.43							
v/s Ratio Perm			0.14			0.01		c0.19			0.11	0.00
v/c Ratio	0.39	0.94	0.24	0.82	0.65	0.01		0.96			0.58	0.02
Uniform Delay, d1	57.4	22.8	12.0	53.0	12.3	7.1		47.6			43.5	38.7
Progression Factor	1.00	1.00	1.00	0.94	0.91	1.00		1.00			1.00	1.00
Incremental Delay, d2	5.4	9.7	0.6	21.3	1.2	0.0		52.2			2.6	0.0
Delay (s)	62.8	32.5	12.6	71.0	12.4	7.1		99.7			46.1	38.7
Level of Service	E	C	B	E	B	A		F			D	D
Approach Delay (s)		30.3			17.5			99.7			45.2	
Approach LOS		C			B			F			D	

Intersection Summary			
HCM 2000 Control Delay	29.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	88.8%	ICU Level of Service	E
Analysis Period (min)	15		

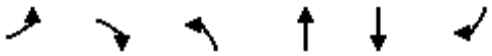
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	18	21	157	2	8	478
Future Volume (Veh/h)	18	21	157	2	8	478
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	21	25	187	2	10	569
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						553
pX, platoon unblocked						
vC, conflicting volume	777	188			189	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	777	188			189	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	94	97			99	
cM capacity (veh/h)	366	859			1397	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	46	189	579
Volume Left	21	0	10
Volume Right	25	2	0
cSH	532	1700	1397
Volume to Capacity	0.09	0.11	0.01
Queue Length 95th (ft)	7	0	1
Control Delay (s)	12.4	0.0	0.2
Lane LOS	B		A
Approach Delay (s)	12.4	0.0	0.2
Approach LOS	B		

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	41.6%	ICU Level of Service	A
Analysis Period (min)	15		

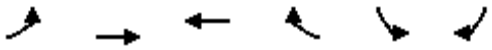


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	45	22	24	116	382	117
Future Volume (Veh/h)	45	22	24	116	382	117
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	51	25	27	132	434	133
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					920	
pX, platoon unblocked						
vC, conflicting volume	686	500	567			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	686	500	567			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	87	96	97			
cM capacity (veh/h)	400	574	1015			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	76	159	567
Volume Left	51	27	0
Volume Right	25	0	133
cSH	445	1015	1700
Volume to Capacity	0.17	0.03	0.33
Queue Length 95th (ft)	15	2	0
Control Delay (s)	14.8	1.7	0.0
Lane LOS	B	A	
Approach Delay (s)	14.8	1.7	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	37.7%	ICU Level of Service	A
Analysis Period (min)	15		

RS666



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	51	109	32	16	1
Future Volume (Veh/h)	0	51	109	32	16	1
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	0	59	125	37	18	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	162				202	144
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	162				202	144
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				98	100
cM capacity (veh/h)	1429				791	909

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	59	162	19
Volume Left	0	0	18
Volume Right	0	37	1
cSH	1429	1700	796
Volume to Capacity	0.00	0.10	0.02
Queue Length 95th (ft)	0	0	2
Control Delay (s)	0.0	0.0	9.6
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.6
Approach LOS			A

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	17.7%	ICU Level of Service	A
Analysis Period (min)	15		

RS667

Exhibit H

October 24, 2016

Subject: Notice of a proposed subdivision at 13333 Rusk Road

Dear Property Owner:

You are cordially invited to attend a neighborhood meeting on **Thursday, November 3 at 6:00 PM**.

The purpose of this meeting is to discuss a proposed subdivision located at 13333 SE Rusk Road adjacent to the Turning Point Church. The subject tax lots are: 22E 06AD 600, 700, 900 and 901. The site is approximately 18 acres and is zoned R-3 and R-10 by the City of Milwaukie. A vicinity map showing the site location is attached to this letter.

The proposed subdivision will include single-family attached (row house) lots. The applicant is proposing to use the City's Planned Development provisions, which allow flexibility to preserve natural resources on the site while maximizing development potential.

The Turning Point Church will remain in place, and natural resources that exist on the site will be preserved.

A preliminary site plan is attached to this letter.

The purpose of this meeting is to provide an opportunity for the applicant and surrounding property owners to meet and discuss the proposal, including any potential concerns.

The meeting is scheduled for:

Thursday, November 3, 2016
6:00 – 7:30 PM
Turning Point Church
13333 SE Rusk Road
Portland, OR 97222

Please note that this is an informational meeting on preliminary plans. These plans may change slightly before the application is submitted to the City. We look forward to discussing this proposal with you. Please feel free to contact me if you have questions.

Sincerely,

Scott Emmens
DOWL Senior Project Manager

Attachment(s): Vicinity Map and Preliminary Site Plan



Legend

- Site
- taxlots
- City Limits

1,000 500 0

Feet

Vicinity Map

Kellogg Creek

Milwaukie, Oregon

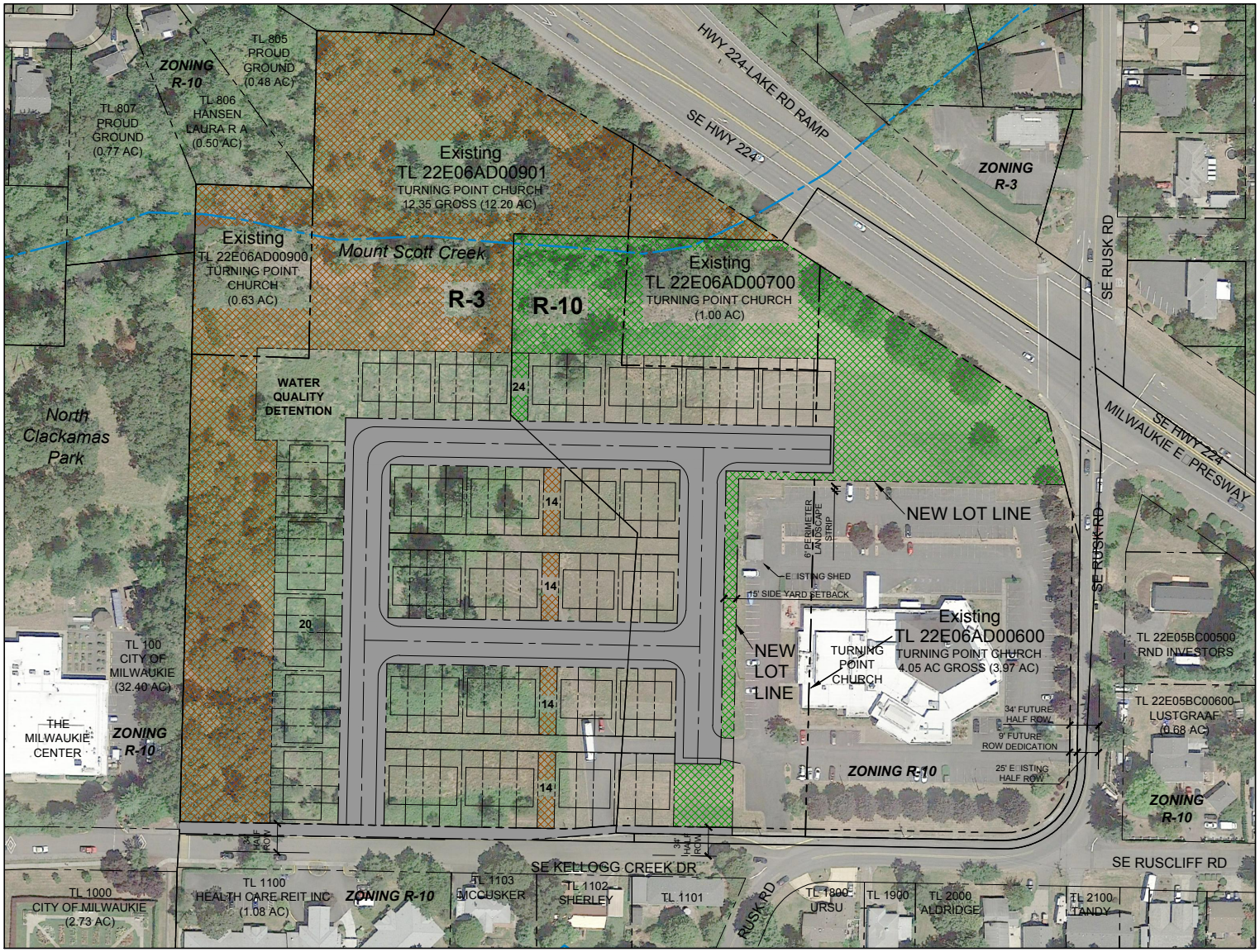
DOWL

Project # 2322.1414258.01

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RS671



Kellogg Creek

Conceptual Site Plan

Milwaukie, Oregon

Development Information

Total Gross Area	**= 14.22 ac**
Total Dwelling Units Proposed	**= 99 du**
Zoning R-3:	= 9.63 ac
Open Space (1/3 Total Gross Area) (Floodplain 2.8 ac + Open Space 0.41 ac)	= - 3.21 ac (Providing 4.51 ac)
ROW (Kellogg + On-site)	= - 1.32 ac
Net Area	= 5.10 ac
Max Dwelling Units (14.5 du/ac)	= 74 du
PUD Density Increase (20 □)	= 89 du
Zoning R-10:	= 4.59 ac
Open Space (1/3 Total Gross Area) (Floodplain 1.73 ac + Open Space 1.07 ac)	= - 1.53 ac (Providing 2.87 ac)
ROW (Kellogg + Rusk + on-site)	= - 0.91 ac
Net Area	= 2.15 ac
Max Dwelling Units (4.4 du/ac)	= 9 du
PUD Density Increase (20□)	= 11 du
Density Total:	
Max Dwelling Units Total	= **83 du**
Max PUD Density Increase Total	= **100 du**

Development Standards - City o□ Milwaukie

Notes:

1. Base map in□ormation based on data □rom a variety o□ sources including Metro GIS□ City o□ Milwaukie GIS□ and Microso□t Bing Aerials. No survey in□ormation was used to create this map and all areas shall be considered approximate.
2. This drawing originated as imported GIS coverages □rom RLIS Metro data dated May 2016. The original projection was maintained: NAD 1983 Harn State Plane OR North 3601 / 2913 Intl Feet.
3. GIS coverages □or Habitat Conservation Area and Vegetated Corridors were imported □rom City o□ Milwaukie data dated June 2016. Vegetated Corridors were modi□ied at west property line per PHS on-site evaluation 7/7/2016.
4. Future ROW dedication re□uirements along SE HWY 224 were unknown at time o□ plan preparation and may impact total allowed Maximum Dwelling Units.

Legend

- Existing Property Lines
- Proposed Property Lines
- City o□ Milwaukie Boundary
- 500 Existing Contours - 5' Interval
- Existing Stream
- Existing FEMA 100 Year Floodplain
- Existing Buildings

Zoning

- Low Density Residential R-10
- Medium Density Residential R-3
- Open Space R-3
- Open Space R-10

10/5/2016

0 30 60 120

DOWL
WWW.DOWL.COM
720 SW Washington Street□□750
Portland□Oregon 97205
971-280-8641
Project No. 2322.14258.01
Contact: Ben Williams□PE

RS672

22E05B 01000
SECHAN NEIL TRUSTEE
101 SCENIC DR
ASHLAND, OR 97520-2619

22E05B 01100
RANDALL INVESTMENT GROUP LLC
2 CENTERPOINTE DR STE 210
LAKE OSWEGO, OR 97035-8627

22E05B 01200
RANDALL INVESTMENT GROUP LLC
2 CENTERPOINTE DR STE 210
LAKE OSWEGO, OR 97035-8627

22E05B 01603
LAKE ROAD MEDICAL BUILDING LLC
6542 SE LAKE RD STE 104
MILWAUKIE, OR 97222-2245

22E05B 02600
ROBERTSON RANDALL W
12972 SE RUSK RD
MILWAUKIE, OR 97222-2106

22E05B 02602
SMITH CRAIG S
13012 SE RUSK RD
MILWAUKIE, OR 97222-2108

22E05B 02603
ENG JOHN
12992 SE RUSK RD
MILWAUKIE, OR 97222-2106

22E05B 02700
NBL PROPERTIES LIMITED
PARTNERSHIP
PO BOX 1741
LAKE OSWEGO, OR 97035-0578

22E05BC00100
HOVIS REBECCA M
13440 SE RUSCLIFF RD
MILWAUKIE, OR 97222-2143

22E05BC00101
MCDONALD BRIAN SCOTT
13398 SE RUSCLIFF RD
MILWAUKIE, OR 97222-2142

22E05BC00102
CLIFFORD ROBERT C & MARTHA L
13436 SE RUSCLIFF RD
MILWAUKIE, OR 97222-2143

22E05BC00103
HOWARD TIMOTHY C & HOLLY M
13444 SE RUSCLIFF RD
MILWAUKIE, OR 97222-2143

22E05BC00104
GERTON JUDITH A & RONALD E
13446 SE RUSCLIFF RD
MILWAUKIE, OR 97222-2143

22E05BC00200
JACKSON RICHARD L & SHERI R
13420 SE RUSCLIFF RD
MILWAUKIE, OR 97222-2143

22E05BC00300
CASTRO DOMINGO RAY JR
13410 SE RUSCLIFF RD
MILWAUKIE, OR 97222-2143

22E05BC00400
STATE OF OREGON
TRANSPORTATION BLDG
SALEM, OR 97310-0001

22E05BC00500
RND INVESTORS INC
6486 SE VERNELDA ST
MILWAUKIE, OR 97267-3269

22E05BC00600
LUSTGRAAF JOY E & DARELL A
13312 SE RUSK RD
MILWAUKIE, OR 97222-3209

22E05BC00700
PASTOR JOAQUIN P & GABRIELA N
13400 SE RUSCLIFF RD
MILWAUKIE, OR 97222-2143

22E05BC00800
MARKWART KEITH A & A K LAUTT-
MARKWART
13430 SE RUSCLIFF RD
MILWAUKIE, OR 97222-2143

22E05BC01000
GUNNARSON CHRIS
13387 SE RUSCLIFF RD
MILWAUKIE, OR 97222-2104

22E05BC01100
LUCAS JUDITH M
13114 SE NIXON AVE
MILWAUKIE, OR 97222-6137

22E05BC01200
VAN BOCKEL DOROTHEA A &
JEBEDIAH
13391 SE RUSCLIFF RD
MILWAUKIE, OR 97222-2104

22E05BC01300
BLACKBURN GLORIA R CO-
TRUSTEE
13465 SE RUSCLIFF RD
MILWAUKIE, OR 97222-2148

22E05BC01400
MILLWARD G RICHARD A
13485 SE RUSCLIFF RD
MILWAUKIE, OR 97222-2148

22E05BC01500
GREEN-HITE JOHN & TERESA
13575 SE BRIARFIELD CT
MILWAUKIE, OR 97222-3201

22E05BC01600
JOHNS LANA S TRUSTEE
7222 SE 29TH
PORTLAND, OR 97202-8732

22E05BC01700
ANDRUS SONIA L & STEVEN R
16897 SE TONG RD
DAMASCUS, OR 97089-8879

22E05BC01800
BRINKMAN SHARON M & GARRY D
6041 SE PARKVIEW TER
MILWAUKIE, OR 97222-3207

22E05BC01900
KILER KURTIS LEE
13555 SE BRIARFIELD CT
MILWAUKIE, OR 97222-3201

RS673

22E05BC02100
HALL LUREL DEAN & MARALYN S
6109 SE ERIC
MILWAUKIE, OR 97222-3206

22E05CB00303
HENNEBECK CAITLIN
13450 SE RUSCLIFF RD
MILWAUKIE, OR 97222-2143

22E06AA00300
MILLER SUSAN & PHIL
5800 SE WEIKO WAY
MILWAUKIE, OR 97222-2145

22E06AA00400
MASSEY LEROYCE J
13021 SE WEIKO WAY
MILWAUKIE, OR 97222-2145

22E06AA00401
MILLER SUSAN & PHIL
5800 SE WEIKO WAY
MILWAUKIE, OR 97222-2145

22E06AA00402
MILLER SUSAN & PHIL
5800 SE WEIKO WAY
MILWAUKIE, OR 97222-2145

22E06AA00501
TIEN FRANK & KAREN
9249 SE HUNTERS BLUFF AVE
HAPPY VALLEY, OR 97086-9131

22E06AA00502
SATIS PROPERTIES LLC
5939 SE IRIS CT
MILWAUKIE, OR 97267-1852

22E06AA00504
TIEN FRANK & KAREN
9249 SE HUNTERS BLUFF AVE
HAPPY VALLEY, OR 97086-9131

22E06AA00600
MASSEY TERRY
8625 SE JENNINGS AVE
MILWAUKIE, OR 97267-5458

22E06AA00601
OFFICE OF OVERSEER & HIS SUCCESSORS
800 NE TENNEY RD STE 110-318
VANCOUVER, WA 98685-2831

22E06AA00700
KING TONY C
12951 SE RUSK RD
MILWAUKIE, OR 97222-2105

22E06AA00800
JOHNSON LORI C
13001 SE RUSK RD
MILWAUKIE, OR 97222-2107

22E06AA00900
BRUNEAU CAROLINE J TRUSTEE
12942 SE RUSK RD
MILWAUKIE, OR 97222-2106

22E06AB00610
OLEARY MICHAEL J & MARY JEAN
5440 SE CAMPANARIO RD
MILWAUKIE, OR 97222-2115

22E06AB00616
SILVERLEAF HOMEOWNERS ASSOCIATION
5246 CAMPANARIO RD
MILWAUKIE, OR 97222

22E06AB00617
NORTH CLACKAMAS PARK & REC DIST
150 BEAVERCREEK RD
OREGON CITY, OR 97045-4302

22E06AB00703
NOREN JOHN A & DONNA
12935 SE CARRIE LYN LN
MILWAUKIE, OR 97222-2166

22E06AB00704
BRUNNING VINCENT C & GEORGIANNE
12963 SE CARRIE LYN LN
MILWAUKIE, OR 97222-2166

22E06AB00705
MCKEE GEORGE A TRUSTEE
5535 SE CAMPANARIO RD
MILWAUKIE, OR 97222-2114

22E06AB00706
PERRY MICHAEL A
5455 SE CAMPANARIO RD
MILWAUKIE, OR 97222-2116

22E06AB00707
ROGERS SALLY M
5454 SE CAMPANARIO RD
MILWAUKIE, OR 97222-2115

22E06AB00708
HEINICHEN RICHARD J & CINDY I
5502 SE CAMPANARIO RD
MILWAUKIE, OR 97222-2167

22E06AB00709
SAENZ SAMUEL & ROSIE
5550 SE CAMPANARIO RD
MILWAUKIE, OR 97222-2167

22E06AB00710
LEFRANC YVES & GINA MCMENAMIN
5606 SE CAMPANARIO RD
MILWAUKIE, OR 97222-2117

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JONES SCOTT & TIFFANY
5648 SE CAMPANARIO RD
MILWAUKIE, OR 97222-2117

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CHANEY DALE S & T BOATWRIGHT-CHANEY
5649 SE CAMPANARIO RD
MILWAUKIE, OR 97222-2180

22E06AB00713
SLOBODA VASILY & TAMARA
12988 SE CARRIE LYN LN
MILWAUKIE, OR 97222-2176

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BAILEY ARLENE F
12936 SE CARRIE LYN LN
MILWAUKIE, OR 97222-2176

22E06AB00715
CHRISTIANSON JOHN W & LOU ANN
5586 SE LAKE RD
MILWAUKIE, OR 97222-2169

22E06AB00716
NORTH CLACKAMAS PARKS & REC DIST
150 BEAVERCREEK RD
OREGON CITY, OR 97045-4302

22E06AC00100
CITY OF MILWAUKIE
10722 SE MAIN ST
MILWAUKIE, OR 97222-7606

22E06AD00100
HACMAC PROPERTIES LLC
6026 SE EASTBROOK DR
MILWAUKIE, OR 97222-3237

22E06AD00200
THORPE JAMES STEVEN
13020 SE RUSK RD
MILWAUKIE, OR 97222-2108

22E06AD00300
GOFF DONALD EUGENE CO-TRUSTEE
14980 SE RIVER FOREST DR
MILWAUKIE, OR 97267-2508

22E06AD00301
STATE OF OREGON
TRANSPORTATION BLDG
SALEM, OR 97310-0001

22E06AD00600
TURNING POINT CHURCH
13333 SE RUSK RD
MILWAUKIE, OR 97222-3208

22E06AD00700
TURNING POINT CHURCH
13333 SE RUSK RD
MILWAUKIE, OR 97222-3208

22E06AD00801
PROUD GROUND
5288 N INTERSTATE
PORTLAND, OR 97217-3767

22E06AD00802
PROUD GROUND
5288 N INTERSTATE
PORTLAND, OR 97217-3767

22E06AD00803
GESIK CHARLIE
5650 SE KAYLA CT
MILWAUKIE, OR 97222-6662

22E06AD00804
PROUD GROUND
5288 N INTERSTATE
PORTLAND, OR 97217-3767

22E06AD00805
PROUD GROUND
5288 N INTERSTATE
PORTLAND, OR 97217-3767

22E06AD00806
HANSEN LAURA R A
12978 SE MADEIRA DR
MILWAUKIE, OR 97222-6633

22E06AD00807
PROUD GROUND
5288 N INTERSTATE
PORTLAND, OR 97217-3767

22E06AD00900
TURNING POINT CHURCH
13333 SE RUSK RD
MILWAUKIE, OR 97222-3208

22E06AD00901
TURNING POINT CHURCH
13333 SE RUSK RD
MILWAUKIE, OR 97222-3208

22E06AD01000
CITY OF MILWAUKIE
10722 SE MAIN ST
MILWAUKIE, OR 97222-7606

22E06AD01100
HEALTH CARE REIT INC
4500 DORR ST
TOLEDO, OH 43615-4040

22E06AD01101
SUPPRESSED NAME
5824 SE KELLOGG CREEK DR
MILWAUKIE, OR 97222-2103

22E06AD01102
SHERLEY JUDY E
5804 SE KELLOGG CREEK DR
MILWAUKIE, OR 97222-2103

22E06AD01103
MCCUSKER JAMES P
5800 SE KELLOGG CREEK DR
MILWAUKIE, OR 97222-2103

22E06AD01200
HEALTH CARE REIT INC
4500 DORR ST
TOLEDO, OH 43615-4040

22E06AD01400
JOHNSON GARY C & SHERRIE L
13477 SE RUSK RD
MILWAUKIE, OR 97222-3210

22E06AD01500
BERESFORD TERRY
13502 SE RUSK RD
MILWAUKIE, OR 97222-3230

22E06AD01600
RIVELLI JOSEPH P & SUSAN M
6008 SE PARKVIEW TER
MILWAUKIE, OR 97222-3207

22E06AD01601
KEAGBINE ANTHONY TRUSTEE
6012 SE PARKVIEW TER
MILWAUKIE, OR 97222-3207

22E06AD01700
PIPER RONALD D & LINDA L
13468 SE RUSK RD
MILWAUKIE, OR 97222-3211

22E06AD01800
URSU IOAN
13460 SE RUSK RD
MILWAUKIE, OR 97222-3211

22E06AD01900
NEALEIGH DOUGLAS E
13360 SE RUSK RD
MILWAUKIE, OR 97222-3229

RS675

22E06AD02000
ALDRIDGE FAMILY TRUST
13340 SE RUSK RD
MILWAUKIE, OR 97222-3229

22E06AD02100
TANDY STEPHEN DOUGLAS &
KAREN LYNN
13330 SE RUSK RD
MILWAUKIE, OR 97222-3229

22E06AD02200
TANDY STEPHEN DOUGLAS &
KAREN LYNN
13330 SE RUSK RD
MILWAUKIE, OR 97222-3229

22E06AD02300
BRINKMAN GARRY D
6041 SE PARKVIEW TER
MILWAUKIE, OR 97222-3207

22E06AD02400
KEAGBINE ANTHONY TRUSTEE
6012 SE PARKVIEW TER
MILWAUKIE, OR 97222-3207

22E06AD02401
CLACKAMAS COUNTY
902 ABERNETHY RD
OREGON CITY, OR 97045-1165

22E06DA00100
HALL LUREL DEAN & MARALYN S
6109 SE ERIC ST
MILWAUKIE, OR 97222-3206

22E06DA00200
ELLS RICHARD H
6037 SE ERIC ST
MILWAUKIE, OR 97222-3205

22E06DA00300
WINTER JILL J TRUSTEE
6025 SE ERIC ST
MILWAUKIE, OR 97222-3205

22E06DA00400
SANDERS KELLI
6011 SE ERIC ST
MILWAUKIE, OR 97222-3205

22E06DA00500
BARNES SUSAN P & ABEDNEGO
5959 SE ERIC ST
MILWAUKIE, OR 97222-3204

22E06DA00600
PEREIRA MICHELLE M & JARROD A
5915 SE ERIC ST
MILWAUKIE, OR 97222-3204

22E06DA03601
PROVOST ERIC J & HOLLY M
6135 SE ERIC ST
MILWAUKIE, OR 97222-3206

22E06DB00400
EASTERN ORTHDX CH ANNUNCTN
PO BOX 22048
MILWAUKIE, OR 97269-2048

KELLOGG CREEK PROJECT NEIGHBORHOOD MEETING

THURSDAY, NOVEMBER 3

WELCOME!

PROJECT TEAM

- Scott Emmens, Senior Project Manager, DOWL
- Serah Breakstone, Senior Planner, DOWL
- Kyle Glidden, Senior Civil Project Designer, DOWL
- John Van Staveren, Senior Scientist, PHS
- Zachary Horowitz, Senior Engineer, Kittelson & Assoc.

Property owner:	**Turning Point Church**
Developer:	**Brownstone Development, Inc.**
Home Builder:	**DR Horton**

PROJECT SITE



PROJECT OVERVIEW

- Subdivision with 99 lots
- Compact development to preserve natural areas
- Property line adjustment
- Church will remain
- Public open spaces and a greenway
- On-site stormwater treatment
- One primary access on Kellogg Creek Drive

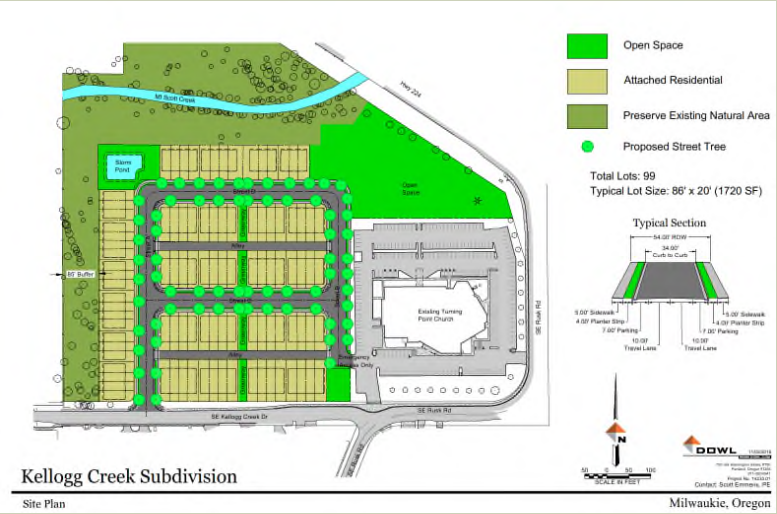
CITY LAND USE APPROVALS

Package 1
- Planned Development
- Zone Change

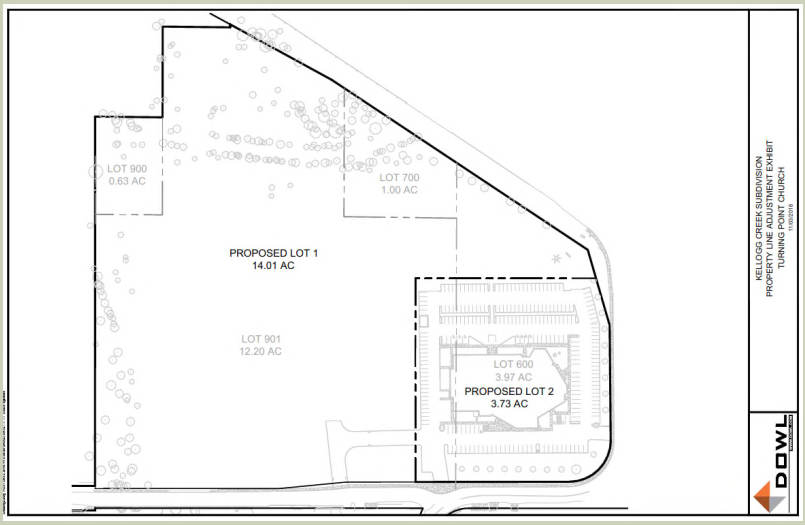
Package 2
- Subdivision
- Natural Resources Review
- Transportation Facilities Review

Applications to be reviewed concurrently
One or two Planning Commission Hearings
One City Council hearing

PRELIMINARY SITE PLAN



LOT LINE ADJUSTMENT



EXAMPLE HOME TYPES



Sample: Front Loaded 4-Plex



Sample: Front Loaded 3-Plex



Sample: Alley Loaded

Kellogg Creek Subdivision

DR Horton Home Types

Milwaukie, Oregon

PROJECT TIMELINE

- Submit application by November 30
- 30-days for completeness review
- About 5 months for review process
- Public hearings early spring (March)
- Construction August – November 2017

QUESTIONS & FEEDBACK

SBREAKSTONE@DOWL.COM
971.280.8661

Exhibit I

Morgan Holen & Associates, LLC
Consulting Arborists and Urban Forest Management
971.409.9354
3 Monroe Parkway, Suite P 220
Lake Oswego, Oregon 97035
morgan.holen@comcast.net

Kellogg Creek Subdivision – Milwaukie, Oregon
Arborist Report
January 4, 2017

MHA16090

Purpose

This arborist report for the Kellogg Creek subdivision project located in Milwaukie, Oregon, describes the existing trees located on and directly adjacent to the project site, as well as recommendations for tree removal, retention, and protection.

Scope of Work and Limitations

Morgan Holen & Associates, LLC, was contracted by DOWL to visually assess existing trees measuring six inches in diameter and larger in terms of general condition and suitability for preservation with development, coordinate with the design team to develop a Tree Protection and Removal Plan for the project, and prepare a written arborist report to correlate with the Tree Plan.

On behalf of Morgan Holen & Associates, LLC, International Society of Arboriculture (ISA) Certified Arborist (PN-0497A) and Qualified Tree Risk Assessor Walter Knapp visited the site on November 18, 2016. Trees located north of Mount Scott Creek are not subject to this scope of work and are therefore not included in the inventory, otherwise Visual Tree Assessment (VTA[1]) was performed on individual trees located across the site. Trees were evaluated in terms species, size, general condition, and potential construction impacts, and treatment recommendations include retain or remove. Following the inventory fieldwork, we coordinated with DOWL to discuss and finalize treatment recommendations based on the proposed site plan and grading.

The client may choose to accept or disregard the recommendations contained herein, or seek additional advice. Neither this author nor Morgan Holen & Associates, LLC, have assumed any responsibility for liability associated with the trees on or adjacent to this site.

General Description

The Kellogg Creek Subdivision project site is located south of State Highway 224 and north of the intersection between SE Rusk Road and SE Kellogg Creek Drive. A site plan was provided by DOWL illustrating the location of trees and tree survey point numbers, and potential construction impacts. Turning Point Church is located on the eastern portion of the project site and the church and parking lot will remain. West of the church, a 92-lot residential subdivision is proposed, along with new streets and water quality facilities. The project also includes right of way improvements along SE Kellogg Creek Drive.

In all, 218 trees measuring 6-inches and larger in diameter were inventoried including 15 different species. Four of the species, accounting for 31 (14%) of the inventoried trees, are on the City's nuisance tree list. Table 1 provides a summary of the quantity of inventoried trees by species. A complete description of individual trees is provided in the enclosed tree data.

[1] Visual Tree Assessment (VTA): The standard process of visual tree inspection whereby the inspector visually assesses the tree from a distance and up close, looking for defect symptoms and evaluating overall condition and vitality.

Table 1. Quantity of Trees by Species – Kellogg Creek Subdivision.

Common Name	Species Name	Total	Percent*
bigleaf maple	*Acer macrophyllum*	2	1%
black cottonwood	*Populus trichocarpa*	39	18%
deciduous	unknown	1	0.5%
Douglas-fir	*Pseudotsuga menziesii*	1	0.5%
English hawthorn^	*Crataegus monogyna*	9	4%
European white birch^	*Betula pendula*	3	1%
Japanese maple	*Acer palmatum*	1	0.5%
Norway maple^	*Acer platanoides*	18	8%
Oregon ash	*Fraxinus latifolia*	32	15%
Oregon white oak	*Quercus garryana*	46	21%
pin oak	*Quercus palustris*	10	5%
red alder	*Alnus rubra*	41	19%
Scots pine	*Pinus sylvestris*	1	0.5%
Scouler's willow	*Salix scouleriana*	13	6%
sweet cherry^	*Prunus avium*	1	0.5%
Total		**218**	**100%**

^Identifies nuisance tree species.
*Percent total may not sum to 100% due to rounding.

Tree Plan Recommendations

The enclosed tree data includes a condition rating for each individual tree to generally describe the overall condition as either: dead; poor; fair; good; or excellent. Note that none of the trees received an excellent condition rating. In all, 157 (71%) trees are planned for retention with the proposed development and 61 (28%) are planned for removal. Table 2 provides a summary of the quantity of trees by treatment recommendation and general condition rating.

Table 2. Count of Trees by Treatment Recommendation and General Condition Rating.

Treatment Recommendation	General Condition Rating				Total	Percent
	Dead	Poor	Fair	Good		
Retain	9	33	39	76	157	72%
Remove		21	26	14	61	28%
Total	**9**	**54**	**65**	**90**	**218**	**100%**
Percent	**4%**	**25%**	**30%**	**41%**		

Trees planned for retention that are dead or in poor condition are located within wetlands or the vegetated riparian corridor, or are otherwise not within striking distance of proposed development if they were to fail; these trees are suitable for retention in order to provide wildlife habitat and other environmental benefits.

Protection fencing should be installed at the dripline of trees planned for retention, except a minor encroachment is needed for lot grading adjacent to trees 8, 9, and 103. Protection fencing should

initially be installed at the dripline of all trees and adjusted where needed in coordination with a Qualified Arborist who should monitor and document work beneath protected tree driplines.

Of the 61 trees planned for removal, removal is necessary to accommodate site development, including grading, building and other site improvements and adequate protection is not possible. The only exception is the proposed removal of tree 29, which could be protected with construction however it is recommended for removal because it is in poor condition and at increased risk for failure without the protection of adjacent trees to the south and west that need to be removed for site development.

Tree Protection Standards
Trees designated for retention will need special consideration to assure their protection during construction. We recommend a preconstruction meeting with the owner, contractors, and project arborist to review tree protection measures and address questions or concerns on site. Tree protection measures include:

1. **Fencing.** Trees to remain on site shall be protected by installation of tree protection fencing to prevent injury to tree trunks or roots, or soil compaction within the root protection area, which generally coincides with tree driplines. Fences shall be chain link fencing on concrete blocks or orange plastic construction fencing on metal stakes. The project arborist shall determine the exact location and type of tree protection fencing. Trees located more than 30-feet from construction activity shall not require fencing.

2. **Tree Protection Zone.** Without authorization from the Project Arborist, none of the following shall occur beneath the dripline of any protected tree:
    a. Grade change or cut and fill;
    b. New impervious surfaces;
    c. Utility or drainage field placement;
    d. Staging or storage of materials and equipment; or
    e. Vehicle maneuvering.

    Root protection zones may be entered for tasks like surveying, measuring, and, sampling. Fences must be closed upon completion of these tasks.

3. **Pruning.** Pruning may be needed to provide for overhead clearance, improve crown structure, and to remove dead and defective branches for safety. The project arborist can help identify where pruning is necessary once trees recommended for removal have been removed and the site is staked and prepared for construction. Tree removal and pruning shall be performed by a Qualified Tree Service.

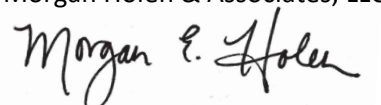
4. **Grading.** Filling and excavating beneath the dripline of protected trees shall be avoided if alternatives are available. Where soil grade changes affect the root protection area, the grade line should be meandered wherever practicable. This will require on-site coordination to ensure a reasonable balance between engineering, construction, and the need for tree protection. The project arborist shall provide on-site consultation during all grading activities beneath the dripline of protected trees.
    a. If the grade must be raised by filling beneath protected tree driplines, the contractor shall coordinate with the project arborist to obtain specific recommendations depending on the depth of fill required and proximity to the tree trunk.

b. Excavation immediately adjacent to roots larger than 2-inches in diameter beneath protected tree driplines shall be by hand or other non-invasive techniques to ensure that roots are not damaged. Where feasible, major roots shall be protected by tunneling or other means to avoid destruction or damage. Exceptions can be made if, in the opinion of the project arborist, unacceptable damage will not occur to the tree.

5. **Landscaping.** Following construction and where landscaping is desired, apply approximately 3-inches of mulch beneath the dripline of protected trees, but not directly against tree trunks. Shrubs and ground covers may be planted within tree protection areas. If irrigation is needed, use drip irrigation installed above ground only beneath the driplines of protected trees.
6. **Quality Assurance.** The project arborist should supervise proper execution of this plan during construction activities that could encroach on retained trees. Tree protection site inspection monitoring reports should be provided to the Client and City following site visits performed throughout construction.

Thank you for choosing Morgan Holen & Associates, LLC, to provide consulting arborist services for the Kellogg Creek Subdivision project. Please contact us if you have questions or need any additional information.

Thank you,
Morgan Holen & Associates, LLC



Morgan E. Holen, Owner/Member
ISA Board Certified Master Arborist, PN-6145B
ISA Tree Risk Assessment Qualified
Forest Biologist

Enclosures: MHA16090 Kellogg Creek Subdivision – Tree Data 11-18-16

No.	Common Name	Species Name	DBH[1]	C-Rad[2]	Cond[3]	Comments	Treatment
1	Oregon white oak	*Quercus garryana*	18		G		Remove
2	Oregon white oak	*Quercus garryana*	18		F		Remove
3	Oregon white oak	*Quercus garryana*	22		F		Remove
4	Oregon white oak	*Quercus garryana*	28		G		Remove
5	Scouler's willow	*Salix scouleriana*	12		P		Remove
6	Oregon white oak	*Quercus garryana*	12		P		Remove
7	Oregon white oak	*Quercus garryana*	14		F		Remove
8	Oregon white oak	*Quercus garryana*	10	12	P		Retain
9	Oregon white oak	*Quercus garryana*	28	23	G		Retain
10	Oregon white oak	*Quercus garryana*	20	28	F		Retain
11	Oregon white oak	*Quercus garryana*	38	32	G		Retain
12	Oregon white oak	*Quercus garryana*	24	24	G		Retain
13	Oregon ash	*Fraxinus latifolia*	12	16	P		Retain
14	Oregon ash	*Fraxinus latifolia*	15	14	G		Retain
15	Oregon ash	*Fraxinus latifolia*	12	12	P		Retain
16	Oregon ash	*Fraxinus latifolia*	2x14	12	P		Retain
17	Oregon ash	*Fraxinus latifolia*	16	16	F		Retain
18	Oregon ash	*Fraxinus latifolia*	2x16	18	G		Retain
19	Oregon ash	*Fraxinus latifolia*	24	26	G		Retain
20	Oregon ash	*Fraxinus latifolia*	24	28	P		Retain
21	Oregon ash	*Fraxinus latifolia*	8	8	F		Retain
22	Oregon white oak	*Quercus garryana*	23	18	P		Retain
23	Oregon white oak	*Quercus garryana*	22	21	G		Retain
24	Oregon white oak	*Quercus garryana*	28	26	G	off-site	Retain
25	Oregon white oak	*Quercus garryana*	22		G		Remove
26	Oregon white oak	*Quercus garryana*	2x16		F		Remove
27	Oregon white oak	*Quercus garryana*	14		P		Remove
28	Oregon white oak	*Quercus garryana*	22		G		Remove
29	Oregon ash	*Fraxinus latifolia*	18		P		Remove
30	Oregon white oak	*Quercus garryana*	12		P		Remove
31	Oregon white oak	*Quercus garryana*	22		G		Remove
32	Oregon white oak	*Quercus garryana*	21		G		Remove
33	Oregon white oak	*Quercus garryana*	18		G		Remove
34	Oregon white oak	*Quercus garryana*	18	15	G		Retain
35	Oregon white oak	*Quercus garryana*	2x20	32	G		Retain
36	Oregon white oak	*Quercus garryana*	36	30	G		Retain
37	Oregon white oak	*Quercus garryana*	26	21	G		Retain
38	Oregon white oak	*Quercus garryana*	29	24	G		Retain
41	pin oak	*Quercus palustris*	18	19	F		Retain

No.	Common Name	Species Name	DBH[1]	C-Rad[2]	Cond[3]	Comments	Treatment
42	pin oak	*Quercus palustris*	22	20	G		Retain
43	pin oak	*Quercus palustris*	21	23	G		Retain
44	pin oak	*Quercus palustris*	18	18	G		Retain
45	pin oak	*Quercus palustris*	18	19	G		Retain
46	pin oak	*Quercus palustris*	18	24	G		Retain
47	pin oak	*Quercus palustris*	21	18	G		Retain
50	Douglas-fir	*Pseudotsuga menziesii*	2x16	14	G		Retain
51	Norway maple	*Acer platanoides*	14	12	G	nuisance species	Retain
52	Norway maple	*Acer platanoides*	14	14	G	nuisance species	Retain
53	Norway maple	*Acer platanoides*	16	12	G	nuisance species	Retain
54	Norway maple	*Acer platanoides*	13	14	G	nuisance species	Retain
55	Norway maple	*Acer platanoides*	19	13	G	nuisance species	Retain
56	Norway maple	*Acer platanoides*	12	12	G	nuisance species	Retain
57	Norway maple	*Acer platanoides*	14	12	G	nuisance species	Retain
58	Norway maple	*Acer platanoides*	15	12	G	nuisance species	Retain
59	Norway maple	*Acer platanoides*	14	13	G	nuisance species	Retain
60	European white birch	*Betula pendula*	12	8	F	nuisance species	Retain
61	Japanese maple	*Acer palmatum*	12	12	G		Retain
62	European white birch	*Betula pendula*	14	14	F	nuisance species	Retain
63	Norway maple	*Acer platanoides*	19	16	G	nuisance species	Retain
64	Norway maple	*Acer platanoides*	12	11	G	nuisance species	Retain
65	Norway maple	*Acer platanoides*	15	15	G	nuisance species	Retain
66	Norway maple	*Acer platanoides*	20	16	G	nuisance species	Retain
67	Norway maple	*Acer platanoides*	17	14	G	nuisance species	Retain
68	Norway maple	*Acer platanoides*	15	13	G	nuisance species	Retain
69	Norway maple	*Acer platanoides*	14	14	G	nuisance species	Retain
70	Norway maple	*Acer platanoides*	17	15	G	nuisance species	Retain
71	Norway maple	*Acer platanoides*	14	15	G	nuisance species	Retain
72	European white birch	*Betula pendula*	10	10	G	nuisance species	Retain
73	pin oak	*Quercus palustris*	18	20	F		Retain
74	English hawthorn	*Crataegus monogyna*	10	8	F	nuisance species	Retain
75	red alder	*Alnus rubra*	16	15	F		Retain
76	red alder	*Alnus rubra*	3x12	18	F		Retain
77	Oregon ash	*Fraxinus latifolia*	12	15	G		Retain
78	red alder	*Alnus rubra*	12	15	G		Retain
79	red alder	*Alnus rubra*	12	13	P		Retain
80	red alder	*Alnus rubra*	20	4	D	nesting cavities	Retain
81	black cottonwood	*Populus trichocarpa*	21	14	G		Retain
82	Oregon ash	*Fraxinus latifolia*	8	10	P		Retain

No.	Common Name	Species Name	DBH[1]	C-Rad[2]	Cond[3]	Comments	Treatment
83	pin oak	*Quercus palustris*	18	12	F		Retain
84	Scouler's willow	*Salix scouleriana*	14	14	P		Retain
85	pin oak	*Quercus palustris*	8	8	P		Retain
86	Scouler's willow	*Salix scouleriana*	14		G		Remove
87	black cottonwood	*Populus trichocarpa*	2x14		G		Remove
88	black cottonwood	*Populus trichocarpa*	10		G		Remove
89	black cottonwood	*Populus trichocarpa*	12		G		Remove
90	Scouler's willow	*Salix scouleriana*	12		P		Remove
91	black cottonwood	*Populus trichocarpa*	10	11	F		Retain
92	black cottonwood	*Populus trichocarpa*	8	10	F		Retain
93	black cottonwood	*Populus trichocarpa*	14	13	G		Retain
94	black cottonwood	*Populus trichocarpa*	12	12	F		Retain
95	black cottonwood	*Populus trichocarpa*	12	12	G		Retain
96	black cottonwood	*Populus trichocarpa*	12	12	G		Retain
97	black cottonwood	*Populus trichocarpa*	8	10	P		Retain
98	black cottonwood	*Populus trichocarpa*	12	12	G		Retain
99	black cottonwood	*Populus trichocarpa*	12	12	G		Retain
100	Oregon white oak	*Quercus garryana*	17		F		Remove
101	Oregon white oak	*Quercus garryana*	28		F		Remove
102	Oregon ash	*Fraxinus latifolia*	6x8		P		Remove
103	Oregon white oak	*Quercus garryana*	16	13	G		Retain
104	English hawthorn	*Crataegus monogyna*	10		P	nuisance species	Remove
105	Oregon white oak	*Quercus garryana*	26		G		Remove
106	Oregon white oak	*Quercus garryana*	24		P	decay	Remove
107	Scouler's willow	*Salix scouleriana*	18		P	decay	Remove
108	Scouler's willow	*Salix scouleriana*	2x16		F		Remove
109	English hawthorn	*Crataegus monogyna*	10		P	nuisance species	Remove
110	English hawthorn	*Crataegus monogyna*	10		F	nuisance species	Remove
111	Scouler's willow	*Salix scouleriana*	5x10		P		Remove
112	Oregon white oak	*Quercus garryana*	10		P		Remove
113	Oregon white oak	*Quercus garryana*	12		P		Remove
114	Oregon white oak	*Quercus garryana*	24	24	G		Retain
115	Scouler's willow	*Salix scouleriana*	8x10		P		Remove
116	English hawthorn	*Crataegus monogyna*	14		F	nuisance species	Remove
117	black cottonwood	*Populus trichocarpa*	12	10	G		Retain
118	black cottonwood	*Populus trichocarpa*	12	10	G		Retain
119	black cottonwood	*Populus trichocarpa*	2x8	12	G		Retain
120	black cottonwood	*Populus trichocarpa*	8	10	G		Retain
121	black cottonwood	*Populus trichocarpa*	10	11	G		Retain

No.	Common Name	Species Name	DBH[1]	C-Rad[2]	Cond[3]	Comments	Treatment
122	black cottonwood	*Populus trichocarpa*	8	10	F		Retain
123	Scots pine	*Pinus sylvestris*	6	10	P		Retain
124	black cottonwood	*Populus trichocarpa*	2x10	10	G		Retain
125	Oregon ash	*Fraxinus latifolia*	6	10	G		Retain
126	Oregon ash	*Fraxinus latifolia*	8	10	G		Retain
127	sweet cherry	*Prunus avium*	10	14	D	nuisance species	Retain
128	Oregon ash	*Fraxinus latifolia*	8	8	G		Retain
129	Oregon ash	*Fraxinus latifolia*	8	8	G		Retain
130	Oregon ash	*Fraxinus latifolia*	6	8	G		Retain
131	Oregon ash	*Fraxinus latifolia*	6	8	G		Retain
132	Oregon ash	*Fraxinus latifolia*	8	8	F		Retain
133	Oregon ash	*Fraxinus latifolia*	8	10	F		Retain
134	Oregon ash	*Fraxinus latifolia*	10	10	F		Retain
135	English hawthorn	*Crataegus monogyna*	10	10	P	nuisance species	Retain
136	Oregon ash	*Fraxinus latifolia*	2x8	8	G		Retain
137	Oregon white oak	*Quercus garryana*	20	25	G		Retain
138	Oregon ash	*Fraxinus latifolia*	14	16	P		Retain
139	Oregon ash	*Fraxinus latifolia*	14	18	F		Retain
140	Oregon ash	*Fraxinus latifolia*	18	20	G		Retain
141	Oregon white oak	*Quercus garryana*	16	30	F		Retain
143	bigleaf maple	*Acer macrophyllum*	8		P		Remove
144	bigleaf maple	*Acer macrophyllum*	12	12	P	split trunk	Retain
145	Oregon white oak	*Quercus garryana*	2x14	22	G		Retain
146	Oregon ash	*Fraxinus latifolia*	14	12	G		Retain
147	Oregon ash	*Fraxinus latifolia*	16	12	P		Retain
148	Oregon ash	*Fraxinus latifolia*	10	12	G	off-site	Retain
149	Oregon ash	*Fraxinus latifolia*	10	12	F	off-site	Retain
150	Oregon white oak	*Quercus garryana*	48	27	G		Retain
151	deciduous	unknown	12	10	D		Retain
152	English hawthorn	*Crataegus monogyna*	8		P	nuisance species	Remove
153	red alder	*Alnus rubra*	12	10	D		Retain
154	red alder	*Alnus rubra*	14	12	D		Retain
155	red alder	*Alnus rubra*	2x10	8	P		Retain
156	red alder	*Alnus rubra*	12	12	P		Retain
157	red alder	*Alnus rubra*	14	12	F		Retain
158	red alder	*Alnus rubra*	16	12	P		Retain
159	red alder	*Alnus rubra*	14	10	P		Retain
160	red alder	*Alnus rubra*	3x8	12	F		Retain
161	Scouler's willow	*Salix scouleriana*	14	4	D		Retain

No.	Common Name	Species Name	DBH[1]	C-Rad[2]	Cond[3]	Comments	Treatment
162	Oregon ash	*Fraxinus latifolia*	10	10	F		Retain
163	English hawthorn	*Crataegus monogyna*	2x8	10	P	nuisance species	Retain
164	red alder	*Alnus rubra*	12	4	D		Retain
165	red alder	*Alnus rubra*	12	12	F		Retain
166	red alder	*Alnus rubra*	12	10	P		Retain
167	English hawthorn	*Crataegus monogyna*	8	8	G	nuisance species	Retain
168	red alder	*Alnus rubra*	18	20	P		Retain
169	red alder	*Alnus rubra*	12	4	D		Retain
170	red alder	*Alnus rubra*	12	12	P	decay	Retain
171	red alder	*Alnus rubra*	12	20	P	decay	Retain
172	red alder	*Alnus rubra*	10	8	P		Retain
173	red alder	*Alnus rubra*	12	4	D		Retain
174	red alder	*Alnus rubra*	11	12	F		Retain
175	Oregon ash	*Fraxinus latifolia*	8	10	F		Retain
176	red alder	*Alnus rubra*	12	14	F		Retain
177	red alder	*Alnus rubra*	10	10	F		Retain
178	red alder	*Alnus rubra*	8	8	P		Retain
179	red alder	*Alnus rubra*	2x10	8	P		Retain
180	red alder	*Alnus rubra*	10	12	P		Retain
181	red alder	*Alnus rubra*	14	14	F		Retain
182	red alder	*Alnus rubra*	10	12	F		Retain
183	red alder	*Alnus rubra*	10	12	P		Retain
184	red alder	*Alnus rubra*	2X14	18	F		Retain
185	red alder	*Alnus rubra*	18	18	P		Retain
186	Scouler's willow	*Salix scouleriana*	3x12		P		Remove
187	Scouler's willow	*Salix scouleriana*	2x8		P		Remove
188	Scouler's willow	*Salix scouleriana*	2x10		P		Remove
189	red alder	*Alnus rubra*	2x14	17	G		Retain
190	red alder	*Alnus rubra*	14	16	F		Retain
191	red alder	*Alnus rubra*	12	10	F		Retain
192	red alder	*Alnus rubra*	2x12	15	F		Retain
193	red alder	*Alnus rubra*	14	12	F		Retain
194	Oregon white oak	*Quercus garryana*	20	16	G		Retain
195	Oregon white oak	*Quercus garryana*	20	18	G		Retain
196	Oregon white oak	*Quercus garryana*	12	12	G		Retain
197	Oregon white oak	*Quercus garryana*	16	21	F		Retain
198	Oregon white oak	*Quercus garryana*	8	12	P		Retain
199	Oregon white oak	*Quercus garryana*	23	35	G		Retain
200	Oregon white oak	*Quercus garryana*	23	31	G		Retain

No.	Common Name	Species Name	DBH[1]	C-Rad[2]	Cond[3]	Comments	Treatment
201	red alder	*Alnus rubra*	12	10	P		Retain
202	red alder	*Alnus rubra*	12	10	F		Retain
203	red alder	*Alnus rubra*	2x10	10	F		Retain
204	black cottonwood	*Populus trichocarpa*	16		G		Remove
205	black cottonwood	*Populus trichocarpa*	2x18		G		Remove
206	Scouler's willow	*Salix scouleriana*	4x12		P		Remove
207	black cottonwood	*Populus trichocarpa*	16		F		Remove
208	black cottonwood	*Populus trichocarpa*	2x12		F		Remove
209	black cottonwood	*Populus trichocarpa*	9x10		F		Remove
210	black cottonwood	*Populus trichocarpa*	12		F		Remove
211	black cottonwood	*Populus trichocarpa*	12		F		Remove
212	black cottonwood	*Populus trichocarpa*	12		F		Remove
213	black cottonwood	*Populus trichocarpa*	12		F		Remove
214	black cottonwood	*Populus trichocarpa*	14		F		Remove
215	black cottonwood	*Populus trichocarpa*	16		F		Remove
216	black cottonwood	*Populus trichocarpa*	14		F		Remove
217	black cottonwood	*Populus trichocarpa*	10		F		Remove
218	black cottonwood	*Populus trichocarpa*	14		F		Remove
219	black cottonwood	*Populus trichocarpa*	3x6		F		Remove
220	black cottonwood	*Populus trichocarpa*	12		F		Remove
221	black cottonwood	*Populus trichocarpa*	14		F		Remove
222	black cottonwood	*Populus trichocarpa*	10		F		Remove
223	black cottonwood	*Populus trichocarpa*	2x16		F		Remove

[1]**DBH** is tree diameter measured at 4.5-feet above ground level in inches; diameter for trees with codominant stems originating below 4.5-feet is reported as quantity of stems x size.

[2]**C-Rad** is the average crown radius measured in feet for trees planned for preservation.

[3]**Cond** is an arborist assigned rating to generally describe the condition of individual trees as follows-

D: Dead
P: Poor Condition
F: Fair Condition
G: Good Condition
E: Excellent Condition

GENERAL COMMENTS:

STEM DECAY IN MOST RED ALDER

ALDER BORDERING STREAM - UNDERMINED ROOTS ON STREAM SIDE

Morgan Holen & Associates LLC
Consulting Arborists and Urban Forest Management
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Lake Oswego, Oregon 97035
morgan.holen@comcast.net

DATE: June 11, 2017

TO: J. Scott Emmens, DOWL

FROM: Morgan Holen, Consulting Arborist

RE: Kellogg Creek Subdivision – Modified Site Plan Tree Protection Recommendations

MHA17033

This memorandum provides supplemental information to the January 4, 2017 arborist report for the Kellogg Creek Subdivision project in Milwaukie, Oregon, based on site plan modifications and discussion during an on-site meeting that occurred on June 8, 2017. I met with J. Scott Emmens of Dowl at the site, along with Brett Kelver (City of Milwaukie), Randy Myers (Brownstone Homes), and Chris Runyard (local ecologist). We discussed tree protection in the southwest corner of the site in terms of street improvements along Kellogg Creek Drive and 12 proposed building lots adjacent to a grove of Oregon white oak (*Quercus garryana*) trees.

The modified site plan limits encroachment towards the oak trees closest to the road by meandering the sidewalk north through the grove. Under this scenario, the existing sidewalk will be removed, the street will be widened to create a bicycle lane, and a new curb will be constructed in approximately the same location as the back of the existing sidewalk. The proposed street construction is limited to the existing disturbed area. Recommendations:

- **Exploratory Excavation.** Prior to construction, conduct exploratory excavation along the back of the existing sidewalk to the depth of the proposed new curb using either an airspade or a hydrovac; a Qualified Tree Service should perform this work. Coordinate with the project arborist to visually assess the exposed roots in terms of quantity, size, location, and condition. The arborist should determine whether individual roots are critical to the health or stability of the adjacent trees and prescribe additional treatment recommendations as needed. Such treatments could include pruning non-critical roots clean to sound wood at the limits of proposed work or developing design alternatives to preserve roots determined to be critical intact within the new street section. Performing exploratory excavation upfront will provide the best information to inform site design and avoid delays at the time of construction.
- **Modified Profile.** The new sidewalk meandering through the oak grove should be built up from existing grade with no excavation using a modified profile (Figure 1). The profile includes removal of the uppermost organic matter along the sidewalk alignment, placing a layer of permeable geotextile fabric on the ground surface, and clean crushed rock to raise the grade as needed. Surfacing may include asphalt, concrete, or other materials.

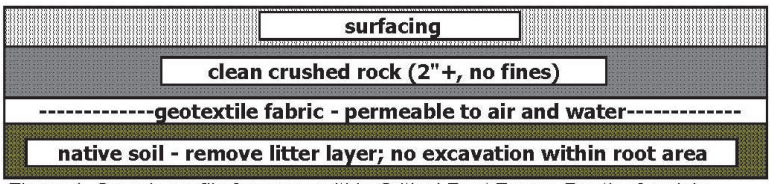


Figure 1. Sample profile for areas within Critical Root Zones. Depth of rock is dependent on grading. Technique based on best management practices.

During the site meeting, we discussed a variety of options to help avoid or minimize work being proposed within and directly adjacent to the tree grove, including: shifting street improvements as far to the south as possible; doing away with the proposed sidewalk along the north side of the road by installing a cross-walk east of the tree grove connecting to the existing sidewalk on the south side of the road; and, raising the grade of the proposed bicycle lane to avoid excavation beneath the existing sidewalk. These approaches are being explored by the City and design team. However, Oregon white oaks have good tolerance for development impacts[1] and from a tree protection perspective, adequate tree protection is possible based on the modified site plan using the tree protection specifications provided in the January 4, 2017 arborist report and the supplemental recommendations provided above. Nevertheless, the alternative approaches discussed during the site meeting, if feasible, could reduce the need for tree protection and provide protection of the understory vegetation.

Prior to the site meeting, J. Scott Emmens flagged the limits of proposed work in the rear of 12 building lots at 119 feet from the western property boundary based on the modified site plan. Tree #2 is the only tree with a crown overlapping a building lot. The crown radius of this 18-inch diameter oak measured 36-feet, but the tree is very one-sided with a strong but stable phototropic lean to the east. Because of its structure, the critical root zone of this tree is more accurately defined using an alternative, but widely accepted method, of one foot radius of tree protection for each inch of trunk diameter[2]. The modified site plan depicts the dripline for consistency with all other trees, but also depicts a radius based on one foot per inch diameter, which is the recommended tree protection zone. A line of protection fencing extending north to south at the rear of these 12 lots will exceed the recommended tree protection area of all trees adjacent to the building lots. Also, tree #25, a 22-inch diameter oak with a 25-foot crown radius overlaps the water quality tract between the road and building lots, but no work is proposed beneath the dripline and protection fencing can be installed at the dripline at a minimum. No impacts to these trees are proposed. Protection recommendations are consistent with Tree Protection Standard 2 in the January 4, 2017 arborist report, specifically:

- **Fencing.** Trees to remain on site shall be protected by installation of tree protection fencing to prevent injury to tree trunks or roots, or soil compaction within the root protection area, which generally coincides with tree driplines *(except for a radius equivalent to one foot of protection for each inch of trunk diameter for tree #2)*. Fences shall be chain link fencing on concrete blocks or orange plastic construction fencing on metal stakes. The project arborist shall determine the exact location and type of tree protection fencing. Trees located more than 30-feet from construction activity shall not require fencing.

Based on the proposed site plan modifications, 26 additional trees can be retained during site development, including all of the existing Oregon white oaks. The following table provides an update to Table 2 in the January 4, 2017 arborist report.

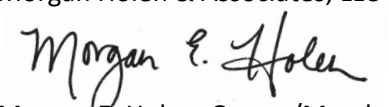
[1] N. Matheny & J.R. Clark. (1998) Trees and Development: A Technical Guide to Preservation of Trees During Land Development. International Society of Arboriculture. Page 176.
[2] K. Fite & E.T. Smiley. (2008) Best Management Practices: Managing Trees During Construction. International Society of Arboriculture. Page 12.

Revised Table 2. Count of Trees by Treatment Recommendation and General Condition Rating.

Treatment Recommendation	General Condition Rating				Total	Percent
	Dead	Poor	Fair	Good		
Retain	9	44	46	86	185	83%
Remove		10	20	6	36	17%
Total	**9**	**54**	**66**	**92**	**221**	**100%**
Percent	**4%**	**24%**	**30%**	**42%**		

The client may choose to accept or disregard the recommendations contained herein, or seek additional advice. Neither this author nor Morgan Holen & Associates, LLC, have assumed any responsibility for liability associated with the trees on or adjacent to this site. Thank you for choosing Morgan Holen & Associates, LLC, to provide consulting arborist services for the Kellogg Creek Subdivision project. Please contact us if you have questions or need any additional information or further assistance.

Thank you,
Morgan Holen & Associates, LLC



Morgan E. Holen, Owner/Member
ISA Board Certified Master Arborist, PN-6145B
ISA Tree Risk Assessment Qualified
Forest Biologist

Enclosures: MHA16090 Kellogg Creek Subdivision – Tree Data 11-18-16 Rev. 6-8-17

No.	Common Name	Species Name	DBH[1]	C-Rad[2]	Cond[3]	Comments	Treatment
1	Oregon white oak	*Quercus garryana*	18	16	G		Retain
2	Oregon white oak	*Quercus garryana*	18	38	F	phototropic lean, one-sided to east	Retain
3	Oregon white oak	*Quercus garryana*	22	24	F		Retain
4	Oregon white oak	*Quercus garryana*	28	26	G		Retain
5	Scouler's willow	*Salix scouleriana*	12	12	P		Remove
6	Oregon white oak	*Quercus garryana*	12	12	P		Retain
7	Oregon white oak	*Quercus garryana*	14	12	F		Retain
8	Oregon white oak	*Quercus garryana*	10	12	P		Retain
9	Oregon white oak	*Quercus garryana*	28	23	G		Retain
10	Oregon white oak	*Quercus garryana*	20	28	F		Retain
11	Oregon white oak	*Quercus garryana*	38	32	G		Retain
12	Oregon white oak	*Quercus garryana*	24	24	G		Retain
13	Oregon ash	*Fraxinus latifolia*	12	16	P		Retain
14	Oregon ash	*Fraxinus latifolia*	15	14	G		Retain
15	Oregon ash	*Fraxinus latifolia*	12	12	P		Retain
16	Oregon ash	*Fraxinus latifolia*	2x14	12	P		Retain
17	Oregon ash	*Fraxinus latifolia*	16	16	F		Retain
18	Oregon ash	*Fraxinus latifolia*	2x16	18	G		Retain
19	Oregon ash	*Fraxinus latifolia*	24	26	G		Retain
20	Oregon ash	*Fraxinus latifolia*	24	28	P		Retain
21	Oregon ash	*Fraxinus latifolia*	8	8	F		Retain
22	Oregon white oak	*Quercus garryana*	23	18	P		Retain
23	Oregon white oak	*Quercus garryana*	22	21	G		Retain
24	Oregon white oak	*Quercus garryana*	28	26	G	off-site	Retain
25	Oregon white oak	*Quercus garryana*	22	25	G		Retain
26	Oregon white oak	*Quercus garryana*	2x16	34	F		Retain
27	Oregon white oak	*Quercus garryana*	14	16	P	one-sided to north	Retain
28	Oregon white oak	*Quercus garryana*	22	30	G		Retain
29	Oregon ash	*Fraxinus latifolia*	18	15	P		Retain
30	Oregon white oak	*Quercus garryana*	12	12	P		Retain
31	Oregon white oak	*Quercus garryana*	22	22	G		Retain
32	Oregon white oak	*Quercus garryana*	21	22	G		Retain
33	Oregon white oak	*Quercus garryana*	18	20	G		Retain
34	Oregon white oak	*Quercus garryana*	18	15	G		Retain
35	Oregon white oak	*Quercus garryana*	2x20	32	G		Retain
36	Oregon white oak	*Quercus garryana*	36	30	G		Retain
37	Oregon white oak	*Quercus garryana*	26	21	G		Retain
38	Oregon white oak	*Quercus garryana*	29	24	G		Retain

No.	Common Name	Species Name	DBH[1]	C-Rad[2]	Cond[3]	Comments	Treatment
41	pin oak	*Quercus palustris*	18	19	F		Retain
42	pin oak	*Quercus palustris*	22	20	G		Retain
43	pin oak	*Quercus palustris*	21	23	G		Retain
44	pin oak	*Quercus palustris*	18	18	G		Retain
45	pin oak	*Quercus palustris*	18	19	G		Retain
46	pin oak	*Quercus palustris*	18	24	G		Retain
47	pin oak	*Quercus palustris*	21	18	G		Retain
48	plum	*Prunus* spp.	12	8	G		Retain
49	plum	*Prunus* spp.	12	8	G		Retain
50	Douglas-fir	*Pseudotsuga menziesii*	2x16	14	G		Retain
51	Norway maple	*Acer platanoides*	14	12	G	nuisance species	Retain
52	Norway maple	*Acer platanoides*	14	14	G	nuisance species	Retain
53	Norway maple	*Acer platanoides*	16	12	G	nuisance species	Retain
54	Norway maple	*Acer platanoides*	13	14	G	nuisance species	Retain
55	Norway maple	*Acer platanoides*	19	13	G	nuisance species	Retain
56	Norway maple	*Acer platanoides*	12	12	G	nuisance species	Retain
57	Norway maple	*Acer platanoides*	14	12	G	nuisance species	Retain
58	Norway maple	*Acer platanoides*	15	12	G	nuisance species	Retain
59	Norway maple	*Acer platanoides*	14	13	G	nuisance species	Retain
60	European white birch	*Betula pendula*	12	8	F	nuisance species	Retain
61	Japanese maple	*Acer palmatum*	12	12	G		Retain
62	European white birch	*Betula pendula*	14	14	F	nuisance species	Retain
63	Norway maple	*Acer platanoides*	19	16	G	nuisance species	Retain
64	Norway maple	*Acer platanoides*	12	11	G	nuisance species	Retain
65	Norway maple	*Acer platanoides*	15	15	G	nuisance species	Retain
66	Norway maple	*Acer platanoides*	20	16	G	nuisance species	Retain
67	Norway maple	*Acer platanoides*	17	14	G	nuisance species	Retain
68	Norway maple	*Acer platanoides*	15	13	G	nuisance species	Retain
69	Norway maple	*Acer platanoides*	14	14	G	nuisance species	Retain
70	Norway maple	*Acer platanoides*	17	15	G	nuisance species	Retain
71	Norway maple	*Acer platanoides*	14	15	G	nuisance species	Retain
72	European white birch	*Betula pendula*	10	10	G	nuisance species	Retain
73	pin oak	*Quercus palustris*	18	20	F		Retain
74	English hawthorn	*Crataegus monogyna*	10	8	F	nuisance species	Retain
75	red alder	*Alnus rubra*	16	15	F		Retain
76	red alder	*Alnus rubra*	3x12	18	F		Retain
77	Oregon ash	*Fraxinus latifolia*	12	15	G		Retain
78	red alder	*Alnus rubra*	12	15	G		Retain
79	red alder	*Alnus rubra*	12	13	P		Retain

No.	Common Name	Species Name	DBH[1]	C-Rad[2]	Cond[3]	Comments	Treatment
80	red alder	*Alnus rubra*	20	4	D	nesting cavities	Retain
81	black cottonwood	*Populus trichocarpa*	21	14	G		Retain
82	Oregon ash	*Fraxinus latifolia*	8	10	P		Retain
83	pin oak	*Quercus palustris*	18	12	F		Retain
84	Scouler's willow	*Salix scouleriana*	14	14	P		Retain
85	pin oak	*Quercus palustris*	8	8	P		Retain
86	Scouler's willow	*Salix scouleriana*	14		G		Remove
87	black cottonwood	*Populus trichocarpa*	2x14		G		Remove
88	black cottonwood	*Populus trichocarpa*	10		G		Remove
89	black cottonwood	*Populus trichocarpa*	12		G		Remove
90	Scouler's willow	*Salix scouleriana*	12		P		Remove
91	black cottonwood	*Populus trichocarpa*	10	11	F		Retain
92	black cottonwood	*Populus trichocarpa*	8	10	F		Retain
93	black cottonwood	*Populus trichocarpa*	14	13	G		Retain
94	black cottonwood	*Populus trichocarpa*	12	12	F		Retain
95	black cottonwood	*Populus trichocarpa*	12	12	G		Retain
96	black cottonwood	*Populus trichocarpa*	12	12	G		Retain
97	black cottonwood	*Populus trichocarpa*	8	10	P		Retain
98	black cottonwood	*Populus trichocarpa*	12	12	G		Retain
99	black cottonwood	*Populus trichocarpa*	12	12	G		Retain
100	Oregon white oak	*Quercus garryana*	17	18	F		Retain
101	Oregon white oak	*Quercus garryana*	28	28	F		Retain
102	Oregon ash	*Fraxinus latifolia*	6x8	14	P		Retain
103	Oregon white oak	*Quercus garryana*	16	13	G		Retain
104	English hawthorn	*Crataegus monogyna*	10		P	nuisance species	Remove
105	Oregon white oak	*Quercus garryana*	26	26	G		Retain
106	Oregon white oak	*Quercus garryana*	24	24	P	decay	Retain
107	Scouler's willow	*Salix scouleriana*	18	15	P	decay	Retain
108	Scouler's willow	*Salix scouleriana*	2x16	15	F		Retain
109	English hawthorn	*Crataegus monogyna*	10		P	nuisance species	Remove
110	English hawthorn	*Crataegus monogyna*	10		F	nuisance species	Remove
111	Scouler's willow	*Salix scouleriana*	5x10		P		Remove
112	Oregon white oak	*Quercus garryana*	10	14	P		Retain
113	Oregon white oak	*Quercus garryana*	12	14	P		Retain
114	Oregon white oak	*Quercus garryana*	24	24	G		Retain
115	Scouler's willow	*Salix scouleriana*	8x10		P		Remove
116	English hawthorn	*Crataegus monogyna*	14		F	nuisance species	Remove
117	black cottonwood	*Populus trichocarpa*	12	10	G		Retain
118	black cottonwood	*Populus trichocarpa*	12	10	G		Retain

No.	Common Name	Species Name	DBH[1]	C-Rad[2]	Cond[3]	Comments	Treatment
119	black cottonwood	*Populus trichocarpa*	2x8	12	G		Retain
120	black cottonwood	*Populus trichocarpa*	8	10	G		Retain
121	black cottonwood	*Populus trichocarpa*	10	11	G		Retain
122	black cottonwood	*Populus trichocarpa*	8	10	F		Retain
123	Scots pine	*Pinus sylvestris*	6	10	P		Retain
124	black cottonwood	*Populus trichocarpa*	2x10	10	G		Retain
125	Oregon ash	*Fraxinus latifolia*	6	10	G		Retain
126	Oregon ash	*Fraxinus latifolia*	8	10	G		Retain
127	sweet cherry	*Prunus avium*	10	14	D	nuisance species	Retain
128	Oregon ash	*Fraxinus latifolia*	8	8	G		Retain
129	Oregon ash	*Fraxinus latifolia*	8	8	G		Retain
130	Oregon ash	*Fraxinus latifolia*	6	8	G		Retain
131	Oregon ash	*Fraxinus latifolia*	6	8	G		Retain
132	Oregon ash	*Fraxinus latifolia*	8	8	F		Retain
133	Oregon ash	*Fraxinus latifolia*	8	10	F		Retain
134	Oregon ash	*Fraxinus latifolia*	10	10	F		Retain
135	English hawthorn	*Crataegus monogyna*	10	10	P	nuisance species	Retain
136	Oregon ash	*Fraxinus latifolia*	2x8	8	G		Retain
137	Oregon white oak	*Quercus garryana*	20	25	G		Retain
138	Oregon ash	*Fraxinus latifolia*	14	16	P		Retain
139	Oregon ash	*Fraxinus latifolia*	14	18	F		Retain
140	Oregon ash	*Fraxinus latifolia*	18	20	G		Retain
141	Oregon white oak	*Quercus garryana*	16	30	F		Retain
143	bigleaf maple	*Acer macrophyllum*	8	10	P		Retain
144	bigleaf maple	*Acer macrophyllum*	12	12	P	split trunk	Retain
145	Oregon white oak	*Quercus garryana*	2x14	22	G		Retain
146	Oregon ash	*Fraxinus latifolia*	14	12	G		Retain
147	Oregon ash	*Fraxinus latifolia*	16	12	P		Retain
148	Oregon ash	*Fraxinus latifolia*	10	12	G	off-site	Retain
149	Oregon ash	*Fraxinus latifolia*	10	12	F	off-site	Retain
150	Oregon white oak	*Quercus garryana*	48	27	G		Retain
151	deciduous	unknown	12	10	D		Retain
152	English hawthorn	*Crataegus monogyna*	8		P	nuisance species	Remove
153	red alder	*Alnus rubra*	12	10	D		Retain
154	red alder	*Alnus rubra*	14	12	D		Retain
155	red alder	*Alnus rubra*	2x10	8	P		Retain
156	red alder	*Alnus rubra*	12	12	P		Retain
157	red alder	*Alnus rubra*	14	12	F		Retain
158	red alder	*Alnus rubra*	16	12	P		Retain

No.	Common Name	Species Name	DBH[1]	C-Rad[2]	Cond[3]	Comments	Treatment
159	red alder	*Alnus rubra*	14	10	P		Retain
160	red alder	*Alnus rubra*	3x8	12	F		Retain
161	Scouler's willow	*Salix scouleriana*	14	4	D		Retain
162	Oregon ash	*Fraxinus latifolia*	10	10	F		Retain
163	English hawthorn	*Crataegus monogyna*	2x8	10	P	nuisance species	Retain
164	red alder	*Alnus rubra*	12	4	D		Retain
165	red alder	*Alnus rubra*	12	12	F		Retain
166	red alder	*Alnus rubra*	12	10	P		Retain
167	English hawthorn	*Crataegus monogyna*	8	8	G	nuisance species	Retain
168	red alder	*Alnus rubra*	18	20	P		Retain
169	red alder	*Alnus rubra*	12	4	D		Retain
170	red alder	*Alnus rubra*	12	12	P	decay	Retain
171	red alder	*Alnus rubra*	12	20	P	decay	Retain
172	red alder	*Alnus rubra*	10	8	P		Retain
173	red alder	*Alnus rubra*	12	4	D		Retain
174	red alder	*Alnus rubra*	11	12	F		Retain
175	Oregon ash	*Fraxinus latifolia*	8	10	F		Retain
176	red alder	*Alnus rubra*	12	14	F		Retain
177	red alder	*Alnus rubra*	10	10	F		Retain
178	red alder	*Alnus rubra*	8	8	P		Retain
179	red alder	*Alnus rubra*	2x10	8	P		Retain
180	red alder	*Alnus rubra*	10	12	P		Retain
181	red alder	*Alnus rubra*	14	14	F		Retain
182	red alder	*Alnus rubra*	10	12	F		Retain
183	red alder	*Alnus rubra*	10	12	P		Retain
184	red alder	*Alnus rubra*	2X14	18	F		Retain
185	red alder	*Alnus rubra*	18	18	P		Retain
186	Scouler's willow	*Salix scouleriana*	3x12	14	P		Retain
187	Scouler's willow	*Salix scouleriana*	2x8		P		Remove
188	Scouler's willow	*Salix scouleriana*	2x10		P		Remove
189	red alder	*Alnus rubra*	2x14	17	G		Retain
190	red alder	*Alnus rubra*	14	16	F		Retain
191	red alder	*Alnus rubra*	12	10	F		Retain
192	red alder	*Alnus rubra*	2x12	15	F		Retain
193	red alder	*Alnus rubra*	14	12	F		Retain
194	Oregon white oak	*Quercus garryana*	20	16	G		Retain
195	Oregon white oak	*Quercus garryana*	20	18	G		Retain
196	Oregon white oak	*Quercus garryana*	12	12	G		Retain
197	Oregon white oak	*Quercus garryana*	16	21	F		Retain

No.	Common Name	Species Name	DBH[1]	C-Rad[2]	Cond[3]	Comments	Treatment
198	Oregon white oak	*Quercus garryana*	8	12	P		Retain
199	Oregon white oak	*Quercus garryana*	23	35	G		Retain
200	Oregon white oak	*Quercus garryana*	23	31	G		Retain
201	red alder	*Alnus rubra*	12	10	P		Retain
202	red alder	*Alnus rubra*	12	10	F		Retain
203	red alder	*Alnus rubra*	2x10	10	F		Retain
204	black cottonwood	*Populus trichocarpa*	16		G		Remove
205	black cottonwood	*Populus trichocarpa*	2x18		G		Remove
206	Scouler's willow	*Salix scouleriana*	4x12		P		Remove
207	black cottonwood	*Populus trichocarpa*	16		F		Remove
208	black cottonwood	*Populus trichocarpa*	2x12		F		Remove
209	black cottonwood	*Populus trichocarpa*	9x10		F		Remove
210	black cottonwood	*Populus trichocarpa*	12		F		Remove
211	black cottonwood	*Populus trichocarpa*	12		F		Remove
212	black cottonwood	*Populus trichocarpa*	12		F		Remove
213	black cottonwood	*Populus trichocarpa*	12		F		Remove
214	black cottonwood	*Populus trichocarpa*	14		F		Remove
215	black cottonwood	*Populus trichocarpa*	16		F		Remove
216	black cottonwood	*Populus trichocarpa*	14		F		Remove
217	black cottonwood	*Populus trichocarpa*	10		F		Remove
218	black cottonwood	*Populus trichocarpa*	14		F		Remove
219	black cottonwood	*Populus trichocarpa*	3x6		F		Remove
220	black cottonwood	*Populus trichocarpa*	12		F		Remove
221	black cottonwood	*Populus trichocarpa*	14		F		Remove
222	black cottonwood	*Populus trichocarpa*	10		F		Remove
223	black cottonwood	*Populus trichocarpa*	2x16		F		Remove
225	English hawthorn	*Crataegus monogyna*	3x8		F	nuisance species	Remove

[1]**DBH** is tree diameter measured at 4.5-feet above ground level in inches; diameter for trees with codominant stems originating below 4.5-feet is reported as quantity of stems x size.

[2]**C-Rad** is the average crown radius measured in feet for trees planned for preservation.

[3]**Cond** is an arborist assigned rating to generally describe the condition of individual trees as follows-

D: Dead
P: Poor Condition
F: Fair Condition
G: Good Condition
E: Excellent Condition

GENERAL COMMENTS:

STEM DECAY IN MOST RED ALDER

ALDER BORDERING STREAM - UNDERMINED ROOTS ON STREAM SIDE

Natural Resource Review for the Proposed Kellogg Creek Subdivision in Milwaukie, Oregon

(Township 2 South, Range 2 East, Section 6AD,
Clackamas County, TL 600 and Portions of 700, 900, 901)

Prepared for

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PHS Project Number: 5975

April 6, 2017

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1.0 INTRODUCTION

The City of Milwaukie (the "City") has mapped Water Quality Resource (WQR) and Habitat Conservation Area (HCA) within the proposed Kellogg Creek Subdivision project site. Brownstone Development, Inc. (the "Applicant") seeks approval for the proposed development through a Type III General Discretionary Review. The following document demonstrates how the proposed project will be in compliance with the applicable development standards that are listed in the Natural Resources (NR) Zoning Code Section 19.402 of the City of Milwaukie Municipal Code (MMC). Pacific Habitat Services, Inc. (PHS) has prepared a Natural Resource Review in accordance with MMC Section 19.402 to support the land use application. The information necessary to process the application is provided in the following sections. Supporting information is included in Attachment A (Figures) and Attachment B (Wetland Delineation Report).

2.0 APPLICANT INFORMATION

2.1 Applicant

Brownstone Development, Inc.
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2.2 Applicant's Agent

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3.0 SITE INFORMATION

The following information is for the parcel which is the subject of this natural resource review.

Site Address: 13333 SE Rusk Road, Milwaukie, OR 97222

Zoning: Residential R-3 and R-10

Legal Description: Tax Lot (TL) 600 and portions of TL 700, 900, 901, Section 6AD 2S 2E (15.58 acres), Clackamas County

3.1 Site Description

The site is located southwest of Highway 224 (Pacific Highway), north of SE Kellogg Creek Drive, and north and west of SE Rusk Road. Mt. Scott Creek flows to the west along the northern edge of the study area, and the North Clackamas Park Milwaukie Center borders the western edge. The site is located within a residential area; undeveloped woodland is located immediately to the north and northwest of the study area, and the Turning Point Church is located in the southeast corner of the site at 13333 SE Rusk Road (Figures 1 and 2). The eastern half of the property, near the church, is relatively level; however, the western half descends abruptly to a lower woodland area. Site elevations range from approximately 80 feet National Geodetic Vertical Datum (NGVD) in the eastern half of the site, to approximately 66 feet NGVD in the lower reaches of the western half of the site. The site has not been subject to recent construction activities; however, it appears that the substrate throughout much of the central and eastern half of the site consists of fill material, up to more than 12 feet thick, likely associated with the construction of the church, over two decades ago.

On November 21, 2016, PHS identified and delineated one potential wetland area (Wetland A) and Mt. Scott Creek (south bank only), as well as six potentially artificially created wetland areas (Wetlands B through G). Descriptions of the on-site wetlands and non-wetland waters are provided below, and are further detailed in the Wetland Delineation Report (Attachment B). Figure 3 shows the existing site conditions.

Mt. Scott Creek, a tributary to Kellogg Creek and the Willamette River, is a perennial stream that generally flows to the west along the northern boundary of the study area. The stream banks are well defined and near vertical at the location of the OHW line. The plant community of the riparian area along the creek includes a deciduous overstory of big-leaf maple (*Acer macrophyllum*), Oregon white oak (*Quercus garryana*), Oregon ash (*Fraxinus latifolia*), and red alder (*Alnus rubra*); and a shrub and herbaceous understory composed of species such as snowberry (*Symphoricarpos albus*), Pacific ninebark (*Physocarpus capitatus*), Scouler's willow (*Salix scouleriana*), English hawthorn (*Crataegus monogyna*), Fuller's teasel (*Dipsacus fullonum*), and spreading bentgrass (*Agrostis stolonifera*). Mt. Scott Creek continues outside the project area to the north, west and east.

An approximately 0.70-acre (30,386 square feet) wetland (Wetland A) is located in the low-lying woodland area in the western half of the site, south of Mt. Scott Creek. The plant community within Wetland A is a combination of deciduous woodland bordered by open fields. Dominant species within the woodland include an overstory of Oregon ash and black cottonwood (*Populus balsamifera*), with a woody understory of Oregon ash, black cottonwood, red-osier dogwood (*Cornus alba*), snowberry, and Himalayan blackberry (*Rubus armeniacus*). The open fields include reed canarygrass (*Phalaris arundinacea*), creeping buttercup (*Ranunculus repens*), large-leaf avens (*Geum macrophyllum*), slender rush (*Juncus tenuis*), rough bluegrass (*Poa trivialis*), bitter dock (*Rumex obtusifolius*), and common dandelion (*Taraxacum officinale*).

The adjacent upland areas include Oregon ash, Himalayan blackberry, snowberry, English hawthorn, reed canarygrass, Fuller's teasel, large-leaf avens, bull thistle (*Cirsium vulgare*), fringed willowherb (*Epilobium ciliatum*), Dewey sedge (*Carex deweyana*), common selfheal (*Prunella vulgaris*), Western swordfern (*Polystichum munitum*), lentil vetch (*Vicia tetrasperma*), creeping buttercup, spreading bentgrass, field horsetail (*Equisetum arvense*), narrow-leaf goosefoot (*Chenopodium leptophyllum*), spotted cat's ear (*Hypochaeris radicata*), European centaury (*Centaurium erythraea*), wild carrot (*Daucus carota*), tansy ragwort (*Senecio jacobaea*), and colonial bentgrass (*Agrostis capillaris*).

In addition to Wetland A, six potentially artificially created wetlands (Wetlands B –G) are located in the central portion of the site. These wetlands generally consist of small, shallow, isolated depressions. Table 2 lists the area of each wetland.

Wetland	Area (square feet / acres)
B	905 / 0.02
C	176 / 0.004
D	172 / 0.004
E	998 / 0.02
F	301 / 0.007
G	666 / 0.02
Total	**3,218 / 0.07**

All six of these wetlands are similar in character. The plant communities in both the wetland and upland areas are primarily composed of weedy grasses and herbs; the wetland areas include reed canarygrass, spreading bentgrass, soft rush (*Juncus effusus*), spotted cat's ear, and oxeye daisy (*Chrysanthemum vulgare*); the adjacent upland areas include wild carrot, curly dock (*Rumex crispus*), colonial bentgrass, bluegrass (*Poa sp*.), common velvet grass (*Holcus lanatus*), tall fescue (*Schedonorus arundinaceus*), yellow glandweed (*Parentucellia viscosa*), and English plantain (*Plantago lanceolata*).

Hydrology within Wetlands B through G primarily consists of surface runoff and precipitation. As discussed in the *Subsurface Conditions* section of the geotechnical evaluation report (Appendix E of the Wetland Delineation Report), fill material in the central portion of the site was observed to be approximately 10 feet thick, and groundwater was not encountered in the test pits in the vicinity of these wetlands. Therefore, it is reasonable to assume that these wetlands are not hydrologically connected to the water table, and as such, are considered to be non-jurisdictional artificially created wetlands.

The wetland delineation report (Attachment B) was submitted to the Oregon Department of State Lands (DSL) for review and has received approval. On June 8, 2017, DSL conducted a site visit to verify the delineated wetland boundary. During the site visit, DSL took additional data and concluded that it concurred with PHS's delineated wetland boundary. A copy of the concurrence letter is included with this report (Attachment C).

4.0 PROJECT DESCRIPTION

The Kellogg Creek Subdivision will consist of the construction of a planned residential development with 92 dwelling units, associated parking, roads, utilities, landscaping, and four stormwater treatment facilities. Mt. Scott Creek (a perennial stream) and Wetland A (a Title 3 wetland) are both Primary Protected Water Features, as defined in the City's Natural Resources Code (MMC 19.402). As such, the proposed project is subject to discretionary review under MMC Subsections 19.402.8, 19.402.9, 19.402.11, 19.402.12, and 19.402.13I – J. This Natural Resource Review describes the

existing Water Quality Resource (WQR) and Habitat Conservation Area (HCA) on the site and demonstrates project compliance with the applicable sections of the municipal code.

This Natural Resource review includes an evaluation of the condition of the WQR on the site, an analysis of potential impacts from the proposed development on the WQR and the HCA, a mitigation plan to compensate for those impacts, and an HCA boundary verification and updated map.

5.0 EXISTING WQR AND HCA ON THE PROJECT SITE

Mt. Scott Creek and Wetland A are primary protected water features, and as described in Table 19.402.15, Determination of WQR Location in MMC Subsection 19.402.15, primary protected water features have an associated vegetated corridor of 50 to 200 feet wide depending on the slopes adjacent to the resource. The slopes adjacent to the south side of Mt. Scott Creek are less than 25 percent, and therefore, the associated vegetated corridor in this area is 50 feet wide. For the same reason, the vegetated corridor along the north, south and west sides of Wetland A are also 50 feet wide. However, the slopes along a short segment of vegetated corridor adjacent to the eastern edge of Wetland A, vary in steepness from less than to greater than 25 percent near the fill slope; therefore, in this area, the width of the vegetated corridor ranges from 50 to 130 feet. The extent of the vegetated corridor on the project site, based on the surveyed boundaries of the wetland and waterway is depicted on Figure 4. The total area of WQR on the site (not including the stream and wetland) is approximately 103,187 sf (2.37 acres). Section 6.3 MMC19.402.11.C describes the condition of the vegetated corridor.

Mt. Scott Creek and Wetland A also have associated HCAs. The Milwaukie Interactive Zoning Map (http://milwaukie.maps.arcgis.com/apps/webappviewer/index.html?id=48bfb9fc517446f9af954d4d1c4413af) shows HCAs extending onto the northern and western portions of the site. The City's GIS-mapped HCA is depicted on Figure 4. The total area of HCA on the project site is approximately 175,791 sf (4.04 acres). This HCA, and the WQR noted above, are used in the impact evaluation and alternatives analysis below.

6.0 COMPLIANCE WITH MILWAUKIE MUNICIPAL CODE

6.1 MMC 19.402.8 – Activities Requiring Type III Review

Within either WQRs or HCAs, the following activities are subject to Type III review and approval by the Planning Commission under Section 19.1006, unless they are otherwise exempt or permitted as a Type I or II activity.

B. The activities listed below shall be subject to the review criteria for partitions and subdivisions provided in Subsections 19.402.13.H and I, respectively:

2. The subdividing of land containing a WQR or HCA.

The proposed project site contains both WQR and HCA, and the project will require the subdividing of land.

6.2 MMC 19.402.9 – Construction Management Plans

B. Construction management plans shall provide the following information:

1. ***Description of work to be done.***
2. ***Scaled site plan showing a demarcation of WQRs and HCAs and the location of excavation areas for building foundations, utilities, stormwater facilities, etc.***
3. ***Location of site access and egress that construction equipment will use.***
4. ***Equipment and material stockpile areas.***
5. ***Erosion and sediment control measures.***

As stated above in Section 4, the project is the construction of a planned residential development with 92 dwelling units, associated parking, roads, utilities, landscaping, four stormwater treatment facilities, and balanced cut/fill in the floodplain. Site preparation will include grubbing and grading. A demarcation of WQRs and HCAs and the location of excavation areas for building foundations, utilities, stormwater facilities, etc. are shown on Figure 5. Figures 5A and 5B show alternative site plans, which are discussed below in Section 6.4. The site access and egress locations that construction equipment will use, as well as equipment and material stockpile/staging areas, are shown on the Construction Management Plan (Figure 6). As shown on Figure 6, erosion control fencing will be placed at the limits of disturbance. This fencing will act as a physical barrier and prevent the encroachment of machinery into portions of the WQR and HCA areas that are to remain undisturbed.

The following components of the erosion control plan will protect against erosion, prevent the transport of sediments offsite and into the remaining WQR and HCA areas, and ensure that impacts are minimized. The proposed project will have no detrimental impact on resources or functional values of WQR and HCA areas designated to be left undisturbed. The use of construction fencing and erosion and sediment control barriers at the limits of work, as well as other methods described below will prevent direct physical impacts to nearby areas of WQR and HCA to remain undisturbed.

- Prior to the start of any earth-moving activities, construction fencing will be installed at the limits of the work area, which in this case will be along the outer edge of the proposed development. Sediment fence will be installed inside the construction fencing.
- All base erosion and sediment prevention control measures (including inlet protection, perimeter sediment control, gravel construction entrances, etc.) will be in place, functional, and approved in an initial inspection prior to the start of any construction activities.
- Construction entrances will be installed prior to construction and maintained for the duration of the project.
- Active inlets to stormwater systems will be protected with approved inlet protection measures. All inlet protection measures will be regularly inspected and maintained as necessary. These inlet protection measures will prevent runoff from reaching discharge points.
- Exposed cut and fill areas will be stabilized through the use of temporary seeding and mulching or other appropriate measures.
- Seed used for temporary or permanent seeding will be per specifications.

- Slopes receiving temporary or permanent seeding will have the surface roughened to improve seed bedding and reduce run-off velocities.
- Stockpiled soil or strippings will be placed in an approved, stable location and configuration. During "wet weather" periods, stockpiles will be covered with straw mulch. Sediment fence will be placed around the perimeter of all stockpiles.
- Appropriate dust control measures, including the application of a fine spray of water, straw mulching or other approved measures, will be used in areas subject to wind erosion. Any saturated materials hauled off site will be transported in watertight trucks to prevent the spillage of sediment or sediment-laden water.

The proposed project will have no detrimental impact on resources or functional values of WQR and HCA areas designated to be left undisturbed. The use of construction fencing and erosion and sediment control barriers at the limits of work, as well as other methods described in the Construction Management Plan will prevent direct physical impacts to nearby areas of WQR and HCA to remain undisturbed.

6. Measures to protect trees and other vegetation located within the potentially affected WQR and/or HCA. A root protection zone shall be established around each tree in the WRQ or HCA that is adjacent to any approved work area. The root protection zone shall extend from the trunk to the outer edge of the tree's canopy, or as close to the outer edge of the canopy as is practicable for the approved project. The perimeter of the root protection zone shall be flagged, fenced, or otherwise marked and shall remain undisturbed. Material storage and construction access is prohibited within the perimeter. The root protection zone shall be maintained until construction is complete.

The Tree Removal and Protection Plan is shown on Figure 7 and the accompanying Tree Survey and Removal Table is shown on Figure 7A. Tree protection will be as recommended by a qualified arborist or, at minimum, will include the following protective measures:

- All trees to be protected on the project site and adjacent to the site shall be clearly identified and protective fencing will be installed at the perimeter of the dripline (to avoid soil compaction, removal of vegetation, and/or tree branches) prior to any grubbing, clearing, grading, parking, preparation or storage of materials or machinery, or other construction activity on the site. The fencing will be secured and consist of a material that cannot be easily moved, removed, or broken during construction activities
- No machinery repair, cleaning or fueling will be performed within 10 feet of the dripline of any of trees identified for protection;
- There will be no digging of trenches for placement of public or private utilities or other structure within the critical root zones of trees to be protected;
- If required by the City, a consulting arborist or other qualified biologist will be present during construction or grading activities that may affect the dripline of the trees to be protected.

6.3 MMC 19.402.11 – Development Standards

A. Protection of Natural Resources During Site Development

During development of any site containing a designated natural resource, the following standards shall apply:

1. ***Work areas shall be marked to reduce potential damage to the WQR and/orHCA.***

In addition to erosion and sediment control measures, previously discussed in the Construction Management section, work areas shall be marked to reduce potential damage to the WQR and/or HCA.

2. ***Trees in WQRs or HCAs shall not be used as anchors for stabilizing construction equipment.***

No trees within the WQR or HCA will be used as anchors for stabilizing construction equipment.

3. ***Native soils disturbed during the development shall be conserved on the property.***

Native soils disturbed during development will be conserved on the property.

4. ***An erosion and sediment control plan is required and shall be prepared in compliance with requirements set forth in the City's Public Works Standards.***

The erosion and sediment control plan is shown on the Construction Management Plan (Figure 6), was discussed in the previous section, Construction Management Plan, and was prepared in compliance with requirements set forth in the City's Public Works Standards.

5. ***Site preparation and construction practices shall be followed that prevent drainage of hazardous materials or erosion, pollution, or sedimentation to any WQR adjacent to the project area.***

As discussed above in the Construction Management Plans section, Best Management Practices (BMPs) will be implemented during site preparation and construction in order to prevent drainage of hazardous materials or erosion, pollution, or sedimentation to any WQR adjacent to the project area.

6. ***Stormwater flows that result from proposed development within and to natural drainage courses shall not exceed predevelopment flows.***

The primary purpose of the stormwater management plan (Figure 8) is to effectively treat the stormwater runoff from the new development while maintaining the same hydrologic input as is currently present at pre-development/pre-Lewis and Clark conditions. Key components of the stormwater management plan will include treating and detaining stormwater in four vegetated stormwater treatment facilities/ponds (A – D). Treated stormwater from facilities A, B and C will be discharged with the use of flow spreaders; and storm facility D will connect back into the existing storm sewer system in SE Kellogg Creek Drive.

7. ***Prior to construction, the WQR and/or HCA that is to remain undeveloped shall be flagged, fenced, or otherwise marked and shall remain undisturbed. Such markings shall be maintained until construction is complete.***

As discussed above in the Construction Management Plans section, prior to construction, construction fencing, sediment fencing, and other erosion and sediment control barriers will be installed at the limits of work, in order to prevent impacts to nearby areas of WQR and HCA to remain undisturbed.

8. The construction phase of the development shall be done in such a manner as to safeguard the resource portions of the site that have not been approved for development.

As discussed above in the Construction Management Plans section, BMPs will be implemented and erosion and sediment control methods will be in place prior to construction in such a manner as to safeguard the resource portions of the site that have not been approved for development.

9. Where practicable, lights shall be placed so that they do not shine directly into any WQR and/or HCA location. The type, size, and intensity of lighting shall be selected so that impacts to habitat functions are minimized.

Where practicable, lights will be placed so that they do not shine directly into the WQR and/or HCA. The type, size, and intensity of lighting will be selected so that impacts to habitat functions are minimized.

10. All work on the property shall conform to a construction management plan prepared according to Subsection 19.402.9.

All work on the property will conform to a construction management plan, as previously discussed, prepared according to Subsection 19.402.9.

B. General Standards for Required Mitigation

Where mitigation is required by Section 19.402 for disturbance to WQRs and/or HCAs, the following general standards apply:

1. Disturbance

a. Designated natural resources that are affected by temporary disturbances shall be restored, and those affected by permanent disturbances shall be mitigated, in accordance with the standards provided in Subsection 19.402.11.C for WQRs and Subsection 19.402.D.2 for HCAs, as applicable.

Designated natural resources that are affected by temporary disturbances will be restored. The proposed site plan will unavoidably result in permanent disturbances to both WQR and HCA areas, and as such, the areas of permanent disturbances will be mitigated in accordance with the standards provided in Subsections 19.402.11.C and 19.402.D.2, respectively. See Figure 9 - Mitigation Plan.

2. Required Plants

Unless specified elsewhere in Section 19.402, all trees, shrubs, and ground cover planted as mitigation shall be native plants, as identified on the Milwaukie Native Plant List. Applicants are encouraged to choose particular native species that are appropriately suited for the specific conditions of the planting site; e.g., shade, soil type, moisture, topography, etc.

All proposed mitigation plants will consist of native species as identified on the Milwaukie Native Plant List. Plants will be chosen for: 1) their suitability to the soils and hydrology of the site, 2) their natural occurrence in the area, 3) their wildlife habitat enhancement value, and 4) their local availability. The table on Figure 9A shows selected species to be planted.

3. Plant Size

Replacement trees shall average at least a ½-in caliper – measured at 6 in above the ground level for field-grown trees or above the soil line for container-grown trees – unless they are oak or madrone, which may be 1-gallon size. Shrubs shall be at least 1-gallon size and 12 in high.

4. Plant Spacing

Trees shall be planted between 8 and 12 ft on center. Shrubs shall be planted between 4 and 5 ft on center or clustered in single-species groups of no more than 4 plants, with each cluster planted between 8 and 10 ft on center. When planting near existing trees, the dripline of the existing tree shall be the starting point for plant spacing measurements.

5. Plant Diversity

Shrubs shall consist of at least 2 different species, If 10 trees or more are planted, then no more than 50% of the trees shall be of the same genus.

Mitigation plant size, spacing and diversity will be in accordance with the requirements stated in items 3 – 5, above (See table on Figure 9A).

6. Location of Mitigation Area

a. On-Site Mitigation

All mitigation vegetation shall be planted on the applicant's site within the designated natural resource that is disturbed, or in an area contiguous to the resource area; however, if the vegetation is planted outside of the resource area, the applicant shall preserve the contiguous planting area by executing a deed restriction such as a restrictive covenant.

All mitigation vegetation will be planted on-site and within the designated natural resource that is disturbed or in an area contiguous to the resource area. The mitigation areas proposed for planting are shown in Figure 9 Mitigation Plan.

In addition to required mitigation, the project will provide enhancement to three areas on the site, one of which is currently mapped as a natural resource area and two of which are partially mapped as natural resource areas. Those areas are shown as Additional Enhancement Areas A, B and C on Figure 9 and planting lists for the areas are shown on Figure 9A. Enhancement Area A is approximately 0.34 acre and is located north of Mt. Scott Creek. Enhancement Areas B and C are approximately 0.40 acre and 0.35 acre, respectively, and are located south of Mt. Scott Creek in the northern portion of the site. These three areas will be enhanced through the removal of man-made debris, removal of invasive plant species and planting with native trees, shrubs and seed mix. Those plantings will improve the native plant community, vegetation structure and diversity – all of which will improve the overall quality of wildlife habitat on the site.

7. Invasive Vegetation

Invasive nonnative or noxious vegetation shall be removed within the mitigation area prior to planting, including, but not limited to, species identified as nuisance plants on the Milwaukie Native Plant List.

Invasive nonnative or noxious vegetation, and nuisance plants will be removed from the mitigation area prior to planting.

8. Ground Cover

Bare or open soil areas remaining after the required tree and shrub plantings shall be planted or seeded to 10% surface coverage with grasses or other ground cover species identified as native on the Milwaukie Native Plant List. Revegetation shall occur during the next planting season following the site disturbance.

Following the installation of the required tree and shrub plantings, remaining bare/open soil areas will be planted or seeded to 100% surface coverage with a native grass seed mix or other ground cover species during the next planting season following the site disturbance.

9. Tree and Shrub Survival

A minimum of 80% of the trees and shrubs planted shall remain alive on the second anniversary of the date that the mitigation planting is completed.

a. Required Practices

To enhance survival of the mitigation plantings, the following practices are required:

(1) Mulch new plantings to a minimum of 3-in depth and 18-in diameter to retain moisture and discourage weed growth.

(2) Remove or control nonnative or noxious vegetation throughout the maintenance period.

b. Recommended Practices

To enhance survival of tree replacement and vegetation plantings, the following practiced are recommended:

(1) Plant bare root trees between December 1 and April 15; plant potted plants between October 15 and April 30.

(2) Use plant sleeves or fencing to protect trees and shrubs against wildlife browsing and the resulting damage to plants.

(3) Water new plantings at a rate of 1 in per week between June 15 and October 15 for the first two years following planting.

In order to meet the minimum of 80% tree and shrub survival of the mitigation plantings on the second anniversary of the date that the mitigation planting is completed, the applicant will following the "Required" and "Recommended" planting and maintenance practices, as described above in Items a and b.

c. Monitoring and Reporting

Monitoring of the mitigation site is the ongoing responsibility of the property owner. Plants that die shall be replaced in kind as needed to ensure the minimum 80% survival rate. The Planning Director may require a maintenance bond to cover the continued heath and survival of all plantings. A maintenance bond shall not be required for land use applications related to owner-occupied single-family residential projects. An annual report on the survival rate of all plantings shall be submitted for 2 years.

An annual monitoring site visit will be conducted and a report will be prepared and submitted to the City for two years after planting. The report will allow an analysis of the survival rate of the mitigation plantings and what corrective measures, if any, are needed to ensure the minimum 80% required survival rate for woody plantings at the end of the second monitoring season.

10. Light Impacts

Where practicable, lights shall be placed so that they do not shine directly into any WQR and/or HCA location. The type, size, and intensity of lighting shall be selected so that impacts to habitat functions are minimized.

Where practicable, lights will be placed so that they do not shine directly into the WQR and/or HCA. The type, size, and intensity of lighting will be selected so that impacts to habitat functions are minimized.

C. Mitigation Requirements for Disturbance within WQRs

1. The requirements for mitigation vary depending on the existing condition of the WQR on the project site at the time of application. The existing condition of the WQR shall be assessed in accordance with the categories established in Table 19.402.11.C.

Plant communities within the vegetated corridor include a mixture of wooded and non-wooded communities. PHS identified two separate plant communities within the on-site vegetated corridor based on the predominance of woody species in the community. South of Mt. Scott Creek, and along the western property boundary to the north and south of the west end of Wetland A, the vegetated corridor has a well-developed forest canopy; while along the eastern and southern edges of Wetland A, the vegetated corridor has only a few scattered trees. PHS took seven sample points to characterize the plant communities; two along the south side of the creek, two along the northeast side of Wetland A, one along the south side of Wetland A, and two near the western property boundary to the north and south of Wetland A. A brief description and an evaluation of the condition of each of the communities are provided below (See Figure 4 for location of sample points).

South of Mt. Scott Creek

The WQR south of Mt. Scott Creek contains a moderately dense canopy predominantly composed of red alder (*Alnus rubra*), Oregon white oak (*Quercus garryana*), black cotton wood *(Populus balsamifera*), and big-leaf maple (*Acer macrophyllum*). Common species in the understory include English hawthorn (*Crataegus monogyna*), snowberry (*Symphoricarpos alba*), Pacific willow (*Salix lasiandra*), Scouler's willow (*Salix scouleriana*), Pacific ninebark (*Physocarpus capitatus*), red-osier dogwood (*Cornus alba*), clustered rose (*Rosa pisocarpa*), twinberry honeysuckle (*Lonicera involucrata*), Himalayan blackberry (*Rubus armenicacus*), and beaked hazel (*Corylus cornuta*). The groundcover contains a diverse mixture of native and non-native species, including Pacific dewberry (*Rubus ursinus*), Fuller's teasel (*Dipsacus sylvestris*), Waton's willow-herb (*Epilobium watsonii*), nipplewort (*Lapsana communis*), common velvetgrass (*Holcus lanatus*), colonial bentgrass (*Agrostis capillaris*), fringecup (*Tellima grandiflora*), brome (*Bromus sp*.), and Western swordfern (*Polystichum munitum*). Tables 1 and 2 summarize the species composition at two sample points within the plant community.

Table 1. Plant Community South of Mt. Scott, Characterized by Sample Point 1

Botanical Name	Common Name	♦Cover (%)
Trees		**50**
Alnus rubra	Red alder	30
Fraxinus latifolia	Oregon ash	5
Salix scouleriana	Scouler's willow	7
Salix lasiandra	Pacific willow	2
Acer macrophyllum	Big-leaf maple	1
Crataegus monogyna	English hawthorn	10
Shrubs and Saplings		**60**
Populus balsamifera	Black cottonwood	5
Symporicarpos albus	Common snowberry	5
Rosa pisocarpa	Clustered rose	13
Oregon white oak	Quercus garryana	10
*Rubus armeniacus***	Himalayan blackberry	2
Physocarpus capitatus	Pacific ninebark	15
Crataegus monogyna	English hawthorn	5
Corylus cornuta	Beaked hazelnut	3

Botanical Name	Common Name	♦Cover (%)
Cornus alba	Red-osier dogwood	2
Groundcover		**55**
Rubus ursinus	California dewberry	5
*Dipsacus sylvestris***	Fuller's teasel	25
Epilobium watsonii	Watson's willow-herb	30
*Lapsana communis***	Nipplewort	10
Holcus lanatus	Common velvetgrass	5
Agrostis capillaris	Colonial bentgrass	20
Tellima grandiflora	Fringecup	2
Bromus sp.	Common brome	3

Invasive species or noxious weed (Oregon Dept. of Agriculture (ODA))
****Nuisance Plant List (Milwaukie Plant List/Portland Plant List)*** ♦***Absolute Percent Cover***

Table 2. Plant Community South of Mt. Scott, Characterized by Sample Point 2

Botanical Name	Common Name	♦Cover (%)
Trees		**60**
Alnus rubra	Red alder	20
Quercus garyana	Oregon white oak	40
Salix scouleriana	Scouler's willow	5
Populus balsamifera	Black cottonwood	10
Acer macrophyllum	Big-leaf maple	5
Shrubs and Saplings		**80**
Lonicera involucrate	Twinberry honeysuckle	2
Symporicarpos albus	Common snowberry	30
Rosa pisocarpa	Clustered rose	5
Oregon white oak	Quercus garryana	5
Populus balsamifera	Black cottonwood	5
Physocarpus capitatus	Pacific ninebark	10
Crataegus monogyna	English hawthorn	5
Corylus cornuta	Beaked hazelnut	3
Cornus alba	Red-osier dogwood	2
Groundcover		**35**
Rubus ursinus	California dewberry	5
*Dipsacus sylvestris***	Fuller's teasel	2
Polystichum munitum	Western swordfern	3
*Lapsana communis***	Nipplewort	3
Holcus lanatus	Common velvetgrass	3
Agrostis capillaris	Colonial bentgrass	10
Tellima grandiflora	Fringecup	5
Bromus sp.	Common brome	22

Invasive species or noxious weed (Oregon Dept. of Agriculture (ODA))
****Nuisance Plant List (Milwaukie Plant List/Portland Plant List)*** ♦***Absolute Percent Cover***

The plant community south of Mt. Scott Creek has a moderately dense tree canopy with coverage that varies from 50 to 60 percent. Canopy coverage across the entire plant community exceeds 50 percent. The combined tree, shrub and groundcover layers provide coverage that exceeds 80 percent. As such, the existing condition of the WQR south of Mt. Scott Creek meets the definition of a Class A ("Good") WQR, as defined in Table 19.402.11.C of the municipal code.

Northeast of Wetland A

A few scattered trees are present within the vegetated corridor northeast of Wetland A; however, the plant community is this area generally lacks a canopy layer and is predominantly composed of reed canarygrass (*Phalaris arundinacea*) and other grasses and various groundcover. Tables 3 and 4 summarize the species composition within the plant community east of Wetland A.

Table 3. Plant Community Northeast of Wetland A, Characterized by Sample Point 3

Botanical Name	Common Name	♦Cover (%)
Trees		**20**
Salix scouleriana	Scouler's willow	20
Crataegus monogyna	English hawthorn	20
Fraxinus latifolia	Oregon ash	5
Populus balsamifera	Black cottonwood	5
Shrubs and Saplings		**40**
Salix scouleriana	Scouler's willow	20
Rosa pisocarpa	Clustered rose	10
Crataegus monogyna	English hawthorn	20
Corylus cornuta	Beaked hazelnut	5
*Rubus armeniacus****	Himalayan blackberry	5
Groundcover		**90**
*Phalaris arundinacea****	Reed canarygrass	60
*Dipsacus sylvestris****	Fuller's teasel	40
*Tanacetum vulgare****	Common tansy	15
Epilobium watsonii	Watson's willow-herb	15
Cirsium arvense	Canada thistle	5

Invasive species or noxious weed (Oregon Dept. of Agriculture (ODA))
****Nuisance Plant List (Milwaukie Plant List/Portland Plant List)***
♦*Absolute Percent Cover*

Table 4. Plant Community Northeast of Wetland A, Characterized by Sample Point 4

Botanical Name	Common Name	♦Cover (%)
Trees		**5**
Acer macrophyllum	Big-leaf maple	5
Shrubs and Saplings		**10**
Acer macrophyllum	Big-leaf maple	10
Rosa pisocarpa	Clustered rose	10
*Rubus armeniacus****	Himalayan blackberry	5
Groundcover		**100**
*Phalaris arundinacea****	Reed canarygrass	100

*Dipsacus sylvestris***	Fuller's teasel	15

Invasive species or noxious weed (Oregon Dept. of Agriculture (ODA))
****Nuisance Plant List (Milwaukie Plant List/Portland Plant List)*** ♦***Absolute Percent Cover***

As described above and shown by Sample Points 3 and 4, the plant community northeast of Wetland A has little to no tree canopy coverage. The combined tree, shrub and groundcover layers provide coverage that exceeds 80 percent; however, tree canopy coverage is less than 25 percent. Therefore, the existing condition of the WQR east of Wetland A meets the definition of a Class C ("Poor") WQR, as defined in Table 19.402.11.C of the municipal code.

South of Wetland A

Similar to the vegetated corridor along the northeast side of Wetland A, the area to the south of Wetland A also has a few scattered trees present. The plant community south of Wetland A also generally lacks a canopy layer and is primarily composed of reed canarygrass and a few other species of grasses and various groundcover. Table 5 summarizes the species composition within the plant community south of Wetland A.

Table 5. Plant Community South of Wetland A, Characterized by Sample Point5

Botanical Name	Common Name	♦Cover (%)
Trees		**5**
Crataegus monogyna	English hawthorn	5
Shrubs and Saplings		**10**
Quercus garyana	Oregon white oak	10
*Rubus laciniatus***	Cut-leaf blackberry	5
*Rubus armeniacus****	Himalayan blackberry	10
Groundcover		**100**
*Phalaris arundinacea***	Reed canarygrass	90
*Dipsacus sylvestris***	Fuller's teasel	40
Epilobium watsonii	Watson's willow-herb	10
*Cirsium arvense****	Canada thistle	10

Invasive species or noxious weed (Oregon Dept. of Agriculture (ODA))
****Nuisance Plant List (Milwaukie Plant List/Portland Plant List)*** ♦***Absolute Percent Cover***

As described above and shown by Sample Point 5, the plant community south of Wetland A has almost no tree canopy coverage. The combined tree, shrub and groundcover layers provide coverage that exceeds 80 percent; however, tree canopy coverage is less than 25 percent. Therefore, the existing condition of the WQR south of Wetland A meets the definition of a Class C ("Poor") WQR, as defined in Table 19.402.11.C of the municipal code.

West of Wetland A

The WQR west of Wetland A contains a dense canopy predominantly composed of Oregon ash and Oregon white oak. Common species in the understory include English hawthorn, snowberry, Himalayan blackberry, bald-hip rose (*Rosa gymnocarpa*), and clustered rose. The groundcover contains a diverse mixture of native and non-native species, including Pacific dewberry, English ivy (*Hedera helix*), Fuller's teasel, Waton's willow-herb, nipplewort, Western swordfern, big-leaf avens

(*Geum macrophyllum*), and common dandelion (*Taraxacum officinale*). Tables 6 and 7 summarize the species composition at two sample points within the plant community.

Table 6. Plant Community West of Wetland A. Characterized by Sample Point 6

Botanical Name	Common Name	♦Cover (%)
Trees		**90**
Fraxinus latifolia	Oregon ash	25
Quercus garyana	Oregon white oak	30
Shrubs and Saplings		**40**
Symporicarpos albus	Common snowberry	50
Rubus armeniacus ***	Himalayan blackberry	10
Crataegus monogyna	English hawthorn	15
Groundcover		**55**
Rubus ursinus	California dewberry	15
Geum macrophyllum	Big-leaf avens	20
Epilobium watsonii	Watson's willow-herb	5
*Lapsana communis***	Nipplewort	35
Taraxacum officinale	Common dandelion	15
Polystichum munitum	Western swordfern	5
*Hedera helix***	English ivy	5

Invasive species or noxious weed (Oregon Dept. of Agriculture (ODA))
****Nuisance Plant List (Milwaukie Plant List/Portland Plant List)*** ♦***Absolute Percent Cover***

Table 7. Plant Community West of Wetland A, Characterized by Sample 7

Botanical Name	Common Name	♦Cover (%)
Trees		**90**
Fraxinus latifolia	Oregon ash	10
Quercus garyana	Oregon white oak	5
Shrubs and Saplings		**50**
Symporicarpos albus	Common snowberry	50
Rosa gymnocarpa	Bald-hip rose	10
Rosa pisocarpa	Clustered rose	10
Crataegus monogyna	English hawthorn	40
Groundcover		**60**
Rubus ursinus	California dewberry	60
Geum macrophyllum	Big-leaf avens	40
Epilobium watsonii	Watson's willow-herb	10
*Dipsacus sylvestris***	Fuller's teasel	20
Polystichum munitum	Western swordfern	15

Invasive species or noxious weed (Oregon Dept. of Agriculture (ODA))
****Nuisance Plant List (Milwaukie Plant List/Portland Plant List)*** ♦***Absolute Percent Cover***

The plant community west of Wetland A has a dense tree canopy averaging 90 percent. Canopy coverage across the entire plant community exceeds 50 percent. The combined tree, shrub and groundcover layers provide coverage that exceeds 80 percent. As such, the existing condition of the WQR west of Wetland A meets the definition of a Class A ("Good") WQR, as defined in Table 19.402.11.C of the municipal code.

6.4 MMC 19.402.12 - General Discretionary Review

A. Impact Evaluation and Alternatives Analysis

An impact evaluation and alternatives analysis is required to determine compliance with the approval criteria for general discretionary review and to evaluate development alternatives for a particular property. A report presenting this evaluation and analysis shall be prepared and signed by a knowledgeable and qualified natural resource professional, such as a wildlife biologist, botanist, or hydrologist. At the Planning Director's discretion, the requirement to provide such a report may be waived for small projects that trigger discretionary review but can be evaluated without professional assistance.

The alternatives shall be evaluated on the basis of their impact on WQRs and HCAs, the ecological functions provided by the resource on the property, and off-site impacts within the subwatershed (6th Field Hydrologic Unit Code) where the property is located. The evaluation and analysis shall include the following:

1. Identification of the ecological functions of riparian habitat found on the property, as described in Subsection 19.402.1.C.2.

Subsection 19.402.1.C.2 of the MMC identifies seven functions and values that contribute to water quality and to fish and wildlife habitat in urban streamside areas. Descriptions of the functions and values provided by the riparian habitat on the project site are provided below.

Vegetated corridors to separate protected water features from development – With exception of the southeast corner of the site, at the location of the church, the site is undeveloped. The vegetated buffer south of Mt. Scott Creek provides a buffer that separates this existing development in the southeast corner of the site from the primary protected water features. The moderately dense tree cover and the dense shrub and herbaceous vegetation along the south side of the creek provide wildlife habitat and water quality benefits to the stream.

Microclimate and shade – Trees within the WQR provide shade to the stream and help to regulate the microclimate within the riparian corridor.

Streamflow moderation and water storage – The floodplain on the south side of Mt. Scott Creek is vegetated with a mixture of trees, shrubs and herbaceous vegetation. During high flow events, vegetation within the floodplain helps to slow floodwaters and reduce downstream flooding. Although much of the floodplain south of the creek predominantly consists of non-woody vegetation, the stream gradient within the site is relatively gradual, and therefore, the riparian corridor within the project area provides limited streamflow moderation and water storage functions.

Water filtration, infiltration, and natural purification – Vegetation within the riparian corridor along Mt. Scott Creek slows runoff from adjacent areas and filters sediments and other pollutants from the runoff before it reaches the stream. By slowing the runoff, the vegetation also increases the potential for water to infiltrate into the soil before reaching the stream. However, the predominantly clay loam soils within the project area reduce the ability of the water to infiltrate into the soil.

Bank stabilization and sediment and pollution control – Streambanks within the project area are generally well-vegetated with trees, shrubs and herbaceous vegetation. This vegetation helps to stabilize the banks, and no evidence of active bank erosion within the project site was observed.

Large wood recruitment and retention and natural channel dynamics – Within the project area, trees occur on both the north and south sides of Mt. Scott Creek. These trees have the potential to become large woody material. When these trees fall into the stream, they have the potential to affect the natural channel dynamics. However, because of the relatively small size of the stream, any large woody material that falls into the stream is likely to remain on the project site rather than be carried downstream.

Organic material resources –Vegetation within the riparian corridor provides organic material that serves as the basis for the aquatic food web. Under the existing conditions, the riparian corridor within the project site is vegetated with a mixture of trees, shrubs, and herbaceous species, which contribute organic materials to the stream.

2. ***An inventory of vegetation, sufficient to categorize the existing condition of the WQR per Table 19.402.11.C, including the percentage of ground and canopy coverage materials within the WQR.***

An inventory of vegetation, sufficient to categorize the existing condition of the WQR per Table 19.402.11.C, including the percentage of ground and canopy coverage materials within the WQR, was provided earlier in this document in Subsection 19.402.11.C "Mitigation Requirements for Disturbance within WQRs" of the Development Standards.

3. ***An assessment of the water quality impacts related to the development, including sediments, temperature and nutrients, sediment control, and temperature control, or any other condition with the potential to cause the protected water feature to be listed on DEQ's 303(d) list.***

The proposed project will result in impacts to WQR and HCA associated with Mt. Scott Creek and Wetland A. A 92-unit residential subdivision will be constructed in the central portion of the site. Construction of the subdivision will include four stormwater facilities and grading in the northwest corner of the site for floodplain storage; these features will result in impacts to 40,155 sf (0.92 acre) of WQR and approximately 46,192 sf (1.06acres) of HCA beyond the limits of the WQR. The WQR impact also includes approximately 1,557 sf (0.04acre) of wetland impact. The wetlands proposed for impact are of low quality, lacking vegetated structure, and primarily composed of a monoculture of reed canarygrass. Required permits from the State (Department of State Lands (DSL)) and Federal (U.S. Army Corps of Engineers (COE)) agencies for the proposed wetland impacts, and associated wetland mitigation plan, will be obtained, and upon receipt, the Applicant will provide a copy to the City for its files. The areas of permanent and temporary disturbance within the HCA and WQR are summarized in Table 8, below and shown on Figure 5.

It should be noted that the proposed soft-surface paths within the WQR and / or HCA are unpaved and no wider than 30 inches, and therefore, are exempt trails, and as such, meet the standards established in MMC Subsection 19.402.4.A.17, and are not considered to be permanent disturbance within the WQR and HCA.

Table 8. Summary of Permanent and Temporary Disturbance in the WQR and HCA

Activity	Permanent Disturbance (sq.ft./ac.)		Temporary Disturbance (sq.ft./ac.)	
	WQR	HCA	WQR	HCA
92-Unit Subdivision	31,799 / 0.73	40,684 / 0.93	0 / 0	0 / 0
Floodplain storage	0/0	0/0	8,356 / 0.19	5,508 / 0.13
Total	**31,799 / 0.73**	**40,684/ 0.93**	**8,356 / 0.19**	**5,508 / 0.13**

The proposed project is not anticipated to have any adverse impacts to water quality. The use of erosion and sediment controls during construction will prevent sediment-related impacts to water quality. The proposed project is not anticipated to result in additional nutrient inputs to the stream, and the restoration of the floodplain/ on the south side of Mt. Scott Creek will increase shade on the stream as the riparian plantings mature, helping to reduce water temperatures in the stream. The stormwater outfalls will discharge treated stormwater to the WQR, and the flow-spreaders at the outfalls will dissipate flows preventing erosion and sedimentation downslope of the outfalls and prevent impacts to water quality.

4. ***An alternatives analysis, providing an explanation of the rationale behind choosing the alternative selected, listing measures that will be taken to avoid and/or minimize adverse impacts to designated natural resources, and demonstrating that:***

   a. ***No practicable alternatives to the requested development exist that will not disturb the WQR or HCA.***

Because of the location, size and orientation of the resources within the site, and the existing development/church, and limited access points from SE Kellogg Creek Drive, impacts to the WQR and HCA are unavoidable. The alternative site plan (Figure 5A) would have resulted in approximately 48% more permanent impacts to the WQR, with a total of 46,666 sf / 1.07 ac of WQR impacts; permanent impacts to the HCA (42,823 sf / 0.98 acre) resulting from the alternative site plan would have been greater than 5% more than the proposed site plan; and impacts to the wetland (17,592 sf / 0.40 acre) resulting from the alternative site plan would have been significantly greater, resulting in more than 11 times the amount of wetland impact than the proposed site plan. In order to avoid and minimize impacts to the resources, while still allowing the project to be practicable, the Applicant conducted an alternatives analysis, resulting in the proposed plan, which has significantly less adverse effects to the water resources than the alternative design.

An additional alternative site plan was analyzed in order to investigate whether the natural resource impacts could be further minimized. Figure 5B illustrates the additional alternative site plan. However, due to the complexities associated with the combination of the R-10 and R-3 zones transecting the central portion of the site, this alternative would not have allowed the development to meet the City's minimum density requirements, and therefore, is not a practicable option. This site layout generally shows how the site could be designed under standard R-10 and R-3 zoning without using the Planned Development provisions and within the context of the Natural Resource standards in MMC 19.402.13.I related to subdivisions. The language in that section provides two options for lot layout:

> *1. At least 90% of the property's HCA and 100% of the property's WQR shall be located in a separate tract. Applications that meet this standard are not subject to the discretionary review requirements of Subsection 19.402.12.*

or

2. If a subdivision cannot comply with the standards in Subsection 19.402.13.I.1, the application shall comply with the following standards:

a. All proposed lots shall have adequate buildable area outside of the WQR and HCA…

The alternative site layout complies with subsection (1) above and indicates that 100 percent of the WQR and 90 percent of the HCA will remain intact in a separate tract. Lots have been laid out on the site consistent with that standard and consistent with the existing split zoning (10,000 square foot lots in R-10 and 3,000 square foot lots in R-3). As shown, the alternative site plan provides 34 lots (27 R-3 lots and 7 R-10 lots). However, this is not a sufficient number of lots to meet the City's required minimum density for the R-3 zone. The table below shows how minimum density was calculated for the site.

Zone	Gross Acres	Deduct Gross SF	Deduct Floodway	Deduct Proposed ROW	Deduct Open Space	Net SF	Net Acres	Min Required Units
R3	9.58	417,305	52,359	39,837	189,922	135,187	3.10	36
R10	4.44	193,406	21,753	37,517	74,488	59,649	1.37	5

These calculations assume the entire WQR area and more than 90 percent of the HCA will remain in a separate tract owned in common by the future residents of the subdivision. Once floodway, right-of-way and common open space are deducted from the gross R-3 acreage, the net buildable area is 3.10 acres. With a minimum density requirement of 11.6 units per acre, the total amount of units required for the R-3 zone is 36 units. As shown on the alternative site plan, only 27 units fit within the R-3 portion of the site. In order to meet minimum density requirements in the R-3 zone, nine additional units would be needed, which would result in substantial impacts to the WQR and HCA.

b. Development in the WQR and/or HCA has been limited to the area necessary to allow for the proposed use.

Development within the WQR and HCA has been limited to the area necessary to allow for the proposed use. The development has been designed taking into consideration the City's building, design, and development requirements, while avoiding and minimizing resource impacts to the greatest extent practicable, and still allowing the project to be financially feasible. As such development in the WQR and HCA has been limited to the outer potions of each, in areas that are of lowest quality.

c. If disturbed, the WQR can be restored to an equal or better condition in accordance with Table 19.402.11.C; and the HCA can be restored consistent with the mitigation requirements of Subsection 19.402.11.D.2.

Restoration and mitigation for impacts to the WQR and HCA will be done in accordance with Table 19.402.11.C and Subsection 19.402.11.D.2, respectively. Details of the restoration and mitigation are described in more detail below in Subsection 19.402.12.A.6.b.

It should be noted that the DSL and COE requirement for mitigation for the wetland impact will be met and details will be discussed in the permit, which upon receipt, the Applicant will provide to the City.

d. Road crossings will be minimized as much as possible.

Road crossings are located along the inside edge of the development, which will eliminate the need for side slopes, and thereby, minimize the area of impact to the WQR and HCA.

5. Evidence that the applicant has done the following, for applications proposing routine repair and maintenance, alteration, and/or total replacement of existing structures located within the WQR:

a. Demonstrated that no practicable alternative design or method of development exists that would have a lesser impact on the WQR than the one proposed. If no such practicable alternative design or method of development exists, the project shall be conditioned to limit its disturbance and impact on the WQR to the minimum extent necessary to achieve the proposed repair/maintenance, alteration, and/or replacement.

b. Provided mitigation to ensure that impacts to the functions and values of the WQR will be mitigated or restored to the extent practicable.

Not applicable. The proposed project does not include routine repair and maintenance, alteration, and/or total replacement of existing structures within the WQR.

6. A mitigation plan for the designated natural resource that contains the following information:

a. A description of adverse impacts that will be caused as a result of development.

The proposed project will result in impacts to WQR and HCA associated with Mt. Scott Creek and Wetland A. A 92-unit residential subdivision will be constructed in the central portion of the site. Construction of the subdivision will include four stormwater facilities and grading in the northwest corner of the site for floodplain storage; these features will result in impacts to a total of 40,155 sf (0.92 acre) of WQR and approximately 46,192 sf (1.06 acres) of HCA beyond the limits of the WQR. The WQR impact also includes approximately 1,557 sf (0.04 acre) of wetland impact. The areas proposed for grading for floodplain storage will be restored with native vegetation plantings. The areas of permanent and temporary disturbance within the HCA and WQR are summarized in Table 8, above.

b. An explanation of measures that will be taken to avoid, minimize, and/or mitigate adverse impacts to the designated natural resource; in accordance with, but not limited to, Table 19.402.11.C for WQRs and Subsection 19.402.11.D.2 for HCAs.

As discussed above, impacts to the WQR and HCA are unavoidable. Adverse effects to the resources have been minimized by reducing the number of dwelling units (from 100 to 92) and redesigning the development layout, thereby, limiting impacts to the outer edges of the resources to the greatest extent practicable.

Mitigation for the unavoidable impacts will be provided through the inventory of man-made debris and noxious materials that might be present within the WQR and the removal of any such material present; the implementation of a stormwater plan that meets City requirements for runoff rates and water quality; the removal of non-native, invasive plants from the riparian corridor along the south side of Mt. Scott Creek; and the installation of tree and shrub plantings within the remaining WQR and HCA areas, the floodplain storage area, and three additional enhancement areas to restore a diverse, native plant community. Compliance with the mitigation requirements outlined in Table 19.402.11.C and Subsection 19.402.11.D.2 to compensate for proposed impacts to the WQR and HCA are described below. Planting the three additional enhancement areas is in addition to the required mitigation.

As depicted on Figure 4, the existing condition of WQR along the south side of Mt. Scott Creek and the west edge of the property, north and south of Wetland A, is Class A ("Good"); the existing condition of the WQR along the northeast and south sides of Wetland A is Class C ("Poor"). Mitigation requirements for disturbance in a Class A and Class C WQR, as listed in Table 19.402.11.C, are listed below, as are the components of the project design that have been incorporated to insure compliance with the mitigation requirements.

- ***Submit a plan for mitigating water quality impacts related to the development, including: sediments, temperature, nutrients, or any other condition that may have caused the protected water feature to be listed on DEQ's 303(d) list.***

  DOWL will be submitting a Preliminary Drainage Report (dated January 12, 2017) demonstrating that the proposed stormwater management facilities treat runoff to meet the City of Milwaukie's water quality requirements and detain post-development runoff at or below pre-development release rates.

- ***Inventory and remove debris and noxious materials.***

  At the time of site construction, the Applicant will identify man-made debris and noxious materials that may be present within the WQR. Any such debris or materials will be removed from the WQR. This will occur within mitigation and restoration areas, as shown on Figure 9.

Mitigation requirements for disturbance in a Class C WQR, as listed in Table 19.402.11.C, are listed below, as are the components of the project design that have been incorporated to insure compliance with the mitigation requirements.

- ***Restore and mitigate disturbed areas with native species from the Milwaukie Native Plant List, using a City-approved plan developed to represent the vegetative composition that would naturally occur on the site.***

  All disturbed areas within the WQR and HCA will be restored with native trees and shrubs and reseeded with a native seed mix. Trees and shrubs will be planted within the mitigation and restoration areas on the south side of Mt. Scott Creek to restore a native plant community within the WQR and HCA areas. In addition to the required mitigation, three additional enhancement areas will be planted with native trees, shrubs and seed mix, which will further improve vegetation structure and diversity.

  The number of trees and shrubs to be planted was determined in accordance with MMC Subsection 19.402.11.D.2. Sixteen trees will be removed from the WQR, as shown on Figure 7. As prescribed by Table 19.402.11.D.2.a, 112 trees and 183 shrubs would be required under Mitigation Option 1 to mitigate for the trees to be removed. Under Mitigation Option 2, 863 trees (86,347 sf impact area x 5 trees per 500 sf of impact area = 863 trees) and 4,317 shrubs (86,347 sf impact area x 25 shrubs per 500 sf of impact area = 4,317 shrubs) would be planted to mitigate for the 86,347 sf of impacts to the WQR and HCA. Because Mitigation Option 2 results in more tree plantings, Mitigation Option 2 was used to determine the number of trees and shrubs to be planted in accordance with MMC Subsection 19.402.11.D.2. A list of trees and shrubs proposed for planting is provided in Table 9 below, and on Figure 9A – Planting Lists.

  These mitigation plantings meet the requirements of MMC Subsection 19.402.11.D, as follows:

- All areas temporarily disturbed will be restored and permanent impacts will be mitigated by the tree and shrub plantings, as described above.
- All species proposed for planting are native species, as identified on the Milwaukie Native Plant List.
- Trees to be planted will average at least a ½-in caliper (measured at 6 inches above the ground level for field-grown trees or above the soil line for container-grown trees). Shrubs shall be at least 1-gallon size and 12 inches high.
- Trees will be planted between 8 and 12 feet on center. Shrubs will be planted between 4 and 5 feet on center or clustered in single-species groups of no more than 4 plants, with each cluster planted between 8 and 10 feet on center. When planting near existing trees, the dripline of the existing tree shall be the starting point for plant spacing measurements.
- More than two species of shrubs are proposed, and not more than 50 percent of the trees to be planted are of the same genus.
- All mitigation will occur on site.
- Invasive non-native or noxious vegetation will be removed within the mitigation area prior to planting, including, but not limited to, species identified as nuisance plants on the Milwaukie Native Plant List.
- Bare or open soil areas remaining after the required tree and shrub plantings will be seeded to 100% surface coverage with grasses or other groundcover species identified as native on the Milwaukie Native Plant List. Revegetation will occur during the next planting season following the site disturbance.

Table 9. Mitigation Area A Planting List

Species	Common Name	Quantity	Stock Type	Plant Size
Trees				
Alnus rubra	Red alder	173	Container or field-grown	½ in caliper
Crataegus suksdorfii	Black hawthorn	172	Container or field grown	½ in caliper
Fraxinus latifolia	Oregon ash	173	Container or field grown	½ in caliper
Populus balsamifera	Black cottonwood	173	Container or field-grown	½ in caliper
Salix scouleriana	Scouler's willow	172	Container or field-grown	½ in caliper
Shrubs				
Cornus alba	Red-osier dogwood	720	1 gal.	12 in
Rosa pisocarpa	Clustered rose	720	1 gal.	12 in
Malus fusca	Western crabapple	719	1 gal	12 in
Physocarpus capitatus	Pacific ninebark	719	1 gal.	12 in
Sambucus racemosa	Red elderberry	719	1 gal.	12 in
Symphoricarpos albus	Snowberry	720	1 gal.	12 in
Herbaceous seed mix				
Agrostis exarata	Spike bentgrass	2.0 lbs/ac	Seed	n/a

Species	Common Name	Quantity	Stock Type	Plant Size
Bromus carinatus	California brome	2.0 lbs/ac	Seed	n/a
Deschampsia cespitosa	Tufted hairgrass	3.0 lbs/ac	Seed	n/a
Elymus glaucus	Blue wildrye	3.0 lbs/ac	Seed	n/a
Hordeum brachyantherum	Meadow barley	2.0 lbs/ac	Seed	n/a
Lupinus rivularis	Riverbank lupine	3.5 lbs/ac	Seed	n/a

The types of plants to be installed were chosen from the Milwaukie Native Plant List and by the suitability to site conditions and the types of native species that were observed on the site. The tree and shrub plantings will improve vegetation structure and diversity, and thereby, enhance wildlife habitat, in areas that presently consist of a monoculture of reed canarygrass.

- ***Plant and/or seed all bare areas to provide 100% surface coverage.***

  All disturbed soil surfaces will be seeded with a native seed mix, as described in Table 9, above. Areas temporarily disturbed for the construction of stormwater outfalls and due to the removal of invasive plant species will be seeded with this seed mix.

- ***Inventory and remove debris and noxious materials.***

  At the time of site construction, the Applicant will identify man-made debris and noxious materials that may be present within the WQR. Any such debris or materials will be removed from the WQR. This will occur within mitigation and restoration areas, as shown on Figure 9.

c. Sufficient description to demonstrate how the following standards will be achieved:

(1) Where existing vegetation has been removed, the site shall be revegetated as soon as practicable.

Following the completion of the construction of the proposed stormwater outfalls, disturbed soils will be reseeded with the native seed mix described in Table 9, above. Within the mitigation and restoration areas, soils disturbed as a result of the removal of non-native invasive plants will be seeded with the native seed mix described in Table 9 as soon as practicable following the removal of the invasive plants. Woody material will be planted in the mitigation and restoration areas in the fall/winter immediately following construction to maximize the survival of the plantings.

(2) Where practicable, lights shall be placed so that they do not shine directly into any WQR and/or HCA location. The type, size, and intensity of lighting shall be selected so that impacts to habitat functions are minimized.

Lights will be placed so that they do not shine directly into the WQR and/or HCA. The type, size, and intensity of lighting will be selected so that impacts to habitat functions are minimized.

(3) Areas of standing trees, shrubs, and natural vegetation will remain connected or contiguous; particularly along natural drainage courses, except where mitigation is approved; so as to provide a transition between the proposed development and the designated natural resource and to provide opportunity for food, water, and cover for animals located within the WQR.

With the exception of the removal of invasive plants from the proposed mitigation and restoration areas, existing trees, shrubs, and natural vegetation within the WQR will remain undisturbed during the proposed construction.

d. A map showing where the specific mitigation activities will occur. Off-site mitigation related to WQRs shall not be used to meet the mitigation requirements of Section 19.402.

Figure 9 depicts the location of proposed mitigation activities. No mitigation is proposed to occur off-site.

e. An implementation schedule; including a timeline for construction, mitigation, mitigation maintenance, monitoring, and reporting; as well as a contingency plan. All in-stream work in fish-bearing streams shall be done in accordance with the allowable windows for in-water work as designated by ODFW.

Construction of the proposed project is anticipated to begin in the late summer of 2017. Activities associated with the WQR/HCA mitigation are anticipated to begin in summer 2017. Removal of any existing man-made debris and noxious materials from the WQR will occur in summer 2017, as will the removal of invasive plants from the mitigation and restoration areas (Figure 9). Restoration plantings will be installed in the mitigation and enhancement areas in late fall of 2017.

Monitoring of the restoration area will be conducted in the summer of 2018 and again in the summer of 2019. An annual monitoring report documenting the survival of the restoration plantings will be submitted to the City of Milwaukie by December 31 of each monitoring year. Plants that die shall be replaced in kind as needed to ensure the minimum 80% survival rate.

No in-stream work is proposed to occur as part of this project.

B. Approval Criteria

1. Unless specified elsewhere in Section 19.402, applications subject to the discretionary review process shall demonstrate how the proposed activity complies with the following criteria:

a. Avoid

The proposed activity avoids the intrusion of development into the WQR and/or HCA to the extent practicable. The proposed activity shall have less detrimental impact to the designated natural resource than other practicable alternatives, including significantly different practicable alternatives that propose less development within the resource area.

The proposed project avoids development within the WQR and HCA to the extent practicable, given the limitations due to zoning constraints and minimum density requirements. As discussed earlier in this document, the alternative site designs (Figures 5A and 5B) have greater impacts to the WQR, HCA and wetlands, and therefore, the proposed site design is the optimal alternative for site development that would meet the City's minimum density requirements while also avoiding and minimizing impacts to natural resources on the site to the extent practicable.

b. Minimize

If the applicant demonstrates that there is no practicable alternative that will avoid disturbance of the designated natural resource, then the proposed activity within the resource area shall minimize detrimental impacts to the extent practicable.

(1) The proposed activity shall minimize detrimental impacts to ecological functions and loss of habitat, consistent with uses allowed by right under the base zone, to the extent practicable.

Implementation of the proposed mitigation will ensure the proposed project minimizes adverse effects to the ecological functions of the WQR and loss of habitat, as follows:

- The minimization of areal impacts as well as the proposed plantings to restore native plant communities on the south side of Mt. Scott Creek, along the northeast and south sides of

Wetland A, and within the floodplain storage area will ensure that the WQR continues to provide vegetated corridors that separate protected water features from development.

- As the proposed tree and shrub plantings south of Mt. Scott Creek, around Wetland A, and within the floodplain storage area mature, they will increasingly provide microclimate regulation and shade for the stream and wetland, and provide better microclimate regulation and shade as compared to the existing plant communities.
- As the proposed tree and shrub plantings south of Mt. Scott Creek, around Wetland A, and the floodplain storage area mature, they will provide more effective streamflow moderation during high flow events than the herbaceous plant community, predominantly composed of reed canarygrass, that is present under existing conditions.
- The diverse plant community within the WQR, HCA and floodplain storage area will continue to provide water filtration, infiltration, and natural purification functions. The proposed project will not adversely affect these functions.
- The proposed restoration plantings and the resulting diverse plant community within the WQR, HCA and floodplain storage area will continue to provide bank stabilization and sediment and pollution control functions. The proposed project will not adversely affect these functions.
- Trees will remain within the vegetated corridor following construction, and therefore, the WQR will continue to provide the potential for large wood recruitment and retention functions. No impacts are proposed for the creek, and therefore, there will be no adverse impact on channel dynamics.
- Because the WQR will continue to be vegetated with a diverse plant community, the proposed project will not adversely affect the resource's ability to provide organic inputs to the stream and riparian area.

(2) To the extent practicable within the designated natural resource, the proposed activity shall be designed, located, and constructed to:

(a) Minimize grading, removal of native vegetation, and disturbance and removal of native soils; by using the approaches described in Subsection 19.402.11.A, reducing building footprints, and using minimal excavation foundation systems (e.g., pier, post, or piling foundation).

In accordance with MMC Subsection 19.402.11.A, the following measures will be implemented to minimize impacts to the WQR on the site:

- Work areas will be marked to reduce potential damage to the WQR.
- Trees in the WQR will not be used as anchors for stabilizing construction equipment.
- Native soils disturbed during development shall be conserved on the property.
- The Applicant has prepared a preliminary grading and erosion control plan. Prior to the start of any construction activities, the applicant will apply for a grading and erosion control permit, consistent with the standards required by the City's Public Works Department.
- The Applicant will implement best management practices on site to prevent the drainage of hazardous materials, erosion, pollution or sedimentation within the resources and the vegetative corridors.

- The Applicant has prepared a preliminary stormwater detention and water quality plan for the project which has been designed to prevent flows within and to natural drainage courses which might exceed pre-developed conditions.
- Prior to construction, the WQR and HCA that are to remain undeveloped will be flagged, fenced, or otherwise marked and shall remain undisturbed. Such markings will be maintained until construction is complete.
- The construction phase of the development shall be done in such a manner as to safeguard the resource portions of the site that have not been approved for development.
- Lights will be placed so that they do not shine directly into the WQR and/or HCA.
- The Applicant has prepared a construction management plan which will conform to the requirements of 19.402.9. The Final Construction management plan will be provided to the City's Engineering Department prior to the commencement of construction activities.

(b) Minimize adverse hydrological impacts on water resources.

The implementation of the proposed stormwater management plan, which detains post-development runoff at or below pre-development release rates will ensure that hydrologic impacts to the water resources are minimized. Since no work is proposed in the stream, this will ensure the project avoids hydraulic impacts to the stream channel.

(c) Minimize impacts on wildlife corridors and fish passage.

No work is proposed in the stream, which will ensure the project avoids impacts to fish passage along this reach of Mt. Scott Creek. Restoration with a diverse native plant community within the riparian corridor will ensure that impacts to wildlife habitat are minimized.

(d) Allow for use of other techniques to further minimize the impacts of development in the resource area; such as using native plants throughout the site (not just in the resource area), locating other required landscaping adjacent to the resource area, reducing light spill-off into the resource area from development, preserving and maintaining existing trees and tree canopy coverage, and/or planting trees where appropriate to maximize future tree canopy coverage.

Impacts to the on-site resources have been minimized to the extent practicable.

c. Mitigate

If the applicant demonstrates that there is no practicable alternative that will avoid disturbance of the designated natural resource, then the proposed activity shall mitigate for adverse impacts to the resource area. All proposed mitigation plans shall meet the following standards:

(1) The mitigation plan shall demonstrate that it compensates for detrimental impacts to the ecological functions of resource areas, after taking into consideration the applicant's efforts to minimize such detrimental impacts.

As described above, implementation of the proposed mitigation will ensure the proposed project minimizes adverse effects to the ecological functions of the WQR and loss of habitat, as follows:

- The minimization of areal impacts as well as the proposed plantings to restore a native plant community on the south side of Mt. Scott Creek, around Wetland A, and within the floodplain storage area will ensure that the WQR continues to provide a vegetated corridor that separates protected water features from development.

- As the proposed tree and shrub plantings south of Mt. Scott Creek; around Wetland A, and within the floodplain storage area mature, they will increasingly provide microclimate regulation and shade for the stream, and provide better microclimate regulation and shade as compared to the existing plant community on the south side of the creek.
- As the proposed tree and shrub plantings south of Mt. Scott Creek, around Wetland A, and within the floodplain storage area mature, they will provide more effective streamflow moderation during high flow events than the predominantly reed canarygrass herbaceous plant community that is present under existing conditions.
- The diverse plant community within the WQR, HCA and floodplain storage area will continue to provide water filtration, infiltration, and natural purification functions. The proposed project will not adversely affect these functions.
- The proposed restoration plantings and the resulting diverse plant community within the WQR, HCA and floodplain storage area will continue to provide bank stabilization and sediment and pollution control functions. The proposed project will not adversely affect these functions.
- Trees will remain within the vegetated corridor following construction, and therefore, the WQR will continue to provide the potential for large wood recruitment and retention functions. No impacts are proposed for the creek, and therefore, there will be no adverse impact on channel dynamics.
- Because the WQR will continue to be vegetated with a diverse plant community, the proposed project will not adversely affect the resource's ability to provide organic inputs to the stream and riparian area.

(2) Mitigation shall occur on the site of the disturbance, to the extent practicable. Off-site mitigation for disturbance of WQRs shall not be approved. Off-site mitigation for disturbance of HCAs shall be approved if the applicant has demonstrated that it is not practicable to complete the mitigation on-site and if the applicant has documented that they can carry out and ensure the success of the off-site mitigation as outlined in Subsection 19.402.11.B.5.

In addition, if the off-site mitigation area is not within the same subwatershed (6th Field Hydrologic Unit Code) as the related disturbed HCA, the applicant shall demonstrate that it is not practicable to complete the mitigation within the same subwatershed and that, considering the purpose of the mitigation, the mitigation will provide more ecological functional value if implemented outside of the subwatershed.

All mitigation will occur on site.

(3) All revegetation plantings shall use native plants listed on the Milwaukie Native Plant List.

Only native species will be installed in the revegetation plantings. A list of species to be planted is provided on Figure 9A.

(4) All in-stream work in fish-bearing streams shall be done in accordance with the allowable windows for in-water work as designated by ODFW.

No in-stream work is proposed to occur with this project.

(5) A mitigation maintenance plan shall be included and shall be sufficient to ensure the success of the planting. Compliance with the plan shall be a condition of development approval.

The Applicant will undertake the following mitigation maintenance measures to ensure a minimum of 80 percent of the trees and shrubs planted remain alive two years after the mitigation planting is completed.

- New plantings will be mulched to a minimum of 3-inch depth and 18-inch diameter to retain moisture and discourage weed growth.
- Non-native or noxious vegetation will be removed or controlled throughout the maintenance period.
- Plant sleeves or fencing will be used to protect trees and shrubs against wildlife browsing and the resulting damage to plants.
- New plantings will be watered at a rate of 1 inch per week between June 15 and October 15 for the first two years following planting.

It should be noted that as described in the sections above, mitigation for proposed impacts to the HCA and WQR are primarily in the form of restoration and enhancement plantings. Due to the size, shape and location of the wetland areas and associated WQR and HCA within the site, options for other mitigation measures, such as grading with gradual slopes, while avoiding further impacts to natural resources, is quite limited. As such, grading with gradual slopes, 3:1 or less, were limited to areas along the south and east sides of the existing wetland.

6.5 MMC 19.402.13 – Land Division and Property Line Adjustments

I. Subdivisions

Applications for subdivisions are subject to Type III review and shall comply with one of the following two standards:

1. At least 90% of the property's HCA and 100% of the property's WQR shall be located in a separate tract. Applications that meet this standard are not subject to the discretionary review requirements of Subsection 19.402.12.

This standard is not met. As such the application is subject to the discretionary review provided in Section 6.4, above.

2. If a subdivision cannot comply with the standards in Subsection 9.402.13.I.1, the application shall comply with the following standards:
- ***a. All proposed lots shall have adequate buildable area outside of the WQR and HCA.***
- ***b. To the extent practicable, the lot and access configurations shall mitigate the potential future impacts to the WQR and HCA from access and development.***
- ***c. An Impact Evaluation and Alternatives Analysis shall be prepared in accordance with the relevant portions of Subsection 19.402.12.A.***
- ***d. For properties where the HCA covers more than 85% of the total lot area, the Impact Evaluation and Alternatives Analysis shall address how the applicant's proposal retains the greatest practicable degree of contiguity of the HCA across the new lots.***

Standards b, c and d are being met, and have been discussed above in Section 6.4. Standard a cannot be met, however, mitigation for impacts to WQR and HCA has been provided. Some of the developable lots within the proposed development will not provide adequate buildable area outside of

WQR and HCA areas on the site, and therefore, will remain with a WQR and/or HCA. As such, a formal variance request has been made by the Applicant, and will be subject to a Type III review. A Type III Variance Application has been submitted to the City by DOWL.

J. Resource Area as a Separate Tract

Where required by Section 19.402, the new subdivision or partition plat shall delineate and show all WQRs and HCAs as being located in a separate unbuildable tract(s) according to the following process:

1. Prior to preliminary plat approval, the designated natural resource (whether WQR, HCA, or both) shall be shown as a separate tract(s), which shall not be part of any lot or parcel used for construction of any structures.

Prior to preliminary plat approval, the WQR and HCA will be shown as separate tracts, which will not be part of any lot or parcel used for construction of any structures. Figure 10 shows the locations of the revised WQR and HCA boundaries upon completion of the proposed development.

2. Prior to final plat approval, ownership of the separate natural resource tract(s) shall be identified to distinguish it from lots or parcels intended for sale. Ownership in common or by a homeowners association is strongly discouraged. The tract(s) may be identified as any of the following:

a. Private natural area held by the owner with a restrictive covenant and/or conservation easement.

b. For residential subdivisions, private natural area subject to an easement conveying storm and surface water management rights to the City of Milwaukie, Clackamas County Water Environment Services, and/or any other relevant jurisdiction, and preventing the owner of the tract from activities and uses inconsistent with the purposes of Section 19.402.

c. Public natural area where the tract has been dedicated to the City of Milwaukie or a private nonprofit with the mission of land conservation.

As the proposed development is a residential subdivision, prior to final plat approval, the ownership of the separate natural resource tract(s) will be identified to distinguish it from lots or parcels intended for sale by identifying it as a private natural area subject to an easement conveying storm and surface water management rights to the City of Milwaukie, Clackamas County Water Environment Services, and/or any other relevant jurisdiction, and preventing the owner of the tract from activities and uses inconsistent with the purposes of Section 19.402.

3. The boundaries of all such tracts shall be demarcated with stakes, flags, or some similar means so that the boundaries between tracts and adjacent properties are defined in perpetuity. Fences that prevent the unfettered passage of wildlife shall not be installed along the boundary of any tract.

The boundaries of all such tracts will be demarcated with stakes, flags, or some similar means so that the boundaries between tracts and adjacent properties are visibly defined in perpetuity. The exact means that will be used will be determined at the time of construction; however, fences that prevent the unfettered passage of wildlife will not be installed along the boundary of any tract.

6.6 MMC 19.402.15 – Boundary Verification and Map Administration

A. Boundary Verification

To determine whether the standards of Section 19.402 apply to a proposed activity at any given location, the boundaries of any designated natural resource(s) on or near the site shall be verified.

Agreement with the accuracy of the NR Administrative Map does not constitute or require a land use decision. However, for activities proposed within 100 feet of a wetland or its associated vegetated corridor, the boundary verification process outlined in Subsection 19.402.15.A.2.a(1)(b) shall be followed to identify the specific location of wetlands on the subject property. The Planning Director may waive the requirement for official wetland

delineation, depending on the specific circumstances of the site and the proposed activity. Such circumstances may include, but are not limited to, the scale and potential impacts of the proposed activity, the proximity of the proposed activity to the mapped resource, and the Director's confidence in the accuracy of the NR Administrative Map relative to the resource in question. An applicant may challenge the accuracy of the NR Administrative Map through either of the boundary verification processes outlined in Subsections 19.402.15.A.1 and 2.

1. Type I Boundary Verification

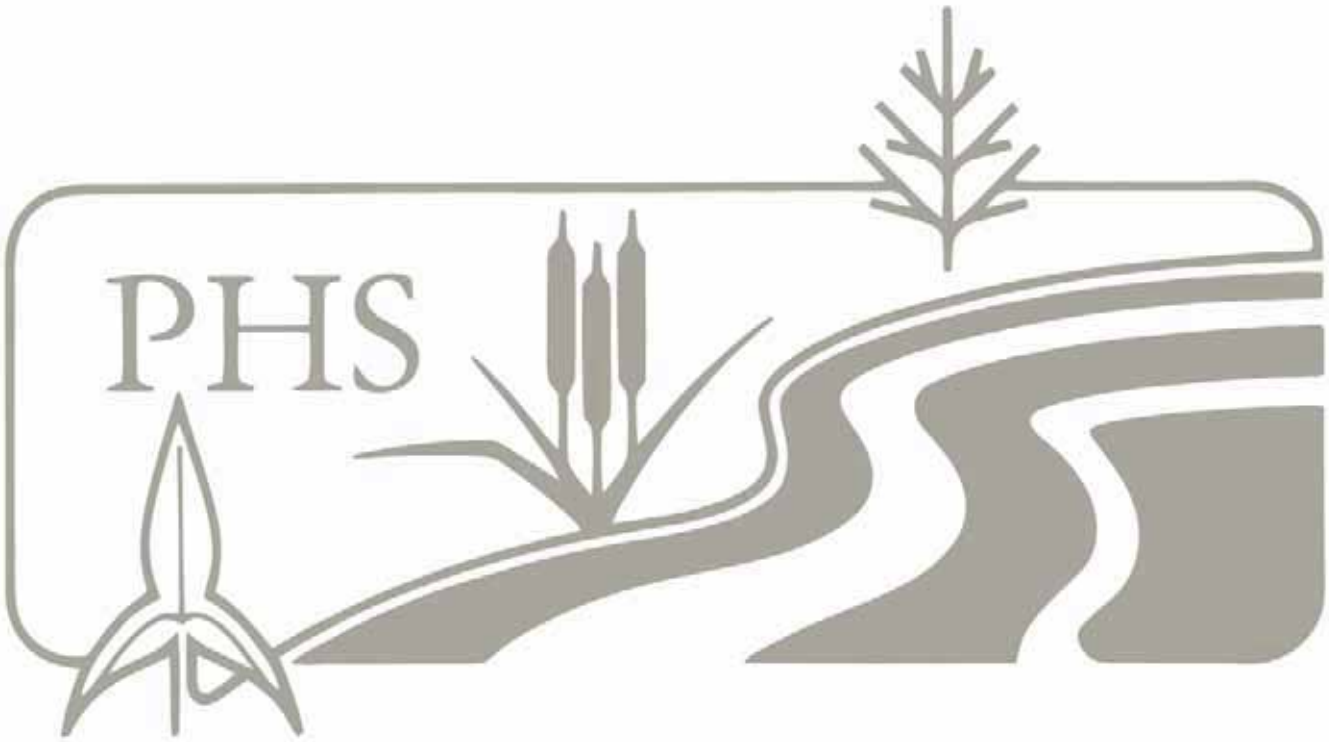
The following minor corrections to mapped HCAs may be proposed according to one of the following procedures, and are subject to Type I review per Section 19.1004:

a. Simple Incongruities

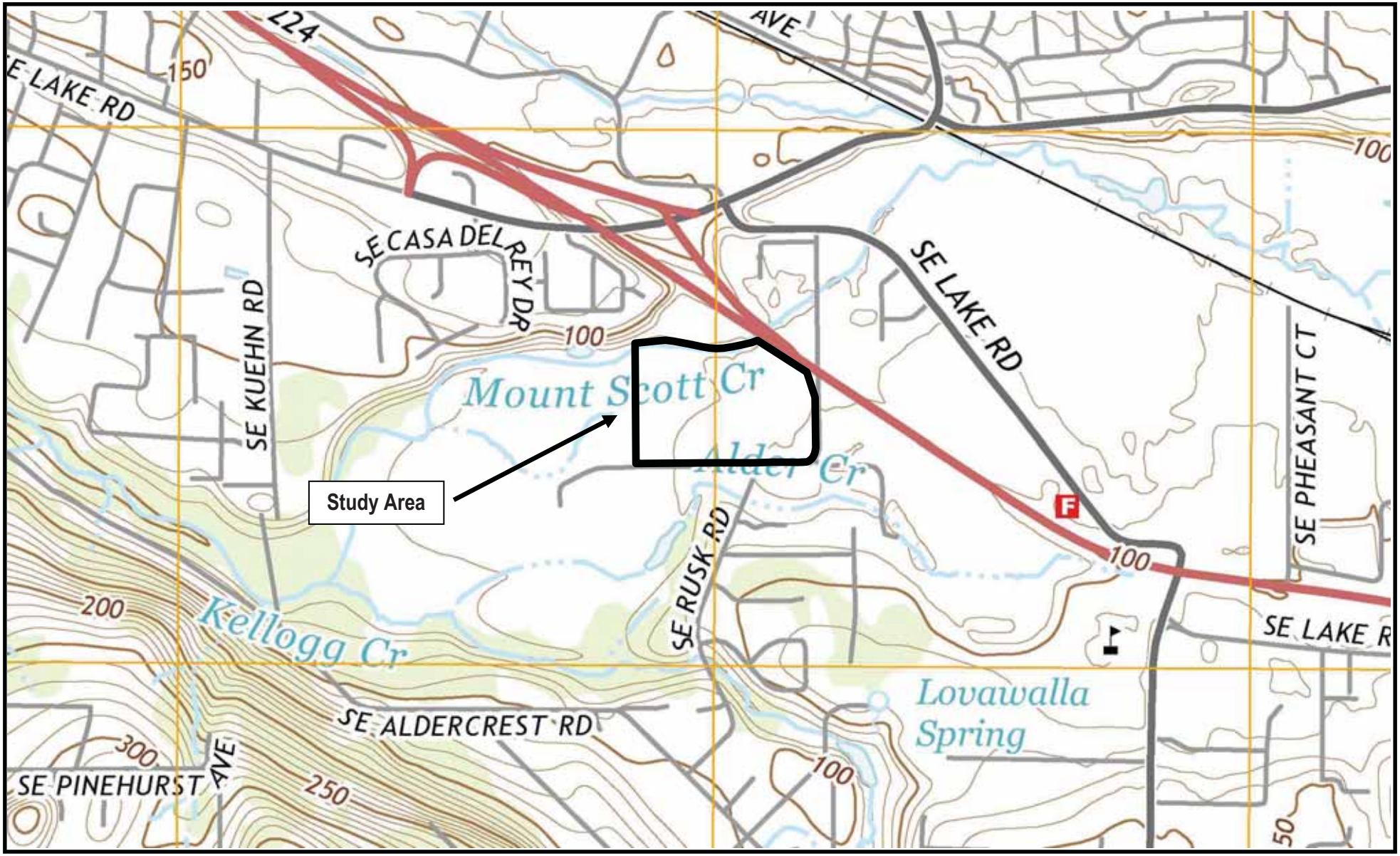
The proposed site plan per approval will result in a revised HCA boundary resulting from simple incongruities associated with the development of the subject site. The proposed updated HCA boundary verification map is presented on Figure 10.

Attachment A

Figures



RS735

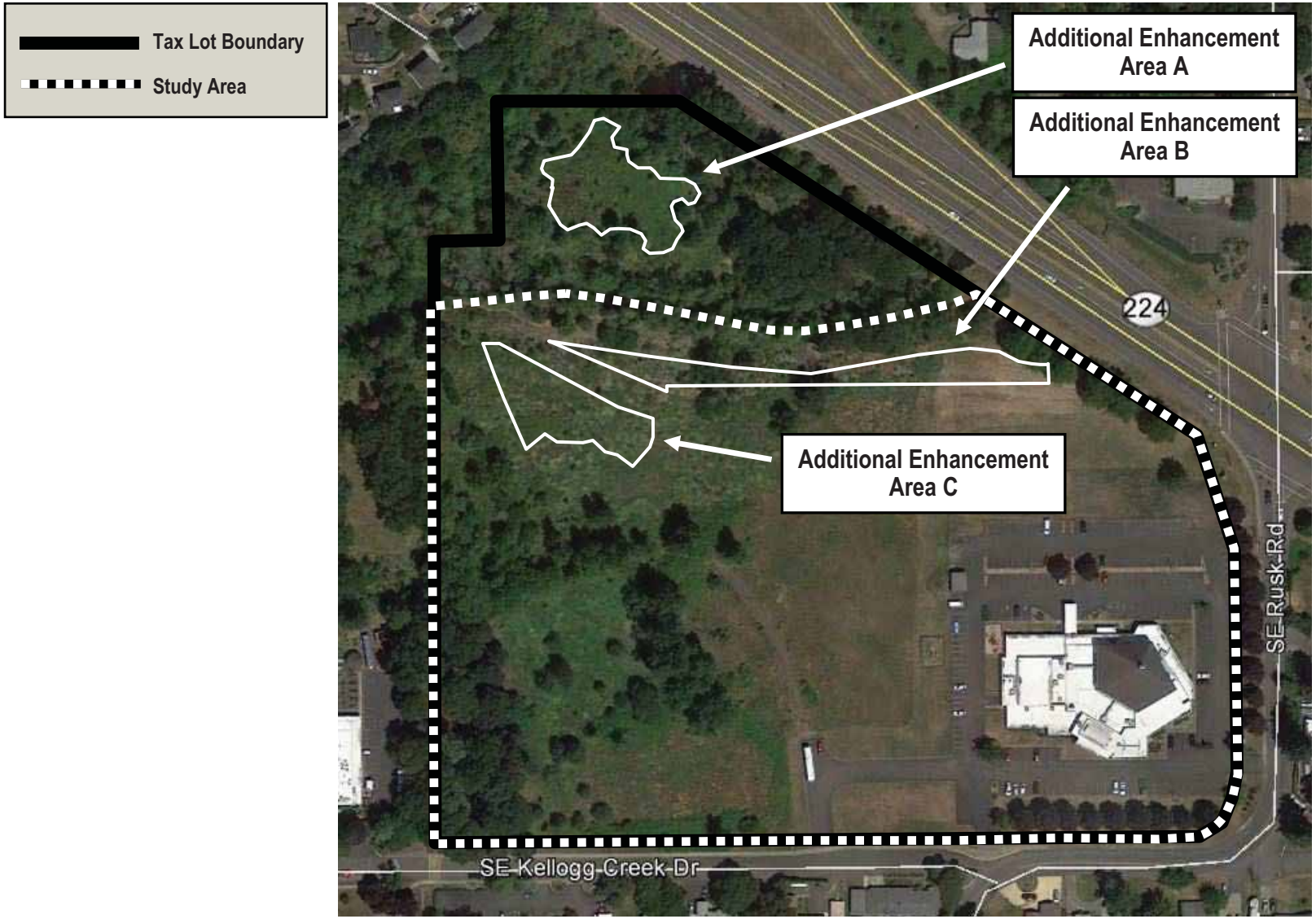


5975
1/16/2017

Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

General Location and Topography
SE Kellogg Creek Drive - Milwaukie, Oregon
United States Geological Survey (USGS), Gladstone, Oregon, 7.5 Quadrangle, 2014
(viewer/nationalmap.gov/basic)

FIGURE
1

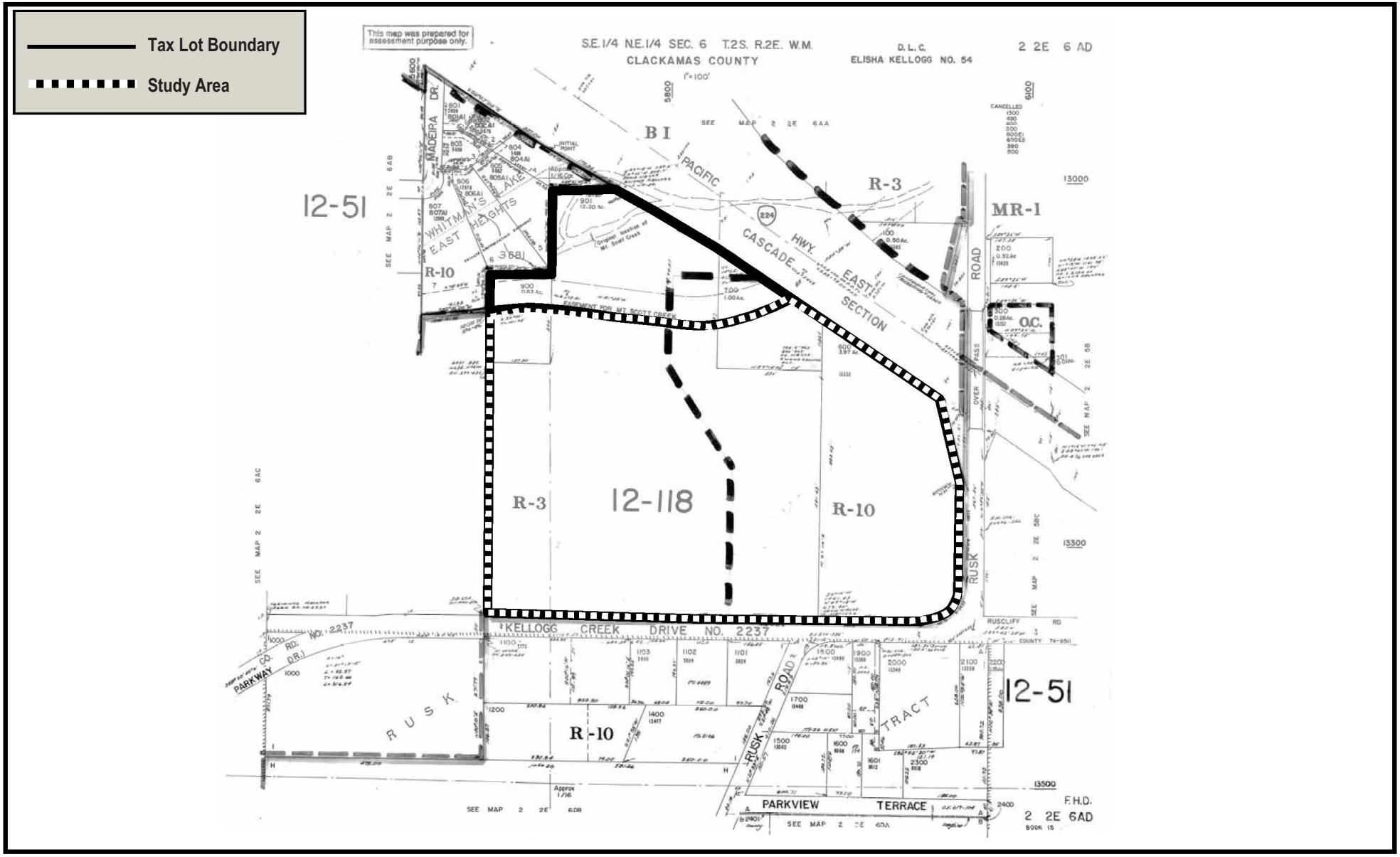


5975
4/19/2017

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Wilsonville, OR 97070

Additional Enhancement Areas A, B and C
SE Kellogg Creek Drive - Milwaukie, Oregon
Aerial Photo - Google Earth, 2016

FIGURE
1A

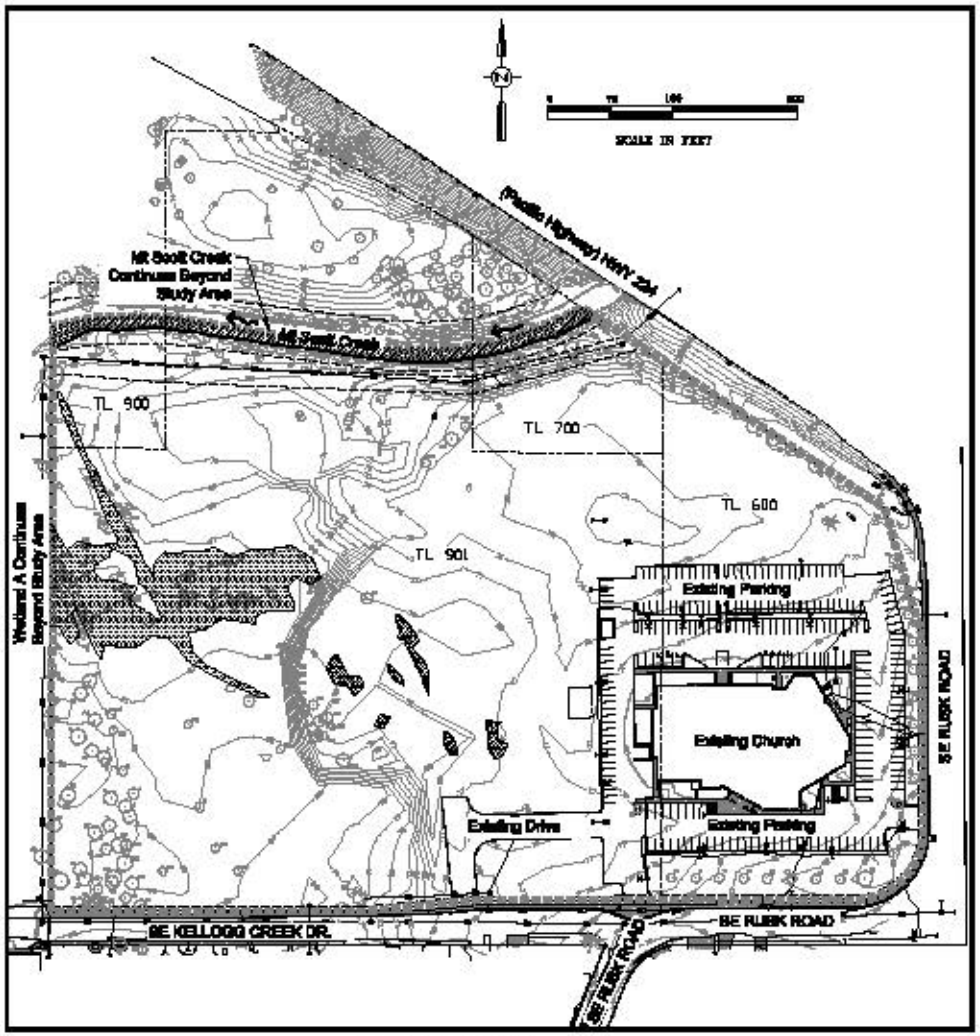


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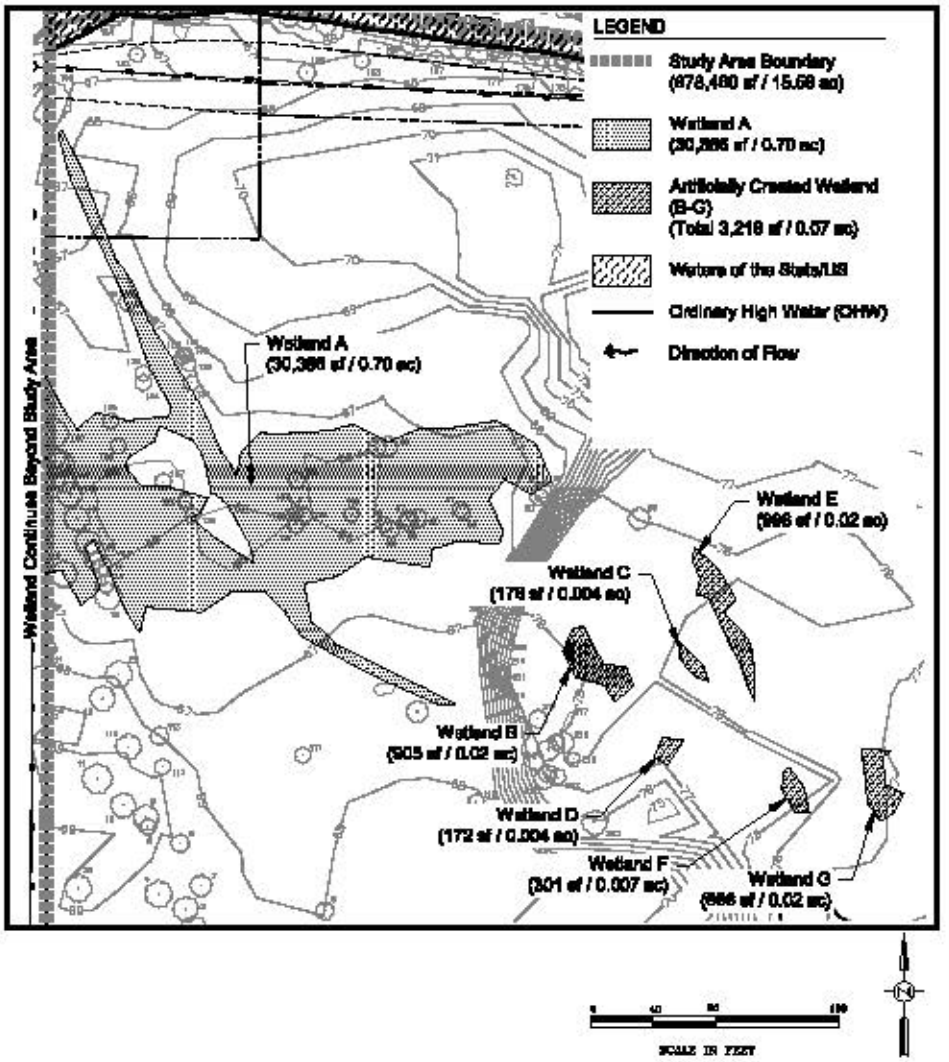
Pacific Habitat Services, Inc.
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Wilsonville, OR 97070

Tax Lot Map
SE Kellogg Creek Drive - Milwaukie, Oregon
The Oregon Map (ormap.net)

FIGURE
2



TAX LOT OVERVIEW



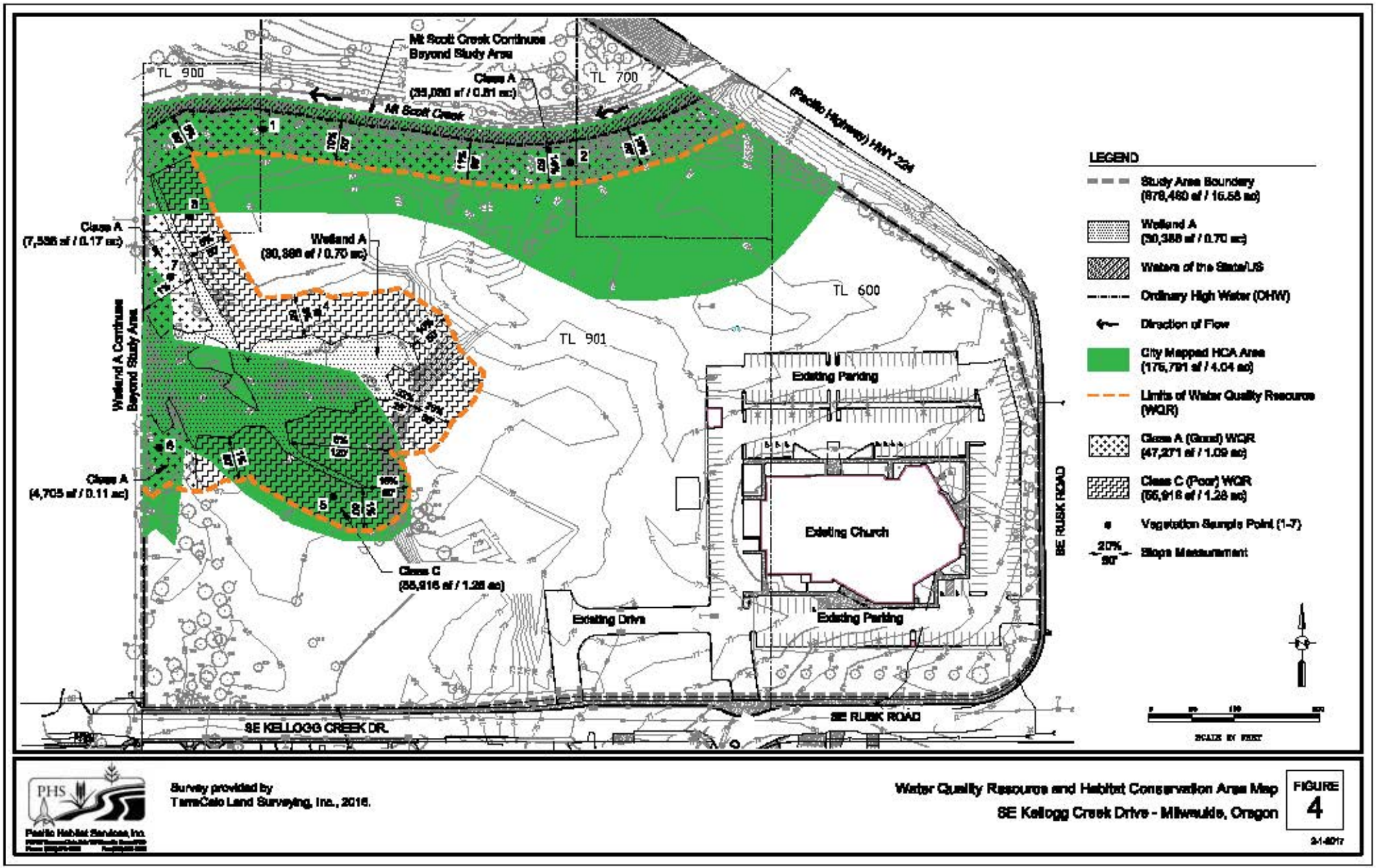
Survey provided by
TerraCalo Land Surveying, Inc., 2016
Survey accuracy is sub-centimeter and
Sample Point accuracy is ± 3 feet.

Existing Conditions
Kellogg Creek Subdivision - Milwaukie, Oregon

FIGURE 3

1-31-2017

X:\Project Directories\5000\5078 SE Rusk Road (Kellogg Creek Drive)\AutoCAD\Plot Dwg\HCA\Fig3 ExistCond.dwg, 8/16/2017 9:04:02 AM, CutePDF Writer



Survey provided by TerraCalo Land Surveying, Inc., 2016.

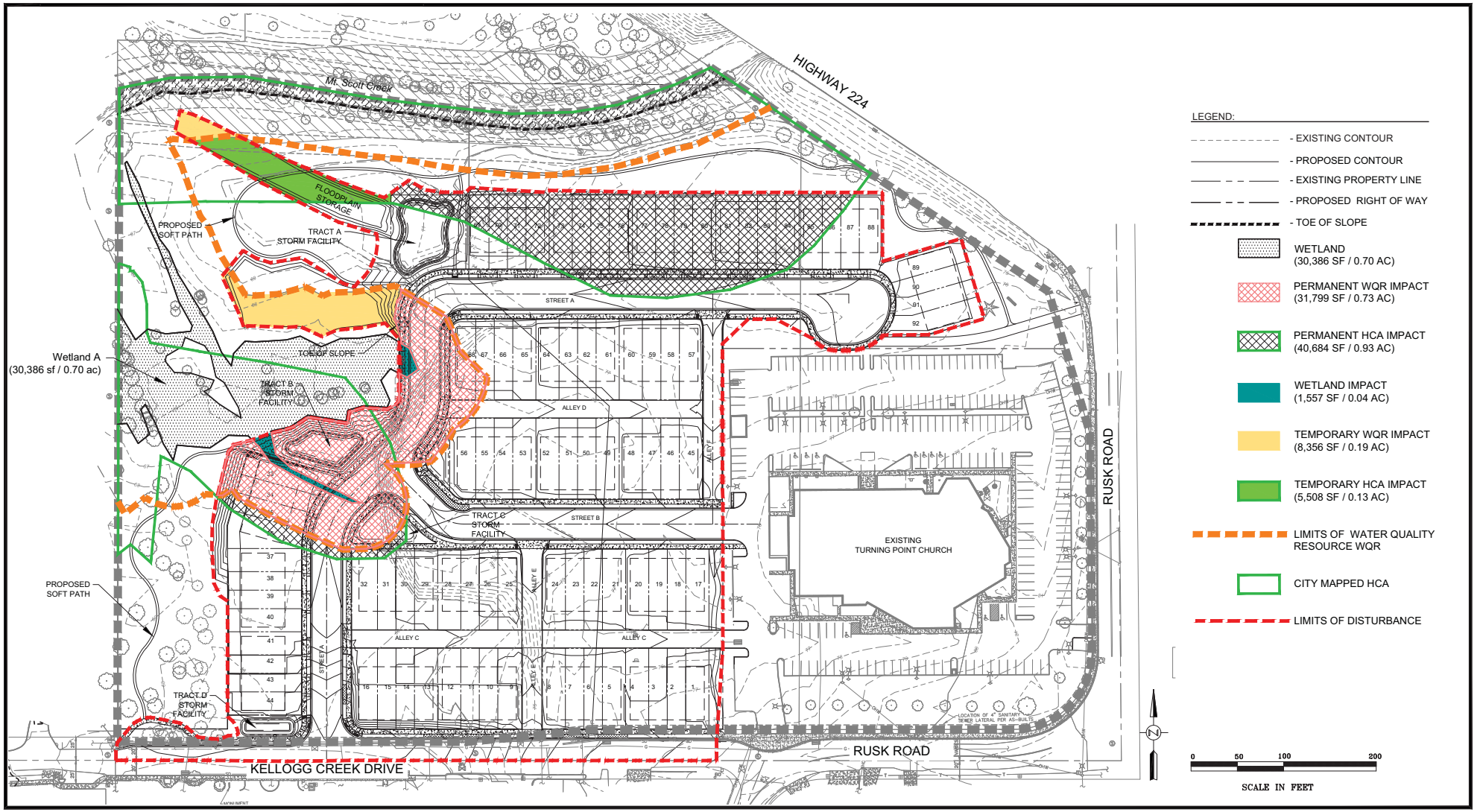
Water Quality Resource and Habitat Conservation Area Map
SE Kellogg Creek Drive - Milwaukie, Oregon

FIGURE 4

3-1-2017

X:\Project Directories\3000\3078 SE Rusk Road (Kellogg Creek Drive)\AutoCAD\Plot Dwg\HCA\Fig4 HCA.dwg, 6/15/2017 9:04:59 AM, CutePDF Writer

RS740



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9450 SW Commerce Circle, Suite 180 Wilsonville, Oregon 97070
Phone: (503) 570-0800 Fax (503) 570-0855

Plans provided by DOWL.

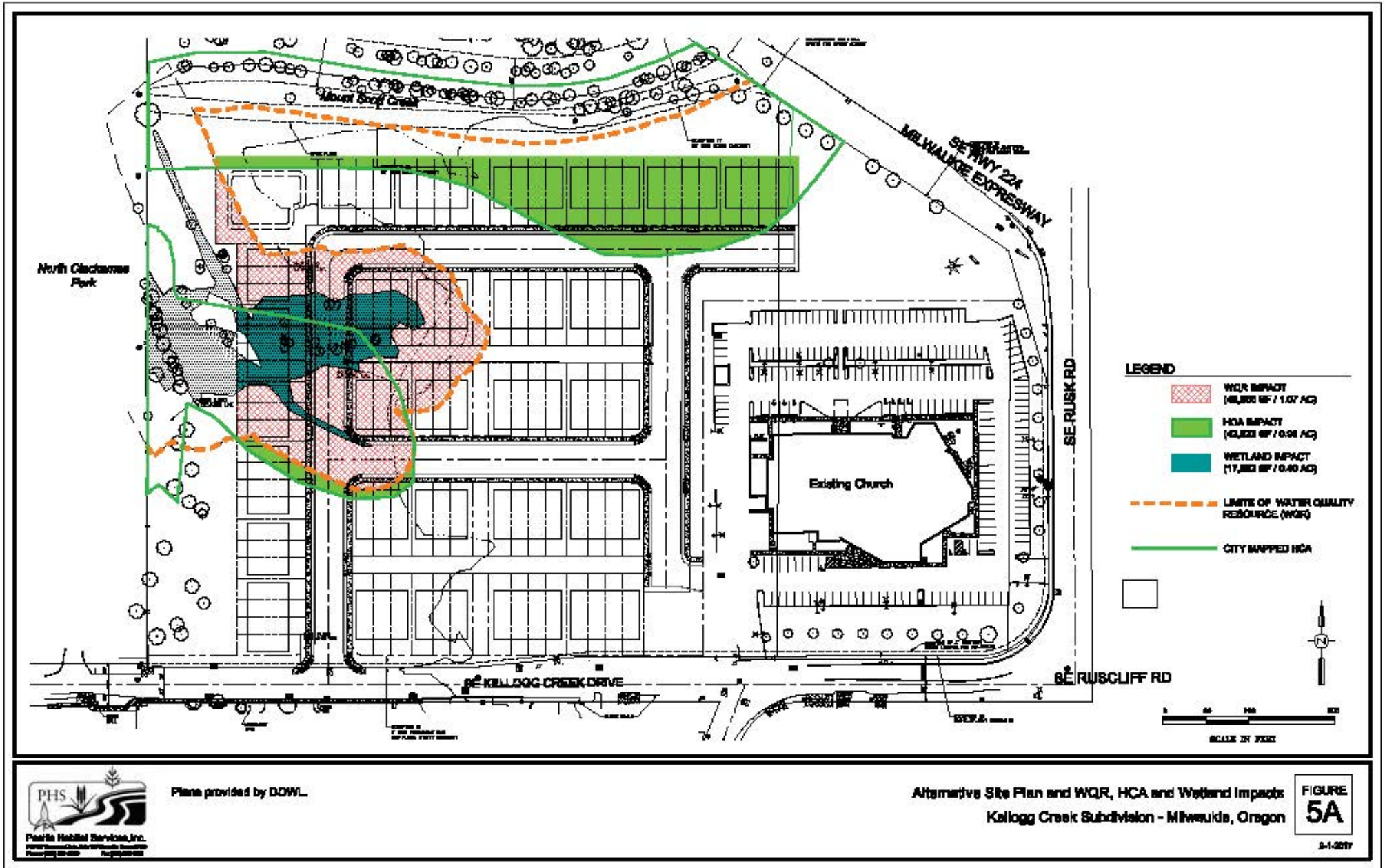
Site Plan and WQR, HCA and Wetland Impacts
Kellogg Creek Subdivision - Milwaukie, Oregon

FIGURE 5

6-14-2017

X:\Project Directories\5900\5975 SE Rusk Road (Kellogg Creek Drive)\AutoCAD\Plot Dwg\HCA\Fig5 Site Plan.dwg, 6/14/2017 11:00:17 AM

RS741

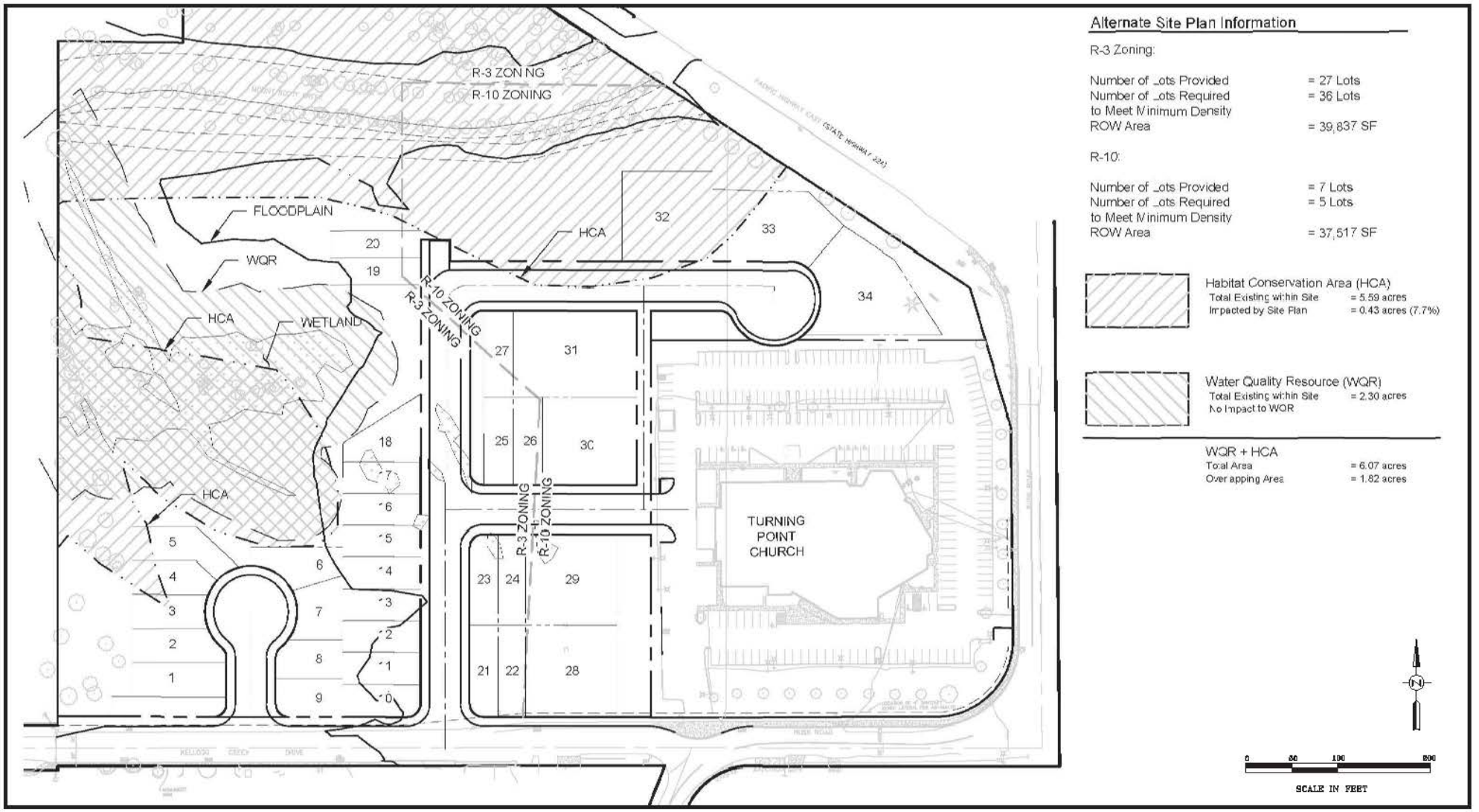


Plans provided by DOWL.

Alternative Site Plan and WQR, HCA and Wetland Impacts
Kellogg Creek Subdivision - Milwaukie, Oregon

FIGURE 5A

RS742



Pacific Habitat Services, Inc.

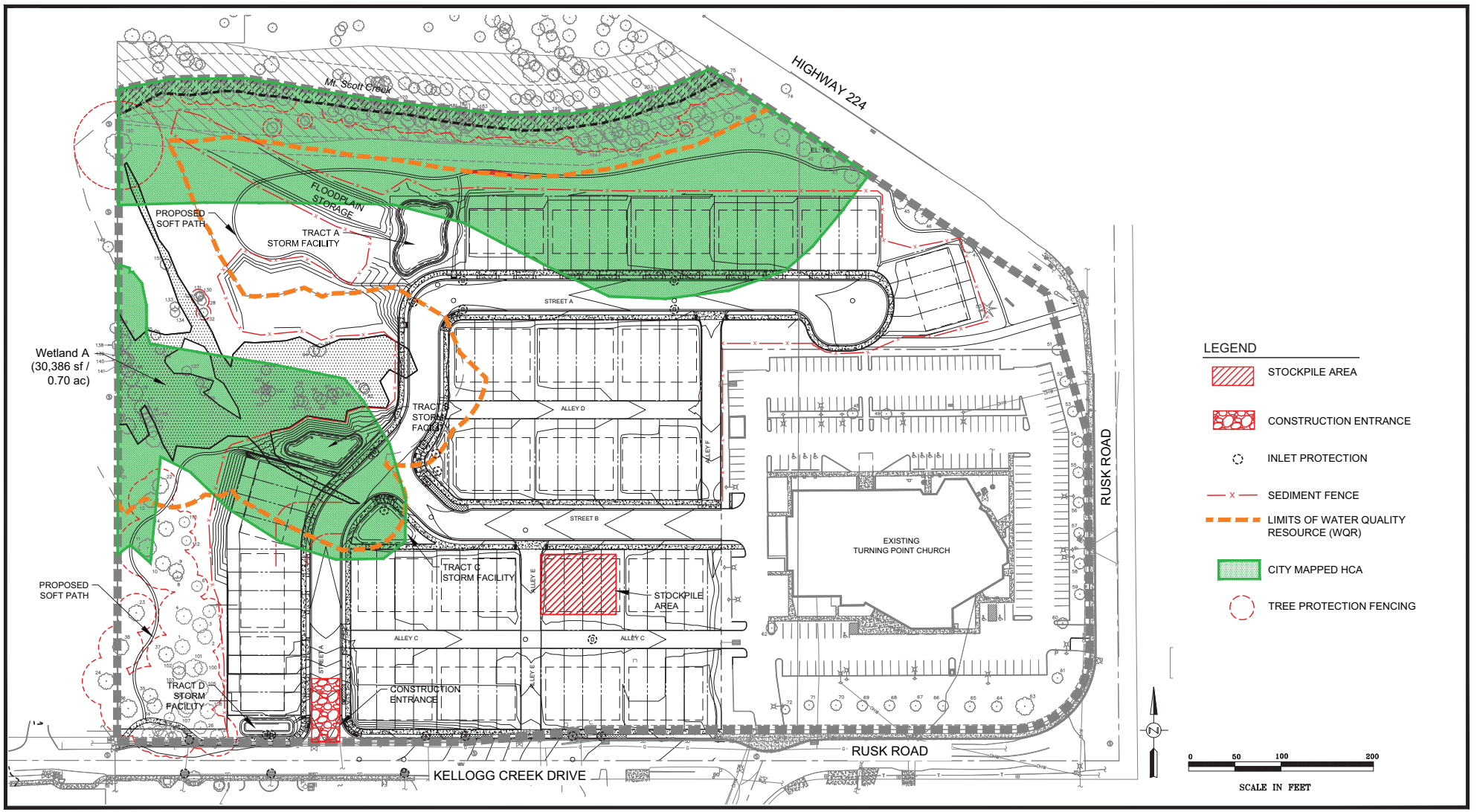
Site Plan (April 3, 2017) provided by DOWL

Additional Alternative Site Plan
Kellogg Creek Subdivision - Milwaukie, Oregon

FIGURE 5B

4-6-2017

X:\Project Directories\5900\5975 SE Rusk Road (Kellogg Creek Drive)\AutoCAD\Plot Dwg\HCA\Fig5B AltSite Plan.dwg, 4/6/2017 2:53:24 PM, Cute_SW_PDF Writer.pc3



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Plans provided by DOWL.

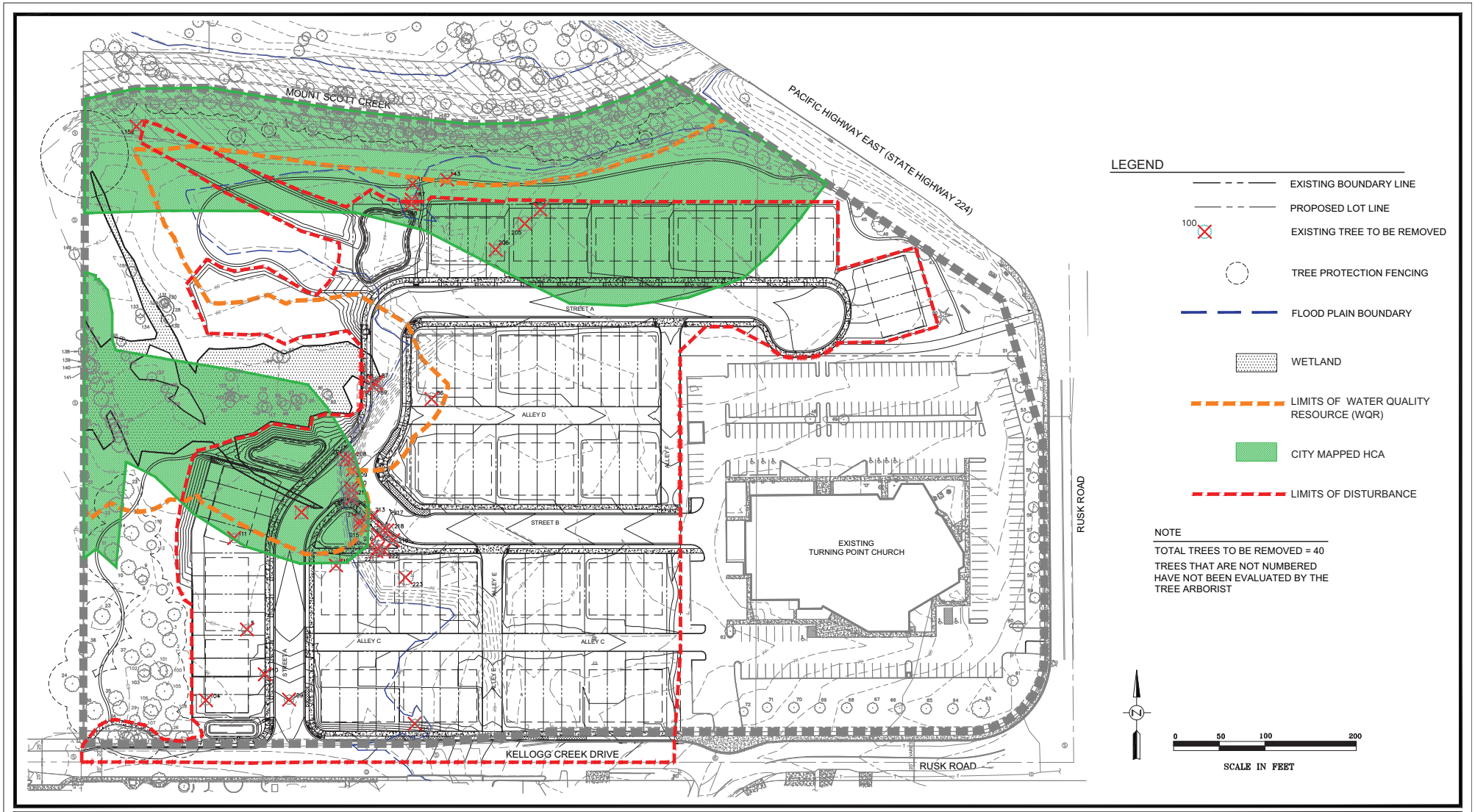
Construction Management / Erosion and Sediment Control Plan
Kellogg Creek Subdivision - Milwaukie, Oregon

FIGURE 6

6-14-2017

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RS744



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Plans provided by DOWL.

Tree Removal and Protection Plan
Kellogg Creek Subdivision - Milwaukie, Oregon

FIGURE 7

6-14-2017

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RS745

Number	Dia (in)	Remove (Y/N)
1	18	N
2	18	N
3	22	N
4	28	N
5	12	Y
6	12	N
7	14	N
8	10	N
9	28	N
10	20	N
11	38	N
12	24	N
13	12	N
14	15	N
15	12	N
16	2x14	N
17	16	N
18	2x16	N
19	24	N
20	24	N
21	8	N
22	23	N
23	22	N
24	28	N
25	22	N
26	2x16	N
27	14	N
28	22	N
29	18	N
30	12	N
31	22	N
32	21	N
33	18	N
34	18	N
35	2x20	N
36	36	N
37	26	N
38	29	N
41	18	N
42	22	N
43	21	N
44	18	N
45	18	N
46	18	N
47	21	N
48	12	Y
49	12	Y
50	2x16	N
51	14	N
52	14	N
53	16	N
54	13	N
55	19	N
56	12	N
57	14	N
58	15	N
59	14	N
60	12	N

Number	Dia (in)	Remove (Y/N)
61	12	N
62	14	N
63	19	N
64	12	N
65	15	N
66	20	N
67	17	N
68	15	N
69	14	N
70	17	N
71	14	N
72	10	N
73	18	N
74	10	N
75	16	N
76	3x12	N
77	12	N
78	12	N
79	12	N
80	20	N
81	21	N
82	8	N
83	18	N
84	14	N
85	8	N
86	14	Y
87	2x14	Y
88	10	Y
89	12	Y
90	12	Y
91	10	N
92	8	N
93	14	N
94	12	N
95	12	N
96	12	N
97	8	N
98	12	N
99	12	N
100	17	N
101	28	N
102	6x8	N
103	16	N
104	10	Y
105	26	N
106	24	N
107	18	N
108	2x16	N
109	10	Y
110	10	Y
111	5x10	Y
112	10	N
113	12	N
114	24	N
115	8x10	Y
116	14	Y
117	12	N
118	12	N

Number	Dia (in)	Remove (Y/N)
119	2x8	N
120	8	N
121	10	N
122	8	N
123	6	N
124	2x10	N
125	6	N
126	8	N
127	10	N
128	8	N
129	8	N
130	6	N
131	6	N
132	8	N
133	8	N
134	10	N
135	10	N
136	2x8	N
137	20	N
138	14	N
139	14	N
140	18	N
141	16	N
143	8	Y
144	12	N
145	2x14	N
146	14	N
147	16	N
148	10	N
149	10	N
150	48	N
151	12	N
152	8	Y
153	12	N
154	14	N
155	2x10	N
156	12	N
157	14	N
158	16	N
159	14	N
160	3x8	N
161	14	N
162	10	N
163	2x8	N
164	12	N
165	12	N
166	12	N
167	8	N
168	18	N
169	12	N
170	12	N
171	12	N
172	10	N
173	12	N
174	11	N
175	8	N
176	12	N
177	10	N

Number	Dia (in)	Remove (Y/N)
178	8	N
179	2x10	N
180	10	N
181	14	N
182	10	N
183	10	N
184	2X14	N
185	18	N
186	3x12	Y
187	2x8	Y
188	2x10	Y
189	2x14	N
190	14	N
191	12	N
192	2x12	N
193	14	N
194	20	N
195	20	N
196	12	N
197	16	N
198	8	N
199	23	N
200	23	N
201	12	N
202	12	N
203	2x10	N
204	16	Y
205	2x18	Y
206	4x12	Y
207	16	Y
208	2x12	Y
209	9x10	Y
210	12	Y
211	12	Y
212	12	Y
213	12	Y
214	14	Y
215	16	Y
216	14	Y
217	10	Y
218	14	Y
219	3x6	Y
220	12	Y
221	14	Y
222	10	Y
223	2x16	Y
225	3x8	Y

TOTAL TREES TO BE REMOVED = 40

TREES THAT ARE NOT NUMBERED HAVE NOT BEEN EVALUATED BY THE ARBORIST

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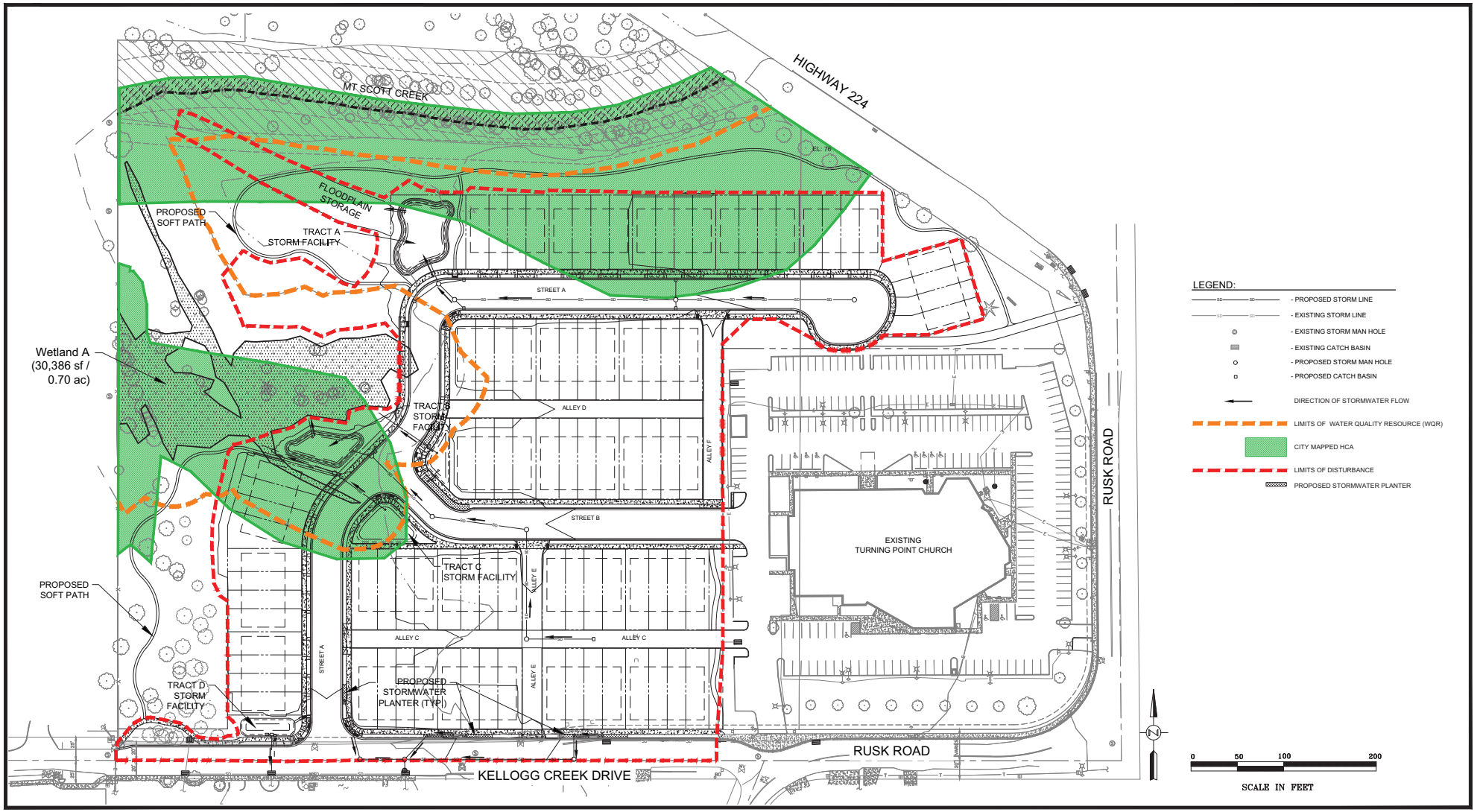
Plans provided by DOWL.

Tree Survey and Removal Table
Kellogg Creek Subdivision - Milwaukie, Oregon

FIGURE 7A

6-14-2017

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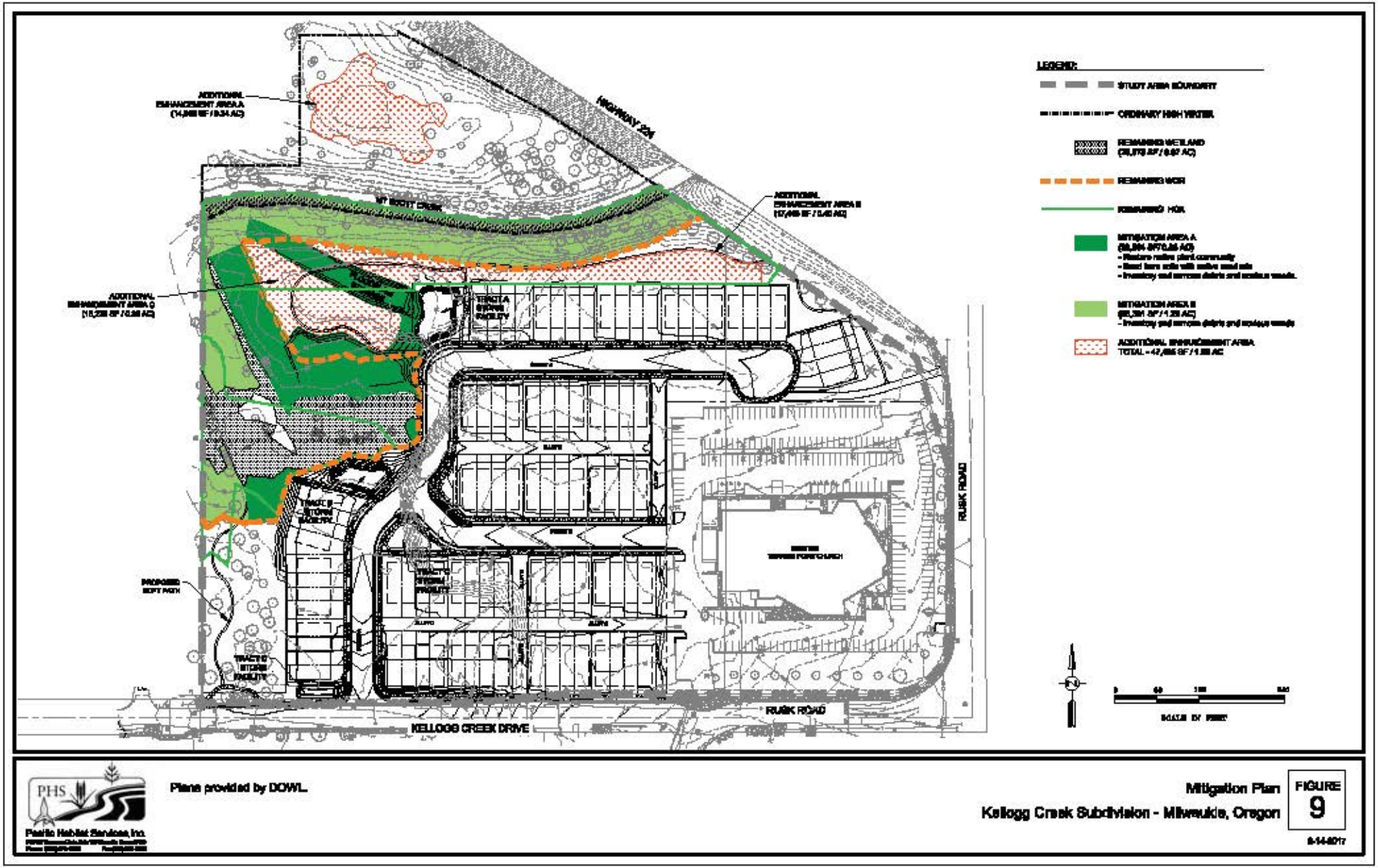
Plans provided by DOWL.

Stormwater Management Plan
SE Kellogg Creek Drive - Milwaukie, Oregon

FIGURE 8

6-14-2017

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PHS
Pacific Habitat Services, Inc.

Plans provided by DOWL.

Mitigation Plan
Kellogg Creek Subdivision - Milwaukie, Oregon

FIGURE 9

8-14-2017

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Mitigation Area A Planting List

Species	Common Name	Quantity	Stock Type	Plant Size
Trees				
Alnus rubra	Red alder	173	Container or field-grown	½ in caliper
Crataegus douglasii	Douglas hawthorn	172	Container or field grown	½ in caliper
Fraxinus latifolia	Oregon ash	173	Container or field grown	½ in caliper
Populus balsamifera	Black cottonwood	173	Container or field-grown	½ in caliper
Salix scouleriana	Scouler's willow	172	Container or field-grown	½ in caliper
Shrubs				
Cornus alba	Red-osier dogwood	720	1 gal.	12 in
Rosa pisocarpa	Clustered rose	720	1 gal.	12 in
Malus fusca	Western crabapple	719	1 gal	12 in
Physocarpus capitatus	Pacific ninebark	719	1 gal.	12 in
Sambucus racemosa	Red elderberry	719	1 gal.	12 in
Symphoricarpos albus	Snowberry	720	1 gal.	12 in
Herbaceous seed mix				
Agrostis exarata	Spike bentgrass	2.0 lbs/ac	Seed	n/a
Bromus carinatus	California brome	2.0 lbs/ac	Seed	n/a
Deschampsia cespitosa	Tufted hairgrass	3.0 lbs/ac	Seed	n/a
Elymus glaucus	Blue wildrye	3.0 lbs/ac	Seed	n/a
Hordeum brachyantherum	Meadow barley	2.0 lbs/ac	Seed	n/a
Lupinus rivularis	Riverbank lupine	3.5 lbs/ac	Seed	n/a

Additional Enhancement Area A Planting List

Species	Common Name	Quantity	Stock Type	Plant Size
Trees				
Crataegus douglasii	Douglas hawthorn	81	Container or field grown	½ in caliper
Fraxinus latifolia	Oregon ash	81	Container or field grown	½ in caliper
Populus balsamifera	Black cottonwood	81	Container or field-grown	½ in caliper
Shrubs				
Rosa pisocarpa	Clustered rose	243	1 gal.	12 in
Malus fusca	Western crabapple	243	1 gal	12 in
Physocarpus capitatus	Pacific ninebark	243	1 gal.	12 in
Sambucus racemosa	Red elderberry	243	1 gal.	12 in
Symphoricarpos albus	Snowberry	243	1 gal.	12 in
Herbaceous seed mix				
Agrostis exarata	Spike bentgrass	2.0 lbs/ac	Seed	n/a
Bromus carinatus	California brome	2.0 lbs/ac	Seed	n/a
Deschampsia cespitosa	Tufted hairgrass	3.0 lbs/ac	Seed	n/a
Elymus glaucus	Blue wildrye	3.0 lbs/ac	Seed	n/a
Hordeum brachyantherum	Meadow barley	2.0 lbs/ac	Seed	n/a

Additional Enhancement Area B Planting List

Species	Common Name	Quantity	Stock Type	Plant Size
Trees				
Acer macrophyllum	Big-leaf maple	54	Container or field-grown	½ in caliper
Populus balsamifera	Black cottonwood	54	Container or field grown	½ in caliper
Quercus garryana	Oregon white oak	54	Container or field grown	½ in caliper
Shrubs				
Mahonia aquifolium	Tall Oregon grape	286	1 gal.	12 in
Rosa gymnocarpa	Baldhip rose	286	1 gal.	12 in
Symphoricarpos albus	Snowberry	286	1 gal	12 in
Herbaceous seed mix				
Achillea millefolium	Yarrow	3.0 lbs/ac	Seed	n/a
Bromus carinatus	California brome	2.0 lbs/ac	Seed	n/a
Elymus glaucus	Blue wildrye	3.0 lbs/ac	Seed	n/a

Additional Enhancement Area C Planting List

Species	Common Name	Quantity	Stock Type	Plant Size
Trees				
Alnus rubra	Red alder	87	Container or field-grown	½ in caliper
Crataegus douglasii	Douglas hawthorn	86	Container or field grown	½ in caliper
Fraxinus latifolia	Oregon ash	87	Container or field grown	½ in caliper
Populus balsamifera	Black cottonwood	87	Container or field-grown	½ in caliper
Salix scouleriana	Scouler's willow	86	Container or field-grown	½ in caliper
Shrubs				
Cornus alba	Red-osier dogwood	360	1 gal.	12 in
Rosa pisocarpa	Clustered rose	360	1 gal.	12 in
Malus fusca	Western crabapple	360	1 gal	12 in
Physocarpus capitatus	Pacific ninebark	360	1 gal.	12 in
Sambucus racemosa	Red elderberry	360	1 gal.	12 in
Symphoricarpos albus	Snowberry	360	1 gal.	12 in
Herbaceous seed mix				
Agrostis exarata	Spike bentgrass	2.0 lbs/ac	Seed	n/a
Bromus carinatus	California brome	2.0 lbs/ac	Seed	n/a
Deschampsia cespitosa	Tufted hairgrass	3.0 lbs/ac	Seed	n/a
Elymus glaucus	Blue wildrye	3.0 lbs/ac	Seed	n/a
Hordeum brachyantherum	Meadow barley	2.0 lbs/ac	Seed	n/a
Lupinus rivularis	Riverbank lupine	3.5 lbs/ac	Seed	n/a

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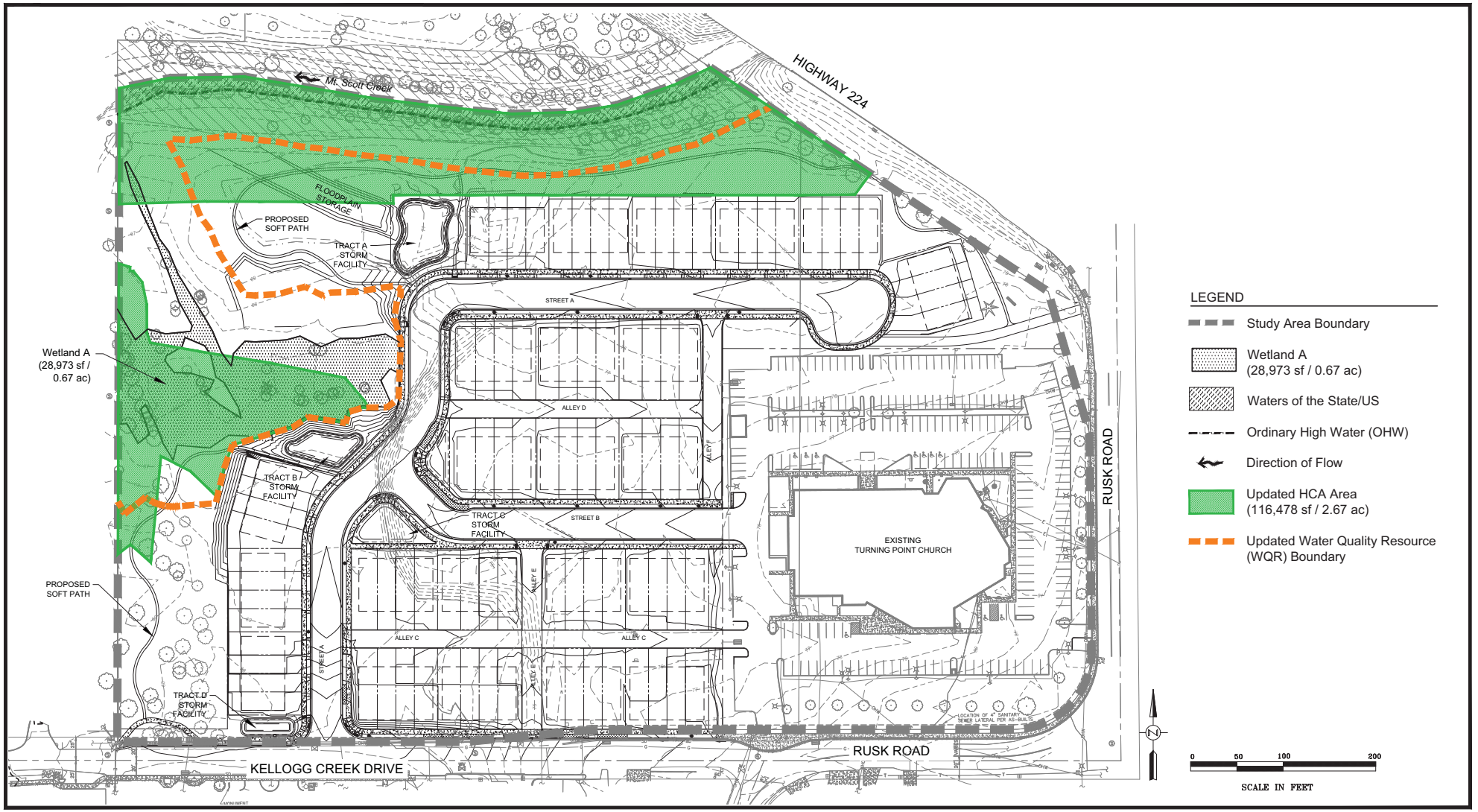
Plans provided by DOWL.

Planting Lists
Kellogg Creek Subdivision - Milwaukie, Oregon

FIGURE 9A

6-14-2017

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Plans provided by DOWL.

HCA Boundary Verification Map
Kellogg Creek Subdivision - Milwaukie, Oregon

FIGURE 10

6-14-2017

X:\Project Directories\5900\5975 SE Rusk Road (Kellogg Creek Drive)\AutoCAD\Plot Dwg\HCA\Fig10 HCA verification.dwg, 6/14/2017 2:19:16 PM

RS750

Attachment B

Wetland Delineation Report



RS751

Wetland Delineation for a Proposed Development Site North of SE Kellogg Creek Drive in Milwaukie, Clackamas County, Oregon

(Township 2 South, Range 2 East, Section 6AD,
TL 600 and Portions of 700, 900 and 901)

Prepared for

Brownstone Development, Inc.
Attn: Randy Myers
PO Box 2375
Lake Oswego, OR 97035

Prepared by

Caroline Rim, Craig Tumer
John van Staveren
Pacific Habitat Services, Inc.
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PHS Project Number: 5975

January 16, 2017

RS752

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Figure 3: National Wetland Inventory Map
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Figure 5: Aerial Photograph
Figure 6: Wetland Delineation Map

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APPENDIX C: Site Photos
APPENDIX D: Historic Aerial Photographs
APPENDIX E: Wetland Definitions, Methodology, and References (client only)

I. INTRODUCTION

Pacific Habitat Services, Inc. (PHS) conducted a wetland delineation on a proposed development site located north of SE Kellogg Creek Drive in Milwaukie, Clackamas County, Oregon (Township 2 South, Range 2 East, Section 6AD, Tax Lot 600 and portions of Tax Lots 700, 900, 901). The study area consists of approximately 15.58 acres.

This report presents the results of PHS's field work. Figures, including a map depicting the location of wetlands within the study area, are located in Appendix A. Data sheets documenting on-site conditions are provided in Appendix B. Ground-level photos of the study area are in Appendix C. Historic aerial photographs are in Appendix D. The geotechnical evaluation report for the site is included in Appendix E. A discussion of the methodology is provided in Appendix F for the client.

II. RESULTS AND DISCUSSION

A. Landscape Setting and Land Use

The site is located southwest of Highway 224 (Pacific Highway); north of SE Kellogg Creek Drive, and north and west of SE Rusk Road. Mt. Scott Creek flows to the west along the northern edge of the study area, and the North Clackamas Park Milwaukie Center borders the western edge. The site is located within a residential area; undeveloped woodland is located immediately to the north and northwest of the study area, and the Turning Point Church is located in the southeast corner of the site at 13333 SE Rusk Road. The eastern half of the property, near the church, is relatively level; however, the western half descends abruptly to a lower woodland area. Site elevations range from approximately 80 feet National Geodetic Vertical Datum (NGVD) in the eastern half of the site, to approximately 66 feet NGVD in the lower reaches of the western half of the site.

B. Site Alterations

The site has not been subject to recent construction activities; however, it appears that the substrate throughout much of the central and eastern half of the site consists of fill material, likely associated with the construction of the church, over two decades ago.

C. Precipitation Data and Analysis

Table 1 compares the average monthly precipitation to the observed monthly precipitation at the Portland International Airport National Weather Service Station in the three months prior to PHS's wetland delineation field work. Table 1 also compares the observed precipitation to be within the normal precipitation range, as identified in the NRCS WETS table for the Oregon City station.

As shown in Table 1, observed precipitation was below normal and normal range in August. Observed precipitation was above normal but within normal range in September; however, in October observed precipitation was considerably above normal and normal range. It should be noted that the observed precipitation total for November in Table 1 is the amount of precipitation recorded in the first 20 days of the month, prior to the day of PHS's wetland delineation field work.

Table 1. Comparison of Average and Observed Precipitation for the Three Months Prior to the Wetland Delineation Field Work

Month	Average Precipitation[a] (in.)	30% Chance Will Have		Observed Precipitation[b] (in.)	Percent of Normal
		Less Than Average[a]	More Than Average[a]		
August	1.00	0.21	1.16	0.09	13
September	1.93	0.86	2.41	1.69	115
October	3.48	1.85	4.25	8.31	277
November	6.79	4.43	8.16	2.79[c]	50[d]

Notes:
a. Source: NRCS WETS Table for Oregon City WETS station
b. Observed precipitation is the precipitation recorded at the Portland International Airport weather station. Source: National Weather Service.
c. Observed precipitation is for the period November 1-20, 2016, prior to PHS's November 21, 2016 field work.
d. The percent of normal precipitation is for the first twenty days in November prior to PHS's November 21, 2016 field work. This estimate assumes that precipitation is spread evenly across the month and that the average precipitation in the first twenty days of November is 2.79 inches.

Precipitation in the months preceding PHS's wetland delineation field work fluctuated widely. However, based on this and other observations of hydrologic conditions during the site visit, it is PHS's opinion that the drier than normal conditions in August and the wetter than normal conditions in September and October did not affect the hydrological indicators observed at the time of PHS's wetland delineation field work.

D. Methods

PHS conducted the wetland investigation and data collection on November 21, 2016. PHS identified jurisdictional wetlands in the study area based on the presence of wetland hydrology, hydric soils, and hydrophytic vegetation, in accordance with the Routine On-site Determination, as described in the *Corps of Engineers Wetland Delineation Manual, Wetlands Research Program Technical Report Y-87-1* ("The 1987 Manual") and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region*.

PHS delineated the limits of ordinary high water (OHW) along the south bank of Mt. Scott Creek based on an evaluation of observed physical characteristics, as described in the U.S. Army Corps of Engineers' Regulatory Guidance Letter No. 05-05 (December 7, 2005). PHS flagged the limits of OHW with blue flags placed at the limits of the OHW, as indicated by the point below which woody vegetation is absent and at the break in the slope angle of the bank.

E. Description of All Wetlands and Other Non-Wetland Waters

PHS identified and delineated one potential wetland area (Wetland A) and Mt. Scott Creek (south bank only), as well as six potentially, artificially created wetland areas (Wetlands B through G). Brief descriptions of the on-site wetlands and non-wetland waters are provided below.

Mt. Scott Creek

Mt. Scott Creek, a tributary to Kellogg Creek and the Willamette River, is a perennial stream that generally flows to the west along the northern boundary of the study area. The stream banks are relatively well defined and near vertical at the location of the OHW line. The plant community of the riparian area along the creek includes a deciduous overstory of big-leaf maple (*Acer macrophyllum*, FACU), Oregon white oak (*Quercus garryana*, FACU), Oregon ash (*Fraxinus latifolia*, FACW), and red alder (*Alnus rubra*, FAC); and a shrub and herbaceous understory composed of species such as snowberry (*Symphoricarpos albus*, FACU), Pacific ninebark (*Physocarpus capitatus*, FACW), Scouler's willow (*Salix scouleriana*, FAC), English hawthorn (*Crataegus monogyna*, FAC), Fuller's teasel (*Dipsacus fullonum*, FAC), and spreading bentgrass (*Agrostis stolonifera*, FAC). The Cowardin Classification for Mt. Scott Creek is Riverine Upper Perennial Unconsolidated Bottom Permanently Flooded (R3UBH) and Riverine Unknown Perennial Unconsolidated Bottom Permanently Flooded (R5UBH). The Hydrogeomorphic (HGM) Classification is Riverine Flow-Through. Mt. Scott Creek continues outside the study area to the north, west and east.

Wetland A

Wetland A consists of approximately 30,386 square feet (0.70 acre) located in the western half of the site, south of Mt. Scott Creek. The plant community within Wetland A (characterized by Sample Points 3, 5, 7) is a combination of deciduous woodland bordered by open fields. Dominant species within the woodland include an overstory of Oregon ash and black cottonwood (*Populus balsamifera*, FAC), with a woody understory of Oregon ash, black cottonwood, red-osier dogwood (*Cornus alba*, FACW), snowberry, and Himalayan blackberry (*Rubus armeniacus*, FAC). The open fields include reed canarygrass (*Phalaris arundinacea*, FACW), creeping buttercup (*Ranunculus repens*, FAC), big leaf avens (*Geum macrophyllum*, FAC), slender rush (*Juncus tenuis*, FAC), rough bluegrass (*Poa trivialis*, FAC), bitter dock (*Rumex obtusifolius*, FAC), and common dandelion (*Taraxacum officinale*, FACU).

The adjacent upland areas (characterized by Sample Points 2, 6, 8) include Oregon ash, Himalayan blackberry, snowberry, English hawthorn, reed canarygrass, Fuller's teasel, large leaf avens, bull thistle (*Cirsium vulgare*, FACU), fringed willowherb (*Epilobium ciliatum*, FACW), Dewey sedge (*Carex deweyana*, FAC), common selfheal (*Prunella vulgaris*, FACU), Western swordfern (*Polystichum munitum*, FACU), lentil vetch (*Vicia tetrasperma*, NOL), creeping buttercup, spreading bentgrass, field horsetail (*Equisetum arvense*, FAC), narrow-leaf goosefoot (*Chenopodium leptophyllum*, FACU), spotted cat's ear (*Hypochaeris radicata*, FACU), European centaury (*Centaurium erythraea*, FAC), wild carrot (*Daucus carota*, FACU), tansy ragwort (*Senecio jacobaea*, FACU), and colonial bentgrass (*Agrostis capillaris*, FAC).

Hydrology within Wetland A is likely supported by a seasonally high groundwater table, surface runoff and precipitation. At the time of PHS's wetland delineation field work, the soils in Wetland A were typically saturated to the surface or within twelve inches of the surface, with free water observed at four inches below the soil surface or at the surface; inundation was also commonly present within Wetland A. The low-chroma matrix of the soil with contrasting redox concentrations meets the redox dark surface indicator for hydric soils. The Cowardin Classification for Wetland A is Palustrine Emergent, Persistent, Seasonally Flooded/Saturated (PEM1E). The HGM Classification is Slope. Wetland A continues outside the study area to the west.

<u>Wetlands B – G</u> (Artificially Created Wetlands)

Wetlands B through G generally consist of small, shallow, isolated depressions. Table 2 lists the area of each wetland.

Wetland	Area (square feet / acres)
B	905 / 0.02
C	176 / 0.004
D	172 / 0.004
E	998 / 0.02
F	301 / 0.007
G	666 / 0.02
Total	**3,218 / 0.07**

All six of these wetlands are similar in character, and therefore, a representative pair of wetland/upland sample points (9 and 10, respectively) were taken at Wetland E. These wetlands are located in the central portion of the site, west of the church and several feet above the lower woodland area further to the west. The plant communities in both the wetland and upland areas are primarily composed of weedy grasses and herbs; the wetland areas include reed canarygrass, spreading bentgrass, soft rush (*Juncus effusus*, FACW), spotted cat's ear, and oxeye daisy (*Chrysanthemum vulgare*, FACU), and the adjacent upland areas include wild carrot, curly dock (*Rumex crispus*, FAC), colonial bentgrass, bluegrass (*Poa sp*., FAC), common velvet grass (*Holcus lanatus*, FAC), tall fescue (*Schedonorus arundinaceus*, FAC), yellow glandweed (*Parentucellia viscosa*, FAC), and English plantain (*Plantago lanceolata*, FACU).

Hydrology within Wetlands B through G primarily consists of surface runoff and precipitation. As discussed in the *Subsurface Conditions* section of the geotechnical evaluation report (Appendix E), fill material on the site ranges in thickness up to more than 12 feet, with approximately 10 feet in the central portion of the site, and groundwater was not encountered in the test pits in the vicinity of these wetlands. Therefore, it is reasonable to assume that these artificially created wetlands are not hydrologically connected to the water table. At the time of PHS's wetland delineation field work, the soils within these wetlands were typically saturated to the surface, with free water observed at or near the surface, and included some areas of inundation, which likely was perched on compacted substrate resulting in diminished permeability. The redox dark surface indicator for hydric soils was met with low-chroma matrix soils with contrasting redox concentrations. The Cowardin Classification for Wetlands B through G is Palustrine Emergent, Nonpersistent, Seasonally Flooded/Saturated (PEM2E). The HGM Classification is Slope.

As mentioned previously in Section B, *Site Alterations*, it appears that the substrate throughout much of the central and eastern half of the site consists of fill material, likely associated with the construction of the church. In addition, based on a review of historic aerial photographs (Appendix D), it appears that Wetlands B through G have been artificially created on compacted fill material resulting from activities associated with construction of the church and on-going activities associated with the church property over the years.

F. Deviation from LWI or NWI

With the exception of Mt. Scott Creek, which the US Fish and Wildlife Service's National Wetlands Inventory (NWI) maps as Riverine Upper Perennial Unconsolidated Bottom Permanently Flooded (R3UBH) and Riverine Unknown Perennial Unconsolidated Bottom Permanently Flooded (R5UBH) wetland, it does not indicate the presence of any wetlands on the site. NWI maps are generated primarily through the interpretation of color infrared aerial photographs (scale of 1:58,000), with limited "ground truthing" to confirm the interpretations. The canopy cover over much of Wetland A, the small size of Wetlands B through G, and the scale of the aerial photographs used to prepare the NWI maps are likely reasons for the discrepancy between the wetlands mapping and the existing on-site conditions. In addition, as Wetlands B though G appear to be artificially created, their presence and absence over the years are likely to have been dependent upon the construction and various activities on the church property, which have varied over the period of time in which the aerial photographs were taken.

G. Mapping Method

PHS flagged the wetland boundaries and limits of OHW with blue flagging. Sample points were flagged with lime green surveyor's tape. The wetland boundary and OHW flagging were survey-located by TerraCalc Land Surveying, Inc. Sample points were GPS-located by PHS, which subsequently transferred this information onto a base map provided by TerraCalc Land Surveying. The estimated survey accuracy is sub-centimeter and the sample point accuracy is approximately +/- 3 feet.

H. Additional Information

None

I. Results and Conclusions

Within the study area, PHS identified and delineated a total of approximately 0.70 acres of potentially jurisdictional wetland, approximately 0.07 acres of potentially artificially created wetland, and the OHW line along the south bank of Mt. Scott Creek, as detailed in Table 3.

Table 3: Summary of Potentially Jurisdictional and Artificially Created Wetland, and Other Waters within the Study Area

Resource	Area (square feet/acreage)	Cowardin Class	HGM Class
Wetland A	30,386 / 0.70	PEM1E	Slope
Wetland B (Artificially Created)	905 / 0.02	PEM2E	Slope
Wetland C (Artificially Created)	176 / 0.004	PEM2E	Slope
Wetland D (Artificially Created)	172 / 0.004	PEM2E	Slope

Resource	Area (square feet/acreage)	Cowardin Class	HGM Class
Wetland E (Artificially Created)	998 / 0.02	PEM2E	Slope
Wetland F (Artificially Created)	301 / 0.007	PEM2E	Slope
Wetland G (Artificially Created)	666 / 0.02	PEM2E	Slope
Mt. Scott Creek (OHW line south bank only)	-	R3UBH R5UBH	Riverine Flow-Through
Total (Potentially Jurisdictional Wetland)	**30,386 (0.70 acres)**		
Total (Potentially Artificially Created Wetland)	**3,218 (0.07 acres)**		

J. Required Disclaimer

This report documents the investigation, best professional judgment and conclusions of the investigators. It is correct and complete to the best of our knowledge. It should be considered a Preliminary Jurisdictional Determination of wetlands and other waters and used at your own risk unless it has been reviewed and approved in writing by the Oregon Department of State Lands in accordance with OAR 141-090-0005 through 141-090-0055.

III. REFERENCES

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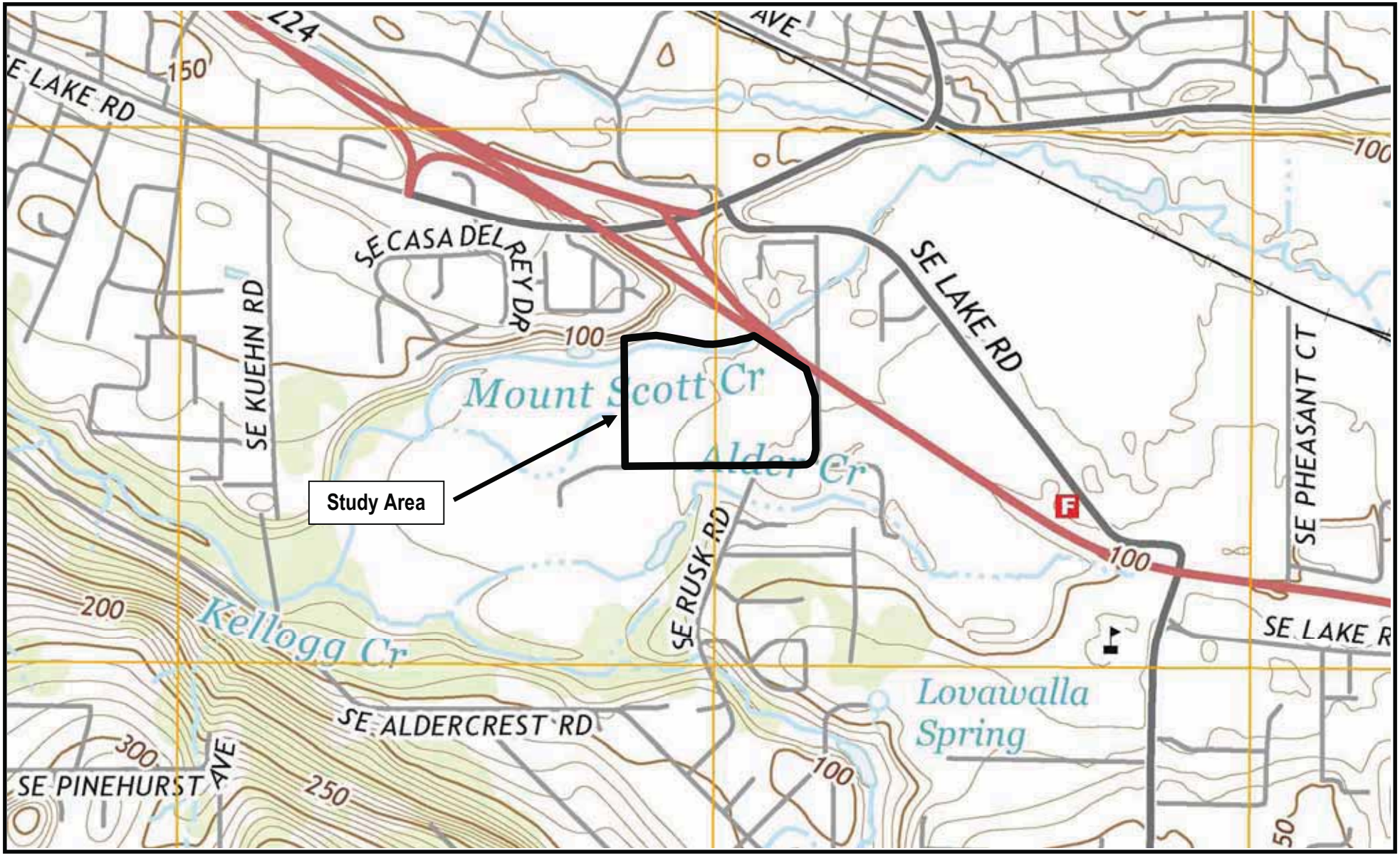
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Appendix A

Figures



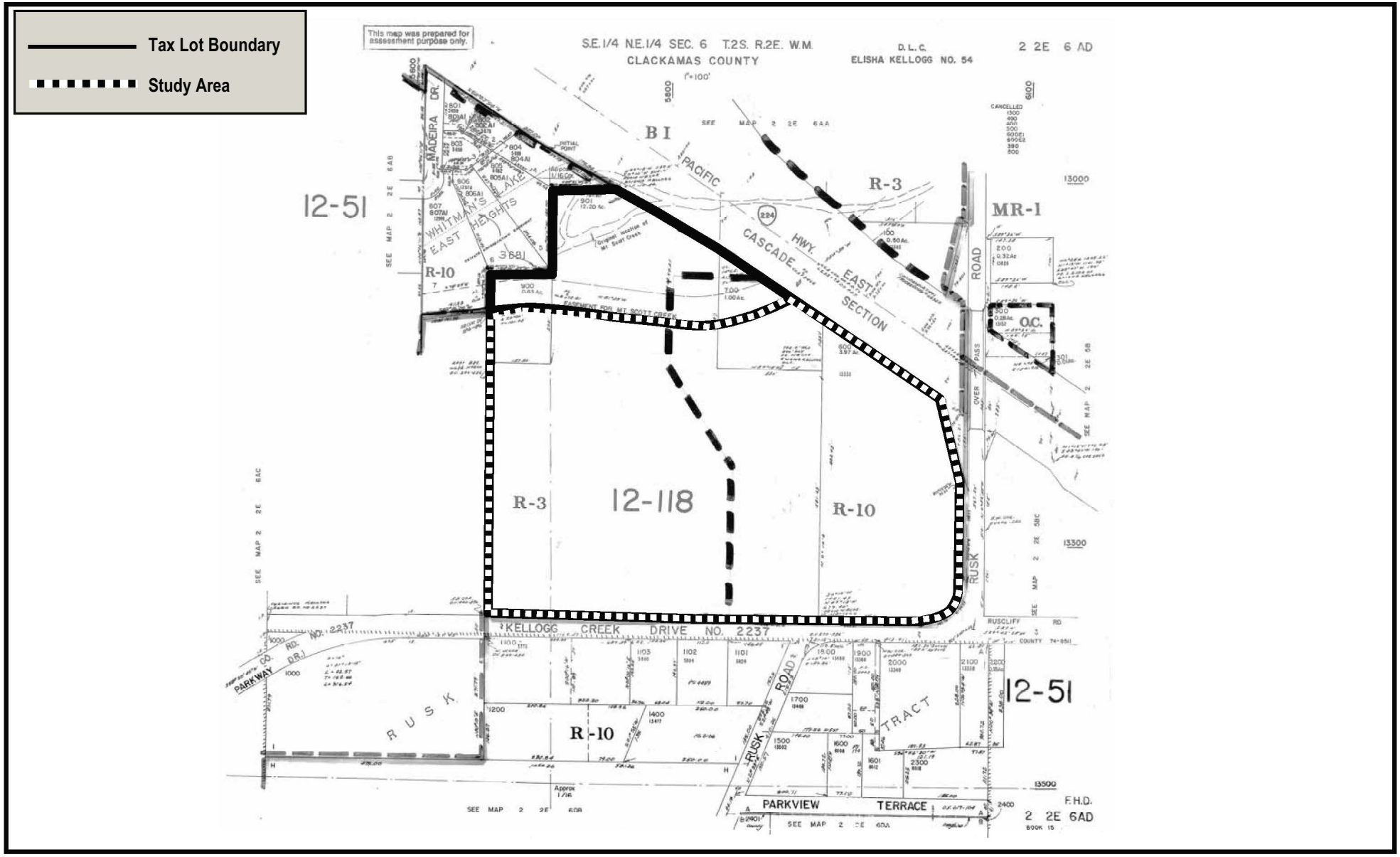


5975
1/16/2017

Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

General Location and Topography
SE Kellogg Creek Drive - Milwaukie, Oregon
United States Geological Survey (USGS), Gladstone, Oregon, 7.5 Quadrangle, 2014
(viewer/nationalmap.gov/basic)

FIGURE
1

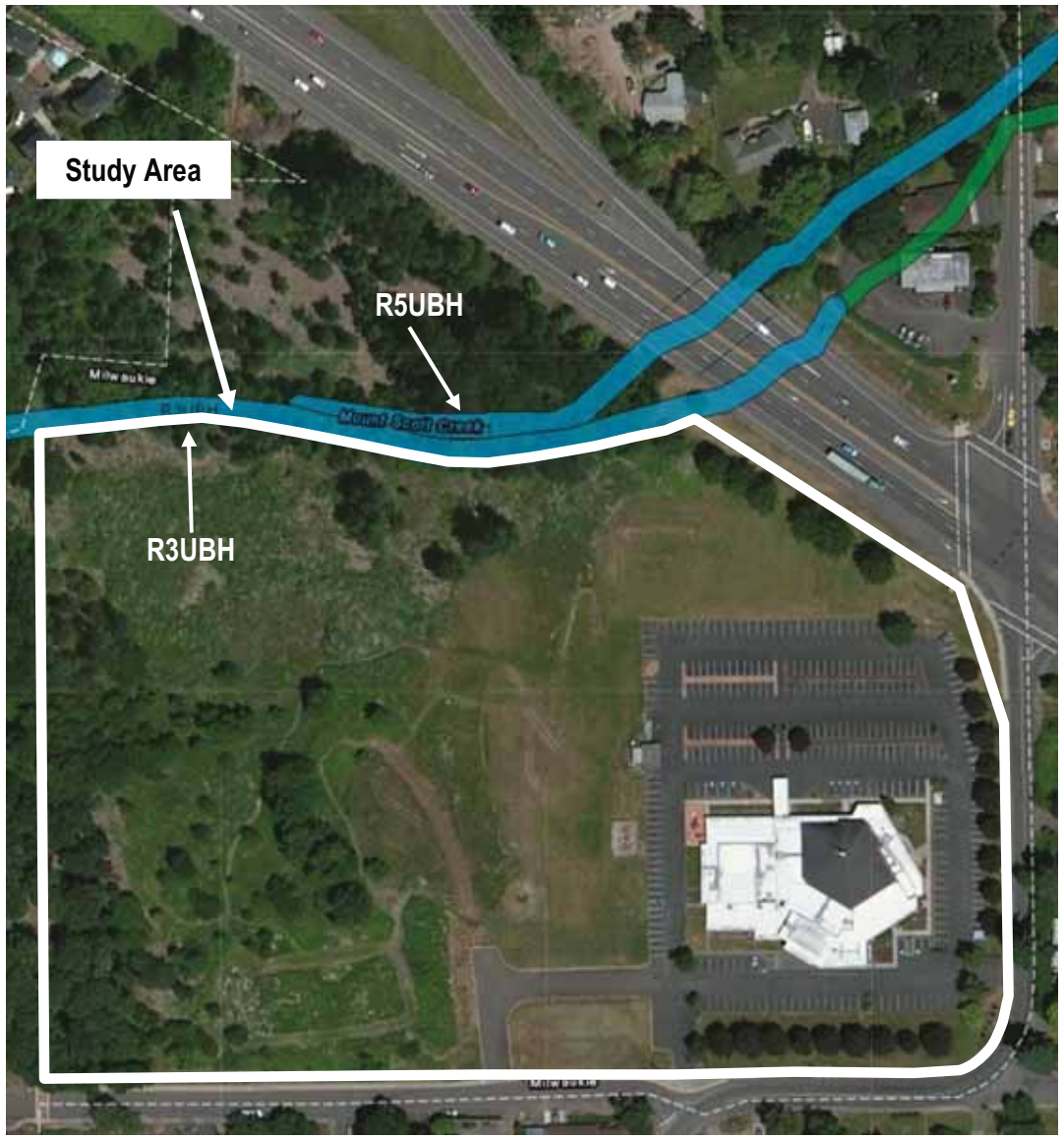


5975
12/21/2016

Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

Tax Lot Map
SE Kellogg Creek Drive - Milwaukie, Oregon
The Oregon Map (ormap.net)

FIGURE
2



LEGEND

Wetlands

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

R3UBH: Riverine Upper Perennial Unconsolidated Bottom Permanently Flooded

R5UBH: Riverine Unknown Perennial Unconsolidated Bottom Permanently Flooded

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12/21/2016

Pacific Habitat Services, Inc.
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Wilsonville, OR 97070

National Wetlands Inventory Map
SE Kellogg Creek Drive - Milwaukie, Oregon
U.S. Fish and Wildlife Service, Online Wetland Mapper V2, 2016

FIGURE
3

Soil Map Units

25 - Cove silty clay loam (hydric)

84 - Wapato silty clay loam (hydric)

91B - Woodburn silt loam, 3 to 8% slopes



5975
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Wilsonville, OR 97070

Soils Map
SE Kellogg Creek Drive - Milwaukie, Oregon
Natural Resources Conservation Services, Web Soil Survey, 2016

(websoilsurvey.sc.egov.usda.gov)

FIGURE
4



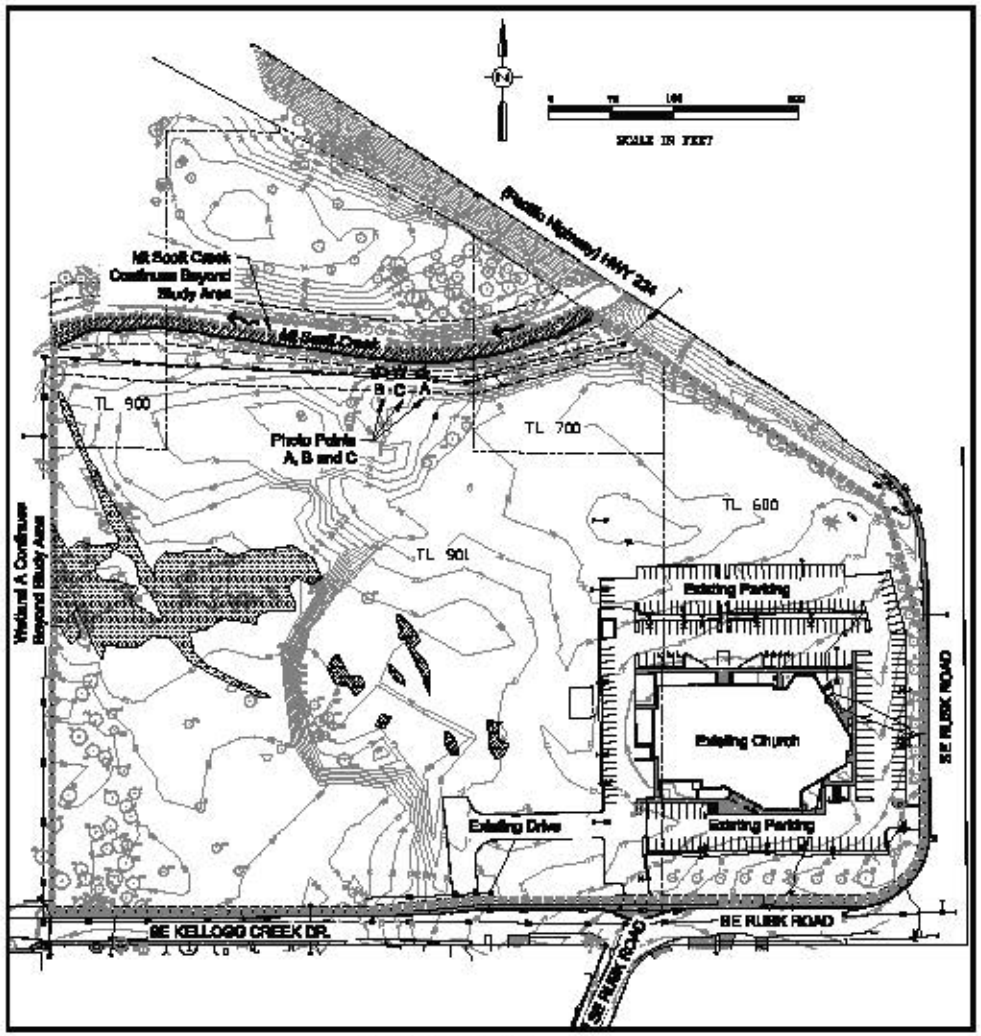
5975
12/21/2016

PHS

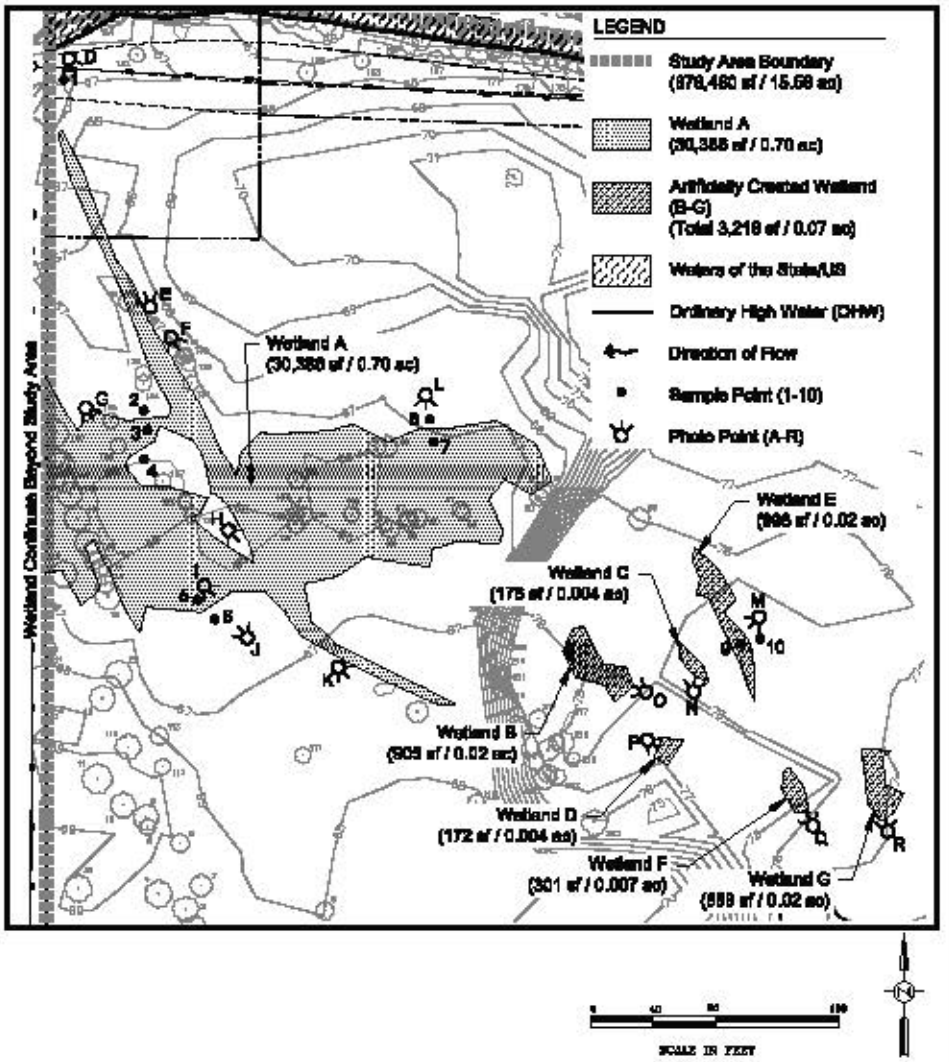
Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

Aerial Photo
SE Kellogg Creek Drive - Milwaukie, Oregon
Google Earth, 2016

FIGURE
5



TAX LOT OVERVIEW



PHS
Prairie Habitat Services, Inc.

Survey provided by
TerraCalo Land Surveying, Inc., 2016
Survey accuracy is sub-centimeter and
Sample Point accuracy is ± 3 feet.

Wetland Delineation
SE Kellogg Creek Drive - Milwaukie, Oregon

FIGURE 6

1-18-2017

RS767

Appendix B

Wetland Delineation Data Sheets



RS768

PHS # 5975

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: SE Kellogg Creek Drive | City/County: Milwaukie/Clackamas | Sampling Date: 11/21/2016

Applicant/Owner: Brownstone Development, Inc. | State: OR | Sampling Point: 1

Investigator(s): Caroline R./Craig T. | Section, Township, Range: Section 6AD, T 2S, R 2E

Landform (hillslope, terrace, etc.): | Local relief (concave, convex, none): | Slope (%):

Subregion (LRR): LRRA | Lat: 45.427379 | Long: -122.603487 | Datum: WGS 84

Soil Map Unit Name: Wapato silty clay loam | NWI Classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ (if no, explain in Remarks)

Are vegetation ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y

Are vegetation ____ Soil ____ or Hydrology ____ naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	X	No		
Hydric Soil Present?	Yes		No	X	**Is Sampled Area within a Wetland?** Yes ____ No X
Wetland Hydrology Present?	Yes	X	No		

Remarks:
Floodplain adjacent to Mt. Scott Creek.

VEGETATION - Use scientific names of plants.

		absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (plot size: 30)				
1	***Quercus garryana***	30	X	FACU
2				
3				
4				
		30	= Total Cover	
Sapling/Shrub Stratum (plot size: 5)				
1	***Salix sitchensis***	15	X	FACW
2	***Fraxinus latifolia***	5	X	FACW
3	***Rubus armeniacus***	5	X	FAC
4				
5				
		25	= Total Cover	
Herb Stratum (plot size: 5)				
1	***Rumex crispus***	5		FAC
2	***Carex deweyana***	5		FAC
3	***Taraxacum officinale***	2		FACU
4	***Dipsacus fullonum***	6		FAC
5	***Geum macrophyllum***	3		FAC
6	***Agrostis stolonifera***	15	X	FAC
7	***Lapsana communis***	10	X	FACU
8	***Leucanthemum vulgare***	2		FACU
		48	= Total Cover	
Woody Vine Stratum (plot size:)				
1				
2				
		0	= Total Cover	

% Bare Ground in Herb Stratum 40

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL Species		x 1 =	0
FACW species		x 2 =	0
FAC Species		x 3 =	0
FACU Species		x 4 =	0
UPL Species		x 5 =	0
Column Totals	0 (A)		0 (B)

Prevalence Index =B/A = #DIV/0!

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

X 2- Dominance Test is >50%

____ 3-Prevalence Index is ≤ 3.0[1]

____ 4-Morphological Adaptations[1] (provide supporting data in Remarks or on a separate sheet)

____ 5- Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

RS769

SOIL PHS # 5975 Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(Inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/2	100					Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: **Compacted rock/gravel/cobble**

Depth (inches): **12"**

Hydric Soil Present? Yes ___ **No X**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water stained Leaves (B9) **(Except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- **X** Water stained Leaves (B9) **(MLRA1, 2, 4A, and 4B)**
- **X** Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Fac-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	___	No **X**	Depth (inches):	
Water Table Present?	Yes	___	No **X**	Depth (inches):	**> 12**
Saturation Present? (includes capillary fringe)	Yes	___	No **X**	Depth (inches):	**> 12**

Wetland Hydrology Present?

Yes X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

PHS # 5975

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: SE Kellogg Creek Drive | City/County: Milwaukie/Clackamas | Sampling Date: 11/21/2016

Applicant/Owner: Brownstone Development, Inc. | State: OR | Sampling Point: 2

Investigator(s): Caroline R./Craig T. | Section, Township, Range: Section 6AD, T 2S, R 2E

Landform (hillslope, terrace, etc.): | Local relief (concave, convex, none): | Slope (%):

Subregion (LRR): LRRA | Lat: 45.427379 | Long: -122.603487 | Datum: WGS 84

Soil Map Unit Name: Cove silty clay loam | NWI Classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ (if no, explain in Remarks)

Are vegetation ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y

Are vegetation ____ Soil ____ or Hydrology ____ naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	X	No		
Hydric Soil Present?	Yes		No	X	**Is Sampled Area within a Wetland?** Yes ____ No X
Wetland Hydrology Present?	Yes		No	X	

Remarks:

VEGETATION - Use scientific names of plants.

		absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (plot size: ____)				
1	*Fraxinus latifolia*	10	X	FACW
2				
3				
4				
		10	= Total Cover	
Sapling/Shrub Stratum (plot size: ____)				
1	*Fraxinus latifolia*	5	X	FACW
2	*Prunus sp.*	1		(FAC)
3	*Rubus armeniacus*	5	X	FAC
4				
5				
		11	= Total Cover	
Herb Stratum (plot size: ____)				
1	*Phalaris arundinacea*	70	X	FACW
2	*Dipsacus fullonum*	15		FAC
3	*Geum macrophyllum*	2		FAC
4	*Cirsium vulgare*	1		FACU
5	*Epilobium ciliatum*	1		FACW
6				
7				
8				
		89	= Total Cover	
Woody Vine Stratum (plot size: ____)				
1				
2				
		0	= Total Cover	

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL Species		x 1 =	0
FACW species		x 2 =	0
FAC Species		x 3 =	0
FACU Species		x 4 =	0
UPL Species		x 5 =	0
Column Totals	0 (A)		0 (B)

Prevalence Index =B/A = #DIV/0!

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

X 2- Dominance Test is >50%

____ 3-Prevalence Index is ≤ 3.0[1]

____ 4-Morphological Adaptations[1] (provide supporting data in Remarks or on a separate sheet)

____ 5- Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

RS771

SOIL PHS # 5975 Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(Inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 3/2	100					Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) **(except MLRA 1)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes _____ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water stained Leaves (B9) **(Except MLRA 1, 2, 4A, and 4B)**
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Plowed Soils (C6)
- Stunted or Stressed Plants (D1) **(LRR A)**
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water stained Leaves (B9) **(MLRA1, 2, 4A, and 4B)**
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Fac-Neutral Test (D5)
- Raised Ant Mounds (D6) **(LRR A)**
- Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes		No X	Depth (inches):	
Water Table Present?	Yes		No X	Depth (inches):	> 18
Saturation Present? (includes capillary fringe)	Yes		No X	Depth (inches):	> 18

Wetland Hydrology Present?

Yes _____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

PHS # 5975

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: **SE Kellogg Creek Drive** City/County: **Milwaukie/Clackamas** Sampling Date: **11/21/2016**

Applicant/Owner: **Brownstone Development, Inc.** State: **OR** Sampling Point: **3**

Investigator(s): **Caroline R./Craig T.** Section, Township, Range: **Section 6AD, T 2S, R 2E**

Landform (hillslope, terrace, etc.:) **Swale** Local relief (concave, convex, none): Slope (%):

Subregion (LRR): **LRRA** Lat: **45.427379** Long: **-122.603487** Datum: **WGS 84**

Soil Map Unit Name: **Cove silty clay loam** NWI Classification: **None**

Are climatic/hydrologic conditions on the site typical for this time of year? Yes **X** No (if no, explain in Remarks)

Are vegetation Soil or Hydrology significantly disturbed? Are "Normal Circumstances" present? (Y/N) **Y**

Are vegetation Soil or Hydrology naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	**X**	No		
Hydric Soil Present?	Yes	**X**	No	**Is Sampled Area within a Wetland?**	Yes **X** No
Wetland Hydrology Present?	Yes	**X**	No		

Remarks:

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (plot size:)			
1 ***Fraxinus latifolia***	**5**	**X**	**FACW**
2			
3			
4			
	5	= Total Cover	
Sapling/Shrub Stratum (plot size:)			
1 ***Fraxinus latifolia***	**15**	**X**	**FACW**
2 ***Rubus armeniacus***	**5**	**X**	**FAC**
3			
4			
5			
	20	= Total Cover	
Herb Stratum (plot size:)			
1 ***Phalaris arundinacea***	**50**	**X**	**FACW**
2 ***Ranunculus repens***	**30**	**X**	**FAC**
3 ***Geum macrophyllum***	**1**		**FAC**
4			
5			
6			
7			
8			
	81	= Total Cover	
Woody Vine Stratum (plot size:)			
1			
2			
	0	= Total Cover	

% Bare Ground in Herb Stratum

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: **5** (A)

Total Number of Dominant Species Across All Strata: **5** (B)

Percent of Dominant Species That are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL Species		x 1 =	**0**
FACW species		x 2 =	**0**
FAC Species		x 3 =	**0**
FACU Species		x 4 =	**0**
UPL Species		x 5 =	**0**
Column Totals	**0** (A)		**0** (B)

Prevalence Index =B/A = **#DIV/0!**

Hydrophytic Vegetation Indicators:

- 1- Rapid Test for Hydrophytic Vegetation
- **X** 2- Dominance Test is >50%
- 3-Prevalence Index is ≤ 3.0[1]
- 4-Morphological Adaptations[1] (provide supporting data in Remarks or on a separate sheet)
- 5- Wetland Non-Vascular Plants[1]
- Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes **X** No

Remarks:

RS773

SOIL PHS # 5975 Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(Inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/1	100					Silty Clay Loam	
8-18	10YR 2/1	98	10YR 4/4	2	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

	Histosol (A1)		Sandy Redox (S5)
	Histic Epipedon (A2)		Stripped Matrix (S6)
	Black Histic (A3)		Loamy Mucky Mineral (F1) **(except MLRA 1)**
	Hydrogen Sulfide (A4)		Loamy Gleyed Matrix (F2)
	Depleted Below Dark Surface (A11)		Depleted Matrix (F3)
	Thick Dark Surface (A12)	X	Redox Dark Surface (F6)
	Sandy Mucky Mineral (S1)		Depleted Dark Surface (F7)
	Sandy Gleyed Matrix (S4)		Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

	2 cm Muck (A10)
	Red Parent Material (TF2)
	Very Shallow Dark Surface (TF12)
	Other (explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes X **No**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)			Secondary Indicators (2 or more required)
	Surface Water (A1)	Water stained Leaves (B9) **(Except MLRA 1, 2, 4A, and 4B)**	Water stained Leaves (B9) **(MLRA1, 2, 4A, and 4B)**
X	High Water Table (A2)		
X	Saturation (A3)	Salt Crust (B11)	Drainage Patterns (B10)
	Water Marks (B1)	Aquatic Invertebrates (B13)	Dry-Season Water Table (C2)
	Sediment Deposits (B2)	Hydrogen Sulfide Odor (C1)	Saturation Visible on Aerial Imagery (C9)
	Drift Deposits (B3)	Oxidized Rhizospheres along Living Roots (C3)	Geomorphic Position (D2)
	Algal Mat or Crust (B4)	Presence of Reduced Iron (C4)	Shallow Aquitard (D3)
	Iron Deposits (B5)	Recent Iron Reduction in Plowed Soils (C6)	Fac-Neutral Test (D5)
	Surface Soil Cracks (B6)	Stunted or Stressed Plants (D1) **(LRR A)**	Raised Ant Mounds (D6) **(LRR A)**
	Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Frost-Heave Hummocks (D7)
	Sparsely Vegetated Concave Surface (B8)		

Field Observations:

Surface Water Present?	Yes		No X	Depth (inches):	
Water Table Present?	Yes	X	No	Depth (inches):	8
Saturation Present? (includes capillary fringe)	Yes	X	No	Depth (inches):	10

Wetland Hydrology Present? Yes X **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

PHS # 5975

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: SE Kellogg Creek Drive | City/County: Milwaukie/Clackamas | Sampling Date: 11/21/2016

Applicant/Owner: Brownstone Development, Inc. | State: OR | Sampling Point: 4

Investigator(s): Caroline R./Craig T. | Section, Township, Range: Section 6AD, T 2S, R 2E

Landform (hillslope, terrace, etc.): | Local relief (concave, convex, none): | Slope (%):

Subregion (LRR): LRRA | Lat: 45.427379 | Long: -122.603487 | Datum: WGS 84

Soil Map Unit Name: Cove silty clay loam | NWI Classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ (if no, explain in Remarks)

Are vegetation ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y

Are vegetation ____ Soil ____ or Hydrology ____ naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes		No	X	**Is Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes		No	X	
Wetland Hydrology Present?	Yes		No	X	

Remarks:

VEGETATION - Use scientific names of plants.

		absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (plot size: 30)				
1	*Fraxinus latifolia*	3		FACW
2				
3				
4				
		3	= Total Cover	
Sapling/Shrub Stratum (plot size: 5)				
1	*Fraxinus latifolia*	3		FACW
2	*Rubus armeniacus*	20	X	FAC
3	*Crataegus monogyna*	10	X	FAC
4	*Rubus laciniatus*	15	X	FACU
5				
		48	= Total Cover	
Herb Stratum (plot size: 5)				
1	*Geum macrophyllum*	5	X	FAC
2	*Lapsana communis*	10	X	FACU
3	*Polystichum munitum*	5	X	FACU
4				
5				
6				
7				
8				
		20	= Total Cover	
Woody Vine Stratum (plot size:)				
1	*Rubus ursinus*	60	X	FACU
2	*Solanum dulcamara*	5		FAC
		65	= Total Cover	

% Bare Ground in Herb Stratum

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 43% (A/B)

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL Species		x 1 =	0
FACW species		x 2 =	0
FAC Species		x 3 =	0
FACU Species		x 4 =	0
UPL Species		x 5 =	0
Column Totals	0 (A)		0 (B)

Prevalence Index =B/A = #DIV/0!

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2- Dominance Test is >50%

____ 3-Prevalence Index is ≤ 3.0[1]

____ 4-Morphological Adaptations[1] (provide supporting data in Remarks or on a separate sheet)

____ 5- Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:

RS775

SOIL PHS # 5975 Sampling Point: 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(Inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/2	100					Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) **(except MLRA 1)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes _____ **No X**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water stained Leaves (B9) **(Except MLRA 1, 2, 4A, and 4B)**
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Plowed Soils (C6)
- Stunted or Stressed Plants (D1) **(LRR A)**
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water stained Leaves (B9) **(MLRA1, 2, 4A, and 4B)**
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Fac-Neutral Test (D5)
- Raised Ant Mounds (D6) **(LRR A)**
- Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	_____	No **X**	Depth (inches):	_____
Water Table Present?	Yes	_____	No **X**	Depth (inches):	**> 16**
Saturation Present? (includes capillary fringe)	Yes	_____	No **X**	Depth (inches):	**> 16**

Wetland Hydrology Present?

Yes _____ **No X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

RS776

PHS # 5975

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: SE Kellogg Creek Drive | City/County: Milwaukie/Clackamas | Sampling Date: 11/21/2016

Applicant/Owner: Brownstone Development, Inc. | State: OR | Sampling Point: 5

Investigator(s): Caroline R./Craig T. | Section, Township, Range: Section 6AD, T 2S, R 2E

Landform (hillslope, terrace, etc.:) Depression | Local relief (concave, convex, none): | Slope (%):

Subregion (LRR): LRRA | Lat: 45.427379 | Long: -122.603487 | Datum: WGS 84

Soil Map Unit Name: Cove silty clay loam | NWI Classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ (if no, explain in Remarks)

Are vegetation ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y

Are vegetation ____ Soil ____ or Hydrology ____ naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is Sampled Area within a Wetland?**	Yes X No
Hydric Soil Present?	Yes X	No		
Wetland Hydrology Present?	Yes X	No		

Remarks:

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (plot size: ____)			
1 *Fraxinus latifolia*	60	X	FACW
2			
3			
4			
	60	= Total Cover	
Sapling/Shrub Stratum (plot size: ____)			
1 *Fraxinus latifolia*	5	X	FACW
2 *Cornus alba*	1		FACW
3 *Symphoricarpos albus*	1		FACU
4			
5			
	7	= Total Cover	
Herb Stratum (plot size: ____)			
1 *Poa trivialis*	30	X	FAC
2 *Juncus tenuis*	2		FAC
3 *Rumex obtusifolius*	1		FAC
4 *Geum macrophyllum*	1		FAC
5 *Taraxacum officinale*	1		FACU
6			
7			
8			
	35	= Total Cover	
Woody Vine Stratum (plot size: ____)			
1			
2			
	0	= Total Cover	

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL Species		x 1 =	0
FACW species		x 2 =	0
FAC Species		x 3 =	0
FACU Species		x 4 =	0
UPL Species		x 5 =	0
Column Totals	0 (A)		0 (B)

Prevalence Index =B/A = #DIV/0!

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

X 2- Dominance Test is >50%

____ 3-Prevalence Index is ≤ 3.0[1]

____ 4-Morphological Adaptations[1] (provide supporting data in Remarks or on a separate sheet)

____ 5- Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

RS777

SOIL PHS # 5975 Sampling Point: 5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(Inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1-6	10YR 3/1	100					Silty Clay Loam	
6-8	10YR 2/1	95	10YR 4/4	5	C	M	Clay	
8-18	10YR 2/1	100					Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

	Histosol (A1)		Sandy Redox (S5)
	Histic Epipedon (A2)		Stripped Matrix (S6)
	Black Histic (A3)		Loamy Mucky Mineral (F1) **(except MLRA 1)**
	Hydrogen Sulfide (A4)		Loamy Gleyed Matrix (F2)
	Depleted Below Dark Surface (A11)		Depleted Matrix (F3)
	Thick Dark Surface (A12)	X	Redox Dark Surface (F6)
	Sandy Mucky Mineral (S1)		Depleted Dark Surface (F7)
	Sandy Gleyed Matrix (S4)		Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

	2 cm Muck (A10)
	Red Parent Material (TF2)
	Very Shallow Dark Surface (TF12)
	Other (explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes X No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)			Secondary Indicators (2 or more required)
	Surface Water (A1)	Water stained Leaves (B9) **(Except MLRA 1, 2, 4A, and 4B)**	Water stained Leaves (B9) **(MLRA1, 2, 4A, and 4B)**
X	High Water Table (A2)		
X	Saturation (A3)	Salt Crust (B11)	Drainage Patterns (B10)
	Water Marks (B1)	Aquatic Invertebrates (B13)	Dry-Season Water Table (C2)
	Sediment Deposits (B2)	Hydrogen Sulfide Odor (C1)	Saturation Visible on Aerial Imagery (C9)
	Drift Deposits (B3)	Oxidized Rhizospheres along Living Roots (C3)	Geomorphic Position (D2)
	Algal Mat or Crust (B4)	Presence of Reduced Iron (C4)	Shallow Aquitard (D3)
	Iron Deposits (B5)	Recent Iron Reduction in Plowed Soils (C6)	Fac-Neutral Test (D5)
	Surface Soil Cracks (B6)	Stunted or Stressed Plants (D1) **(LRR A)**	Raised Ant Mounds (D6) **(LRR A)**
	Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Frost-Heave Hummocks (D7)
	Sparsely Vegetated Concave Surface (B8)		

Field Observations:

Surface Water Present?	Yes		No X	Depth (inches):	
Water Table Present?	Yes	X	No	Depth (inches):	4
Saturation Present? (includes capillary fringe)	Yes	X	No	Depth (inches):	9

Wetland Hydrology Present? Yes X No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

RS778

PHS # 5975

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: SE Kellogg Creek Drive | City/County: Milwaukie/Clackamas | Sampling Date: 11/21/2016

Applicant/Owner: Brownstone Development, Inc. | State: OR | Sampling Point: 6

Investigator(s): Caroline R./Craig T. | Section, Township, Range: Section 6AD, T 2S, R 2E

Landform (hillslope, terrace, etc.): | Local relief (concave, convex, none): | Slope (%):

Subregion (LRR): LRRA | Lat: 45.427379 | Long: -122.603487 | Datum: WGS 84

Soil Map Unit Name: Cove silty clay loam | NWI Classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (if no, explain in Remarks)

Are vegetation ___ Soil ___ or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y

Are vegetation ___ Soil ___ or Hydrology ___ naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	X	No		
Hydric Soil Present?	Yes		No	X	**Is Sampled Area within a Wetland?** Yes ___ No X
Wetland Hydrology Present?	Yes		No	X	

Remarks:

VEGETATION - Use scientific names of plants.

		absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (plot size: 30)				
1	*Fraxinus latifolia*	50	X	FACW
2				
3				
4				
		50	= Total Cover	
Sapling/Shrub Stratum (plot size: 5)				
1	*Fraxinus latifolia*	20	X	FACW
2	*Symphoricarpos albus*	5		FACU
3	*Crataegus monogyna*	15	X	FAC
4	*Rubus armeniacus*	2		FAC
5				
		42	= Total Cover	
Herb Stratum (plot size: 5)				
1	*Carex deweyana*	70	X	FAC
2	*Prunella vulgaris*	3		FACU
3	*Polystichum munitum*	3		FACU
4	*Vicia tetrasperma*	5		(NOL)
5	*Ranunculus repens*	10		FAC
6	*Dipsacus fullonum*	3		FAC
7	*Agrostis stolonifera*	10		FAC
8	*Equisetum arvense*	1		FAC
		105	= Total Cover	
Woody Vine Stratum (plot size: ___)				
1				
2				
		0	= Total Cover	

% Bare Ground in Herb Stratum

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL Species		x 1 =	0
FACW species		x 2 =	0
FAC Species		x 3 =	0
FACU Species		x 4 =	0
UPL Species		x 5 =	0
Column Totals	0 (A)		0 (B)

Prevalence Index =B/A = #DIV/0!

Hydrophytic Vegetation Indicators:

- ___ 1- Rapid Test for Hydrophytic Vegetation
- X 2- Dominance Test is >50%
- ___ 3-Prevalence Index is ≤ 3.0[1]
- ___ 4-Morphological Adaptations[1] (provide supporting data in Remarks or on a separate sheet)
- ___ 5- Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks:

RS779

SOIL PHS # 5975 Sampling Point: 6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(Inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/2	100					Sandy Loam	
6-16	10YR 3/2	60					Sandy Clay Loam	
	10YR 3/1	20					Sandy Clay Loam	
	10YR 4/3	20					Sandy Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) **(except MLRA 1)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes _____ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water stained Leaves (B9) **(Except MLRA 1, 2, 4A, and 4B)**
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Plowed Soils (C6)
- Stunted or Stressed Plants (D1) **(LRR A)**
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water stained Leaves (B9) **(MLRA1, 2, 4A, and 4B)**
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Fac-Neutral Test (D5)
- Raised Ant Mounds (D6) **(LRR A)**
- Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes		No X	Depth (inches):	
Water Table Present?	Yes		No X	Depth (inches):	> 16
Saturation Present? (includes capillary fringe)	Yes		No X	Depth (inches):	> 16

Wetland Hydrology Present?

Yes _____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

PHS # 5975

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: SE Kellogg Creek Drive | City/County: Milwaukie/Clackamas | Sampling Date: 11/21/2016

Applicant/Owner: Brownstone Development, Inc. | State: OR | Sampling Point: 7

Investigator(s): Caroline R./Craig T. | Section, Township, Range: Section 6AD, T 2S, R 2E

Landform (hillslope, terrace, etc.): | Local relief (concave, convex, none): | Slope (%):

Subregion (LRR): LRRA | Lat: 45.427379 | Long: -122.603487 | Datum: WGS 84

Soil Map Unit Name: Cove silty clay loam | NWI Classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ (if no, explain in Remarks)

Are vegetation ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y

Are vegetation ____ Soil ____ or Hydrology ____ naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is Sampled Area within a Wetland?**	Yes X No
Hydric Soil Present?	Yes X	No		
Wetland Hydrology Present?	Yes X	No		

Remarks:

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (plot size: ____)			
1 *Populus balsamifera*	10	X	FAC
2			
3			
4			
	10	= Total Cover	
Sapling/Shrub Stratum (plot size: ____)			
1 *Populus balsamifera*	15	X	FAC
2			
3			
4			
5			
	15	= Total Cover	
Herb Stratum (plot size: ____)			
1 *Phalaris arundinacea*	100	X	FACW
2			
3			
4			
5			
6			
7			
8			
	100	= Total Cover	
Woody Vine Stratum (plot size: ____)			
1			
2			
	0	= Total Cover	

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL Species		x 1 =	0
FACW species		x 2 =	0
FAC Species		x 3 =	0
FACU Species		x 4 =	0
UPL Species		x 5 =	0
Column Totals	0 (A)		0 (B)

Prevalence Index =B/A = #DIV/0!

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

X 2- Dominance Test is >50%

____ 3-Prevalence Index is ≤ 3.0[1]

____ 4-Morphological Adaptations[1] (provide supporting data in Remarks or on a separate sheet)

____ 5- Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

RS781

SOIL PHS # 5975 Sampling Point: 7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(Inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/2	100					Silty Clay Loam	
4-7	10YR 3/2	95	7.5YR 4/6	5	C	M	Silty Clay Loam	
7-18	10YR 2/2	98	10YR 3/4	2	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water stained Leaves (B9) **(Except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water stained Leaves (B9) **(MLRA1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Fac-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	X	No ___	Depth (inches):	2
Water Table Present?	Yes	X	No ___	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes	X	No ___	Depth (inches):	0

Wetland Hydrology Present? Yes X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Small ponded area in ~5% of plot

RS782

PHS # 5975

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: SE Kellogg Creek Drive | City/County: Milwaukie/Clackamas | Sampling Date: 11/21/2016

Applicant/Owner: Brownstone Development, Inc. | State: OR | Sampling Point: 8

Investigator(s): Caroline R./Craig T. | Section, Township, Range: Section 6AD, T 2S, R 2E

Landform (hillslope, terrace, etc.:) Fill | Local relief (concave, convex, none): | Slope (%):

Subregion (LRR): LRRA | Lat: 45.427379 | Long: -122.603487 | Datum: WGS 84

Soil Map Unit Name: Cove silty clay loam | NWI Classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ (if no, explain in Remarks)

Are vegetation ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y

Are vegetation ____ Soil ____ or Hydrology ____ naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes		No	X	**Is Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes		No	X	
Wetland Hydrology Present?	Yes		No	X	

Remarks:

VEGETATION - Use scientific names of plants.

		absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (plot size: ____)				
1				
2				
3				
4				
		0	= Total Cover	
Sapling/Shrub Stratum (plot size: ____)				
1				
2				
3				
4				
5				
		0	= Total Cover	
Herb Stratum (plot size: 5)				
1	*Phalaris arundinacea*	20	X	FACW
2	*Chenopodium leptophyllum*	25	X	FACU
3	*Lotus corniculatus*	10		FAC
4	*Ranunculus repens*	5		FAC
5	*Hypochaeris radicata*	10		FACU
6	*Centaurium erythraea*	5		FAC
7	*Daucus carota*	15	X	FACU
8	*Senecio jacobaea*	10		FACU
		105	= Total Cover	
Woody Vine Stratum (plot size: ____)				
1				
2				
		0	= Total Cover	

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL Species		x 1 =	0
FACW species		x 2 =	0
FAC Species		x 3 =	0
FACU Species		x 4 =	0
UPL Species		x 5 =	0
Column Totals	0 (A)		0 (B)

Prevalence Index =B/A = #DIV/0!

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2- Dominance Test is >50%

____ 3-Prevalence Index is ≤ 3.0[1]

____ 4-Morphological Adaptations[1] (provide supporting data in Remarks or on a separate sheet)

____ 5- Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:

Herb Stratum also contains: Agrostis capillaris (FAC) 5%

RS783

SOIL PHS # 5975 Sampling Point: 8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(Inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/3	100					Sandy Loam	
4-8	10YR 4/4	60					Sandy Loam	
	10YR 3/2	40					Sandy Loam	
8-16	10YR 3/1	100					Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) **(except MLRA 1)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes _____ **No X**

Remarks:

0-16" - a jumble of mixed disturbed fill, rocks and gravel throughout

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water stained Leaves (B9) **(Except MLRA 1, 2, 4A, and 4B)**
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Plowed Soils (C6)
- Stunted or Stressed Plants (D1) **(LRR A)**
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water stained Leaves (B9) **(MLRA1, 2, 4A, and 4B)**
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Fac-Neutral Test (D5)
- Raised Ant Mounds (D6) **(LRR A)**
- Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes		No X	Depth (inches):	
Water Table Present?	Yes		No X	Depth (inches):	> 16
Saturation Present? (includes capillary fringe)	Yes		No X	Depth (inches):	> 16

Wetland Hydrology Present?

Yes _____ **No X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

RS784

PHS # 5975

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: SE Kellogg Creek Drive | City/County: Milwaukie/Clackamas | Sampling Date: 11/21/2016

Applicant/Owner: Brownstone Development, Inc. | State: OR | Sampling Point: 9

Investigator(s): Caroline R./Craig T. | Section, Township, Range: Section 6AD, T 2S, R 2E

Landform (hillslope, terrace, etc.:) depression | Local relief (concave, convex, none): | Slope (%):

Subregion (LRR): LRRA | Lat: 45.427379 | Long: -122.603487 | Datum: WGS 84

Soil Map Unit Name: Cove silty clay loam | NWI Classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (if no, explain in Remarks)

Are vegetation ___ Soil ___ or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y

Are vegetation ___ Soil ___ or Hydrology ___ naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is Sampled Area within a Wetland?**	Yes X No
Hydric Soil Present?	Yes X	No		
Wetland Hydrology Present?	Yes X	No		

Remarks:

VEGETATION - Use scientific names of plants.

		absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (plot size:)				
1				
2				
3				
4				
		0	= Total Cover	
Sapling/Shrub Stratum (plot size:)				
1				
2				
3				
4				
5				
		0	= Total Cover	
Herb Stratum (plot size:)				
1	*Phalaris arundinacea*	25	X	FACW
2	*Agrostis stolonifera*	40	X	FAC
3	*Juncus effusus*	10		FACW
4	*Hypochaeris radicata*	10		FACU
5	*Leucanthemum vulgare*	5		FACU
6				
7				
8				
		90	= Total Cover	
Woody Vine Stratum (plot size:)				
1				
2				
		0	= Total Cover	

% Bare Ground in Herb Stratum

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL Species		x 1 =	0
FACW species		x 2 =	0
FAC Species		x 3 =	0
FACU Species		x 4 =	0
UPL Species		x 5 =	0
Column Totals	0 (A)		0 (B)

Prevalence Index =B/A = #DIV/0!

Hydrophytic Vegetation Indicators:

- ___ 1- Rapid Test for Hydrophytic Vegetation
- X 2- Dominance Test is >50%
- ___ 3-Prevalence Index is ≤ 3.0[1]
- ___ 4-Morphological Adaptations[1] (provide supporting data in Remarks or on a separate sheet)
- ___ 5- Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No

Remarks:

RS785

SOIL PHS # 5975 Sampling Point: 9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(Inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	2.5YR 3/2	90	7.5YR 4/6	10	C	M	Silt Loam	
6-14	2.5YR 5/2	80	7.5YR 4/6	20	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water stained Leaves (B9) **(Except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water stained Leaves (B9) **(MLRA1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Fac-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	X	No ___	Depth (inches):	2
Water Table Present?	Yes	X	No ___	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes	X	No ___	Depth (inches):	0

Wetland Hydrology Present? Yes X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

PHS # 5975

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: SE Kellogg Creek Drive | City/County: Milwaukie/Clackamas | Sampling Date: 11/21/2016

Applicant/Owner: Brownstone Development, Inc. | State: OR | Sampling Point: 10

Investigator(s): Caroline R./Craig T. | Section, Township, Range: Section 6AD, T 2S, R 2E

Landform (hillslope, terrace, etc.): | Local relief (concave, convex, none): | Slope (%):

Subregion (LRR): LRRA | Lat: 45.427379 | Long: -122.603487 | Datum: WGS 84

Soil Map Unit Name: Cove silty clay loam | NWI Classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ (if no, explain in Remarks)

Are vegetation ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y

Are vegetation ____ Soil ____ or Hydrology ____ naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes		No	X	**Is Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes		No	X	
Wetland Hydrology Present?	Yes		No	X	

Remarks:

VEGETATION - Use scientific names of plants.

		absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (plot size: ____)				
1				
2				
3				
4				
		0	= Total Cover	
Sapling/Shrub Stratum (plot size: ____)				
1				
2				
3				
4				
5				
		0	= Total Cover	
Herb Stratum (plot size: 5)				
1	*Daucus carota*	25	X	FACU
2	*Chenopodium leptophyllum*	20	X	FACU
3	*Agrostis capillaris*	20	X	FAC
4	*Hypochaeris radicata*	15		FACU
5	*Holcus lanatus*	10		FAC
6	*Bromus sp.*	20	X	(FAC)
7	*Parentucellia viscosa*	10		FAC
8	*Plantago lanceolata*	15		FACU
		160	= Total Cover	
Woody Vine Stratum (plot size: ____)				
1				
2				
		0	= Total Cover	

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL Species		x 1 =	0
FACW species		x 2 =	0
FAC Species		x 3 =	0
FACU Species		x 4 =	0
UPL Species		x 5 =	0
Column Totals	0 (A)		0 (B)

Prevalence Index =B/A = #DIV/0!

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2- Dominance Test is >50%

____ 3-Prevalence Index is ≤ 3.0[1]

____ 4-Morphological Adaptations[1] (provide supporting data in Remarks or on a separate sheet)

____ 5- Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:

Herb Stratum also contains: Poa sp. (FAC) 10%, Rumex crispus (FAC) 5%, Cirsium arvense (FAC) 5%, Schedonorus arundinaceus, FAC 5%

RS787

SOIL PHS # 5975 Sampling Point: 10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(Inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/3	100					Sandy Loam	
3-16	10YR 4/4	60					Sandy Loam	
	10YR 4/2	40					Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) **(except MLRA 1)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes _____ **No X**

Remarks:

0-16 - jumble of mixed/disturbed fill

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water stained Leaves (B9) **(Except MLRA 1, 2, 4A, and 4B)**
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Plowed Soils (C6)
- Stunted or Stressed Plants (D1) **(LRR A)**
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water stained Leaves (B9) **(MLRA1, 2, 4A, and 4B)**
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Fac-Neutral Test (D5)
- Raised Ant Mounds (D6) **(LRR A)**
- Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes		No X	Depth (inches):	
Water Table Present?	Yes		No X	Depth (inches):	> 16
Saturation Present? (includes capillary fringe)	Yes		No X	Depth (inches):	> 16

Wetland Hydrology Present?

Yes _____ **No X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

RS788

Appendix C

Site Photos





Photo A

Looking east along south bank of Mt. Scott Creek

Photo B

Looking west along south bank of Mt. Scott Creek



#5975
11/22/2016

Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

Photodocumentation
SE Kellogg Creek Drive, Milwaukie, Oregon
Both photos taken on October 18, 2016

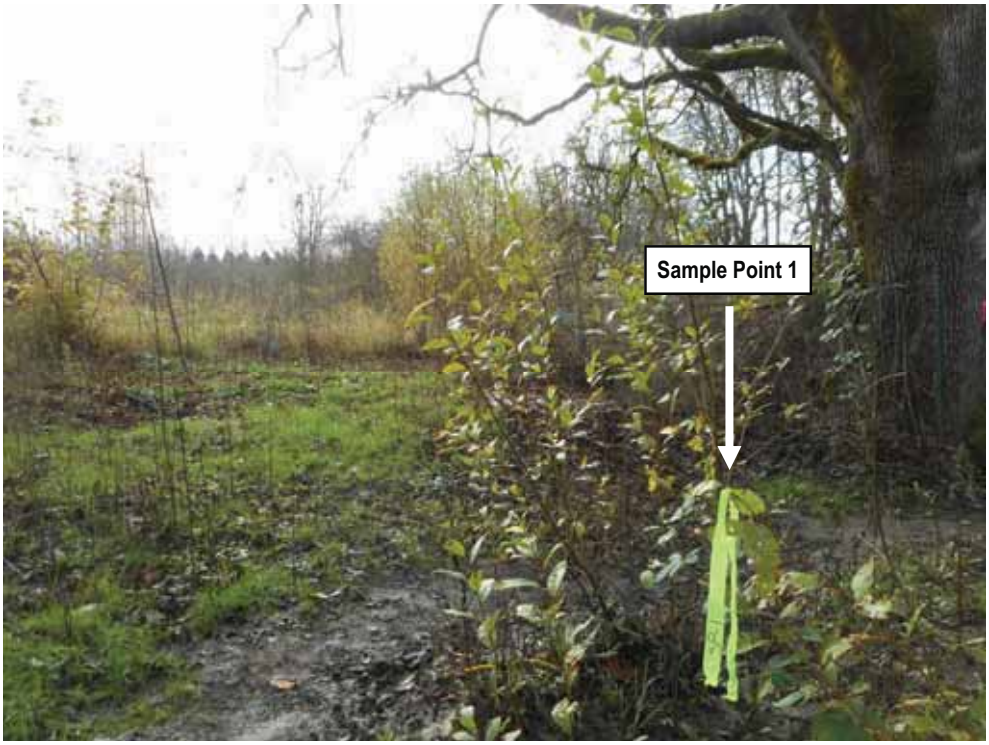


Photo C

Looking north across
Mt. Scott Creek

Photo D

Looking southeast toward
Wetland A



#57975
711/22/2016

Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

Photodocumentation
SE Kellogg Creek Drive, Milwaukie, Oregon
Photo C taken on October 18, 2016, Photo D taken on November 21, 2016



Photo E

Looking northwest toward north end of Wetland A

Photo F

Looking southeast toward center of Wetland A



#5975
11/22/2016

Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

Photodocumentation
SE Kellogg Creek Drive, Milwaukie, Oregon
Both photos taken on November 17, 2016

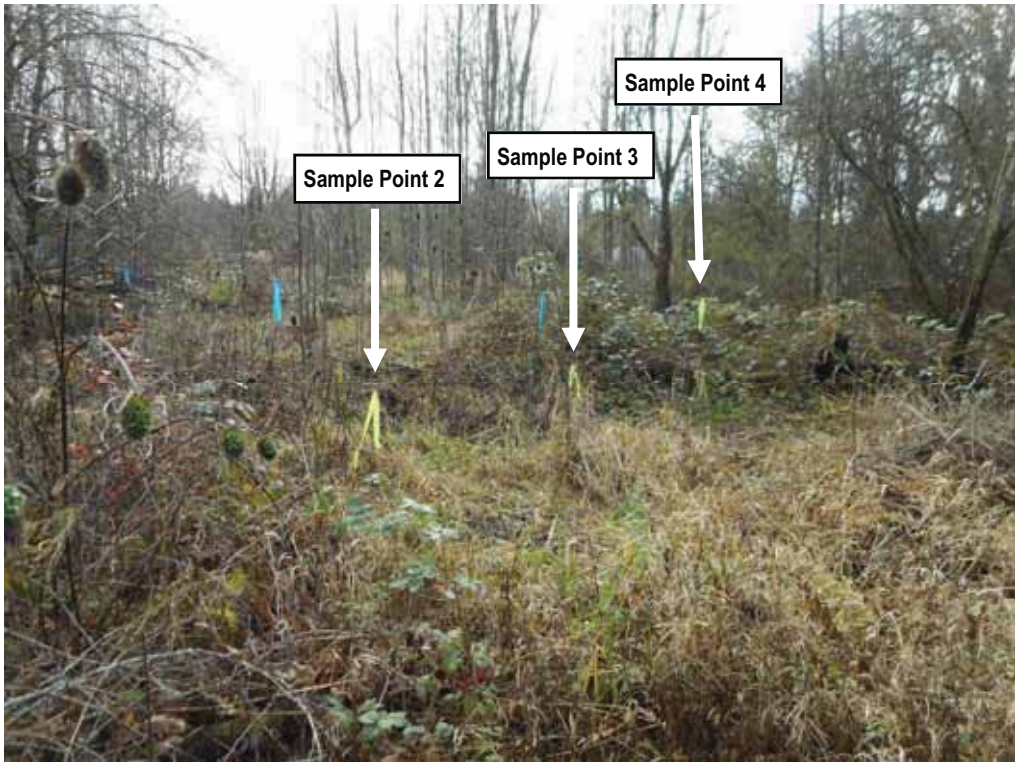


Photo G

Looking southeast toward upland island (Sample Point 4) and center of Wetland A

Photo H

Looking southeast toward southern portion of Wetland A from south end of upland island



#5975
11/22/2016

Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

Photodocumentation
SE Kellogg Creek Drive, Milwaukie, Oregon
Both photos taken on November 21, 2016

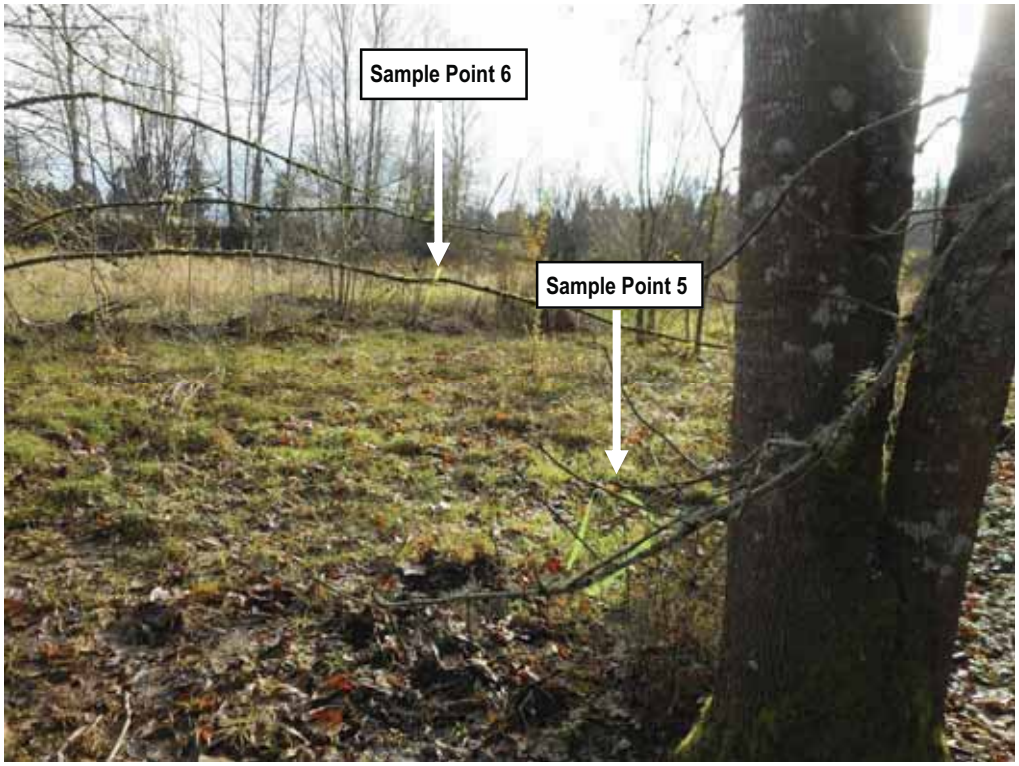
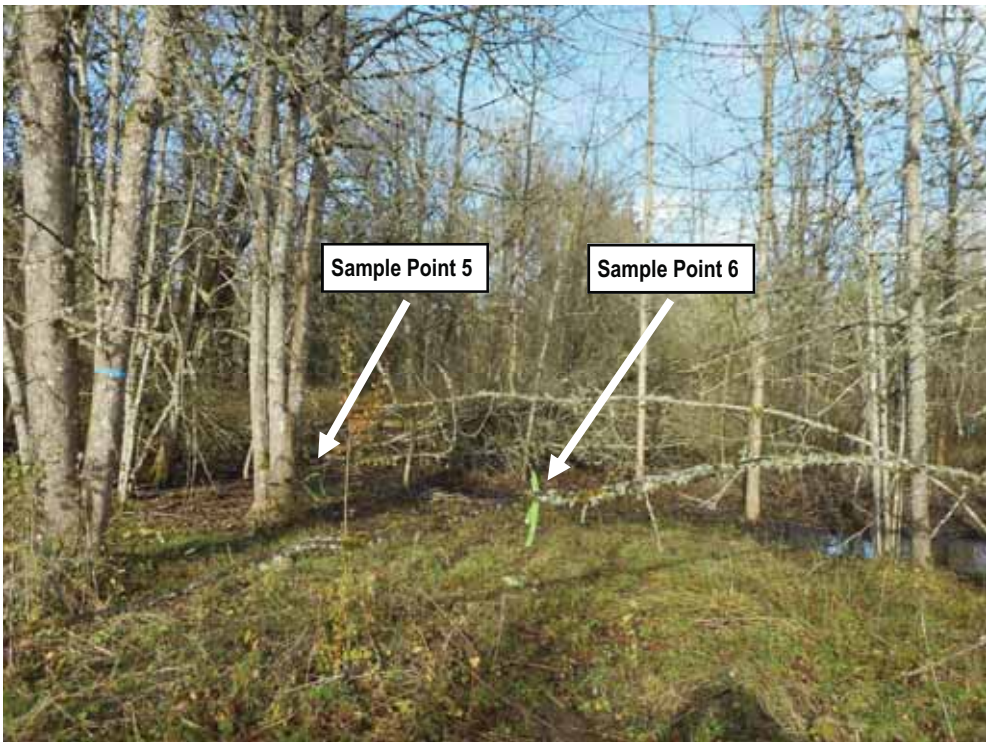


Photo I

Looking southeast toward southern boundary of Wetland A

Photo J

Looking toward the northwest portion of Wetland A from its southern boundary.



#5975
11/22/2016

Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

Photodocumentation
SE Kellogg Creek Drive, Milwaukie, Oregon
Both photos taken on November 21, 2016

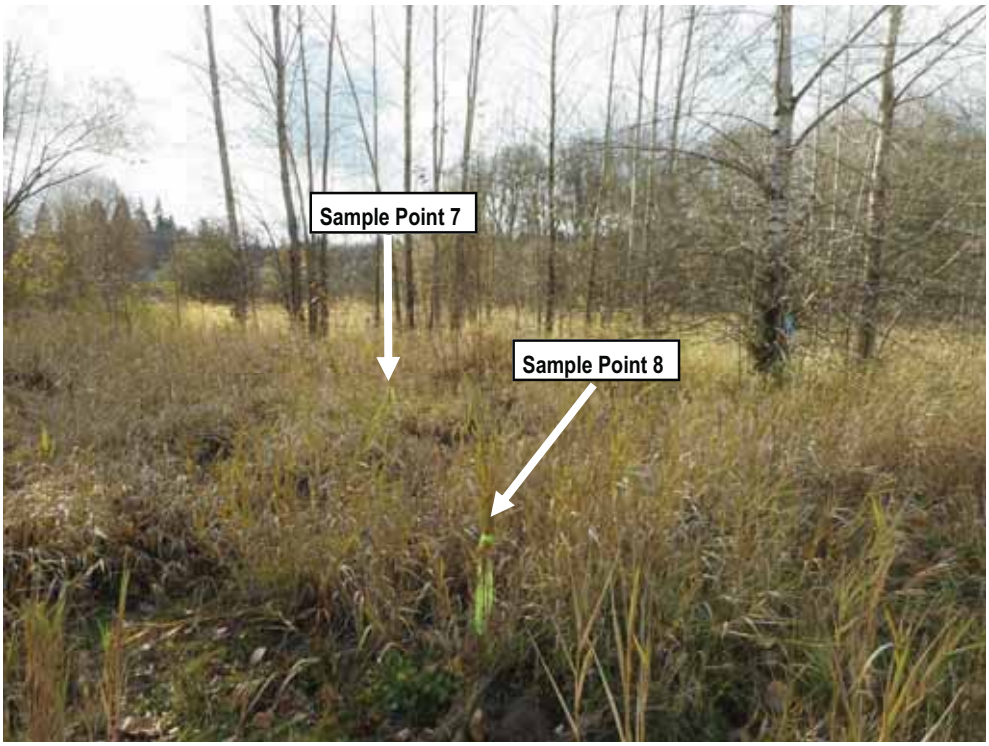


Photo K

Looking southeast at south end of Wetland A

Photo L

Looking south at eastern portion of Wetland A



#5975
11/22/2016

Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

Photodocumentation
SE Kellogg Creek Drive, Milwaukie, Oregon
Both photos taken on November 21, 2016

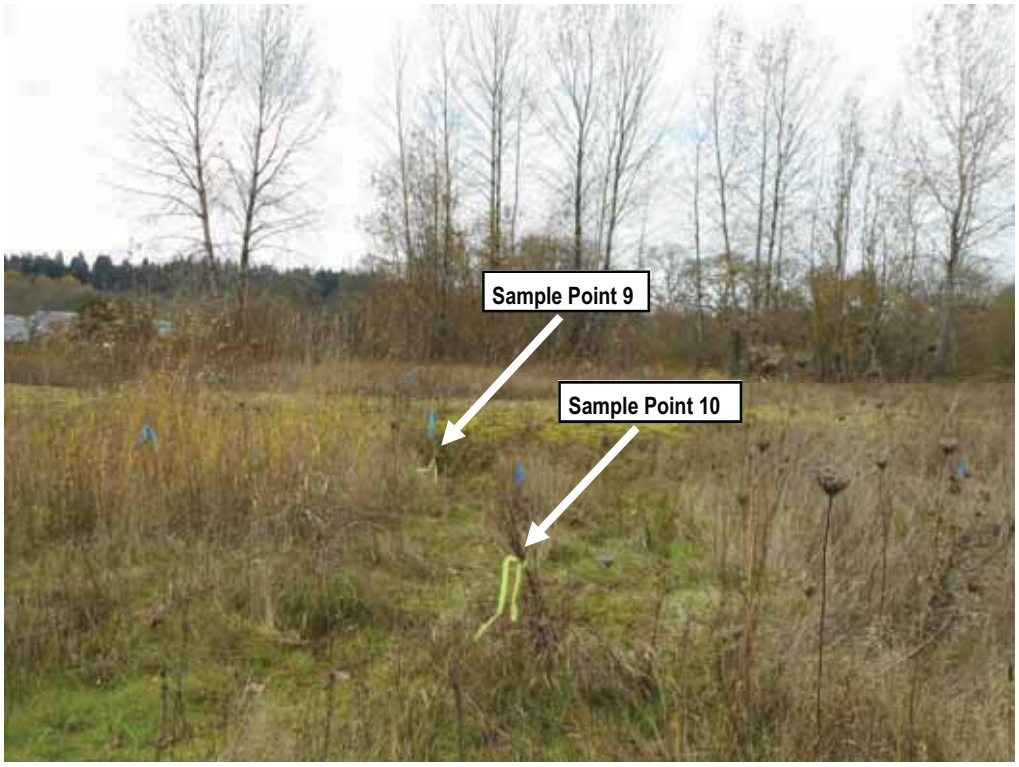


Photo M

Looking southwest across Wetland E

Photo N

Looking north at Wetland C



#5975
11/22/2016

Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

Photodocumentation
SE Kellogg Creek Drive, Milwaukie, Oregon
Both photos taken on November 21, 2016



Photo O

Looking northwest at Wetland B

Photo P

Looking southeast at Wetland D



#5975
11/22/2016

Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

Photodocumentation
SE Kellogg Creek Drive, Milwaukie, Oregon
Both photos taken on November 21, 2016



Photo Q

Looking northwest at Wetland F

Photo R

Looking north at Wetland G



#5975
11/22/2016

Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

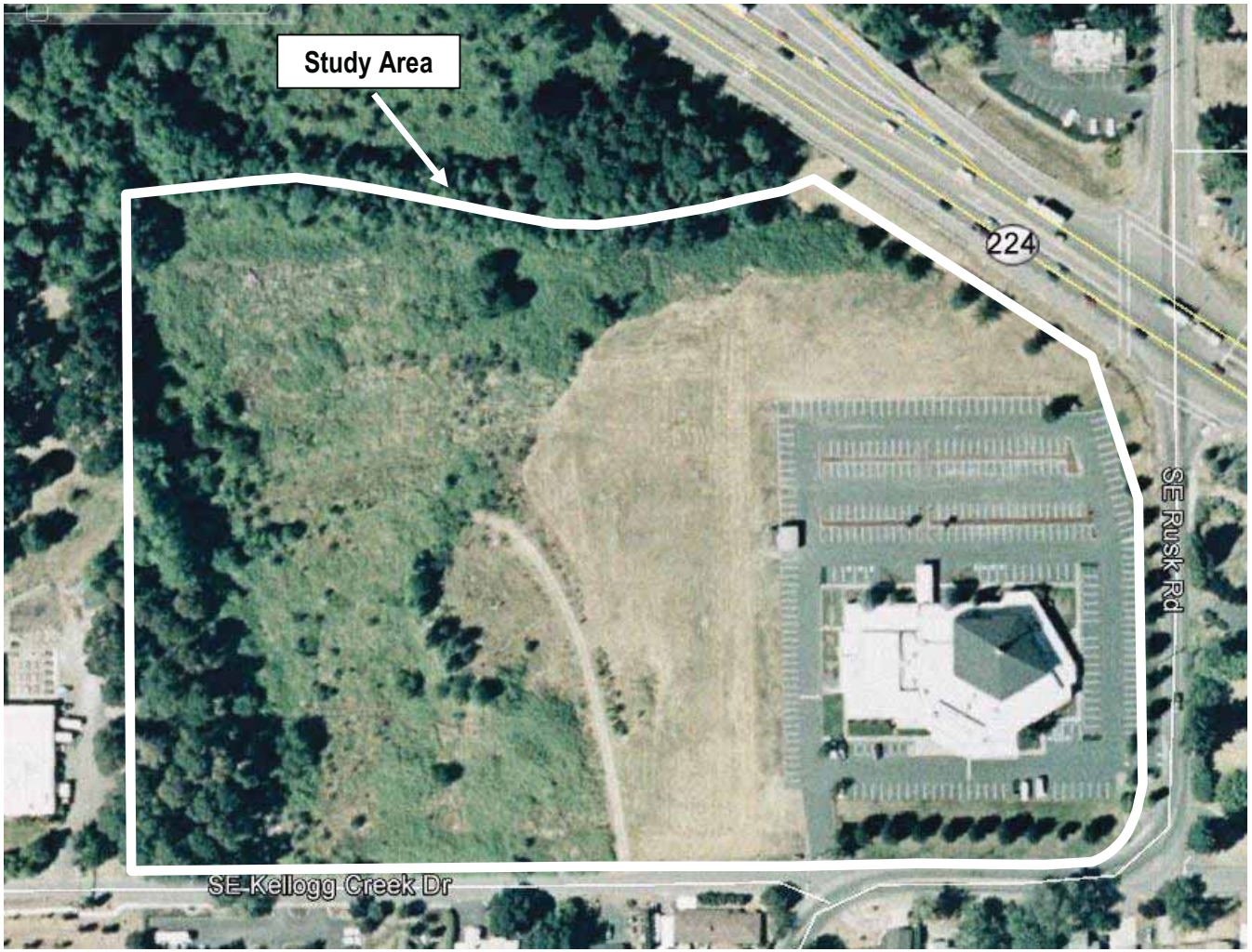
Photodocumentation
SE Kellogg Creek Drive, Milwaukie, Oregon
Both photos taken on November 21, 2016

Appendix D

Historic Aerial Photographs



RS799

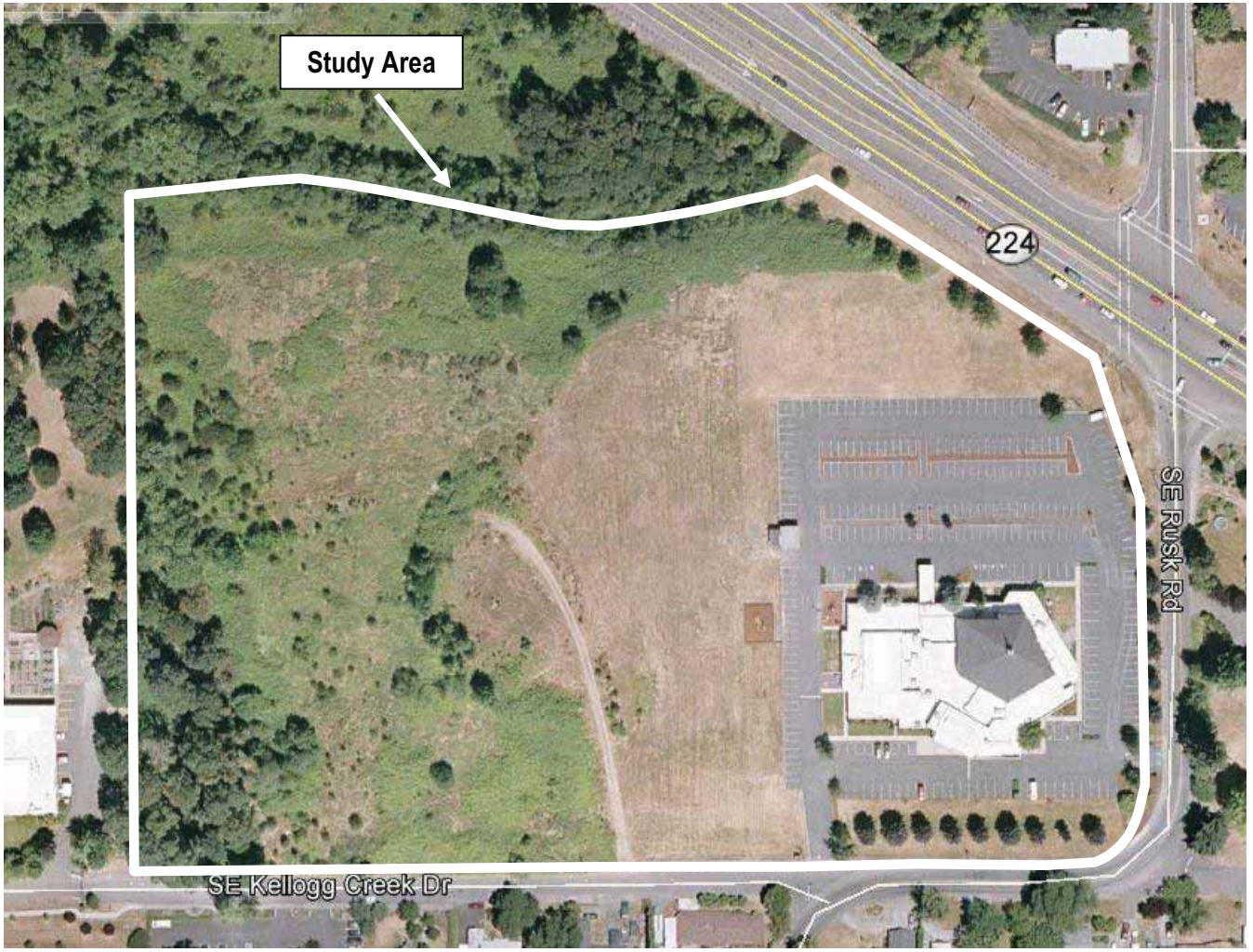


5975
12/21/2016

PHS

Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

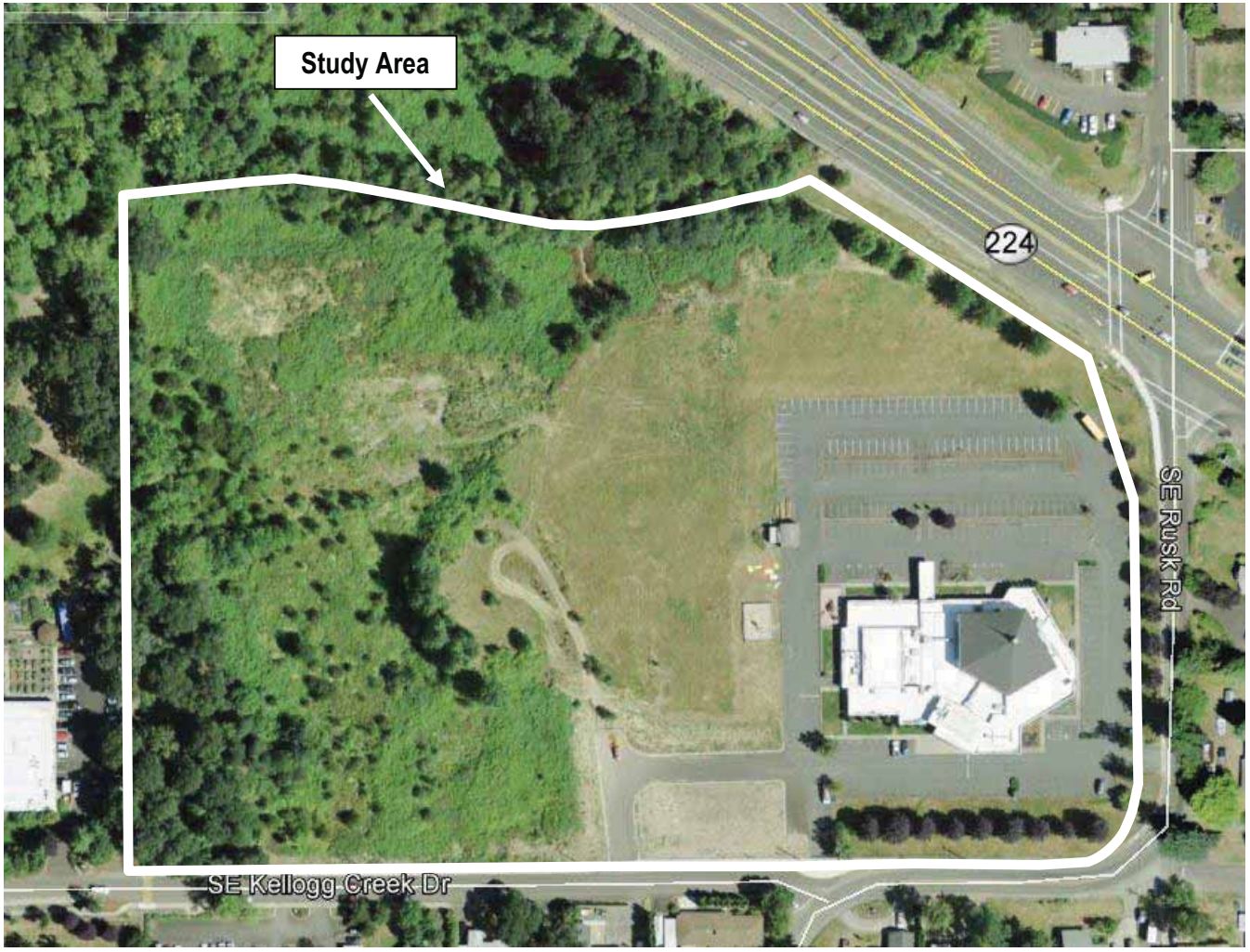
Historic Aerial Photo
SE Kellogg Creek Drive, Milwaukie, Oregon
Google Earth, August 14, 2002



5975
12/21/2016

Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

Historic Aerial Photo
SE Kellogg Creek Drive, Milwaukie, Oregon
Google Earth, July 2003

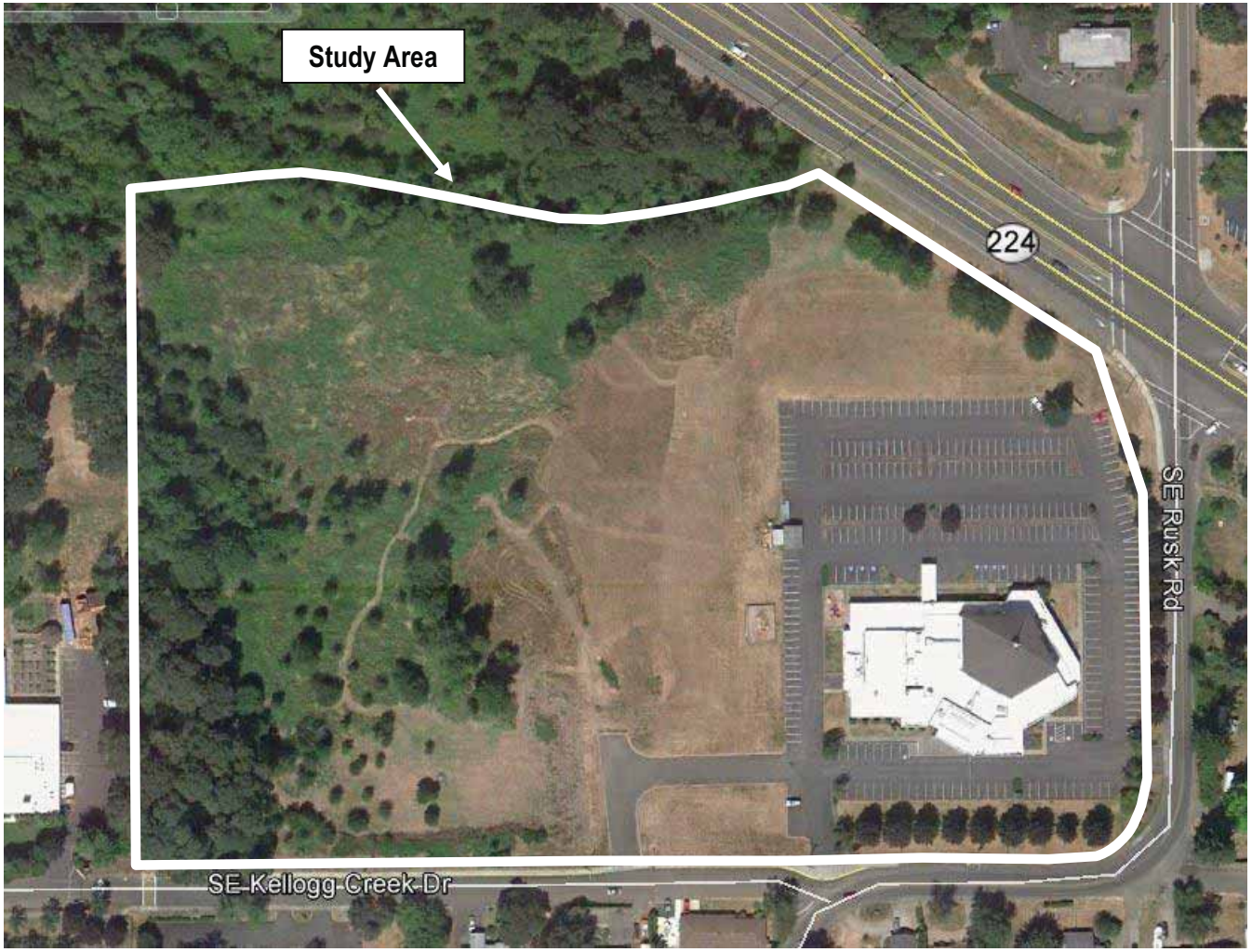


5975
12/21/2016

Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

Historic Aerial Photo
SE Kellogg Creek Drive, Milwaukie, Oregon
Google Earth, July 2007

RS802



5975
12/21/2016

PHS

Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

Historic Aerial Photo
SE Kellogg Creek Drive, Milwaukie, Oregon
Google Earth, August 2010

Appendix E

Wetland Definitions, Methodology, and References



RS804

WATERS OF THE STATE AND WETLAND DEFINITION AND CRITERIA

Regulatory Jurisdiction

Wetlands and water resources in Oregon are regulated by the Oregon Department of State Lands (DSL) under the Removal-Fill Law (ORS 196.800-196.990) and by the U.S. Army Corps of Engineers (COE) through Section 404 of the Clean Water Act.

The primary source document for wetland delineations within Oregon is the *Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1* (Environmental Laboratory 1987) which is recognized by both DSL and COE.

Waters of the State and Wetland Definition

Waters of the State are defined as "natural waterways including all tidal and nontidal bays, intermittent streams, constantly flowing streams, lakes, wetlands and other bodies of water in this state, navigable and nonnavigable...". "Natural waterways" is further defined as waterways created naturally by geological and hydrological processes, waterways that would be natural but for human-caused disturbances (e.g. channelized or culverted streams, impounded waters, partially drained wetlands or ponds created in wetlands)..."(DSL, 2001).

Wetland*s* are defined as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (DSL, 2001).

Wetland Criteria

Based on the above definition, three major factors characterize a wetland: hydrology, substrate, and biota.

Wetland Hydrology

Wetland hydrology is related to duration of saturation, frequency of saturation, and critical depth of saturation. The 1987 manual defines wetland hydrology as inundation or saturation within a major portion of the root zone (usually above 12 inches), typically for at least 12.5% of the growing season. The wetland hydrology criterion can be met, however, if saturation within the major portion of the root zone is present for only 5% of the growing season, depending on other evidence.

The growing season is defined as the portion of the year when soil temperatures at 19.7 inches below the soil surface are higher than biological zero (41 degrees Fahrenheit, 5 degrees Celsius), but also allows approximation from frost free days, based on air temperature. The growing season for any given site or location is determined from US Natural Resources Conservation Service, (formerly Soil Conservation Service) data and information.

Wetland hydrologic indicators include the following: visual observation of inundation or saturation, watermarks, drift lines, sediment deposits, drainage pattern, and/or oxidized rhizospheres with living roots. Oxidized rhizospheres are defined as yellowish-red zones around the roots and rhizomes of some plants that grow in frequently saturated soils.

Wetland Substrate (Soils)

Most wetlands are characterized by hydric soils. Hydric soils are those that are ponded, flooded, or saturated for long enough during the growing season to develop anaerobic conditions. Periodic saturation of soils causes alternation of reduced and oxidized conditions, which leads to the formation of redoximorphic features (gleying and mottling). Mineral hydric soils will be either gleyed or will have bright mottles and/or low matrix chroma. The redoximorphic feature known as gley is a result of greatly reduced soil conditions, which result in a characteristic grayish, bluish or greenish soil color. The term mottling is used to describe areas of contrasting color within a soil matrix. The soil matrix is the portion of the soil layer that has the predominant color. Soils that have brightly colored mottles and a low matrix chroma are indicative of a fluctuating water table.

Hydric soil indicators include: organic content of greater than 50% by volume, sulfidic material or “rotten egg” odor, and/or presence of redoximorphic features and dark soil matrix, as determined by the use of a Munsell Soil Color Chart. This chart establishes the chroma, value and hue of soils based on comparison with color chips. Mineral hydric soils usually have a matrix chroma of 2 or less in mottled soils, or a matrix chroma of 1 or less in unmottled soils.

Wetland Biota (Vegetation)

Wetland biota is defined as hydrophytic vegetation. A hydrophyte is a plant species that is capable of growing in substrates that are periodically deficient in oxygen as a result of saturated soil conditions. The U.S. Fish and Wildlife Service, in the *National List of Plant Species that Occur in Wetlands*, has established five basic groups of vegetation based on their frequency of occurrence in wetlands. These categories, referred to as the "wetland indicator status”, are as follows: obligate wetland plants (OBL), facultative wetland (FACW), facultative (FAC), facultative upland (FACU), and obligate upland (UPL). Table 1 gives a definition of the plant indicator codes.

Table 1. Description of Wetland Plant Indicator Status Codes

Indicator Code	Status
OBL	Obligate wetland. Estimated to occur almost exclusively in wetlands (>99%)
FACW	Facultative wetland. Estimated to occur 67-99% of the time in wetlands.
FAC	Facultative. Occur equally in wetlands and non-wetlands (34-66%).
FACU	Facultative upland. Usually occur in non-wetlands (67-99%).
UPL	Obligate upland. Estimated to occur almost exclusively in non-wetlands (>99%). If a species is not assigned to one of the four groups described above it is assumed to be obligate upland.
NI	Has not yet received a wetland indicator status, but is probably not obligate upland.

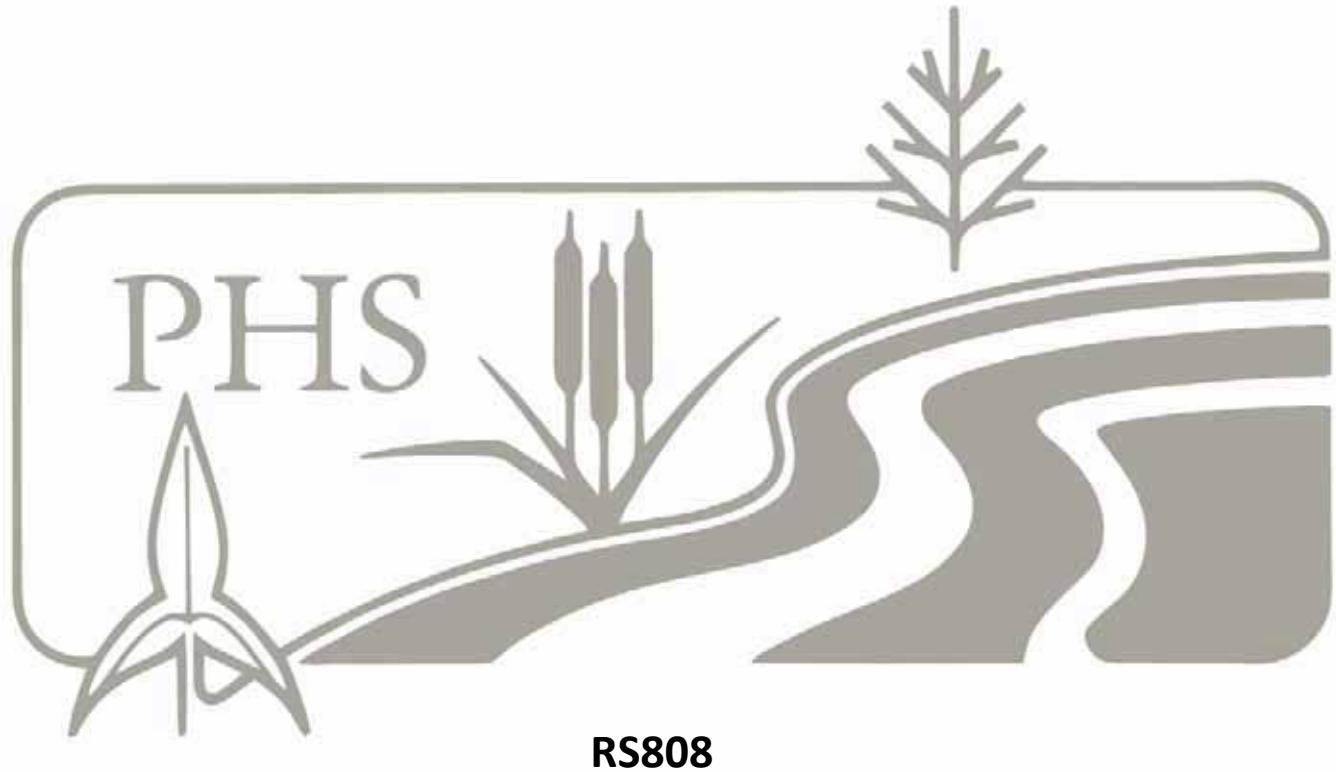
Observations of hydrology, soils, and vegetation, were made using the "Routine On-site" delineation method as defined in the 1987 manual for areas that were not currently in agricultural production. One-foot diameter soil pits were excavated to 16 inches and soil profiles were examined for hydric soil and wetland hydrology field indicators. In addition, a visual percent-

cover estimate of the dominant species of the plant community was performed using soil pit locations as a center of reference. Dominant plant species are based on estimates of percent cover for herbaceous, woody vine, and shrub species within a 5 foot radius of the sample point, and basal area cover for tree species within a 30 foot radius of the sample point. Plant species in each vegetative layer, which are estimated at less than 20%, are not considered to be dominant. The wetland indicator status is then used to determine if there is an overall dominance (greater than 50%) of wetland or upland plant species.

During data collection, the soil profiles were examined for hydric soil and wetland hydrology field indicators. Plant species and cover were recorded. Data was recorded on standard data sheets which contain the information specified in the 1987 Corps manual.

Attachment C

DSL Concurrence Letter



RS808

Oregon
Kate Brown, Governor

Department of State Lands
775 Summer Street NE, Suite 100
Salem, OR 97301-1279
(503) 986-5200
FAX (503) 378-4844
www.oregon.gov/dsl

State Land Board

Kate Brown
Governor

Dennis Richardson
Secretary of State

Tobias Read
State Treasurer

May 2, 2017

Brownstone Development, Inc.
Attn: Randy Myers
P.O. Box 2375
Lake Oswego, OR 97035

Re: WD # 2017-0054 Wetland Delineation Report for the Proposed Kellogg Creek Subdivision
Clackamas County; T2S R2E Sec. 6AD, Tax lot 600 and Portions of Tax Lots 700, 900 and 901
App. # 60166

Dear Mr. Myers:

The Department of State Lands has reviewed the wetland delineation report prepared by Pacific Habitat Services for the site referenced above. Please note that the study area includes only a portion of the tax lots described above (see the attached maps). Based upon the information presented in the report, we concur with the wetland and waterway boundaries as mapped in Figure 6 of the report. Within the study area, seven wetlands and a segment of Mt. Scott Creek were identified.

One of the seven wetlands (Wetland A, totaling approximately 0.7 acres) and the creek are subject to the permit requirements of the state Removal-Fill Law. The remaining six wetlands (Wetlands B through G) are exempt per OAR 141-085-0515 (6); therefore, they are not subject to these permit requirements. In addition, normally a state permit is required for cumulative fill or annual excavation of 50 cubic yards or more in wetlands or below the ordinary high water line (OHWL) of a waterway (or the 2 year recurrence interval flood elevation if OHWL cannot be determined). However, Mt. Scott Creek is an essential salmonid stream; therefore, fill or removal of any amount of material below its OHWL or within hydrologically-connected wetlands (Wetland A) may require a state permit.

This concurrence is for purposes of the state Removal-Fill Law only. Federal or local permit requirements may apply as well. This concurrence is based on information provided to the agency. The jurisdictional determination is valid for five years from the date of this letter unless new information necessitates a revision. Circumstances under which the Department may change a determination are found in OAR 141-090-0045 (available on our web site or upon request). In addition, laws enacted by the legislature and/or rules adopted by the Department may result in a change in jurisdiction; individuals and applicants are subject to the regulations that are in effect at the time of the removal-fill activity or complete permit application. The applicant, landowner, or

agent may submit a request for reconsideration of this determination in writing within six months of the date of this letter.

Thank you for having the site evaluated. Please phone me at 503-986-5232 if you have any questions.

Sincerely,

Peter Ryan, PWS
Jurisdiction Coordinator

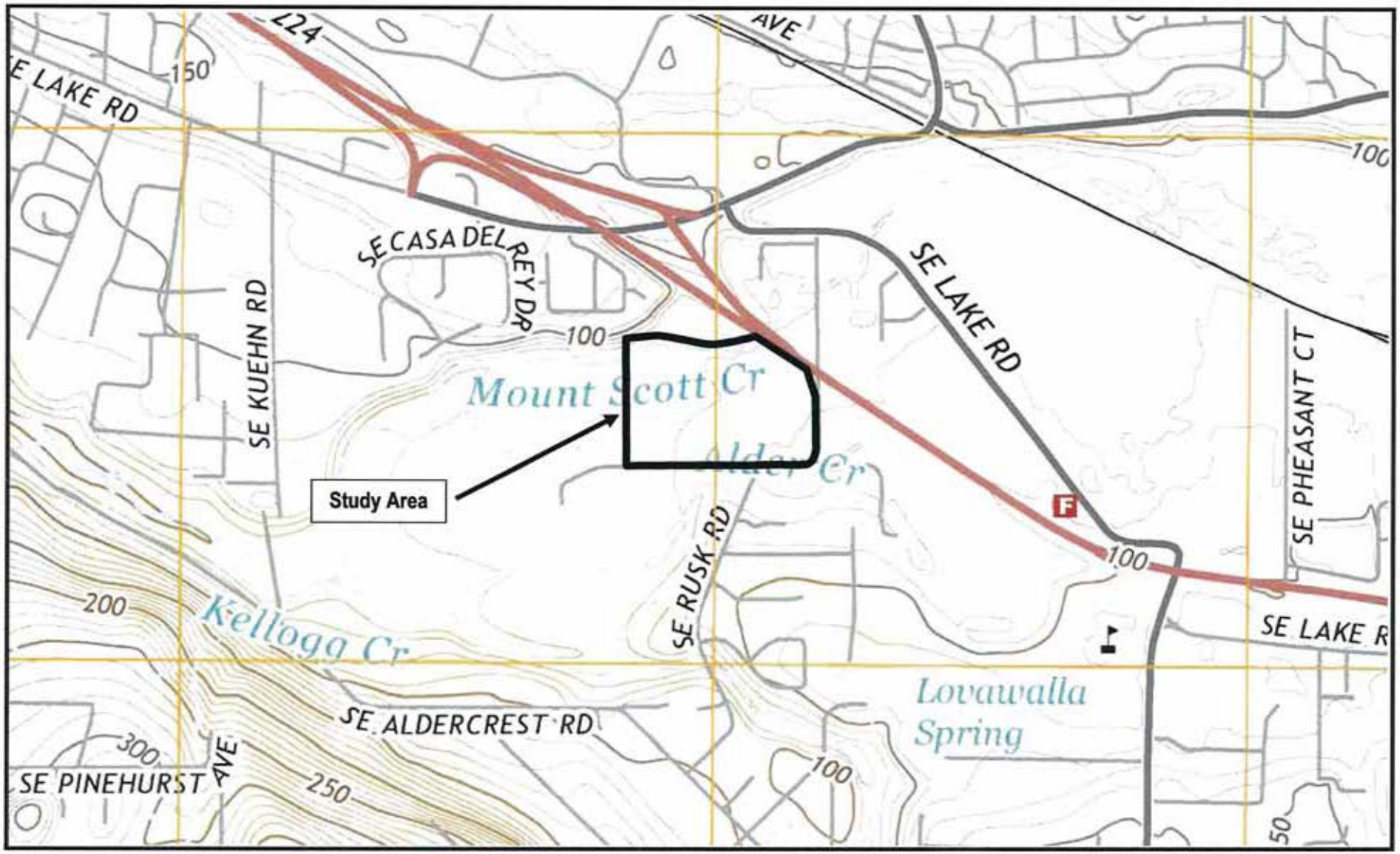
Approved by

Kathy Verble, CPSS
Aquatic Resource Specialist

Enclosures

ec: Caroline Rim, Pacific Habitat Services
Clackamas County Planning Department
Dominic Yballe, Corps of Engineers
Melinda Butterfield, DSL

WD2017-0254



5975
1/16/2017

PHS

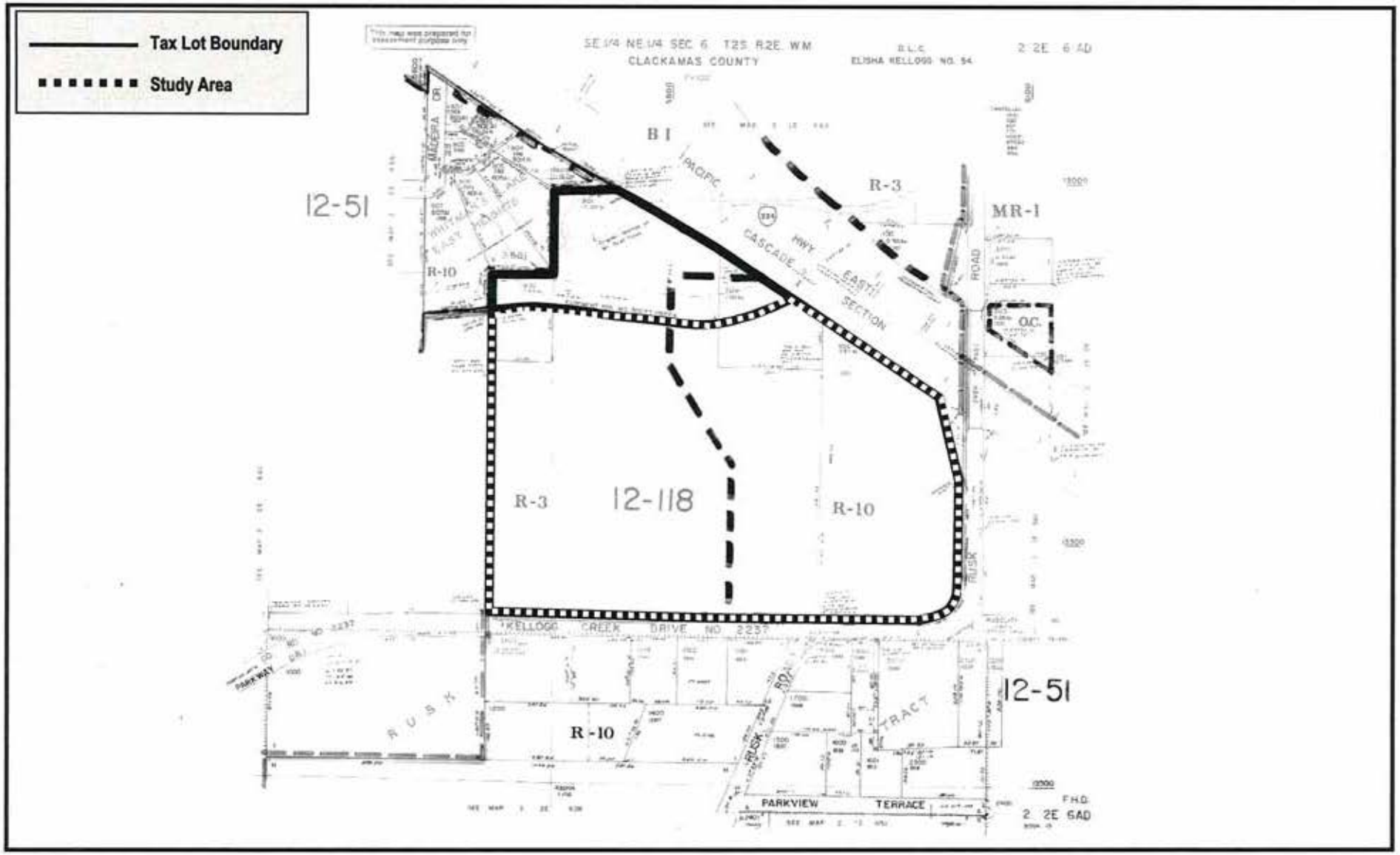
Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

General Location and Topography
SE Kellogg Creek Drive - Milwaukie, Oregon
United States Geological Survey (USGS), Gladstone, Oregon, 7.5 Quadrangle, 2014
(viewer/nationalmap.gov/basic)

FIGURE
1

RS811

WD2017-0254



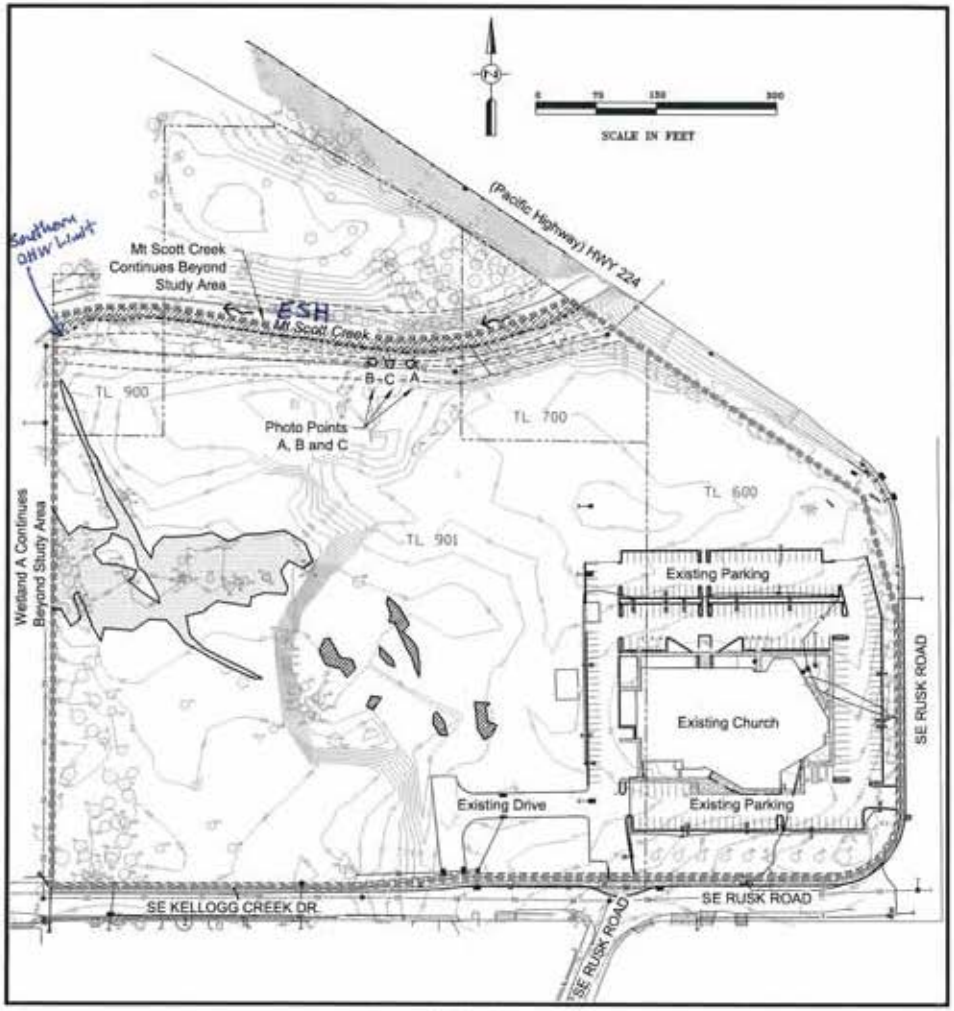
5975
12/21/2016

Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

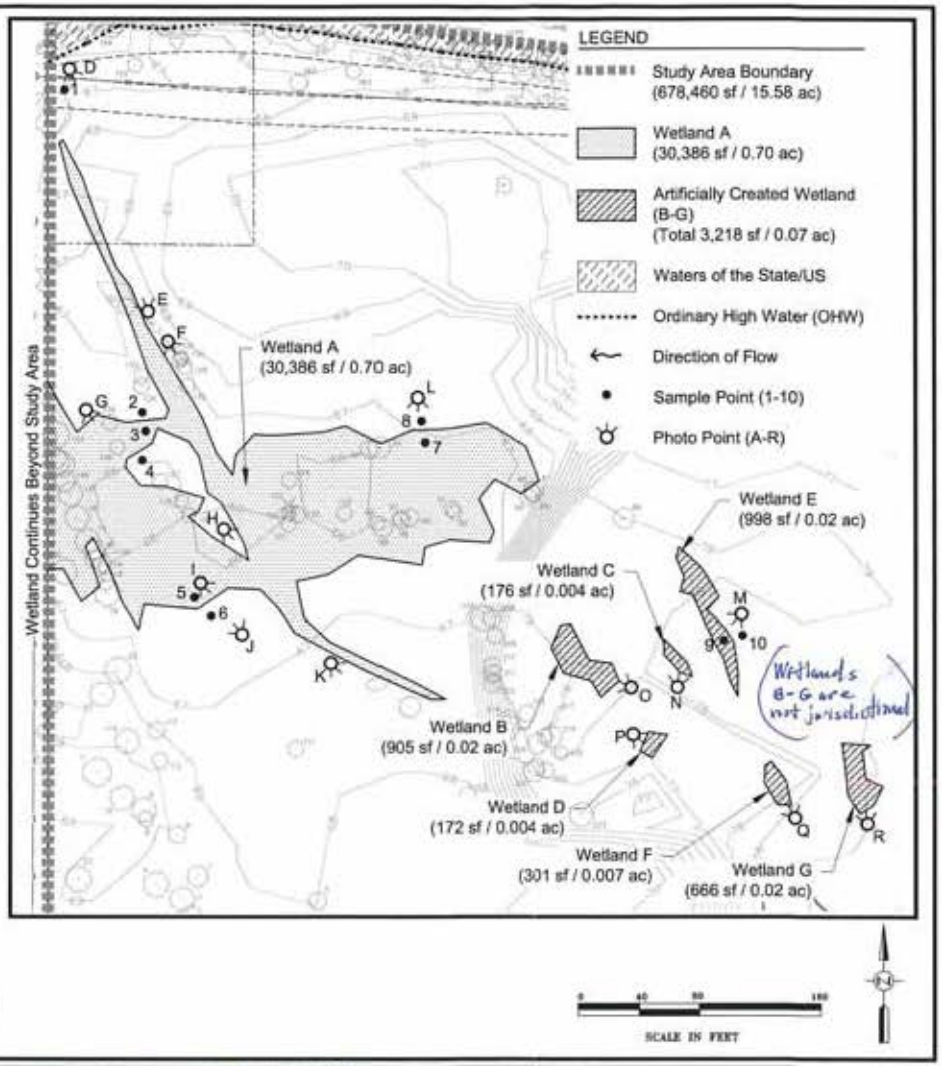
Tax Lot Map
SE Kellogg Creek Drive - Milwaukie, Oregon
The Oregon Map (ormap.net)

FIGURE
2

RS812



TAX LOT OVERVIEW



Pacific Habitat Services, Inc.

Survey provided by
TerraCalc Land Surveying, Inc., 2016
Survey accuracy is sub-centimeter and
Sample Point accuracy is ± 3 feet.

DSL WD # 2017-0054
Approval Issued 5/2/2017
Approval Expires 5/2/2022

Wetland Delineation
SE Kellogg Creek Drive - Milwaukie, Oregon

FIGURE 6

1-18-2017

K:\Project Directories\13000\13971 SE Rusk Road (Kellogg Creek Drive)\Data\CAD\Port Dwg\Fig6 WetDel.dwg, 1/18/2017 1:36:34 PM

RS813

Exhibit K

JOHNSON ECONOMICS

MEMORANDUM

DATE: April 4, 2017

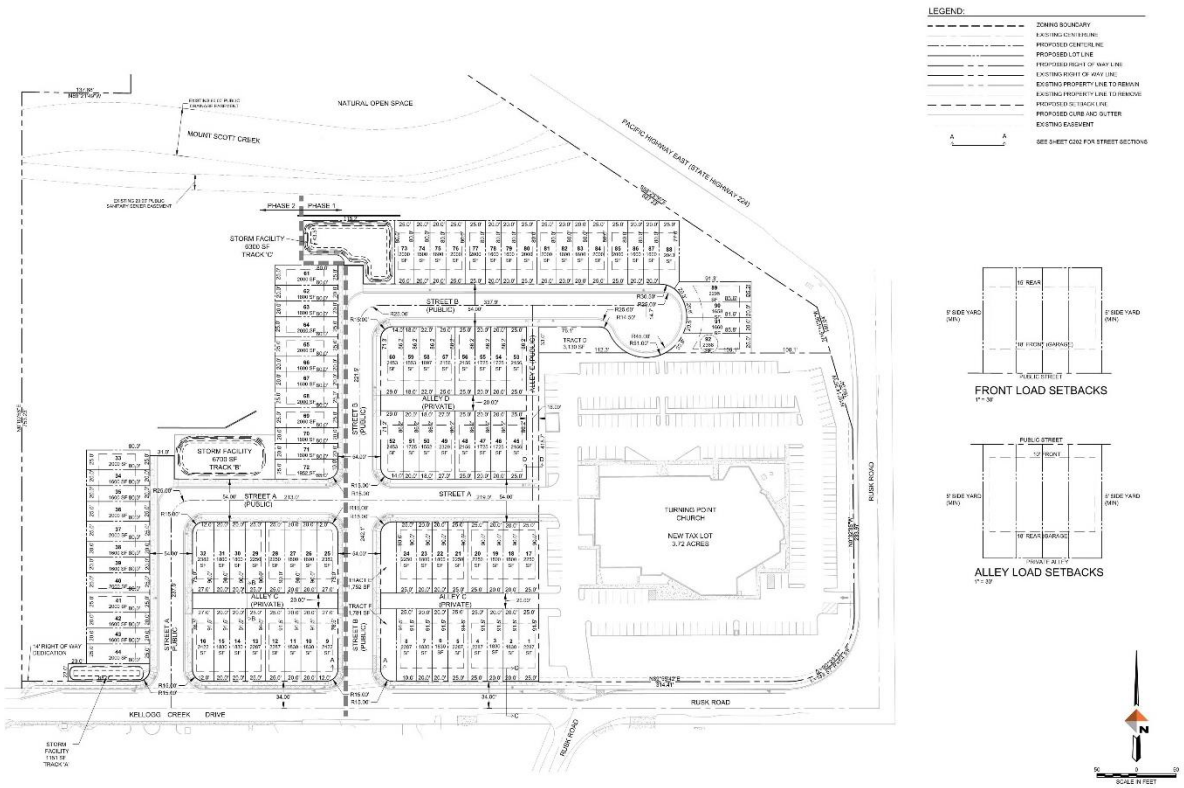
TO: Serah Breakstone
DOWL

FROM: Jerry Johnson
JOHNSON ECONOMICS, LLC

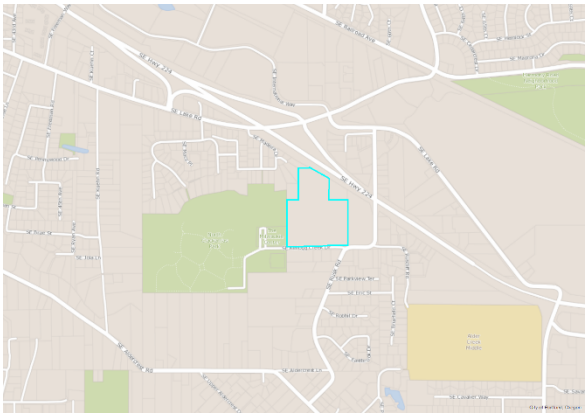
SUBJECT: Review of Proposed Development in Context of Milwaukie's Housing Needs Analysis

Johnson Economics has been asked to review a proposed 92-unit residential development program in Milwaukie, Oregon. This review addresses the program and the degree to which it is consistent with the findings of the City's Housing Needs Analysis and Strategies reports (August 2016).

The development site is at the intersection of SE Rusk Road and SE Kellogg Creek. Zoning on the site is currently R-10 and R-3.



The location of the site provides excellent access and visibility from Highway 224, as well as access to the North Clackamas Park, Alder Creek Middle School, the Clackamas Aquatic Center, and employment concentrations along Highway 224 and I-205 Corridors. While proximate to single family residential concentrations to the south and west, the site is separated by topography and environmental corridors, limiting the impact on these properties from new development.



The proposed development program would include approximately 92 units, which would be delivered in four rowhouse building modules. The development would include alleys for access into attached garages for approximately half of the units, with the remainder front-loaded. The units are expected to offer three bedrooms and two and a half baths with one car garages. The townhome configuration of the project will allow the development to provide these family friendly units at a price point that would be unobtainable with a lower density detached single family development.

Demographic and Housing Trends

The Housing Needs Analysis (HNA) discussed future housing types, and the increasing role that attached residential forms are expected to play in the metropolitan area's housing market. The region has adopted policies to encourage increased density of land uses within the UGB, as well as to encourage infill and redevelopment over time. As noted in the City's HNA:

> *The continuing constraints of the UGB, along with the region's planning framework and policies, create an atmosphere in which individual jurisdictions are likely to see an increasing share of attached housing types (from townhomes to large complexes) in order to accommodate projected demand.*

In the Portland Metro area, there is evidence that growth and rising housing costs in central Portland is causing spillover effects across the region. Adjacent cities such as Milwaukie now provide an attractive lower-cost alternative for younger households. Milwaukie is an attractive established community, with good transportation connections to other parts of the Metro area.

The millennial generation is emerging as the dominant demographic group impacting entry-level residential housing, similar to what is being proposed. This generation grew up in a time of generally rising economic prosperity in the 1980s and 1990s, but many find themselves at a disadvantage in the current economy. Quality entry-level jobs have been scarce since the recession, while average student debt has risen sharply. Incomes for people younger than 35 have fallen over the last decade, meaning that this generation is starting from behind.

While many millenials currently reside in rental housing in the urban core, they will be less well-positioned to afford central city housing as they change life-stages and seek ownership opportunities and room for families. In the urban core, where many prefer to live, single-family homes will be scarce and expensive. While childless millennials may continue to accept smaller multi-family units in order to remain in their preferred neighborhoods, many will find many urban options either too constrained or too expensive. This is expected to create opportunities for close-

in suburbs. Based on observed trends, this generation appears to be more accepting of living in denser types of housing, such as attached single-family, even with children. Townhomes will likely represent a larger share of for-sale starter homes, as an attached product allows for a lower price point.

The City of Milwaukie has a significant employment base, and is a net-importer of labor from the remainder of the metropolitan area. There are an estimated 12,400 jobs in the city of Milwaukie, and an estimated 9,100 Milwaukie residents in the labor force. As of 2014, the Census estimates that over 11,700 employees commute into the city from elsewhere. This significant commute pattern indicates that locally-employed workers are not finding appropriate housing options within the City.

The general trends identified in the HNA for the City of Milwaukie include:

- As demand increases, prices rise, and remaining land within the UGB is developed, denser forms of development and creative reuse of parcels through infill and redevelopment become more economically viable. This is increasingly the case for developed parts of the Metro area such as Milwaukie, which offer few opportunities for large-scale development of single-family subdivisions.

- Milwaukie is likely to be attractive to 20-something residents seeking relatively affordable living near transportation options and employment centers. Some in this generation are already starting young families and will be well into middle age during the 20-year planning period. More of these households may move from areas like central Portland to communities like Milwaukie for affordable housing, more space, and schools.

HOUSING NEEDS ANALYSIS FINDINGS

The HNA provided a projected profile of future housing demand through 2036. That profile indicated that 68.8% of the projected demand for ownership housing units would be for units priced below $380,000. This is a price point that is increasingly difficult for developers to hit with a detached residential product, and building for that market will require an expanding role for middle housing products such as townhomes. While the HNA found a significant existing stock of detached single family homes in that price range, recent escalation trends have significantly diminished that stock. Over time, we expect that the City will have very limited opportunities to purchase detached single family housing at affordable price ranges.

As noted in the HNA, the types of housing that Milwaukie and other Metro communities should expect to see going forward will include more attached housing types and increased density overall. This is due to the developed nature of Milwaukie within its current city boundary and limited ability to expand into undeveloped areas. This trend also reflects the region-wide policy to house most future growth within the current UGB.

While the City of Milwaukie has an estimated remaining residential capacity of 2,919 units, only 17.5% of this capacity is on vacant land. The remainder is theoretical redevelopment capacity.

The HNA includes strategies related to realizing the potential of infill and redevelopment site in lower medium density residential zones which are scattered throughout the city. The subject site was identified in the HNA as likely to redevelop. This type of development, often called “infill” development is key to the City of Milwaukie’s ability to meet the housing needs of future residents – people who work and/or want to live in Milwaukie in the future.

SUMMARY

The proposed development is consistent with the observed trends in the residential market, and is expected to deliver a product that is consistent with identified market demand. The subject site is particularly well suited for this type of development, with proximate parks and open space to complement the limited yard space provided in a townhome configuration. We would expect the project to have appeal to a cost-sensitive starter family market, which will value the local amenity mix as well as proximity to employment and commercial services.

The development is requesting a Planned Development approval, which would allow for flexibility to deal with the site and natural resources. The site is split zoned, with portions zoned either R-10 or R-3. The R-10 zoning has a minimum lot size of 10,000 square feet, and would yield few units. Even under a duplex scenario, the zoning would require 14,000 square feet per duplex. The R-3 zoning allows for 3,000 square foot lots sizes, but with the level of natural resource on the site a development would not be able to meet minimum density. As zoned, any development on the site would necessarily be at a price point that would not be responsive to the local demand.

The proposed townhome development would allow for family-oriented unit at a price point that meets identified demand, and can provide workforce housing. It would help realize and expand the City's housing capacity, increasing housing options for local residents as well as locally-employed households.

Kelver, Brett

From: Wyffels, Michelle <WyffelsM@trimet.org>
Sent: Thursday, April 20, 2017 2:07 PM
To: Kelver, Brett
Subject: RE: Development of 13333 SE Rusk Rd

Thank you for poking me again. It's been a hectic few days.

Thank you for catching the Line 152 route change- it hasn't yet hit my desk and I didn't catch the pending change. Please remove my comment, it won't be applicable once the development is done.

Thank you,

Michelle

From: Kelver, Brett [mailto:KelverB@milwaukieoregon.gov]
Sent: Thursday, April 20, 2017 1:17 PM
To: Wyffels, Michelle
Subject: RE: Development of 13333 SE Rusk Rd

Michelle,

Checking back to see if you had a response to my earlier questions below. Keep me posted—I just didn't want to have this fall through the cracks on my end. Thanks!

Brett Kelver, AICP
Associate Planner
City of Milwaukie

From: Kelver, Brett
Sent: Tuesday, April 18, 2017 4:38 PM
To: Wyffels, Michelle <WyffelsM@trimet.org>
Subject: RE: Development of 13333 SE Rusk Rd

Michelle,

Thanks for the note back. I will pass along the contact info (regarding you and not Grant being the TriMet contact) to our administrative staff to update our forms.

Shall I consider this e-mail to be your official comment from TriMet? A few clarifications:

- When you mention TriMet's interest in "maintaining sidewalks along the frontage," am I correct in assuming that you mean along the project's Kellogg Creek Drive frontage, as opposed to the Hwy 224 and Rusk Rd frontages? And that by "maintaining" you mean something like "ensuring that sidewalks are in place" instead of "TriMet actually providing the upkeep of sidewalks"? (I'm getting into my technical writing brain of the land use findings, which sometimes wants to use the word "maintain" as "to keep up or service.")

- Would a bus stop be on Kellogg Creek Drive? Also, I thought I had heard that TriMet was going to be discontinuing its regular bus service in this particular area (the 152 route)--would a bus stop potentially be one for shuttle service rather than regular buses?

Thanks again for responding in such timely fashion. Let me know if you need more information or have questions about the project. We'll certainly update our TriMet contact info to pull you into the loop.

-Brett Kelver
Associate Planner

From: Wyffels, Michelle [WyffelsM@trimet.org]
Sent: Tuesday, April 18, 2017 1:08 PM
To: Kelver, Brett
Subject: Development of 13333 SE Rusk Rd

Brett-

TriMet may be interested in installing a bus stop for deboarding customers adjacent to this new development if residents request it. With this in mind, we are interested in maintaining sidewalks along the frontage and promoting safe crossings.

Also, Grant O'Connell is no longer with my department. Can you replace his name with mine for future correspondence from the City? I would eventually get stuff routed to him, but it risks getting lost.

Thank you,

MICHELLE WYFFELS
Planner II
TriMet
1800 SW 1st Ave., Suite 300, Portland, OR 97201
Office: 503-962-2180 **Email:** wyffelsm@trimet.org

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Clackamas County Fire District #1
Fire Prevention Office

E-mail Memorandum

To: City of Milwaukie Planning Department

From: Matt Amos, Fire Inspector, Clackamas Fire District #1

Date: 4/25/2017

Re: Kellogg Creek Subdivision PD-2017-001

This review is based upon the current version of the Oregon Fire Code (OFC), as adopted by the Oregon State Fire Marshal's Office. The scope of review is typically limited to fire apparatus access and water supply, although the applicant must comply with all applicable OFC requirements. When buildings are completely protected with an approved automatic fire sprinkler system, the requirements for fire apparatus access and water supply may be modified as approved by the fire code official. The following items should be addressed by the applicant:

COMMENTS:

A Fire Access and Water Supply plan is required for subdivisions and commercial buildings over 1000 square feet in size or when required by Clackamas Fire District #1. The plan shall show fire apparatus access, fire lanes, fire hydrants, fire lines, available fire flow, FDC location (if applicable), building square footage, and type of construction. The applicant shall provide fire flow tests per NFPA 291, and shall be no older than 12 months. Work to be completed by experienced and responsible persons and coordinated with the local water authority.

Access:

1) Provide address numbering that is clearly visible from the street.
2) The inside turning radius and outside turning radius for a 20' wide road shall not be less than 28 feet and 48 feet respectively, measured from the same center point.
3) Provide an approved turnaround for dead end access roads exceeding 150 feet in length.
4) Fire Department turnarounds shall meet the dimensions found in the fire code applications guide.

2930 S.E. Oak Grove Blvd. • Milwaukie, OR 97267 • 503-742-2660

Water Supply

1) Fire Hydrants, One and Two-Family Dwellings & Accessory Structures: Where a portion of a structure is more than 600 feet from a hydrant on a fire apparatus access road, as measured in an approved route around the exterior of the structure(s), additional fire hydrants and mains shall be provided.
2) Prior to the start of combustible construction required fire hydrants shall be operational and accessible.
3) For one and two family dwellings located in areas with reliable municipal fire fighting water supply the following shall apply:
    <3,600 square feet (including attached garage)
        a) 1,000 gpm @ 20 psi with hydrant within 600 feet of furthest portion of new residential construction, (OFC Section B105.2)
    >3,600 square feet (including attached garage)
        a) Shall meet fire flow requirements specified in Appendix B of the current Oregon Fire Code, (OFC, Table B105.1)
        b) Shall meet hydrant coverage as specified in Appendix C of the current Oregon Fire Code, (OFC, Table C105.1)

Kelver, Brett

From: Amos, Matt <Matt.Amos@clackamasfire.com>
Sent: Thursday, May 04, 2017 3:46 PM
To: Kelver, Brett
Subject: 13333 SE Rusk Rd. PD-2017-001
Attachments: PD-2017-001 Kellogg Creek Subdivision.doc

Good afternoon Brett,

I have no additional comments based on the additional plans. I am going to keep my original comments and continue to send them as a response.

Thank you,

Matt Amos
Fire Inspector | Fire Prevention
direct: 503.742.2661
main: 503.742.2600

To Safely Protect & Preserve Life & Property

CLACKAMAS FIRE DISTRICT #1
www.clackamasfire.com

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Kelver, Brett

From: Livingston, Robert
Sent: Tuesday, April 25, 2017 9:30 AM
To: Kelver, Brett
Subject: Kellogg Creek subdivision

Brett,

Thanks for the opportunity to comment on this project. I have reviewed the plans proposed by the developer and I'm suggesting the following comments:

1. Because of the size of the development is over five (5) acres, a 1200C Construction stormwater permit will be required. The applicant will be required to apply to Oregon DEQ for this permit. They will need to insert Milwaukie's standard erosion control notes into their erosion control plan using the templates that DEQ require. They will need to submit the same erosion control plans to the City of Milwaukie at the same time they submit to DEQ. The City of Milwaukie will also issue an erosion control permit due to their disturbing >500 ft^2 per Milwaukie code and the applicant will have to pay the appropriate fee for this permit. The City of Milwaukie will provide comments on the erosion control plan during the 14 day public comment period as provided in the 1200C permit process.
2. The applicant will need to enter into a maintenance agreement with the City of Milwaukie for the operation and maintenance of the privately owned stormwater facilities on the property. This agreement will need to be completed by the applicant completely and recorded at the appropriate county records department.
3. As much of the project will be constructed on/in an area currently a wetland, I did not see how they anticipated to manage the hydric soils they will be excavating from the wetland area. Perhaps this is a comment more for the erosion control plan.
4. With the addition of 92 new households, we could reasonably expect the addition of at least 50-75 pets that residents would walk around the proposed natural area to the north of the project. The developers should be required to install some sort of pet waste bag dispensing device similar to what is available in public parks and establish a pet waste management plan for dealing with pet waste and disposal. I also anticipate pets recreating in Mt. Scott Creek, damaging the water quality for aquatic life in the creek and degrading fish habitat.
5. The private stormwater facilities on the property are described as detaining stormwater runoff prior to discharging into Mt. Scott Creek, but do not elaborate on how or where this discharge will be mitigated.
6. The planting plan for the development shows most of the planting to occur near the buildings and sidewalks. With the addition of 92 new units and the impact the development and new residents will have on the area, can we require tree plantings near the creek? I'm thinking specifically tree plantings that will ultimately facilitate shade on Mt. Scott Creek in order to reduce stream temperatures and mitigate some of the impact of the development and the residents plus the removal of many large mature trees already on the property.

Thanks,

ROB LIVINGSTON
Environmental Services Coordinator
503.786.7691
6101 SE Johnson Creek Blvd • Milwaukie, OR 97206

CITY OF MILWAUKIE

Kelver, Brett

From: Livingston, Robert
Sent: Thursday, April 27, 2017 2:02 PM
To: Kelver, Brett
Subject: Brownstone Development variances

Brett,

Thanks for the opportunity to comment on the additional materials submitted on the Kellogg subdivision project. I read through the applicants request for both variances and while the first variance concerning driveway specifications didn't concern me, the second relating to wetland mitigation did. Brownstone's proposal of Additional Enhancement Areas "A" and "B" are fine, but *in addition* to this proposal I had the following thoughts:

The applicant's proposal will impact 1.06 acres of habitat conservation area but is only proposing to mitigate 0.46 acres. Additional Enhancement Areas "A" and "B" in my opinion don't offer real streambank enhancement nor vegetative shading of Mt. Scott Creek, which is my biggest concern. Neither areas "A" and "B" are not in close proximity to the creek, Area "A" is north of the creek and any tree planting there wouldn't offer any beneficial shading to Mt. Scott Creek and Area "B" is too far away from the creek for shade to reach the creek if trees are planted for years, or decades.

My suggestion (if a variance is approved) would be for the developer to plant trees along the southern bank of Mt. Scott Creek that will appreciably shade the creek as they mature. Areas "A" and "B" total 0.46 acres and the difference in impact would be 0.6 acres. I think the developer should be responsible for planting the difference in area impacted (0.6 acres) with native trees on the southern bank of the creek with some sort of plan for maintenance & protection to ensure successful forestation.

ROB LIVINGSTON
Environmental Services Coordinator
503.786.7691
6101 SE Johnson Creek Blvd • Milwaukie, OR 97206

CITY OF MILWAUKIE

Kelver, Brett

From: paul.hawkins@daimler.com
Sent: Friday, April 28, 2017 11:23 AM
To: Kelver, Brett
Subject: RE: comments on Rusk Rd project?

Mr. Kelver,

I have examined the application thoroughly. Knowing that the FEMA flood data from that location is dated, I hope the three proposed catch basins are adequate.

In addition to a less than ideal "Y" intersection with Kellogg Creek Drive, traffic presently backs up on Rusk Road @ 224 during work commuting hours; M-F.

I will be attending the meeting on May 23d.

Enjoy your weekend,
Paul Hawkins
Lake Road Neighborhood Assoc.

From: Kelver, Brett [mailto:KelverB@milwaukieoregon.gov]
Sent: Friday, April 28, 2017 10:41 AM
To: 'Vincent.Alvarez@BURROUGHS.COM' <Vincent.Alvarez@BURROUGHS.COM>; Hawkins, Paul (164) <paul.hawkins@daimler.com>
Subject: comments on Rusk Rd project?

Vince and Paul,

Checking in to see if you had a chance to review the Planned Development materials for the Rusk Road project and whether you were planning to send me any comments on the application.

The initial deadline for comments was yesterday (4/27), but I know it is a lot of material to get through, and I am still working on my draft documents. If you need until early next week to send me any comments, that would be fine—is there a chance you could get me something by the end of the day Monday (5/01)?

Thanks for taking time to look things over. I'm guessing there will be a lot of public interest in this project, and I'd like to make sure that whatever comments the NDA has are included in the staff report and analysis in advance of the first hearing on May 23.

-Brett Kelver
Associate Planner

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Kelver, Brett

From: Rebecca Hamilton <Rebecca.Hamilton@oregonmetro.gov>
Sent: Monday, May 01, 2017 3:59 PM
To: Kelver, Brett
Subject: RE: comments on Rusk Rd project (Milwaukie)?

Hello Brett,

Thank you for the opportunity to comment on this application. Metro notes that the application would require a Type III variance in order to allow impacts to designated natural areas for the purpose of construction of 31 of the 92 proposed lots. The City of Milwaukie's Municipal Code is consistent with Metro's Functional Plan. If the City of Milwaukie is satisfied that the application has met its requirements for a Type III Variance, and if there is no request for an amendment to the City's comprehensive plan or zoning code, then Metro has no comment on this application.

Please feel free to contact me with any questions or comments. Best,

Rebecca Hamilton
Regional Planner
Metro
600 NE Grand Ave., Portland, OR 97232
(503) 797-1721
rebecca.hamilton@oregonmetro.gov

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From: Kelver, Brett [mailto:KelverB@milwaukieoregon.gov]
Sent: Friday, April 28, 2017 1:37 PM
To: Rebecca Hamilton
Subject: comments on Rusk Rd project (Milwaukie)?

Rebecca,

I'm checking in to see if you had a chance to review the Planned Development materials for the Rusk Road project and whether you were planning to send me any comments on the application. You should have received a hard copy of the materials in the mail, but they are also available online here: https://www.milwaukieoregon.gov/planning/pd-2017-001

The initial deadline for comments was yesterday (4/27), but I know it is a lot of material to get through, and I am still working on my draft documents. If you need until early next week to send me any comments, that would be fine—is there a chance you could get me something by the end of the day Monday (5/01)?

Thanks for taking time to look things over. I'm guessing there will be a lot of public interest in this project, and I'd like to make sure that whatever comments Metro has are included in the staff report and analysis in advance of the first hearing on May 23.

-Brett Kelver
Associate Planner

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Kelver, Brett

From: Joseph Edge <joseph.edge@gmail.com>
Sent: Monday, May 01, 2017 1:21 PM
To: Kelver, Brett
Cc: Baldwin van der Bijl; Mike Schmeer
Subject: OGCC Comments for PD-2017-001 (13333 SE Rusk Rd)

Brett,

Here are the comments approved by the Oak Grove Community Council Board of Directors regarding the proposed Planned Development Subdivision at 13333 SE Rusk Road.

I. Traffic impact study
II. Stormwater calculations
III. Mitigation for impacts to WQR/HCA

I. Traffic impact study
We are concerned that using the ITE Trip Generation Rate estimates for "Townhouses" from the ITE Trip Generation Manual will under-represent the number of vehicular trips beginning or ending at the subject site during the peak periods. The subject site is not well-served by transit or well-connected regional trails nor is is part of a connected, walkable grid of streets shared with employment uses. Additionally, the proposed housing is intended as "workforce housing," which suggests that it's residents will be employed, not retired, and are intended to be owner-occupied, which has been shown empirically to result in a higher number of trips by motor vehicle compared to rental units. Since this is not a mixed-use development and no on site employment uses are programmed, a very low proportion of these residents will remain on-site to work as opposed to commuting off-site to work. Almost all of these trips will be made using a motor vehicle. Lastly, at a price point above $300,000, these dwellings will be affordable to families earning 100-120% or more of area median income (up to $76,620). For a lot of families, it will require two wage-earners to combine to afford this price point, which translates to two trips per peak period for many of these proposed dwelling units. We believe that the designation for "single family detached dwelling" more accurately reflects the trip generation rate for these owner-occupied, single-family dwellings.

II. Stormwater calculations
The applicant estimated pre-development ("*Lewis and Clark*") conditions for the site as a combination of woods/grass which, with the current soil type in the site, aligns with a "curve number" of 79. Wooded areas in "D" type soils are rated 77, but would be rated 70 if a more absorbent soil type were assumed. The site does have a high water table and the presence of less absorbent soils, so runoff under current conditions is relatively high, but under densely forested *Lewis and Clark* conditions (exemplified by the dense wooded riparian areas along Mount Scott Creek near the Highway 224 right-of-way) the presence of additional large trees on the site would consume much of that groundwater, making room for more infiltration of surface water. Also, much of the current soil on the site is fill dumped on the site sometime between 1981 and 1995, which does not resemble *Lewis and Clark* conditions. The applicant uses a "conservative" estimate for calculating the required runoff storage, but we find that a conservative estimate should err on the side of caution with respect to runoff storage and the resulting risk to life and property. This site floods frequently in routine rain events, and is located downstream from properties that are being bought out by Clackamas County and FEMA because of the repeat flood risk. A "conservative" estimate should "conservatively" estimate the volume of water that can safely be conveyed to Kellogg and Mount Scott Creeks during a rain event without exacerbating flooding. We believe a curve number of 70 should be used to better reflect the intent of the ordinance.

III. Mitigation for impacts to WQR/HCA
The loss of large White Oak trees and their associated vegetation (Camas etc) along the western edge of this proposed project is unacceptable. New trees will not mitigate for this increasingly rare Old-growth White Oak forest. The proposal includes permanent disturbances to portions of the protected resource areas on the site. This is allowed if the alternatives are not feasible to permit development of the same number of dwelling units; however, the ordinance seeks first to protect, then to mitigate if protection is not feasible. We find that an alternative where the 12 dwelling units in the three buildings proposed for the southwesterly portion of the site are combined with some other dwelling units into a multi-family building outside of the protected resource area should be feasible and protect the applicant's right to construct the same number of dwelling units as in their preferred alternative.

Please do not hesitate to contact us with any questions.

Thank you,

Joseph P Edge
Director, Oak Grove Community Council

CC: Baldwin van der Bijl, Chair, Oak Grove Community Council
CC: Mike Schmeer, Chair, Oak Grove Community Council Land Use Application Review Team

--
Joseph

ESA

819 SE Morrison Street
Suite 310
Portland, OR 97214
503.274.2010 phone
503.274.2024 fax

www.esassoc.com

memorandum

date May 1, 2017

to Brett Kelver, AICP

from Sarah Hartung, Senior Biologist; Beth Copeland, P.E.; Luci Hise-Fisher, Senior Planner

subject Natural Resource Review for the Kellogg Creek Drive Planned Development

This memorandum summarizes our technical review of land use application materials relating to site natural resources regulated by Milwaukie's Municipal Code, including floodplains, Habitat Conservation Areas (HCAs) and Water Quality Resources (WQRs). Our responses to specific technical review tasks are identified in *italics*.

1. Visit the site to assess existing conditions and verify that the applicant's presentation of existing conditions in the Natural Resource Review report is accurate and thorough.

Response: ESA personnel (Sarah Hartung and Beth Copeland) visited the project site on April 18, 2017, traversing the natural areas with the applicant's land use application materials in hand.

The HCA boundaries shown in the application materials match the City's natural resource map, although the mapping is coarse and does not precisely line-up with the tree canopy cover that occurs on site. Any map adjustments proposed by the applicant should consider incorporating areas that may have been overlooked during initial mapping, namely the oak woodland in the southwest portion of the site.

There are some inconsistencies when comparing WQR sample plots 1 and 7 with current conditions. Sample plots 3, 4, 5 and 6 seemed reasonable and accurate, but the tree canopy for both sample plot 1 and 7 seemed over-estimated/inaccurate. It didn't appear as though this was due entirely to a seasonal effect (i.e. ESA's site visit was in early spring versus the applicant's visit in November 2016). Instead of a "good" condition for the buffer in the areas near sample plots 1 and 7, a marginal or poor category might be more appropriate. The tree canopy near sample plot 1 is relatively open, and seemed less than the reported 50 or 55% (depending how the canopy cover is derived according to the tables), in part because of a few dead red alders along the stream bank. This area is also planted with Oregon white oak saplings (~4-6 ft. high), which is an important consideration for the proposed mitigation. Questions

arise include: were the oak plantings part of a voluntary effort or are they part of a compensatory mitigation plan? What is the overall vegetation community goal for this area? If the goal is to establish oak woodlands, consider adjusting the mitigation plan to improve the understory and groundcover, instead of planting a high density of trees that would eventually shade-out the oaks.

It's not clear how the applicant tallied the total cover for each vegetation layer. For example, in Table 7 on page 15 of the natural resource report – the cover percentage for Oregon ash is 10%, and Oregon white oak is 5%, but the total cover for the tree category is reported at 90% instead of 15 (10+5%). The 15% total cover appeared to be more representative based on ESA's field visit than the 90% cover. This type of inconsistency is throughout all of the tables and warrants clarification.

2. Comment on the following aspects of the applicant's Natural Resources Review report:

a. Confirm the applicant's demarcation of the WQR boundary, particularly with respect to steep slopes and the measurement of the vegetated corridor (see Figure 4 in the report).

Response: The demarcation of the WQR boundaries generally seems accurate and in accordance with Table 19.402.15, with the exception of the buffer adjacent to the southeast extension of Wetland A. A conservative interpretation of the setback guidelines would have the buffer begin at the top of the embankment that runs along the eastern boundary of the wetland. In the vicinity of the southeast wetland extension, the first 25-foot increment is < 25%, but the second 25-foot increment is > 25% because of the steep embankment apparently created by historic fill. This adjustment would shift the buffer to the southeast and would include the black cottonwood trees growing at the top of the slope. However, it's understood that the city advised the applicant to establish a 50-foot setback from the wetland boundary based on the slopes in the first 25-foot increment, which does not seem unreasonable for the southeast portion of Wetland A.

b. Figure 5 in the report shows the limits of disturbance and the areas of temporary and permanent impacts to the WQR and HCA. Does the estimation of temporary impact area realistic where shown tightly along the toe of the slope, given the proposed amount of grading and the steepness of some of the proposed slopes? Would more detailed information about the applicant's proposed grading methods be necessary for an adequate assessment of this aspect?

Response: The estimation of the temporary impact area may be realistic if mass grading is undertaken during dry weather and with regular oversight from the geotechnical engineer of record (GEO Consultants Northwest). The limits of disturbance may require revision due to the high groundwater table in the western portion of the site (3 to 12 feet below ground surface, recorded during the dry-season), native sand soils underlying structural silt fill, and potential soft areas of fill that will require overexcavation and re-compaction. The limit of disturbance adjacent to lots 65-69, Tract B Storm Facility, and lots 33-44 may be particularly difficult to maintain, as GEO Consultants Northwest has indicated that the existing ground surface in these areas may need to be stabilized prior to the

placement of fill. Re-compaction of these areas may not be possible during wet-weather or will require alternative methods, such as cement treatment.

It may be advantageous for the City of Milwaukie to outline with the contractor expectations for:

1. *A dry-weather only construction schedule*
2. *Temporary erosion control measures*
3. *Dewatering procedures*
4. *A schedule of erosion control or grading inspections by a qualified inspector*
5. *Permanent erosion control measures, particularly on 2H:1V slopes*
6. *Site closure or stabilization methods if mass grading cannot occur during a single dry weather season or construction work is halted temporarily*

A conservative approach would be to assume a zone of temporary disturbance beyond the areas of permanent fill.

c. Consider and comment on the proposal to fill portions of Wetland A—how will the fill affect the wetland's ecological function? In addition, how will the proposed steep slopes along the edges of Wetland A and elsewhere within the WQR and HCA affect the ecological function and value of the natural resource areas?

<u>Response</u>: Wetland A covers 0.7 acre on-site and extends off-site to the west. The total size of Wetland A (on and off-site) was not provided in the application. The project proposes to fill 0.08 acre, or 11%, of wetland along the eastern edges and avoid permanent fill in 89% of the on-site wetland. From a state and federal perspective, 0.08 acre of fill is considered a relatively minor amount. According to DSL guidelines, if wetland fill is less than 0.2 acre, the applicant is not required to conduct a formal wetland functional assessment using the current accepted tool, the Oregon Rapid Wetland Assessment Protocol. A consideration of proposing permanent fill in a wetland is to determine if the fill has the potential to adversely modify hydrology of the wetland. The source of hydrology for Wetland A is a seasonally high groundwater table. The narrative contends that the project will not adversely affect wetland functions, which seems reasonable given the minor amount of fill along the edge.

Steep slopes are currently located along the eastern edge of Wetland A. From a buffering or wetland protection standpoint, the proposed steep slopes may act as a barrier to prevent human intrusion, and thus disturbance to wildlife habitat in Wetland A. Recommended methods for demarcating wetlands and associated buffers include installing permanent signage and fencing along the perimeter. An example of an appropriate message is as follows: "Protected Wetland and Buffer Area; Do Not Disturb; Contact the City of Milwaukie Regarding Uses, Restrictions, and Opportunities for Stewardship." ***[Note to City staff: ESA ran out of time to consider the pros and cons of different fencing types and can provide input on that topic at a later date.]***

d. The proposal includes excavation that increases the depth of some portions of the floodplain to balance the fill proposed elsewhere within the floodplain. Considering the potential impacts to infiltration, are there significant negative impacts involved with this method of floodplain

mitigation, given that there will be fewer square feet of floodplain area, even if the cubic area of floodplain storage is maintained?

Response: A significant amount of fine-grained structural fill has been placed on the site prior to 1995. The silt fill was placed on top of coarse-grained Missoula Flood Deposits. The fill decreased the floodplain area and infiltration capacity of the site. In the area of proposed floodplain storage GEO Consultants Northwest (2016) found four to five feet of fill in test pits (TP-5, TP-6). The excavation of the proposed floodplain storage will remove up to four feet of fill and is likely to reveal native Missoula Flood Deposits in some areas of the floodplain storage area and increase the infiltration capacity of the remaining floodplain.

The floodplain boundary shown on Sheet C100 is based on the base flood elevation of FEMA cross-section C (69.9 feet NAVD 1988). Sheet C100 shows the floodplain boundary parallel to the 70 foot topographic contour. The floodplain boundary on FEMA FIRM Panel 41051C0400H (July 17, 2008) does not match Sheet C100. The interpolation of the floodplain boundary using the base flood elevation and current topographic information, as shown on Sheet C100, may be appropriate for the site. FEMA floodplain maps were constructed using older topographic information and typically have not been updated to account for the cumulative impacts of increases in impervious area and fill. However, the City's use of a floodplain boundary that is different than the floodplain boundary shown on the FEMA FIRM, without the benefit of FEMA Conditional Letter of Map Revision (CLOMR), could risk the City's Community Rating System (CRS) valuation during a subsequent FEMA audit. It may also result in homeowners misunderstanding their flood risks or their requirement to purchase flood insurance. These risks should be evaluated by City staff with respect to Milwaukie Municipal Code 18.04.

e. Provide a simple assessment of how the ecological function and value of the WQR and HCA in their current states will be affected by the proposed project (including the proposed mitigation) by choosing one of the three following responses:
   i. Improved
   ii. Unchanged
   iii. Degraded

Response: The WQR areas and HCA range from poor to good quality based on vegetative cover. The groundcover in the natural areas has been significantly disturbed from past land-use activities and nuisance species (read canarygrass, teasel, nipplewort, and Canada thistle) are abundant. If the proposed mitigation can effectively establish native groundcover and control nuisance plants in the herbaceous layer, conditions would be improved. Controlling weed species during establishment of the mitigation areas would likely require multiple visits throughout the year and a combination of manual, mechanical, and chemical control. Prior to project approval, it would be beneficial to learn more details about how the applicant proposes to successfully establish a native herbaceous layer and control weeds.

f. Does the proposed development do as much as possible or practicable to avoid and/or minimize impacts to the WQR and HCA, given the general goal of establishing at least the minimum required density of housing on the site?

Response: The natural resources are located primarily on the western and northern portions of the site. The project proposes a clustered development on the eastern portion of the site, which generally serves to protect the natural resources and provide more than the minimum required density. The proposed development would result in some permanent impacts at the edges of mapped resources.

The proposed project would place a large portion of the resources in an open space area. The project would provide 7.07 acres, or about half of the approximately 14 acre site as open space.[1] *The open space area provides protection to some of the natural resources on the site. However, even with this amount of open space some of the residences would be located within the mapped HCA. Most of the residences on the north side of Street B and about 7 lots in the western portion of the site would be within the mapped HCA. In addition, about 8 lots in the central portion of the site would be within the limits of water quality resource. With the proposed housing type, a greater avoidance of natural resources could only be achieved through a reduction in the number of proposed units.*

Under the current R-3 and R-10 zoning, the minimum density on the property on the property is 66 units and the maximum density is 80 units (Tables 2 and 3B of the application). The applicant is requesting an increase in the density in accordance with Section 19.311.3.C of the City's code. Section 19.311.3.C allows an increase in density of up to 20 percent in the PD zone. Due to the configuration of the resources on the site, it is difficult to avoid the resources entirely without reducing the density of the development. The clustered development at the proposed maximum density is configured so as to minimize the impacts to the WQR and HCA.

Because the project would exceed the minimum density and is requesting an increase in density based on Section 19.311.3.C, it is important to consider if "…the planned development is outstanding in planned land use and design and provides exceptional advantages in living conditions and amenities not found in similar developments constructed under regular zoning." The project would include amenities for future residents, including open space, soft surface trails, and a community garden. In addition, the project would add residential units to the City's housing stock and would provide a different type of housing than is typically available in the City. The rowhouses would be in pods of four and would offer a more dense type of development for future residents. The project would include about 7 acres of open space, including a trail system. However, there are two separate trails and the trail on the southwestern portion of the site terminates at the rear of lots on the western side of Street B. This could force users to

[1] The introduction in the application indicates the site is 13.8 acres and the tables calculating allowable density indicate 14.02 acres.

walk behind the residences in the wetland area. ***[Note to City staff: Could the trail be located through the western edge of the wetland in the vicinity of current public access to connect with the trail on the northern portion of the site?]*** *The project would include a community garden with about 30 plots. This would allow about 1/3 of the lots to have a plot in the community garden. Aside from any improvements offered in the open space areas, which is essentially the natural resources, the community garden is the primary amenity with the exception of housing opportunities that are perhaps at a price that is affordable.*

Generally, with the proposed density, the project appears to avoid and/or minimize impacts to the WQR and HCA to the extent practicable. In addition, the proposed project would provide housing opportunities within proximity to services and utilities, and would provide on-site amenities to the future residents.

g. Is the proposed mitigation sufficient to restore the disturbed WQR to an equal or better condition? Does it adequately address any anticipated impacts related to alkalinity, E. Coli, nutrients, sedimentation, and temperature (the pollutants that appear to be listed for Mount Scott Creek on the Department of Environmental Quality's 303(d) list)?

Response: See response to 2e. The proposed mitigation appears to adequately address temperature and sedimentation issues by proposing to increase the woody structure within the floodplain. The mitigation plan does not directly address E. coli or nutrients (Nitrogen, Phosphorus), which are commonly introduced into the landscape through animal waste (or human sewage) and chemical fertilizers applied to cropland. Run-off from residential lawns may also be a source of chemical fertilizers, but on a smaller scale compared to agricultural input.

h. Is the proposed mitigation sufficient to reestablish forested canopy within the HCA in a way that meets the ecological functions and values outlined in MMC Subsection 19.402.1?

Response: The proposed mitigation in Area A technically meets the City's requirements, but would result in an overly dense planting of trees and shrubs. The proposed number of trees and shrubs does not appear to account for existing woody vegetation, including several Oregon white oak saplings that have been planted on-site in the floodplain and along the stream bank. An appropriate alternate approach would be to reduce the density of trees and shrubs in Area A, protect existing oak saplings, and focus effort on replacing existing nuisance plants with native groundcover species in certain areas. Furthermore, appropriate mitigation measures for the proposed project also includes enhancing the understory of the existing oak woodland in the southwest portion of the site by replacing nuisance plants (English ivy and shiny geranium) with native forbs and grasses compatible with Oregon white oaks.

i. Are the numbers and species of proposed mitigation plantings sufficient and appropriate for the proposed impacts to the WQR and HCA?

Response: See the response to "h" above regarding the number of proposed plantings. The species proposed as part of mitigation plantings are generally appropriate and include a reasonable mix of native tree and shrub species. The proposed herbaceous layer is predominately a grass seed mix with the exception of lupine. The proposed species list for the herbaceous layer could be significantly improved by including forbs or non-grass species such as yarrow and camas, or other native wildflowers as appropriate.

j. Consider the applicant's presentation of alternatives to the proposed development. Are there additional obvious alternatives that should be considered? Are the applicant's estimates of the various alternatives' impacts to the WQR and HCA reasonable?

Response: The applicant evaluated an alternative that is consistent with the current zoning of the site (i.e., R-3 and R-10 zoning districts). The alternative would provide larger lots on the eastern portion of the site and smaller lots on the western portion of the site. The applicant indicates that absent the increase in density that can be achieved from the requested Planned Development the project would not be economically viable.

It appears that the alternative presented in Figure 5 would result in a reduction in impacts to the natural resources compared with the project. In other words, the alternative presented does not provide a direct comparison of development with the same amount of impacts. An alternative that could be explored is working from Figure 5, Alternative Site Layout – Standard Zoning, and identifying areas to avoid and then apply a similar cluster development of small lots to determine the density that could be achieved. In visually comparing the proposed project to the areas considered for development in the alternative site plan, the proposed project could possibly achieve the minimum density but would not provide the increase in housing opportunities that would result from the proposed project.

The Planned Development requested allows for a clustered development and a higher density than the density that could be obtained under the current zoning. If the City determines that greater protection of natural resources is necessary, the likely solution would be a reduction in the number of units.

k. In the context of alternatives, would it be feasible to utilize the floodplain storage area for stormwater management, in place of one or more of the proposed detention ponds?

Response: If treated stormwater could be released into the floodplain storage area at a volume and rate that would not cause erosion, it would be feasible to incorporate the floodplain storage area into the overall stormwater management plan. Release of stormwater into the HCA or WQR without prior pollution reduction or flow mitigation could degrade those areas.

l. Comment on the ecological impacts of the proposed removal of Oregon white oak trees in the southwest corner of the site, particularly where beyond the WQR and HCA boundaries. What ecological role or contribution do those trees provide for the nearby designated natural resource areas?

Response: Approximately 25 mature Oregon white oaks ranging in size from 16 to over 24 inches in diameter at breast height (dbh) are located in the southwest portion of the site. [Side note: ESA double-checked the diameter of a subset of the oaks proposed for removal using a Forester's tape with mixed results. Trees 3, 6 and 7 are accurate as presented on Figure 7a, but the diameters of Trees 27, 28, 30 to 33, 101 and 106 were a couple to several inches larger in the field compared with Figure 7a. For example, Trees 31 and 32 are presented as 16 inches DBH, but ESA measured these as 21 inches. This difference could be due to variation in sampling technique; DBH is typically measured at 4.5 feet above the ground.] Fifteen oaks are proposed for removal to accommodate Units 33-44 and a stormwater treatment facility. The Oregon Department of Fish and Wildlife (ODFW) identifies oak woodlands as a "Strategy Habitat" in the Willamette Valley ecoregion, which is a vegetation cover type of high conservation value. Large diameter oaks in particular are valued for providing diverse wildlife habitat. Approximately 5 percent of the historic white oak habitat in the Willamette Valley is remaining (ODFW, 2005).

The stand of trees in the southwest corner appears to be a remnant oak woodland as it has open-grown oaks, and a relatively open understory with native groundcover including camas (Camassia sp.) at the south end of the stand. Ground cover in a majority of the woodlot consists of shiny (or shining) geranium (Geranium lucidum), a nuisance plant. Several hundred Oregon white oak trees (~ 300) are growing on adjoining parcels, including nearby park land. Removal of the 15 oaks trees represents an approximate 5% reduction of oak trees in the vicinity, and would contribute to the incremental loss of Oregon white oak habitat in the city and the larger ecoregion. Although the stand of oak trees on site is relatively small, it adds structural diversity and complexity that is lacking in the adjacent wetland.

If your report notes any deficiencies in the application, please indicate whether you believe the deficiency (1) needs to be resolved with revised application materials prior to issuance of a decision, (2) can be resolved through adding a condition of approval, or (3) does not impact the overall review of the proposal.

Thank you for the opportunity to review the Kellogg Creek Drive plan development project. Please let me know if you have any questions or would like to discuss any of the information presented in this memorandum.

Oregon
Kate Brown, Governor

Department of Transportation
Region 1 Headquarters
123 NW Flanders Street
Portland, Oregon 97209
(503) 731.8200
FAX (503) 731.8259

May 3, 2017 ODOT #7689

ODOT Response

Project Name: 13333 SE Rusk - Zone Change w/ PUD and Subdivision	**Applicant:** Brownstone Development
Jurisdiction: City of Milwaukie	**Jurisdiction Case #:** PD-2017-001, ZA-2017-001, S-2017-001, NR-2027-001, TFR-2017-001, VR-2017-001, CSU-2017-001
Site Address: 13333 SE Rusk Rd, Milwaukie, OR 90367	**State Highway:** OR 224

The site of this proposed land use action is adjacent to OR 224. ODOT has permitting authority for this facility and an interest in ensuring that this proposed land use is compatible with its safe and efficient operation. **Please direct the applicant to the District Contact indicated below to determine permit requirements and obtain application information.**

ZONE CHANGE/PD COMMENTS

☒ ODOT has determined there will be no significant impacts to state highway facilities for the zoning amendment to apply the Planned Development overlay due to a small increase in additional trips to the state highway.

SUBDIVSION

COMMENTS/FINDINGS

The Traffic Impact Analysis (TIA) prepared by Kittelson and Associates dated Feb 7, 2017, shows a high number of crashes at Webster St/OR 224 where the majority of crashes are injury related. Additionally, the Rusk Rd and Webster St intersections with OR 224 are listed on the top 10% SPIS sites. This means that they are in the top 10% of crashes on the state highway system.

The TIA analyzed the northbound right turn movement at the Rusk Rd/OR 224 intersection as a right turn lane. Currently, there is a flare for a turn lane that is limited to storage for only one vehicle to make the right turn. ODOT recommends that the applicant be conditioned to install a northbound right turn lane at the Rusk Rd/OR 224 intersection.

All improvements (access, frontage, roadway etc.) within the State highway right of way are subject to the ODOT Highway Design Manual (HDM) standards; otherwise, a Design Exception by a licensed engineer is required to be submitted for review, and approval must be obtained or an alternative design that meets Highway Design Manual standards must be used. Until more detailed plans have been reviewed, ODOT cannot make a determination whether design elements will require a Design Exception.

Note: If a Design Exception is required, it may take up to 3 months to process.

All ODOT permits and approvals must reach 100% plans before the District Contact will sign-off on a local jurisdiction building permit, or other necessary requirement prior to construction.

ODOT RECOMMENDED LOCAL CONDITIONS OF APPROVAL

Traffic Impacts

☒ The applicant shall construct a northbound right turn lane at the intersection of Rusk Rd and OR 224.

Frontage Improvements and Right of Way

☒ Cross walk ramp(s) shall be constructed as necessary to be consistent with local, ODOT and ADA standards.

Permits and Agreements to Work in State Right of Way

☒ An ODOT Miscellaneous Permit must be obtained for all work in the highway right of way. When the total value of improvements within the ODOT right of way is estimated to be $100,000 or more, an agreement with ODOT is required to address the transfer of ownership of the improvement to ODOT. An Intergovernmental Agreement (IGA) is required for agreements involving local governments and a Cooperative Improvement Agreement (CIA) is required for private sector agreements. The agreement shall address the work standards that must be followed, maintenance responsibilities, and compliance with ORS 276.071, which includes State of Oregon prevailing wage requirements.

Note: If a CIA is required, it may take up to **6 months** to process.

☒ An ODOT Miscellaneous Permit is required for connection to state highway drainage facilities. Connection will only be considered if the site's drainage naturally enters ODOT right of way. The applicant must provide ODOT District with a preliminary drainage plan showing impacts to the highway right of way.

A drainage study prepared by an Oregon Registered Professional Engineer is usually required by ODOT if:

1. Total peak runoff entering the highway right of way is greater than 1.77 cubic feet per second; or
2. The improvements create an increase of the impervious surface area greater than 10,758 square feet.

ADVISORY INFORMATION

Noise

☒ The applicant is advised that a residential development on the proposed site adjacent to the expressway may be exposed to traffic noise levels that exceed federal noise guidelines. Builders should take appropriate measures to mitigate this impact. It is generally not the State's responsibility to provide mitigation for receptors that are built after the noise source is in place.

Please send a copy of the Notice of Decision including conditions of approval to:

ODOT Region 1 Planning
Development Review
123 NW Flanders St
Portland, OR 97209

Region1_DEVREV_Applications@odot.state.or.us

Development Review Planner: Marah Danielson	503.731.8258, marah.b.danielson@odot.state.or.us
Traffic Contact: Avi Tayar, P.E.	503.731.8221
District Contact: Jim Nelson	971.673.12682942

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MEMORANDUM

TO: Community Development Department

THROUGH: Chuck Eaton, Director of Engineering

FROM: Alex Roller, Engineering Technician II

RE: 92-Lot Planned Development – 13333 SE Rusk Road
PD-2017-001

DATE: May 5, 2017

Subdivide 3 existing parcels into 92 lots.

1. Per 19.709.5 The public improvement process will conform to conditions laid out in MMC 12.08.020.MMC Chapter 12.08. This will apply to all construction that is completed in the right-of-way that is eventually dedicated to the City.
2. MMC Chapter 12.02 – Public Works Standards

   The Planning Commission finds that the following complies with applicable criteria of MMC Chapter 12.02.

   A. 12.02.010 – Establishes standards that all new public works, including streets, sanitary sewer, storm sewers, and water lines constructed shall be constructed in conformance with the applicable public works standards.

      Proposed driveways will conform to 12.02.010 through Condition of Approval C.
3. MMC Chapter 12.08 – Street and Sidewalk Excavations, Construction and Repair

   The Planning Commission finds that the following complies with applicable criteria of MMC Chapter 12.08.

   Construction process will conform to all sections of MMC 12.08.
4. MMC Chapter 12.16 – Access Management

The Planning Commission finds that the following complies with applicable criteria of MMC Chapter 12.16.

A. MMC Chapter 12.16.040 establishes standards for access (driveway) requirements.

   i. 12.16.040A: requires that all properties be provided street access with the use of an accessway.

      The proposed development is consistent with MMC 12.16.040A.

   ii. 12.16.040B: Access spacing onto arterial and collector streets.

      The proposed development, is consistent with MMC 12.16.040B.

   iii. 12.16.040C: Accessway Locations

      a. Double Frontage

The proposed development is consistent with MMC 12.16.040.C.1 as no double frontage lot accessways are proposed.

b. Limiting driveway access from arterials and collectors.

The proposed development is consistent with 12.16.040C.2, as no accessways are proposed on a collector or arterial.

c. Distance from property line

Proposed driveways will conform to 12.16.040.C.3 through Condition of Approval L.

d. Distance from Intersection

Proposed lot layout allows for the siting of houses that will facilitate the required 45 ft accessway spacing on all lots except for lot 72. Applicant must have an approved variance to this requirement to construct an accessway for lot 72, which will conform to Condition of Approval A.

The proposed development, as conditioned is consistent with MMC 12.16.040.C.4.a.

iv. 12.16.040D: Number of Accessway Locations

a. Safe access

Applicant has proposed the minimum number of accessway locations.

The proposed development is consistent with MMC 12.16.040.D.1.

b. 12.16.040.D.2-3 Does not apply to this development, as no accessways are on arterials or collectors are proposed. Also only 1 accessway per property is proposed.

v. 12.16.040E & 12.16.040F: Accessway Design - ADA standards & Width

Proposed driveways will conform to 12.16.040.E & 12.16.040.F through Condition of Approval L.

5. MMC Chapter 12.24 – Clear Vision at Intersections

The Planning Commission finds that the following complies with applicable criteria of MMC Chapter 12.24.

A. 12.24.030: clear vision requirements

Proposed driveways, accessways and intersections will conform to 12.24.030 through Condition of Approval M.

6. MMC Chapter 13.14 – Stormwater Management

The Planning Commission finds that the following complies with applicable criteria of MMC Chapter 13.14.

A. 13.14.020 - Definitions

"Public Works Standards" mean the City of Milwaukie Public Works Standards and the referenced City of Portland Stormwater Management Manual that the City requires be complied with for the design and construction of on-site mitigation facilities including stormwater detention, retention, and water quality treatment facilities.

Preliminary stormwater report indicates a pre-development curve number of 79. The number that will be used for the final report will be 72 (Lewis & Clark era). This alteration will increase the size of the facilities slightly. Also, the City is unable to verify the preliminary stormwater report County BMP calculation for facility sizing. Final stormwater report will include PAC calculations for City to officially approve the stormwater facility sizing and configuration. The City feels that the discrepancy in curve number and unknown sizing calculations does not pose a problem because the project site has a much larger area of land that is already being graded and replanted. This land can accommodate the additional stormwater treatment area.

Final stormwater design may include treatment facilities in the newly constructed floodplain/wetlands. Final design will conform to a design that satisfies Portland's Stormwater Manual as well as Milwaukie's requirements for maintenance.

7. MMC Chapter 18 – Flood Hazard Regulations

The Planning Commission finds that the following complies with applicable criteria of MMC Chapter 18.

MMC Chapter 18 applies to all special flood hazard areas and all flood management areas within the jurisdiction of the City.

A. 18.040.100 – Development Permit Required

Applicant is proposing a map revision. New lots will not be in the modified floodplain. Although no buildings will be built below the floodplain elevation, application is proposing to cut and fill within the floodplain.

B. 18.04.150 General Standards

i. 18.04.150.A-B Anchoring and Construction Materials and Methods

Does not apply, application does not propose to construct any building in the floodplain once map revision has been approved by FEMA.

ii. 18.04.150.C – Utilities

Utilities shall conform to requirements set forth in 18.04.150.C through Condition of Approval I.

iii. 18.04.150.F – Balanced Cut and Fill

Two submittals have been submitted that indicate that there will not be a net fill in the floodplain. Grading permit will be required to accurately show that changes will conform to MC 18.04.150.F.

iv. 18.040.150.G – Crawlspace Construction

If crawlspaces are constructed within the floodplain elevation, they must follow conditions per MMC 18.040.150.G.

8. MMC Chapter 19.700 – Public Facility Improvements

The Planning Commission finds that the following complies with applicable criteria of MMC Chapter 19.700.

MMC Chapter 19.700 applies to partitions, subdivisions, new construction, and modification or expansion of an existing structure or a change or intensification in use that result in any projected increase in vehicle trips or any increase in gross floor area on the site. The applicant proposes to subdivide the existing 3 parcels into 92 new lots. The subdivision triggers the requirements of MMC Chapter 19.700.

A. MMC Section 19.703 Approval Criteria

i. 19.703.1 Preapplication Conference

Requirement for a preapplication conference was satisfied on August 11th 2016.

ii. 19.703.2 Application Submittal

Development will require a Transportation Impact Study, and a Transportation Facilities Review application has been submitted.

The proposed development is consistent with MMC 19.703.2

iii. 19.703.3 Approval Criteria

Applicant will provide transportation improvements and mitigation in rough proportion to the potential impacts of the development.

The proposed development is consistent with MMC 19.703.3.

B. MMC Section 19.704 requires submission of a transportation impact study documenting the development impacts on the surrounding transportation system.

Transportation impact study has been provided and reviewed.

The proposed development is consistent with MMC 19.704.

C. MMC Section 19.705 requires that transportation impacts of the proposed development be mitigated.

Per the TIS submitted February 7, 2017 from Kittelson & Associates, Inc. the proposed development does not trigger mitigation of impacts beyond the required frontage improvements and bike lane requirements. The surrounding transportation system will continue to operate at the level of service before the proposed development.

The proposed development is consistent with MMC 19.705.

D. MMC Section 19.708 – Transportation Facility Requirements

i. 19.708.1 – General Street Requirements and Standards

19.708.1.A – Access Management

Access requirements shall comply with access management standards contained in Chapter 12.16.

19.708.1.B – Clear Vision

Clear vision requirements shall comply with clear vision requirements contained in Chapter 12.24.

19.708.1.C – Development in downtown zones

Does not apply to this development

19.708.1.D – Development in Non-Downtown Zones

The proposed development is consistent with MMC 19.708.1.D.

19.708.1.E – Street Layout & Connectivity

MMC 19.708.1.E.1-2

Proposed development is consistent with MMC 19.708.1.E.1-2

MMC 19.708.1.E.3

Does not apply to proposed development as no streets are going to be extended to adjacent properties.

MMC 19.708.1.E.4

Proposed development is consistent with MMC.19.708.1.E.4

19.708.1.F – Intersection Design and Spacing

Proposed development is consistent with MMC 19.708.1.F

ii. MMC Section 19.708.2 establishes standards for street design and improvement.

The street to the east of lots 45 & 53 does not comply with minimum City standards. The sidewalk and planter strips are not proposed. The City has allowed this reduced cross section because of the pending adoption of a low volume residential standard cross section with pedestrian routes on the street surface. The 22-foot right-of-way width accommodates the minimum 10-foot travel lanes, curb and separation from the private property.

The proposed cross sections for Kellogg Creek Drive and all remaining internal streets conform to requirements are consistent with MMC Section 19.708.2.

19.708.2.A.12 – Street Trees

Landscape strips are present on application. Street trees will be required at an average 40’ spacing.

iii. MMC Section 19.708.3 requires sidewalks to be provided on the public street frontage of all development.

The construction of sidewalks along the proposed development property abutting all public rights-of-way is included in the street frontage requirements.

19.708.3.A.3 requires that public sidewalks shall conform to ADA standards. Current proposal includes ADA ramps at all corners.

The proposed development is consistent with MMC Section 19.708.3.

iv. MMC Section 19.708.4 establishes standards for bicycle facilities.

Per Milwaukie's Transportation Plan, a bike lane is required connecting the northeast corner of the property to the southwest corner of the property. Applicant has proposed to construct an on-street bike route through the development. The north-east turnaround will connect to Rusk/224 intersection through the construction of a multi-use path.

Proposed development is consistent with MMC 19.708.4.

v. MMC Section 19.708.5 establishes standards for pedestrian and bicycle paths. Pedestrian access is required at the end of the cul-de-sac, which has been satisfied through a 15-foot multi-use path extended to Rusk Road. Pedestrian access is also required from the east end of "Street A" to Kellogg Creek Drive, which has been satisfied through a pedestrian connection in tracts E & F.

Proposed development is consistent with MMC 19.708.5

vi. MMC Section 19.708.6 establishes standards for transit facilities.

The portion of SE Kellogg Creek Drive fronting the proposed development is classified as a transit route in the Milwaukie Transportation System Plan, however, transit facilities are already in place. As a result, transit facility improvements are not required for the proposed development.

vii. MMC 19.708.6 does not apply to the proposed development.

Recommended Conditions of Approval

1. Prior to approval of the final plat, the following shall be resolved:
   A. Obtain a variance to MMC 12.16.040.C.4.a for accessway spacing for lot 72.
   B. Submit a final stormwater management plan to the City of Milwaukie Engineering Department for review and approval. The plan shall be prepared in accordance with Section 2 – Stormwater Design Standards of the City of Milwaukie Public Works Standards. Submit full-engineered plans for construction of all required public improvements, reviewed and approved by the City of Milwaukie Engineering Department. All utilities shall conform to the Milwaukie Public Works Standards.
   C. Obtain a right-of-way permit for construction of all required public improvements listed in these recommended conditions of approval.

D. Pay an inspection fee equal to 5.5% of the cost of the public improvements.

E. Provide a payment and performance bond for 100 percent of the cost of the required public improvements.

F. Provide an erosion control plan and obtain an erosion control permit.

G. Dedicate 14 feet of right-of-way on SE Kellogg Creek Drive fronting the proposed development property to accommodate the parking and bike facilities.

H. Install all underground utilities, including stubs for utility service prior to surfacing any streets. Utilities shall be designed to minimize or eliminate infiltration of floodwaters into the system. New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of floodwaters into the system and discharge from the systems into floodwaters. Relocate or provide a private utility easement for all utilities encroaching onto adjacent properties.

I. Construct a 5-foot set-back sidewalk, 4' planter strip and curb & gutter on entire frontage of SE Kellogg Creek Drive.

J. Construct all sidewalks, ramps and driveways on "SE Street A" and "Street B".

K. Construct a driveway approach to meet all guidelines of the Americans with Disabilities Act (ADA) to each new lot. The driveway approach aprons shall be between 9 feet and 20 feet in width and least 7.5 feet from the side property line.

L. Clear vision areas shall be maintained at all driveways and accessways and on the corners of all property adjacent to an intersection Remove all signs, structures, or vegetation more than three feet in height located in "vision clearance areas" at intersections of streets, driveways, and alleys fronting the proposed development.

M. Provide a 12-month Maintenance Bond upon completion of the construction.

N. Provide a final approved set of Mylar and electronic PDF "As Constructed" drawings to the City of Milwaukie prior to final inspection.

2. Prior to issuance of any building permit:

   A. Obtain approval of FEMA map revision for lots that are currently in the floodplain.

3. Prior to final inspection for any building on the proposed development, the following shall be resolved:

   A. Connect all residential roof drains to private drywell or other approved structure. Private properties may only connect to public storm system if percolation tests show that infiltration cannot be obtained on site or if the water table is too shallow. In the event the storm management system contains underground injection control devices, submit proof of acceptance of the storm system design from the Department of Environmental Quality.

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CLACKAMAS COUNTY

DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
DEVELOPMENT SERVICES BUILDING
150 BEAVERCREEK ROAD | OREGON CITY, OR 97045

MEMORANDUM

TO: Brett Kelver, City of Milwaukie
FROM: Kenneth Kent, Senior Planner, Clackamas County Engineering
DATE: May 8, 2017
RE: PD-2017-001 Kellogg Creek Subdivision

This office has the following comments pertaining to this proposal:

FACTS AND FINDINGS

1. The proposed land use application for a 92-lot subdivision is located within the City of Milwaukie, with frontage on SE Kellogg Creek Drive which is a county roadway. The development site includes the Turning Point Church in the southeast portion of the site frontage on SE Rusk Road, which is also a county roadway. As discussed in the project narrative, a property line adjustment is proposed to modify the existing lots of record and separate the church from the subdivision site. A minor modification of the Community Service Use approval for the church is proposed to address changes to the church site. Access and improvements along the frontage of SE Kellogg Creek Drive for the subdivision requires approval by Clackamas County. In addition access or improvements along the SE Rusk Road frontage of the church require approval by Clackamas County.

2. The proposed subdivision has approximately 654 feet of frontage on the northerly side of SE Kellogg Creek Drive. Clackamas County has designated SE Kellogg Creek Drive a local roadway. Clackamas County has adopted roadway standards that pertain to the structural section, right-of-way width, construction characteristics, and access standards for local roadways. The standard improvement for a local roadway includes a right-of-way width of 54 feet, with a 32-foot wide curb to curb roadway, 5-foot wide landscape strip with street trees, and a 5-foot wide sidewalk. The existing improvements include curb-tight sidewalk and a total road width of 28-32 feet. The existing right-of-way width appears to be 40 to 50 feet. There is existing sidewalk on the south side of SE Kellogg Creek Drive toward the westerly end of the project site that extends for approximately 325 feet. The remainder of the south frontage does not have curb or sidewalk. Based on the zoning of the remaining parcels on the south side of SE Kellogg Creek Drive, redevelopment is not likely. The applicant should be required to provide a minimum total road width of 32 feet along the entire site frontage, allowing for parking on both sides of the roadway.

3. The preliminary plans identify a striped bike lane along the frontage of SE Kellogg Creek Drive. The county does not provide bike lanes on local roads.

4. Clackamas County requires that roadways and intersections serving subdivisions have adequate capacity to handle the additional traffic generated by the development and will continue to operate during the mid-day one hour peak and first and second hours of the PM peaks at acceptable volume to capacity (v/c) ratios, below the maximums which are 0.90 and 0.99 respectively. The applicant has submitted a traffic impact study prepared by Kittelson & Associates, Inc. dated February 7, 2017 evaluating the roadways and intersections within the influence area of the proposed development. The proposed subdivision is projected to generate 536 total daily vehicle trips, with 40 AM peak trips, 48 mid-day peak trips and 48 evening peak trips. The study concludes that capacity of the roadways and intersections serving the project site will operate within the volume to capacity ratios. Therefore, the county's intersection capacity requirements as they relate to the transportation system are met by the applicant's proposal.

5. The traffic impact study conducted counts for the study intersections during the month of November. The study notes that the counts do not capture traffic from the North Clackamas Park during peak summer activity, and concludes that the additional traffic will not degrade the intersection below acceptable levels. The county recommends that the applicant's traffic engineer evaluate the study intersections including estimated summer traffic volumes from the park to verify adequate capacity and safety.

6. The traffic impact study recommends modification of the Turning Point Church driveway onto SE Rusk Road to emphasize that it is an entrance only. The recommendation includes signage and narrowing of the driveway throat to a single lane width. The functional classification of SE Rusk Road is a collector roadway, which generally has limited access when access to a lower functional class roadway is available. The church has an existing full access to SE Kellogg Creek Driveway and will continue to have access with the proposed subdivision. The location of the driveway onto SE Rusk Road does not meet county standards. As noted in the traffic impact study, the driveway does not provide adequate sight distance to allow vehicles to use the driveway to enter SE Rusk Road. Although the proposal recommends signage and narrowing of the driveway throat to discourage exiting from the driveway, the county's practice is to only allow a driveway with one-way restrictions when controlled by a median. Based on increased traffic from the proposed subdivision, and modification of the church site, the county recommends closure of the driveway. The traffic impact study should be updated to include the impacts of the church driveway closure.

7. The traffic impact study indicates that the northbound right turn lane at the Highway 224 and SE Rusk Road intersection has adequate queue storage. Although a queue storage of 50 feet is noted, based on the existing asphalt width, the queue storage appears to be 25 to 30 feet. County staff has observed that the right turn lane is not available with the typical queues for the northbound through/left movement because of available asphalt width. The use of the Synchro program may not adequately capture operation of the intersection in this case. It is recommended that the applicant's traffic engineering re-evaluate the queuing using the SimTraffic program. If the need for additional queue length is identified, the applicant should be required to construct the additional storage if right-of-way is available.

8. The traffic impact study does not evaluate the need for a northbound left turn lane at the SE Rusk/SE Kellogg Creek Drive intersection. The study should be updated to include that analysis.

9. The proposed application does not provide a discussion of overall parking availability. Although, the use of alley access for a number of the lots will provide on-street parking, close to half of the development will have driveways onto the public road. With 20 to 25-foot wide lots and driveway approaches, there will be little if any parking along those frontages. Some analysis or evaluation should be completed that addresses the availability of driveway/garage/on-street parking to better understand any overflow parking that may occur in the existing neighborhood.
10. Prior to commencement of site work, a Development Permit and a Utility Placement Permit are required and must be obtained from Clackamas County for all work performed in the SE Kellogg Creek Drive right-of-way.

CONCLUSION

Although the County does not have land use jurisdiction over the proposed subdivision, the County does have jurisdiction over access and improvements along SE Kellogg Creek Drive and SE Rusk Road.

If the City of Milwaukie approves the request, the following conditions of approval are recommended. If the applicant is advised to or chooses to modify the proposal in terms of access location and/or design following the preparation of these comments this office requests an opportunity to review and comment on such changes prior to a decision being made.

1. All frontage improvements in, or adjacent to Clackamas County right-of-way, shall be in compliance with *Clackamas County Roadway Standards*.
2. The applicant shall dedicate a minimum of approximately 7 feet of additional right-of-way along the entire site frontage of SE Kellogg Creek Drive as necessary to accommodate the public improvements, and shall verify by survey that there is a minimum 27-foot wide one-half right-of-way width.
3. The applicant shall grant an 8-foot wide public utility easement adjacent to the public right-of-way along the entire site frontage of SE Kellogg Creek Drive.
4. The applicant shall design and construct improvements along the entire site frontage of SE Kellogg Creek Drive in accordance with the *Clackamas County Roadway Standards*.

   These improvements shall consist of:

   a. A minimum 16-foot wide one half-street improvement for a local roadway. The applicant shall widen SE Kellogg Creek Drive so that the minimum total road width along the site frontage is 32 feet. The structural section for SE Kellogg Creek Drive improvements shall consist of 4 inches of asphalt concrete, per Clackamas County Roadway Standards Standard Drawing C100.

   b. Standard curb, or curb and gutter if curbline slope is less than one percent.

   c. Adjacent to the curb, a 5-foot landscape strip, including street trees shall be constructed along the entire site frontage.

d. A minimum 5-foot wide unobstructed sidewalk shall be constructed along the entire site frontage, per Standard Drawing S960. Where sidewalk does not connect to sidewalk on adjacent property, the end of the sidewalk include a concrete ADA accessible ramp, providing a transition from the new sidewalk to the edge of the pavement.

e. Inbound and outbound tapers shall be provided per Section 250.6.4 of the Clackamas County Roadway Standards. The full road improvement shall extend to the westerly project property line, with the outbound taper beginning at that point.

f. The applicant shall remove bike lane striping from the proposed frontage improvements.

g. Dual curb ramps shall be constructed at proposed intersections with SE Kellogg Creek Drive, per Standard Drawing S910. A perpendicular curb ramp shall be constructed at the westerly project boundary, per Standard Drawing S940. Crosswalk striping shall be modified as necessary based on required road widening. The designer shall complete the county ADA Assessment Checklist and provide a copy with the improvement plans. The county has adopted the following curb ramp design and construction standards:

Feature	Design Standard	Construction Standard
Ramp Slope	7.5%	8.33%
Ramp Cross Slope	1.5%	2.0%
Landing (turning space) Cross Slope	1.5%	2.0%

h. Drainage facilities in conformance Water Environment Services regulations and Clackamas County Roadway Standards, Chapter 4. Storm water detention facilities shall not be located within the public right-of-way.

5. The Turning Point Church driveway on SE Rusk Road shall be closed. The driveway approach shall be removed and replaced with curb and sidewalk to match existing.
6. If an updated traffic impact study identifies the need for additional queue storage for the northbound right turn land at the SE Rusk Road/Highway 224 intersection, the applicant shall construct the improvements to provide the right turn lane storage.
7. Prior to commencement of site work the applicant shall obtain a Development Permit from the Clackamas County Engineering Division for design and construction of required improvements to SE Kellogg Creek Drive. To obtain the Permit, the applicant shall submit plans prepared and stamped by an Engineer registered in the State of Oregon, provide a Performance Guarantee, and pay an Inspection Fee. The Performance Guarantee is 125% of the approved Engineer's cost estimate for the required improvements.
8. Prior to commencement of utility work within the SE Kellogg Creek Drive or SE Rusk Road rights-of-way, a Utility Placement Permit shall be obtained from the Clackamas County Engineering Division.

NORTH CLACKAMAS
PARKS & RECREATION DISTRICT

MEMO

TO: Mr. Brett Kelver, Associate Planner, City of Milwaukie

FROM: Kathryn Krygier, Planning and Development Manager
Tonia Williamson, Natural Resource Coordinator

Copy: Scott Archer, Director

DATE: May 10, 2017

RE: Brownstone Development, Inc.
File Nos.: PD-2017-001, ZA-2017-001, S-2017-001, NR-2017, TFR-2017-001, VR-2017-003, CSU-2017-001

Application Types: Planned Development, Zoning Map Amendment, Subdivision (preliminary plat), Natural Resource Review, Transportation Facilities Review, Variance, Community Service Use (minor modification)

Thank you for the opportunity to comment on the proposed Brownstone Development (Project). The Project has the opportunity to take advantage of many nearby community services and amenities including the adjacent North Clackamas Park and the Milwaukie Center, which North Clackamas Parks and Recreation District (NCPRD) operates and maintains. NCPRD facilities host a variety of public activities and amenities, including such things as walking paths, picnic areas, organized sports, passive recreation, fitness classes, nutrition programs, natural areas, and protection of essential wetlands.

The Project has many positive attributes. It fulfills Milwaukie's stated goal to provide workforce housing as described in the 2016 Housing Needs Analysis and Strategies Report. The development would also result in many bicycle and pedestrian improvements that would be used by the community including NCPRD's staff and customers. The proposed street frontage on Kellogg Creek Drive includes parking, street trees, sidewalks, and private entries fronting Kellogg Creek Drive, which promote a safer and livelier entrance to North Clackamas Park and the Milwaukie Center. A significant proposed amenity for the community is the bicycle and pedestrian path created through the development between Kellogg Creek Drive and Hwy 224. The proposed connectivity is admirable.

NCPRD has concerns, however, about information which is missing from the application and about impacts the Project will have on transportation and natural resources. These comments are noted below.

Vehicle, Pedestrian, and Bicycle Safety

Increased traffic will have significant impacts on access to and from the NCPRD facilities and to the community. The transportation study has a significant omission—it was not conducted during peak usage of the ball field complex and park which is April through July, in the early evening, during the weekday. In addition, traffic on the weekend is significant in the summer and should be considered in conjunction with the Turning Point Church use.

Safety is a particular concern at the intersection of SE Rusk Road and SE Kellogg Creek Drive. This intersection is confusing for all transportation modes and needs further study. If access to the Turning Point Church is denied access directly from SE Rusk Road, as has been suggested by Clackamas County Transportation and Development staff, this change needs to be taken into consideration. NCPRD requests alternate designs be explored at this intersection to improve traffic clarity and calming to mitigate the Project impacts. Some characteristics of this intersection, which will be exacerbated with increased volume, are noted here:

- East/west traffic at this location is confusing; the bulb-out pushes vehicles out of their travel lane.
- Even though SE Rusk Road is a collector street, during peak use of North Clackamas Park, equal or more traffic is travelling east/west (SE Kellogg Creek Drive/SE Rusk Road) as is traveling north/south on SE Rusk Rd.
- The left turn lane traveling north on SE Rusk Road onto SE Kellogg Creek Drive is not clearly defined.
- North/south and east/west pedestrian crossings need to be improved, even though there are no sidewalks south of this intersection on SE Rusk Road.

Parking

NCPRD requests a parking study to understand where visitors of homeowners will park.

Pedestrian Connections

The application does not appear to provide continuous sidewalks and/or curb cuts at all intersections. A drawing to illustrate pedestrian paths should be included in the application for further review. Specific comments are:

- Provide consistent treatment of the pedestrian path to connect north/south from SE Kellogg Creek Drive to Street B. The proposed soft surface trail and (assumed) path in the public alley is not safe and not suitable to accommodate people with disabilities, wheel chairs and strollers. It is however, a desirable and essential pedestrian connection.
- Sidewalks fronting storm facilities need to be continuous and provide curb cuts for cross street access.
- A curb cut is needed at the bike path from Hwy 224 to Street B.
- A curb cut at Street A should align with a sidewalk not with the existing Deerfield Village Assisted Living driveway.

Bicycle Connections

The bike lane between Street B and Rusk Road “dead ends” at the bulb-out. This needs resolution.

Soft Surface Trails

It is not clear if the soft surface trails are to be a public amenity. If they are, an approach to ownership and maintenance should be addressed. Because the trails are short and discontinuous, the value to the public is not clear. In addition, the impact to the natural resources need to be assessed.

Phasing

A phasing plan is requested, if the project is proposed to be phased.

Natural Resources

NCPRD has concerns about a Type III Variance to the natural resources standards that would allow 31 lots to be built in the Natural Resources Area. Our primary concern is about the potential for increased flooding within NCPRD property that already experiences annual flood events. The flooding results in damage to our infrastructure, which is expensive to repair and replace. If additional Habitat Conservation Area (HCA) and

Water Quality Resource (WQR) capacity is decreased upstream, NCPRD property will have increased flooding and increased expenses. The proposal does include constructive improvements for grading of floodplain storage, but in doing so creates impacts to the HCA and WQR Area wetlands, which also function as great water storage.

The natural resources review states wetlands are "low quality," but these wetlands (with reed canary grass) still function to help mitigate stormwater impacts and flooding. This attribute should not be overlooked just because the current landowner is not weeding their wetlands.

The application notes the Project will not have any impacts to water quality and will decrease stream temperatures. But, it does not note that because the development is so close to Mt. Scott Creek, the large shade trees will not be able to grow sufficiently to provide a wide riparian buffer to the creek. It is generally agreed upon in the ecological community that the proposed development impacts on the riparian buffer will have a negative impact on water temperature, resulting in increased water temperature and decreased water quality.

Minimize impacts

NCPRD requests additional information on how the applicant will minimize the impacts of development in the HCA and WQR areas (as opposed to only proposing mitigation measures). Specifically, the applicant is proposing significant grading and adverse hydrologic impacts to water resources, habitat, and wildlife corridors. The applicant does not provide proposals to minimize these impacts as required in the approval criteria.

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Kelver, Brett

From: Laura Hickman <lhickman@pdx.edu>
Sent: Thursday, May 11, 2017 2:27 PM
To: Kelver, Brett
Subject: Rusk Road Proposal: School Calendars
Attachments: 2016_17 Elementary Student Calendar.pdf; 2016_17 Middle School Student Calendar.pdf; 2016_17 High School Student Calendar.pdf

Hi Mr. Keiver,

Thank you for spending time on the phone with me this morning to discuss some of my questions about the proposed planned development on Rusk Road.

Traffic Study Methodology:

Per our conversation about the traffic study, I have attached the North Clackamas School District calendars showing the dates school was in session in November. While Alder Creek Middle School is right in our neighborhood, the high school and elementary calendars are also relevant to traffic with buses and cars transporting kids from and through our neighborhood.

As you can see from the attached calendars, NC School District was not in session Nov 2, 3, 4, 10, 24 and 24 for the middle schools. The elementary
schools were closed these dates, plus Nov 23. Related specifically to the
middle school, Wednesdays are a "late start day" so morning traffic on Wednesdays is less representative of the usual weekday morning trips on Rusk Road.

The additional school omitted from the traffic study on Rusk Road that I mentioned is: http://www.micha-elschool.org/about-micha-el-school/ This is that school's calendar, showing its closed days in November: http://www.micha-elschool.org/events-activities/

Moreover, the NC School District has a large bus barn located in the lot adjacent to Alder Creek Middle School. The number of buses traveling to/from there can be very clearly seen with the satellite view on Google maps. The transportation hub was not mentioned in the traffic study, including the number of trips due to the buses traveling through our neighborhood as a result.

If the traffic study was conducted on a no-school day or on any Wednesday, there are reasons to question whether it is truly representative of the typical traffic on most weekdays.

Pedestrian and Cyclist Safety:

Another issue I wanted to learn more about is the matter of pedestrian and bike safety. The traffic study acknowledges that there is currently no safe way to walk from the planned development to the middle school, despite it being within a mile of the location.

Rusk is narrow, almost entirely without sidewalks. There are several completely blind corners and a hill, right at the entrance to Eric, where children who currently walk from the West side of Rusk need to cross to walk over to the middle school. These conditions create presently a real hazard to cyclists and pedestrians - given the absence of sidewalks and bike lanes and the current level of traffic coming over the blind hill.

In other words, the existing walk and bike ride to and from the existing North Clackamas Park or to the Middle School pass-through along Briarfield Ct. is already hazardous. Parents often drive their children, rather than walk as it is, given the hazards of walking on Rusk Road. This alone increases the number of vehicle trips than you might otherwise expect (with a generic traffic model) with middle school and major park right in an otherwise easily walkable distance.

The proposed development of additional 92 homes only makes the current situation worse for walkers and bike riders. Not only will there be many more cars heading towards 224 on Rusk, there will be many more heading to the South on Rusk to Aldercrest. That latter stretch of Rusk (to
Aldercrest) is particularly narrow and hazardous for anyone not inside a car.

I wanted to raise these general concerns because it is not clear to me how the traffic study or other parts of the developer's plan considers these issues. If so, I would be very interested in learning how this considerably increased danger of adding 92 homes (with considerably more cars than 92) to Rusk Road can be successfully mitigated.

I will likely follow up with more questions after more consideration and discussion with my neighbors.

Thank you again for all your assistance with understanding the process.

Laura Hickman
Rusk Road area resident

-----Original Message-----
From: North Clackamas SD 12 [mailto:notifications@schoolconnectsweb.com]
Sent: Friday, February 24, 2017 3:28 PM
To: LHickman@pdx.edu
Subject: 2016-17 Calendar Updates

February 24, 2017

Dear North Clackamas Families,

On February 3, the District closed schools for a 10th day this year as a result of inclement weather. Prior to this, you had been notified of some changes in our school year calendar. This notice will hopefully, be our final adjustment to any of our student calendars for the 2016-17 school year. All changes are as follows:

Elementary Schools
April 14 will change from teacher in-service/work day to a student school day.
Four student instruction days will be added to the end of the school year.
The last day for elementary students is June 21.

Middle Schools
April 14 will change from teacher in-service/work day to a student school day.
Four student instruction days will be added to the end of the school year.
The last day for middle school students is June 22.

High Schools
The high school student contact day for our schools on block schedule will end at 3:15 pm beginning Monday, April 3, 2017. Adding 5 minutes within the daily instructional time schedule at Milwaukie/MAA, Clackamas, Rex Putnam will add the necessary time to meet state instructional hour requirements.
Sabin-Schellenberg will adjust their times to coordinate with the home high schools.
April 14 will change from teacher in-service/work day to an instructional day.
Four student instruction days will be added to the end of the school year.

The last day for high school students is June 22.

These changes will not affect graduating seniors, with the exception of the added instructional day on April 14 and the added instructional minutes during the school day. Graduation dates will remain the same. There are some changes in the Day 1/Day 2 sequence for middle and high school calendars. Please check the dates carefully.

Updated calendars are attached and published on our district website along with further explanation to answer some common questions at www.nclack.k12.or.us/studentcalendars.

Vietnamese

Ngày 24 tháng Hai, 2017

Kính thưa Quý Gia Đình thuộc North Clackamas,

Tới ngày 3 tháng Hai, Khu Học Chánh đã đóng cửa mười ngày trong năm nay do kết quả của thời tiết khắc nghiệt. Trước lá thư này, quý vị đã được thông báo sẽ có một vài thay đổi trong lịch trình của nhà trường. Thư thông báo này hy vọng sẽ là sự điều chỉnh sau cùng về lịch trình của học sinh trong niên khoá 2016-17. Sau đây là tất cả những sự thay đổi:

Trường Tiểu Học
Ngày 14 tháng Tư sẽ được đổi từ ngày ngày giáo viên làm hồ sơ/tu bổ thành ngày học sinh đi học.
Bốn ngày đi học sẽ được thêm vào cuối niên học. Ngày bãi trường của học sinh tiểu học là 21 tháng Sáu.

Trường Trung Học Đệ Nhứt Cấp
Ngày 14 tháng Tư sẽ được đổi từ ngày ngày giáo viên làm hồ sơ/tu bổ thành ngày học sinh đi học.
Bốn ngày đi học sẽ được thêm vào cuối niên học. Ngày bãi trường của học sinh tiểu học là 22 tháng Sáu.

Trường Trung Học Đệ Nhị Cấp
Học sinh các trường trung học có thời khoá biểu từng khối thời gian sẽ tan trường lúc 3:15 chiều, bắt đầu từ Thứ Hai, ngày 3 tháng Tư, 2017. Thêm 5 phút trong phạm vi thời khoá biểu giờ học hàng ngày tại trường Milwaukie/MAA, trường Clackamas, Rex Putnam sẽ thêm thời gian cần thiết để hội đủ số giờ học do tiểu bang bắt buộc. Sabin-Schellenberg sẽ điều chỉnh thời giờ để thích nghi với trường nhà.
Ngày 14 tháng Tư sẽ được đổi từ ngày ngày giáo viên làm hồ sơ/tu bổ thành ngày học sinh đi học.
Bốn ngày đi học sẽ được thêm vào cuối niên học. Ngày bãi trường của học sinh tiểu học là 22 tháng Sáu.

Những sự thay đổi này sẽ không ảnh hưởng tới sự tốt nghiệp của học sinh lớp
12 ngoại trừ thêm ngày học vào 14 tháng Tư và thêm số phút trong những ngày đi học. Ngày lễ tốt nghiệp không thay đổi. Có một số thay đổi trong thứ tự Ngày 1/Ngày 2 cho học sinh trung học đệ nhứt và đệ nhị cấp. Xin xem lại các ngày cẩn thận.

Lịch cập nhựt được đính kèm theo đây và được phổ biến trên trang mạng của khu học chánh cùng với lời giải thích thêm những câu hỏi thông thường tại www.nclack.k12.or.us/studentcalendars.

Spanish

Elementary Student Significant Dates

September 2016

M	T	W	T	F
			1	2
5	6	7	8	9
12 k	13	14	15	16
19	20	21	22	23
26	27	28	29	30

October 2016

M	T	W	T	F
3	4	5	6	7
10	11	12	13	14
17	18	19	20	21
24	25	26	27	28
31				

November 2016

M	T	W	T	F
	1	2	3	4
7	8	9	10	11
14	15	16	17	18
21	22	23	24	25
28	29	30		

December 2016

M	T	W	T	F
			1	2
5	6	7	8	9
12	13	14	15	16
19	20	21	22	23
26	27	28	29	30

January 2017

M	T	W	T	F
2	3	4	5	6
9	10	11	12	13
16	17	18	19	20
23	24	25	26	27
30	31			

September 5 ..... Labor Day
September 6 ..... First Day of School for Grades 1-5
September 12 .... First Day of School for Kindergarten
September 30 ..... Work Day/Inservice Day

October 14 ..... School Not in Session

November 2 ..... Work Day/Inservice Day
November 3-4 ..... Parent Conference Day
November 10 ..... Work Day/Inservice Day
November 11 ..... Veterans Day
November 23 ..... Grade Report Preparation
November 24 ..... Thanksgiving Holiday
November 25 ..... School Not in Session

December 19-January 2 ..... Winter Break
January 16 ..... Martin Luther King, Jr. Day
January 17 ..... Work Day/Inservice Day

February 3 ..... Work Day/Inservice Day
February 20 ..... Presidents' Day

March 9 ..... Work Day/Inservice Day
March 10 ..... Grade Report Preparation
March 27-31 ..... Spring Break

April 28 ..... Work Day/Inservice Day

May 29 ..... Memorial Day

June 21 ..... Last Day of School for Elementary

February 2017

M	T	W	T	F
		1	2	3
6	7	8	9	10
13	14	15	16	17
20	21	22	23	24
27	28			

March 2017

M	T	W	T	F
		1	2	3
6	7	8	9	10
13	14	15	16	17
20	21	22	23	24
27	28	29	30	31

April 2017

M	T	W	T	F
3	4	5	6	7
10	11	12	13	14
17	18	19	20	21
24	25	26	27	28

May 2017

M	T	W	T	F
1	2	3	4	5
8	9	10	11	12
15	16	17	18	19
22	23	24	25	26
29	30	31		

June 2017

M	T	W	T	F
			1	2
5	6	7	8	9
12	13	14	15	16
19	20	21	22	23
26	27	28	29	30

End of Grading Periods

Trimester 1: November 22, 2016

Trimester 2: March 8, 2017

Trimester 3: June 21, 2017

2016-17 School Year Calendar

LEGEND

- First/Last Day of School
- k — First Full Day of Kindergarten
- End of Trimester
- School Not In Session
- Parent Conference Day

NORTH Clackamas Schools

Final calendar is subject to bargained agreements with employee groups

Board Adopted 1.26.2017

RS863

Middle School Student Significant Dates

September 5 ..... Labor Day
September 6 ..... First Day of School

October 14 ..... School Not in Session

November 2 ..... Work Day/Inservice Day
November 3-4 ..... Parent Conference Days
November 10 ..... Grade Report Preparation
November 11 ..... Veterans Day
November 24 ..... Thanksgiving Holiday
November 25 ..... School Not in Session

December 19-January 2 ..... Winter Break
January 16 ..... Martin Luther King, Jr. Day
January 17 ..... Work Day/Inservice Day

February 10 ..... Grade Report Preparation
February 20 ..... Presidents' Day

March 27-31 ..... Spring Break

April 28 ..... Work Day/Inservice Day

May 29 ..... Memorial Day

June 22 ..... Last Day of School for Middle School

End of Grading Periods

Quarter 1: November 9, 2016

Quarter 2: February 9, 2017

Quarter 3: April 14, 2017

Quarter 4: June 22, 2017

September 2016

M	T	W	T	F
			1	2
5	6	7 1	8 2	9 1
12 2	13 1	14 2	15 1	16 2
19 1	20 2	21 1	22 2	23 1
26 2	27 1	28 2	29 1	30 2

October 2016

M	T	W	T	F
3 1	4 2	5 1	6 2	7 1
10 2	11 1	12 2	13 1	14
17 2	18 1	19	20 2	21 1
24 2	25 1	26 2	27 1	28 2
31 1				

November 2016

M	T	W	T	F
	1 2	2	3	4
7 1	8 2	9 1	10	11
14 2	15 1	16 2	17 1	18 2
21 1	22 2	23 1	24	25
28 2	29 1	30 2		

December 2016

M	T	W	T	F
			1 1	2 2
5 1	6 2	7 1	8 2	9 1
12 2	13 1	14 2	15 1	16 2
19	20	21	22	23
26	27	28	29	30

January 2017

M	T	W	T	F
2	3 1	4 2	5 1	6 2
9 1	10 2	11 1	12 2	13 1
16	17	18 2	19 1	20 2
23 1	24 2	25 1	26 2	27 1
30 2	31 1			

February 2017

M	T	W	T	F
		1 2	2 1	3 2
6 1	7 2	8 1	9 2	10
13 2	14 1	15 2	16 1	17 2
20	21 1	22 2	23 1	24 2
27 1	28 2			

March 2017

M	T	W	T	F
		1 1	2 2	3 1
6 2	7 1	8 2	9 1	10 2
13 1	14 2	15 1	16 2	17 1
20 2	21 1	22 2	23 1	24 2
27	28	29	30	31

April 2017

M	T	W	T	F
3 1	4 2	5 1	6 2	7 1
10 2	11 1	12 2	13 1	14 1
17 2	18 1	19 2	20 1	21 2
24 1	25 2	26 1	27 2	28

May 2017

M	T	W	T	F
1 2	2 1	3 2	4 1	5 2
8 1	9 2	10 1	11 2	12 1
15 2	16 1	17 2	18 1	19 2
22 1	23 2	24 1	25 2	26 1
29	30 2	31 1		

June 2017

M	T	W	T	F
			1 2	2 1
5 2	6 1	7 2	8 1	9 2
12 1	13 2	14 1	15 2	16 1
19 2	20 1	21 2	22 1	23
26	27	28	29	30

2016-17 School Year Calendar

LEGEND

First/Last Day of School

End of Quarter

Late Start

Parent Conference Day

School Not In Session

NORTH Clackamas Schools

Final calendar is subject to bargained agreements with employee groups

RS864

Board Adopted 1.26.2017

High School Student Significant Dates

September 2016

M	T	W	T	F
			1	2
5	6	7 1	8 2	9 1
12 2	13 1	14 2	15 1	16 2
19 1	20 2	21 1	22 2	23 1
26 2	27 1	28 2	29 1	30 2

October 2016

M	T	W	T	F
3 1	4 2	5 1	6 2	7 1
10 2	11 1	12 2	13 1	14
17 2	18 1	19	20 2	21 1
24 2	25 1	26 2	27 1	28 2
31 1				

November 2016

M	T	W	T	F
	1 2	2	3	4
7 1	8 2	9 1	10	11
14 2	15 1	16 2	17 1	18 2
21 1	22 2	23 1	24	25
28 2	29 1	30 2		

December 2016

M	T	W	T	F
			1 1	2 2
5 1	6 2	7 1	8 2	9 1
12 2	13 1	14 2	15 1	16 2
19	20	21	22	23
26	27	28	29	30

January 2017

M	T	W	T	F
2	3 1	4 2	5 1	6 2
9 1	10 2	11 1	12 2	13 1
16	17	18 2	19 1	20 2
23 1	24 2	25 1	26 2	27 1
30 2	31 1			

September 5 ..... Labor Day
September 6 ..... First Day of School

October 14 ..... School Not in Session
October 19 ..... PSAT Day

November 2 ..... Work Day/Inservice Day
November 3 ..... Parent Conference Day
November 4 ..... Work Day/Inservice Day
November 10 ..... Grade Report Preparation
November 11 ..... Veterans Day
November 24 ..... Thanksgiving Holiday
November 25 ..... School Not in Session

December 19-January 2 ..... Winter Break
January 16 ..... Martin Luther King, Jr. Day
January 17 ..... Work Day/Inservice Day

February 10 ..... Grade Report Preparation
February 20 ..... Presidents' Day

March 27-31 ..... Spring Break

May 29 ..... Memorial Day

June 22 ..... Last Day of School for High School

End of Grading Periods

Quarter 1: November 9, 2016
Quarter 2: February 9, 2017
Quarter 3: April 14, 2017
Quarter 4: June 22, 2017

Finals Schedule

February 6/June 19 ..... Periods 1 & 2
February 7/June 20 ..... Periods 5 & 6
February 8/June 21 ..... Periods 3 & 4
February 9/June 22 ..... Periods 7 & 8
(The above dates will be half days for students)

February 2017

M	T	W	T	F
		1 2	2 1	3 2
6 F	7 F	8 F	9 F	10
13 2	14 1	15 2	16 1	17 2
20	21 1	22 2	23 1	24 2
27 1	28 2			

March 2017

M	T	W	T	F
		1 1	2 2	3 1
6 2	7 1	8 2	9 1	10 2
13 1	14 2	15 1	16 2	17 1
20 2	21 1	22 2	23 1	24 2
27	28	29	30	31

April 2017

M	T	W	T	F
3 1	4 2	5 1	6 2	7 1
10 2	11 1	12 2	13 1	14 1
17 2	18 1	19 2	20 1	21 2
24 1	25 2	26 1	27 2	28 1

May 2017

M	T	W	T	F
1 2	2 1	3 2	4 1	5 2
8 1	9 2	10 1	11 2	12 1
15 2	16 1	17 2	18 1	19 2
22 1	23 2	24 1	25 2	26 1
29	30 2	31 1		

June 2017

M	T	W	T	F
			1 2	2 1
5 2	6 1	7 2	8 1	9 2
12 1	13 2	14 1	15 2	16 1
19 F	20 F	21 F	22 F	23
26	27	28	29	30

2016-17 School Year Calendar

LEGEND

First/Last Day of School
End of Quarter
Parent Conference Day
PSAT Day
School Not In Session

North Clackamas Schools

Final calendar is subject to bargained agreements with employee groups

Board Adopted 1.26.2017

RS865

Kelver, Brett

From: Ray Olma <rayolma@yahoo.com>
Sent: Saturday, May 13, 2017 9:45 AM
To: Kelver, Brett
Subject: comment on the planned development

I saw that this is the place to send comments about the subdivision the developer wants to build off of Rusk Road by the Turning Point Church. I live in this neighborhood, in a cul-de-sac off Rusk Road. It is completely unreasonable to build that many townhouses in a location that funnels all the the traffic onto Rusk. Anyone who lives on/near Rusk can tell you, this road is not equipped for that much traffic, even with a few improvements. It's just a slab of asphalt. There aren't even any shoulders in some parts of the road.

I don't know how the developer decided it would be fine to add that many cars here but it is already very hard to walk on Rusk Road from street over to North Clackamas Park with my kids and dog. There is no where to walk along Rusk and cars can't see people crossing the street on foot in front of Eric. This is where lots of people try to cross to get to and from the park - the place where the development will be- and over of the middle school.

With this many new houses (92 homes means twice that many cars), it is only a matter of time before a kid is going to be run over trying to walk up or across Rusk, as it is. There is no public transportation in this area and since it's not safe to walk or ride your bike around here, it is guaranteed that the traffic is going wreck this neighborhood - not just by the big increase caused by the people living in the new subdivision, but also by making more people who already live here get into cars instead of walking to one the schools in our area or to the park. My neighbor and I were talking yesterday - she said she almost got hit by a car trying to cross Rusk to walk up Eric. Drivers can't see coming over that hill on Rusk and there is a bus stop right there at the bottom of the hill.

North Clackamas Park already creates a big influx of traffic when there are softball tournaments. When people going and coming from the huge subdivision are added to the mix, this neighborhood will be a mess.

This is all made worse because Hwy 224 is a completely packed every weekday in the afternoons starting about 3:30, all the way to 6-6:30. Every weekday, cars are lined up and moving at a crawl all the way from the 205 past the Lake Road overpass. Lots of GPS units tell people to cut through on Rusk Road to get around the 224 traffic. Lots of cars are coming up Rusk that don't even live here to get around that afternoon parking lot. The middle school has about 1000 kids, plus employees and it lets out at 4:05. That dumps an additional mess of traffic onto 224 and all the surrounding roads, right at the worst time, including all the routes that lead to and from Rusk Rd.

Regardless of whatever that developer put in the application about traffic, I have lived here for years and I can tell you - traffic is not going to be "acceptable" by any standard because I can't imagine the developer could have possibly taken all this into account.

If you approve this huge subdivision, our neighborhood will be destroyed. There is no way to make Rusk Road safe or passable with that many more cars. I know Milwaukie is looking for ways to add housing. Destroying the quality of life in existing neighorhoods is NOT the way to do it.

Please share my comments about this subdivision with the Planning Commission.
Ray Olma

Kelver, Brett

From: Jamie Marshall <jamie454@gmail.com>
Sent: Sunday, May 14, 2017 8:27 AM
To: Kelver, Brett
Subject: Catch-22 isn't it?

I just learned about a proposed large subdivision at Rusk Road. Is our already substandard infrastructure able to cope? I'm sure the City thinks that without the additional property tax revenue we can't make ends meet. It's pretty complicated. However, don't you think we should be properly prepared prior to allowing more families to live and work in our area? I recently read an article about how inadequate our water treatment facilities are. I also know that I-205, which was meant to open things up, is now a parking lot on more occasions than we want. If the state and Feds had plans to widen 205 then the property tax dollars might be able to address the other issues. But let's face it, there's no joy on the horizon there. Can't we just say no?

I lived in California for over forty years and I am a witness to what developers do to an area. When I arrived there, Coit Tower was the SF landmark and horses with riders were still seen trotting down the streets of the smaller towns. Now, even with multiple freeway overhauls, the traffic chokes off any movement. So where is the progress when small businesses can't get their trucks from point A to point B to earn a decent living?

If there were plans to overhaul I-205 and plans to upgrade surface streets and plans to increase water treatment capacity then go for it. But as usual City Planners have grand "pie in the sky" visions that turn to "you know what" but by then, they are retired. All the people involved have left behind a big stinking pile of problems for future generations to cope with.

Please! Just once say no to these developers who dangle the promises of revenue in front of your noses like a carrot on a stick in front of a jack ass.

Jamie Marshall
Gladstone, OR
510-908-3692 (cell)

Kelver, Brett

From: Melanie Frisch <melfrisch48@gmail.com>
Sent: Sunday, May 14, 2017 8:52 PM
To: Kelver, Brett
Subject: Re: 92 unit sub division on 224 & Rusk Rd

My name is Melanie Frisch. I live on Oatfield Rd not far from the proposed sight. I am concerned about the building of so many units without the inter structure to support so much traffic. Our streets are all ready degraded and way to busy. Not to mention more pollution and damage to our limited natural resources.
Sincerely,
Melanie Frisch

Sent from my iPhone

MEMORANDUM

TO: Community Development Department

THROUGH: Chuck Eaton, Director of Engineering

FROM: Alex Roller, Engineering Technician II

RE: 92-Lot Planned Development – 13333 SE Rusk Road
PD-2017-001 *(revised comments)*

DATE: May 16, 2017

Subdivide 3 existing parcels into 92 lots.

1. Per MMC 19.709.5 The public improvement process will conform to conditions laid out in MMC 12.08.020. This will apply to all construction that is completed in the right-of-way that is eventually dedicated to the City.
2. MMC Chapter 12.02 – Public Works Standards

   The Planning Commission finds that the following complies with applicable criteria of MMC 12.02.

   A. MMC 12.02.010 – Establishes standards that all new public works, including streets, sanitary sewer, storm sewers, and water lines constructed shall be constructed in conformance with the applicable public works standards.

      Proposed driveways will conform to 12.02.010 through Condition of Approval C.
3. MMC Chapter 12.08 – Street and Sidewalk Excavations, Construction and Repair

   The Planning Commission finds that the following complies with applicable criteria of MMC 12.08.

   Construction process will conform to all sections of MMC 12.08.
4. MMC Chapter 12.16 – Access Management

   The Planning Commission finds that the following complies with applicable criteria of MMC 12.16.

   A. MMC Section 12.16.040 establishes standards for access (driveway) requirements.

      i. MMC 12.16.040.A: requires that all properties be provided street access with the use of an accessway.

         The proposed development is consistent with MMC 12.16.040A.

      ii. MMC 12.16.040.B: Access spacing onto arterial and collector streets.

         The proposed development, is consistent with MMC 12.16.040B.

      iii. MMC 12.16.040.C: Accessway Locations

         a. Double Frontage

The proposed development is consistent with MMC 12.16.040.C.1 as no double frontage lot accessways are proposed.

b. Limiting driveway access from arterials and collectors.

The proposed development is consistent with MMC 12.16.040C.2, as no accessways are proposed on a collector or arterial.

c. Distance from property line

Proposed driveways will conform to MMC 12.16.040.C.3 through Condition of Approval M.

d. Distance from Intersection

Proposed lot layout allows for the siting of houses that will facilitate the required 45 ft accessway spacing on all lots except for lot 72. Applicant must have an approved variance to this requirement to construct an accessway for lot 72, which will conform to Condition of Approval A.

The proposed development, as conditioned is consistent with MMC 12.16.040.C.4.a.

iv. MMC 12.16.040.D: Number of Accessway Locations

a. Safe access

Applicant has proposed the minimum number of accessway locations.

The proposed development is consistent with MMC 12.16.040.D.1.

b. MMC 12.16.040.D.2-3 Does not apply to this development, as no accessways are on arterials or collectors are proposed. Also only 1 accessway per property is proposed.

v. MMC 12.16.040.E & MMC 12.16.040.F: Accessway Design - ADA standards & Width

Proposed driveways will conform to MMC 12.16.040.E & MMC 12.16.040.F through Condition of Approval M.

5. MMC Chapter 12.24 – Clear Vision at Intersections

The Planning Commission finds that the following complies with applicable criteria of MMC 12.24.

A. MMC Section 12.24.030: clear vision requirements

Proposed driveways, accessways and intersections will conform to MMC 12.24.030 through Condition of Approval M.

6. MMC Chapter 13.14 – Stormwater Management

The Planning Commission finds that the following complies with applicable criteria of MMC 13.14.

A. MMC Section 13.14.020 - Definitions

"Public Works Standards" mean the City of Milwaukie Public Works Standards and the referenced City of Portland Stormwater Management Manual that the City requires be complied with for the design and construction of on-site mitigation facilities including stormwater detention, retention, and water quality treatment facilities.

Preliminary stormwater report indicates a pre-development curve number of 79. The number that will be used for the final report will be 72 (Lewis & Clark era). This alteration will increase the size of the facilities slightly. Also, the City is unable to verify the preliminary stormwater report WES's BMP calculation for facility sizing. Final stormwater report will include PAC calculations for City to officially approve the stormwater facility sizing and configuration. The City feels that the discrepancy in curve number and unverified sizing calculations does not pose a problem because the project site has a much larger area of land that is already being graded and replanted. Even if this altered floodplain is not used for water treatment facilities, there is sufficient area on site to construct facilities, including constructing additional roadside planters.

Final stormwater design may include treatment facilities in the newly constructed floodplain/wetlands. Final design will conform to a design that satisfies Portland's Stormwater Manual as well as Milwaukie's requirements for city maintenance of systems treating stormwater from public streets.

7. MMC Title 18 – Flood Hazard Regulations

The Planning Commission finds that the following complies with applicable criteria of MMC Title 18.

MMC Title 18 applies to all special flood hazard areas and all flood management areas within the jurisdiction of the City.

A. MMC Section 18.040.100 – Development Permit Required

Applicant is proposing a map revision. New lots will not be in the modified floodplain. Although no buildings will be built below the floodplain elevation, application is proposing to cut and fill within the floodplain.

B. MMC Section 18.04.150 General Standards

i. MMC 18.04.150.A-B Anchoring and Construction Materials and Methods

Does not apply, application does not propose to construct any building in the floodplain once map revision has been approved by FEMA.

ii. MMC 18.04.150.C – Utilities

Utilities shall conform to requirements set forth in 18.04.150.C through Condition of Approval H.

iii. MMC 18.04.150.F – Balanced Cut and Fill

Two submittals have been submitted that indicate that there will not be a net fill in the floodplain. Grading permit will be required to accurately show that changes will conform to MC 18.04.150.F.

iv. MMC 18.04.150.G – Crawlspace Construction

If crawlspaces are constructed within the floodplain elevation, they must follow conditions per MMC 18.040.150.G.

8. MMC Chapter 19.700 – Public Facility Improvements

The Planning Commission finds that the following complies with applicable criteria of MMC 19.700.

MMC 19.700 applies to partitions, subdivisions, new construction, and modification or expansion of an existing structure or a change or intensification in use that result in any projected increase in vehicle trips or any increase in gross floor area on the site. The applicant proposes to subdivide the existing 3 parcels into 92 new lots. The subdivision triggers the requirements of MMC Title 19.700.

A. MMC Section 19.703 Approval Criteria

i. MMC 19.703.1 Preapplication Conference

Requirement for a preapplication conference was satisfied on August 11th 2016.

ii. MMC 19.703.2 Application Submittal

Development will require a Transportation Impact Study, and a Transportation Facilities Review application has been submitted.

The proposed development is consistent with MMC 19.703.2

iii. MMC 19.703.3 Approval Criteria

Applicant will provide transportation improvements and mitigation in rough proportion to the potential impacts of the development.

The proposed development is consistent with MMC 19.703.3.

B. MMC Section 19.704 requires submission of a transportation impact study documenting the development impacts on the surrounding transportation system.

Transportation impact study has been provided and reviewed.

The proposed development is consistent with MMC 19.704.

C. MMC Section 19.705 requires that transportation impacts of the proposed development be mitigated.

Per the TIS submitted February 7, 2017 from Kittelson & Associates, Inc. the proposed development does not trigger mitigation of impacts beyond the required frontage improvements and bike lane requirements. The surrounding transportation system will continue to operate at the level of service before the proposed development.

ODOT and Clackamas County have expressed concern regarding the analysis performed for the right turn lane for northbound traffic at Rusk/OR 224 intersection. TIS indicates a turn lane with a queueing length of 50 ft. The City agrees that this value may be overestimated. The TIS also indicates that right turn on red allowance is 50 vehicles per hour, which likely is not how this intersection functions where one through vehicle can block the entire turn lane. City's consultant has analyzed this intersection with left turn, through and right turn as a single lane. Also, the right turn on red has reduced to zero vehicles which is a more accurate representation of how the intersection currently functions. The resulting v/c is great than 1.0, indicating in mitigation requirements.

Traffic impact mitigation will conform to 19.705 through Condition of Approval L.

D. MMC Section 19.708 – Transportation Facility Requirements

i. MMC Subsection 19.708.1 – General Street Requirements and Standards

MMC 19.708.1.A – Access Management

Access requirements shall comply with access management standards contained in Title 12.16.

MMC 19.708.1.B – Clear Vision

Clear vision requirements shall comply with clear vision requirements contained in Title 12.24.

MMC 19.708.1.C – Development in downtown zones

Does not apply to this development

MMC 19.708.1.D – Development in Non-Downtown Zones

The proposed development is consistent with MMC 19.708.1.D.

MMC 19.708.1.E – Street Layout & Connectivity

MMC 19.708.1.E.1-2

Proposed development is consistent with MMC 19.708.1.E.1-2

MMC 19.708.1.E.3

Does not apply to proposed development as no streets are going to be extended to adjacent properties.

MMC 19.708.1.E.4

Proposed development is consistent with MMC.19.708.1.E.4

MMC 19.708.1.F – Intersection Design and Spacing

Proposed development is consistent with MMC 19.708.1.F

ii. MMC Subsection 19.708.2 establishes standards for street design and improvement.

The street to the east of lots 45 & 53 does not comply with minimum City standards. The sidewalk and planter strips are not proposed. The City has allowed this reduced cross section because of the pending adoption of a low volume residential standard cross section with pedestrian routes on the street surface. The 22-foot right-of-way width accommodates the minimum 10-foot travel lanes, curb and separation from the private property.

The proposed cross sections for Kellogg Creek Drive and all remaining internal streets conform to requirements are consistent with MMC 19.708.2.

MMC 19.708.2.A.12 – Street Trees

Landscape strips are present on application. Street trees will be required at an average 40' spacing.

iii. MMC Subsection 19.708.3 requires sidewalks to be provided on the public street frontage of all development.

The construction of sidewalks along the proposed development property abutting all public rights-of-way is included in the street frontage requirements.

MMC 19.708.3.A.3 requires that public sidewalks shall conform to ADA standards. Current proposal includes ADA ramps at all corners.

The proposed development is consistent with MMC 19.708.3.

iv. MMC Subsection 19.708.4 establishes standards for bicycle facilities.

Per Milwaukie's Transportation System Plan, a bike lane is required connecting the northeast corner of the property to the southwest corner of the property. Applicant has proposed to construct an on-street bike route through the development. The north-east turnaround will connect to Rusk/224 intersection through the construction of a multi-use path.

Proposed development is consistent with MMC 19.708.4.

v. MMC Subsection 19.708.5 establishes standards for pedestrian and bicycle paths. Pedestrian access is required at the end of the cul-de-sac, which has been satisfied through a 15-foot multi-use path extended to Rusk Road. Pedestrian access is also required from the east end of "Street A" to Kellogg Creek Drive, which has been satisfied through a pedestrian connection in tracts E & F.

Proposed development is consistent with MMC 19.708.5

vi. MMC Subsection 19.708.6 establishes standards for transit facilities.

The portion of SE Kellogg Creek Drive fronting the proposed development is classified as a transit route in the Milwaukie Transportation System Plan, however, transit facilities are already in

place. As a result, transit facility improvements are not required for the proposed development.

vii. MMC 19.708.6 does not apply to the proposed development.

Recommended Conditions of Approval

1. Prior to approval of the final plat, the following shall be resolved:
   A. Obtain a variance to MMC 12.16.040.C.4.a for accessway spacing for lot 72.
   B. Submit a final stormwater management plan to the City of Milwaukie Engineering Department for review and approval. The plan shall be prepared in accordance with Section 2 – Stormwater Design Standards of the City of Milwaukie Public Works Standards. Submit full-engineered plans for construction of all required public improvements, reviewed and approved by the City of Milwaukie Engineering Department. All utilities shall conform to the Milwaukie Public Works Standards.
   C. Obtain a right-of-way permit for construction of all required public improvements listed in these recommended conditions of approval.
   D. Pay an inspection fee equal to 5.5% of the cost of the public improvements.
   E. Provide a payment and performance bond for 100 percent of the cost of the required public improvements.
   F. Provide an erosion control plan and obtain an erosion control permit.
   G. Dedicate 14 feet of right-of-way on SE Kellogg Creek Drive fronting the proposed development property to accommodate the parking and bike facilities to the intersection of Rusk and Kellogg Creek Drive.
   H. Install all underground utilities, including stubs for utility service prior to surfacing any streets. Utilities shall be designed to minimize or eliminate infiltration of floodwaters into the system. New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of floodwaters into the system and discharge from the systems into floodwaters. Relocate or provide a private utility easement for all utilities encroaching onto adjacent properties.
   I. Construct a 5-foot set-back sidewalk, 4-foot planter strip and curb & gutter on entire frontage of SE Kellogg Creek Drive.
   J. <u>Construct 5-foot set-back sidewalk, 4-ft planter strip, curb and gutter, 7-foot parking, and 10-foot travel lane (for each half of right-of-way), on “SE Street A” and “SE Street B”.</u>
   K. Construct all sidewalks, ramps and driveways on “SE Street A” and “Street B”.
   L. <u>Extend right turn lane for northbound traffic at Rusk/OR 224 intersection.</u>
   M. Construct a driveway approach to meet all guidelines of the Americans with Disabilities Act (ADA) to each new lot. The driveway approach aprons shall be between 9 feet and 20 feet in width and least 7.5 feet from the side property line.

N. Clear vision areas shall be maintained at all driveways and accessways and on the corners of all property adjacent to an intersection Remove all signs, structures, or vegetation more than three feet in height located in “vision clearance areas” at intersections of streets, driveways, and alleys fronting the proposed development.

O. Provide a 12-month Maintenance Bond upon completion of the construction.

P. Provide a final approved set of Mylar and electronic PDF “As Constructed” drawings to the City of Milwaukie prior to final inspection.

2. Prior to issuance of any building permit:

   A. Obtain approval of FEMA map revision for lots that are currently in the floodplain.

3. Prior to final inspection for any building on the proposed development, the following shall be resolved:

   A. Connect all residential roof drains to private drywell or other approved structure. Private properties may only connect to public storm system if percolation tests show that infiltration cannot be obtained on site or if the water table is too shallow. In the event the storm management system contains underground injection control devices, submit proof of acceptance of the storm system design from the Department of Environmental Quality.

Kelver, Brett

From: Dan Sweet <sweet@global-support.us>
Sent: Thursday, May 18, 2017 1:47 PM
To: Kelver, Brett
Cc: Daniel L Sweet; joecec@cyberiad.com; Pam Sweet
Subject: PD-2017-001 Hwy 224 & Rusk Road

Good Morning Mr. Kelver,

We wanted to take a minute to express my extreme opposition to the proposed 92 unit complex scheduled for a variance hearing on May 23rd.

We have several reasons for opposing this development in no particular order:

1 – Traffic is already a major issue at the intersection of Rusk/Lake and 224.
Adding to this just going to exacerbate the issue. The fact that they completed their "traffic study" during the summer clearly shows the developers are trying to avoid and minimize this issue. Summer break takes a huge load off both Rusk and Aldercrest roads and an even larger load off of the intersection due to both North Clackamas School Buses and general day to day summer traffic

2 – The propose building site is on and near both delineated wetland and areas prone to flooding. Their report tries to minimize this fact by stating that Wetlands "B –G are artificially created" Artificial or not it has been a wetland for some time and should remain so. Their plan indicates "minimal" disturbance but there should be NO disturbance of the wetland and habitat areas.

3- Storm water runoff and flood water storage. 90+ units will require covering a large amount of exposed land with hard surfaces.
We do not need additional pollution from landscape maintenance, parking lots, and the 100 plus vehicles that will be on that parking long running into the streams and habit area after every rain storm. The additional loss of storm runoff storage on the open ground there will have a significant negative effect on the surrounding area. I am sure you are well aware that just across 224 that homes and business have to sandbag their properties during the winter rainfalls. This will only be exacerbated by paving/covering the surrounding lowland areas. A few runoff basins may help with the pollution generated by the parking lot but not much else.

Sincerely,

The Sweet Family
Joe & Cecile
Dan & Lucy
Pam

Dan Sweet
6176 SE Parmenter Ct
Milwaukie, OR 97267-1822
503-653-0574 (office and cell)

sweet@dansweet.com (personal)
sweet@global-support.us (work)

Kelver, Brett

From: Milwaukie Planning
Sent: Thursday, May 18, 2017 12:42 PM
To: Egner, Dennis; Kelver, Brett; Roller, Alex; Eaton, Chuck
Subject: FW: Lake Road NDA objections to the Turning Point development
Attachments: NDA letter to Planning Dept. questioning the wisdom of the Turning Point developement.docx

FYI.

David

From: Vincent Alvarez [mailto:heavytech77@gmail.com]
Sent: Thursday, May 18, 2017 12:34 PM
To: Milwaukie Planning <Planning@milwaukieoregon.gov>
Subject: Lake Road NDA objections to the Turning Point development

We have been discussing this proposed project and have several concerns about the project in its current form.

Chair of Lake Road NDA

Vincent Alvarez

To whom it may concern:

I write as the Chairman of the Lake Road Neighborhood Association, and our approximately 3000 residents. Our association has been discussing the Turning Point Church Development Project on Rusk Road and we have several concerns with the proposed plan as it currently stands.

Our main concern is destruction of the existing Wetlands/Lowlands by filling to allow for the most westerly proposed building, which is identified as consisting of units 33 – 44.
This area contains the greatest concentration of large healthy Oregon White Oaks. These are mature trees having diameters of well beyond a foot and a half. Also a healthy under-story of Camas, and other native plants. This is not a, "low quality," wetland as indicated in some of the documentation. Some mitigation of invasive species should be carried out here, but, predominately, healthy native species make up the bulk of the vegetation.

The Willamette Valley is down to less than 3% of the original Native White Oak habitat in existence. The only acceptable loss of more of this habitat is none! The area planned for the 12 units also provide important flood control benefits. This area has already experienced several flooding occurrences. Loss of more of the wetlands will only exacerbate this problem. Directly across Hwy. 224 on Mt. Scott creek, FEMA is buying out several home owners and returning those lots to function as wetlands and to help reduce the severity of high water events. It makes no sense to bulldoze and fill land that acts as water containment, while at the same time razing homes to create more.

Additionally there are issues with what will certainly be worsening traffic concerns at the intersection of Rusk Rd. and Hwy. 224. This crossing is already very congested and sometimes dangerous. The addition of at least another hundred vehicles transiting it, will not improve the existing problems, and will only increase the backups that are occurring. We have questions as to the correctness of the traffic studies that have been performed.

A decision was moved and passed by Lake Road NDA to speak as one voice to our opposition of this development as currently planned. We would like to see the plans modified so that no White Oaks are lost and further impact on the lowlands surrounding Mt. Scott Creek are eliminated. There has been sustained and continuing improvements to the water shed to aid in the return of native fish species. This development with the proposed impact on native species and wetlands bordering Mt. Scott Creek would be counter productive to our stated goals as a community.

Lastly, we are concerned about cross purposes in the removal of 20 or so Oregon White Oaks, when our city has recently received the honor of the designation as a Tree City USA.

In closing. Our NDA recognizes the need for more housing in Milwaukie.
But, these projects must work within certain parameters and this development is counterintuitive to efforts made to reconstruct healthy watersheds. We must not lose any more White Oak habitat, we must be careful to not make flooding worse by destroying existing wetlands/lowlands, and we need to continue to work towards the reintroduction of native salmon to their ancestral waters.

Sincerely,

Vincent Alvarez, Chairman/Treasurer
Lake Road Neighborhood Association
May 12, 2017

RS880

Kelver, Brett

From: Bruce Reiter <breiter@pps.net>
Sent: Saturday, May 20, 2017 2:43 PM
To: Kelver, Brett
Subject: RE: proposed building of subdivision on 224 and Rusk Road

The two considerations should be impact to the land and negative change to traffic flow. This location, adding 92 plus vehicles into the existing streets would clog up the already heavy traffic, especially on weekday, school day, traffic. Lines of cars need two and three or more light changes to get through the intersections. How would adding almost one hundred more people help this situation?

This land location is necessary for the impounding of water during high rate rain showers to prevent flooding in the area. Wetland mitigate flooding by acting as a "weigh station" for this water slowing the flow into the streams and and rivers of the area, that eventually enter the Willamette River.

Has there been an environmental impact study and a traffic study during multiple seasons and weather conditions been performed?

Please look before you leap into this project. Consider all aspects, and not just monetary gains.

Thank you

Bruce Eric Reiter, RG

Sent from my Verizon, Samsung Galaxy smartphone

Kelver, Brett

From: John Green-Hite <jgreenhite@gmail.com>
Sent: Sunday, May 21, 2017 9:20 PM
To: Kelver, Brett
Subject: RE: PD 2017-001

John Green-Hite
13575 SE Briarfield Ct.
Milwaukie, OR 97222

Brett Keiver
City of Milwaukie Planner

RE: PD 2017-001

Dear Mr. Keiver:

As a local neighbor of the proposed 92-townhome subdivision, I am concerned that such a proposed subdivision would create a hazard to people, vehicles, and homes.

Any building, as you know, would affect not only the watershed directly on the said property, but would also affect Mt. Scott Creek and any tributaries, such as Cedar Creek, Alder Creek, and Kellogg Creek, and ultimately the Willamette River in which all of the creeks ultimately flow into. This would impact the City of Milwaukie at the Willamette River docks. The impact of the vehicles from a 92-townhouse development (not including 1, 2 or 3 or more cars per family inhabiting each townhouse) would detrimentally impact all the waterways and not just the water wetlands on said property. The backup of water would cause overflow in the sewer system and cause flooding of those creeks that depend on water flow and wetlands to handle overflow. Oils and other impurities, from the vehicles themselves (both construction and later the personal vehicles), would magnify the pollution already present in waterways. During flooding stages, which has closed Rusk Road just across the Milwaukie Expressway several times in recent times, those impurities are particularly worrisome.

Of great concern, as well, is the traffic impact. Unfortunately, the magnitude of this problem cannot be stressed enough. Currently, Rusk emptying into the Milwaukie Expressway is already clustered up, especially during school days when the buses come out of the bus garage. Delaying the buses even more due to traffic coming out of a 92-townhome subdivision than they presently are will result in bus drivers unconsciously rushing to get to their charges thereby increasing the risk of collisions. Meanwhile, children having to wait in areas for late buses, would increase the chances of them being hit and killed at unprotected bus stops. Furthermore, increasing the time for buses to leave the bus garage and getting back to the bus garage will result in increased pay hours affecting the cost to North Clackamas School District. How imperative is it that children's lives would be put at risk for the sake of an unnecessary subdevelopment?

The area, furthermore, has no supporting safety net for pedestrians, bicycles, or cars. There is no Trimet bus support to get pedestrians to any mass transit in the locale. Pedestrian sidewalks are practically nonexistent to the south, east and west of the location and access to any sort of mass transit would have to come from crossing the Milwaukie Expressway. By the very statement of fact that heavy traffic would ensue from a 92-townhouse subdivision, so it is logical that more pedestrian injuries and fatalities would ensue from the crossing of a major highway in the area to try to obtain public transportation. There is a charter school on the property of the Eastern Orthodox Church that has children who are subject to the traffic and the safety that would be compromised by approving of this subdivision. Children from Alder Creek Middle School also use Eric St. to Rusk Rd. that also would be put at risk. Would the City of Milwaukie be willing to put in a pedestrian

sky bridge costing “Overpasses (excluding bridges) have a range from **$150** to **$250** per square foot or **$1,073,000** to **$5,366,000** per complete installation, depending on site conditions. Wooden bridges are approximately**$125,000** on average, and pre-fabricated steel bridges approximately **$200,000**.
Overpasses/Underpasses - Pedestrian & Bicycle Information Center
www.pedbikeinfo.org/planning/facilities_crossings_over-underpasses.cfm”

North Clackamas Park would also be affected. During times of baseball (remembering baseball clubs run all year round}, weddings at the Sara Hite Rose Garden, Senior Citizens at the Senior Center, picnics at the park, the dog runs, and a myriad amount of other activities, the stream of cars is significant.

Three churches also affect the traffic on the weekends and during the week. The three churches within a half a mile of this proposed subdivision would clog up the minor and major arterials of the area. The Church of Jesus Christ of Latter Day Saints, Eastern Orthodox Church of the Annunciation, and the non denominational church next door to the property all contribute to the traffic flow which, as it stands, is already congested at all times.

The roadway of Rusk is also a problem where it funnels into the curves. Traffic from Robhil Dr. and Eastbrook Dr. already have limited visibility. Leaving Eric Street can be a major issue due to line of sight restrictions. When the traffic backs up on Eric Street, as it will with a 92-townhouse subdivision, the resultant collisions from cars coming down the hill from Aldercrest, with limited line of sight, will be an eventuality.

My house was directly impacted when Robhil Dr. was put in; construction trucks came down Eric Street and turned around in the cul de sac of Briarfield Ct. in which the street was damaged and neither the county or city has done anything about it. The damage that resulted is major to us and since any decision by the City of Milwaukie, the approval of such a subdivision, would directly affect all the streets in the area due to heavy construction vehicles which really has not been addressed. The City of Milwaukie can come down our street to verify this statement.

I am not saying that a development should not be approved. Such a large development as proposed would create a liability for both the City of Milwaukie and the residents in the area. A reduced number of townhouses to perhaps a quarter of the number proposed might be more understandable.

Respectfully Submitted,
John Green-Hite

Kelver, Brett

From: Joan Young <joan.s.young@gmail.com>
Sent: Sunday, May 21, 2017 10:17 PM
To: Kelver, Brett
Subject: PD-2017-001 92 unit proposed subdivision

Attention: Brett Kelver, Planner
FOR THE CITY OF MILWAUKIE PLANNING COMMISSION MEMBERS

The development of a parcel of land located just east of North Clackamas Park and Milwaukie Center, is of great concern for me for several reasons:

COMMUNITY FOCUS, NOT JUST CITY OF MILWAUKIE
*The parcel is JUST inside the City of Milwaukie boundaries but development will affect everyone who lives close by outside the City of Milwaukie in unincorporated Clackamas County, also. The wetlands and environmentally sensitive areas within the parcel are closely linked to similar issues and areas outside of the purview of the City of Milwaukie. Wildlife corridors and areas of environmental concern do not follow political boundaries. Clackamas County and unincorporated Clackamas County local residents should be involved in this decision making also.

TRANSPORTATION AND ACCESS
*Transportation is a huge concern for a development on that parcel due to the following:
>The latest transportation study seems less than valid because it is 2-years old and was completed during a low use time (when schools were not in session). I urge you to complete another study, in conjunction with Clackamas County, with appropriate timing in mind, to get a full picture of the area's traffic issues currently.
>The only entrance and exit for this development is Kellogg Creek Drive onto Rusk Road. Traffic piles up on both Rusk Rd. and Kellogg Creek Drive during peak transit times, waiting for the light at Hwy 224. That could be morning commutes or post-events in North Clackamas Park or the Milwaukie Center. Putting more traffic on Kellogg Creek Drive seems ridiculous at best since it dumps onto Rusk Rd.
>The pressure that would be put onto Rusk Road with more traffic is a huge potential issue. More and more, people are attempting to skirt traffic during peak travel times at Aldercrest and Thiessen Rds by utilizing Rusk Road. They often come onto Rusk Rd, off of driving east on Hwy 224, to avoid the traffic slow downs on Hwy 224. This also puts more pressure on Aldercrest Road between Rusk Rd and Thiessen Road. Neither Aldercrest or Rusk Roads have ROAD IMPROVEMENTS to provide for pedestrian and bicycle safety. They are dangerous at best in several areas.
>The development applicant states that there is only one school nearby, Alder Creek Middle School. Micha-el Waldorf School is right off Rusk Road. Because it is private, there is no bus transportation, so parents - multiple cars - pick up and drop off their kids both through the Rusk Rd. access to the school and via the North Clackamas Park back access to the school. During these time frames, traffic is frequently backed up on Rusk Rd. In addition, North Clackamas School District Bus Facility is accessed off Russcliff Drive. The buses come and go from there, putting more pressure on Rusk Road and the light at Hwy 224.
>The Milwaukie Center, located just inside North Clackamas Park, has between 200-500 people visiting on a daily basis, M-F, to participate in activities and receive services. The majority of these people are older adults. The Milwaukie Center also operates four ~16-passenger buses on a daily basis to transport people who do not drive.
>North Clackamas Park is a heavily used park, with literally hundreds to thousands of people visiting on any given day, depending upon weather and activities (picnics, weddings, ball tournaments, etc). Milwaukie Center is rented on evenings and weekends, with often several hundred people attending special events.

> Access to Hwy 224 from south on Rusk Road is inadequate. I personally have waited through four or five lights during peak transit times to get onto Hwy 224. There is no left turn only light or lane, and no right turn only lane, just one light and one lane. People try to illegally make a right turn lane, but there are huge pot holes and no pavement where cars often try to go. It is only a matter of time before we have a tragic accident at that intersection due to people trying to go either straight, left and right through a short time frame, while dealing with oncoming traffic from the north side of Rusk Rd.

ENVIRONMENT
*The environmentally sensitive areas are a large part of the parcel requested to be developed and of significant issue:
>Soon after the church facility was built, they started having dump trucks of dirt dumped in the environmentally sensitive area ILLEGALLY and, after many dump trucks, and notification by concerned neighbors, the authorities finally made them halt that activity. Now, decades later, is that area that was filled in illegally suddenly no longer an issue?
>Much of the Turning Point Church property in question has been deemed, by Metro's Title 13 program, as a high habitat conservation area with endangered Oregon White Oak habitat, wetlands and flood plains. Sensitive native fish species and threatened salmon species have been documented in this area. A lot of work has been done to improve the area in very recent years, with plantings and removal of non-native plant species. I question the applicants suggestion that they can safely save and protect enough of the environmentally sensitive area. AND THEN, WHAT IMPACT WILL THE INFLUX OF PEOPLE LIVING IN 92 UNITS HAVE ON THAT AREA?
>The White Oak stand between The Milwaukie Center and the Turning Point property is one of very few oak habitats left in the area and, as such, is highly endangered. It helps slow the water flow to prevent worse flooding down stream from that area.
>There is significant effort going into removal of the dam at Kellogg Lake. Not if, but when that happens, how will a development in this area negatively affect the salmonoid and native fish populations for the year-around water accesses?
>We already have flooding issues very close by (North on Rusk Rd). Paving more of this sensitive area will only prevent the natural absorption of water into the ground, resulting in faster and higher water accumulations....ie, more flooding.
>Say the development goes through....they will hire landscape crews to keep their new and beautiful plantings weed-free. What chemicals are they going to use that will then leach into the wetlands and streams so very close by, destroying natural habitats and killing our wildlife? How is the City of Milwaukie going to monitor that?

DO WHAT IS RIGHT
Yes, more and more people are moving into the metropolitan area. Due to this reason especially, it is important for the livability of the area to retain open spaces and protect environmentally sensitive areas. This is one of those areas and this is one of those tough considerations. North Clackamas Parks and Recreation District made an offer on the property recently. Pastor Bob Mihue of Turning Point Church wrote a letter of support for North Clackamas Parks and Recreation District to access grant money to purchase the property. The offer made by North Clackamas Parks and Recreation District to purchase the land was turned down by the church when the church found out it could get much more money from a developer. Turning Point Church has the opportunity to sell the land to a public steward of the land, North Clackamas Parks and Recreation District. This development does not need to happen and especially does not need to put such incredible pressure on the area.

Thank you.

Joan Young
14210 SE Parmenter Drive
Milwaukie, Oregon
97267

"I pledge allegiance to the earth and to all the beings who inhabit it, and to the planet for which it stands, one world under love, indivisible, with peace and liberty for all"

Kelver, Brett

From: Howard Lanoff <howardlanoff@yahoo.com>
Sent: Monday, May 22, 2017 8:09 AM
To: Kelver, Brett
Subject: Prroposed subdivision on 224 and Rusk Rd.

Hi Kevin,

I am concerned about the urban density that we have already I feel that Milwaukie needs more parks and open spaces for people to feel free connected to this earth that we live upon. Livability in Milwaukie is pretty good, and I would rather we improve upon that than consider future development.

Please do not allow the urban density and teraffic in Milwaukie to incrase with the addition of a new subdivision.

Thank You,

Howard Lanoff

Kelver, Brett

From: georgia bogner <ghbogner@yahoo.com>
Sent: Monday, May 22, 2017 10:42 AM
To: Kelver, Brett
Subject: MORE TO CONSIDER WITH 92-Townhome subdivision Hwy224 & Rusk Road

Most homes have more that one vehicle. That means way more than 92 additional vehicle during busy times.

From: georgia bogner <ghbogner@yahoo.com>
To: "kelverb@milwaukieoregon.gov" <kelverb@milwaukieoregon.gov>
Sent: Monday, May 22, 2017 10:24 AM
Subject: 92-Townhime subdivision Hwy224 & Rusk Road

I have exited onto to Hwy 224 via Rusk Road for thirty years and have experience additional traffic with the additions two housing developments off of Rusk Road--nowhere near a 92-housing unit. I have waited through 3-4 traffic lights at Hwy 224, sometimes sitting behind multiply school buses during the busy commute times of the day. I can't just dash off somewhere I need to be without considering the delay just to get onto Rusk Road and Hwy 224 a short distance from my house.

I think the residents of the 92-housing unit would be very frustrated as everyone else with the additional traffic. Just take a look at the size and distance of the road that is to accommodate this during the busy commute times of the day.

Georgia Bogner
503-653-5221

Kelver, Brett

From: Chris Runyard <crunyard@msn.com>
Sent: Monday, May 22, 2017 1:12 PM
To: Kelver, Brett
Subject: Turning Point Church Comments

https://vimeo.com/217941859



Turning Point

vimeo.com

This is "Turning Point" by People for Trees on Vimeo, the home for high quality videos and the people who love them.

Hello Brett. Please accept this short video submission into the discussion about the Turning Point Church property that will be discussed at the 5/23/17 Planning Commission meeting. Please forward this to the Planning Commission and others for the official record.

Thank You,
Chris Runyard

Kelver, Brett

From: Rodger/Linda Huntley <rhuntley18@comcast.net>
Sent: Monday, May 22, 2017 1:41 PM
To: Kelver, Brett
Subject: 92 Unit Planned Dev.

Mr. Kelver,

I am writing to oppose the 92 Unit Planned Development Subdivision at 13333 SE Rusk Road Milwaukie, OR.

I am a homeowner that lives on Briarfield Court off of Rusk Road, the traffic on Rusk Road is very busy as it is. If 92 Units go in, that could be a possible of 184 more vehicles using Rusk Road. The intersection at 224 & Rusk is a very, very busy Intersection now. Thursday, May 11th I left my home at 9:05am on my way to a class, I sat in a line of 25 vehicles to get thru the traffic light. There were no school buses in the line, there was one Tri-Met Lift Bus and the rest were cars. There have been several accidents at the corner of Rusk & 224. We have three churches on or off of Rusk Road, that brings traffic on the weekends and some week nights. Trying to get out of our street (Eric St. No Outlet) we have to wait for 5 to 10 vehicles to pass going either direction before we can pull out onto Rusk Road. This is our neighborhood and 92 units would be way to many to put on the land that is in consideration.
Please be considerate in making your review & choice on this matter of the neighbors in the surrounding area who pay a great deal in taxes and have chosen to live in an area with a Natural Resource Area that we hope you will protect. We love our neighborhood and adding 92 homes is a drastic increase to this area.

Thank you for your consideration on this matter.

Linda Huntley
13845 SE Briarfield Court
Milwaukie, Oregon 97222
503-659-4773

Kelver, Brett

From: jennifer <jenstipetic@yahoo.com>
Sent: Monday, May 22, 2017 4:03 PM
To: Kelver, Brett
Subject: 92 unit subdivision proposal for SE Rusk & Hwy 224

Dear Mr. Brett Kelver,

I want to take this opportunity to express my concerns about the proposed 92 unit subdivision at SE Rusk & Hwy 224.

I am currently a resident of Milwaukie residing off of Molt & Webster and my main means of transportation are walking or using trimet; choices I very much appreciate. In general, it is pretty safe to walk around the area because we have a lot of sidewalks, however, the traffic is heavy on our neighborhood roads, including 224 most of the day. Unfortunately, there is a lot of speeding through the neighborhoods and drivers texting, creating very unsafe roads.

I frequently walk to the North Clackamas Park and walk on SE Rusk Road, portions of which have no paved shoulder or actual ground including a sharp blind bend which makes it unsafe with the current traffic flow. Increasing the estimated number of cars at least 92, one per unit, or 184 for 2 per unit, plus school buses, delivery, ect. is a lot of extra traffic on that little road. I want to also point out that the most likey grocery store is Safeway on Webster Road and SE Rusk is a cut through to avoid 224.

My other concern is the destruction of the wetland area and the removal of the two hundred year old growth Oak Trees that will displace wildlife, cause flooding and hurt the restoration of the wetland area. I understand the need for housing, a robust economy and a sustainable future that includes a high quality life and preservation of the uniqueness that is Milwaukie Oregon, but the proposal of 92 units crowded on this parcel only takes into account profits earned while ignoring everthing else. I would challenge the developers to create a better design that leaves all the Old Oak Trees and doesn't fill in any wetlands.

In conclusion, I am asking that you evaluate this proposal with extreme due dilegence and require the developers to step up to the challenge and submit more appropriate plans condusive to the area so that there can be a positive outcome for all us, including the proposed "new neighbors". All of Milwaukie's citizens deserve to live in a safe and healthy neighborhood.

Thank you for your expertise.
Jennifer Stipetic

Kelver, Brett

From: Coordinator Account <coordinator@ncuwc.org>
Sent: Monday, May 22, 2017 4:18 PM
To: Kelver, Brett; Milwaukie Planning
Cc: Terry Gibson; Joseph Edge
Subject: NCUWC comments for PD-2017-001 Kellogg Creek Subdivision
Attachments: NCUWC comments Kellogg Creek Drive Planned Development 5.16.17signed.pdf

Dear Brett Kelver,
Please find attached the North Clackamas Urban Watershed Council's comments on the proposed Kellogg Creek Subdivision, PD-2017-001. Please contact me if you have any questions.

Thank you,

Andrew Collins-Anderson
Executive Director
North Clackamas Urban Watersheds Council
503-550-9282
2416 SE Lake Rd. Milwaukie, OR 97222

North Clackamas Urban Watersheds Council

2416 SE Lake Rd. • Milwaukie, OR 97222
coordinator@ncuwc.org • www.ncuwc.org

May 16, 2017

To: Brett Kelver, AICP
City of Milwaukie Planning Department
6101 SE Johnson Creek Blvd.
Milwaukie, OR 97206

RE: PD-2017-001 Kellogg Creek Subdivision

As the watershed council representing Mt. Scott Creek, the North Clackamas Urban Watersheds Council (NCUWC) would like to provide the following comments in regards to the proposed Kellogg Creek Drive Planned Development, PD-2017-001.

1.) The applicant is requesting to waive the City's requirement that all new lots must provide adequate buildable area outside the WQR and/or HCA (31 of the 92 proposed lots do not meet this requirement), and therefore is asking for a Variance. Under 19.911.4.B.1, Approval Criteria for Type III Variances, Discretionary Relief Criteria, the applicant has failed to show that the proposed variance avoids or minimizes impacts to surrounding properties, has desirable public benefits, or responds to the existing built or natural environment in a creative or sensitive manner.
    a. Under 19.911.4.B.1.b.(1) the application does not address or analyze the potential for increased flooding of the adjacent North Clackamas Park and Milwaukie Center due to the filling of wetlands and damage to HCA and WQR. The headwaters of Camas Creek flows from the wetlands on the proposed property through North Clackamas Park, yet there is no analysis of the impacts the application will have on the adjacent properties. This is further shown by Milwaukie's environmental consultant, ESA, in their comment "Wetland A covers 0.7 acre on-site and extends off-site to the west. The total size of Wetland A (on and off-site) was not provided in the application." The application has not shown that the project will not impact surrounding properties. There is a potential for impacts and the applicant should be required to address this potential.
    b. Under 19.911.4.B.1.b.(2), the application has shown the public benefit of the project to reaching the goals in Milwaukie's Housing Needs Analysis. However, the application does not address the public benefit that the property's natural resources currently provide, and are at risk of losing. The property has 46 mature White Oak trees with 20 of those planned to be removed. According to Milwaukie's environmental consultant, ESA, "The Oregon Department of Fish and Wildlife (ODFW) identifies oak woodlands as a "Strategy Habitat" in the Willamette Valley ecoregion, which is a vegetation cover type of high conservation value. Large diameter oaks in particular are valued for providing diverse wildlife habitat. Approximately 5 percent of the historic white oak habitat in the Willamette Valley is remaining (ODFW, 2005)." This example shows that the application does not analyze the full range of potential public benefits the project could provide to the residents of Milwaukie (which is a Tree City USA) or the State of Oregon's natural resource priorities through the protection of these trees. Mt. Scott Creek has also been surveyed and shown to provide habitat for threatened species of salmon and steelhead by ODFW. Riparian and wetland habitats are essential for the viability of these fish, and the site currently provides a public benefit in the protection and recovery of these listed fish. Further, destruction of the HCA and WQR will have a negative impact on the public benefit of the recovery of Oregon native salmon and steelhead.
    c. Under 19.911.4.B.1.b.(3), the application does not respond to the existing built or natural environment in a creative and sensitive manner. The application provides three alternatives for

the project: one with current zoning and no impacts to HCA or WQR, one with the maximum allowable density, and the preferred alternative with impacts to the HCA and WQR. The application does not offer alternatives that are creative or sensitive to the existing natural environment by showing alternative site plans and building types that avoid disturbance of the HCA and WQR.

2.) NCUWC is concerned and recommends the City take very seriously the comments provided by ESA regarding flooding: "... the City's use of a floodplain boundary that is different than the floodplain boundary shown on the FEMA FIRM, without the benefit of FEMA Conditional Letter of Map Revision (CLOMR), could risk the City's Community Rating System (CRS) valuation during a subsequent FEMA audit. It may also result in homeowners misunderstanding their flood risks or their requirement to purchase flood insurance. These risks should be evaluated by City staff with respect to Milwaukie Municipal Code 18.04." With properties just upstream of this site being purchased by FEMA because of repeat loss due to flooding, and with Milwaukie and Clackamas County resources being used to remove these properties from the floodplain, it is unreasonable to propose developing so close to the 100 –year floodplain. Flood maps are outdated, and the risk is real for property damage and threats to public safety as the project is proposed.

3.) NCUWC has also invested in the restoration and maintenance of the natural areas on the proposed property through invasive plant removal and native plantings. In the spring of 2010, the Turning Point Church property was enrolled in NCUWC's Streamside Stewards Program (SSP). Through this collaboration, NCUWC has planted over 5,000 native plants (which includes some 600 Oregon White Oak trees) and removed invasive plants through several grants funded by Metro and the Oregon Watershed Enhancement Board. The application proposes to mitigate disturbance of the HCA and WQR areas through invasive plant removal and native plantings. NCUWC feels that this mitigation is inadequate considering that this work has already been started through the SSP, and therefore would be redundant and a waste of local and state resources. NCUWC also finds the City's requirements for maintenance of mitigation through invasive plant management and native plantings to be inadequate. Two years is not enough to control invasive plants to allow for the establishment of the planted natives, and generally this type of restoration takes sustained management from a landowner, the HOA in this case. Through the SSP, NCUWC has found that many HOAs that manage natural areas along Kellogg and Mt. Scott Creeks do not have the resources needed to maintain these properties for the improved habitat and conservation values they are protected for. How does this application address that issue?

Recommendations:

NCUWC recommends that the Milwaukie Planning Commission not approve the application as proposed and require further review of alternative site plans in order to protect the unique and irreplaceable natural resources on the property and to protect public health and safety for future Milwaukie citizens and their neighbors.

Sincerely,

Terry Gibson, Board Chair

Kelver, Brett

From: Rodger/Linda Huntley <rhuntley18@comcast.net>
Sent: Tuesday, May 23, 2017 8:05 AM
To: Kelver, Brett
Subject: RE: 92 Unit Planned Dev.

Brett,

ANOTHER CONCERN

Thank you for your response. I am sorry that I forgot to mention, when the ball fields at North Clackamas Park are having tournaments and are in use, the traffic exceeds a neighborhood and the use of Rusk Road. getting in and out of the park, and makes it difficult and dangerous for the residents on our street to pull out of ERIC St. onto Rusk Road. The intersection at Rusk Road and 224 Really backs up during these times Spring thru Fall.

Thank you,
Linda Huntley

From: Kelver, Brett [mailto:KelverB@milwaukieoregon.gov]
Sent: Monday, May 22, 2017 6:18 PM
To: Rodger/Linda Huntley
Subject: RE: 92 Unit Planned Dev.

Linda,

Thank you for sending your comments related to the planned development project on Rusk Road. I am forwarding them on to the Planning Commission in advance of Tuesday's public hearing, and they will be entered into the public record for this application.

We expect to talk more about the issues you raised concerns about and other related questions during the hearing itself. It is helpful to hear these concerns in advance so that we can prepare for the conversation. I have also shared your comments with the applicant's team so that they can prepare to respond as needed.

I hope you'll be able to attend the public hearing on Tuesday, where there will be an opportunity to testify in front of the Planning Commission and provide additional information about your concerns. The staff report and accompanying materials are available at this link: https://www.milwaukieoregon.gov/planning/planning-commission-170.

The project page for this application is here: https://www.milwaukieoregon.gov/planning/pd-2017-001.

Please let me know if you have any additional questions prior to the hearing.

-Brett Kelver
Associate Planner

From: Rodger/Linda Huntley [mailto:rhuntley18@comcast.net]
Sent: Monday, May 22, 2017 1:41 PM
To: Kelver, Brett <KelverB@milwaukieoregon.gov>
Subject: 92 Unit Planned Dev.

Kelver, Brett

From: Sara Miller <sarie72@icloud.com>
Sent: Tuesday, May 23, 2017 10:41 AM
To: Kelver, Brett
Cc: Sara Miller
Subject: 92-unit townhome subdivision Rusk/224

Dear Brett & fellow council members:

I'd like to bring up a few points since I will not be able to attend the meeting tonight to voice my opinion. I am a homeowner adjacent to the area of the property being discussed, and I have many concerns about the proposed development.

I would like to first mention, while I do agree with bringing in more affordable housing, however, not at this particular property/location for the following reasons:

1- It does NOT fall into line Milwaukie's 2040 Plan as mentioned here: https://www.milwaukieoregon.gov/sites/default/files/fileattachments/planning/page/73491/town_hall_reference_guide_200_copies.pdf

Goals listed under "Planet: Ecosystems, Energy, Environment, and Resilience:"

- "*The entire city nurtures a connected canopy of trees planted and stewarded by its residents. Smart and focused development honors and prioritizes life-sustaining natural resources.*" —> The proposed development plan is NOT "nurturing" to the old aged oaks at the current site.

- Under Goal Statement#2 - it does NOT "*Increase wetland opportunities for natural stormwater management*" —> In fact, development at this site will only hinder, and building right on top of the existing wetland, which does already mitigate some of the flooding issues the area has. Even with infill and only ONE storm water outlet in the developer's plan, the area will be more likely to flood once you add all the hard surfaces, and the developer's plan does not have sufficient mitigation for the flooding issues that already affects the area, particularly once the wetland is destroyed. Not to mention, with only have one water swale on the proposed property, it is most likely the water would not be adequately filtered, like it now through the plants in the established wetland - and that will have impact on the overall water shed . Also, building into the wetland will just destroy a part of that ecosystem and the layout of the site plan does not indicate where flood lines, such as the FEMA 100 year flood plain, are in relation to the site. Sure they can fill in the land but it will effect flooding and areas downstream.

Goals listed under "Place: Housing, Infrastructure, Mobility, Neighborhoods, Parks:"

-" ***I****dentify and all sidewalk gaps and ADA deficiencies in the existing network*" —> I did not see anything mentioned in the plans for sidewalks. That area already has high traffic, especially when school in in session (unlike the traffic study that was done during summer, when traffic is minimal as compared to the rest of the year). It is already not a safe place for pedestrians, and lacks sidewalks, quite frankly. How does this project intend to meet that goal? Add more hard surfaces to a place that is already prone to flooding? How does that make help that issue? Is only downtown in mind for this goal?

-"Identify safe routes for all modes of transportation" —> Area is already high in traffic, and waiting queues during rush hours span many hours. With the twists and turns of Rusk, how will adding 100+ cars to the area be a "safer" route? Add in the traffic on existing routes without any expansion, will be less safe for all drivers, and pedestrians.

Which brings me to the point — It's the basic visioning statements about sustainability and healthy rivers (water) some of those points shouldn't be seen as isolated things from the rest of the Milwaukie area. They all relate and depend on each other.

It would be good to know who designated it as a natural area. Was it an environmental agency or just a zoning designation placed on it by the City? If it was the city, then the city should definitely be able to deny the request for the zoning designation change.

Milwaukie just became "Tree City USA" https://www.milwaukieoregon.gov/parkssustainability/tree-city-usa —> how will this project impact the fact that 200+ year old oaks for the sake of pure greedy profit will be destroyed? Doesn't that conflict with the message that the city itself is trying to convey? Not only that, if you read through the City's website, it states,

- "Stormwater runoff can be reduced by tree canopies by as much as 65 percent, reducing flooding and the need for expensive facilities."

By removing the existing trees on the wetland area that is already prone to flooding, wouldn't that just cause more flooding? It would make more sense to have the city purchase the property and expand the trail system that is being worked on now, wouldn't it? Why give in to a developer that doesn't have the community's or the city's best interest at stake, only their profit in mind? What kind of message will the city be sending to its people if the city plans to be a "Tree City" in one breath, yet allow developer's to destroy it in the next? If the developer gets the go ahead to develop the site - who will pay for "expensive facility?" My guess is, not the developer!

I think there are better suited areas in Milwaukie to develop town homes — just not this location. There are many things to consider, and the easiest and most prevalent that most residents in this area would be concerned with, is the increase of traffic. It does not help that the developer provided their own non-independent study done during summer when traffic is not at its norm. Then you start thinking about the flooding that the area has, what the wetlands do for that area, let alone the wild life that wetland area supports. Add in the protections that the tree provides in helping with flooding, and ground stabilization, and the fact that the city wants to protect trees and be a "Tree City" - why not have the city practice what it preaches? I hope that you and the rest of the Council members take in consideration all of the factors, and not just the tax income that the development may provide, I think there are other ways for the city to receive that income. It will come at a high cost for the community as a whole, and that is certainly something that should be taken into consideration. It has been a super hot topic on the App NextDoor, and you might want to read the comments that are being posted on this plan, and you will see quite clearly that the community does not want it.

Cheers,
Sara Miller

Kelver, Brett

From: dicksallyshook@juno.com
Sent: Tuesday, May 23, 2017 1:36 PM
To: Kelver, Brett
Subject: PD-2017-001 Kellogg Creek Subdivision

Brett:
I have tried to send the email with my comments on the Kellogg Creek Subdivision to you below. We plan on attending the Planning Commission meeting this evening and would like to read it into the record and will submit a printed copy
Thanks,
Dick Shook

My wife and I have lived for 40 years on Mt. Scott Creek a few hundred yards down stream from the Turning Point Church and the proposed 92 unit housing development. We are deeply concerned over the effect this proposed development will have on the area creeks and wet lands. We have seen the creek rise rapidly after heavy down pours up stream, frequently over topping its bank and flooding North Clackamas Park. The introduction of many impervious roofs and parking lots could have a profound affect on the amount of water flowing into Mt Scout Creek.

The removal of the rare old growth Oregon White Oaks could disastrously change the camas meadows along the western edge of the housing development. This area is the headwaters of Camas Creek and we have seen incidents of how changes to the water table can effect local springs.

We have heard that Milwaukie needs to provide additional living units. It must be recognized that as people are crowded into homes with less outdoor space, open areas and parks must be maintained to provide outdoor recreation. This area should have been and still could be added to the North Clackamas Park.

Please review this proposed development closely and you will see that the number of units planed far exceeds the number that can be accommodated.

Thank you for your consideration

Kelver, Brett

From: Matt at Mountain Soles <mtnsoles@hotmail.com>
Sent: Tuesday, May 23, 2017 2:54 PM
To: Kelver, Brett
Subject: Public Comments for Development at Turning Point Church

Dear Planning Commission,

I am writing you to express my concerns at over the proposed development at Turning Point Church on Rusk Rd.

I have lived in Milwaukie for 14 years and have been involved in many planning and visioning processes that the City has held over this time. Not one of those planning processes has ever placed any value on a project like the proposed development at Rusk Rd. Time and time again our community has expressed an interest in building community in future development and a deep desire to preserve the limited natural resources that we have left. Allowing a developer to build the proposed project goes against everything I've heard Milwaukie residents say they want in our town; walkable communities, more open space, and housing developments which create a sense of community. This development is poorly planned and looks like the poorly executed developments in Gresham and Beaverton that have been looked down upon by many urban planners since there development. This community has values which an outside developer is not concerned with. All they want to do is make their money and leave when they are done regardless of the long term implications they leave the residents who live here.

Many years ago people in this community did not understand the benefits which wetlands and trees provide our community. As a result of this lack of understanding our town allowed the cutting down, paving and building over of large areas of wetlands. These former wetland areas are now home to the International Way business district and Milwaukie Marketplace development. After these projects were built, stream flows changed significantly causing sediment to build up downstream and choking the flow of Spring Creek.

Please do not allow the proposed development to proceed forward as the developer is requesting. It is unacceptable. If this developer (or any developer) is allowed to develop this property, they should retain the wetlands and all existing White Oak trees. They should also be asked to come back with a housing proposal that works to create a sense of community, which we all value.

Thank you for your time on the Planning Commission and your willingness to listen to your fellow residents' concerns.

Matt Menely
2816 SE Lake Rd
Milwaukie, OR 97222

Matt Menely
Mountain Soles & Outdoor Threads
Celebrating 35 years of service! 1979-2014

Mail Order Address:
10824 SE Oak Street, Suite #184 Milwaukie, OR
97222
503.236.0785
www.mountainsoles.com

Kelver, Brett

From: Laura Hickman <lhickman@pdx.edu>
Sent: Tuesday, May 23, 2017 3:52 PM
To: Kelver, Brett
Subject: RE: follow-up RE: Rusk Road Proposal: School Calendars

Hi Brett,

I am sure you have little time before the meeting to communicate but I wanted to ask whether there is a way to submit a report from the school district which includes a detailed review of the pedestrian conditions on Rusk Road. I know the Rusk Road development proposal's traffic study states that the school district finds the walking conditions unsafe. The 2017 report from the school district actually concludes a systematic ranking of the components of safety and finds Rusk Road unacceptably hazardous even for high school students to walk.

The entire length of Rusk Road from 224 to Aldercrest is tied with the only one other location as the highest hazard score of all the streets it reviewed (page 128 below). It's composite score of 33 is made up of a series of 9 components. Rusk Road scored as poorly as a road can score for usable width of shoulders, condition of the road shoulder, and terrain features affecting motorist visibility, along with other hazards of varying degrees.

These are objective criteria and this road was evaluated by professionals.
There is more in the report below but in the interest of time, I just wanted to ask the best way to call this information to the attention of the
Planning Commission. I do intend to testify, if that is the best method.
http://www.nclack.k12.or.us/cms/lib6/OR01000992/Centricity/Domain/267/Walk%20Zone%20Supplemental%20Plan%203-2-17-ENG.pdf

Thank you,
Laura Hickman

-----Original Message-----
From: Kelver, Brett [mailto:KelverB@milwaukieoregon.gov]
Sent: Monday, May 22, 2017 6:23 PM
To: Laura Hickman
Subject: follow-up RE: Rusk Road Proposal: School Calendars

Laura,

I wanted to let you know that updated materials for Tuesday's Planning Commission hearing on the proposed Rusk Road development are available at this link: https://www.milwaukieoregon.gov/planning/planning-commission-170.

Also, we received a new alternative site plan from the applicant late Friday afternoon. It is included with the other application materials here:
https://www.milwaukieoregon.gov/planning/pd-2017-001.

The Planning Commission meeting is scheduled to start at 6:30pm on Tuesday night, May 23. Please let me know if you have any questions in the meantime.

-Brett Kelver

Kelver, Brett

From: Susan Barnes <susan.p.barnes@state.or.us>
Sent: Tuesday, May 23, 2017 5:00 PM
To: Kelver, Brett
Cc: Todd Alsbury
Subject: Kellogg Creek Subdivision (PD-2017-001) - ODFW prelim comments

Brett,

As a follow-up to our brief phone conversation yesterday… I am sending the following on behalf of Todd Alsbury:

May 23, 2017

Brett Kelver
City of Milwaukie
10722 SE Main St.
Milwaukie, OR 97222

RE: Proposed Kellogg Creek Subdivision PD-2017-001

Thank you for the opportunity to comment on the proposed Kellogg Creek Subdivision (PD-2017-001). The Oregon Department of Fish and Wildlife (ODFW) recently became aware of the proposed project and has completed a preliminary review. ODFW has been given statutory authority to manage fish and wildlife to prevent serious depletion of indigenous species and to provide the optimum recreational and aesthetic benefits for present and future generations of the citizens of this state (ORS 496.012). Conservation priorities are described in the Oregon Conservation Strategy (http://oregonconservationstrategy.org/), the state's voluntary strategy for conserving fish and wildlife, and includes recovery of listed salmon and steelhead species. ODFW respectfully requests additional time for review of the proposed project. In the meantime, and in accordance with our authorities, mission, and conservation priorities, we offer the following preliminary comments and recommendations for submittal in the record for the Planning Commission meeting on May 23, 2017.

Priority / special status fish and wildlife species are known to occur on and near the property of interest and would likely be negatively impacted by the proposed project. Priority species include steelhead (Lower Columbia River ESU, winter run), Coho salmon (Lower Columbia River ESU), western painted turtle, northern red-legged frog, and white-breasted nuthatch. Mt. Scott Creek is considered Essential Salmonid Habitat as it provides rearing, spawning, and migration habitat from the confluence with Kellogg Creek upstream to SE 122nd / Sunnyside Road.

Flowing water, riparian zones, wetlands, and Oregon white oak habitat are identified as Strategy (Priority) Habitats in the Oregon Conservation Strategy. These habitats are present on the property of interest and would be impacted by the proposed project. ODFW is concerned about siting of infrastructure within an active floodplain, encroachment into the riparian zone, loss of existing wetlands, and loss of Oregon white oak trees that would result from the proposed project. ODFW recommends protecting and restoring remnant wetlands, especially those along waterways where they can best function to protect existing infrastructure as well as water quality. When siting new infrastructure, ODFW recommends siting outside floodplains, wetlands, and other

priority fish and wildlife habitats and that these priority habitats be adequately buffered. Given its rarity, it is recommended that remnant Oregon white oak be retained.

Thank you for considering ODFW comments and recommendation. We look forward to additional discussion and coordination with the City on this and future proposed projects. If you have any questions please contact me at todd.alsbury@state.or.us or 971-673-6011.

Sincerely,

Todd Alsbury
District Fish Biologist – East Side
North Willamette Watershed District

Susan Barnes
Regional Conservation Biologist
West Region

Oregon Department of Fish and Wildlife
17330 SE Evelyn Street
Clackamas, OR 97015
Tel: (971)673-6010
Email: susan.p.barnes@state.or.us

Kelver, Brett

From: Lisa Kennedy <lisaakennedy@gmail.com>
Sent: Wednesday, May 24, 2017 9:44 AM
To: Kelver, Brett
Subject: PD 2017-001

Due to a family emergency I was not able to attend last night's planning meeting but I was able to view it on line.

I was hoping to say a few words in favor of this development. I have been in favor since the beginning and last night just confirmed my desire to see this come to pass.

The revised plan submitted is the best one I have seen yet. It provides plenty of open space with the affordable housing this area desperately needs.

I realize the neighbors are concerned about traffic but that is something that can be fixed, running out of places to build cannot.

My children want to be able to live here; being able to find a home (not an apartment) is becoming more and more difficult.

Please pass on my comments to the planning commission. It looks like everyone is against this but that is not the case.

If this does go through, then the neighbors would have access to the property (right now it is private and there are no trespassing signs up) and I would think that is something they would appreciate.

Thanks for your time.

_____

Lisa Kennedy
11262 SE 48th Ave
Milwaukie, OR 97222

Kelver, Brett

From: sue hayes <swayes01@yahoo.com>
Sent: Wednesday, May 24, 2017 10:03 AM
To: Milwaukie Planning
Subject: PD 2017-001 Hwy. 224 & Rusk Road

I attending a portion of the meeting on May 23. I am writing to express my OPPOSITION to the proposed 92 unit project at 224 and Rusk Road.

1. Not every green space needs developing. It needs nurturing.

2. 92 units is 92 too many.

3. I understand from the meeting that the proposal hopes to attract young adults and young families. What person wants their family by 224?

4. What people who already live in Milwaukie love about Milwaukie is the space. A lot of properties have larger sized lots. There is a feeling of being able to breathe and see. Building row housing of this nature is the complete opposite. Milwaukie does not need to turn into the disaster Portland has.

5. If this project goes through, the people who move there will shop on 82nd or in Happy Valley. That takes business away from downtown Milwaukie. Downtown Milwaukie needs as much business as it can get.

6. If this project happens, why not make it substantially smaller and for seniors? For example, intentional senior living or co-housing with 20 units?

7. It is a flood zone!

8. 92 units at this location does absolutely nothing to enhance Milwaukie livability. In fact, there is nothing "livable" about being so close to 244.

9. The impact to existing neighbors and neighborhoods would greatly decrease livability for those people. Not OK!

10. Turning left onto 224 at S.E. Harrison from either direction is a nightmare. There are no left turning arrows at this busy intersection. ODOT doesn't seem concerned about the impact of such a development at Rusk road, so more driving nightmares.

11. Increased traffic and dangerous for pedestrians.

I'm sure I could come up with more reasons why this is such a bad idea, but I'll stop here. My idea? Put the 92 units in the industrial area off McLoughlin.

Thanks for reading.

Susan Hayes

Kelver, Brett

From: Jim St John <jimbevstjohn@gmail.com>
Sent: Wednesday, May 24, 2017 8:15 PM
To: Milwaukie Planning
Subject: Rusk Road development.

Planning Department,

I was unable to attend the meetings about development of the property off Rusk Road at Turning Point Church. I have had several concerns since moving to a neighborhood off highway 224 and Webster, about seven months ago. The traffic seems to be consistent and consistently heavy at various times of the day. The school contributes to the traffic and the bus barn. Turning toward my neighborhood from 224 to Webster is often a long wait. There aren't any sidewalks connecting neighborhoods, the main roads don't have sidewalks either, Webster-Aldercrest-Rusk-Theissen.... This area encourages traffic and discourages foot traffic and bicycles. I really feel that pedestrian safety and non motorized forms of travel encouraged and prioritized in the entire area before adding more cars and people. All roads and neighborhoods will see an increase in cars, pollution, noise, congestion. I'm not finding it an ecological or environmentally good idea for the residents in the area. It seems the planning discourages safety, air quality, quality of life, and safe travel.
Please consider pediatrician safety and making foot travel a priority before adding more people and cars without alternative forms of transportation available. We moved from Portland where pedestrian safety is encouraged, would love to see it here too.
Thank you for your time,
Bev

Sent from my iPhone

Kelver, Brett

From: R. Day <rhdmilw@msn.com>
Sent: Thursday, May 25, 2017 7:57 AM
To: Kelver, Brett; Egner, Dennis
Cc: Roller, Alex
Subject: RE: Note on Continued Hearing for Rusk Road project (Thurs, 5/25)

Mr. Kelver and the members of the Planning Board:

Thank you for this opportunity. After listening to the information presented at Tuesday's meeting I offer the following.

First, I am not opposed to developing the Turning Point Church site. However, I am opposed to this proposed development as being too much for this site. Even if the developer can mitigate the construction impact to the sensitive lands bordering the site, the impact of 80 to 92 homes in a such small area will pose an ongoing threat to these lands. Short of high walls or fences, how can we protect these areas? I question if housing is the best use for this site.

The proposed development creates a community that promotes auto use that radiates beyond the immediate area. Public transportation serving this area is minimal at best. Much was made of public easements for walking and bicycles. However, these easements essentially begin and end at the boundaries of the development. There is no existing pedestrian or bicycle infrastructure that would connect to these easements.

While much can be made of traffic studies and vehicle counts, I am not sure these can adequately measure the impact to the current traffic situation in the area. As we know, Rusk Road is relatively narrow, has many turns and lacks sidewalks. Three churches, a school, four popular baseball fields along with other park and Senior Center activities. Nearby, Eric Street, Robhil Drive and Eastbrook Drive all intersect with Rusk Road. These intersections are very close to each other and all three have very limited visibility.

The developer apparently does not see the need for a right turn lane for north bound Rusk Road traffic at Highway 224. I disagree. That need exists now. In addition, I believe a case can be made that any increased usage calls for a left turn lane and signal at this intersection.

Thank you for taking the time to consider this information.

Randy Day

From: Kelver, Brett [mailto:KelverB@milwaukieoregon.gov]
Sent: Wednesday, May 24, 2017 2:37 PM
To: Egner, Dennis <EgnerD@milwaukieoregon.gov>
Cc: Roller, Alex <RollerA@milwaukieoregon.gov>
Subject: Note on Continued Hearing for Rusk Road project (Thurs, 5/25)

Hello,

You are receiving this message because you either submitted comments related to the Planned Development project at the Turning Point Church site on Rusk Road or you attended the hearing last night and signed in (whether or not you signed up to give testimony).

Kelver, Brett

From: Jarrod Allen <jadacreata@gmail.com>
Sent: Thursday, May 25, 2017 8:32 AM
To: Kelver, Brett
Subject: Against 92 home development off rusk

Hi Brentt,

I'm against this new development in Milwaukie off the 224 and Rusk rd. I'm a home owner a few blocks away and I think that the traffic exiting rusk road is already getting very bad. Couldn't imagine what it would be like if this development moves forward. Also, our neighborhood isn't built to withstand any foot traffic. There aren't any sidewalks or places walk besides in the street and that corner where the development would exit wouldn't be able to handle both this development and the baseball field visitors. That section of land that they want to build on should remain what it is, healthy natural land. There are lots of places for these developers to build. Please don't let them change our neighborhood in the direction they are trying to with this 92 Home Subdivision.

I'm against this development if the road exit way travels through rusk road.

Thank you,
Jarrod

Kelver, Brett

From: Lois Keiser <loisakeiser@yahoo.com>
Sent: Thursday, May 25, 2017 8:46 AM
To: Kelver, Brett
Subject: Proposed 92 home subdivision at Rusk

Dear Mr. Keiver,
I am a resident on Briarfield Court off Eric and Rusk in this neighborhood. I am concerned that 92 homes, water/sewer impact and theoretically 184 more cars will have a terrible impact on my neighborhood. The traffic flow will be very congested especially when added to events at the Milwaukie Center which already impacts traffic congestion. There are very limited sidewalks in the area and I am concerned that with more people & cars it will create more of a safety issue for walking, bikes, kids & elders than it already is.
Thank you,
Sincerely,
Lois Keiser
13751 SE Briarfield Ct
Milwaukie

Sent from my iPhone

Kelver, Brett

From: Ben Geertz <bgeertz1@yahoo.com>
Sent: Thursday, May 25, 2017 11:39 AM
To: Kelver, Brett
Subject: Re: Note on Continued Hearing for Rusk Road project (Thurs, 5/25)

Brett – thanks

As was highlighted in the meeting on the 23rd by another public comment, I further wanted to reiterate the concern with pedestrian and other non-motorized traffic safety.

As was so well stated on the 23rd, Rusk Road is incredibly unsafe. While the road literally in some cases has no shoulder, it also has blind corners and hills to limit any line of sight, and there is simply no ability for a pedestrian to walk safely. The street I live on is maybe one-third of a mile South of the entrance to the Park, and I have to both walk on Rusk with no shoulder (I am literally in the street walking for part of the time) and then jaywalk to cross Rusk in order to get to the park entrance. All the while, I am hoping I will not have to worry about a driver who is either not fully paying attention, or not able to see me, as the hill, corners, or shadows in the road have not allowed me to be visible. On top of everything else, with the fact this road is a traffic bypass for many, drivers on this road are often speeding at well above the posted limit not aware of what might be around the bend or over the hill.

With the number of families in the area, multiple churches and schools, and the obvious draw to walk to the park in order to enjoy its many features, we have to consider the impacts of the extra traffic on Rusk between HWY 224 and Aldercrest if this development proceeds, and how to ensure everyone's safety. There are simply too many possible places where someone could very easily be injured or killed.

Thank you

Benjamin Geertz
5982 SE Robhil Drive
Milwaukie, OR 97222

925-639-7729

Sent from my iPhone

On May 25, 2017, at 10:35 AM, Kelver, Brett <KelverB@milwaukieoregon.gov> wrote:

> Ben,
>
> You can e-mail me your comments, and I will pass them on to the Commission. If you can do that today before the end of the afternoon I can take them directly to the meeting tonight. I assume the record will probably remain open for more comments after tonight, but we'll have to see what happens at the meeting.
>
> -Brett Kelver
> Associate Planner
>
> **From:** Ben Geertz [mailto:bgeertz1@yahoo.com]
> **Sent:** Thursday, May 25, 2017 8:38 AM

Kelver, Brett

From: Lois Herring <annunciation.oregon@juno.com>
Sent: Thursday, May 25, 2017 1:04 PM
To: Kelver, Brett
Subject: Re: Continued Hearing for Rusk Road project (Thurs, 5/25)

Mr. Kelver--

Here is an additional comment in support of the testimony last night of Joseph Edge:

Mr. Edge requested that traffic study calculations for projected trip generation from the new development should be done **using the assumption that travel behavior of these residents would be similar to travel behavior of residents of detached single family dwellings.**

The Institute of Transportation Engineers Trip Generation Manual land use category that includes townhouses is called **230 Residential Condominium / Townhouse.** Thus, data for both condominiums and townhouses were included when deriving the trip generation factors. Condominiums, however, are frequently *smaller* than the units proposed in this development (1 or 2 bedrooms rather than 3). Smaller family living in the housing unit translates to fewer trips. Condominiums also are frequently chosen by older empty-nest households that are looking to downsize. In contrast, the housing needs statement submitted by the applicant states that Millennial first-time home buyers (read, young families) are the demographic that is expected to be particularly interested in buying these 3-bedroom 1400 square-foot housing units. The size (square feet/number of bedrooms) of these proposed dwelling units is exactly comparable to the size of many detached single-family houses that are currently available in the Milwaukie area. Why does it make any sense to assume that just because these homeowners have tiny hards and houses attached to their neighbors house, their commuting travel behavior will be different from other homeowners of 3-bedroom houses??? (Particularly since the surrounding neighborhood lacks good facilities for travel by mass transit, bicycle, or walking.)

A list of the land use categories used in the Trip Generation Manual may be found in this document, posted online by the City of Troutdale, Oregon:
http://www.ci.troutdale.or.us/publicworks/documents/itelanduselist.pdf
(Note that the PM peak hour travel rate listed on this document for **230 Condominium/Townhouse** exactly matches the PM peak hour travel rate for the new development that is cited on P. 17 of the applicant's Traffic Impact Study.)

Lois Herring
8945 SE 29 Av., Milwaukie

Kelver, Brett

From: Rodger/Linda Huntley <rhuntley18@comcast.net>
Sent: Thursday, May 25, 2017 2:09 PM
To: Kelver, Brett; Egner, Dennis
Cc: Roller, Alex
Subject: RE: Note on Continued Hearing for Rusk Road project (Thurs, 5/25)

Thank you Brett for this email and keeping us up to date. Unfortunately, we are unable to attend the meeting this evening. We were in attendance at the Tuesday meeting until the end.

Please note, after hearing the testimony of the gentleman from the Fish & Wildlife, and the other gentleman who had worked on the wetland to preserve the Salmon Habitat and also the White Oaks in this area. We were made more aware how important these issues are to our area. Please, please let those who make the final decisions know how important this area is and also ONCE WE DISTURB IT AND CUT TREES DOWN IT WILL DEVASTATE WHAT SO MANY HAVE WORKED TO PRESERVE.
Affordable housing is needed, we agree with that. BUT, NOT AT THIE COST OF DISTURBING AND POSSIBLY ELIMINATING WHAT WE HAVE STRIVED FOR IN THIS NATURAL AREA
. POSSIBLY HALF THE AMOUNT OF UNITS , AND NOT DISTURBING THE WHITE OAKS AND THS SALMON HABITAT.

THOSE THAT BE, THAT MAKE THE FINAL DECISIONS ON THIS PLAN, HOPEFULY WILL PUT THIS TO THE FORFRONT OF THEIR DRCISION MAKING AND NOT JUST $$$$$$.

My original concern was with all the traffic, but the above is so important as well.

Thank you,
Linda & Rodger Huntley
13845 SE Briarfield CT
Milwaukie, Or 97222
503-659-4773

From: Kelver, Brett [mailto:KelverB@milwaukieoregon.gov]
Sent: Wednesday, May 24, 2017 2:37 PM
To: Egner, Dennis
Cc: Roller, Alex
Subject: Note on Continued Hearing for Rusk Road project (Thurs, 5/25)

Hello,

Kelver, Brett

From: Joseph Edge <joseph.edge@gmail.com>
Sent: Friday, May 26, 2017 12:25 AM
To: Kelver, Brett
Subject: PD-2017-001 Comments

Brett,

I think I stumbled over some of my words and wasn't as clear as I had hoped in my testimony on Thursday. I would like to clarify the second part of my statement.
+++++

Chair Hemer, et al.,

This proposal intends to offer a market rate housing product that will command a price that will likely be lower than a comparable detached single family dwelling. However, there is no guarantee that the market rate for these dwelling units will be within the means of modest-income households. Therefore it should not be assumed that these dwelling units will be available as workforce housing once they are put up for sale. As such, this assumption should not form any of the basis for granting a density bonus.

If your intent is for some of these 92 dwelling units to be available to families with modest incomes, please consider asking the applicant to present an alternative that provides some of the dwelling units in multifamily buildings. Rental units in multifamily buildings, even at market rates, will be more affordable to families with modest incomes than owner-occupied units. Multifamily buildings will reduce the aggregate footprints of structures, affording the developer greater flexibility in avoiding and minimizing impacts to the natural resource areas on the site while offering the same number of dwelling units as proposed under other alternatives.

As much as we need more, actual "affordable housing" across the metro area, this is not the site to serve that need, even if multifamily buildings are planned. The people who live here will need access to motor vehicles to travel to and from this site. Motor vehicle ownership is very expensive and exacerbates poverty and uncertainty for people with lower incomes, which is why a plurality of low income households do not own motor vehicles. Many of the families that will live at this development will choose to own two or more motor vehicles due to the lack of other safe options for traveling to and from this site, thereby disqualifying those of lower incomes - and yes, even many families with "modest" incomes - from being able to afford to live here.

The provision of a car-sharing service, under contract by the HOA and/or multifamily building owners, would help reduce the number of vehicles that future residents of the proposed development will choose to own and operate. This will also reduce the money required to "buy in" to a dwelling unit here, whether rented or purchased, increasing the number of households who could afford to live here. Phrased differently: a household that owns one fewer car has more resources available to spend on housing or other goods.

In closing, the combination of a multifamily building or buildings to reduce impacts to resource areas coupled with the provision of a car sharing amenity could serve as creative, unique, and outstanding design features that warrant the density bonus for a Planned Development.

Thank you for your consideration.

Joseph Edge

June 7, 2017
Comments on the Turning Point Church Project

After attending two Planning Commission meetings on the subject, I have a few comments.

1. It is not the Planning Commissions role to ensure a profit for the developer. There are many moving parts in this project where the developer can make money. 92 units is not mandatory to make a profit. Why are the commissioners so concerned about Brownstone's profit at the expense of the wetlands and low areas? The western 12 units are horribly placed, wouldn't 80 units work? Avoid the northern HCA and maybe 70 would work.

2. The developer will make a profit on this project well below the 92 units. While I believe the Brownstone comments about operating on a lean margin, I do not believe any good business owner needs 92 units to make this project profitable.

$350,000 x 92 = $32.2 million (gross)
$350,000 x 80 = $28 million
$350,000 x 50 = $17.5 million

As the unit # decreases so do many of the costs, footprints, habitat destruction....

3. These are not “affordable housing” as confirmed by Dowl Consultants. Any notion that this is an affordable housing project was put to rest by the consultant team who said that “this is not an affordable housing project.” The houses will sell for market value at the time of the sale. They will resale for market value at the time of the resale. Some of them will be bought and then rented to renters at the market rental rates.

If the builder gets all 92 units, they will not be sold at a more affordable rate. They will be sold at market rate regardless of number of units.

4. The natural areas will be a maintenance liability that the HOA would love to get rid of. The access to the natural areas will be a wonderful asset. Both of those are available by giving the land to the NCPRD. This isn't something to negotiate the wetlands away for, any smart developer or HOA will see the benefit of this. HOA's do 1 of 2 things with their natural areas: ignore it and let it succumb to weeds, transients and garbage or have their landscape crew mow it to death. It is not necessary to build 92 units for the NCPRD to get the wetlands.

5. The development should not encroach upon the wetlands, HCA, WQR or lowlands regardless of how much land is donated to the NCPRD.

I believe it is not the role of the city to ensure maximum profits for the developer. It is however, the role of the city to protect the public good. Wetlands, trees, housing and reduced flooding are the public good. I would like to see the Planning Commission and city staff less concerned with developer profit and more concerned about their natural treasures. Draw a line around what you don't want destroyed and they can build on the rest, not the other way around. 92 units is too many for this site!

Submitted by
Chris Runyard

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NORTH CLACKAMAS
PARKS & RECREATION DISTRICT

MEMO

SUPER DRAFT

TO: Mr. Brett Kelver, Associate Planner, City of Milwaukie

FROM: Kathryn Krygier, Planning and Development Manager

Copy: Scott Archer, Director
Tonia Williamson, Natural Resources Coordinator
Kevin Cayson, Park an Facilities Manager

DATE: July 10, 2017

RE: **Brownstone Development, Inc.**
File Nos.: PD-2017-001, ZA-2017-001, S-2017-001, NR-2017, TFR-2017-001, VR-2017-003, CSU-2017-001

Application Types: Planned Development, Zoning Map Amendment, Subdivision (preliminary plat), Natural Resource Review, Transportation Facilities Review, Variance, Community Service Use (minor modification)

Thank you for the opportunity to provide additional comments on the proposed Brownstone Development (Project). Most of this memo responds to questions raised by City planning staff and Planning Commissioners about ownership and management of the open space. In addition, NCPRD would like to comment on connectivity in the proposed development as noted at the end of the list.

<u>Ownership and Maintenance</u>

It is NCPRD's experience that generally Home Owner's Associations (HOA) do not have the capacity to adequately maintain open space. The proposed open space contains sensitive wetlands and a conservation area, which requires specialized care and maintenance. This makes it an even greater challenge for an HOA. While we are supportive of the development, we are concerned the open space will be neglected and become a negative influence, not only to the watershed, but also to our adjacent property. For this reason, staff have met with Randy Meyers about possible acquisition of the open space, but have not come to acceptable terms. Following are NCPRD's initial ideas about acquiring and managing the property:

1. NCPRD would want the open space tract to be compatible and enhance the North Clackamas Park Master Plan. A trail through the site, connecting to the park would be an amenity for the community. NCPRD would want to approve the location and specifications of the trail. A pole and post fence may be appropriate in some areas of the property to protect the wetlands.
2. NCPRD would want to review the proposed mitigation plan to make sure it is be compatible with the North Clackamas Park Master Plan and NCPRD's approach to restoration of wetlands and conservation areas. If it were not compatible, NCPRD would want to make changes to the proposal.

3. NCPRD would accept the property after the mitigation warranty period is completed and approved by all permitting agencies. Alternatively, NCPRD could, with funding from the developer, create and/or implement the mitigation plan.
4. NCPRD is only interested in owning open space that serves the community. For example, NCPRD is not interested in owning the community garden and play area.
5. NCPRD will only accept the property at no cost. The expense to maintain the property in perpetuity is a significant unplanned expense to NCPRD, so no additional funds are available for acquisition of the property.
6. This Project is not contemplated in our SDC Capital Improvement Plan, therefore no SDCs are available for the Project.
7. NCPRD is amenable to having the City of Milwaukie acquire the property and amending our IGA to include future maintenance responsibilities of the open space. We would anticipate accepting the maintenance of the property with similar conditions that are noted above.

Connectivity

8. Pedestrian and bicycle routes through and within the site are critical to its success. The plan dated 5/19/2017 shows a "path" where a road was located in earlier drawings. This "path" should be public and meet ADA requirements to provide for complete connectivity throughout the Project.

MEMORANDUM

TO: Community Development Department

THROUGH: Chuck Eaton, Director of Engineering

FROM: Alex Roller, Engineering Technician II

RE: 92-Lot Planned Development – 13333 SE Rusk Road
PD-2017-001 *(revised comments)*

DATE: July 18, 2017

Transportation Facility Requirements

MMC 19.708.1.E.5 – Dwelling units on a closed-end street system

Proposal will have 92 dwelling units on a closed-end street system, while our code only allows 20. The Engineering department supports a variance for this increase. There is no opportunity for any additional dwelling units to be constructed that will access this street system, further impacting this closed-end system. Also, the system will have separate fire access points, providing adequate fire and life safety.

Recommended Conditions of Approval

1. Prior to approval of the final plat, the following shall be resolved:

~~A. Obtain a variance to MMC 12.16.040.C.4.a for accessway spacing for lot 72.~~

A. Obtain a variance to MMC 19.708.1.E.5 for number of dwellings on a closed-end street system.

B. Submit a final stormwater management plan to the City of Milwaukie Engineering Department for review and approval. The plan shall be prepared in accordance with Section 2 – Stormwater Design Standards of the City of Milwaukie Public Works Standards. Submit full-engineered plans for construction of all required public improvements, reviewed and approved by the City of Milwaukie Engineering Department. All utilities shall conform to the Milwaukie Public Works Standards.

C. Obtain a right-of-way permit for construction of all required public improvements listed in these recommended conditions of approval.

D. Pay an inspection fee equal to 5.5% of the cost of the public improvements.

E. Provide a payment and performance bond for 100 percent of the cost of the required public improvements.

F. Provide an erosion control plan and obtain an erosion control permit.

G. Dedicate 14 feet of right-of-way on SE Kellogg Creek Drive fronting the proposed development property to accommodate the parking and bike facilities to the intersection of Rusk and Kellogg Creek Drive.

H. Install all underground utilities, including stubs for utility service prior to surfacing any streets. Utilities shall be designed to minimize or eliminate infiltration of floodwaters into the system. New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of floodwaters into the system and discharge from the systems into floodwaters. Relocate or provide a private utility easement for all utilities encroaching onto adjacent properties.

I. Construct a 5-foot set-back sidewalk, 4-foot planter strip and curb & gutter on entire frontage of SE Kellogg Creek Drive. Modification to this requirement may be possible by constructing a crossing at the southwest corner of lot 33, and not constructing sidewalk to the west of this pedestrian crossing.

J. Construct 5-foot set-back sidewalk, 4-ft planter strip, curb and gutter, 7-foot parking, and 10-foot travel lane (for each half of right-of-way), on "SE Street A" and "SE Street B".

K. Construct all sidewalks, ramps and driveways on "SE Street A" and "Street B".

L. Extend right turn lane for northbound traffic at Rusk/OR 224 intersection.

M. Construct a driveway approach to meet all guidelines of the Americans with Disabilities Act (ADA) to each new lot. The driveway approach aprons shall be between 9 feet and 20 feet in width and least 7.5 feet from the side property line.

N. Clear vision areas shall be maintained at all driveways and accessways and on the corners of all property adjacent to an intersection Remove all signs, structures, or vegetation more than three feet in height located in "vision clearance areas" at intersections of streets, driveways, and alleys fronting the proposed development.

O. Provide a 12-month Maintenance Bond upon completion of the construction.

P. Provide a final approved set of Mylar and electronic PDF "As Constructed" drawings to the City of Milwaukie prior to final inspection.

2. Prior to issuance of any building permit:

   A. Obtain approval of FEMA map revision for lots that are currently in the floodplain.

3. Prior to final inspection for any building on the proposed development, the following shall be resolved:

   A. Connect all residential roof drains to private drywell or other approved structure. Private properties may only connect to public storm system if percolation tests show that infiltration cannot be obtained on site or if the water table is too shallow. In the event the storm management system contains underground injection control devices, submit proof of acceptance of the storm system design from the Department of Environmental Quality.

Oregon
Kate Brown, Governor

Department of Transportation
Region 1 Headquarters
123 NW Flanders Street
Portland, Oregon 97209
(503) 731.8200
FAX (503) 731.8259

July 20th, 2017 ODOT #7689

ODOT Response

Project Name: 13333 SE Rusk - Zone Change w/ PUD	**Applicant:** Brownstone Development
Jurisdiction: City of Milwaukie	**Jurisdiction Case #:** PD-2017-001
Site Address: 13333 SE Rusk Rd, Milwaukie, OR 90367	**State Highway:** OR 224

COMMENTS/FINDINGS

ODOT has reviewed the Kittelson and Associates supplemental traffic operational analysis for the Kellogg Creek Townhomes development dated June 12, 2017. The intersection of OR 224/SE Rusk Rd was reanalyzed with the existing lane configuration of a single lane northbound approach at the intersection. Under this scenario, ODOT standards are met but the intersection will continue to experience congestion. The addition of a northbound right turn lane will improve intersection operations now as well as in the future.

Please send a copy of the Notice of Decision including conditions of approval to:

ODOT Region 1 Planning
Development Review
123 NW Flanders St
Portland, OR 97209

Region1_DEVREV_Applications@odot.state.or.us

Development Review Planner: Marah Danielson	503.731.8258, marah.b.danielson@odot.state.or.us
Traffic Contact: Avi Tayar, P.E.	503.731.8221

Kelver, Brett

From: Susan Barnes <susan.p.barnes@state.or.us>
Sent: Monday, July 24, 2017 5:49 PM
To: Kelver, Brett
Cc: todd.alsbury@state.or.us
Subject: RE: packet materials for Rusk Road project at July 25 PC meeting
Attachments: ODFW TA email comments 7_19_17.docx

Brett –

I wasn't able to track Todd down late last week or today to see if he provided any comments to you. I am guessing not as I wasn't cc: on any correspondence. I know his workload is extra heavy this time of the year… That said, we did communicate about the project recently and I have attached an email exchange with Todd last week. I had asked him if he had any comments and recommendations to offer related to effects on salmonids and other fish resources from the proposed Kellogg subdivision. Please forward this email with attachment onto the Planning Commission for their consideration. Thank you. And thank you again for seeking ODFW comment on this project.

susan

Susan Barnes
Regional Conservation Biologist
West Region

Oregon Department of Fish and Wildlife
17330 SE Evelyn Street
Clackamas, OR 97015
Tel: (971)673-6010
Email: susan.p.barnes@state.or.us

From: Kelver, Brett [mailto:KelverB@milwaukieoregon.gov]
Sent: Monday, July 24, 2017 11:03 AM
To: Susan Barnes <susan.p.barnes@state.or.us>
Cc: todd.alsbury@state.or.us
Subject: RE: packet materials for Rusk Road project at July 25 PC meeting

Thanks, Susan. I think you and Todd are both on the Interested Persons list I'm keeping. If either of you do have additional comments and can send them in advance of tomorrow night's continued hearing, we will forward them on to the Planning Commission as we're able. Thanks!

BRETT KELVER
Associate Planner

From: Susan Barnes [mailto:susan.p.barnes@state.or.us]
Sent: Wednesday, July 19, 2017 5:03 PM
To: Kelver, Brett <KelverB@milwaukieoregon.gov>
Cc: todd.alsbury@state.or.us
Subject: RE: packet materials for Rusk Road project at July 25 PC meeting

Hi Brett –

Thanks for your email and for reaching out to ODFW specifically regarding this project. I have been getting the "interested party" updates recently, not sure if Todd A is on the e-list so I have been forwarding to him just in case. I communicated with Todd briefly today and he has some comments on ODFW's recommended set-back for this proposed development from Mt Scott Creek given its values and functions as a salmon-bearing stream. Additional comments forthcoming as well related to water quality and fisheries resources. I am still getting through the revised materials to comment from the wildlife perspective.

Thank you again for seeking our input.

Susan Barnes
Regional Conservation Biologist
West Region

Oregon Department of Fish and Wildlife
17330 SE Evelyn Street
Clackamas, OR 97015
Tel: (971)673-6010
Email: susan.p.barnes@state.or.us

From: Kelver, Brett [mailto:KelverB@milwaukieoregon.gov]
Sent: Wednesday, July 19, 2017 2:14 PM
To: susan.p.barnes@state.or.us
Cc: todd.alsbury@state.or.us
Subject: FW: packet materials for Rusk Road project at July 25 PC meeting

Susan,

I know I haven't been keeping you up to exact date on things with the Rusk Road planned development, but I thought I'd forward you the note I sent to other Interested Persons as a reminder that the continued hearing is coming up next Tuesday (July 25). I don't know if ODFW has had more of a chance to review the project (revised materials are now available and included in the meeting packet at the link below), but we can pass along any additional formal comments if there are some from ODFW. Let me know.

BRETT KELVER
Associate Planner

From: Kelver, Brett
Sent: Tuesday, July 18, 2017 5:28 PM
To: Kelver, Brett <KelverB@milwaukieoregon.gov>
Cc: Egner, Dennis <EgnerD@milwaukieoregon.gov>; Roller, Alex <RollerA@milwaukieoregon.gov>
Subject: packet materials for Rusk Road project at July 25 PC meeting

Hello,

The agenda and packet materials for next Tuesday evening's continued hearing on the proposed Rusk Road project are now available on the City website at this link: Planning Commission | City of Milwaukie Oregon Official Website.

From: Todd Alsbury [mailto:todd.alsbury@state.or.us]
Sent: Wednesday, July 19, 2017 4:09 PM
To: Susan Barnes <susan.p.barnes@state.or.us>; Dave Stewart <dave.stewart@state.or.us>; Ben Walczak <ben.walczak@state.or.us>
Cc: Don VandeBergh <don.j.vandebergh@state.or.us>
Subject: Re: Turning Point Church Development on Mt. Scott Creek

Will do...

Sent from my Verizon, Samsung Galaxy smartphone

-------- Original message --------
From: Susan Barnes <susan.p.barnes@state.or.us>
Date: 7/19/17 4:08 PM (GMT-08:00)
To: Todd Alsbury <todd.alsbury@state.or.us>, Susan Barnes <susan.p.barnes@state.or.us>, Dave Stewart <dave.stewart@state.or.us>, Ben Walczak <ben.walczak@state.or.us>
Cc: Don VandeBergh <don.j.vandebergh@state.or.us>
Subject: RE: Turning Point Church Development on Mt. Scott Creek

These are the comments that need to go to Brett! Can you put those into a letter / email to him?

Susan Barnes
Regional Conservation Biologist
West Region

Oregon Department of Fish and Wildlife
17330 SE Evelyn Street
Clackamas, OR 97015
Tel: (971)673-6010
Email: susan.p.barnes@state.or.us

From: Todd Alsbury [mailto:todd.alsbury@state.or.us]
Sent: Wednesday, July 19, 2017 3:55 PM
To: Susan Barnes <susan.p.barnes@state.or.us>; Dave Stewart <dave.stewart@state.or.us>; Ben Walczak <ben.walczak@state.or.us>
Cc: Don VandeBergh <don.j.vandebergh@state.or.us>
Subject: RE: Turning Point Church Development on Mt. Scott Creek

I have significant concern from a water quality perspective and the potential for direct impacts if the riparian area is compromised. In spite of current stormwater control criteria I fear that developments of this size are too much risk to be located within 100 feet of a salmon bearing stream...particularly, one we are working to try and recover from the mouth upstream (...Kellogg Dam).

Todd Alsbury
District Fish Biologist
ODFW-North Willamette Watershed District
971-673-6011 (office)
503-781-8286 (cell)
971-673-6071 (fax)
todd.alsbury@state.or.us

720 SW Washington St.
Suite 500
Portland, OR 97205
503.243.3500
www.dksassociates.com

Date: July ~~20~~21, 2017

Request: Kellogg Creek Townhomes Transportation Impact Study Review

Reviewer: Mat Dolata, PE, PTP, DKS Associates P14167-003

DKS Associates has reviewed the transportation impact analysis (TIA) for the Kellogg Creek Townhomes[1] including supplemental traffic analysis[2]. The proposed development is located at 1333 Rusk Road in Milwaukie, Oregon, south of OR 224 (Milwaukie Expressway). The project would construct approximately 99 townhouse residential units on current open space located on the southeast corner of the Turning Point Church property. A zoning map change will be required as part of the development. The general comments and listing of recommendations are based on review of the transportation impact analysis (TIA) materials.

REZONE TRAFFIC IMPACT STUDY

Key findings from the rezone impact analysis include:

- A Planned Development process associated with the proposed development would result in a zone change that increases allowable development density on the site. The current Comprehensive Plan designation would be retained.
- The TIA states that the proposed rezone would increase maximum allowed residential density from the currently allowed 97 units. The maximum allowable residences after the rezone are not identified. The analysis considers the proposed 99 unit development to reflect the worst reasonable case. Following this interpretation of reasonable worst case development, the proposed zoning would allow two additional residential units.
- The trip generation impact for two additional residential units (12 daily trips, 1 during the AM peak hour, and 2 during the PM peak hour) would not significantly affect the transportation system.
- Traffic analysis of peak hour traffic conditions in 2035 was included in the TIA. All study intersections were found to operate within applicable mobility standards.
- The 2035 traffic analysis assumed improvements on OR 224 (construction of a third westbound lane from I-205 to SE Webster Road) based on the Metro Regional Transportation Plan financially constrained project list (Project ID 11350). The analysis also assumes construction of

[1] Kellogg Creek Townhomes – Traffic Impact Study, Kittelson and Associates, December 8, 2016.
[2] Kellogg Creek Townhomes Supplemental Traffic Operational Analysis Information, June 12, 2017.

a third eastbound lane on OR 224 at the intersection with SE Webster Road/SE Lake Road. It is not clear if this is an appropriate assumption. The traffic operations results indicate some movements (westbound left) may exceed available capacity (v/c ratio above 1.0), but the overall intersection operations were found to be operate within the mobility standard with the assumed improvements noted.

- The proposed zone change is not expected to significantly affect any transportation facilities in the City of Milwaukie.
- If the land use action would allow for additional development of the site (beyond the proposed 99 residential units), a trip cap may be appropriate to ensure any potential future development comply with the Transportation Planning Rule.

No significant off-site transportation impacts in the City of Milwaukie have been identified as a result of the proposed zone change and the Transportation Planning Rule is satisfied for the proposed development.

The SE Webster Road & SE Lake Road/OR 224 intersection is located outside of the City of Milwaukie. A separate determination regarding Transportation Planning Rule compliance at the intersection should be made by ODOT.

TRANSPORTATION IMPACT ANALYSIS SUMMARY

Key findings from the transportation impact analysis include:

- The proposed project would result in the following estimated motor vehicle trip generation: 52 (35 in/17 out) weekday PM peak hour trips and 44 (7 in/37 out) weekday AM peak hour vehicle trips. The weekday mid-day peak hour trip estimate is the same as for the PM peak hour. The daily traffic generation estimate is 576 trips. The estimates are based on applying ITE trips rates to 99 townhome residential units.
- Proposed site access would be modified by closing the existing driveway on SE Kellogg Creek Drive and constructing a new primary access approximately 300 feet further west on SE Kellogg Creek. The existing SE Rusk Road driveway for the Turning Point Church would be retained. This driveway is intended for one-way traffic (for trips into the Church site) but traffic count data indicate the driveway is also used for turns onto SE Rusk Road from the Church.
- Traffic operations were analyzed for existing conditions (year 2016) and forecasted conditions in year 2018, when construction of the proposed development is anticipated to be complete. Operations analysis was performed for the AM, mid-day, and PM peak hours at seven study intersections: SE Webster Road & SE Lake Road/OR 224, SE Rusk Road/OR 224, SE Rusk Road/Church Driveway, SE Rusk Road/SE Ruscliff Road, SE Rusk Road/SE Kellogg Creek Drive, SE Rusk Road/SE Aldercrest Road, and SE Kellogg Creek Drive/Driveway.
- New traffic counts were collected on June 1, 2017 for the supplemental traffic analysis. The new counts reflect typical traffic patterns on a day when school was in session and operating with regular class schedule. New intersection turn movement counts were collected at SE Rusk Road/OR 224, SE Rusk Road/SE Ruscliff Road, and SE Rusk Road/SE Kellogg Creek Drive. Traffic operations analysis was revised to reflect the count data at these three study intersections.

- The original TIA used traffic count data that was collected in November 2, 2016.
- In addition to new traffic count data, the supplemental traffic analysis modified the analysis of OR 224/SE Rusk Road to include a single shared lane on the northbound approach, at the request of City staff.
- ~~Traffic count data was collected in November 2, 2016.~~
- A background traffic growth rate of 0.61 percent per year was applied to existing traffic volumes to estimate background traffic volumes for year 2018 traffic operations analysis. This growth rate is based on estimated trip demand from land in Milwaukie (16% increase from 2010 to 2035) from Chapter 4 of the Transportation System Plan[3] (TSP). The overall growth is generally consistent with expected traffic volume growth on OR 224 as identified in the TSP (Figure 8-2A shows 13% traffic growth on OR 224 from 2012 to 2035). No additional trips from in-process development were included in background growth.
- The trip distribution estimate for the site shows 40% of site trips traveling to or from the west via OR 224 and 20% of site trips traveling to or from the east via OR 224. The remaining 40% of trips are estimated to travel north or south (20% each) on SE Rusk Road. No rationale was provided for the trip distribution estimate.
- All study intersections were found to operate at an acceptable level of service through the 2018 AM, Mid-day, and PM peak hours with full buildout of the proposed redevelopment.
- The worst-case traffic operations were reported at the SE Webster Road/OR 224 intersection during the 2018 PM peak hour (LOS D with 0.98 V/C ratio), which is within minimum acceptable mobility standards identified by ODOT.
- All study intersections in Milwaukie are estimated to operate at LOS C or better during the 2018 peak hours. However, significant delay (LOS F) and queuing ~~may be experienced~~ were reported during peak hours for northbound vehicles at the SE Rusk Road/OR 224 intersection. The supplemental traffic analysis indicated the overall intersection will operate near capacity during 2018 peak periods (LOS C with 0.95 V/C ratio in the AM peak hour and LOS C with 0.93 V/C ratio in the PM peak hour), although the intersection is expected to remain within minimum acceptable mobility standards identified by ODOT.
- Constructing an extension of the existing northbound right turn lane on SE Rusk Road at the OR 224 intersection is expected to be required as a condition of approval on the proposed development. If constructed, the additional storage capacity would be expected to improve operations and reduce queue lengths on the northbound approach.
- ~~.~~
- A left-turn lane warrant analysis was performed for the SE Kellogg Creek Drive approach at SE Rusk Road. This warrant analysis methodology applies to uncontrolled major street movements. The traffic operations analysis does not indicated the need for an additional turn lane at the stop-controlled intersection.

[3] http://www.milwaukieoregon.gov/engineering/transportation-system-plan

- No significant safety issues at intersections in Milwaukie were found from review of the last five years of available collision data at study intersections.
- Intersection sight distance measurements at the existing Church driveway locations were found to not sufficiently meet the intersection sight distance requirements. The TIA identifies potential mitigations to ensure the SE Rusk Road driveway operates with the intended one-way traffic flow (into the Church from SE Rusk Road). The proposed driveway on SE Kellogg Creek Drive is expected to sufficiently meet the intersection sight distance requirements (335 feet for a 30mph design speed)[4].
- The proposed driveway would meet the intersection spacing standards on SE Kellogg Creek Drive. The standards require local streets to be constructed at a maximum distance of 530 feet and minimum distance of 100 feet. The proposed site access is approximately 400-500 feet from the SE Rusk Road intersection.
- The TIA states that no public streets will be constructed, indicating that the internal street system in the proposed development will be constructed as private streets.
- Potential issues related to traffic circulation with the proposed site plan include:
    - Trips from the Turning Point Church would have a significantly longer distance to access SE Rusk Road, via the new local street system and SE Kellogg Creek Drive. This may increase the frequency of vehicles making turns from the Church driveway onto SE Rusk Road, where sight distance was found to be substandard.
    - Trips to the new residential development may use the Church parking lot for a more direct cut-through routing, particularly for residences on the east side of the proposed development. As a result, the Church parking lot may function more like a private street.
    - These traffic flows may result in complaints from the Church community as well as future residents.
- The traffic circulation created by the proposed site plan may be acceptable if the internal street system is entirely private.
- A direct pedestrian connection should be provided between SE Rusk Road and the east end stub of the northernmost internal street in the residential development. The direct pedestrian connection should either be made via the Church parking lot or adjacent to it, along the new proposed lot line.
- A direct pedestrian connection should be provided between SE Kellogg Creek Drive and the east end of the southernmost internal street in the residential development. The direct pedestrian connection should either be made via the Church parking lot or adjacent to it along the new proposed lot line.
- Direct pedestrian connections are not provided to the west or north of the proposed development. Given topographic constraints (Mt. Scott Creek) and the lack of pedestrian

[4] Milwaukie Public Works Standards identify a 25mph design speed for local streets.

facilities on OR 224, it is acceptable to encourage pedestrian connections to be made via public streets.

RECOMMENDATIONS

The following recommendations should be considered in developing conditions of approval for the proposed development:

- Frontage (one-half street) improvements to SE Rusk Road should be constructed along the length of the Turning Point Church property frontage. The frontage improvements should include pavement, sidewalk, planter, drainage, and curb consistent with Clackamas County standards for a local street. All roadway and frontage improvements should meet the Clackamas County street design standards and should be subject to review and approval by Clackamas County staff.
- Frontage improvements should be constructed along the length of SE Kellogg Creek Drive property frontage, including at the existing driveway location on the property. The frontage improvements should include pavement, sidewalk, planter, drainage, and curb consistent with City of Milwaukie standards for a local street. All roadway and frontage improvements should meet the City of Milwaukie street design standards and should be subject to review and approval by the City Engineer.
- Right-of-way should be dedicated along SE Rusk Road and SE Kellogg Creek Drive to provide for the half-street cross-sections, as identified by the City Engineer.
- The SE Rusk Road intersection with the Church driveway should be modified to ensure safe traffic operations. The intersection should be closed, relocated, modified to right-in turns only, or safe sight distance should be provided to allow for full access. Providing safe sight distance at the intersection would likely require tree removal on the south end of the Church property along SE Rusk Road. If the driveway access is retained for one way-traffic, signage should be added to specify one-way traffic, as identified in the TIA. If the driveway access is retained for one way-traffic access, access should be limited to right-turns in only and the intersection should be reconstructed with a physical concrete barrier with curbs, to discourage turns out of the Church driveway. The final intersection design and signage should be approved by the City Engineer and Clackamas County staff prior to construction. The intersection design and signage should also be coordinated with emergency responders.
- Consideration of a roundabout at the SE Kellogg Creek Drive / SE Rusk Road intersection is recommended. A roundabout at this location could allow for a full access Church driveway on the north leg of the intersection, access to SE Kellogg Creek Drive on the west leg, with SE Rusk Road on the south and east legs. This intersection configuration could improve traffic circulation for both the Church and proposed residential development.
- All sections of the internal driveway, parking, and sidewalk system should be constructed to meet City of Milwaukie standards for pavement, sidewalk, drainage and curb, where applicable for private streets.

- The new driveway on SE Kellogg Creek Drive should be between 100 and 530 feet from the nearest street intersection (SE Rusk Road).
- Minimum AASHTO sight distance requirements should be met at all street and driveway intersections. These should be approved by the City Engineer prior to final site plan approval.
- A direct pedestrian connection should be retained, or a new pedestrian connection constructed, to connect the proposed residential development to SE Kellogg Drive near the southeast end of the proposed development.
- A direct pedestrian connection should be provided, to connect the proposed residential development to SE Rusk Road from the east end stub of the northernmost street of the proposed development.
- Pedestrian access easements shall be granted to the residential development on or adjacent to the Church property such that direct access to sidewalks on SE Rusk Road and SE Kellogg Creek Drive can be provided.
- Vehicle access easements shall be granted to the Church on all private streets in the residential development property, unless direct two-way vehicle access can be provided on the Church lot.
- The final site plan should be approved by the City Engineer prior to construction.

X:\Projects\2014\P14167-000 (Milwuakie On-Call)\P14167-011 (Milwaukie On-Call - 13333 Rusk Road TIA Update Review)\DKS TIA Review for Kellogg Creek Townhomes Updated Review.docx~~X:\Projects\2014\P14167-000 (Milwuakie On-Call)\P14167-008 (Milwaukie On-Call - 13333 Rusk Road TIA Review)\DKS TIA Review for Kellogg Creek Townhomes_Draft.docx~~

Kelver, Brett

From: Kelver, Brett
Sent: Thursday, May 11, 2017 10:48 AM
To: 'aargo23@gmail.com'; 'grau@nwhousing.org'; 'greghemermilw@gmail.com'; 'kim.travis75@gmail.com'; 'scott.jns@gmail.com'; 'shannahanderson@gmail.com'
Cc: Egner, Dennis; 'john.henry.burns@gmail.com'
Subject: Forward of response to Commissioner Burns (re: Rusk Rd project)

Planning Commissioners,

Below is a response I sent to Commissioner Burns regarding some specific questions he asked in regards to the Rusk Road Planned Development you'll be holding a hearing on May 23.

As staff, we do appreciate hearing from you in advance if you have questions about upcoming hearings. As a reminder of the general protocol for those communications with us, you should e-mail your questions directly to staff without copying the other Commissioners; staff will respond to the questions and copy the entire Commission. You should keep your communications one-on-one with staff and not "Reply All" or copy all Commissioners, in order to avoid the appearance or actuality of getting into deliberations outside of the hearing. Questions should be informational or clarifying in nature—since all Commissioners will see your questions as part of staff's response, you should refrain from sharing opinions or comments that would compromise your ability to be impartial in your decision-making at the hearing. Commissioner Burns' questions are a good example of an appropriate approach.

-Brett Kelver
Associate Planner

From: Kelver, Brett
Sent: Wednesday, May 10, 2017 5:52 PM
To: 'John Henry Burns' <john.henry.burns@gmail.com>
Cc: Roller, Alex <RollerA@milwaukieoregon.gov>; Egner, Dennis <EgnerD@milwaukieoregon.gov>; 'd.egner@comcast.net' <d.egner@comcast.net>
Subject: RE: Rusk Rd comments from Clackamas County

John,

Thanks for the note. Here are some quick replies to your good questions:

1. As long as Kellogg Creek Drive is under the County's jurisdiction and an applicant would be going to the County for the permits to construct improvements, I believe the County would not allow a bike lane to be striped, as that would not be in line with their current standard for a local street. (To be fair, I don't believe bike lanes are considered standard on Milwaukie's local streets either.) The City would prefer to have a bike lane, I think because of the proximity to the park. We're still talking internally about whether and/or how we could or would require a bike lane there as long as the County still has jurisdiction.

2. There is a process for transferring jurisdiction of streets from the County to the City. The proposal itself does not trigger a requirement for jurisdictional transfer, but I think we could request it and initiate the process, and I'm not sure at the moment whether the Engineering Director is considering that option. I may have to get back to you on this one if I learn more about it before the hearing—or it may end up being something you raise at the hearing for us to answer there, depending on the timing.

-Brett Kelver
Associate Planner

From: John Henry Burns [mailto:john.henry.burns@gmail.com]
Sent: Wednesday, May 10, 2017 10:20 AM
To: Kelver, Brett <KelverB@milwaukieoregon.gov>
Subject: Re: Rusk Rd comments from Clackamas County

Thanks Brett. A couple questions after a quick read-through:

1) The county notes: "The preliminary plans identify a striped bike lane along the frontage of SE Kellogg Creek Drive. The county does not provide bike lanes on local roads". Does this imply the county would prohibit a bike lane in this location, or simply not require one? If the county would not require one, can the city?

2) Rusk Rd and Kellogg Creek Dr are in county jurisdiction. Is there a process by which these roads would come in to Milwaukie jurisdiction? If so what would trigger that? Or can Milwaukie request to take jurisdiction as part of this application? A primer on how road jurisdiction are shared between county and city would be helpful for me.

Thank you, - John

Kelver, Brett

From: Kelver, Brett
Sent: Friday, May 19, 2017 5:20 PM
To: 'Greg Hemer'
Cc: 'aargo23@gmail.com'; 'grau@nwhousing.org'; 'john.henry.burns@gmail.com'; 'kim.travis75@gmail.com'; 'scott.jns@gmail.com'; 'shannahanderson@gmail.com'; Roller, Alex; Eaton, Chuck; Egner, Dennis
Subject: RE: Rusk Rd project questions

Greg,

Thanks for sending your questions. I'll take a shot at answering them this afternoon, knowing that they are the kinds of questions that others on the Commission and in the public will likely want to ask more about at the hearing next week.

- Roads = Regarding the church driveway on Rusk Road, we have discussed this further with the County and they are amenable to us requiring the driveway to remain open, as it affects the proposal greatly to have it closed. We'll probably recommend a condition of approval to keep the driveway open and do as much as possible to make it function as a one-way "in" from Rusk Road. Regarding the suggestion to extend the right turn lane northbound on Rusk Road, both ODOT and the County have recommended the extension, and the City will require that, too. The extension will have to meet County standards but should be pretty basic. I hope that answers this question enough for now. I'll aim to address that in my presentation next Tuesday.

- Traffic = We'll speak more about the traffic questions at the hearing. Regarding the various questions that have come up with regard to the methodology and assumptions of the traffic study, staff has confirmed with our traffic consultant that the applicant's traffic study is sound. The summertime peak traffic in the park does not significantly conflict with the standard 4pm to 6pm traffic peak window (page 13 of the applicant's traffic study). I think we'll let the applicant's consultant field more of the specific questions that come up, but staff's position is that the traffic study is sound and does not need further revision. The one assumption we caught that needed tweaking was how the length of the right-turn lane on northbound Rusk Road at Highway 224 was measured—when that adjustment is made, that particular leg of the intersection fails, and thus the requirement to extend the right-turn lane there. We can explain more about that at the hearing.

- Flooding = The City's requirements are that stormwater runoff cannot be greater after the development than it was before (or even back to the Lewis & Clark standard, as we discussed with the Harmony Road mini-storage project). It's about managing the flow rate, not about drying up the water itself. My understanding is that water will still make its way off the site (or onto other portions of the site, like the open space area), and it won't do that any more quickly or with greater flows than it does now.

- Affordable homes vs Environmental impacts = The primary City standards or criteria in play on this question seem to be those for the Planned Development (especially the request for increased density) and those for Natural Resource review. Both are discretionary reviews, and I am not aware of case law that provides any legal precedent for valuing one over the other. For the Planned Development, there are some standards (like, having at least a third of the site as open space), but there are also some areas where it is more of a judgment call about whether the design is outstanding enough to warrant the requested density bump. For Natural Resources, the applicant is supposed to demonstrate that they've looked at a number of practicable alternatives, that theirs is the least impactful one, and that they have minimized and mitigated for impacts. I think it's mostly about trying to find an appropriate-feeling balance between the two goals (providing housing and protecting natural resources).

Thanks again for the questions in advance. Have a good weekend as well, and good luck with all the reading and review!

-Brett Kelver
Associate Planner

From: Greg Hemer [mailto:greghemermilw@gmail.com]
Sent: Friday, May 19, 2017 2:44 PM
To: Kelver, Brett <KelverB@milwaukieoregon.gov>
Subject: Rusk Rd project questions

Happy Friday, I am sure you have your hands full but I have a few questions:

Roads - I am confused about jurisdiction and what standards need to be met. Does the applicant have to comply with the County's request or standard for Rusk Rd or does PC have to put in with Condition of approval?

Traffic- Many public comments have implied that the traffic study was not done during adequate measuring times ie no school or softball. Can the applicant provide a revised traffic study in time for 120 day rule for a new traffic study or can that be conditioned in to determine a more accurate (may not change from current) traffic study to determine the mitigation?

Flooding - maybe a silly question, but doesn't the extra water run off controls of the proposed development reduce the amount of water entering into Mt. Scott Creek ie retention ponds and mitigation area?

Affordable homes vs. Environmental impacts- Is this a feeling determination for PC or is there a City standard or City evaluation, previous case law, or precedent that takes one consideration over another?

Thank you and enjoy your weekend and sunshine

Greg Hemer

Kelver, Brett

From: Kelver, Brett
Sent: Thursday, May 25, 2017 10:57 AM
To: 'aargo23@gmail.com'; 'grau@nwhousing.org'; 'greghemermilw@gmail.com'; 'john.henry.burns@gmail.com'; 'kim.travis75@gmail.com'; 'scott.jns@gmail.com'; 'shannahanderson@gmail.com'
Cc: Egner, Dennis; Roller, Alex; Levitan, David
Subject: RE: Rusk Rd request (and additional comments received)
Attachments: 37_Jim St John comments_25May2017.pdf; 38_Randy Day comments_25May2017.pdf; 39_Jarrod Allen comments_25May2017.pdf; 40_Lois Keiser comments_25May2017.pdf; Detached SFR Sales 2016_1500-2000 SF.xlsx

Planning Commissioners,

We received the below questions from Chair Hemer yesterday. Here are quick answers:

- We ran figures for prior year sales for 1,500-2,000 SF single family homes in Lake Road, Linwood, and Oatfield (6 months didn't have many sales for Lake Road or Linwood and was skewed by a couple of large parcels). The price per sf was ~$200 sf in each neighborhood. See the attached spreadsheet for some details. Thanks to Senior Planner David Levitan for pulling these numbers.

- I checked in with North Clackamas Parks & Rec District (NCPRD) and confirmed that they do not normally maintain lands outside their jurisdiction or ownership. There are no examples of that to share.

I am attaching 4 more public comments that have come in since sending you the other comments yesterday.

-Brett Kelver
Associate Planner

From: Greg Hemer [mailto:greghemermilw@gmail.com]
Sent: Wednesday, May 24, 2017 7:52 AM
To: Kelver, Brett <KelverB@milwaukieoregon.gov>
Cc: Egner, Dennis <EgnerD@milwaukieoregon.gov>
Subject: Rusk Rd request

I hope this is within the rules, but I have an 2 additional question about the project.
Can we get recent data (last 6 months) of median house price in sales for single family homes in comparable size 1,500 sqft to 2,000 sqft around and in Milwaukie?
Is it normal for a Park District maintain lands outside their jurisdiction or ownership? If you could find an example where this partnership currently exists would be great.
Thanks

Detached SFR Sales 2016
1500 to 2000 sq ft

Lake Road, Linwood, and Oatfield neighborhoods

SOLD DATE	PRICE	ADDRESS	ZIP	BEDS	BATHS	SQ FEET	LOT SIZE	YR BUILT	DAYS ON MARKET	$/SQ FT
September-9-2016	$346,300	11925 SE Juniper St	97222	4	2	1674	7405	1966	257	207
July-28-2016	$325,000	12242 SE Grove Loop	97222	3	2	1541	6534	1977	300	211
February-22-2017	$340,000	12221 SE 70th Ave	97222	3	2	1685	6969	1968	91	202
August-29-2016	$490,000	11707 SE 60th Ave	97222	4	2	1981	49222	1937	268	247
December-8-2016	$325,000	6436 SE Aspen St	97222	3	2	1671	6969	1964	167	194
September-9-2016	$189,000	10592 SE 55th Ave	97222	2	1	1750	12632	1920	257	108
May-15-2017	$380,000	6305 SE Plum Dr	97222	3	2.5	1605	7405	1966	9	237
July-22-2016	$355,000	11912 SE Lamplighter Ave	97222	3	2	1680	7840	1990	306	211
November-23-2016	$334,900	11615 SE 56th Ave	97222	3	3	1623	6969	2001	182	206
August-12-2016	$305,000	6825 SE Madrona Dr	97222	4	2	1530	8712	1972	285	199
January-19-2017	$322,000	5467 SE Park St	97222	4	2.5	1900	10890	1976	125	169
November-17-2016	$287,000	10675 SE 59th Ave	97222	2	2	1798	9147	1965	188	160
September-15-2016	$300,000	11304 SE 60th Ave	97222	3	1	1526	11761	1958	251	197
September-26-2016	$305,000	11729 SE 63rd Ave	97222	3	2.5	1598	7840	1977	240	191
May-4-2017	$363,100	12325 SE Sequoia Ave	97222	4	2	1803	7405	1968	20	201
June-30-2016	$308,000	11805 SE Stanley Ave	97222	3	1.5	1680	10018	1956	328	183
February-9-2017	$315,000	12104 SE Grove Loop	97222	4	2.5	1958	5662	1975	104	161
Average	**$328,841**					**1,706**	**10,787**			**$193**

URL (SEE http://www.redfin.com/buy-a-home/comparative-market-analysis FOR INFO ON PRICING)

http://www.redfin.com/OR/Milwaukie/11925-SE-Juniper-St-97222/home/25752212
http://www.redfin.com/OR/Milwaukie/12242-SE-Grove-Loop-97222/home/25825166
http://www.redfin.com/OR/Milwaukie/12221-SE-70th-Ave-97222/home/25861442
http://www.redfin.com/OR/Milwaukie/11707-SE-60th-Ave-97222/home/25938758
http://www.redfin.com/OR/Milwaukie/6436-SE-Aspen-St-97222/home/25938784
http://www.redfin.com/OR/Milwaukie/10592-SE-55th-Ave-97222/home/25979640
http://www.redfin.com/OR/Milwaukie/6305-SE-Plum-Dr-97222/home/25989203
http://www.redfin.com/OR/Milwaukie/11912-SE-Lamplighter-Ave-97222/home/25999569
http://www.redfin.com/OR/Milwaukie/11615-SE-56th-Ave-97222/home/26004148
http://www.redfin.com/OR/Milwaukie/6825-SE-Madrona-Dr-97222/home/26013441
http://www.redfin.com/OR/Milwaukie/5467-SE-Park-St-97222/home/26035921
http://www.redfin.com/OR/Milwaukie/10675-SE-59th-Ave-97222/home/26040860
http://www.redfin.com/OR/Milwaukie/11304-SE-60th-Ave-97222/home/26049467
http://www.redfin.com/OR/Milwaukie/11729-SE-63rd-Ave-97222/home/26052446
http://www.redfin.com/OR/Milwaukie/12325-SE-Sequoia-Ave-97222/home/26054447
http://www.redfin.com/OR/Milwaukie/11805-SE-Stanley-Ave-97222/home/26070467
http://www.redfin.com/OR/Milwaukie/12104-SE-Grove-Loop-97222/home/26072839

Kelver, Brett

From: Scott Jones <scott.jns@gmail.com>
Sent: Thursday, May 25, 2017 2:23 PM
To: Egner, Dennis; Kelver, Brett
Subject: 5.23.17 Rusk Rd. Hearing Comments

Hi Denny and Brett, thank you both for facilitating an informative and spirited PC hearing on Tuesday. I believe that this project is a critical benchmark for the future of the city, and should be given the appropriate amount of attention.

Following the staff, applicant and public testimony, I have some observations for deliberation. I will not be able to make it to the continuation of the hearing tonight (5.25.17), but would like to share my thoughts with the rest of the commissioners and staff:

The baseline evaluation for the density increase to a "PD" zone is "exceptional and outstanding" design. While I am vehemently pro-affordable housing and would like to see more development in this range for Milwaukie, I do not believe that there is anything exceptional about this design and did not feel the applicant was adequately prepared to convince the commission otherwise. I was disappointed in the lack of explanation regarding the context/quality of housing being built. I felt the applicant's presentation was perfunctory, and made little concern of the community's overwhelmingly negative response.

From an architectural perspective, this project lacks character, texture and regionalism. This could be found in any suburb, nationwide, and is not respectful of our city's context. The building masses present an unwieldy wall on Rusk Rd., facing down the neighbors, presenting a banal streetscape. Material selections are unoriginal and do not provide visual intrigue or variety. I would like to see more figure ground analysis of the surrounding area, as well as visual renderings of the streetscape including mature plantings, and neighborhood context.

From Section 19.311.1: **Purpose**
The purpose of a PD Planned Development Zone is:

A. To provide a more desirable environment than is possible through the strict application of Zoning Ordinance requirements;

B. To encourage greater flexibility of design and the application of new techniques in land development;

C. To provide a more efficient, aesthetic, and desirable use of public and private common open space;

D. To promote variety in the physical development pattern of the City; and

E. To encourage a mix of housing types and to allow a mix of residential and other land uses.

I would argue that 19.311.1 B and E are minimally addressed, while A, C and D are not met.

The applicant should be required to provide more diversity and creativity throughout the development, with more design configurations and break-up of massing. It is my opinion that this does not meet minimum standards or guidelines, let alone provide something exceptional for increased density consideration.

Verbiage from section 19.505.1 states "...standards are intended to promote attention to detail, human-scale design, street visibility, and privacy of adjacent properties, while affording flexibility to use a variety of architectural styles."

The floodplain concerns are real and critical. Regardless of meeting minimum requirements for site disturbance, this is already a FEMA recognized problem area, which we have observed over the past few years. The downstream impacts are an undue burden on established homeowners, and building in the floodplain (whether or not this is offset) is a potential disaster for future homeowners in this development. My preferred course of action is that floodplain analysis is done pre-fill, pre-1980's, and the inherited fill be mitigated prior to development of the site. Construction in floodplain

How are the home sites separated from the wetland? Fences? A 2:1 slope as shown on the proposed grading plan is very steep, and will inevitably erode over time without proper maintenance. Stormwater transport overwhelmingly relies on gravity feed, and for the western most home sites, it appears that surface water retention will not be directed to catch facilities per the proposed grading plan. This will result in pet waste, cleaning solvents, motor oil etc. to leach in to the wetland, subject to private homeowner management of "good stewardship". I would encourage staff to carefully evaluate the extent to which these homesites may introduce hazardous materials in to sensitive areas.

I am very concerned by the ODFW statement that this will significantly impact existing habitat. Introduction of human habitat in adjacency to natural habitat is historically negative. This is a critical part of the city's restoration efforts, especially in restoring free-flowing Kellogg Creek. The significant efforts done over the past decades could easily be undone by introducing this much density, hardscape, and by locating homes so close to the the HCA and riparian zones. Significant disturbance will occur during construction. I am well aware of requirements for erosion control and replantings, but feel that these are inadequate for such a sensitive site and overlap should not be allowed.

The traffic argument is well documented, and I won't do much more than acknowledge the community concerns, and suggest revised/repeated traffic studies. I would also suggest the physical establishment of a right turn lane to 224.

I am well aware of the housing pinch in all west coast metropolitan areas, and think that this project does satisfy a regional need. I do not believe that the city's job is price policing the market, as we are already seeing negative blowback in City of Portland due to inclusionary zoning, which will ultimately negatively impact the buyer. Professionally, I feel the anticipated valuation is high, especially considering the comps provided today of $200/sf for standalone single family. However, the market will speak to this during sale.

Many projections are anticipating a 2018 housing market slowdown coinciding with project completion. The applicant spoke honestly about the risks involved with a non-phased approach. The unfortunate and undue burden of these units not fetching market rate is a vacant wasteland of decaying homes in an established neighborhood.

All of this being said, I would suggest that this development move forward with significant considerations. Affordable housing is a critical part of our comp plan and vision statement, and we have an inherent responsibility to explore all options, and consider the disadvantages.

My specific suggestions:
-Do not approve the Planned Development density bonus, 92 home sites exceeds the practicable capacity of this site
-Require the applicant to explore the viability of 50-80 home sites per original zoning designation and present testimony as to if and why this is unviable

-Require applicant to present testimony regarding "highest and best use" of the site, other sites under consideration, and how this provides an exceptional and outstanding environment
-Require additional study into the architectural character and composition of the development as a whole, as well as the individual units
-Publicly provide more study of the architectural mass integration with the neighborhood, including composed images of proposed development and adjacent homes/natural areas
-Require, where possible by our code, building sites avoid established or proposed flood plains and HCA (pending error review from city on HCA boundaries)
-Address traffic (there are other voices who I believe are better suited than mine for these topics)
-Require turn lane on Rusk Rd. improvement
-Suggest that the city waive or offset ROW improvements to mitigate impacts on existing white oak stand

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I am planning to attend the next regularly scheduled PC meeting, if there is a continuation, and would be happy to expand on these thoughts and present them publicly.

Thank you,

-Scott Jones

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USA : +1.360.909.6970
Skype : Scott.jns

Kelver, Brett

From: Susan Barnes <susan.p.barnes@state.or.us>
Sent: Wednesday, May 24, 2017 12:42 PM
To: Kelver, Brett
Cc: Todd Alsbury
Subject: RE: Kellogg Creek Subdivision (PD-2017-001) - ODFW prelim comments

Brett -

You are welcome. Thank you again for receiving them so late in the day and distributing last night. Sounds like it was long night … with another one potentially tonight.

As for the question about Strategy (Priority) Habitats and the Oregon Conservation Strategy in general, here is a quick primer. I tried to keep it simple yet provide enough info to give you an idea how OCS priorities can be considered and applied during project planning, siting, design and implementation.

Strategy Habitats - Strategy Habitats are habitats of conservation concern within Oregon that provide important benefits to **Strategy Species**. There are 11 Strategy Habitats within the Oregon Conservation Strategy, **designated by ecoregion**. Each Strategy Habitat includes a general description, conservation overview, and a list of limiting factors and recommended approaches.

I suggest you watch a short 2-minute video that explains the Oregon Conservation Strategy (what it is and what it is not): http://www.oregonconservationstrategy.org/overview/

The Oregon Conservation Strategy is a blueprint for conservation in Oregon.

The Oregon Conservation Strategy (also referred to as the Conservation Strategy or Strategy) is an overarching state strategy for conserving fish and wildlife. It provides a shared set of priorities for addressing Oregon's conservation needs. The Conservation Strategy brings together the best available scientific information, and presents a menu of recommended voluntary actions and tools for all Oregonians to define their own conservation role. The goals of the Conservation Strategy are to maintain healthy fish and wildlife populations by maintaining and restoring functioning habitats, preventing declines of at-risk species, and reversing declines in these resources where possible.

The Oregon Conservation Strategy is Oregon's State Wildlife Action Plan (SWAP) and mechanism for receiving federal appropriations (called State Wildlife Grant Program or SWG money) for conserving sensitive or imperiled fish and wildlife species. The SWG Program is the only federal program with the explicit goal of preventing endangered species listings. All U.S. state fish and wildlife agencies were mandated by Congress in 2003 to develop a SWAP. SWAPs must be updated every 10 years and reviewed/approved by the U.S. Fish and Wildlife Service. While ODFW developed the Oregon Conservation Strategy first in 2006 and then updated it in late 2016, it was not created by ODFW alone. Private landowners, conservation groups, watershed councils, outdoor interest groups, universities, outdoor interest groups, tribes, municipalities, state and federal agencies, and many others contributed and provided review.

When thinking about a particular project / action, whatever it is, the Oregon Conservation Strategy provides information on conservation issues, priorities, and recommended actions to be considered. These can be queried by geographic location, habitat, and/or species of interest. For example:

Willamette Valley Ecoregion - http://www.oregonconservationstrategy.org/ecoregion/willamette-valley/

Conservation Opportunity Areas - http://www.oregonconservationstrategy.org/conservation-opportunity-areas/

Use the COMPASS mapping tool to get more detailed geospatial data at the 1 square mile hexagon scale

Flowing Water and Riparian Habitat - http://www.oregonconservationstrategy.org/strategy-habitat/riparian-habitats-and-flowing-water/

Western Painted Turtle - http://www.oregonconservationstrategy.org/strategy-species/western-painted-turtle/

If you have any Qs please let me know!

susan

Susan Barnes
Regional Conservation Biologist
West Region

Oregon Department of Fish and Wildlife
17330 SE Evelyn Street
Clackamas, OR 97015
Tel: (971)673-6010
Email: susan.p.barnes@state.or.us

From: Kelver, Brett [mailto:KelverB@milwaukieoregon.gov]
Sent: Wednesday, May 24, 2017 9:20 AM
To: Susan Barnes <susan.p.barnes@state.or.us>
Subject: RE: Kellogg Creek Subdivision (PD-2017-001) - ODFW prelim comments

Susan,

Thanks again for sending the ODFW comments yesterday. We were able to distribute them at the meeting last night, which was continued to Thursday (tomorrow, 5/25) at 6:30pm to allow for more public testimony. (We took testimony from a number of people but ran out of time at 10:15pm and decided to pick it up again tomorrow.)

One question came up about the ODFW comments. I was asked whether I knew what "Strategy (Priority) Habitats" means. Can you provide a simple explanation or point me to where I can learn more about it and/or the Oregon Conservation Strategy?

Thanks,
-Brett Kelver
Associate Planner

From: Susan Barnes [mailto:susan.p.barnes@state.or.us]
Sent: Tuesday, May 23, 2017 5:00 PM
To: Kelver, Brett <KelverB@milwaukieoregon.gov>
Cc: Todd Alsbury <todd.alsbury@state.or.us>
Subject: Kellogg Creek Subdivision (PD-2017-001) - ODFW prelim comments

Brett,

As a follow-up to our brief phone conversation yesterday… I am sending the following on behalf of Todd Alsbury:

Attachment 8

CITY OF MILWAUKIE
PLANNING COMMISSION
MINUTES
Milwaukie City Hall
10722 SE Main Street
TUESDAY, MAY 23, 2017
6:30 PM

COMMISSIONERS PRESENT
Greg Hemer, Chair
John Burns
Scott Jones
Kim Travis

STAFF PRESENT
Denny Egner, Planning Director
Brett Kelver, Associate Planner
Alex Roller, Engineering Tech II
Tim Ramis, City Attorney

COMMISSIONERS ABSENT
Adam Argo, Vice Chair
Shannah Anderson
Sherry Grau

1.0 Call to Order – Procedural Matters*
Chair Hemer called the meeting to order at 6:30 p.m. and read the conduct of meeting format into the record.

***Note**: The information presented constitutes summarized minutes only. The meeting video is available by clicking the Video link at http://www.milwaukieoregon.gov/meetings.*

2.0 Planning Commission Minutes
2.1 March 28, 2017

It was moved by Commissioner Burns and seconded by Commissioner Jones to approve the Planning Commission minutes for March 28, 2017 as presented. The motion passed unanimously.

3.0 Information Items

Denny Egner, Planning Director, reported City Council would end its study sessions at 6:15 pm to accommodate televising the Planning Commission meetings at 6:30 pm. He noted the Commission's worksession on the North Milwaukie Industrial Area Plan this Thursday.

4.0 Audience Participation –This is an opportunity for the public to comment on any item not on the agenda. There was none.

5.0 Public Hearings
5.1 Summary: Rusk Rd Planned Development
Applicant/Owner: Brownstone Development, Inc. / Turning Point Church
Address: 13333 SE Rusk Rd
File: PD-2017-01 (master file)
Staff: Brett Kelver

Chair Hemer called the public hearing to order and read the conduct of the quasi-judicial hearing format into the record.

Chair Hemer declared a potential conflict of interest in that he had worked with Ernie Green of Brownstone Development at Milwaukie Lumber five or six years ago. He did not feel he had a true conflict of interest, and could be impartial. No other conflicts of interest or ex parte contacts were declared.

Brett Kelver, Associate Planner, presented the staff report and reviewed key elements of the project and the requested variances. He noted the differences between the original proposal and the alternative plan submitted last week in response to suggestions and concerns from staff and public comments received. He addressed key issues as follows:

- The Habitat Conservation Area (HCA) designation would be corrected to include the entire White Oak grove, which the alternative plan accommodated. The applicant's topographic survey of the site revealed a greater floodplain area than shown on the FEMA map.
- Stormwater issues could be addressed onsite and traffic impacts would be addressed through the conditions of approval. Both site plans presented impacts to the natural resource area, which the applicant argued was necessary to provide more needed housing for the city. The applicant needed to show that alternatives with fewer impacts to the natural resources had been explored.
- The maximum base density allowed on the site was 80 units. The Commission would need to determine if the proposed plan for 92 units met the standard for "outstanding design" and "exceptional amenities" to warrant the applicant's requested 15% density bonus increase allowed through the planned development process.
- Staff believed the alternative plan was an improvement, but more information was needed for it to be thoroughly vetted and to better assess the impacts. The Commission was asked to identify any issues, questions, or concerns for staff to address at the continued hearing.

Staff addressed questions from the Commission with these key comments:

- Oregon Department of Transportation (ODOT) was aware of the intersection issues at Hwy 224 and Rusk Rd, but it was not a priority project. ODOT did not allow adjustments to signal times to mitigate traffic impacts. The increased traffic from the proposed development may increase the intersection's priority for ODOT, but a condition to add a right turn lane could help mitigate the impacts.
- The Planned Development designation was essentially a zone change that established the program and rules governing development on the site. The scope of the Commission's review included not only the site itself, but also the discretionary categories of "outstanding design" and "extraordinary amenities"; these features were intended to allow for increased density.

- Staff would have to research any requirements or liability related to previous fill on the site.
- Development review often required the balancing of conflicting policies, like affordable housing and the desire to protect habitat or the environment, as exemplified in this project. The Housing Needs Analysis found the City needed housing in this price range, but whether the project was too much development for the site was a valid question.
    - **Tim Ramis, City Attorney**, urged deciding the case based on the actual criteria before the Commission rather than a general discussion of policy. The key issue with respect to density was whether the "extraordinary design" features justified the density increase. He confirmed the design feature could be the extra affordable housing provided by the project.
- Staff confirmed that the proposed development would increase traffic on Rusk Rd during peak hours by a small percentage.

- If affordability of the units was part of why the development merited a density bonus, the Commission could recommend a condition for all or a certain percentage of the units be sold at a certain percentage of median income, adjusted over time, for example.
  - **Mr. Ramis** confirmed that if the applicant claimed a feature was a basis for approval, the feature became a de facto condition. He suggested asking the applicant to craft a condition that would be usable.
- For a Planned Development, the Commission could recommend shifting some of the development out of the floodplain into a more vertical development and using a mix of housing types, including multifamily and rowhouses, that would not ordinarily be allowed. During the preapplication process, staff suggested that the applicant look at alternative housing options.

Mr. Kelver noted comments received since the meeting materials were posted. He distributed a letter from Oregon Department of Fish & Wildlife (ODFW) received before the meeting, and noted he would research what "Oregon White Oak habitat are identified as strategy or priority habitat" as written in the letter meant.

Chair Hemer called for the applicant's presentation.

Serah Breakstone and Scott Emmens, DOWL, presented the applicant's proposal, and reviewed the features and benefits of the revised site plan.

- Eight of the 46 Oregon white oaks had to be removed to accommodate the street frontage improvements along Kellogg Creek Drive as required by the City. With the revised site plan, all the remaining trees would be retained.
- The floodplain mitigation proposed in the original site plan provided approximately 600 cu ft more of storage space than currently existed. The revised site plan would have much less impact to the floodplain and require less mitigation.

Jerry Johnson, Johnson Economics, stated he authored the City of Milwaukie's Housing Needs Analysis (HNA) and had reviewed the applicant's site plan for consistency with the HNA findings. He noted that with more people working in Milwaukie than living in Milwaukie, the area had an inherent demand for housing. The proposed attached housing development would provide more affordable housing to better match demand. He addressed Commissioner questions as follows:

- Guidelines for determining affordability of owner-occupied units were not available. Instituting a program to require affordable units was difficult given a need to clearly define "affordable," administering the program over time, and shared appreciation mortgage issues. Ultimately, product pricing becomes what the market would bear. Attached housing was less desirable than detached housing, but was more affordable.
- His finding was that about 68% of the housing demand in Milwaukie was for housing priced at $380,000 and below.
- Providing 92 units at a lower price for affordable housing for moderate incomes was better than 80 units at a higher price, due to the lower land cost per lot and because the developer would have more flexibility to lower the price or to make more margin if the price stayed the same.
- The HNA calculation included 80 units on the R-3 portion of the property. Less than one-third of the city's housing capacity was on vacant property, and most was assumed as infill redevelopment of other properties.

Zach Horowitz, Kittleson & Associates, confirmed the traffic impact study had a problem with

respect to the right-turn lane at the Rusk Road/Hwy 224 intersection. However, regardless of how the northbound approach on Rusk Rd was configured, it would meet ODOT's capacity standard under both AM and PM peak hour conditions.

- Kittleson collected additional traffic data at the Hwy 224/Webster Rd intersection. He described the results of the study, noting an 8% increase in traffic. This count was done while school was in session, unlike the prior traffic study. He was confident the 6-8% increase was reflective of typical traffic conditions at the site.
- Congestion levels would depend on which direction one was traveling. For example, westbound travelers on Hwy 224 during the morning peak hour experienced significantly more delay than eastbound traffic.
- The development would increase traffic on Rusk Rd, both north and southbound traffic south of Hwy 224, by approximately 10% during the AM peak hour and approximately 6% during the PM peak hour.
- He confirmed the traffic increase rates included a yearly inflation assumption of a .61% increase as identified in the City's Transportation System Plan (TSP).

Ms. Breakstone continued the applicant's presentation, noting several concerns about the conditions of approval and requested revisions as follows:

- Reevaluate or remove the condition requiring a turn lane on Rusk Rd at Hwy 224. Based on the Kittleson analysis and review by the City and DKS, the applicant understood there was some disagreement about whether the turn lane was warranted.
- Condition 2.C.f required a public easement on the soft surface trail through the site. The trail was specifically designed to minimize impacts to the natural area with its pervious surface and 30-in width. While the applicant did not object to making it a public easement, the trail design did not meet the City's standards for a public pedestrian connection.
  - The applicant would be willing to discuss North Clackamas Parks & Recreation District (NCPRD) taking ownership or maintaining the trail and adjacent habitat longterm as opposed to the HOA doing so, as had been discussed.
  - She confirmed the trail was one of the outstanding and exceptional design amenities of the planned development. There was no intention to close off the path to the public. The question was whether making the trail a public easement would change the design.
- **Mr. Emmens** commented:
  - He had received clarification about the necessary FEMA map revisions discussed in Condition 4.A.
  - Condition 6.A discussed a six-month expiration date of the approval and a potential Planning Commission review to consider whether an approval extension was in the public interest. With an October approval, six months was a tight deadline to begin construction. Since the other approvals were good for two years, it seemed reasonable to remove the condition or revise the deadline to match the two-year expiration period for the other applications.

The applicant's team responded to questions from the Commission.

- **Mr. Emmens** described how the stormwater runoff from all impervious surfaces, including rooftops, roadways, and sidewalks, would be collected and delivered to the biofiltration ponds, and then discharged into the wetlands.
- **Mr. Emmens** preferred the revised site plan because of its ability to save the white oaks and provide visual access to the wetlands and natural area.
- The range of unit values had been redistributed but not changed with the revised site plan because while the number of units backing up to the open space was reduced, the natural

space was also opened up to the central units.

- **Ms. Breakstone** explained the developer retained the 92 units in the revised plan because that number made the project economically feasible. Although the team looked at scenarios to reduce the number of lots, the revised site plan balanced all the different interests without losing additional units.
- Commissioners expressed concerns about whether the proposal met the character of the neighborhood and community. Illustrations showing how the various design elements interacted within the site and the context of the surrounding neighborhoods were requested. Fewer units would provide more break-up between the masses that might possibly integrate better with the community.
  - **Ms. Breakstone** acknowledged the development was denser than the surrounding neighborhood; however, the site was well-buffered from the adjacent residential neighborhoods by the natural area buffers, the church, and the roads. She believed the site's design and its natural location addressed the impacts to the neighborhood's character ~~pretty~~ well.
- **Mr. Emmens** clarified that site would be constructed in one phase, which would eliminate the need to construct a temporary road for the church, although construction of the homes could be spread out over two seasons.
- **Mr. Emmens** said that stormwater elements like rain gardens or pervious pavement were considered "outstanding" and "exceptional" and went beyond the minimum requirements.
  - **Mr. Emmens** explained the stormwater facilities were modeled after the City of Portland requirements, which incorporated the latest treatment technology, but would remain outside the flood elevations. He confirmed pervious pavement was an option.
- Regarding ODFW concern about the development's impact on the critical salmon and steelhead spawning habitat in Mt Scott Creek, the applicant's water resource engineer followed the Standard Local Operating Procedures for Endangered Species (SLOPES)) V process and all the criteria set forth by the National Marine and Fisheries Service.
- **Ms. Breakstone** was unsure whether consideration had been given to green building design elements. Doing so would potentially impact the price point to the extent that the homes would become a different product.

Chair Hemer called for public testimony.

In Support – None

In Opposition

Dorothea Van Bockel, 13391 SE Ruscliff Ln, stated she was not opposed to the development but had a number of concerns. She valued affordable housing in general, but encouraged the Commission to continue asking questions about design, the homes' quality in construction, access, and what was truly affordable. She also noted flooding and traffic issues, given the limited capacity of the floodplain and the school bus traffic throughout the day.

Allison Lautt-Markwart, 13430 SE Ruscliff Ln, expressed concern about the limited space for queuing when turning right off Ruscliff Ln to cross the highway, the impact on the flood zones, and the existing traffic congestion that already existed due to multiple activities at the church, athletic fields, dog park, and the Milwaukie Center.

Vince Alvarez, 12671 SE Where Else Ln, **Chair, Lake Road Neighborhood District Association (NDA)**. He liked the revised site plan but was concerned about flooding issues. He

said impacting the flood zones needed to be a priority as increased development in the area would only make it worse. Traffic issues were also a concern for the NDA, so it was important to consider and possibly do more traffic studies.

Steve Tandy, 13330 SE Rusk Rd, expressed concern about the impact of additional traffic on the existing traffic from the three churches, athletic fields, and school buses traveling to Rusk Rd each day. He was concerned about emergency vehicle accessibility as well as the impact of the development given the inadequate Rusk Rd/Hwy 224 intersection. He believed in affordable housing, but did not see $400,000 as affordable housing.

Steve Sterhan, 14000 SE Rusk Rd, noted that Rusk Rd had been used as a bypass since ODOT's updates on I-205. He had talked to Troy Johnson at Clackamas County about how narrow Rusk Rd was, noting he and his wife had witnessed more than 20 accidents in eight years at the "Deadman's Corner" intersection. With an additional 200 cars on the road a traffic-related death was inevitable. He confirmed he believed in affordable housing.

Dick Shook, 5418 SE Casa Del Rey Dr, read a statement expressing concerns as a 40-year resident on Mt Scott Creek about the impacts of additional impervious surface on Mt Scott and Camas Creeks, wetlands, and local springs, as well as increased flooding. With additional housing, parks must be maintained to provide outdoor recreation. The subject area should have been and still could be added to NCPRD. He felt the proposed number of units far exceeded the number that could be accommodated.

Lois Herring, 8945 SE 29th Ave, discussed her concerns with the November traffic study, and asked that it be redone when the nearby schools were in session. The applicant assumed townhouses would generate half the traffic of single-family detached housing, but she believed the proposed units would have at least one to two cars each. No public transit was available unless one crossed Rusk Rd, which was not pedestrian-friendly. The number of units should be reduced.

Judy Sherley, 5804 SE Kellogg Creek Dr, agreed NCPRD should take over the wetlands. She discussed traffic issues for Kellogg Creek Dr residents. She urged the Commission to require new traffic studies, both when school was in session and on a summer weekend, and asked for traffic signal improvements to Kellogg Creek Dr and at the Rusk Rd/Hwy 224 intersection. She believed the proposal should be reduce to 50 to 80 units.

Joseph Edge, Director, Oak Grove Community Council, stated the Council was the Clackamas County Community Planning Organization (CPO) representing the unincorporated residents across from the proposed development. The existing traffic study understated the actual traffic impacts considering the context of the site, transportation alternatives available, and destinations accessible through alternate modes. An alternative traffic impact study should be done that treated the townhouse units as single-family homes, or at least assign one vehicle per dwelling unit, given the proposed price point could likely require vehicle commuting. He also requested a recalculation of the stormwater facility needs based on the site in its predevelopment.

- The CPO had understood that development was technically feasible in the R-3 zone, but they were not convinced the proposal met the standard of "outstanding design". The CPO wanted to see some creative alternative plans in accordance with the variance request, including multifamily housing, which would be more affordable as workforce housing.

Erica Toussaint, 12399 SE Oatfield Rd, agreed with the concerns expressed about the white oaks and traffic, noting nothing was discussed about the traffic impacts on Aldercrest and Oatfield Rds. She was concerned about fill, noting flooding occurred on her property after the 1995 fill on this property. She did not believe the proposed homes addressed the need for affordable housing in Milwaukie. With one access road, residents of the proposed development would have worse traffic issues than current residents. She was concerned about the impacts on North Clackamas Park, adding the City needed to consider the use of nearby places. After construction was completed, she hoped there was some guarantee that NCPRD would take over the wetlands and trails instead of the HOA.

Andrew Collins-Anderson, Executive Director, North Clackamas Urban Watershed Council (NCUWC), 2416 SE Lake Rd, noted the subject property represented some of the last remaining quality wetlands for Mt Scott Creek, which had been highly developed. NCUWC had worked with Turning Point Church to do site restoration work through the Streamside Stewards Program funded through the Oregon Watershed Enhancement Board (OWEB) and Metro. It did not believe the applicant's proposed mitigation was adequate, as it seemed redundant. Management of these natural areas was critical, and HOAs did not have the necessary resources. He asked that the applicant be required to provide alternatives that did not impact the irreplaceable HCA or water quality resources (WQRs).

Laura Hickman, 13786 SE Briarfield Ct, noted Alder Creek Middle School let out at 4:05 pm, which contributed to the traffic impacts. She discussed concerns about bicycle and pedestrian safety, noting the North Clackamas School District's assessment of Rusk Rd's walkability as the most hazardous walking route in the Alder Creek area. She urged the Commission to look at the existing conditions. She confirmed she believed in affordable housing, but not in moving families into an already hazardous walking and biking situation.

Chris Runyard, 2325 NE 32nd Ct, Portland, explained he did habitat restoration on streams and wetlands in the region, and worked on this property for NCUWC. He concurred with the ODFW and opposed cutting down any of the old growth Oregon white oaks, which were irreplaceable and sat on the remnants of an old wetland forest. There should be no impact to the wetland, HCA, WQR, or the lowlands. The applicant was aggressive about retaining 92 units, but 70 units could all be outside of the natural resource. He discussed the flooding issues. He noted some of the applicant's proposed mitigation had already been done. He believed the lowlands should be managed by NCPRD; HOAs did not have the expertise to do it right.

Greg Baartz-Bowman, 10677 SE 28th Ave, Milwaukie, acknowledged the need for housing but argued it should not be at the expense of the wetlands and old growth Oregon white oaks. He noted that Milwaukie citizens had chosen to protect old growth oaks in the recent past, and added 97% of old growth Oregon white oaks had been cut down in the valley over the last 150 years. The community wanted affordable housing, the Oregon white oaks, and the wetlands

Chair Hemer noted all the public testimony cards that were submitted would be retained and public testimony would continue at the next meeting.

It was moved by Commissioner Travis and seconded by Commissioner Burns to continue the public hearing for PD-2017-001 for 13333 SE Rusk Rd to a date certain of May 25, 2017. The motion passed unanimously.

6.0 Worksession Items - None

7.0 Planning Department Other Business/Updates - None

8.0 Planning Commission Committee Updates and Discussion Items – This is an opportunity for comment or discussion for items not on the agenda.

9.0 Forecast for Future Meetings:

May 25, 2017
1. Special Session: North Milwaukie Industrial Area Framework Plan and Implementation Strategy

June 23, 2017
1. Public Hearing: PD-2017-002 13333 SE Rusk Rd- *continued tentative*
2. Public Hearing: DEV-2017-006/VR-2017-002 29th Ave Triplex
3. Public Hearing: S-2017-002 4217 SE Railroad Ave
4. Public Hearing: VR-2017-004 11630 SE 27th Ave ADU

Meeting adjourned at approximately 10:06 pm.

Respectfully submitted,

Alicia Martin, Administrative Specialist II

_____
Greg Hemer, Chair

CLACKAMAS COUNTY

DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
DEVELOPMENT SERVICES BUILDING
150 BEAVERCREEK ROAD | OREGON CITY, OR 97045

MEMORANDUM

TO: Brett Kelver, City of Milwaukie
FROM: Kenneth Kent, Senior Planner, Clackamas County Engineering,
DATE: July 26, 2017
RE: PD-2017-001 Kellogg Creek Subdivision

This office has the following additional comments pertaining to this proposal:

1. By reducing access for the development to a single street connection to Kellogg Creek Drive, use of the church driveway on Rusk Road is likely to increase. Access to the church will involve a longer travel route through the neighborhood. In addition, residents may choose to use the Rusk driveway through the church parking lot to access Street B or Alley E. As noted previously in our comments, even with narrowing of the Rusk driveway and use of signage, the driveway may still be used as an exit.

   The applicant's narrative indicates that Alley C would be gated at the church property, but it appears Street B will have open access to the church property. The supplemental traffic report does not discuss the driveway from the church property to SE Rusk Road. Because the revised access plan for the development will further increase vehicle trips at the Rusk Road driveway, the County continues to recommend closure of the driveway.

2. To preserve existing trees along SE Kellogg Creek Drive, the preliminary plat includes a revision to the street improvements west of Street A, eliminating the sidewalk and relocating the crosswalk. A striped bike lane is shown along this portion of the frontage. As provided in the County's previous comments, a bike lane on a local road is not recommended. In order to preserve the White Oak trees, the County would consider a modification to our standards to allow a curb-tight sidewalk along this portion of the project frontage. Without the bike lane, the sidewalk improvements would be no closer to the trees than is shown in the current proposal. It should also be noted that the full street width is required to extend to the westerly project boundary, tapering from that point to the existing street width.

Kelver, Brett

From: nancylarabeepierce@comcast.net
Sent: Saturday, July 29, 2017 9:53 AM
To: Kelver, Brett
Subject: Rusk Road housing development

Greetings-
As a homeowner in Oak Grove, I am seeing an alarming increase in poorly thought out development. The proposed construction of housing behind Turning Point church, is one such.
I could see 1/3 or maybe half the number proposed, might be supportable, but 80 or 90 is outrageous. Most of the properties in this area with any acreage,are being divided. The streets, sewage, water, electricity and fire/police support, however is not keeping up. In a lot of ways, it cannot match the new requirements these developments produce.
We would have gridlock on the streets around this development and road rage with neighbor frustration leading to damage. The study suggesting .5 car trips from these proposed units, is ludicrous-they would require two wage earners and a MINIMUM of 2 trips-God! what a mess!!
I'm sure local government is already counting the taxes they expect from new construction, but please, do not lose sight of those already here(paying taxes). If this developer can pay all that is required to increase all : water supply, sewer capacity, more police and fire stations, large electric conduits AND roads (a large opening onto beleaguered 224), and is protecting the natural resources and promises no flooding-GREAT!! Especially since this will be affordable housing, right?? Costing no more than 250k$, right??
Development-yes. Just ANY development NO!!

Please ask this developer to go back to planning with a smaller number of units and better all-over plan for infrastructure, most especially TRAFFIC
.
Thank you very much,
Nancy Pierce
4775 SE Concord Rd
Oak Grove OR

8/23/17

Comments for the Kellogg Creek Development Project at the Turning Point Church
Submitted by Chris Runyard,

Summary:
-The proposed project is too big for this site.
-No impact should be allowed in the WQR, HCA, wetlands or wet lowlands of this property.
-All medium-old growth White Oaks and associated habitat (Camas etc) should be preserved intact.

Discussion:
According to previous watershed surveys, Mt. Scott Creek has been classified as “severely impaired” and “impaired” in many or most of it's length. Extreme flooding occurs a few yards upstream on Rusk Rd. where FEMA will be buying properties along the creek. A few Coho, Steelhead and Cutthroat still swim these waters.

This project proposes to trade wetlands and sensitive areas for mitigated ponds or wetlands. This creek is in no condition to make these kind of trade-offs. The City of Milwaujkie needs a lot more land to retain flashy storm water. The entire low lands of this site are needed to hold more rain water, not be bargained away for more houses. This watershed can no longer trade low lands for mitigated wetlands. Status quo still leaves Milwaukie with an “impaired” watershed.

The following was my comment for the Planning Commission submitted in June and still holds true today:
I believe it is not the role of the city to ensure maximum profits for the developer. It is however, the role of the city to protect the public good. Wetlands, trees, housing and reduced flooding are the public good. I would like to see the Planning Commission and city staff less concerned with developer profit and more concerned about the city's natural treasures. Draw a line around what you don't want destroyed and they can build on the rest, not the other way around. 92 units is too many for this site!

This plan has too big of a footprint on this site. I urge the City Council to make all of the sensitive areas off limits to building and bulldozing. 92 units may be possible on this site, but not under this plan.

Kelver, Brett

From: Gene Zaharie <zaharie@comcast.net>
Sent: Friday, August 25, 2017 8:06 PM
To: Kelver, Brett
Subject: Re: call for comments on PD-2017-001 (Rusk Rd planned development)

Brett,

We are on vacation in Calgary Alberta. I only have my iPad and don't know how to make this a separate document. My comments are below, hopefully you can use them.

Mary Zellharie

City of Milwaukie
City Council Members

My name is Mary Zellharie and I live in the Hector Campbell neighborhood. For more than a year, my husband, Gene Zaharie and I have been working to improve the housing situation in Clackamas County. We have meet with several of you and other city employees. We understand and support the need for additional housing -- various kinds or levels of housing from shelters to section 8 to condos. We supports the efforts you are making. Therefore it surprises me, that I am not writing in support of the proposed housing on Rusk Road. I have driven by the Turning Point church, the Milwaukie Center and the Clackamas Park and I cannot support the additional traffic that would invade this area with the addition of 82 or more apts.

Please continue your work on housing. We are a long way from meeting the needs of our community. But find another place for this kind of housing.

Mary Zellharie
Sent from my iPad

On Aug 25, 2017, at 5:48 PM, Kelver, Brett <KelverB@milwaukieoregon.gov> wrote:

> Hello,
>
> The staff report and packet materials for the Sept 5 public hearing by the Milwaukie City Council will be sent out this coming Tuesday, Aug 29. If you would like to submit comments in time to have them included in the packet mailing, please send them to me by 4:00 pm on Monday, Aug 28.
>
> You are welcome to submit comments after Monday, and we will forward them along to the Council in batches in advance of the Sept 5 hearing—but you'll give the Council more time to consider them if you get them to us on Monday to go in the packet.
>
> You are also welcome to attend the Council hearing on Sept 5 and present oral testimony. The regular session will begin at 6:00pm that night, at Milwaukie City Hall.

Kelver, Brett

From: JUDY SHERLEY <SJUDY39@msn.com>
Sent: Sunday, August 27, 2017 6:11 PM
To: Kelver, Brett
Subject: Re: call for comments on PD-2017-001 (Rusk Rd planned development)
Attachments: sep. 5 city hall speech (AutoRecovered).docx

thank you Brett for your good communication. i really appreciate it. attached please find my reaponse for the Planning Commission. i can safely say that my husband, Michael Sherley of same address feels the same as my comments reflect.

Regards,

5804 SE Kellogg Creek Drive
Milwaukie, OR

Judy Sherley

From: Kelver, Brett <KelverB@milwaukieoregon.gov>
Sent: Friday, August 25, 2017 4:48 PM
To: Kelver, Brett
Cc: Egner, Dennis; Martin, Alicia
Subject: call for comments on PD-2017-001 (Rusk Rd planned development)

Hello,

The staff report and packet materials for the Sept 5 public hearing by the Milwaukie City Council will be sent out this coming Tuesday, Aug 29. If you would like to submit comments in time to have them included in the packet mailing, please send them to me by 4:00 pm on Monday, Aug 28.

You are welcome to submit comments after Monday, and we will forward them along to the Council in batches in advance of the Sept 5 hearing—but you'll give the Council more time to consider them if you get them to us on Monday to go in the packet.

You are also welcome to attend the Council hearing on Sept 5 and present oral testimony. The regular session will begin at 6:00pm that night, at Milwaukie City Hall.

Please let me know if you have any questions.

BRETT KELVER
Associate Planner
City of Milwaukie
o: 503.786.7657 f: 503.774.8236
6101 SE Johnson Creek Blvd • Milwaukie, OR 97206

Thank you for this opportunity to speak

My name is Judy Sherley and I live on 5804 SE Kellogg Creek Drive, Milwaukie, just across the street from the proposed development at 13333 SE Rusk Road. It is no surprise that I am against this proposed development.

I spoke to the Planning Commission at City Hall when we had that opportunity, along with many of my neighbors and friends. We had so many people speaking that, as I'm sure you are aware, they had to schedule another hearing date to hear all of the public testimony. I think you must be aware that NONE of the public testimony was in favor of this development.

Initially my main concern was traffic on Rusk Rd. and Kellogg Creek Drive. Below I will discuss this but I also want to state my opposition to this whole development taking place in and on and next to the wetlands and beautiful natural grounds on Rusk Road. As I listened to the testimony of others, this need to preserve what little natural beauty we still have in Milwaukie became all the more important to me.

I have never been a 'tree hugger' or environmental activist; I come from 3 generations of Oregonians that are proud of our timber industry, and I come from an agricultural family. But as I listened to the testimony of others at the Planning commission mtg.s several months ago, I realized that it would be a tragedy to build on this piece of land. There are other pieces of dirt in the area. Places totally fitting for housing. But we cannot recreate a piece of property with the natural wetlands such as

already exists here. We cannot recreate the old oak trees, the winding creek. This is a small piece of paradise in the middle of our beautiful little city. If we're going to develop it at all, let's use it as a park or something that doesn't add more human impact such as more housing that will degrade it. We are so lucky to have the Milwaukie center right there, the rose garden, and N. Clackamas park. Let's allow these natural wetlands to remain so and not waste it on simply more development. Once it's gone, it's gone. I don't care how many laws are being used here to 'limit' or mitigate the damage. Let's admit the development will damage something that once destroyed, mankind cannot re-create. It really is very simple.

Now, because I don't expect you to listen to what I just said, and I fully expect unfortunately that this development will go through, I beg you to consider at least limiting the amt. of homes that will be built. Ninety-two homes are just too many on this little piece of land. If we're going to keep any kind of integrity at all, please limit the size significantly.

I will now respond to the traffic implications of 92 more homes, and therefore 200 more cars that will be accessing Kellogg Creek Drive and Rusk Road.

As a homeowner on Kellogg Creek Drive, I can say that ***the traffic on Kellogg Creek Drive during the summer months is currently*** an extreme danger to the residents and their children.

We are unable to get in and out of our driveways when there are events and baseball games at N. Clackamas Park, from June through August, due to the many cars attempting to access Rusk Rd. from Kellogg Creek Drive.

In my conversations with every homeowner on Rusk Road south of Hwy 224, to a person, they all without exception, find the traffic on Rusk Road even during **non-summer** months, hazardous, as Rusk Road is used as a thoroughfare between hwy. 224 and Thiesen/Webster/McLoughlin roads. Increasing this amount by 100 + cars due to this proposed development, will only increase this risk.

The following is what I spoke about before the Planning Commission:

"On behalf of the homeowners on Rusk Road, Kellogg Creek Drive, and the surrounding neighborhoods, we would like to propose several ideas for the City of Milwaukie and Brownstone Development, Inc. to consider re: traffic mitigation:

1. A new traffic study to be conducted before the 2016-2017 school year is out, on a date that North Clackamas Schools are actually in session.
2. An additional traffic study to be done this summer, 2017, sometime between the months of June and September, including weekends, in order to reflect the increased traffic on Kellogg Creek Drive secondary to the increased park use at North Clackamas Park.

3. A three-way light or a roundabout at Kellogg Creek Drive and Rusk Road
4. An improvement at Rusk Road and Hwy 224 to include right and left turn lanes, a center lane and travel lanes.
5. Although we understand that Rusk Road South of Kellogg Creek Drive is not in the City of Milwaukie's jurisdiction, but in the Clackamas County's jurisdiction, we would like to go on record as suggesting the placement of speed bumps on this section of Rusk Road, to hopefully decrease the speed of the auto traffic, and to reduce the hazards for pedestrians and bicyclists."

These suggestions still stand. (and I believe they did another traffic study, but they are still using the incorrect rubrics! These homes should not be compared with inner city homes of similar build. There is not public transportation available to the degree of inner city requirements; all these homeowners WILL be using their own cars to travel. I don't care what Brownstone Development says about this.)

But mostly, I beg you to really listen to the public outcry that is against this proposed development. You are our elected individuals and we expect, dare I say, hope, that you will listen to the people you represent.

Thank you very much for this opportunity to share my concerns.

Kelver, Brett

From: Edward Hacmac <ehacmac@hotmail.com>
Sent: Monday, August 28, 2017 3:49 PM
To: Kelver, Brett
Subject: Re: call for comments on PD-2017-001 (Rusk Rd planned development)
Attachments: Council letter on development.docx

Please include the letter to the City Council with the packet you are preparing

Edward Hacmac, DC Portland, OR

Electronic Privacy Notice. This e-mail, and any attachments, contains information that is, or may be, covered by the Electronic Communications Privacy Act, 18 U.S.C. 2510-2521, and is also confidential and proprietary in nature. If you are not the intended recipient, please be advised that you are legally prohibited from retaining, using, copying, distributing, or otherwise disclosing this information in any manner. Instead, please reply to the sender that you have received this communication in error, and then immediately delete it. Thank you in advance for your cooperation.

From: Kelver, Brett <KelverB@milwaukieoregon.gov>
Sent: Friday, August 25, 2017 4:48 PM
To: Kelver, Brett
Cc: Egner, Dennis; Martin, Alicia
Subject: call for comments on PD-2017-001 (Rusk Rd planned development)

Hello,

The staff report and packet materials for the Sept 5 public hearing by the Milwaukie City Council will be sent out this coming Tuesday, Aug 29. If you would like to submit comments in time to have them included in the packet mailing, please send them to me by 4:00 pm on Monday, Aug 28.

You are welcome to submit comments after Monday, and we will forward them along to the Council in batches in advance of the Sept 5 hearing—but you'll give the Council more time to consider them if you get them to us on Monday to go in the packet.

You are also welcome to attend the Council hearing on Sept 5 and present oral testimony. The regular session will begin at 6:00pm that night, at Milwaukie City Hall.

Please let me know if you have any questions.

BRETT KELVER
Associate Planner
City of Milwaukie
o: 503.786.7657 f: 503.774.8236
6101 SE Johnson Creek Blvd • Milwaukie, OR 97206

Hands On Chiropractic
13033 SE Rusk Rd.
Milwaukie, OR 97222
503.656.8098

August 28, 2017

Milwaukie City Council

Dear Councilors,

I am commenting on the Rusk Rd. townhouse development proposal, PD-2017-001.

My business is located across the highway from the development and my home is located off Rusk Rd. on Eastbrook Drive, outside the city limits. Therefore, I have expectations that the development will have a significant impact on our family and our business.

Business-wise, I will welcome new residents in this area and as such, welcome residential development. But I question whether the infrastructure is capable of handling the stress of hundreds of additional trips through the Highway intersection with the current traffic signaling patterns. But that is an ODOT problem, so why should the Council care?

Community-wise, I am dismayed that the proposed development will most greatly affect the traffic patterns on Rusk Rd. both directions from the Kellogg Creek Drive intersection. Rusk Road is already the most dangerous road in our community, according to the NCSD, for pedestrians. But the dangerous parts of Rusk are outside the city limits, so why should the Council care?

I think you should care because the quality of life for the current residents as well as these new residents will be greatly impacted by the proposed non-development of adequate transportation infrastructure. This development has proposed a bizarrely limited access, on and off a dead-end street onto a busy county arterial without a light or four-way stop, into an already congested interchange involving local residents, increasing numbers of commuters, parents transporting students to area schools and parks, and dozens of school buses making hundreds of trips throughout the day. And then there is the busiest Meals-on-Wheels program around and hundreds (thousands?) of daily visitors to the Milwaukie Center and the North Clackamas Park.

This thing can be fixed, if the city, county, state, the current land-owner (Turning Point Church) and developers work together. If it were me, I would require the Church to give up frontage along Rusk Rd. so the street can be widened with two northbound lanes from Kellogg Creek Drive to the Highway. I would require the city, county and Church to put in a Round-about intersection at the junction of Rusk Rd. and Kellogg Creek Drive. I would get the state to lengthen the right turn only lane off the Highway onto Rusk. And while I was at it, I would work with the county to put sidewalks along Rusk Rd. between Kellogg Creek Drive and Aldercrest Rd.

It is a big list, **but the most important of all would be the Round-about intersection**. It would allow current traffic to continue flowing with minor slowing (which is good!) It would allow access to and from Kellogg Creek Drive and the new development in a safe and orderly manner, with yield-signs rather than a dangerous one-way stop sign. AND, it would give the Church and the development a second egress point which would GREATLY increase the livability of the community and GREATLY enhance the ability of emergency vehicles and school buses to serve this new community. It could be the answer to many objectional factors of this proposed development.

Respectfully,
Dr. Edward Hacmac

Kelver, Brett

From: Laura Hickman <laurajhickman@gmail.com>
Sent: Wednesday, August 30, 2017 10:13 AM
To: Kelver, Brett
Subject: Public Comment for the City Council RE: Rusk Road Development
Attachments: Rusk Road Development.docx

Mr. Kelver,

Please submit the attached to the City Council regarding the Proposed Rusk Road Development.

Thank you,
Laura Hickman

Dear Milwaukie City Council,

I understand the density bonus allows the discretion to consider whether the development offers features that are considered "outstanding" enough to outweigh the potential negative aspects of overdeveloping the land relative to the current zoning.

As a Rusk Road area resident for 10 years, like many others I am very concerned about (1) the environmental impact (flooding, habitat) even with the developer's self-serving transfer of land to the Parks District, (2) the fact that even the developer cannot show that this will really be "affordable" housing, and (3) the very substantial underestimation of the additional traffic on Rusk Road. On the latter point, the assumptions built in to the traffic study simply do not align with the reality of this isolated location and the anticipated price range of this development.

In short, it defies common sense to assume folks living here will have only one car and Rusk Road intersections will be within acceptable limits if this development were allowed as proposed.

All of this said, I would like to especially call your attention to an pronounced hazard that has received no real consideration in the previous process: pedestrian and cyclist safety on Rusk Road.

It is critical to look at some objective criteria which demonstrate this point. Please see the attached North Clackamas School District's 2017 Walk Zone report. This is a link to the report and I encourage you to read it:
http://www.nclack.k12.or.us/sites/default/files/fileattachments/transportation_department/page/2411/transportation_supplemental_plan_2017.pdf

You'll see that the stretch of Rusk Road between 224 and Aldercrest is tied for the most hazardous stretch of road the District evaluated for Alder Creek Middle School. The District uses trained professionals to assess the roadways along a set of nine objective criteria developed by the Oregon Department of Education. This stretch of Rusk Road scored so high on overall hazard that it's not even rated safe for high schoolers to walk.

Rusk Road was scored **as poorly as a road can** for usable shoulder space, the condition of the shoulder (because it several places there is no shoulder at all), and the visibility of drivers going both directions on the road – because contains both blind corners and blind hills.

The school district assessment was on the walkability of Rusk Road. But all of these same conditions make biking just as hazardous as walking, if not more so.

The proposed development would make this objectively very hazardous situation objectively worse. The attention in the application is focused on car trips going that short distance between the development and 224. The major concern for pediatricians and cyclist safety, however, is headed the other direction. There will be dramatically more trips up Rusk Road between this development site and Aldercrest. Among the attractions is the only grocery store in the area and unquestionably overwhelmed intersections at 224

Existing residents like my family around Rusk Road are already taking their lives in hands to try to walk or bike to enjoy North Clackamas Park or to walk or bike to Alder Creek Middle School for school or all the many community activities/sports held there year around for families and kids of all ages. This whole situation currently becomes dramatically more terrifying on Rusk Road during the big influx of softball season traffic.

Without question, the proposed development would considerably worsen the risk of being hit by a car for the families that currently live along Rusk Road. If the increased pediatrician and cyclist fatality risk to the existing families in the neighborhood is not considered sufficient to outweigh whatever features someone might deem as "outstanding," there must certainly be some at least moral and ethical obligation to consider the substantial risk to the residents of this new development.

According to the developer's own testimony before the Planning Commission, this development will largely attract young families. These would be new Milwaukie families placed right into the middle of these same objectively hazardous conditions. I ask that you read the School District's Walk Zone report and that you give this issue some real consideration.

But most importantly, I ask that you bring your own families and park in the church parking lot some afternoon around 4:30 or 5:00. Hold your own child's hand, walk your own dog, or attempt to bike up Rusk Road. Simply try to walk or ride to the closest intersecting street (Eric Road). Attempt to cross Rusk (at the bottom of this blind hill), like many families who are attempting to walk over the middle school without walking along the shoulder of 224.

Now imagine adding 92 more homes, with at least twice that many cars. You'll see immediately why the current neighbors are very considered about this proposal.

Kelver, Brett

From: Rowda Skinner <shelbyroad@gmail.com>
Sent: Wednesday, August 30, 2017 12:27 PM
To: Kelver, Brett
Subject: Proposed 92 unit development off of Rusk Rd

Good Afternoon Brett,

I hope I am not too late submitting my concerns related to the proposed 92 unit development off of Rusk Rd.

I am in opposition of this plan due to the following concerns.

1. Impact on traffic - Congestion on 224 continues to rise and there aren't many public transit options. It's also not a walk-able area; with lack of sidewalks and shopping nearby. I am concerned the additional 92 units would make traffic in the area much worse. Especially since there is another plot of land off of Ruscliffe Rd. zoned for development.

2. Impact on schools - I'm not sure what is estimated for child/household is with this development but I am concerned it could be a burden on the elementary and middle schools in the area.

3. Impact on the environment - My final concern is regarding the North Clackamas Park natural area. I fear this development would cause displacement of plant and wildlife. I value the natural beauty of our neighborhood and would be very disappointed to see it diminish one development at a time.

Thank you,
Rowda Skinner

Kelver, Brett

From: Joseph Edge <joseph.edge@gmail.com>
Sent: Friday, September 01, 2017 11:32 AM
To: Kelver, Brett
Cc: Egner, Dennis; Roller, Alex; Eaton, Chuck
Subject: Re: FW: [City Council Meeting Packets] 9/5 Notice (incl. for Rusk Rd development)
Attachments: Type IV Review Comments Milwaukie Turning Point.pdf

Mr. Egner, Mr. Kelver, et al.,

Please find attached the PD-2017-001 comments for City Council from the Oak Grove Community Council (OGCC). This response has been approved by the OGCC Board of Directors.

Please forward the attached file to City Council for their review with respect to the public hearing for land use application PD-2017-001 scheduled for Tuesday, September 5.

If you have any questions or comments, please do not hesitate to contact us.

Thank you,

Joseph P Edge
Director, Oak Grove Community Council

CC: Baldwin van der Bijl, Chair, Oak Grove Community Council
CC: Mike Schmeer, Chair, Land Use Application Review Team, Oak Grove Community Council

On Tue, Aug 29, 2017 at 5:07 PM Kelver, Brett <KelverB@milwaukieoregon.gov> wrote:

> Hello,
>
> Packet materials are now available for next Tuesday's City Council hearing on the Rusk Road planned development project. This item is on the Regular Session agenda, so please choose that link below (includes the number 212), and then look under the "Supporting Documents" heading to find the materials that have been posted.
>
> Those materials include the staff report for City Council, a background report similar to those provided to the Planning Commission, Track Changes versions of the recommended Findings and Conditions, and comments received to date. Following the Planning Commission hearing on July 25, staff has written a few small modifications into the Findings and Conditions, mostly to clarify or correct small errors but also to reflect the proposal to dedicate the open space to the City.

Oak Grove Community Council

August 31, 2017

To: Milwaukie City Council
10722 SE Main Street
Milwaukie, OR 97222

RE: PD-2017-001 Kellogg Creek Subdivision

The Oak Grove Community Council is the Community Planning Organization representing the unincorporated portions of Clackamas County abutting the city of Milwaukie's southern boundary in the vicinity of the proposed subdivision, including properties within the required notification area. Community Planning Organizations (CPOs) are part of the citizen involvement program for Clackamas County, implementing state land use planning goal 1, Citizen Involvement: *To develop a citizen involvement program that ensures the opportunity for citizens to be involved in all phases of the planning process.* We review and provide recommendations for proposed land use actions affecting our residents and businesses.

Accordingly, we have reviewed the proposed 92-dwelling planned development subdivision of a site located at the edge of the city, directly across the street from some of our residents' homes. While we sincerely appreciate the significant need to create additional housing units in our region, we are concerned that the subject site is ill-suited for this number of households. We acknowledge that the zoning allows for a certain number of dwellings by-right; however, we believe the following concerns warrant a denial of the applicant's request to approve an increase in the number of dwelling units above the base density of the existing zones, on the basis that, as proposed, the development is not "*outstanding in planned land use*" and fails to provide "*exceptional advantages in living conditions*."

I. Impacts from motor vehicles
   A. Single egress shared with church
      As proposed, all vehicular traffic would be routed to the public street system through a single intersection. Pursuant to MMC 19.708.1.E(5), "*Closed-end street systems may serve no more than 20 dwellings*." The applicant proposes to serve not only 92 dwellings on a closed - end street system, but all trips leaving the Turning Point Church will be required to egress using the same street system.
      We recognize and appreciate that this design feature resulted from the applicant's site plan amendments intended to save the Oregon white oak trees at the southwest corner of the site, a move we strongly support. However, even the earlier proposal with two street connections was logically part of a closed-end street system, as both connections linked to Kellogg Creek Drive, a dead-end street. In either case, exceeding a maximum threshold - intended to protect residents' quality of life - by greater than 4½ times does not equate to outstanding planning and is unlikely to produce exceptional advantages in living conditions.
   B. Trip generation estimates not appropriate
      The transportation impact study required by the city instructs the applicant to use the Institute of Transportation Engineers Trip Generation Manual to estimate the number of vehicular trips that

will originate or conclude at the subject site after development based on the proposed use. These estimates are national standards based on land use categories that do not account for factors such as distance to or quality of public transit or bicycle/pedestrian infrastructure, vehicle ownership rates based on demographics or region, access to car or bike share services, or density and mix of uses in the vicinity.

The applicant proposes a subdivision to be developed with attached single family dwellings, also known as rowhouses. A national standard for rowhouses would logically assume an urban context, with higher population densities, a diverse mix of land uses, a walkable, highly interconnected street network with high quality public transit nearby. The subject site is none of these things.

In the current market context, priced in the $300,000-400,000 range, it can be assumed that most of these dwellings will be inhabited by dual income earning households. With a lack of quality public transit or bicycle and pedestrian connections to the subject site, and almost all jobs and services over one mile away, most of these income earners will own and operate their own cars for their daily travel. As such, it can be easily deduced that the vehicular trips originating from or concluding at this subdivision will far exceed the projections for a typical American “rowhouse” such as you might find in centrally located neighborhoods of Philadelphia, Baltimore, or New York City, where rowhouses are most common.

Ignoring the consequences of using an inappropriate assumption for modeling impacts does not equate to outstanding planning and is unlikely to produce exceptional advantages in living conditions.

C. Climate goals

To accommodate the goals that will be outlined in the city's upcoming climate action plan, significant new concentrations of housing should be located convenient to high quality transit, bicycle, and pedestrian systems. Sites that are isolated, lack high quality transit, bicycle, and pedestrian connectivity, and that offer significant value in ecological services if left undeveloped should not receive consideration for density increases.

II. 500-year floodplain

A. Climate change

Approximately half of the proposed dwelling units lie within the 500-year floodplain. Climate change will result in more frequent and severe weather impacts. As I write this, the Houston, Texas, region is experiencing a “500-year flood” for the third consecutive year. Rather than approving a density increase that will place more lives at risk, we should be exploring means of increasing flood storage capacity and reducing the impacts of climate change upon our region's residents and taxpayers.

B. Upstream flooding impacts

Due to existing repeat flooding damages to properties on Kellogg and Mount Scott creeks upstream from the subject site, FEMA has been buying out property owners. The increase in impermeable surfaces and undersized stormwater systems will exacerbate flooding for upstream properties. In light of this readily available information, the proposal does not qualify as outstanding planning and is unlikely to produce exceptional advantages in living conditions.

III. Impacts to the HCA/WQRA

A. Endangered steelhead

The Oregon Department of Fish and Wildlife has documented protected species including steelhead in the Kellogg-Mount Scott Creek system as far upstream as Happy Valley. Approval of a variance to allow creation of lots with no developable area outside of the HCA/WQR buffers will

negatively impact the natural resource areas upon which protected species are dependent for survival. This could expose the city to liability for costly mitigation of city -approved disturbances to habitat. Denying the density bonus and mandating that the eliminated lots are those that would create the greatest disturbances to the HCA/WQR buffers would reduce the city's exposure to such liability in the future.

B. Inadequate buffers

Studies from as far back as the 1990s confirm that the city's prescribed buffers to protect water quality resources are woefully inadequate to protect aquatic and terrestrial wildlife. Salmon and steelhead need buffers of at least 150 feet - possibly even 400 feet - and birds and terrestrial mammals may require a minimum of 330 feet on each side of a stream to protect their essential habitat. In light of research demonstrating negative impacts to water resources and associated habitat, approving a density bonus that will locate several lots entirely within the HCA/WQR buffers does not qualify as outstanding planning and is unlikely to produce exceptional advantages in living conditions.

IV. No guarantee of affordability

A. The affordability of proposed dwellings should not be the basis for an “outstanding” or “exceptional feature” if it isn't guaranteed.

The applicant claims that the dwelling units will support the city's goal of providing workforce housing. However, there is no guarantee that these dwellings will be priced at a point that is affordable to anybody; sale prices will be dictated by market forces. As the promise of delivering workforce housing can not be guaranteed, but the extra lots allowed by a density bonus are forever, this should not be the basis for approving an increase in density.

The Oak Grove Community Council appreciates your consideration of our residents’ concerns. As neighbors of the subject site, we are also neighbors of the future residents of this subdivision, and we hope our new neighbors will be able to enjoy the same quality of life that we enjoy in this neighborhood today.

Sincerely,



Baldwin van der Bijl
Chair Oak Grove Community Council

Kelver, Brett

From: Ray Olma <rayolma@yahoo.com>
Sent: Friday, September 01, 2017 9:21 PM
To: Kelver, Brett
Subject: Comment on Proposed Rusk Road Development

Dear Milwaukie City Council Members,

The Rusk Road Development you are considering is billed as affordable housing. It won't be. This is even according to the testimony given to the Planning Commission by the developer's economic expert. He stated these units would be going for at least $350,000 for starters but would be priced at market value. The income that it takes to afford a home at that price or likely higher isn't that much different than many single family homes already in Milwaukie. So I ask you - what is really "affordable" about this proposed development?

From my real estate experience, I can tell you the only thing that's going to hold the price of these units down is the misery of living in this development. Because the developer can pretend residents won't have two to three cars each, there is insufficient parking. There is only one entrance/exit which will be huge bottle neck in the mornings/evenings. The worst is that this huge development empties onto Rusk Road. This is my neighborhood and I can tell you that Rusk is not adequate even for the traffic it currently carries. Rusk has no shoulders so there is nowhere to walk or ride your bike on Rusk Road. You are taking your life in your hands now on that road, even without the additional 92 units and all those new cars.

What this development represents is a lot more housing units than this location can accommodate but not at an affordable price. If this were a walkable neighborhood with services like groceries and public transportation right next door, that would be one thing. It isn't. It's in an isolated location without any feasible way to get by foot or bike anywhere safely and an massive bottle neck getting anywhere by car. It is a bad idea.

I really wanted to speak up because I was surprised at how disrespectful the chair of the Planning Commission was to all of the community members who turned out to testify. He clearly believed everyone was there because of bias against some stereotype of an affordable housing resident. I don't think he really listened to anyone. The concerns were all very legitimate about negative impacts on traffic, habitat, and flood mitigation, voiced by the people who really know this location the best.

The community isn't against this development because we are a bunch of bigots. We are against this development because (1) it is way too much housing for this isolated location and (2) even the developer can't show that it is really going to be "affordable."

Regards,

Ray Olma

Kelver, Brett

From: Joseph Edge <joseph.edge@gmail.com>
Sent: Tuesday, September 05, 2017 10:06 AM
To: Kelver, Brett; Egner, Dennis
Cc: Andrew Collins-Anderson; Gibson Terry
Subject: PD-2017-001 Comments from NCUWC
Attachments: final letter to City Council.pdf

Mr. Kelver and Mr. Egner:

Please find attached the NCUWC's comments for consideration by City Council with respect to tonight's hearing about the proposed Turning Point Church/Kellogg Creek subdivision.

Please let me know if you have any questions or instructions.

Thank you,

Joseph
--
Joseph

North Clackamas Urban Watersheds Council

2416 SE Lake Rd. • Milwaukie, OR 97222
coordinator@ncuwc.org • www.ncuwc.org

September 5, 2017

To: Milwaukie City Council
10722 SE Main Street
Milwaukie, OR 97222

RE: PD-2017-001 Kellogg Creek Subdivision

We are very concerned by the fact that approximately half of the dwelling units proposed to be built upon the subject site lie within the 500-year floodplain delineation. We disagree that a design intended to locate approximately 40 new dwelling units within a documented floodplain qualifies as "*outstanding in planned land use*" or provides "*exceptional advantages in living conditions*." Quite the opposite, in fact: many future owners of these homes will need to be bought out by FEMA and the floodplain and required buffers will likely need to be cleared when anthropogenic climate change and increased upstream development exacerbates flooding and routinely fills the 500-year floodplain far more frequently than it's official designation indicates. For example, the Houston, Texas, area has experienced two “500-year” flood in each of the last two years (2015, 2016) and then experienced a “1,000-year” flood just last week (2017), for a total of three “500-year” events in three years. The 500-year floodplain is not a safe place to build new housing.

Our concerns are further compounded by the pending revisions to the FEMA National Flood Insurance Program in Oregon, which has been buying out properties upstream from the subject site in recent years due to repeated loss due to flooding of Mount Scott and Kellogg Creeks. A biological opinion released in 2016 by the National Marine Fisheries Service - in direct response to a court-ordered settlement - found that currently adopted development standards in and near floodplains degrades and destroys essential habitat for Endangered Species Act-listed fish populations, including those that are documented to traverse and spawn in the Kellogg-Mt Scott Creek system. The City's approval of plans known to result in degradation and destruction of essential fish habitat increases the likeliness that the City can be found liable for authorizing illegal takings of ESA-listed species, in violation of the ESA, and be held responsible for potentially costly mitigation projects and/or fines. Municipalities that intend to continue their participation in the FEMA NFIP must adopt revised floodplain development standards by March 1, 2018, based on a model ordinance under production by the Oregon Department of Land Conservation and Development. At present, the City is not scheduled to consider amendments to the presently adopted standards, so it is expected that the City will become noncompliant with the requirements for continued participation the NFIP, which, after March 1, 2018, may expose new owners of these (and other) proposed lots and dwellings to full liability of any flood-related damages to their properties, without benefit of insurance coverage. A responsible, forward-thinking City looking out for all its residents' best interests - including reducing the risk of property loss and public safety concerns - would seek to avoid approving a development with such a high risk of flooding. The project as proposed will also almost certainly cost City taxpayers significantly for future mitigation work - and/or large fines - as a direct result of the proposed development's impact on sensitive habitat and natural resources.

The North Clackamas Urban Watersheds Council does not take a position on the number of dwelling units nor specific uses proposed for the subject site, provided that the net result is an improvement to the hydrological functions of the site and the overall health of the greater system of habitat within the watershed. Based on currently adopted standards, we disagree the development of the site, as proposed, will result in a net benefit to the hydrological functions of the site and the overall health of the habitat and watershed. We find that a design alternative that fully avoids the designated Water Quality Resource and Habitat Conservation Areas and associated buffers, and locates all dwelling units outside of the 500-year floodplain, would qualify for consideration as "*outstanding in planned land use*" and offering "*exceptional advantages in living conditions*."

However, as proposed, the design does not warrant the requested density bonus, and we recommend that you deny the request for a density bonus.

Sincerely,

Joseph P. Edge
Board Chair

Photos provided by Mark Gamba.

RS 5. A.
9/5/17
Exhibits






















Attention dog owners:
Off-leash dogs are permitted
ONLY in the off-leash area
Off-leash dog owners are subject to
a fine of up to $500 (WAC 6.28.080)
Thank you for keeping your dog leashed while
visiting other areas of the park.





EXHIBIT
tabbies
RS 5.A.
9-5-17



Color	Cut/Fill Depth	
	-6.00	0.00
	0.00	+1.00
	+1.00	+2.00
	+2.00	+3.00
	+3.00	+4.00
	+4.00	+5.00
	+5.00	+6.00
	+6.00	+7.00
	+7.00	+8.00
	+8.00	+9.00

Note: Negative values represent cut depths, and positive values represent fill depths.

Proposed Finish Grade below Existing

Proposed Finish Grade above Existing

DOWL
WWW.DOWL.COM

KELLOGG CREEK SUBDIVISION
SITE FILL AREAS

PROJECT	14258.01
DATE	9/5/2017

FIGURE 1

I:\BIL-FS\BIL-projects\22\14258-01\65CAD\Exhibits\2017-09-05- Earthwork Fill Exhibit\Kellogg Fill Areas Exhibit.dwg PLOT DATE 2017-9-5 16:24 SAVED DATE 2017-09-05 16:16 USER: kgilidden

NOTE: due to time constraints, Council took no public testimony at the 9/5/17 hearing.

CITY OF MILWAUKIE
CITY COUNCIL

10722 SE Main Street
P) 503-786-7502
F) 503-653-2444
ocr@milwaukieoregon.gov

Speaker Registration

The City of Milwaukie encourages all citizens to express their views to their city leaders in a **respectful** and **appropriate** manner. If you wish to speak before the City Council, fill out this card and hand it to the City Recorder. Note that this Speakers Registration card, once submitted to the City Recorder, becomes part of the public record.

Name: Greg Baertz-Bowman Address:

Organization: Phone:

Email:

Meeting Date: 9.6.17 **Topic:** Rosk Road

Agenda Item You Wish to Speak to:

- ☐ #4 Audience Participation
- ☒ #5 Public Hearing, Topic:
- ☐ #6 Other Business, Topic:

You are Speaking…

- ☐ in Support
- ☒ in Opposition
- ☐ from a Neutral Position
- ☐ to ask a Question

Comments:

NOTE: due to time constraints, Council took no public testimony at the 9/5/17 hearing.

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Speaker Registration

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Name: Gary + Sherrie Johnson

Organization:

Address: 13477 SE Rusk Rd
Phone: 503-659-8316
Email: clackamell@msn.com

Meeting Date: 9/5/2017 **Topic:** Rusk Rd

Agenda Item You Wish to Speak to:

- ☐ #4 Audience Participation
- ☐ #5 Public Hearing, Topic:
- ☐ #6 Other Business, Topic:

You are Speaking…

- ☐ in Support
- ☐ in Opposition
- ☒ from a Neutral Position
- ☒ to ask a Question 2

Comments:

Kellogg cr Dr & ending street
is this on Rusk or Kellogg cr

NOTE: due to time constraints, Council took no public testimony at the 9/5/17 hearing.

MILWAUKIE CITY COUNCIL
Office of the City Recorder

10722 SE Main Street
P) 503-786-7502
F) 503-653-2444
ocr@milwaukieoregon.gov

Speaker Registration

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Name: Rosemary A Grites

Organization:

Address:

Phone:

Email:

Meeting Date: 9/5/2017 **Topic:** Development Risk 224

Agenda Item You Wish to Speak to:

- [x] #4 Audience Participation
- [ ] #5 Public Hearing, Topic:
- [ ] #6 Other Business, Topic:

You are Speaking...

- [ ] in Support
- [x] in Opposition
- [ ] from a Neutral Position
- [ ] to ask a Question

Comments:

NOTE: due to time constraints, Council took no public testimony at the 9/5/17 hearing.

MILWAUKIE CITY COUNCIL
Office of the City Recorder

10722 SE Main Street
P) 503-786-7502
F) 503-653-2444
ocr@milwaukieoregon.gov

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Name: Wallace Brown

Organization:

Address:

Phone:

Email:

Meeting Date: 9/5/17 **Topic:** Kellogs Creek PD

Agenda Item You Wish to Speak to:

- ☐ #4 Audience Participation
- ☑ #5 Public Hearing, Topic: A
- ☐ #6 Other Business, Topic:

You are Speaking...

- ☐ in Support
- ☒ in Opposition
- ☐ from a Neutral Position
- ☐ to ask a Question

Comments:

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Name: DICK SHOOK

Organization:

Address: 4815 SE CASA DEL REY 97222

Phone:

Email:

Meeting Date: 9-5-17 **Topic:**

Agenda Item You Wish to Speak to:

- ☐ #4 Audience Participation
- ☒ #5 Public Hearing, Topic: Kellogg Creek
- ☐ #6 Other Business, Topic:

You are Speaking...

- ☐ in Support
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- ☐ from a Neutral Position
- ☐ to ask a Question

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Name: Vince Alvarez

Organization:

Address: 12671 SE Where Else Ln
Milwaukie 97222
Phone: 971-271-4779
Email: ~~Jtechcarytech~~ 77@gmail

Meeting Date: 9-5-2017 **Topic:** 5 A Rusk Rd

Agenda Item You Wish to Speak to:

- ☐ #4 Audience Participation
- ☒ #5 Public Hearing, Topic:
- ☐ #6 Other Business, Topic:

You are Speaking...

- ☐ in Support
- ☒ in Opposition
- ☐ from a Neutral Position
- ☐ to ask a Question

Comments:

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Name: GWENN L. ALVAREZ

Organization:

Address: 12671 SE WHERE ELSE LANE
MILW OR 97222
Phone: 503 737 4970
Email: thepickyeater@hotmail.com

Meeting Date: 05 SEP 17 **Topic:** 5A - RUSK ROAD

Agenda Item You Wish to Speak to:

- ☐ #4 Audience Participation
- ☒ #5 Public Hearing, Topic:
- ☐ #6 Other Business, Topic:

You are Speaking...

- ☐ in Support
- ☒ in Opposition
- ☐ from a Neutral Position
- ☐ to ask a Question

Comments:

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Name: Kirby Broderick

Organization:

Address: 6109 SE ERIC 97222
Phone: 503.317.4769
Email: .hairpieces hotmail.com

Meeting Date: 9/5/17 **Topic:** Rusk Road Development

Agenda Item You Wish to Speak to:

- ☐ #4 Audience Participation
- ☒ #5 Public Hearing, Topic:
- ☐ #6 Other Business, Topic:

You are Speaking…

- ☐ in Support
- ☒ in Opposition
- ☐ from a Neutral Position
- ☐ to ask a Question

Comments:

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Name: Chris Runyard

Organization:

Address: ~~3011~~ 2325 NE 32nd Ct
Phone: 503 239 5844
Email: crunyard@msn.com

Meeting Date: _____ **Topic:** _____

Agenda Item You Wish to Speak to:

- ☐ #4 Audience Participation
- ☒ #5 Public Hearing, Topic:
- ☐ #6 Other Business, Topic:

You are Speaking...

- ☐ in Support
- ☒ in Opposition
- ☐ from a Neutral Position
- ☐ to ask a Question

Comments:

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Name: Allison Lauth-Markwart

Organization:

Address: 13430 SE Ruscliffe Lane, Milwaukie
Phone: 503-659-2396
Email: markwartfamily@hotmail.com

Meeting Date: 9-5-17 **Topic:** Rusk Road PUD

Agenda Item You Wish to Speak to:

- ☐ #4 Audience Participation
- ☒ #5 Public Hearing, Topic:
- ☐ #6 Other Business, Topic:

You are Speaking...

- ☐ in Support
- ☒ in Opposition
- ☐ from a Neutral Position
- ☐ to ask a Question

Comments:

This PUD has way too many houses for this neighborhood. Traffic is already VERY busy with the busbarn and North Clackamas Park. Another PUD was approved by Clackamas county at the end of Ruscliffe and is now currently on the market again.

NOTE: due to time constraints, Council took no public testimony at the 9/5/17 hearing.

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Name: Steve Berliner

Address: 10824 SE Oak St. #311 Milw 97222

Organization: NCUWC

Phone: 503-653-7875

Email:

Meeting Date: 9/5/17 **Topic:**

Agenda Item You Wish to Speak to:

- ☐ #4 Audience Participation
- ☑ #5 Public Hearing, Topic: PD 2017-001
- ☐ #6 Other Business, Topic:

You are Speaking…

- ☐ in Support
- ☒ in Opposition
- ☐ from a Neutral Position
- ☐ to ask a Question

Comments:

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Name: Laura Hickman Address:

Organization: Phone:

Email:

Meeting Date: 9/5/17 **Topic:** Rusk Road Development

Agenda Item You Wish to Speak to:

- ☐ #4 Audience Participation
- ☒ #5 Public Hearing, Topic: Rusk Road Proposal
- ☐ #6 Other Business, Topic:

You are Speaking…

- ☐ in Support
- ☒ in Opposition
- ☐ from a Neutral Position
- ☐ to ask a Question

Comments:

PUBLIC HEARING ATTENDANCE SIGN-UP SHEET

If you wish to have standing and/or to be on the mailing list for Council information from tonight's hearing, please sign-in below.

9/5/17 | **Kellogg Creek (Rush Road) Planned Development – Ordinance**

Land Use File No. PD-2017-001, ZA-2017-001

NAME	ADDRESS	PHONE	EMAIL
Wallace Brown	5824 SE Kellogg Creek Dr Milwaukie OR 97222	503 516-6856	wallacebrown@hotmail.com
Mike Clifford	13460 S E Ruscliffe Rd 97222	503 974-9643	cliffordant@gmail.com
LOIS KEISER	13751 SE BRIARFIELD CT MILWAUKIE 97222	831-431-7609	loisakeiser@yahoo.com
JOHN CHRISTIANSON	5586 SE LAKE Rd MILWAUKIE 97222	503653 7727	John1ouc@msn.com
Chris Runyard	3942 SE Salmon 97214	← ON FILE →	
Allison Lantt-Markwart	13430 SE Ruscliffe 97222	on file	
Kirby Broderick	6109 SE ERIC 97222	on file	interpiece@hotmail.com
Laura Hickman	13786 SE Brianfield Ct. Milwaukie, OR 97222		
Sherry & Gary Johnson	13477 SE Rusk Milw	97222	
Greg Baretz-Bowman			

PUBLIC HEARING ATTENDANCE SIGN-UP SHEET

If you wish to have standing and/or to be on the mailing list for Council information from tonight's hearing, please sign-in below.

9/5/17 | **Kellogg Creek (Rush Road) Planned Development – Ordinance**

Land Use File No. PD-2017-001, ZA-2017-001

NAME	ADDRESS	PHONE	EMAIL
TERRY GIBSON	5884 SE JENNINGS	503 402-4042	tjgibson1@comcast.net
DICK SHOOK	97222		
STEVE BERLINER	SEE GREEN CARD	503-653-7875	

Kellogg Creek Planned Development

Master File #PD-2017-001

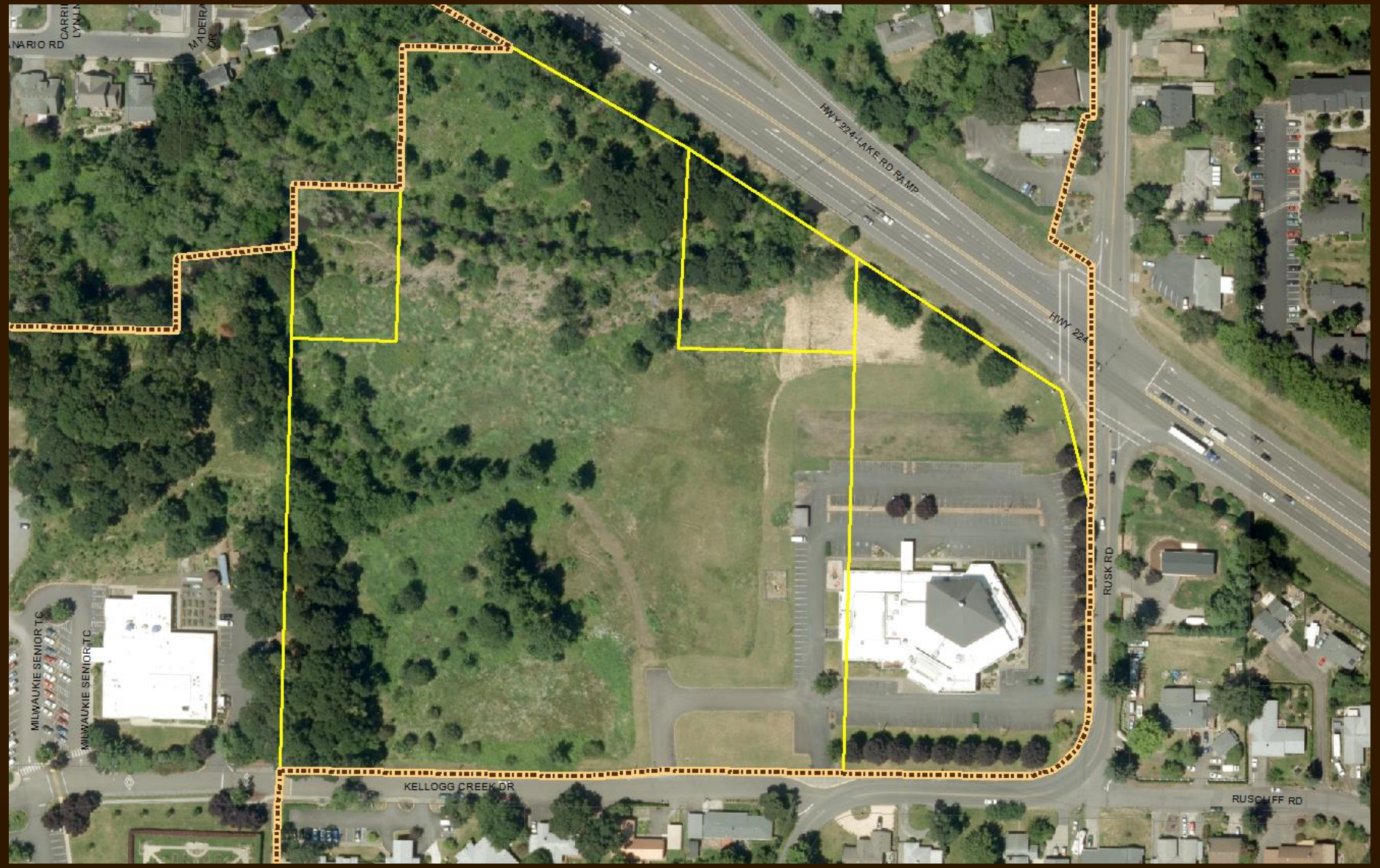
(with ZA-2017-001, S-2017-001, NR-2017-001, TFR-2017-001, VR-2017-003, and CSU-2017-001)

City Council
September 5, 2017
Staff Presentation by Brett Kelver, Associate Planner

Project Location & Vicinity



Site


HWY 224-LAKE RD RAMP
HWY 224
RUSK RD
KELLOGG CREEK DR
RUSCHLFF RD
MILWAUKIE SENIOR TC
MILWAUKIE SENIOR TC

City Zoning


LAKE RD
MADEIRA RD
DEL REY DR
SILVERLEAF CT
LA CRESTA DR
CAMPANARIO RD
MADEIRA DR
HWY 224
HWY 224-LAKE RD RAMP
R-3
WEIKO WAY
R-10
RUSK RD
R-10
MILWAUKIE SENIOR TC
KELLOGG CREEK DR

Planned Development

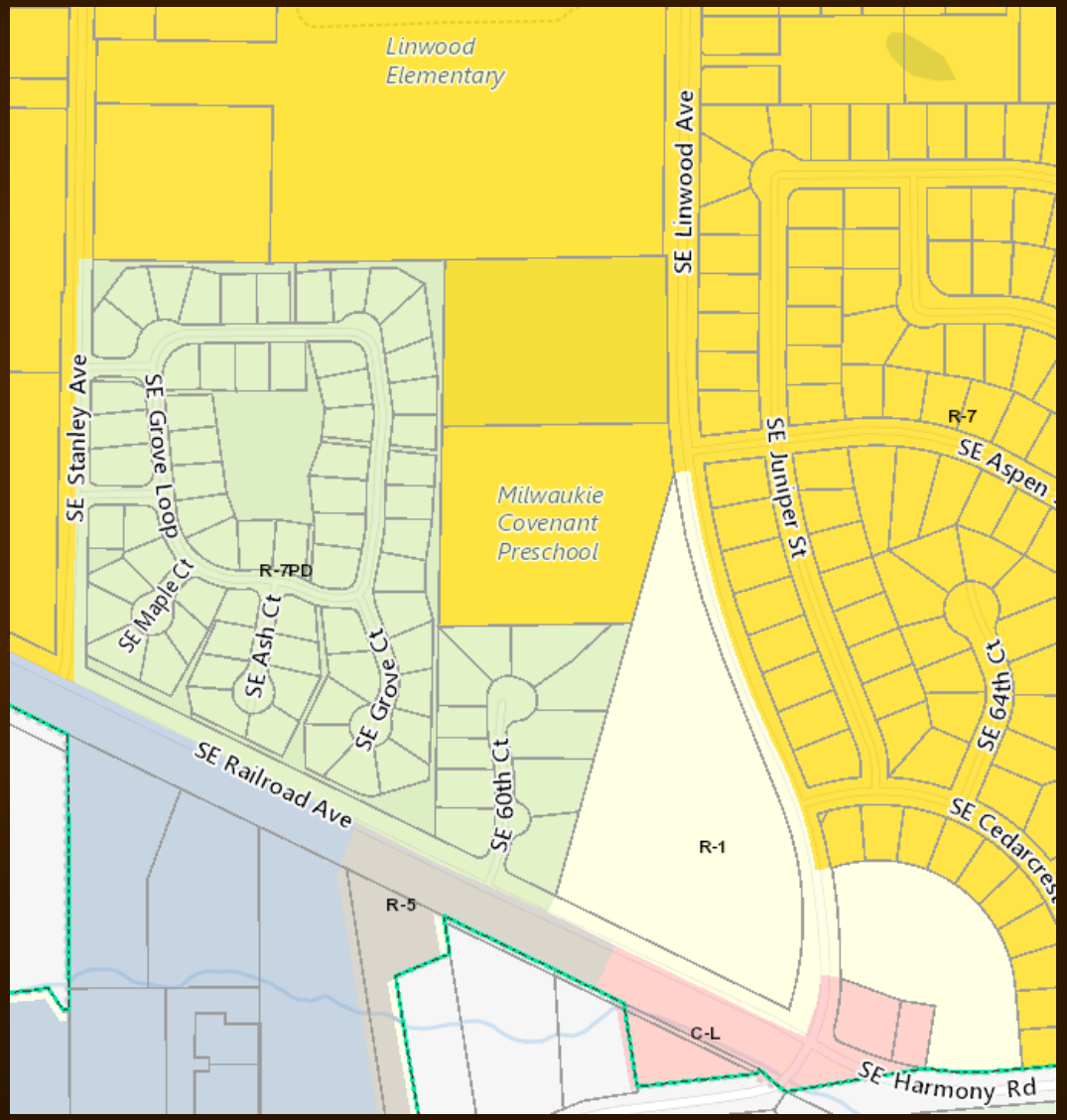
(MMC Section 19.311)

- Zone change
- Type IV review (PC & CC)
- Flexible design
- Required open space (33% of gross area)
- Up to 20% increase in density

Net Area for Maximum Density Calculation

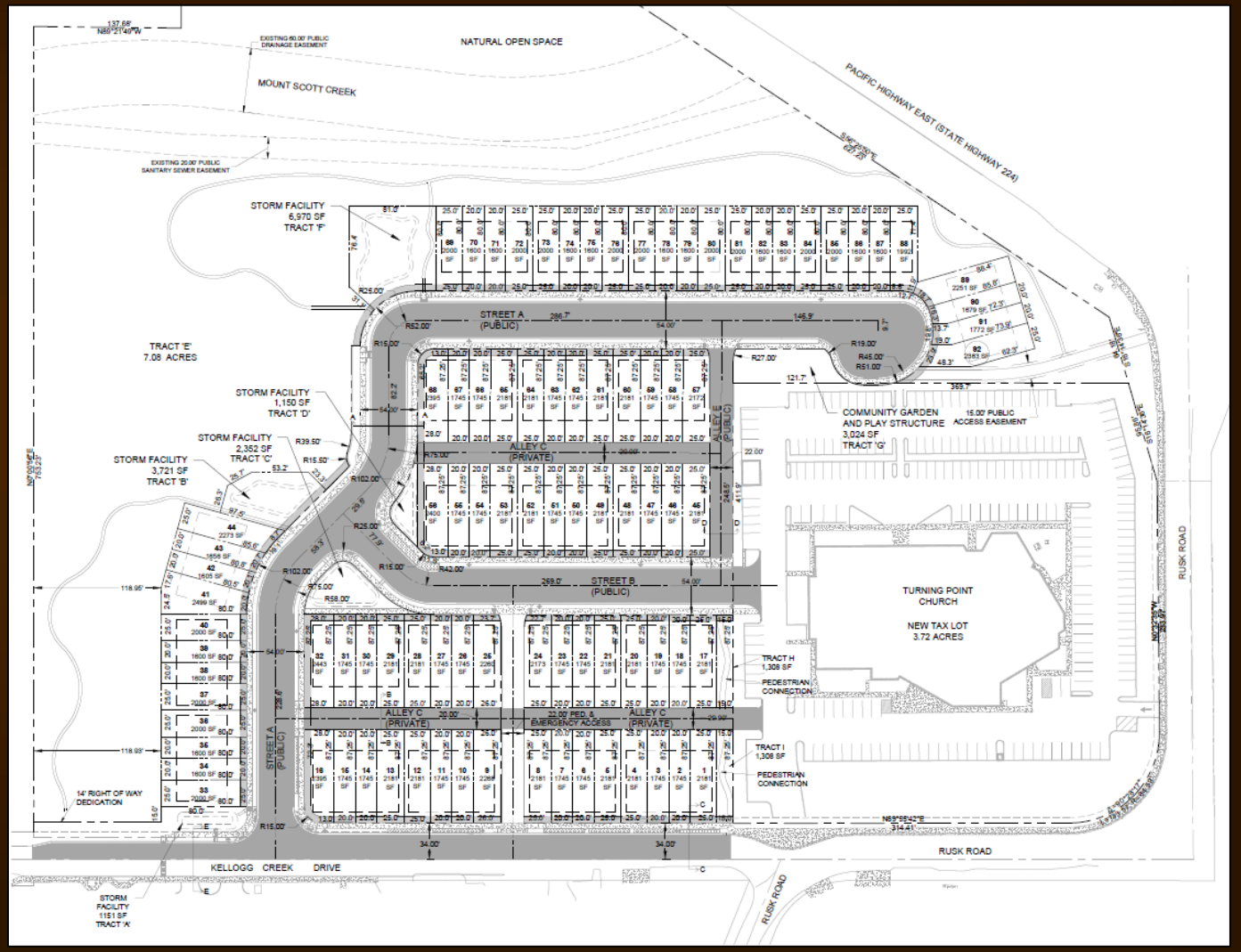
Subtract from gross area:

- Floodplain
- Public right-of-way
- Open space
- Steep slopes

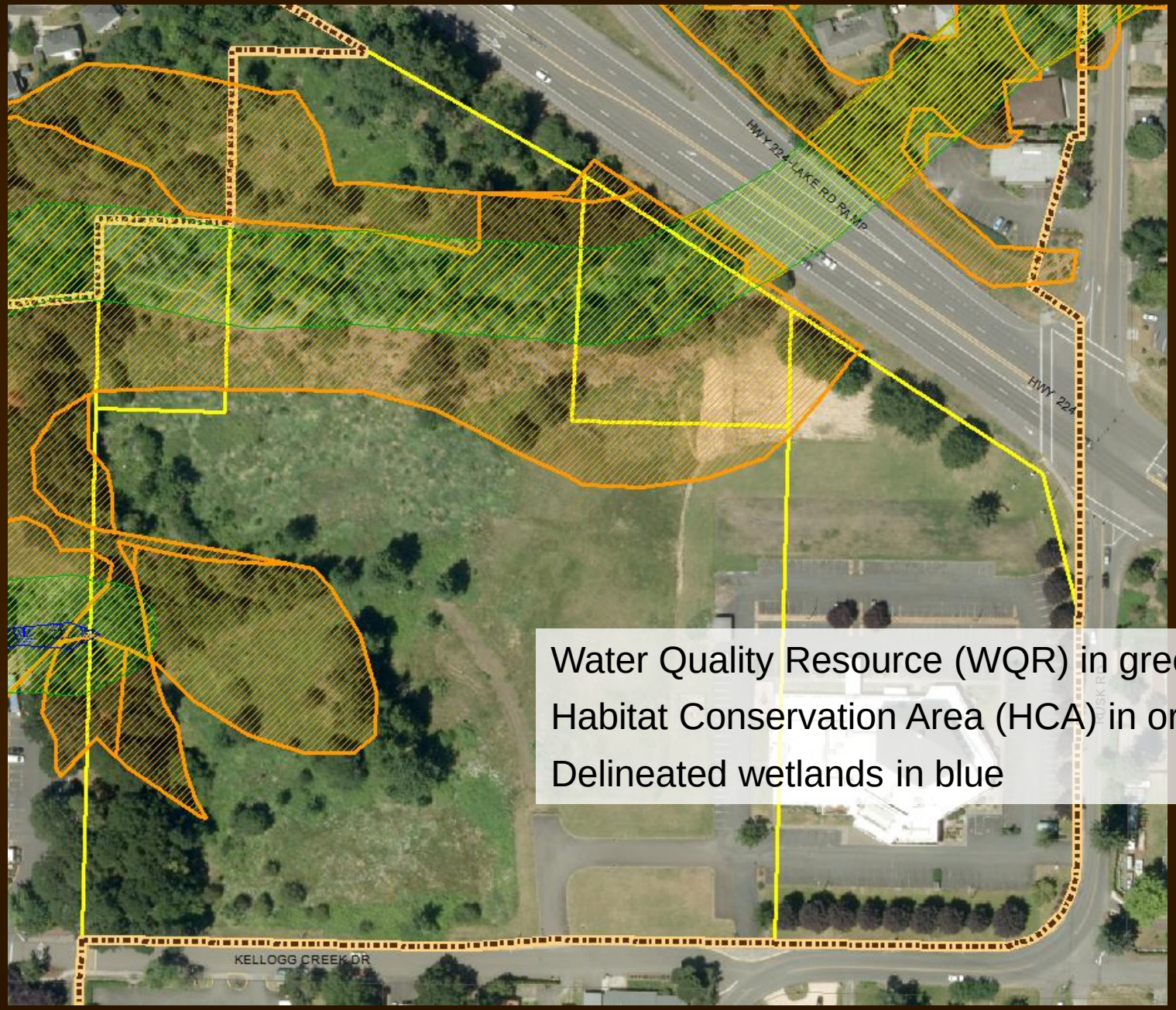


Proposal

- 92 rowhouse units (12% increase in density)
- Open space tract (c. 7 acres) dedicated to City
- Community garden
- Pedestrian/bicycle connections
- Preservation of oak trees
- Stormwater swales
- Variances (lots served by closed-loop system and lots in WQR/HCA)
- Floodplain alteration



Natural Resource Areas

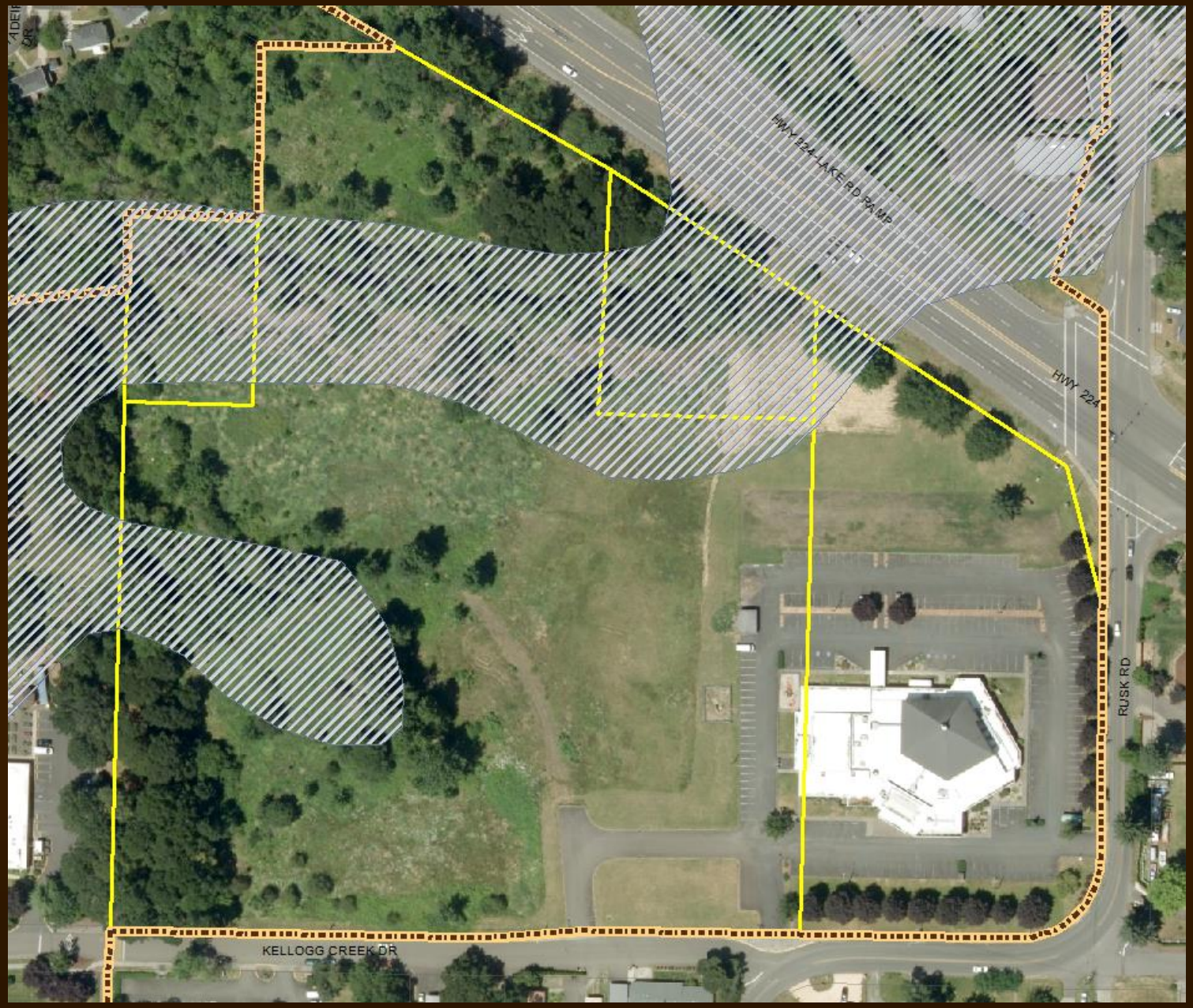


Water Quality Resource (WQR) in green

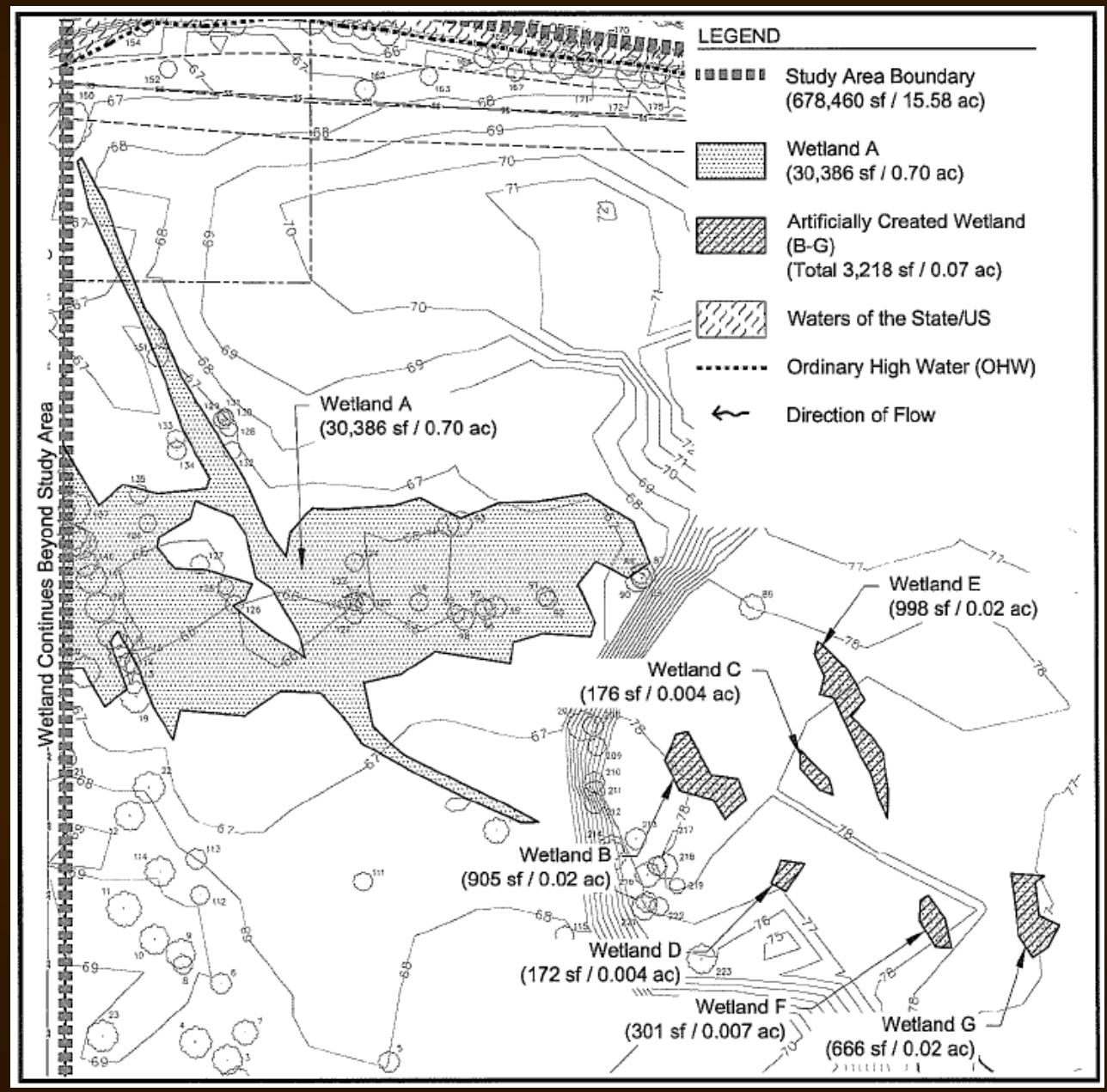
Habitat Conservation Area (HCA) in orange

Delineated wetlands in blue

Floodplain Map (Site)



Delineated Wetlands

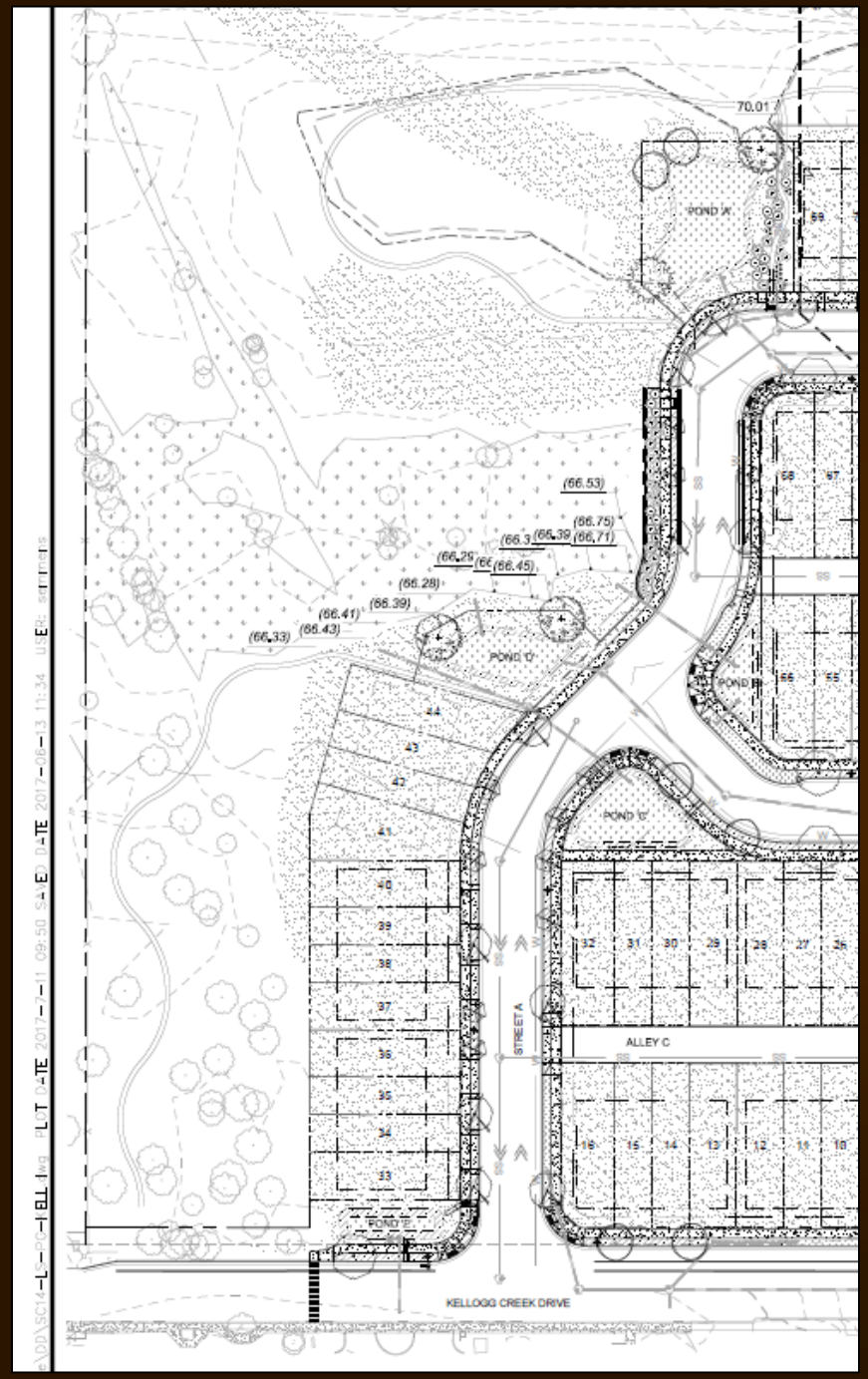


FEMA Floodplain Map



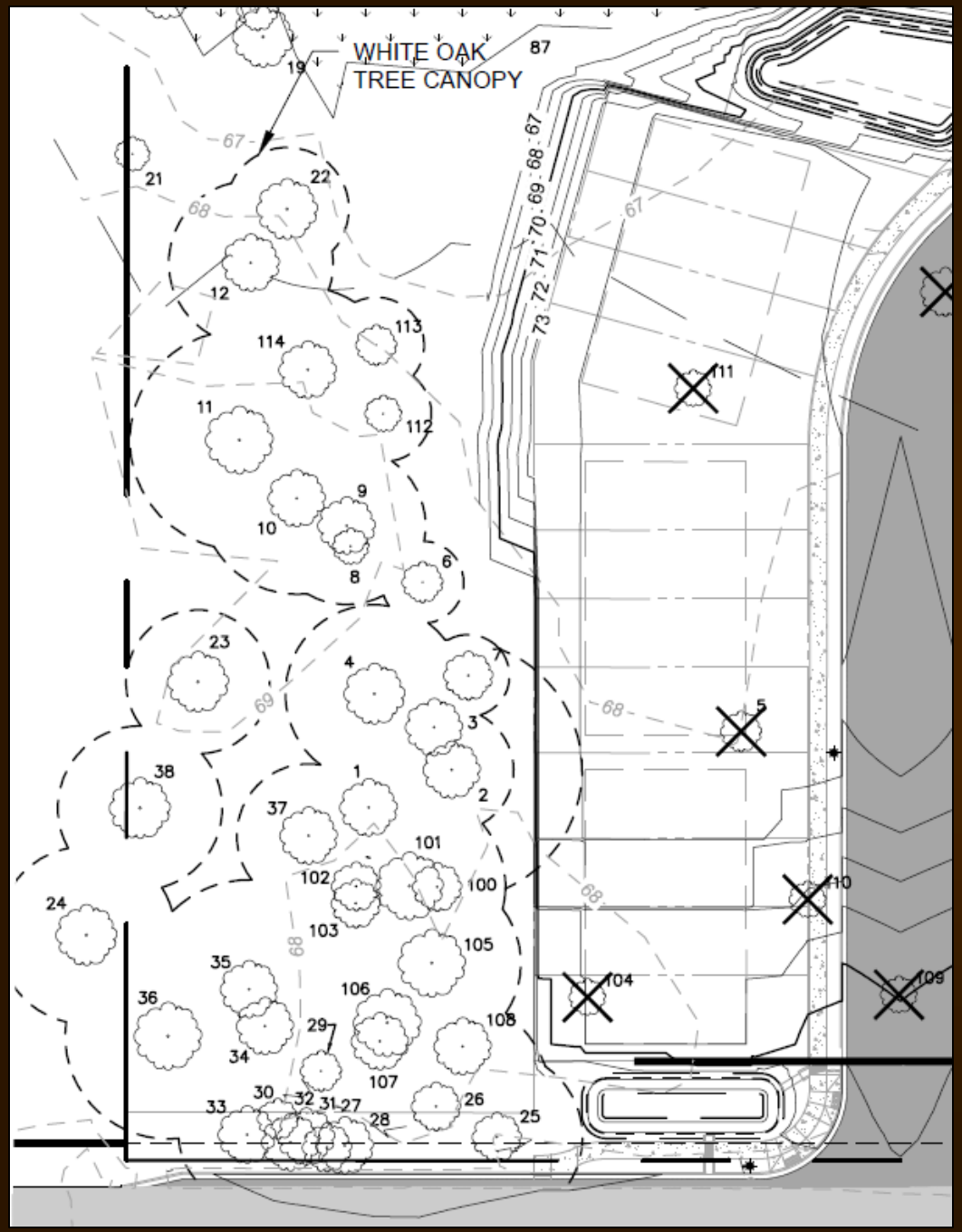
Key Issues for Planning Commission

1. Public ownership of open space tract
2. Preservation of white oak trees
3. Floodplain issues
4. Traffic impacts



Open Space Tract

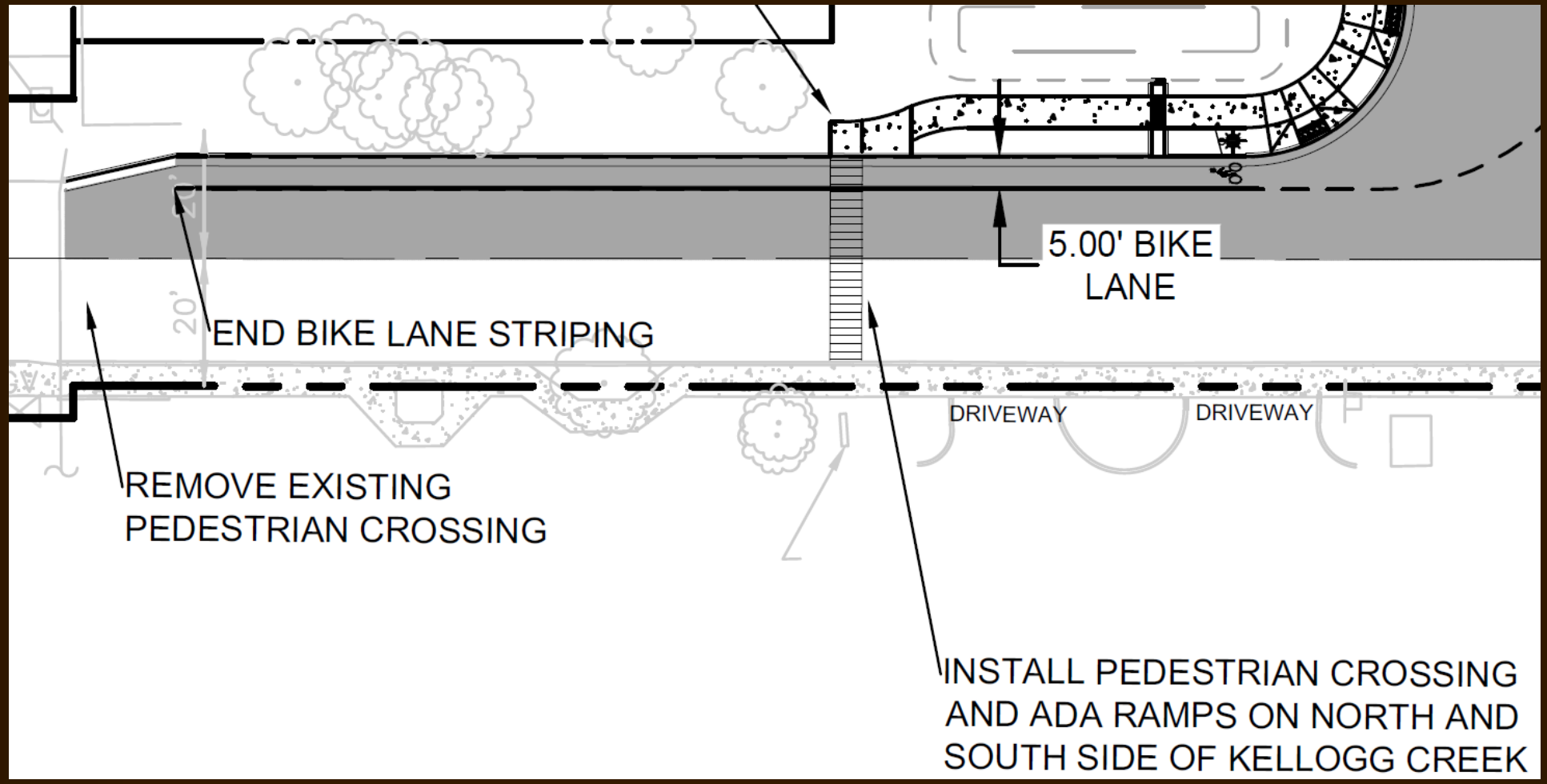
- City ownership
- Management by NCPRD
- Initial mitigation plantings by applicant
  (w/ 2-year monitoring/survival period)



White Oak Trees

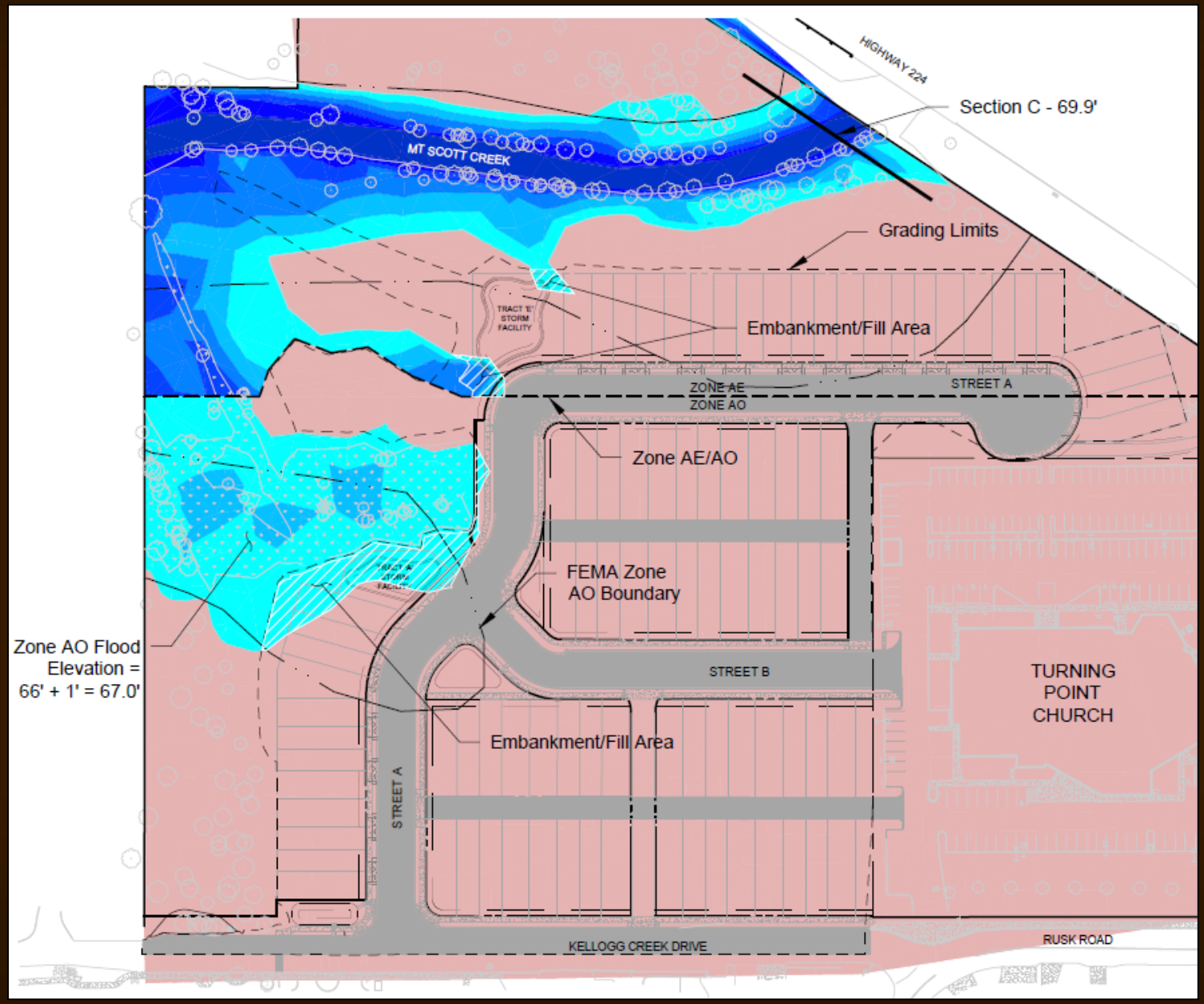
- No oaks to be removed
  (Scouler's willow, English hawthorn)
- Tree protection around canopy

Oaks in Right-of-Way



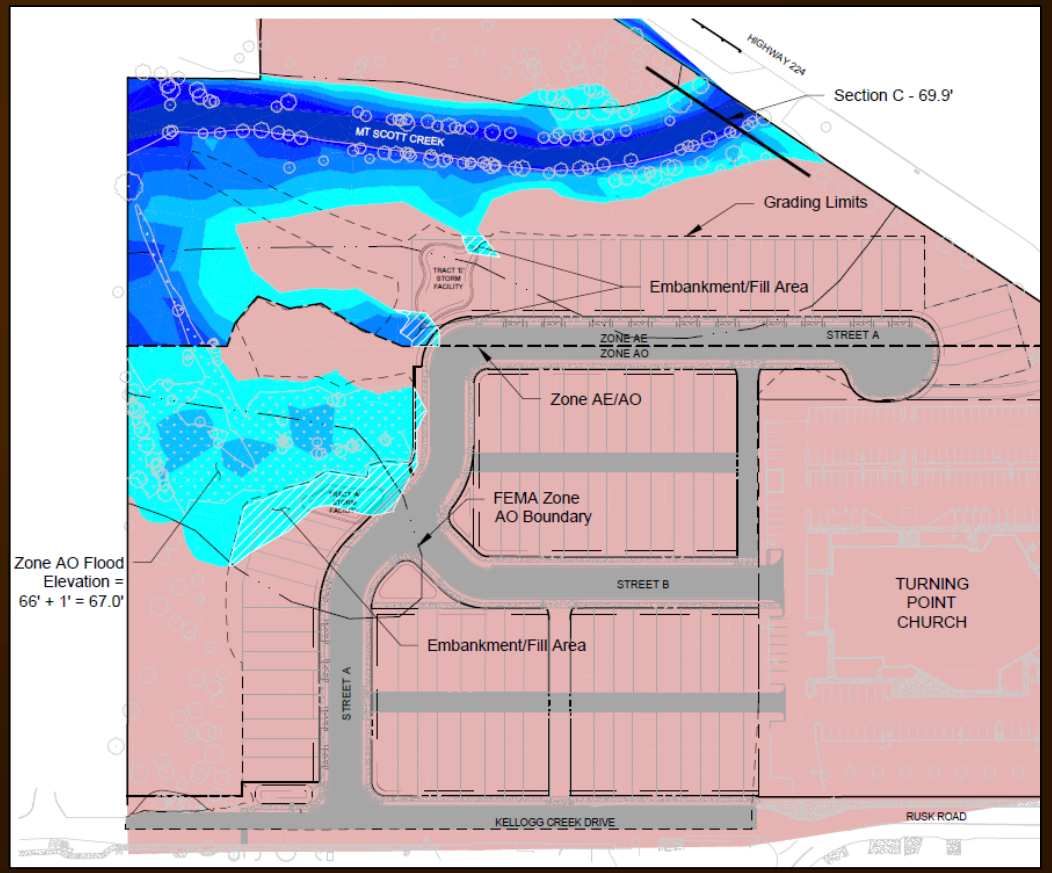
- Adjusted improvements
- Root exploration

Floodplain Alteration (revised)

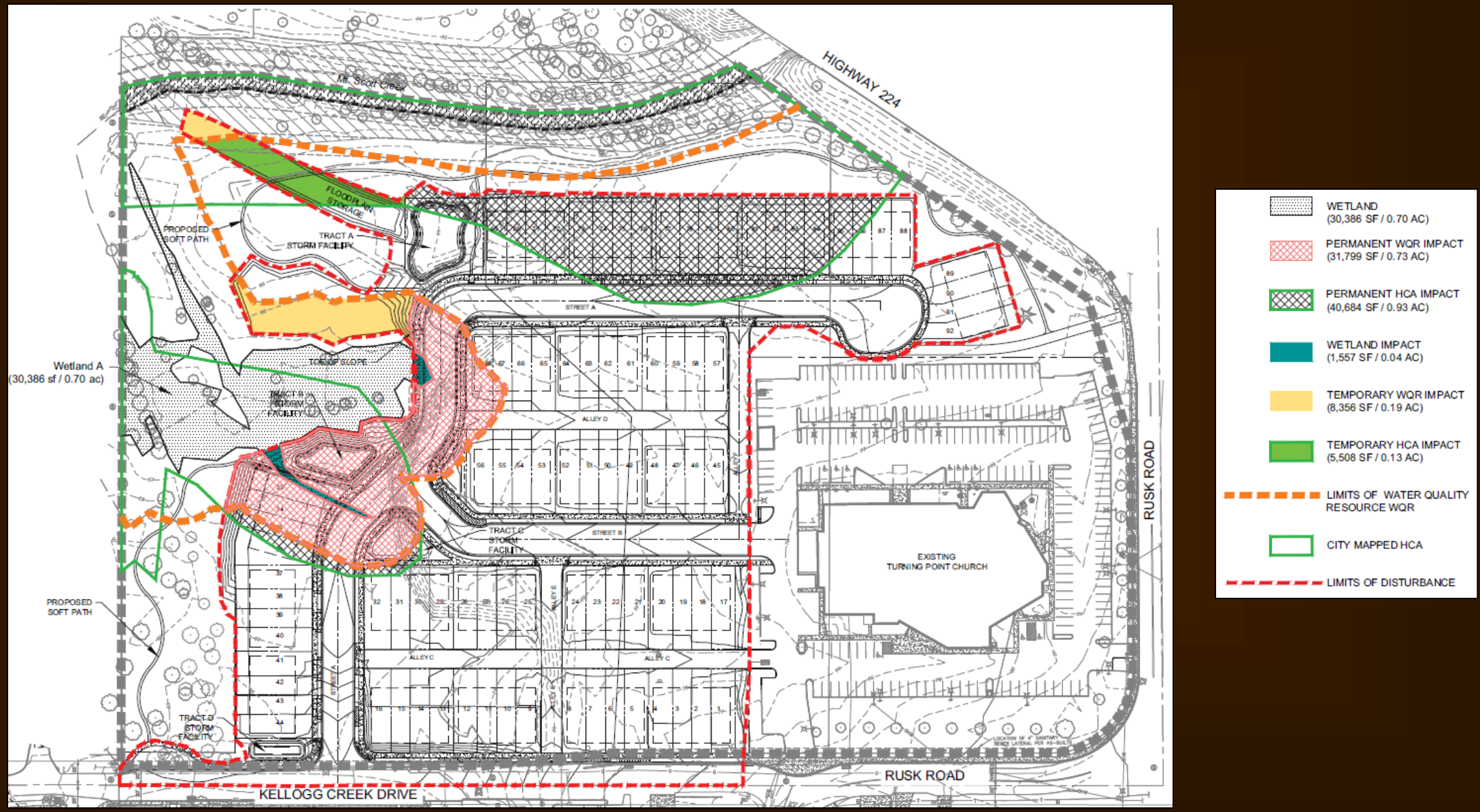


Floodplain Impacts

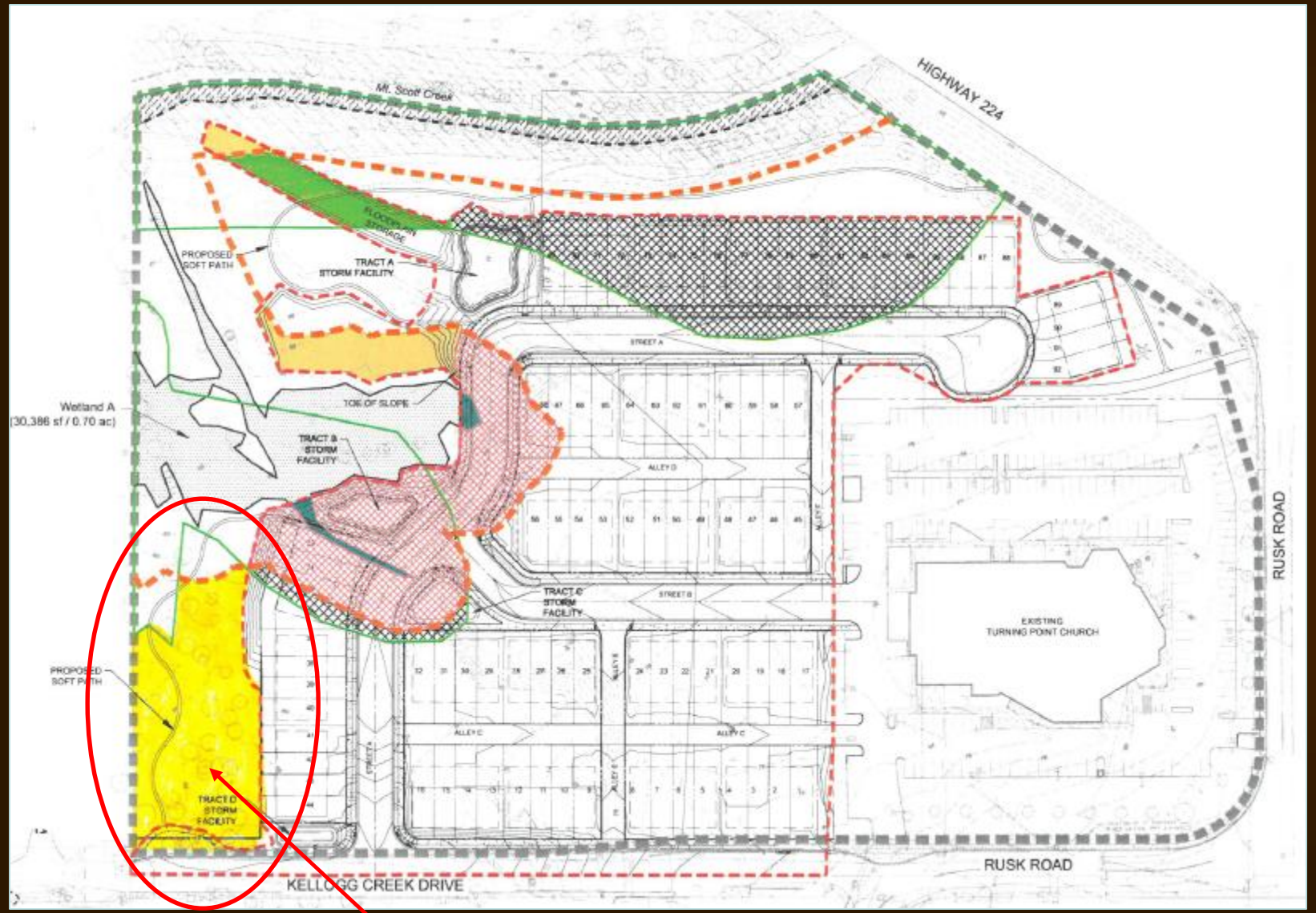
- Technical review by Engineering Department
  - Applicant has shown site capacity for balancing cut and fill
  - Additional data is required at later stages in development review process
- Consideration of impacts
  - Natural Resource review for WQR & HCA impacts
  - Outstanding design



Natural Resource Impacts



Exhibit—Revised Natural Resource Map



Area to be added to NR map as HCA

Mitigation Plan



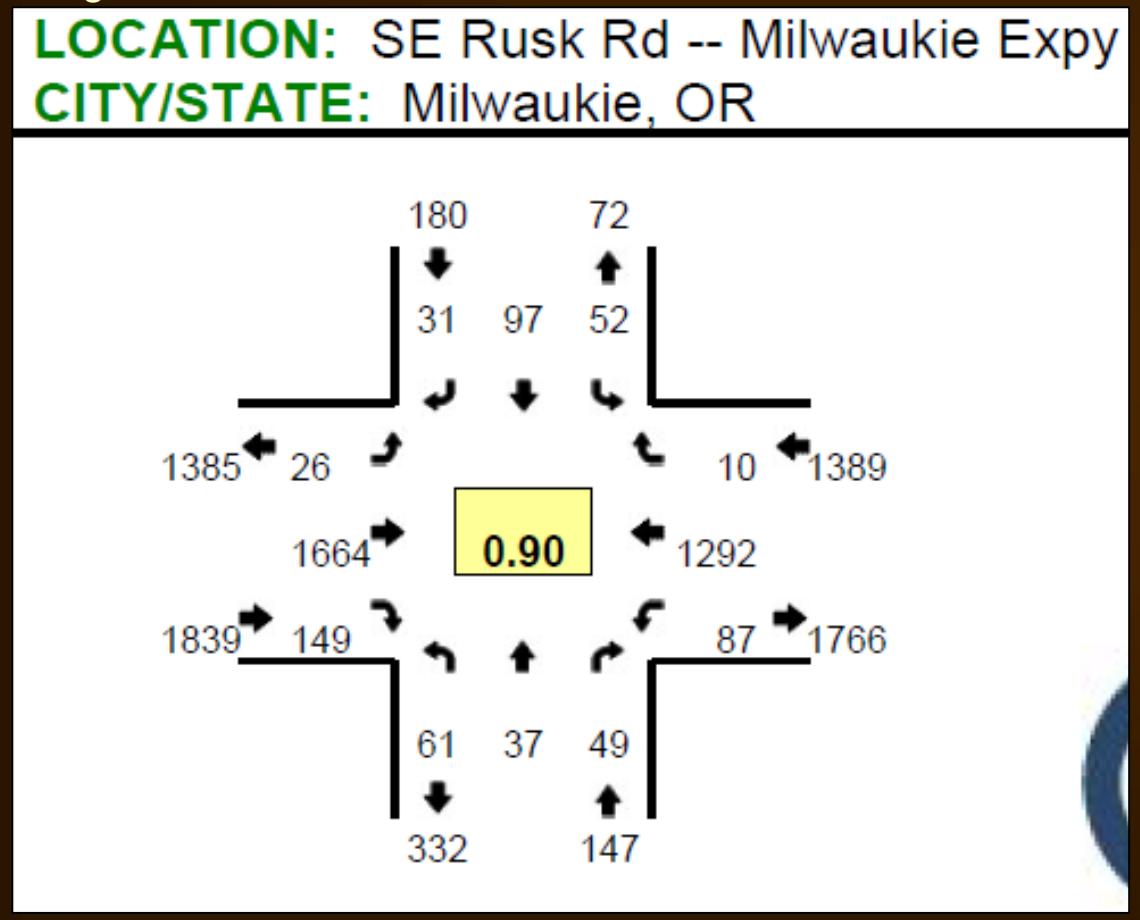
LEGEND:

- STUDY AREA BOUNDARY
- ORDINARY HIGH WATER
- REMAINING WETLAND (28,973 SF / 0.67 AC)
- REMAINING WQR
- REMAINING HCA
- MITIGATION AREA A (38,264 SF/ 0.88 AC)
  - Restore native plant community
  - Seed bare soils with native seed mix
  - Inventory and remove debris and noxious weeds.
- MITIGATION AREA B (56,391 SF / 1.29 AC)
  - Inventory and remove debris and noxious weeds
- ADDITIONAL ENHANCEMENT AREA TOTAL - 47,485 SF / 1.09 AC

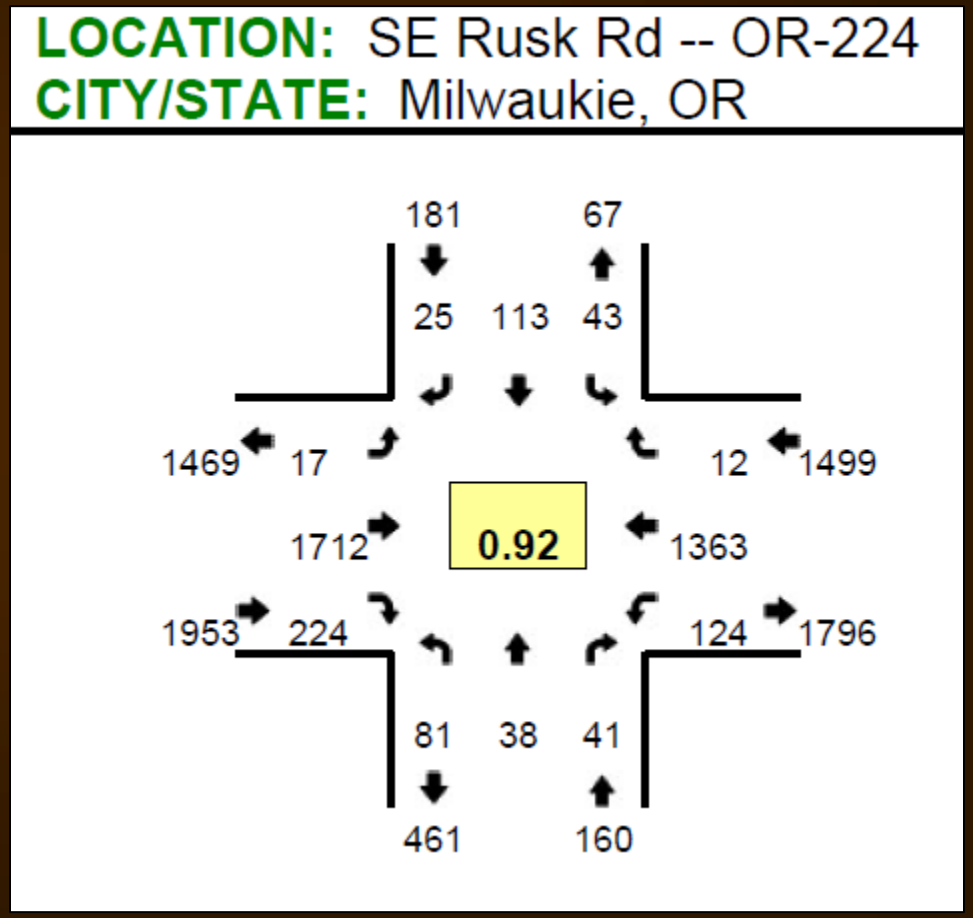
Updated Traffic Counts

PM Peak Hour (approx. 4:30 pm to 5:30 pm)

Original—November 2, 2016



Revised—June 1, 2017



Traffic Impacts

Right-of-way for right turn lane on Rusk Road





Approval Criteria for Planned Development

(MMC Subsection 19.311.2)

A. Conform to the Comprehensive Plan

B. Form a compatible and harmonious group

C. Be suited to the capacity of existing & proposed utilities and facilities

D. Be cohesively designed and compatible with the protection of public health, safety, and welfare in general

E. Afford reasonable protection to the permissible uses of properties surrounding the site

Allowance for Increased Density

(MMC Subsection 19.311.3.C)

If Council determines that the planned development is outstanding in planned land use and design and provides exceptional advantages in living conditions and amenities not found in similar developments constructed under regular zoning.

- Maximum density increase of 20%

Key Conditions

- Extend northbound right-turn lane on Rusk Road at Highway 224
- Dedicate open space tract to City
- 2-year maintenance bond for new mitigation plantings
- Root exploration and protection (white oak trees)
- Fencing with no gates adjacent to open space tract
- Retaining wall design & landscape screening

Key Questions for City Council

1. Does the proposed development offer enough outstanding design elements and extraordinary amenities to warrant the requested density bonus?

2. Does the project do enough to avoid and/or minimize impacts to the WQR and HCA?

Kellogg Creek Planned Development

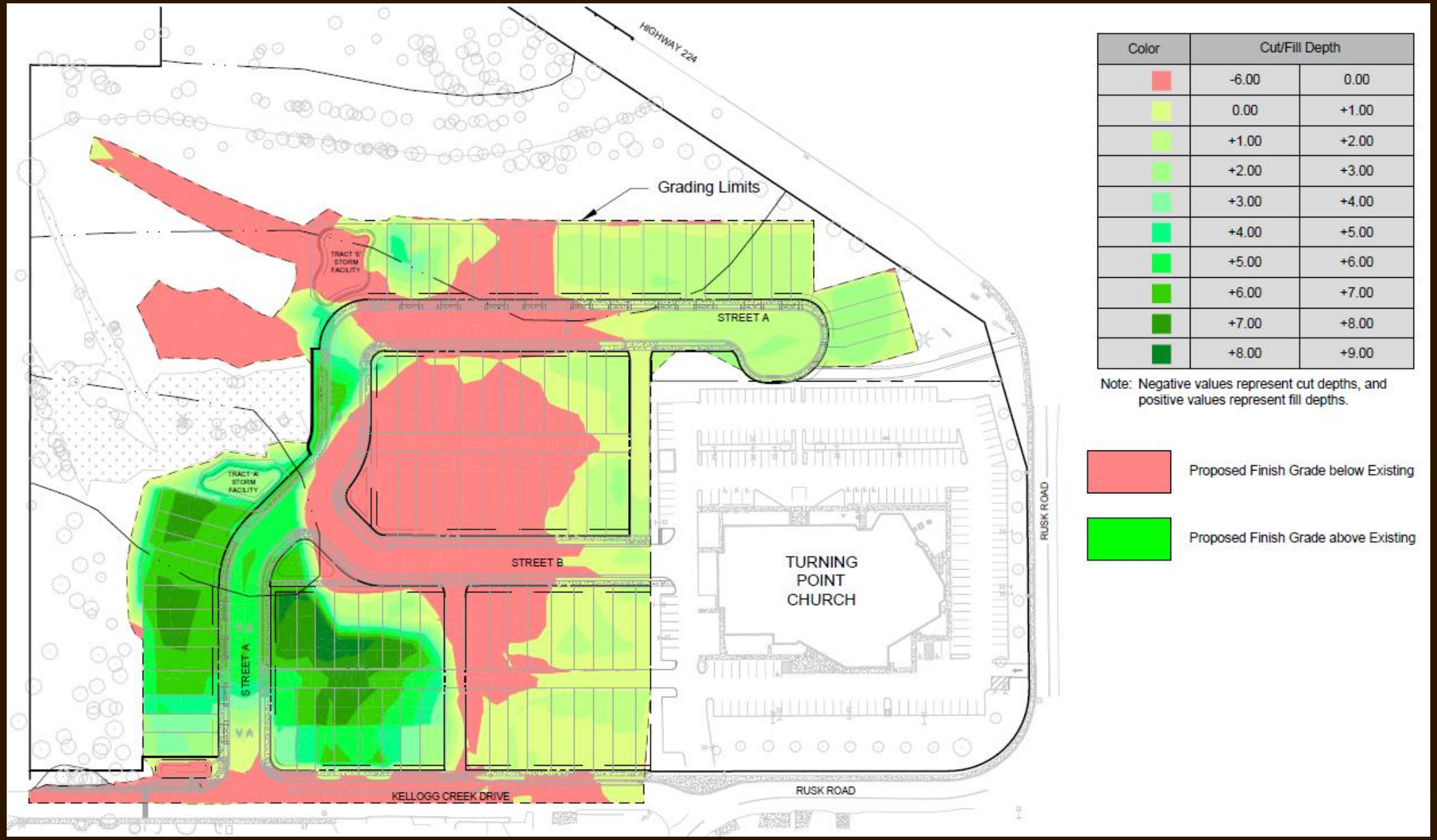
Master File #PD-2017-001

(with ZA-2017-001, S-2017-001, NR-2017-001, TFR-2017-001, VR-2017-003, and CSU-2017-001)

City Council
September 5, 2017
Staff Presentation by Brett Kelver, Associate Planner

Extra Slides—for use if needed

Proposed cut & fill



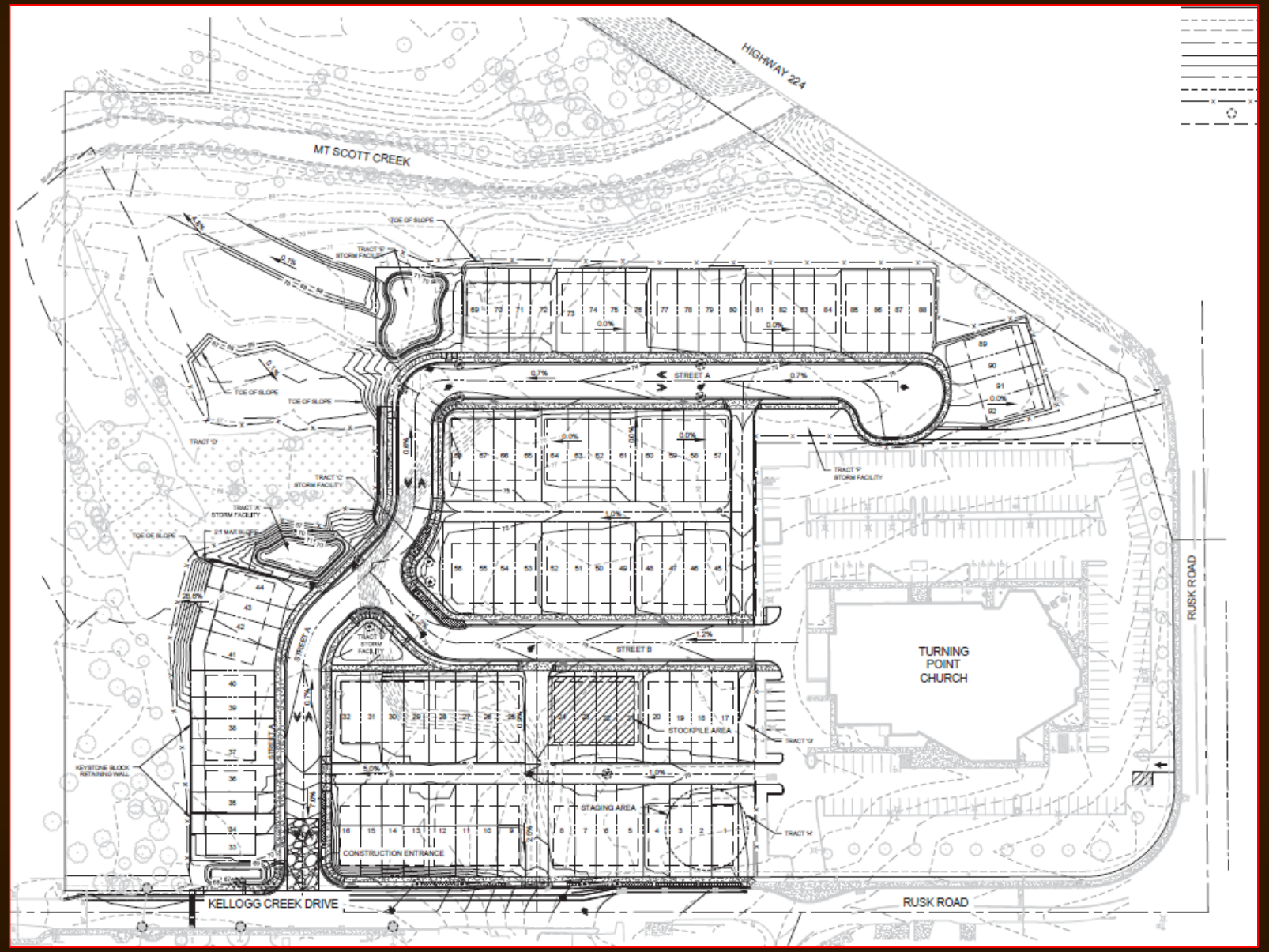
Color	Cut/Fill Depth	
	-6.00	0.00
	0.00	+1.00
	+1.00	+2.00
	+2.00	+3.00
	+3.00	+4.00
	+4.00	+5.00
	+5.00	+6.00
	+6.00	+7.00
	+7.00	+8.00
	+8.00	+9.00

Note: Negative values represent cut depths, and positive values represent fill depths.

Proposed Finish Grade below Existing

Proposed Finish Grade above Existing

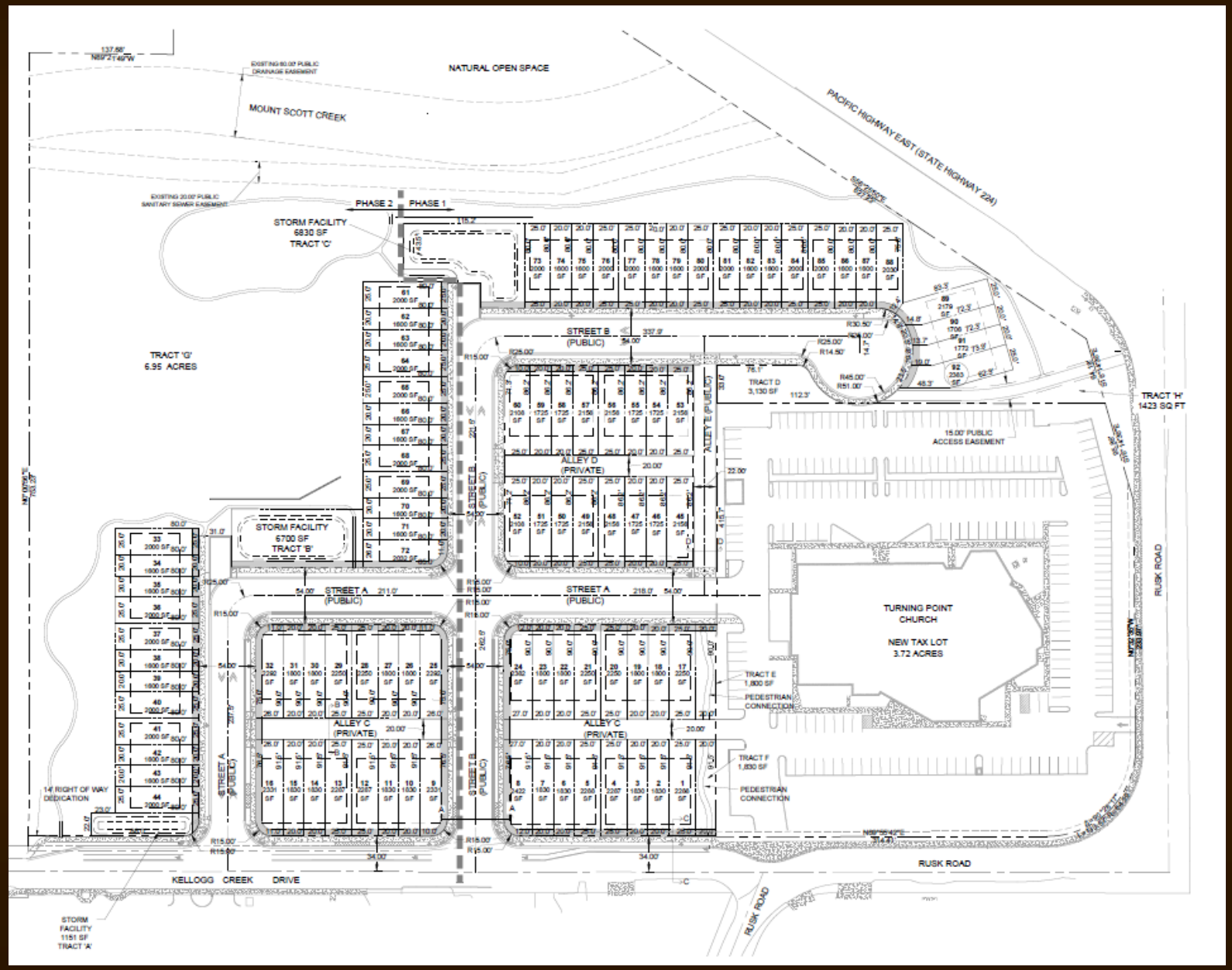
Grading Plan



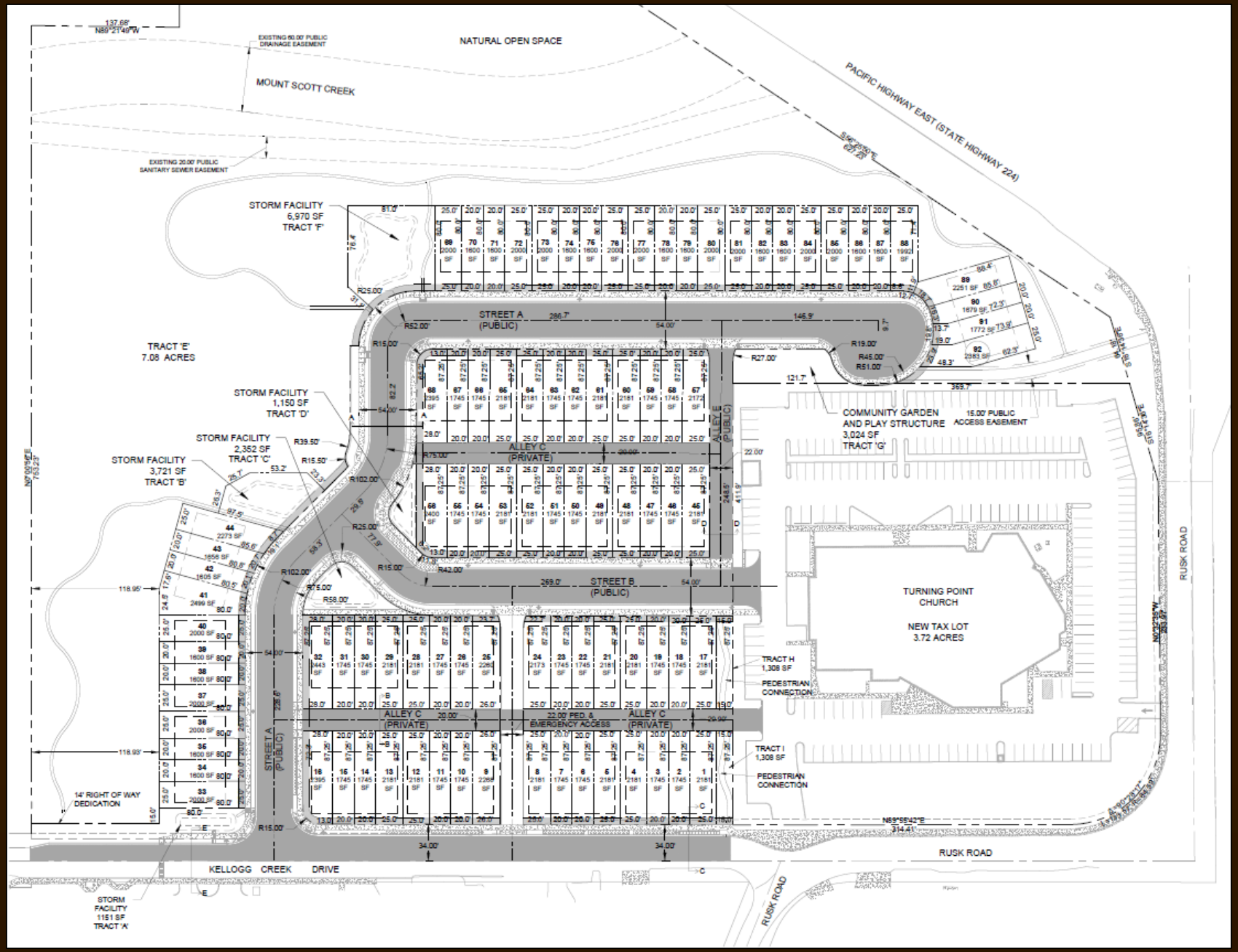
Grading Plan showing proposed fill



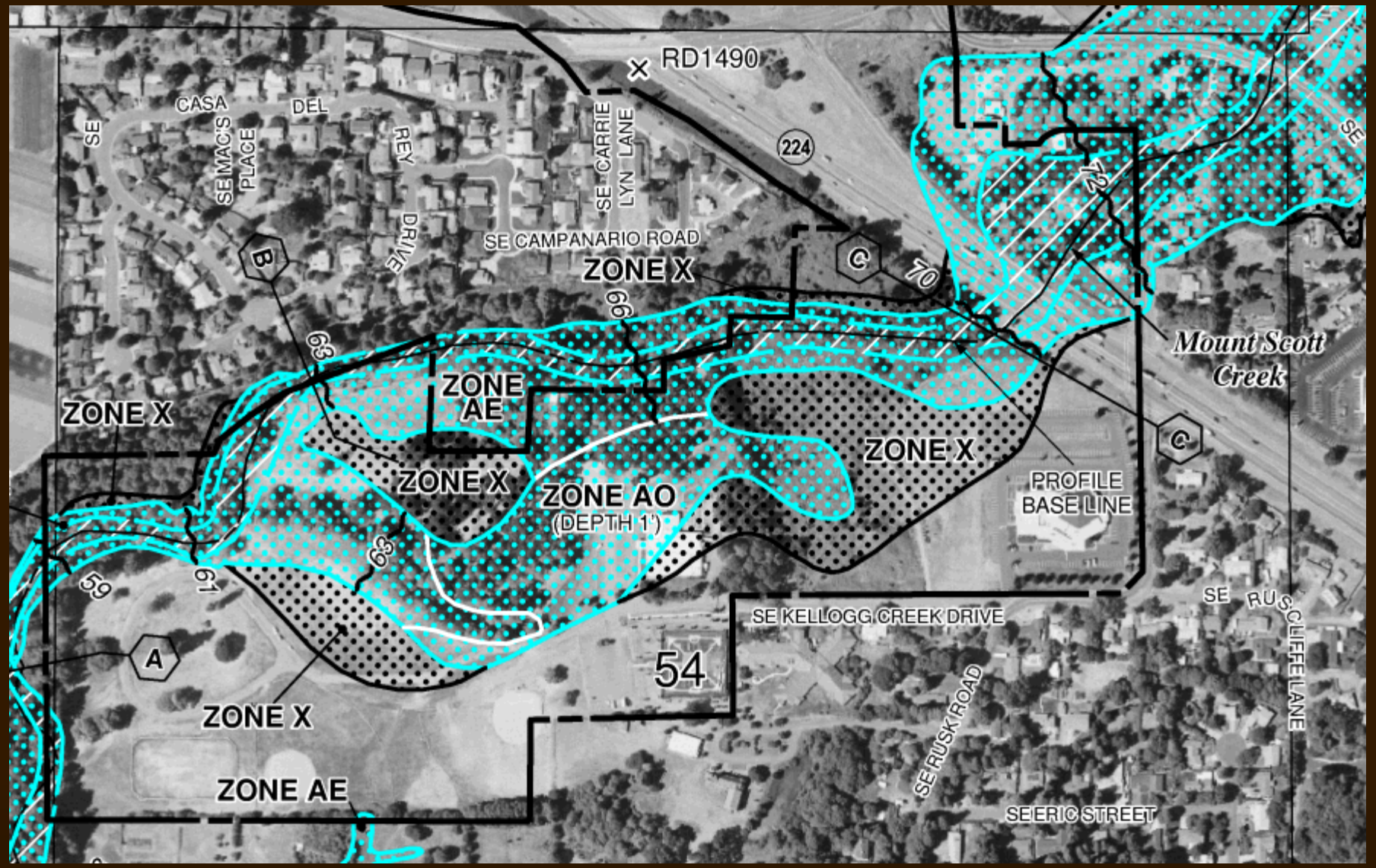
Original Proposed Plan



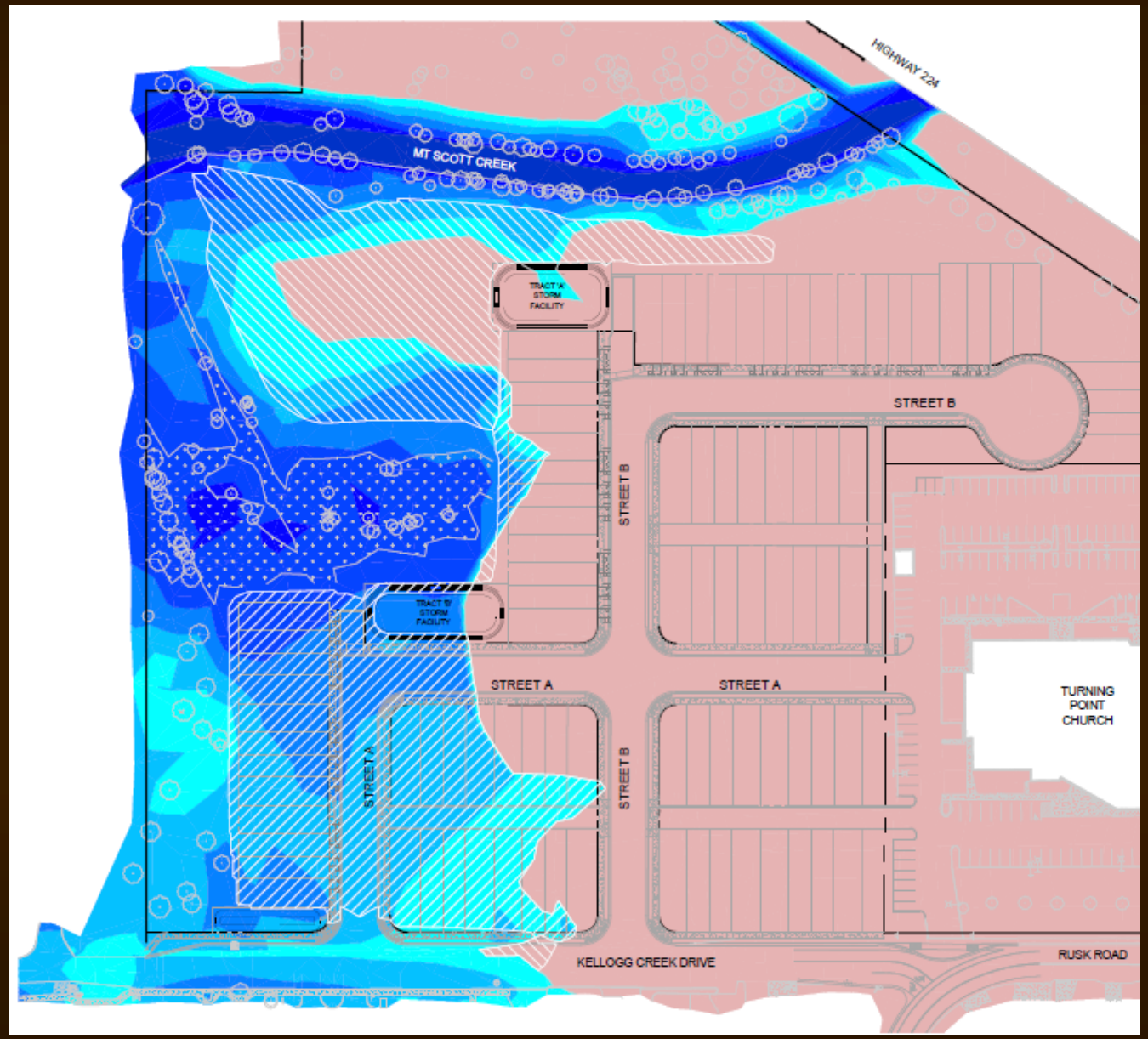
Final Plan


NATURAL OPEN SPACE
MOUNT SCOTT CREEK
EXISTING 60.00' PUBLIC DRAINAGE EASEMENT
EXISTING 20.00' PUBLIC SANITARY SEWER EASEMENT
PACIFIC HIGHWAY EAST (STATE HIGHWAY 224)
STORM FACILITY 6,970 SF TRACT 'F'
TRACT 'E' 7.08 ACRES
STORM FACILITY 1,150 SF TRACT 'D'
STORM FACILITY 2,352 SF TRACT 'C'
STORM FACILITY 3,721 SF TRACT 'B'
STREET A (PUBLIC)
STREET B (PUBLIC)
ALLEY C (PRIVATE)
ALLEY E (PUBLIC)
COMMUNITY GARDEN AND PLAY STRUCTURE 3,024 SF TRACT 'G'
15.00' PUBLIC ACCESS EASEMENT
TURNING POINT CHURCH
NEW TAX LOT 3.72 ACRES
TRACT H 1,308 SF
PEDESTRIAN CONNECTION
TRACT I 1,308 SF
PEDESTRIAN CONNECTION
22.00' PED. & EMERGENCY ACCESS
14' RIGHT OF WAY DEDICATION
KELLOGG CREEK DRIVE
RUSK ROAD
STORM FACILITY 1151 SF TRACT 'A'

FEMA Floodplain Map



Floodplain Alteration (original)



1987 zone change

CITY OF MILWAUKIE
COMMUNITY DEVELOPMENT DEPT.
STAFF REPORT

DATE: September 8, 1987
FILE NO: CPA-87-01/ZC-87 05/CU-87-05
90TH DAY: Dec. 7, 1987

APPLICATION : Plan Amendment, Rezone and Conditional Use
APPLICANT : Pacific Western Development
PROPERTY OWNER: Clackamas Christian Ctr./Assembly of God Church
LOCATION : 13333 S.E. Rusk Road (Tax Lots 700, 900 & 901 of Tax Map T2S-R2E-6AD, W.M.)

PROPOSAL:

This proposal is a combination of three different applications intended to accomplish the following:

1. Amend the Comprehensive Plan designation from Low to Medium Density Residential;
2. Rezone from R-10 to R-3; and
3 Conditional Use in R-3 for a senior housing development, including a density bonus and an additional story height allowance.

The proposal would result in the construction of a 160 unit senior housing project on 9.25 acres of property, currently owned by and adjacent to the Assembly of God Church at 13333 S.E. Rusk Road. The site lies between Kellogg Creek Drive (on the south), Hwy. 224 (on the north), North Clackamas Park (on the west) and the Clackamas Christian Center (on the east).

CRITERIA:

Comprehensive Plan:
Plan Review and Amendment Procedures (pp. 4-5)
Residential Land Use and Housing Element (pp. 24-33)
Environmental and Natural Resources (pp. 10-15)
Transportation, Public Facilities....(pp. 62-80)

Zoning Ordinance:
Zoning Map Amendments - Section 9.03 (p. 87)
Conditional Use Criteria - Section 6.01.2 (p. 79)
Senior Housing CU Criteria - Section 6.01.11 (p. 82c)
Senior Housing Definition (p. 8)
R-3 Standards - Section 3.04 (pp. 17-18)

- Transitional Area Plan Review (Planning Commission)
- Minor Land Partition (Staff)
- Flood Hazard Permit Review (Staff)
- Significant Natural Review (Staff)
- Building Permits (Staff)

CONCLUSIONS:

1. This proposal meets Comprehensive Plan Amendment Criteria.
2. Zoning Map Amendment Criteria have been met.
3. The Conditional Use Criteria have been met provided conditions are applied.

RECOMMENDATIONS AND CONDITIONS:

1. For approval of CPA-87-01, a Plan Amendment from low to medium density residential.
2. For approval of ZC-87-05, a Zoning Map Amendment from R-10 to R-3.
3. For approval of CU-87-05, a Conditional Use for a 160 unit senior housing project, subject to the following conditions:
   a. Approval of CU-87-05 shall not be final until final approval is received from City Council for applications CPA-87-01 and ZC-87-05.
   b. That development of this site occur in accordance with the approved site plan.
   c. That variations from item b. including the placement of site signage, receive approval by consideration of the Planning Commission.
   d. That items 1.-6. of the Clackamas County Transportation memo (from Dennis Everson, dated 8/12/87) be complied with in order to meet traffic and design standards for Kellogg Creek Drive.
   e. That an engineering traffic study be provided by the Applicant to assess improvement needs for the intersection of Rusk Road and Kellogg Creek Drive. The Applicant is to provide improvements specified as needed by this study.

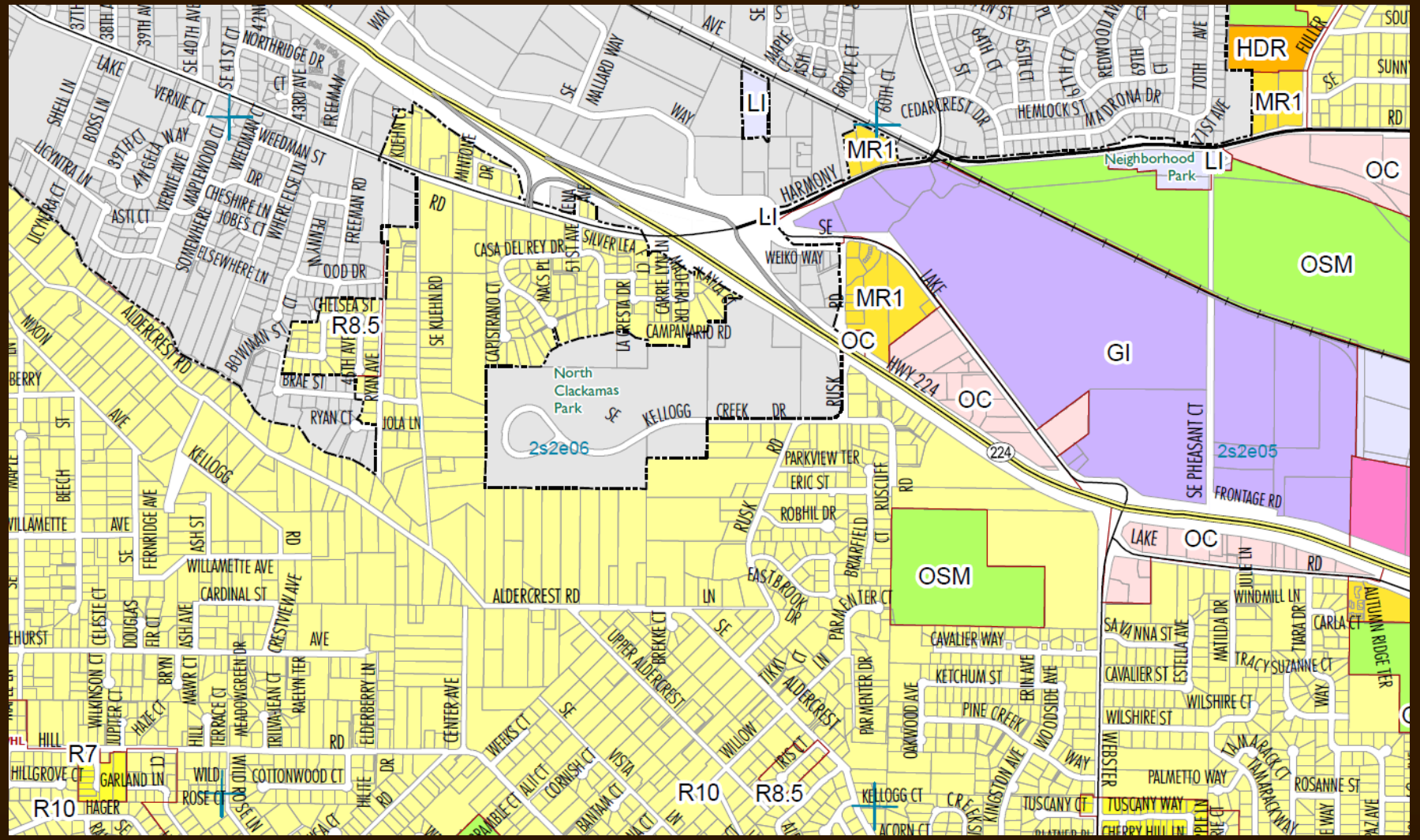
Oaks in Right-of-Way





- Back of existing sidewalk = extent of improvements

County Zoning



KELLOGG CREEK PROJECT

CITY COUNCIL HEARING

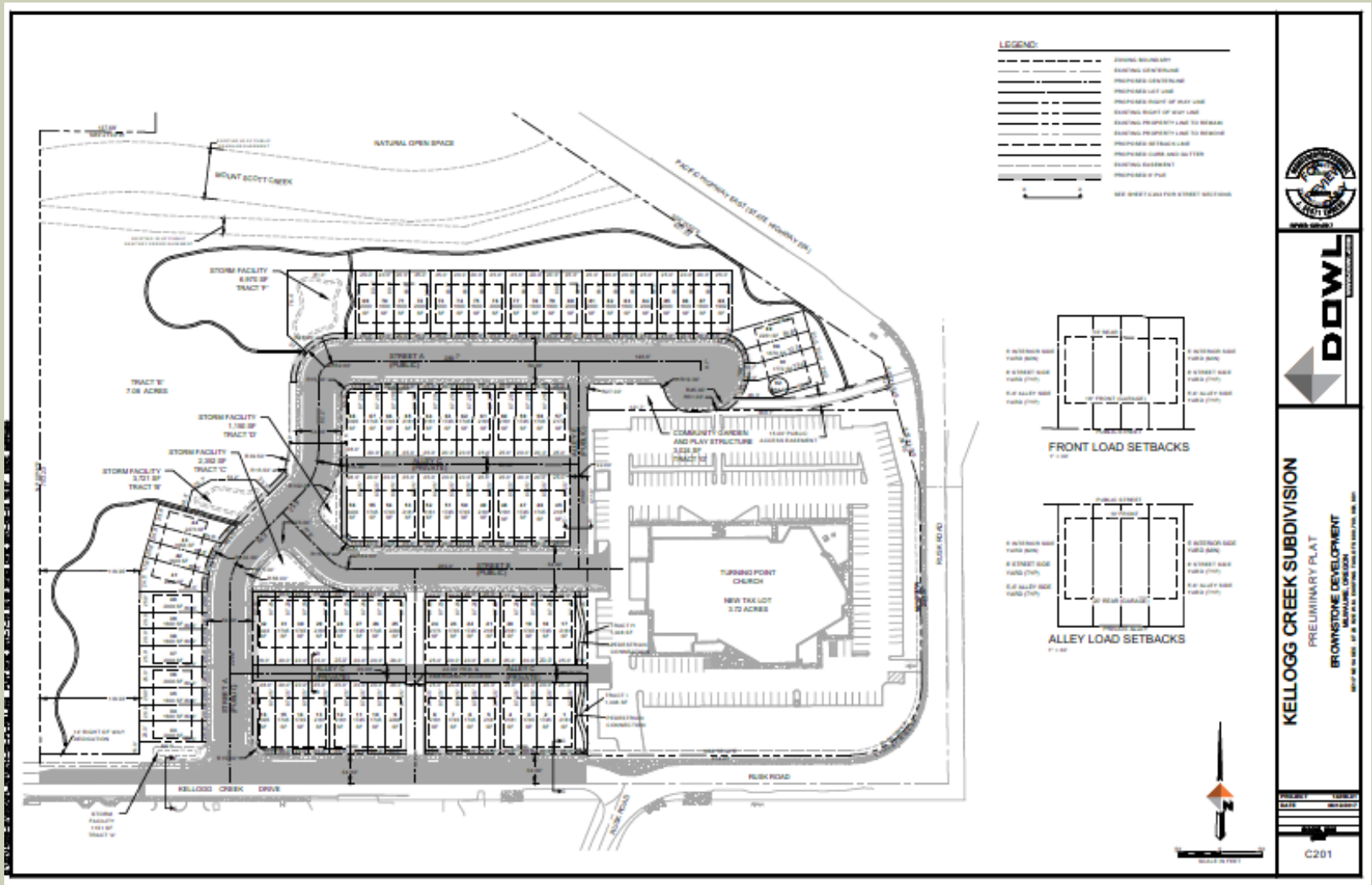
TUESDAY, SEPT. 5, 2017

- Scott Emmens, DOWL
- Serah Breakstone, DOWL
- John Van Staveren, Pacific Habitat Services
- Randy Myers, Brownstone Development, Applicant

Property owner: Turning Point Church

Developer: Brownstone Development, Inc.

KELLOGG CREEK PLAT



PROJECT DESIGN & AMENITIES

1. Protection of natural resources – 7 acres dedicated to the City
2. Protects white oak trees and camas understory
3. Integrated open spaces, access and views
4. Neighborhood amenities – community garden and play area
5. Restoration in habitat and riparian areas
6. Provides 92 units of a needed housing type for Milwaukie

THANK YOU

QUESTIONS?

UPDATED TRAFFIC STUDY

1. New traffic counts conducted on June 1 (school in session)
2. Three intersections:
   - **OR-224/Rusk Road**
   - **Rusk Road/Ruscliff Road**
   - **Rusk Road/Kellogg Creek Road**
3. Results are still consistent with level of service standards

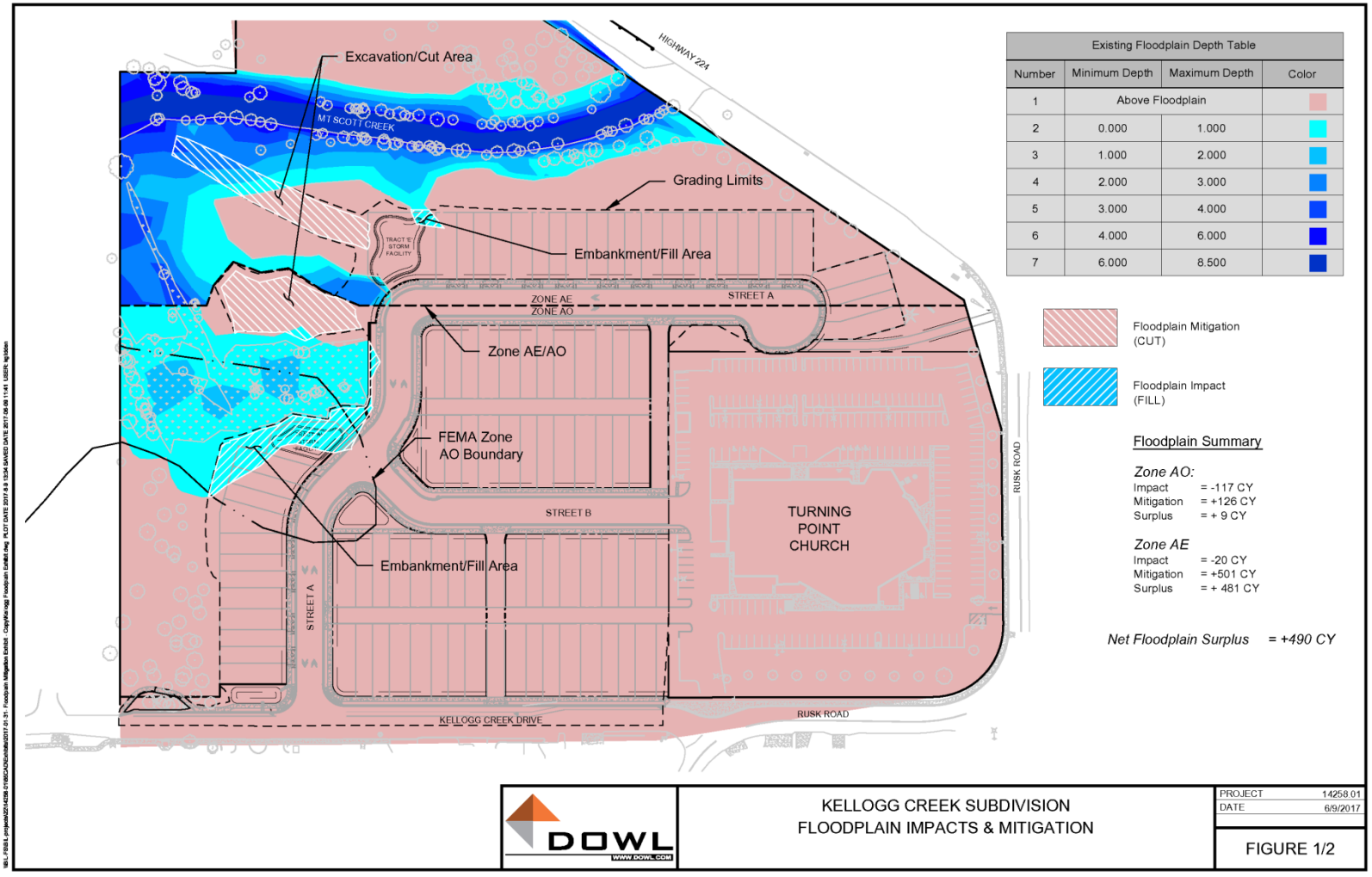
UPDATED TRAFFIC STUDY

Table 1. June 1, 2017 Operational Results and Comparison to Previous

Intersection	Jurisdiction	Applicable Peak Hour Operating Standards	Previous Total Traffic Results		June 1, 2017 Total Traffic Results		Mets Standard?
			AM Peak	PM Peak	AM Peak	PM Peak	
#1 OR-224/SE Rusk Road	ODOT	Intersection V/C ≤ 0.99	0.88	0.86	0.95	0.93	Yes
#3 SE Rusk Road/SE Ruscliffe Road	City of Milwaukie & Clackamas County	LOS "D" & PM V/C ≤ 0.99	LOS "B"	LOS "B" 0.01	LOS "B"	LOS "B" 0.09	Yes
#4 SE Rusk Road/SE Kellogg Creek Drive	City of Milwaukie & Clackamas County	LOS "D" & PM V/C ≤ 0.99	LOS "B"	LOS "B" 0.23	LOS "B"	LOS "B"* 0.17*	Yes
#5 SE Kellogg Creek Drive/Site Driveway	City of Milwaukie	LOS "D"	LOS "B"	LOS "A"	LOS "B"	LOS "A"	Yes

* Note that on June 1, 2017, the volume of eastbound traffic on SE Kellogg Creek was lower than on the previous count day in November 2016 (per the February 2017 traffic report). Using the higher count from November 2016, the results for the weekday PM peak hour would be LOS "C" (16.1 seconds of per-vehicle delay) and a v/c ratio of 0.28. Both the November 2016 and June 2017 results are well within the respective operating standard.

FEMA FLOOD IMPACT REDUCTION





Regular Session Agenda Item No. 6

Other Business

MILWAUKIE CITY COUNCIL
STAFF REPORT

Agenda Item: **RS 6. A.**
Meeting Date: **9/5/17**

To: Mayor and City Council

Through: Ann Ober, City Manager

Subject: **Adoption of the Milwaukie Community Vision**

From: David Levitan, Senior Planner
Denny Egner, Planning Director

Date: September 5, 2017

ACTIONS REQUESTED

Adopt a resolution accepting the Milwaukie Community Vision, which is comprised of an updated Vision Statement and a new Action Plan.

HISTORY OF PRIOR ACTIONS AND DISCUSSIONS

November 5, 1995: The Council adopted Ordinance 1789, which added the Milwaukie Vision Statement as an ancillary document to the Comprehensive Plan (CPA-95-03).

January 19, 2016: The Council asked staff to explore a visioning process that would include an action plan component to address issues that may not fit into the comprehensive plan and to include a more robust outreach element.

February 18, 2016: Visioning consultant Steven Ames gave a presentation on community visioning, including recent visioning projects that he had worked on and the basic tenets of the "Oregon Model" for visioning. Council provided feedback on the potential scope of the visioning process, which Mr. Ames summarized in a March 11 memo.

May 3, 2016: The Council heard an update on the status of the Community Vision and Action Plan, including staff's proposal for a Visioning Advisory Committee.

July 5, 2016: The Council heard the Steering Committee's recommendation for 14 members for the VAC and provided input on a potential 15th member.

August 16, 2016: Staff and consultants from Cogan Owens Greene provided an update on community outreach efforts in August, including stakeholder interviews and summer outreach, and briefed the Council on incorporating a quadruple bottom line approach to sustainability (People, Places, Planet, and Prosperity).

October 20, 2016: Staff updated the Council on the status of the Community Conversations and other public outreach efforts, and discussed the November 2 Vision Town Hall.

November 10, 2016: Staff provided a summary of the November 2 Vision Town Hall and discussed upcoming work items and meetings for the VAC and Steering Committee.

February 7, 2017: Staff updated the Council on the status of the Vision Statement and Action Plan and on upcoming public engagement opportunities, including the February 15 Town Hall.

March 21, 2017: The Council reviewed current drafts of the Vision Statement and Action Plan, in preparation for their April 23 Goal Setting Retreat.

July 5, 2017: The Council reviewed an updated version of the Vision and Action Plan, and directed staff to make several revisions in advance of the August 1 work session.

August 1, 2017: The Council provided its final review and comments on the Action Plan, in advance of adoption of the Community Vision on September 5.

ANALYSIS

Over the past year, City staff and its consultants have worked with the Vision Advisory Committee (VAC) to develop a Community Vision for the City of Milwaukie. Dozens of events, meetings, and surveys were held, resulting in hundreds of ideas and comments from the Milwaukie community that served as the foundation for the document. The Community Vision consists of two components: a Vision Statement, which is an aspirational document that describes the ideal Milwaukie in the year 2040, and is an update to the Vision Statement adopted by the Milwaukie City Council in November 1995; and an Action Plan, which includes a list of action items that serve as a roadmap to achieving the preferred future identified in the Vision Statement.

The VAC held its final meeting on June 21, at which time it recommended adoption of the Community Vision by the City Council. At their July 5 work session, the Council proposed several edits to the VAC's version of the Action Plan, which were subsequently discussed at the August 1 Council meeting. On August 1, the Council had a few minor comments on the Action Plan, and instructed staff to bring the Community Vision (Attachment 1) before them for adoption on September 5. The full list of action items that were generated during the yearlong public process, as well as other appendices, are included in Attachment 3.

The yearlong visioning process involved hundreds of different stakeholders, and is being used as a model for public outreach as staff begins the process of updating the Comprehensive Plan. The process has resulted in new and improved relationships with groups and organizations throughout Milwaukie, and has resulted in Action Plan items related to best practices for topics such as material and meeting translation (see Attachment 2 for the Spanish language version of the Community Vision).

Staff would like to specifically call out the herculean efforts of the VAC, who spent dozens of hours (both during and outside of organized meetings) combing through community input and synthesizing it into the document being presented to you on September 5. The VAC represented an excellent cross-section of the Milwaukie community: long-time residents, recent transplants, homeowners, renters, and residents from all seven neighborhood district associations. The City will be lucky to find Comprehensive Plan Advisory Committee (CPAC) members that match the dedication and aptitude of the VAC.

The Youth Vision Action Team was also an important resource in our public outreach efforts. Made up of four students from Milwaukie High School, the team helped with downtown business canvassing, staffed Community Conversations, and served as liaisons for our outreach at

Milwaukie High School. Staff looks forward to the continued youth participation during the Comprehensive Plan Update process.

REVIEW AND COORDINATION
The staff report has been reviewed by the Planning Director and the City Manager.

FISCAL IMPACTS
None.

WORK LOAD IMPACTS
None.

STAFF RECOMMENDATION
Based on the VAC's recommendation of June 21 and the revisions that have been made to the Community in response to Council comments at their July 5 and August 1 work sessions, staff recommends that the Council adopt a resolution, approving the Community Vision. Staff is also requesting that the Council formally recognize the contributions made by the Vision Advisory Committee and Youth Vision Action Team on September 5.

ATTACHMENTS
1. Community Vision (Vision Statement and Action Plan)
2. Community Vision - Spanish Language Version
3. Community Vision Appendices
4. Resolution Adopting the Community Vision



MILWAUKIE ALL ABOARD

September 5, 2017
City Council Adoption Draft

RS963

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ACKNOWLEDGEMENTS

Vision Advisory Committee
Shannah Anderson
Misty Collard Adcox
Douglas Craig
Chris Davis
Barbara Eiswerth
Angel Falconer
Zara Logue
Bryce Magorian
Jessica Neu
Howie Oakes
Ben Rousseau
Adrianna Stanley
Alejandra Torres
Arianna Van Bergen

Youth Vision Action Team
Odalis Aguilar-Aguilar
Maxwell Bernardi
Tyrenna Jacobs
Sarai Rodriguez

Staff
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Denny Egner, *Planning Director*
Mary Heberling, *Assistant Planner*

Consultants
Kirstin Greene, *Cogan Owens Greene*
Anais Mathez, *Cogan Owens Greene*
Daniel Franco-Nunez, *IZO Marketing*
Anthony Veliz, *IZO Marketing*

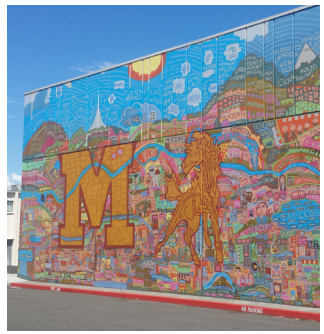
Steering Committee
Scott Archer, *North Clackamas Parks and Recreation District*
Denny Egner, *Planning Director*
Alma Flores, *Community Development Director*
Mark Gamba, *Mayor*
Jordan Imlah, *Public Affairs Coordinator*
David Levitan, *Senior Planner*
Mitch Nieman, *Assistant to the City Manager*
Ann Ober, *City Manager*
Wilda Parks, *City Councilor*
Cindy Quintanilla, *North Clackamas School District*
Jason Wachs, *Neighborhood Outreach Coordinator*

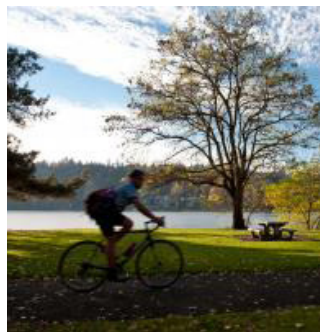
City Council
Shane Abma, *City Councilor*
Lisa Batey, *City Councilor*
Scott Churchill, *City Councilor*
Angel Falconer, *City Councilor*
Mark Gamba, *Mayor*
Wilda Parks, *City Councilor*
Karin Power, *City Councilor*





INTRODUCTION









Along with the rest of the Portland Region, the City of Milwaukie is growing. By 2040, Milwaukie's population is expected to increase by 12 percent—an additional 2,500 new residents. While growth can be a positive, it also means change. The challenge—and opportunity—is to create strategies to accommodate change while preserving community assets like Milwaukie's small town character, rivers, creeks, parks, schools, thriving local businesses and public spaces. The City of Milwaukie is committed to managing growth in a planned and cost-effective way to retain and enhance those Milwaukie attributes that community members value.

In 2016, the City of Milwaukie launched a community-wide engagement process to develop a Vision and Action Plan. The intent of this Vision and Action Plan is twofold: to describe what Milwaukie residents, business owners and employees want the community to be like in the year 2040, and to help guide investments in the years to come. Working within the framework of sustainable community planning, the Vision and Action Plan uses a "quadruple bottom line" approach to identify strategies and priorities that manage growth in a considerate, equitable and cost-effective way. The quadruple bottom line refers to maximizing results for every dollar spent for community, environment, economy and culture. The focus is on City services in collaboration with partner service providers such as North Milwaukie Parks and Recreation District and North Clackamas School District. The results of the process also will help inform the update of the Comprehensive Plan, the City's primary long-range physical planning document.

To guide the process, a citizen-based Vision Advisory Committee (VAC) was formed and made up of volunteer community members. Over 30 applications were submitted for 15 positions. Committee representation was diverse in terms of age, interests and background, and neighborhood representation. Supported with community feedback, the VAC was instrumental in helping shape the topics and themes in the vision and developing action items, metrics and partners.

RS966

The results in this document reflect significant community outreach that occurred over the course of a year. A thousand community members were engaged through various events and activities. A Youth Vision Action Team, made up of four Milwaukie High School students, helped extend the impact of these efforts. This included:

- 15 Summer Fairs and Events
- 20 Stakeholder Interviews
- 18 Community Conversations in Fall 2016
- 4 Web-Based Surveys
- 2 Town Halls
- 3 Place it! Workshops with Urban Designer James Rojas
- 7 Vision Advisory Committee meetings
- 5 Steering Committee/ Department Leadership meetings
- 10 Community Conversations in Spring 2017

Quadruple Bottom Line

Creating strategies that frame a sustainable vision and manage growth in a considerate, equitable and cost-effective way ensures that Milwaukie will continue to be a healthy, thriving community for generations to come. Using a quadruple bottom line approach to guide decision-making fosters innovative thinking about how the Milwaukie community can be improved to achieve multiple objectives and provide the greatest benefits for People, Place, Planet and Prosperity. The Vision and Action Plan applies this approach to frame the development of action items and identify priorities.





VISION

Based on feedback from the community and the Vision Advisory Committee, the City of Milwaukie's vision for 2040 is:

In 2040, Milwaukie is a flourishing city that is entirely equitable, delightfully livable, and completely sustainable. It is a safe and welcoming community whose residents enjoy secure and meaningful work, a comprehensive educational system, and affordable housing. A complete network of sidewalks, bike lanes, and paths along with well-maintained streets and a robust transit system connect our neighborhood centers. Art and creativity are woven into the fabric of the city.

Milwaukie's neighborhoods are the centers of daily life, with each containing amenities and community-minded local businesses that meet residents' needs. Our industrial areas are magnets for innovation, and models for environmentally-sensitive manufacturing and high wage jobs. Our residents can easily access the training and education needed to win those jobs.

Milwaukie nurtures a verdant canopy of beneficial trees, promotes sustainable development, and is a net-zero energy city. The Willamette River, Johnson Creek, and Kellogg Creek are free flowing, and accessible. Their ecosystems are protected by a robust stormwater treatment system and enhanced by appropriate riparian vegetation. Milwaukie is a resilient community, adaptive to the realities of a changing climate, and prepared for emergencies, such as the Cascadia Event.

Milwaukie's government is transparent and accessible, and is committed to promoting tolerance and inclusion and eliminating disparities. It strongly encourages engagement and participation by all and nurtures a deep sense of community through celebrations and collective action. Residents have the resources necessary to access the help they need. In this great city, we strive to reach our full potential in the areas of education, environmental stewardship, commerce, culture, and recreation; and are proud to call it home.

GOAL STATEMENTS



People: Arts, Community, Education, Happiness, Health, Innovation, Safety

1. Milwaukie is an inclusive community of diverse people from a variety of backgrounds that honors our differences and shared similarities. We are engaged and come together in many ways through various events and community gathering places, where we can celebrate our interests and passions.
2. Milwaukie is a diverse community that provides opportunities and support for all of its residents through a variety of resources and enriching activities. We encourage and support a vibrant local economy that contributes to a high quality of life where residents can live, work, learn, and play.
3. The City of Milwaukie is an open portal where information is readily available, easily exchanged, and responsive. Residents feel empowered and have opportunities to engage and share ideas.



Place: Housing, Infrastructure, Mobility, Neighborhoods, Parks

1. Milwaukie has a complete, clean and attractive network of sidewalks, bike lanes and paths that enable accessibility, mobility, and safety for all. Streets are tree-lined, well-lit and designed to promote a healthy and active lifestyle. There is a seamless transition between walking, biking, and transit to key amenities and neighborhood centers.
2. Milwaukie invests in housing options that provide affordability, high quality development and good design, promoting quality living environments. It maintains the small neighborhood feel through creative use of space with housing options that embrace community inclusion and promote stability.
3. Milwaukie collaborates with community partners to create and preserve spaces to inspire the public to be engaged with the city's past and future. Art and innovation is weaved into the fabric of the city.

Planet: Ecosystems, Energy, Environment, Resilience

1. The entire city nurtures a connected canopy of trees planted and stewarded by its residents. Smart and focused development honors and prioritizes life-sustaining natural resources.
2. Milwaukie has free flowing, accessible, pristine waterways that are protected by a robust stormwater treatment system. The Willamette waterfront is easily accessed by the public and offers a wide variety of activities and events that can be enjoyed by all.
3. Milwaukie is a model city that produces more energy through renewable sources than it uses. It is a prepared and resilient community, adaptive to the realities of a changing climate.

Prosperity: Business, Entrepreneurship, Income, Innovation, Investment, Jobs

1. Milwaukie offers numerous pathways to prosperity through an excellent education system and training programs that are connected to local business. Residents of all ages and backgrounds feel supported to pursue and attain success in our local community.
2. Milwaukie's neighborhoods are the center of daily life, with amenities and community-minded local businesses that meet the daily needs of residents. They form a network of unique, interconnected local hubs that together make Milwaukie the livable, equitable, and sustainable community that it is.
3. Downtown Milwaukie is a vibrant destination for both residents and visitors from throughout the region. Our industrial areas provide a high density of living-wage jobs across a number of different industries. The City is nimble and responsive to the needs of residents and businesses, with programs and policies that are financially sound, encourage job creation, and help support a strong and resilient local economy.

SUPERACTIONS

Building from a comprehensive action matrix, the community, City department heads and partner agencies identified priority action items under each goal statement. These priority actions were then categorized and consolidated into five Superactions (numbering does not indicate prioritization). These Superactions serve to unify 2017 City Council Goals with leading 2040 Vision and Action Plan Items across multiple components of the Quadruple Bottom Line framework, and will be used as an organizational framework for the upcoming Comprehensive Plan Update.

1. **Make Milwaukie a Model of Resiliency, Environmental Stewardship and Disaster-Preparedness**
2. **Continually Improve our Transportation System so that it Provides Safety and Connectivity for All Users**
3. **Create Complete Neighborhoods that Offer a Range of Housing Types and Amenities and Enhance Local Identity and Character**
4. **Support Local Businesses and Entrepreneurship through Training, Programs and Partnerships**
5. **Cultivate a Sense of Community, Culture, and Belonging by Encouraging Public Involvement, Diversity, Equity, and Inclusion**

The following tables present action items to support the implementation of each Superaction. These were recommended by the Vision Advisory Committee and/or prioritized by the community in the May 2017 survey, in which 240 community members participated by indicating their first and second top priorities among the 12 goal statements across People, Place, Planet and Prosperity. The status of these actions are defined as follows:

- **Future:** Actions to implement the 2040 vision that were recommended for near term implementation by the Vision Advisory Committee. They may be taken up during the City Council's biannual goal-setting process or initiated earlier as opportunities arise. These items are not currently funded.
- **Underway**: Actions that are currently underway within City departments but need more amplification and/or additional resources.
- **Initiate w/ Comprehensive Plan**: Actions that may be initiated with the City's Comprehensive Plan Update beginning in 2017.
- **Complete:** Actions passed and funded by City Council in the time since the last review of the Action Plan.









1 Make Milwaukie a Model of Resiliency, Environmental Stewardship and Disaster-Preparedness

Matrix Reference	Associated Priority Actions (Established by Town Halls, Survey, Council)	Status
Planet 1.1	Implement city programs, incentives and development code amendments that promote sustainable development and help to better integrate the built environment and natural environment	Initiate with Comprehensive Plan
Planet 1.2	Create a citywide composting program for residents and businesses	Complete
Planet 1.4	Develop a strong tree ordinance that incentivizes tree protection, has equitable tree replacement standards, and provides adequate flexibility for property owners	Underway
Planet 2.1	Develop a Natural Resource Plan and examine funding mechanisms for the restoration of Kellogg and Johnson Creeks and the removal of the Kellogg Dam	Initiate with Comprehensive Plan
Planet 2.2	Implement a plan and funding strategy for stormwater improvements that focuses on natural stormwater management and ensures that by 2040 all stormwater is treated before it is discharged into our creeks and river	Initiate with Comprehensive Plan
Planet 3.1	Encourage energy and water efficiency and the use of renewable sources by offering rebates, incentives, and permit fee reduction or waivers	Future
Planet 3.2	Develop a Climate Action and Energy Plan that aims to reduce the impacts of the Milwaukie community on climate change and by 2040 make Milwaukie a Net-Zero energy community that produces more electricity than it consumes	Underway; 2017-18 Council Goal
Planet 3.5	Ensure that the City's infrastructure and facilities can reasonably withstand natural or man-made disasters and that the City can continue to provide services during an emergency event	Underway
Planet 3.7	Promote household and neighborhood-level emergency preparedness by expanding the role and capacity of Community Emergency Response Teams (CERTs)	Underway

RS973

2 Continually Improve our Transportation System so that it Provides Safety and Connectivity for All Users

Matrix Reference	Associated Priority Actions (Established by Town Halls, Survey, Council)	Status
Place 1.1	Improve walkability and bikeability within the network by creating dedicated bike paths and walking trails that connect transit, neighborhood business hubs and public spaces, including Milwaukie Bay Park	Underway
Place 1.2	Utilize the Safe Access for Everyone (SAFE) Program to fill in sidewalk gaps and construct Americans with Disabilities Act (ADA) improvements in support of the Safe Routes to School Program	Underway
Place 1.4	Develop a Vision Zero program that seeks to eliminate traffic deaths and life-changing injuries on Milwaukie's streets	Future
Place 1.6	Implement road paving and funding strategies that improve road maintenance in Milwaukie	Underway
Place 1.9	Research and examine funding strategies for innovative local transit options that complement the regional transit network and help connect residents and employees to local amenities, employment areas and neighborhoods throughout the city	Future

3 Create Complete Neighborhoods that Offer a Range of Housing Types and Amenities and Enhance Local Identity and Character

Matrix Reference	Associated Priority Actions (Established by Town Halls, Survey, Council)	Status
Prosperity 2.1	Identify and support the development of neighborhood economic hubs that are walkable and provide amenities and commercial services for neighborhood residents	Initiate with Comprehensive Plan
Prosperity 2.2	Incentivize development of opportunity sites and other vacant and underutilized properties that can help meet the needs of neighborhood residents	Underway
Prosperity 2.3	Work with local vendors and community organizations to facilitate access to healthy, fresh food throughout Milwaukie's neighborhoods	Future
Place 2.1	Aim to provide improved housing affordability and stability for all City residents, with a variety of housing types, price ranges, and subsidized units available in all neighborhoods	Underway; 2017-18 Council Goal
Place 2.2	Streamline permitting and examine ways to adjust system development charges to encourage creative uses of space such as Accessory Dwelling Units, Tiny Homes, and Cottage Clusters	Future
Place 2.5	Create neighborhood plans that define neighborhood character, identify community needs and priorities, and develop strategies for better integrating infill housing into neighborhoods	Initiate with Comprehensive Plan
Place 2.7	Update the Development Code to allow more "missing middle" housing types (duplexes, triplexes and cottage clusters, tiny houses) in established neighborhoods, and permit mixed-use buildings in neighborhood hubs	Initiate with Comprehensive Plan
Place 3.1	Ensure that our parks and green spaces to ensure that they are safe, green and clean, with amenities like restrooms, seating areas, play structures, walking paths, parking and covered recreational facilities	Initiate with Comprehensive Plan

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4 Support Local Businesses and Entrepreneurship through Training, Programs and Partnerships

Matrix Reference	Associated Priority Actions (Established by Town Halls, Survey, Council)	Status
People 2.1	Promote small business development through mentoring, incubation and entrepreneurial programs as well as loans and grants distributed across Milwaukie's neighborhoods	Underway
People 2.2	Encourage businesses that provide family-wage jobs	Underway
People 3.1	Expand the role of the Ledding Library as an integral community resource center and explore the creation of a city concierge position that provides information about and helps with programs and resources, services offered by partner agencies, and local employment opportunities and application assistance	Future
Prosperity 1.1	Partner with local schools and businesses to create an internship and career development program that highlights Milwaukie industries and helps students develop skills that meet the needs of Milwaukie businesses	Future
Prosperity 1.2	Market the city as a center for business incubation, and target businesses that are a good match for Milwaukie's established and emerging industry clusters and business space	Underway
Prosperity 1.3	Create incentives for Milwaukie businesses that hire local residents and provide job training and continuing education opportunities for their employees	Future
Prosperity 3.1	Support and retain existing small businesses in our downtown and other business districts and attract new businesses that contribute to an open, inviting, and diverse atmosphere	Underway

5 Cultivate a Sense of Community, Culture, and Belonging by Encouraging Public Involvement, Diversity, Equity, and Inclusion

Matrix Reference	Associated Priority Actions (Established by Town Halls, Survey, Council)	Status
People 1.1	Continue to support neighborhood block parties, tool libraries, book exchanges, community gardens, "barn-raising" type activities and other neighborhood events and resources that serve to bring residents together	Underway
People 1.2	Continue to provide city staff support and funding for events and celebrations that showcase the community, such as the Sunday Parkways, Umbrella Parade, Earth Day/Arbor Day, and the NDA summer concert series	Underway
People 1.3	Develop additional Police Department programs that help build relationships with the community, such as Coffee with a Cop, the Citizen's Police Academy, the creation of a Latino Youth Coalition, and increased participation in community events like National Night Out and Sunday Parkways	Future
People 2.4	Expand the City's volunteer program to organize and promote community volunteer events, projects and other opportunities, connecting volunteers and resources with those in need	Underway
People 3.2	Update the City's comprehensive city-wide communications strategy to encourage community engagement and employ a variety of methods for exchanging information, from large Town hall meetings to emerging online tools	Initiate with Comprehensive Plan
People 3.6	Increase the number of City informational materials translated into Spanish and other languages	Underway
Prosperity 3.4	Develop a new public plaza in the south downtown area that can be used for year-round events and enhance the Milwaukie Farmer's Market	Future
Place 3.2	Complete Phase 3 of Milwaukie Bay Park to create spaces for community gathering and the arts and promote the park as a community destination with year-round programming	Underway; 2017-18 Council Goal
Place 3.4	Make improvements to Milwaukie Bay Park in a manner that celebrates the river and increases opportunities for waterfront events and access for boats and other water-related recreational activities	Underway; 2017-18 Council Goal

RS977



MILWAUKIE ALL ABOARD

Revisión de Consejo Municipal, 5 de Septiembre de 2017

RS978

Esta página se quedó en vacío a propósito.

Reconocimientos

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Barbara Eiswerth
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Bryce Magorian
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Wilda Parks, *City Councilor*
Cindy Quintanilla, *North Clackamas School District*
Jason Wachs, *Neighborhood Outreach Coordinator*

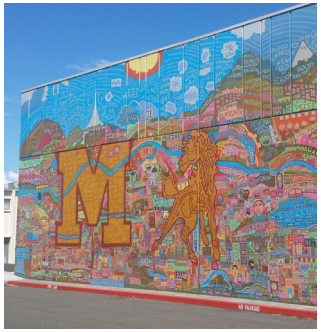
Consejo Municipal, Consejeros de la Ciudad
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Scott Churchill, *City Councilor*
Angel Falconer, *City Councilor*
Mark Gamba, *Mayor*
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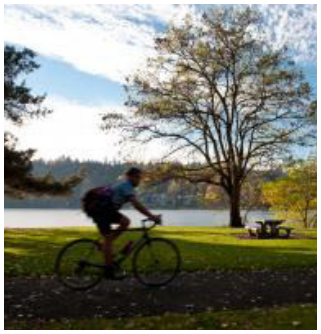




RS980

Introducción









Igual que el resto de Portland, la Ciudad de Milwaukie está en crecimiento. Para el año 2040 se espera que la población de Milwaukie aumente por un 12 porciento, o unos 2,500 residentes adicionales. Aunque crecimiento puede ser algo bueno, también significa cambio. El reto y la oportunidad esta en crear estrategias para controlar el cambio y cuidar de las características únicas de Milwaukie, como su cultura de ciudad pequeña, sus ríos, arroyos, parques, escuelas, vibrantes negocios locales y espacios públicos. La Ciudad de Milwaukie está decidida a manejar el crecimiento con planificación que también cuide de su bolsillo al retener y embellecer las cualidades de Milwaukie que sus residentes tanto aprecian.

En el 2016, la Ciudad de Milwaukie emprendió un proceso de enlace comunitario para crear un Plan de Visión y Acción. El Plan de Visión y Acción tenía dos propósitos: descubrir lo que residentes, dueños de negocios y trabajadores desean que su ciudad sea pare el 2040, y guiar inversiones en los años venideros. Empezando desde la óptica de lo que es sostenible, el Plan de Visión y Acción usa cuatro medidas para identificar estrategias y prioridades que controlan el crecimiento de forma considerada, equitativa y ahorrativa económica. Las cuatro medidas ayudan a maximizar los resultados por cada dólar que se gasta para la comunidad, medio ambiental, economía y cultura. El enfoque esta en servicios de la Ciudad en colaboración con proveedores de servicios regionales como Distrito Escolar del N° de Clackamas y Distritos de Parques y Recreación del N° de Milwaukie. Los resultados de este proceso también tienen el propósito de informar la Actualización del Plan Comprensivo, el documento principal de la planificación a largo plazo de la Ciudad.

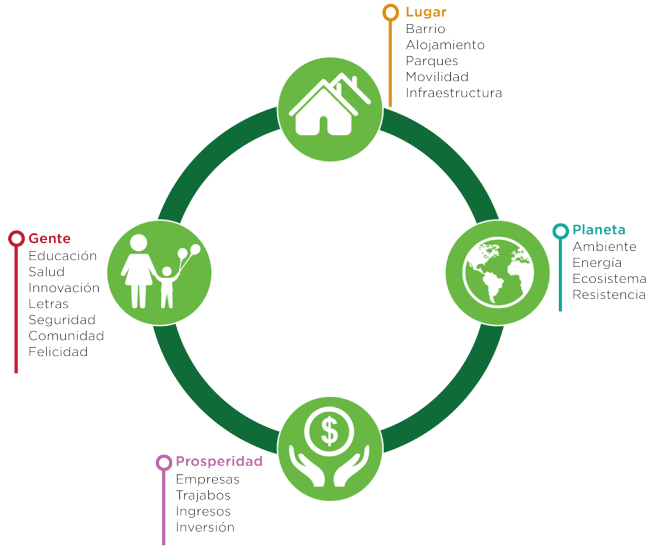
Para guiar este proceso, un comité civil, el Comité Asesor de Visión (VAC siglas en inglés) fue formado y compuesto de voluntarios comunitarios. Se entregaron más de 30 aplicaciones para 15 puestos. Fue un comité diverso en términos de edad, intereses y antecedentes, el VAC fue instrumental en ayudar a formar los temas de la visión y desarrollar ideas de acciones, métricas y aliados.

Los resultados de este documento reflejan de forma significativa el enlace comunitario que duro un año. Mediante varios eventos y actividades se pudo entrevistar a más de mil residentes. Un Equipo Juvenil de Visión y Acción, compuesto de cuatro estudiantes de Milwaukie High School, ayudaron en aumentar aún más este enlace. Lo que

- 15 ferias de verano y eventos
- 20 entrevistas de personas interesadas
- 18 Conversaciones Comunitarias en otoño, 2016
- 4 Encuestas por Internet
- 2 Reuniones Comunitarias
- 3 Eventos “Place It” Comunitarios con James Rojas
- 7 Reuniones con el Comité Asesor de Visión
- 5ReunionesdelComitédeGobierno/Departamentodeliderazgo
- 10 Conversaciones Comunitarias de primavera, 2017

Cuatro Medidas de Exito

Crear estrategias con una visión sostenible y manejando el crecimiento de forma considerada, equitativa y económica, asegura que Milwaukie continúe siendo una comunidad saludable y vibrante para generaciones futura. Usando Cuatro Medidas de Éxito para guiar decisiones, fomenta ideas innovadoras sobre como la comunidad de Milwaukie puede lograr múltiples objetivos al proveer los mejores beneficios para Personas, Lugares, Planeta y Prosperidad. El Plan de Visión y Acción también aplica este principio al decidir en que actuar e identificar como prioridades.





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Proceso de Desarrollo

Basado en consejos comunitarios, los miembros del Comité Asesor de Visión trabajaron muy cercas con empleados de la ciudad y equipo de consejeros para desarrollar 3 metas principales para cada uno de los 4 elementos de Cuatro Medidas de Éxito (Personas, Lugar, Planeta y Prosperidad) para un total de 12 metas. De estas metas, los miembros del VAC crearon una lista de 6 a 10 acciones que ayudaran la implementación de esa meta. Este trabajo se basó extensivamente en información de encuestas por internet, conversaciones comunitarias, Reuniones Comunitarias y sesiones del Comité Asesor de Visión. Se ha creado un esquema de estas acciones, organizado por las Cuatro Medidas de Éxito, que se puede hallar en el Apéndice A. El esquema en Apéndice A también incluye cuales aliados ayudaran con cuales acciones y posibles medidas que se usaran al paso del tiempo.



El Uso Intencionado del Documento

El Plan de Visión y Acción tiene el propósito de servir como un recurso al planificar prioridades comunitarias a corto alcance, se desarrolló mediante el proceso de visión. El proceso del plan de visión y acción informo al Consejo Municipal en su proceso bienal de elegir metas. De aquí en adelante, el Consejo Municipal, Gerente de la Ciudad y Principales de Departamentos usaran el Plan de Acción al desarrollar y expandir programas y políticas que cumplan con la visión de Milwaukie 2040. Futuras actualizaciones se harán anualmente en armonía con informes comunitarios, actualizaciones bienales en conjunto con el proceso de metas del Consejo Municipal. También se deben mantener en mente la lista entera de Metas Y Acciones incluidas en el Apéndice A.[1]

Metas del Consejo Municipal 2017-2018

Abril del 2017, el Consejo Municipal tomo un día para establecer las metas del Consejo para el bienio 2017-2018. Usando la Declaración de Visión y el Plan de Acción, el Consejo estableció 3 metas para el 2017-2018. Aspectos de estas metas incluyen viviendas asequibles, completar un plan de acción climático, y finalizar el desarrollo del parque en la bahía de Milwaukie, estas son cosas que ciudadanos han pedido repetidas veces

RS983

[1]Contacte a David Levitan por correo electrónico a LevitanD@milwaukieoregon.gov para recibir la traducción de apéndice A.

VISIÓN

Basado en informes recibidos de la comunidad y el Comité Asesor de Visión, la Ciudad de Milwaukie en el 2040 se puede describir de la siguiente manera:

En 2040 Milwaukie es una ciudad floreciente que es enteramente equitativa, deleitable para vivir, y totalmente sostenible. Es un lugar seguro, con aceras, carriles de bicicletas y caminos para caminar al par de calles bien mantenidas y un sistema robusto de transporte que conecte a los vecindarios. El arte y creatividad están entretejidos en la cultura de la ciudad.

Los vecindarios de Milwaukie son el centro de la vida diaria, cada cual con especialidades y negocios que apoyan a la comunidad local y cumplen con las necesidades locales. Nuestra área industrial es una incubadora de innovación, y un modelo de fabricación ambientalmente responsable con trabajos bien pagados. Nuestros residentes pueden obtener el entrenamiento y educación para poder obtener esos trabajos fácilmente.

Milwaukie tiene un excelente canapé de árboles saludables, promueve desarrollo sostenible, y es una ciudad que usa solo la energía que produce. El rio Willamette y Johnson Creek fluyen libremente y son accesibles. Sus ecosistemas son protegidos por el tratamiento de aguas de lluvia y mejorados por vegetación ribereña. Milwaukie es una comunidad resistente, adaptada a las realidades del cambio climático, y preparada para las emergencias como el Evento Cascadia.

El gobierno de Milwaukie es transparente y accesible, está decidido a promover la tolerancia e inclusión y eliminar la desigualdad. Promueve y encomia el enlace y participación de todos y nutre un sentido profundo de comunidad mediante celebraciones y acción colectiva. Residentes tienen

Declaraciones de Metas

Personas: Artes, Comunidad, Educación, Alegría, Salud, Innovación, Seguridad

1. Milwaukie es una ciudad inclusive compuesta de diversas personas con antecedentes variados, que celebra nuestras diferencias y similitudes compartidas. Estamos unidos y lo hacemos de varis formas durante diversos eventos y lugares de reuniones comunitarias, donde celebramos nuestros intereses y pasiones.
2. Milwaukie es una ciudad diversa que provee oportunidades y apoyo a todos sus residentes mediante una variedad de recursos y actividades enriquecedoras. Encomiamos y apoyamos una vibrante economía local que contribuye a una buena calidad de vida donde residentes pueden vivir, trabajar, aprender y jugar.
3. La Ciudad de Milwaukie es una puerta abierta donde información es fácilmente accesible, fácilmente intercambiada y que da resultados. Residentes se sienten encomiados y tienen oportunidades de escuchar y compartir ideas.

Lugar: Viviendas, Infraestructura, Movilidad, Vecindarios, Parques

1. Milwaukie tiene un sistema completo, limpio y atractivo de aceras, caminos de bicicletas y de caminar que ayudan con accesibilidad, movilidad y seguridad para todos. Las calles están bordadas por árboles, alumbradas y diseñadas para promover un estilo de vida saludable y activo. Hay una transición natural entre caminos de caminar, andar en bicicleta o tránsito y los servicios a centros de vecindarios.
2. Milwaukie invierte en opciones de viviendas asequibles, el desarrollo de buena calidad y buen diseño. Que promueve entornos de vivienda de cualidad. Mantiene su cultura de ciudad pequeña mediante el uso creativo del espacio con opciones de vivienda que se adhieren a la inclusión de comunidad y promueve sostenibilidad.
3. Milwaukie colabora con aliados comunitarios para crear y preservar espacios que inspiran al público a interactuar con el pasado y futuro de la ciudad. Arte e innovación están tejidos en la cultura de la ciudad.

RS985

Planeta: Ecosistemas, Energía, Ambiente, Resistencia

1. La ciudad entera nutre un canapé de árboles plantados y cuidados por sus residentes. Enfoque inteligente en el desarrollo que honra y da prioridad a recursos naturales que sostienen la vida.
2. Milwaukie tiene aguas que fluyen libremente y limpias que se protegen por un fuerte sistema de limpieza. El malecón del rio Willamette es accesible al público y ofrece una variedad de actividades y eventos que todos pueden disfrutar juntos.
3. Milwaukie es una ciudad modelo que produce más energía de formas sostenibles que las que usa. Es una comunidad preparada y resistente, adaptada a las realidades del cambio climático.

v

1. Milwaukie ofrece múltiple formas de alcanzar el excito por un sistema educativo excepcional y programas de entrenamiento conectados a negocios locales. Residentes de todas las edades y antecedentes se sienten apoyados a seguir su propósito para obtener excito en nuestra comunidad local.
2. Vecindarios de Milwaukie son centros de vida diaria, con servicios y negocios con su enfoque en la comunidad local que cumplen las necesidades de la vida diaria de los residentes. Forman una red única interconectada que hacen a Milwaukie habitable, equitativa y una comunidad sostenible.
3. El Centro de Milwaukie es un destino vibrante para tanto residente como visitantes de toda la región. Nuestras áreas industriales proveen muchos trabajos de altos sueldos en industrias variadas. La Ciudad puede responder fácilmente a las necesidades de residentes y negocios, con programas y políticas que son económicamente sostenibles, que encomian crecimiento de trabajos y ayudan en apoyar una economía fuerte y resistente.

SÚPER ACCIONES

Emprendiendo con una métrica comprensiva, la comunidad, cabezas de departamentos de la Ciudad y agencias aliadas identificaron acciones de prioridad para cada declaración de acción para alcanzar las metas. Estas acciones prioritarias fueron categorizadas y consolidadas en cinco Súper Acciones. (La numeración no refleja su importancia.) Estas Súper Acciones unen a las Metas del Consejo Municipal 2017 con El Plan de Visión y Acción 2014 mediante varios componentes de las Cuatro Medidas de Éxito. También se usara como modelo organizacional para futuras Actualizaciones del Plan Comprensivo.

1. **Hacer a Milwaukie un Modelo de Resistencia, Cuidado Ambiental y Preparación para Desastres**
2. **Siempre Mejorando nuestro Sistema de Transporte para Proveer Conectividad Segura Para Todos**
3. **Proveer Vecindarios Completos con Viviendas Variadas y Servicios que Embellezcan la Identidad y Carácter Local**
4. **Apoyar a Negocios y Emprendedores Locales mediante Entrenamiento, Programas y Alianzas**
5. **Cultivar Sentido de Comunidad, Cultura y Pertenencia por Eventos Públicos, Diversidad, Equidad e Inclusión**

RS987

Las siguientes tablas representan a diferentes acciones que se pueden implementar por cada Súper Acción. Estas fueron recomendadas por el Comité Asesor de Visión y/o dado prioridad por la comunidad en las encuestas de mayo 2017, en cual 240 miembros comunitarios participaron al indicar sus primeras y segundas prioridades entre las 12 declaraciones de metas de Personas, Lugar, Planeta y Prosperidad. El estado de estas acciones se define de la siguiente manera:

- **Futuro: Acciones para implementar la visión 2040 que se recomendaron para implementar a corto plazo por el Comité Asesor de Visión. Se pueden emprender por el Consejo Municipal durante su establecimiento de metas semestral o más temprano cuando haiga oportunidad. Actualmente no están financiadas.**
- **Actualmente: Departamentos de la Ciudad están trabajando en estos actualmente pero requieren ampliación de/o más recursos.**
- **Iniciar con Plan Comprensivo: Acciones que se pueden iniciar con la Actualización del Plan Comprensivo de la Cuidad comenzando en 2017.**
- **Completada: Acciones aceptadas y pasadas por el Consejo Municipal desde la última vez de la revisión del Plan de Acción.**









RS988

1 Hacer a Milwaukie un Modelo de Resistencia, Cuidado Ambiental y Preparación para Desastres

	Acciones de Prioridad Asociadas (Establecidos por Reuniones comunitarias, Encuestas, Consejo)	Estado
Planeta 1.1	Implementar programas e iniciativas de la ciudad y desarrollar enmiendas a pólizas que promueven desarrollos de sostenibilidad y ayudan a integrar a lo construido con el ambiente natural.	Iniciado por Plan Comprensivo
Planeta 1.2	Crear un sistema por toda la ciudad de compostaje residencial y comercial.	Completado
Planeta 1.4	Crear incentivos para proteger los arboles mediante ordenanzas que incentivan su cuidado, reglas de reemplazo equitativo y provee flexibilidad adecuada para dueños de propiedad.	Actualmente
Planeta 2.1	Desarrollar un Plan de Recursos Naturales e investigar posibles formas de financiar la restauración de los arroyos Kellogg y Johnson y remover la presa Kellogg.	Iniciado por Plan Comprensivo
Planeta 2.2	Implementación de un plan para financiar una estrategia de mejoras al sistema de aguas y manejo natural de agua de lluvia y asegurar que para el 2040 toda agua de lluvias sea limpiada antes de ser descargada en arroyos y ríos.	Iniciado por Plan Comprensivo
Planeta 3.1	Encomiar eficaz uso de agua y energía y el uso de energía renovable al ofrecer rebajas, incentivos y permitir reducción gratuita o excepciones.	Futuro
Planeta 3.2	Crear un Plan de Acción Climático y Energético que reduzca el impacto de Milwaukie al Cambio Climático y agá a Milwaukie una ciudad de consumo energético nulo para 2040 al producir más energía que la que consume.	Actualmente;Meta del Consejo para 2017-18
Planeta 3.5	Asegura que los edificios de la Ciudad e infraestructura estén listos para resistir un desastre creado por el hombre y que la Ciudad puede seguir proveyendo servicios en un evento de emergencia natural.	Actualmente
Planeta 3.7	Promover preparación en casos de emergencia a nivel familiar y vecindario al aumentar el papel y capacitación de Equipos de Respuesta Comunitaria de Emergencia (CERT siglas en ingles).	Actualmente

2 Siempre Mejorando nuestro Sistema de Transporte para Proveer Conectividad Segura Para Todos

	Acciones de Prioridad Asociadas (Establecidos por Reuniones comunitarias, Encuestas, Consejo)	Estado
Lugar 1.1	Mejorar los caminos para caminar o andar en bicicleta al crear caminos dedicados para caminar o bicicletas que se conectan al tránsito, centros de vecindarios y espacios públicos incluyendo el Parque de la Bahía de Milwaukie.	Actualmente
Lugar 1.2	Usar el Programa de Acceso Seguro para Todos (SAFE siglas ingles) para espacios entre aceras y calles y que toda nueva construcción se conforme al Acto de Americanos con Discapacidades (ADA siglas en ingles) y que todas la mejoras apoyen el Programa de Caminos Seguros a las Escuelas.	Actualmente
Lugar 1.4	Crear un programa de Visión Cero con la intención de eliminar todas muertes automovilísticas y heridas que destruyen las vidas en las calles de Milwaukie.	Futuro
Lugar 1.6	Implementar estrategias para financiar pavimentación de calles que mejoren el mantenimiento de carreteras en Milwaukie.	Actualmente
Lugar 1.9	Investigar y examinar formas de financiar estrategias innovadoras de transporte local que complemente la red regional de tránsito y ayude a conectar a residentes y empleadores a servicios locales, áreas de trabajo y vecindarios por toda la ciudad.	Futuro

3 Proveer Vecindarios Completos con Viviendas Variadas y Servicios que Embellezcan la Identidad y Carácter Local

Referencia Métrica	Acciones de Prioridad Asociadas (Establecidos por Reuniones comunitarias, Encuestas, Consejo)	Estado
Prosperidad 2.1	Identificar y apoyar el desarrollo de centros económicos de vecindarios que son caminables y proveen servicios y opciones comerciales para residentes del vecindario.	Iniciado por Plan Comprensivo
Prosperidad2.2	Incentivar el desarrollo de oportunidades para proveer oportunidades para residentes de vecindarios al usar al máximo a sitios vacíos o vacantes.	Actualmente
Prosperidad2.3	Trabajar con comerciantes locales y organizaciones comunitarias para facilitar acceso a comida fresca y saludable para todos los vecindarios de Milwaukie.	Futuro
Lugar 2.1	Tratar de proveer asequibilidad y estabilidad de hogares a los residentes de la Ciudad, con una variedad de casas, precios, y descuentos a unidades por todos los vecindarios.	Actualmente; Meta del Consejo para 2017-18
Lugar 2.2	Proveer permisos rápidamente y examinar formas de cobros en el sistema de desarrollos para encomiar usos creativos de espacios como Unidades Auxiliares de Morada, Casas Pequeñas, y agrupaciones de moradas pequeñas.	Futuro
Lugar 2.5	Crear planos del vecindario que demuestren su carácter, identificar necesidades de la comunidad y prioridades y desarrollar estrategias para integrar de mejor manera a nueva construcción.	Iniciado por Plan Comprensivo
Lugar 2.7	Actualizar pólizas de Construcción para permitir más tipos de hogares medianos (dúplex, triplex y agrupación de hogares pequeños) en vecindarios establecidos, y permitir el uso mesclado de edificios en centros de vecindarios.	Iniciado por Plan Comprensivo
Lugar 3.1	Asegurar que nuestros parques y espacios verdes sean seguros, verdes y limpios con servicios como baños, áreas para sentar, estructuras de jugar, caminos para caminar, estacionamiento y edificios de recreación con techos.	Iniciado por Plan Comprensivo

4 Apoyar a Negocios y Emprendedores Locales mediante Entrenamiento, Programas y Alianzas

Referencia Métrica	Acciones de Prioridad Asociadas (Establecidos por Reuniones comunitarias, Encuestas, Consejo)	Estado
Personas 2.1	Promover desarrollo de negocios pequeños por tutoría, incubación y programas de emprendimiento junto con préstamos y subsidies distribuidos por todos los vecindarios de Milwaukie.	Actualmente
Personas 2.2	Encomiar a negocios que provean salario que pueda sostener a una familia.	Actualmente
Personas 3.1	Ampliar el papel de la Librería Ledding como parte integral de la comunidad y explorar la creación de un nuevo empleado de la ciudad que sirva como conserje que provea información sobre programas, recursos, servicios ofrecidos por organizaciones aliadas y oportunidades locales para empleo y ayuda al solicitante.	Futuro
Prosperidad1.1	Aliarse con escuelas locales y negocios para crear un programa de aprendizaje y desarrollo de carreras que ejemplifique industrias en Milwaukie y ayude a estudiantes a desarrollar habilidades que cumplan con las necesidades de negocios de Milwaukie.	Futuro
Prosperidad1.2	Presentar a la ciudad como un centro de incubación de negocio, y enfocarse en negocios que sean buenos para la Ciudad, sus industrias establecidas, agrupaciones de negocios y zonas industriales.	Actualmente
Prosperidad1.3	Crear incentivos para que negocios en Milwaukie empleen a residentes locales y provean oportunidades de entrenamiento y educación avanzada a sus empleados.	Futuro
Prosperidad3.1	Apoyar y mantener a negocios pequeños ya existentes en nuestro centro y otros distritos de negocio y atraer nuevos negocios que contribuyan a una atmosfera libre, atrayente y diversa.	Actualmente

5 Cultivar Sentido de Comunidad, Cultura y Pertenencia por Eventos Públicos, Diversidad, Equidad e Inclusión

Referencia Métrica	Acciones de Prioridad Asociadas (Establecidos por Reuniones comunitarias, Encuestas, Consejo)	Estado
Personas 1.1	Continuar el apoyo a fiestas de vecindarios, bibliotecas de herramientas, intercambio de libros, jardines de vecindarios, actividades comunitarias de apoyo mutuo y otros eventos comunitarios y recursos que ayuden a unir a los residentes.	Actualmente
Personas 1.2	Continuar a proveer empleados de la ciudad y financiamiento para eventos y celebraciones que ejemplifican a la comunidad, como sus Caminos de Domingos, Desfile de Parasoles, Día de la Tierra/Árbol y serie de conciertos de verano de NDA.	Actualmente
Personas 1.3	Crear programas adicionales del Departamento de Policía que ayuda a mejorar relaciones con la comunidad como café con un policía, Academia Ciudadana de la Policía, creación de un Coalición Latino de Jóvenes, y aumento de la participación en los eventos comunitarios como Noche Nacional y domingo en el Parque (siglas en inglés National Night Out y Sunday Parkways).	Futuro
Personas 2.4	Aumentar el programa de voluntarios de la Ciudad que organice y promueva eventos de voluntarios, proyectos y otras oportunidades, uniendo a voluntarios y recursos para los más necesitados.	Actualmente
Personas 3.2	Actualizar la estrategia de comunicación de toda la Ciudad para encomiar más comunicación y enlace al usar una variedad de métodos para intercambiar información, desde Reuniones Comunitarias grandes a enlaces por internet.	Iniciado por Plan Comprensivo
Personas 3.6	Aumentar el número de documentos con información de la Ciudad que se traducen a español y otros idiomas.	Actualmente
Prosperidad 3.4	Desarrollar una plaza pública al sur del centro de Milwaukie que pueda ser usada para eventos durante todo el año y apoye el Mercado de Ranchos de Milwaukie.	Futuro
Lugar 3.2	Completar la etapa 3 del Parque de la Bahía de Milwaukie para crear un espacio para eventos comunitarios y artes que promueva a los parques como destinos comunitarios con programas durante todo el año.	Actualmente; Meta del Consejo para 2017-18
Lugar 3.4	Hacer mejoras al Parque de la Bahía de Milwaukie de tal forma que celebran al rio y aumente las oportunidades para eventos al frente del rio y acceso para barcos y otras actividades de recreación por agua.	Actualmente; Meta del Consejo para 2017-18

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APÉNDICE

Contacte a David Levitan por correo electrónico a LevitanD@milwaukieoregon.gov para recibir la traducción de apéndice A-E

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APPENDICES

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APPENDIX A: List of Acronyms

Acronyms

AARP – American Association of Retired Persons
ADA – Americans with Disabilities Act
artMOB – Milwaukie Arts Committee (Milwaukie)
CC – City Council (Milwaukie)
CCAA – Clackamas County Arts Alliance
CCC – Clackamas Community Council
CDC – Community Development Corporation
CERT – Community Emergency Response Team
CMO – City Manager's Office (Milwaukie)
COBID – Oregon Certification Office for Business Inclusion and Diversity
DEQ – Oregon Department of Environmental Quality
DLCD – Oregon Department of Land Conservation and Development
DMBA – Downtown Milwaukie Business Association
FEMA – Federal Emergency Management Agency
H3S – Clackamas County Health, Housing, and Human Services
IAP2 – International Association for Public Participation
IRCO – Immigrant and Refugee Community Organization
JCWC – Johnson Creek Watershed Council
MAA – Milwaukie Academy of the Arts
MESO – Microenterprise Services of Oregon
MFS – Metropolitan Family Services
MS4 – Municipal Separate Storm Sewer System
MWESB – Minority-Owned, Women-Owned, and Emerging Small Businesses
NAYA – Native American Youth and Family Center
NCPRD – North Clackamas Parks and Recreation District
NCSD – North Clackamas School District
NCUWC – North Clackamas Urban Watersheds Council
NDA – Neighborhood District Association (Milwaukie)
NHWA – Northwest Housing Alternatives
NOAH – Network for Oregon Affordable Housing
NWFS – Northwest Family Services
ODOT – Oregon Department of Transportation
OHCS – Oregon Housing and Community Services
OMB – Oregon Marine Board
OON – Oregon Opportunity Network
OSU – Oregon State University
PARB – Parks and Recreation Board (Milwaukie)
PBOT – Portland Bureau of Transportation
PC – Planning Commission (Milwaukie)
PGE – Portland General Electric
PSAC – Public Safety Advisory Committee (Milwaukie)
PSU – Portland State University
RACC – Regional Arts and Culture Council
SAFE – Safe Access for Everyone
SBA – Small Business Administration
SHPO – State Historic Preservation Office
SSMP – Street Surface Management Program
UO – University of Oregon
VAC – Vision Advisory Committee (Milwaukie)
WFMC – Willamette Falls Media Center

APPENDIX B: Vision and Action Plan Matrix



People Theme 1

Goal Area Statement	Category	Goal #	Action	Status	Lead City Department(s)	Potential Partners	Metric
Milwaukie is an inclusive community of diverse people from a variety of backgrounds that honor our differences and shared similarities. We are engaged and come together in many ways through various events and community gathering places, where we can celebrate our interests and passions.	Events and Sense of Community	1.1	**Continue to support neighborhood block parties, tool libraries, book exchanges, community gardens, "barn-raising" type activities and other neighborhood events and resources that serve to bring residents together**	Underway	CMO	Neighborhood District Associations (NDA's), Milwaukie Parks and Recreation Board	# of events, transactions or exchanges
		1.2	**Continue to provide city staff support and funding for events and celebrations that showcase the community, such as the Umbrella Parade, Earth Day/Arbor Day, Sunday Parkways, and the NDA summer concert series**	Underway	CMO	Downtown Milwaukie Business Association (DMBA), Clackamas County Arts Alliance, NDA's, artMOB, Regional Arts and Culture Council, Milwaukie Rotary Club	# of events held # of staff support hours
		1.3	**Develop additional Police Department programs that help build relationships with the community, such as Coffee with a Cop, the Citizen's Police Academy, the creation of a Latino Youth Coalition, and increased participation in community events like National Night Out and Sunday Parkways.**	Future	Police	Police Department, NDAs, NCSD, Waldorf School, Churches, Ledding Library	Police satisfaction survey results # of new programs
		1.4	Continue efforts to engage children, teenagers and seniors in community events	Underway	CMO, Planning, Library	NDA's, MFS, Milwaukie Senior Center, North Clackamas School District (NCSD), Waldorf School, AARP, Age Friendly Coalition	# of programs and/or participants
	Diversity, Equity and Inclusion	1.5	Develop City procurement practices that prioritize regional vendors and products and businesses owned by women, veterans, people of color, those with disabilities, and the LGBTQ community	Future	Finance	Oregon Certification Office for Business Inclusion and Diversity (COBID), Metro	% of MWESB contracts Distance (# of miles) between vendors and City
		1.6	Encourage and financially support cultural events that reflect and celebrate the diversity of the community	Future	CMO	Latino network, Metropolitan Family Services NW (MFS), CAUSA, Clackamas County Equity, Diversity and Inclusion Council, Metro	# of events per year categorized as "Cultural Event" (Add to Temporary Event Permit application form)
		1.7	Form a committee dedicated to equity, diversity, and inclusion that evaluates City decisions and actions based on City standards and reviews programs and policies for protected classes	Initiate with Comprehensive Plan	CMO	MFS, Metro	# of committee meetings # of participants from minority groups



People Theme 2

Goal Area Statement	Category	Goal #	Action	Status	Lead City Department(s)	Potential Partners	Metric
Milwaukie is a diverse community that provides opportunities and support for all of its residents through a variety of resources and enriching activities. We encourage and support a vibrant local economy that contributes to a high quality of life where residents can live, work, learn, and play	Business Support and a Vibrant Local Economy	2.1	**Promote small business development through mentoring, incubation and entrepreneurial programs as well as loans and grants distributed across Milwaukie's neighborhoods**	Underway	Economic Development, CMO	Clackamas Workforce Partnership, local credit unions, NDA's, Business Oregon, Clackamas Community College (CCC) Small Business Development, Mercy Corps Northwest, Ascent Funding, Microenterprise Services of Oregon, Hispanic Chamber of Commerce	# of entrepreneurs funded
		2.2	**Encourage businesses that provide family-wage jobs**	Underway	Economic Development	DMBA, large industrial employers, Chamber of Commerce, Clackamas County Economic Development	% of City firms that pay family wage jobs
		2.3	Encourage and promote shared co-working spaces for small and sole proprietorship local businesses	Future	Economic Development	DMBA, large industrial building owners, Chamber of Commerce	SF of co-working spaces in City
	Public Participation and Community Involvement	2.4	**Expand the City's volunteer program to organize and promote community volunteer events, projects and other opportunities, connecting volunteers and resources with those in need.**	Underway	CMO	Hands-on Portland, Ledding Library, NCPRD, Historical Society, Habitat for Humanity, NDA's, Rotary Club, artMOB	Volunteer hours
		2.5	Provide a welcome guide for Milwaukie newcomers that lists City resources, community-based organizations and activities and volunteer opportunities	Future	CMO, Library	Chamber of Commerce, NCSD, NDA's, NCPRD, Ledding Library, MFS, Rotary Club, Wichita Center, Realtors	# of welcome guides distributed
		2.6	Create a Youth Advisory Council that serves to educate and provide input on issues affecting Milwaukie's youth	Future	CMO	NCSD, NCPRD, other local schools	# of meetings and participants



People Theme 3

Goal Area Statement	Category	Goal #	Actions	Status	Lead City Department(s)	Potential Partners	Metric
The City of Milwaukie is an open portal where information is readily available, easily exchanged, and responsive. Residents feel empowered and have opportunities to engage and share ideas.	Accessible and Transparent Information	3.1	**Expand the role of the Ledding Library as an integral community resource center and examine the creation of a city concierge position that provides information about and helps with programs and resources, services offered by partner agencies, and local employment opportunities and application assistance**	Future	Library	Ledding Library, NCSD, Waldorf School, Clackamas County, State of Oregon, Chamber of Commerce, Northwest Housing Alternatives (NHWA), Microenterprise Services of Oregon (MESO), IRCO	# of people served
		3.2	**Update the City's comprehensive city-wide communications strategy to encourage community engagement and employ a variety of methods for exchanging information, from large Town Hall meetings to emerging online tools**	Initiate with Comprehensive Plan	CMO, Planning	NDA's, Waldorf School, NCSD, Willamette Falls Media Center, IAP2, Metro, social media	# of community meetings held # FB/Twitter/IG followers
		3.3	Continually improve the City's website to be transparent, simple, user-friendly and interactive, with information easy to obtain	Underway	CMO, ISD	Social media platforms	Website traffic metrics Community survey results on website quality.
		3.4	Place information kiosks and booths in parks, public spaces and neighborhood centers throughout the City.	Future	CMO	NCPRD, NDA's, Farmer's Market, Ledding Library, Clackamas County, Wichita Center	# of kiosks
	Engagement Opportunities for Everyone	3.5	Provide childcare services and activities for children at City meetings and events	Future	CMO, Planning	MFS, Wichita Center, Waldorf School, NCSD	# of City events with childcare
		3.6	**Increase the number of City informational materials translated into Spanish and other languages**	Underway	CMO, Community Development, Public Works, Library	Hispanic Metropolitan Chamber, Wichita Center, International Refugee Center of Oregon (IRCO)	# of pages translated
		3.7	Ensure continued City government transparency and accessibility through an ongoing evaluation program, incorporated into the Citizen Involvement Section of the Comprehensive Plan.	Initiate with Comprehensive Plan	CMO, Planning	[City], NDA's	Community survey results (% rating good or very good)

Place Theme 1

Goal Area Statement	Category	Goal #	Actions	Status	Lead City Department(s)	Potential Partners	Metric
Milwaukie has a complete, clean and attractive network of sidewalks, bike lanes and paths that enable accessibility, mobility, and safety for all. Streets are tree-lined, well-lit and designed to promote a healthy and active lifestyle. There is a seamless transition between walking, biking, and transit to key amenities and neighborhood centers.	Walkability, Bikeability, and Safety	1.1	**Improve walkability and bikeability within the network by creating dedicated bike paths and walking trails that connect transit, neighborhood business hubs and public spaces, including Milwaukie Bay Park**	Underway	Public Works (Streets), Engineering, CMO	Safe Routes to School partners, SAFE, Clackamas County, NCPRD, NDAs, Bike Loud, Better Block PDX, The Streets Trust, Oregon Walks, TriMet, ODOT, PSAC, PARB	Miles of bike paths and sidewalks % of b paths within ½ mile of identified hubs
		1.2	**Utilize the Safe Access for Everyone (SAFE) Program to fill in sidewalk gaps and construct ADA improvements in support of the Safe Routes to School Program**	Underway	Engineering, Public Works (Streets)	ODOT, TriMet, Safe Routes to School partners, SAFE, Metro, NCSD, NDA's, PSAC	% of sidewalk gaps closed # of students that walk or bike to school
		1.3	Make pedestrian and bicycle safety improvements along and across the 224 and 99E corridors and major arterials, such as separated paths, bridges and tunnels	Underway	Engineering, Public Works (Streets), Planning	ODOT, Oregon Walks, Clackamas County, NCPRD, NDAs, Bike Loud, Better Block PDX, The Streets Trust, Oregon Walks, TriMet, ODOT, PSAC	# of designated crossings of 99/224 Linear feet of bike lanes or multi-use paths added
		1.4	**Research and consider developing a Vision Zero program that seeks to eliminate traffic deaths and life-changing injuries on Milwaukie's streets**	Future	Engineering, Public Works (Streets)	TriMet, ODOT, Metro, The Streets Trust, Oregon Walks, NDAs, Portland, Clackamas County, Public Safety Advisory Committee (PSAC)	# of serious accidents and traffic fatalities
		1.5	Develop walking and cycling tour maps connecting points of interest such as parks, plazas, art installations and historical markers.	Underway	CMO, Engineering, Planning	artMOB, NDAs, Milwaukie Historical Society Museum, NCPRD, Bike Milwaukie, Metro	# of maps
	Complete Streets that are Well Maintained	1.6	**Implement road paving and funding strategies that improve road maintenance in Milwaukie**	Underway	Engineering, Public Works (Streets)	PSAC, Urban Renewal Program, Street Surface Management Program (SSMP), Clackamas County	Dollars spent on SAFE/SSMP improvements Miles of roads paved
		1.7	Establish a street tree planting program and provide opportunities for residents to purchase and maintain appropriate trees on public rights of way and required planter strips	Future	Engineering, Public Works (Streets), CMO	Milwaukie Tree Board, Friends of Trees, NCPRD, Audubon Society, Columbia Land Trust	# of trees planted
		1.8	Incorporate "Dark Sky" friendly street lighting to minimize light pollution	Future	Public Works (Streets)	Oregon Planners Network, Dark Sky Alliance, Portland General Electric (PGE), City of Portland (PBOT)	% of street lights that are dark skies compliant
		1.9	**Research and examine funding strategies for innovative local transit options that complement the regional transit network and help connect residents and employees to local amenities, employment areas, and neighborhoods throughout the city**	Initiate with Comprehensive Plan	Planning, Engineering	TriMet, Clackamas County, large employers, large apartment complexes	Cost per mile for service # of partners interested

Place Theme 2

Goal Area Statement	Category	Goal #	Actions	Status	Lead City Department(s)	Potential Partners	Metric
Milwaukie invests in housing options that provide affordability, high quality development and good design, promoting quality living environments. It maintains the small neighborhood feel through creative use of space with housing options that embrace community inclusion and promote stability.	Housing Affordability Housing Diversity, Quality Design, and Neighborhood Compatibility	2.1	**Aim to provide improved housing affordability and stability for all City residents, with a variety of housing types, price ranges, and subsidized units available in all neighborhoods**	Underway (2017-2018 Council Goal)	Planning, Community Development	Habitat for Humanity, NHWA, Portland Housing Center, Portland for Everyone, State, Oregon Opportunity Network, Clackamas County Housing Authority, Metro, Catholic Charities, Reach CDC, Network for Oregon Affordable Housing, AARP, Neighborhood Economic Development Corporation	# of units at 0-120% AMI built per neighborhood % residents that are housing cost burdened
		2.2	**Streamline permitting and examine ways to adjust system development charges to encourage creative uses of space such as Accessory Dwelling Units, Tiny Homes, and Cottage Clusters**	Future	Building, Planning, Engineering	Oregon Planners Network, Department of Land Conservation and Development (DLCD), Metro, Portland for Everyone, OON	# ADUs, tiny homes and college clusters
		2.3	Create city programs that encourage more affordable housing, such as land banking and the collection of a construction excise tax, and continuously evaluate their impacts on housing costs	Underway (2017-2018 Council Goal)	Planning, Community Development	League of Oregon Cities, Metro, Clackamas County	CET funds created, homes underwritten
		2.4	Annex land within the City's Urban Growth Management Area land that helps meet the Milwaukie's housing and employment needs	Underway	Planning	Clackamas County H3S, Metro, State of Oregon, DLCD	Acres annexed, # of homes and businesses
		2.5	**Create neighborhood plans that define neighborhood character, identify community needs and priorities, and develop strategies for better integrating infill housing into neighborhoods**	Initiate with Comprehensive Plan	Planning	NDAs, Creative architects and planning and design consultants, Milwaukie residents, Milwaukie homeowners, Milwaukie renters, 50+ housing; LGBTQ housing; accessibility for disabled persons	# neighborhood or district plans
		2.6	Ensure quality housing design standards that include energy efficiency, shared greenspace and community garden development	Initiate with Comprehensive Plan	Planning	Model planning and building code agencies, Oregon Opportunity Network (OON), Oregon Housing and Community Services (OHCS)	# energy efficient homes, # of community gardens
		2.7	**Update the Development Code to allow more "missing middle" housing types (duplexes, triplexes and cottage clusters, tiny houses) in established neighborhoods, and permit mixed-use buildings in neighborhood hubs**	Initiate with Comprehensive Plan	Planning, Community Development	NDA's, small local businesses	# of missing middle housing types, mixed use buildings in neighborhood hubs
		2.8	Update the City's historic resources inventory and develop local incentives for preservation and restoration	Initiate with Comprehensive Plan	Planning, Community Development	Milwaukie Historical Society Museum, State Historic Preservation Office (SHPO), Clackamas County	# of resources added, protected, and lost
		2.9	Support the development of more senior, veterans and special needs housing, including Aging in Place Villages and transitional and safe-house communities	Initiate with Comprehensive Plan	Planning, Community Development	AARP, Clackamas County, Milwaukie Center, Habitat for Humanity, NW Housing Alternatives, Rebuilding Center, Restore, Age Friendly Coalition, NOAH, OHCS	# of senior and special needs housing

Place Theme 3

Goal Area Statement	Category	Goal #	Actions	Status	Lead City Department(s)	Potential Partners	Metric
Milwaukie collaborates with community partners to create and preserve spaces to inspire the public to be engaged with the city's past and future. Art and innovation is weaved into the fabric of the city.	Parks and Gathering Spaces, including Milwaukie Bay Park	3.1	**Improve parks and green spaces that are safe, green and clean, with amenities like restrooms, seating areas, play structures, walking paths, parking and indoor recreational facilities**	Initiate with Comprehensive Plan	CMO (Parks), Planning	NDA's, NCPRD, PARB	# of parks built out to their master plan Acres of parks/places per neighborhood
		3.2	**Complete Phase 3 of Milwaukie Bay Park to create spaces for community gathering and the arts and promote the park as a community destination with year-round programming**	Underway (2017-2018 Council Goal)	CMO	PARB, NCSD, Landscape architects, NCPRD	# of programs
		3.3	Create a program to fund the development of community gathering places and improvements to neighborhood plazas and parks that offer diverse programming (education, sports, arts, history) in public spaces.	Future	CMO, Community Development	Business Community, Large Employers, Parks Committee, NDA's, Milwaukie High School, Waldorf School, Clackamas Arts Alliance, Oregon Arts Commission, Milwaukie Academy of the Arts, Confederated Tribe of the Grand Ronde, Native American Youth and Family Center (NAYA), NCPRD	# of gathering places in each neighborhood
		3.4	**Make improvements to Milwaukie Bay Park in a manner that celebrates the river and increases opportunities for waterfront events and access for non-motorized boats and other water-related recreational activities**	Underway (2017-2018 Council Goal)	CMO, Engineering, Planning	PARB, NCPRD, Clackamas County, NDA's, OMB	Periodic one day tallies of park visitors and motorized and non-motorized boat launches
	Milwaukie Supports the Arts	3.5	Encourage partnerships between local businesses and artists to provide opportunities for art installations	Underway	Economic Development, CMO (artMOB liaison)	artMOB, Chamber of Commerce, DMBA, CCAA, RACC	# of art installations in area businesses
		3.6	Engage the community when creating programs and spaces for public art	Future	CMO	Performing arts organizations, music and dance schools, Oregon Bluegrass Association, Old Time Fiddlers, Chamber Music NW, CCAA, artMOB, MAA, NCSD, RACC	# of community-based processes around public art
		3.7	Expand art programming throughout the City of Milwaukie through grants, scholarships and funding	Future	CMO	artMOB, Business Community, NCSD, RACC, CCAA	# of dollar amounts toward arts
		3.8	Support space acquisition for open art studios that pool resources and promote local artists	Future	CMO, Economic Development	artMOB, CCAA, RACC, DMBA	# of spaces Dollars allocated for acquisition



Planet Theme 1

Goal Area Statement	Category	Goal #	Actions	Status	Lead City Department(s)	Potential Partners	Metric
The entire city nurtures a connected canopy of trees planted and stewarded by its residents. Smart and focused development honors and prioritizes life-sustaining natural resources.	Sustainable Development and Environmental Stewardship	1.1	**Implement city programs, incentives and development code amendments that promote sustainable development and help to better integrate the built environment and natural environment**	Initiate with Comprehensive Plan	Planning, CMO	Planning Commission, Tree Board, NDA leadership, PGE	% open space in development projects #/% trees preserved # and $ amount of incentives awarded
		1.2	**Create a citywide composting program for residents and businesses**	Complete	City Manager's Office/Finance	Metro, local garbage franchises, NDA's	# and % of households and businesses that compost
		1.3	Develop educational programs for city residents and businesses that focus on native vegetation, landscaping basics, and the economic and environmental value provided by native trees and plants	Future	Public Works (Storm), Planning, CMO	Tree Board, PARB, Friends of Trees, local arborists and permaculturists, Audubon Society, Columbia Land Trust	# of classes offered # of residents served # of properties participating
	Trees, Garden and Vegetation	1.4	**Develop a strong tree ordinance that incentivizes tree protection, has equitable tree replacement standards, and provides adequate flexibility for property owners**	Underway	Planning, CMO	Tree Board, Planning Commission, Friends of Trees, UO/OSU	% of trees over 6" DBH preserved in subdivision and partition applications
		1.5	Create a robust urban forestry plan that inventories the city's tree canopy and vegetation and implements a community-driven tree planting program	Initiate with Comprehensive Plan	Planning, Engineering, CMO	Tree Board, UO/OSU, NCPRD, Friends of Trees, Tree City USA, Watershed Council, NCSD and other local schools	Tree canopy percentage (initial and periodic updates) # of trees planted
		1.6	Support the creation of more community gardens and urban orchards across all neighborhoods	Future	CMO, Planning	PARB, Tree Board, NDA's, Milwaukie Community Gardens, NCPRD, Portland Fruit Tree Program, Schoolyard Farms, Clackamas County Gleaners, NCSD	#/sf of community gardens and urban orchards created
		1.7	Expand the Backyard Habitat program and pursue other ecosystem programs that support local wildlife.	Underway	CMO	Backyard Habitats, Audubon Society, Columbia Land Trust	# of certified homes



Planet Theme 2

Goal Area Statement	Category	Goal #	Actions	Status	Lead City Department(s)	Potential Partners	Metric
Milwaukie has free flowing, accessible, pristine waterways that are protected by a robust stormwater treatment system. Stewardship over the Willamette waterfront ensures that this natural resource can be enjoyed for generations.	Protect the Willamette and our Local Creeks	2.1	**Develop a Natural Resource Plan and examine funding mechanisms for the restoration of Kellogg and Johnson Creeks and the removal of the Kellogg Dam**	Initiate with Comprehensive Plan	Planning, Engineering, Public Works (Storm), CMO	PSU Engineering program, Johnson Creek Watershed Council, Metro, Clackamas County, NCU Watershed Council, state and federal agencies, NCSD, NCPRD	Development and adoption of plan # of restoration/clean-up events
		2.2	**Implement a plan and funding strategy for stormwater improvements that focuses on natural stormwater management and ensures that by 2040 all stormwater is treated before it is discharged into our creeks and river**	Initiate with Comprehensive Plan	Public Works (Storm), Engineering	Clackamas County	MS4 Permit Effluent Concentrations (TSS, Nitrates, Lead, Zinc) # Outreach Events # Catch Basin Screenings # Street Sweeping Days # of bioswales
		2.3	Restore wetlands and riparian vegetation adjacent to our creeks and river	Underway	Public Works (Storm), CMO	Johnson Creek Watershed Council, North Clackamas Urban Watersheds Council, Wetlands Conservancy	SF of wetlands/riparian restored # of clean-up days
		2.4	Educate and address the impacts that local industries have on water and air quality	Underway	Public Works (Storm), Planning, CMO	DEQ, local businesses	# air and water quality monitoring stations Youth asthma cases (%)
		2.5	Encourage stewardship of our local creeks through educational programs and civic events such as clean-up days	Underway	Public Works (Storm), CMO	PARB, Tree Board, JC/NCU Watershed Councils, North Clackamas Schools, Waldorf School, NCPRD	# clean-up days # volunteers # educational events

Planet Theme 3

Goal Area Statement	Category	Goal #	Actions	Status	Lead City Department(s)	Potential Partners	Metric
Milwaukie is a model city that produces more energy through renewable sources than it uses. It is a prepared and resilient community, adaptive to the realities of a changing climate.	Energy and Conservation, including Adoption of a Climate Action Plan	3.1	**Encourage energy and water efficiency and the use of renewable sources by offering rebates, incentives, and permit fee reduction or waiver**	Future	Finance, Planning	PGE, Metro, NW Natural	# rebates issued to City residents and businesses # fee reductions and waivers
		3.2	**Develop a Climate Action and Energy Plan that aims to reduce the impacts of city activities on climate change and by 2040 make Milwaukie a Net- Zero energy community that produces more energy than it consumes**	Underway (2017-2018 Council Goal)	CMO, Planning	TriMet, Metro, National Renewable Energy Laboratory, PGE, NW Natural	Net energy consumption/sf for homes and businesses (set benchmarks for every 5 years)
		3.3	Work with local property owners to solarize the city's industrial parks and other large buildings with the potential to provide large-scale renewable energy	Future	Economic Development, CMO	Energy Trust, Business owners, property owners, PGE, Metro, Solar Oregon	Kilowatt-hours of solar energy panels installed per year
		3.4	Create a program that focuses on ways individual households and businesses can reduce their carbon footprint	Future	CMO, Planning	PGE, NW Natural, Vancouver BC Green Block Initiative	# of households and businesses participating
	Milwaukie is a Resilient Community	3.5	**Ensure that the City's infrastructure and facilities can reasonably withstand natural or man-made disasters and that the City can continue to provide services during an emergency event**	Underway	Engineering, Planning, Building	Clackamas Fire, Metro, Clackamas County, Clackamas River Water, PGE, NW Natural	# of facilities/utilities that have been assessed and improved Miles/Feet of pipes with mechanical connections # of wells that have been hardened
		3.6	Develop programs that improve the resiliency of City residents and businesses in the event of a major disaster such as the Cascadia Earthquake	Initiate with Comprehensive Plan	Public Works, Engineering, Planning, CMO	PGE, NW Natural, Clackamas Fire, State of Oregon, FEMA, NDA's, CERT program	# of rooftop solar systems (with backup batteries)
		3.7	**Promote household and neighborhood-level emergency preparedness by expanding the role and capacity of Community Emergency Response Teams (CERTs)**	Underway	CMO, Police	NDA's, Clackamas Fire, CERT program	# of CERT graduates # of CERT trainings offered



Prosperity Theme 1

Goal Area Statement	Category	Goal #	Actions	Status	Lead City Department(s)	Potential Partners	Metric
Milwaukie offers numerous pathways to prosperity through an excellent education system and training programs that are connected to local business. Residents of all ages and backgrounds feel supported to pursue and attain success in our local community.	Partnerships, Education and Training	1.1	**Partner with local schools and businesses to create an internship and career development program that highlights Milwaukie industries and helps students develop skills that meet the needs of Milwaukie businesses**	Future	Economic Development, CMO	CCC, NCSD, Wichita Center, local businesses, North Clackamas Chamber of Commerce, NWFS, Clackamas Workforce Partnership	# of students and businesses involved in internship program
		1.2	**Market the city as a center for business incubation, and target businesses that are a good match for Milwaukie's established and emerging industry clusters and business space**	Underway	CMO, Economic Development	Chamber of Commerce, Industry Groups, local business incubators and accelerators, Clackamas County Economic Development, NWFS, Greater Portland Inc.	# of businesses added in Milwaukie's identified business clusters/strengths
		1.3	**Create incentives for Milwaukie businesses that hire local residents and provide job training and continuing education opportunities for their employees**	Future	Economic Development	Clackamas County, Clackamas Workforce Partnership, B Lab (B Corps), DMBA, Chamber of Commerce	$ amount of incentives awarded # Milwaukie residents hired
		1.4	Host Career Connections Conventions that connect local residents to resources that enrich their professional lives	Future	Economic Development	CCC, Worksource Oregon, Clackamas Workforce Partnership, NCSD, Chamber of Commerce, NDA's, Recruiting Agencies, Rotary, Veterans Groups, Northwest Family Services (NWFS), Small Business Administration (SBA)	# of events, participants, vendors/partners, types of services offered



Prosperity Theme 2

Goal Area Statement	Category	Goal #	Actions	Status	Lead City Department(s)	Potential Partners	Metric
Milwaukie's neighborhoods are the center of daily life, with amenities and community-minded local businesses that meet the daily needs of residents. They form a network of unique, interconnected local hubs that together make Milwaukie the livable, equitable, and sustainable community that it is.	Complete Neighborhood Hubs	2.1	**Identify and support the development of neighborhood economic hubs that are walkable and provide amenities and commercial services for neighborhood residents**	Initiate with Comprehensive Plan	Planning, Economic Development	Metro and State Grant Programs	% of city housing units within 20-minute walkshed or bikeshed of neighborhood hub or other commercially zoned property
		2.2	**Incentivize development of opportunity sites and other vacant and underutilized properties that can help meet the needs of neighborhood residents**	Underway	Economic Development, Finance, Planning	Clackamas County Economic Development, Metro, ODOT, Clackamas County, NCPRD, private property owners	# of housing units developed SF of open space added
		2.3	**Examine ways to partner with local vendors to provide access to healthy, fresh food throughout Milwaukie's neighborhoods**	Future	Economic Development	Food businesses, brokers, developers, produce growers, farmers, property owners	% of homes within one mile of businesses selling fresh fruits and vegetables
		2.4	Allow increased residential density and commercial development in neighborhood hubs that respects neighborhood character and provides affordable housing, open/green space, a wide mix of uses, and neighborhood amenities	Initiate with Comprehensive Plan	Planning, Community Development	NDA's, developers	% of affordable units in project proposals SF of community space/plazas in proposals



Prosperity Theme 3

Goal Area Statement	Category	Goal #	Actions	Status	Lead City Department(s)	Potential Partners	Metric
Downtown Milwaukie is a vibrant destination for both residents and visitors from throughout the region. Our industrial areas provide a high density of living-wage jobs across a number of different industries. The City is nimble and responsive to the needs of residents and businesses, with programs and policies that are financially sound, encourage job creation, and help support a strong and resilient local economy.	City Programs and Marketing	3.1	**Support and retain existing small businesses in our downtown and other business districts and attract new businesses that contribute to an open, inviting, and diverse atmosphere**	Underway	Economic Development	DMBA, Chamber of Commerce	# of businesses helped by Economic Development Department
		3.2	Formalize a city economic development program that emphasizes job retention and supports development of locally owned businesses	Underway	Economic Development	B Lab (B Corps), DMBA, Chamber of Commerce, NWFS, Clackamas Workforce Partnership	# of Family wage jobs
		3.3	Create a "Buy Local" or "Best for Milwaukie" initiative that encourages residents to support local businesses	Future	Economic Development, CMO	Chamber of Commerce, DMBA, NDA's	# of participating businesses
	Downtown and Industrial Areas	3.4	**Develop a new public plaza in the south downtown area that can be used for year-round events and enhance the Milwaukie Farmer's Market**	Future	CMO, Planning, Community Development	Celebrate Milwaukie Inc, TriMet, DMBA, private developers	# of events held in downtown plaza
		3.5	Work to increase the amount of housing in Downtown Milwaukie and other mixed use zones	Underway	Planning, Economic Development, Community Development	Developers	# of new housing units in mixed use zones
		3.6	Preserve and enhance the city's manufacturing and industrial areas along Highway 99-E, Highway 224, and Johnson Creek Blvd	Underway	Economic Development, Community Development, Planning	Clackamas County, large industrial users, Chamber of Commerce	# of businesses and employees in industrial areas

APPENDIX C: Town Hall Reports

MILWAUKIE ALL ABOARD

TOWN HALL SUMMARY
Vision Advisory Committee Review Draft
November 10, 2016

OVERVIEW

On November 2, 2016 the City of Milwaukie convened a Town Hall for its *Milwaukie All Aboard Community Vision and Action Plan* process. Formulating a Vision and Action Plan is the first phase of an update of our citywide comprehensive plan process. The vision will also help City Council with its decisions on a range of topics ranging from budget to citizen involvement and economic development. Given our commitment to a sustainable future, we are utilizing a "quadruple bottom line" sustainability lens including a range of views or lens including People, Place, Planet and Prosperity.

More than 140 participants attended the event at the Waldorf School, where childcare and refreshments were available. A wide range of participants included Spanish speaking residents, new comers and residents who had lived in Milwaukie for their entire life. From 6 – 6:30 pm, the Waldorf School string quartet played classical music while participants could review background information on the People, Place, Planet and Prosperity themes. At 6:30, after a welcome from Mayor Mark Gamba and new City Manager Ann Ober, participants heard an overview from Greg Hemer from the Milwaukie Historical Society as well as a keynote from livability expert Brian Scott, BDS Planning. Their PowerPoints are available on the City's website. Willamette Falls Community Media streamed the event live via the Internet. Vision and Action Plan consultants Cogan Owens Greene assisted with facilitation and staffing the event.



On the comment forms, participants noted a variety of reasons for attending:

- My interest in Milwaukie/our community (2). I work in affordable housing.
- Interest in development of Milwaukie.
- Curious of future, excited by the future.
- To become familiar with what's happening.
- Love of our community, live and work here.
- Want to help shape the future of Milwaukie.

- Improving things for the better is very important.
- Lived here 25 years and wanted to promote NCSD Bond.
- We're moving to Milwaukie, just bought a lot here in March.
- Want to participate in shaping zoning policy around housing.
- New to Milwaukie, trying to get involved in my new community.
- An appreciation for this process being so inviting for the community.
- I care about the town I live and raise my child in. I want Milwaukie to be awesome.
- A genuine interest and concern for the future of Milwaukie and what Milwaukie can become.
- To make it easier and safer for Milwaukie residents to access education at Clackamas Community College.
- Personally invited.

In their comment forms, and via the online survey, participants indicated the most pressing issues they see facing Milwaukie today. They range from a concern over the cost of rent, affordable housing, grocery stores, safe transportation options and environmental sustainability. A full list of those comments are included in Appendix A.

PRELIMINARY DRAFT VISION STATEMENT

Based on more than 17 community conversations (200 people), 55 web-based surveys, 43 postcards returned from summer fairs and events, 50 business surveys out of 200 canvassed and more than 600 unique aspirations about Milwaukie's future, citizen Vision Advisory Committee (VAC) members had created a preliminary draft vision statement. Arianna Van Bergen and Bryce Magorian read the draft:

The Milwaukie of the future is one of shared investment. We care for and invest in our schools, providing education that prepares us for rewarding work in a changing world. We support our local businesses, creating opportunities for all kinds of people to live and work in our city. We invest in transportation systems, providing a variety of choices for walkers, cyclists, drivers and transit-riders to easily and safely travel between our neighborhoods and throughout the region. We provide a range of housing choices, so that we can meet the needs of those who want to live and work here, regardless of means. We protect and invest in our green spaces, preserving the natural beauty, clean air and pure water we all treasure for generations to come. We invest in sources of renewable energy to sustainably power our homes and invigorate our local industries. Above all, we invest in each other. Our love of our community is expressed through festivals, goodwill between neighbors and common spaces where people of all ages can share perspectives, enriching the whole town. The Milwaukie of the future is a place that diverse community members - young and old alike - are proud to call home.

In a quick vote of hands, and via the comment forms and survey, most participants feel the statement was on the right track. VAC members will take specific suggestions mentioned at the Town Hall in discussions, from completed comment forms, and via a web-based survey and make further modifications at their November 16 meeting. Verbatim comments are included in Appendix B. Comments from the topic specific discussions are included in Appendix C.

Next, Milwaukie High School Milwaukie All Aboard part time staff Youth Vision Action Team members Odalis Aguilar-Aguilar, Maxwell Bernardi, Tyrenna Jacobs and Sarai Rodriguez reported on their outreach focusing on community conversations and business surveys by focus group. Odalis reported on *People*, and mentioned the suggestion for a health clinic or other social service hub in the community. Tyrenna spoke about *Place* and emphasized the desire to see affordability maintained in the community. Sarai touched on *Planet* and noted the enthusiasm over the development of the waterfront park. Finally, Max reported on *Prosperity*, conveying the desire to attract and retain small businesses. Daniel Franco-Nunez with Izo Marketing reported on his observations from his focused outreach to Latino Community members.



SUSTAINABILTIY LENS FOCUS AREA DISCUSSIONS

Vision Advisory Committee members then facilitated 12 tables of discussion – 3 in each focus area to dive deeper into what participants want to see in the future of Milwaukie – in 2040 with respect to that aspect of life. VAC members will be drafting goal area statements at their November 16 meeting.
Mayor Gamba thanked participants for their participation, noted the Action Plan focused Town Hall meeting February 15, 2017 and adjourned the meeting.





Appendix A: Most Pressing Issues Facing Milwaukie Today

Town Hall participants and survey respondents expressed a range of thoughts about the most pressing issues facing Milwaukie today. They are listed below.

- Lack of vitality. Closed businesses. Lack of walkability. Need for cleanliness, sidewalks. Make it family friendly all the time and keep our business here. Give our adults and youth a place to play.
- Rising cost of living, less diversity perspective, loss of "roots" and the story of this place.
- Affordable housing.
- Controlled growth. Transportation. Aging infrastructure.
- Pedestrian and cyclist infrastructure. Vibrant downtown and neighborhood hubs. Affordable housing. General livability concerns.
- Affordable housing. Access to social resources/services.
- Families. Youth.
- Keeping the city affordable.
- Concern of rent prices rising. More businesses to walk to for socializing. Neighborhood hubs.
- Finding a grocery store. Juggling desires of long-term residents with new residents.
- Safe pedestrian routes. Managing density and growth.
- Convenient grocery stores.
- We need a grocery store within walking distance of downtown.
- Control of the real estate prices, so that private homeownership can still be a reality and big time investors do not take the control of where this city is going.
- School children in poverty. Low percentage of sidewalks.
- Safer ways for people to walk and bike, especially east-west connections.
- Transportation. Safety. Bike-friendly. Good grocery stores.
- Housing for all economic levels. Hwy 224 runs through Milwaukie. Downtown Milwaukie is way over on one side. How do we unite all of Milwaukie to have a strong community feel.
- how to improve livability (walkability, access to stores and cafes in the neighborhoods) and increase affordable housing options without becoming overwhelmed, a la SE Division
- Urban Renewal. Sale of the parking lot , and raising the fees on citizens without a vote are all reason for thinking of leaving Milwaukie. Small town gone.
- Safe passage for pedestrians and bikes.
- Growth, development.
- Attract a mix of businesses to downtown to make it a vibrant town center. Grocery, hardware, restaurants, shops. Using space in the downtown wisely. Moving Dark Horse to a new area? Using farmers market lot wisely. Neighbors go to Woodstock or Sellwood area instead of Milwaukie. Or, even to Oregon City. Let's make a deal with McMenamins for a plot overlooking the river? Orange line right to downtown Portland.
- Attracting businesses to and retaining them in downtown Milwaukie and Milwaukie Marketplace. Adequate parking to use what is available.
- Smart growth; avoiding ugly sprawl; easy access to amenities like more grocery stores.
- Council that does not listen to the citizens that have been paying taxes for more than 15 years. All they want to talk to are 30 something's riding bikes.
- Economic vitality of downtown.
- Road maintenance/condition, lack of affordable housing (especially in central areas with the best access to public transit), lack of protection/awareness of creeks and natural areas.
- Pedestrian access and safety, sidewalks needed.
- Being consumed by Portland.

- No one has a reason to visit.
- Need a grocery store downtown.
- Keeping the community centered, to continue drawing everyone together.
- Slow development, slow population growth, dramatically. Change Milwaukie back to a more natural state through focus on native trees, less grass and more native plants, more walkable city, more vibrant down town - a place for the community to come together.
- I'm just guessing - affordable housing, teaching children that are poor that speak many different languages, the lack of public transportation if you're not in the downtown core.
- Lack of sidewalks and other safe routes for pedestrians. People dangerously disregarding traffic laws.
- Lack of new development to expand and revitalize commercial districts.
- General livability, a sense of community.
- Same as the rest of the world, growing inequity between the haves and have nots and Climate Change.
- Growth and increased density.
- Stagnation in downtown.
- Environment sustainability.
- Parking, and getting more business in Milwaukie.
- Loss of housing affordability.
- SAFE project, proactive development for population growth and environmental concerns
- Making downtown more accessible and a fun place to be and spill over growth from Portland
- Small business development (family-friendly restaurants/stores), high quality grocery options, increasing walkability, good schools, heterogeneous housing opportunities.
- Pollution in our creeks, air, and soil from Precision Castparts Corp! Parking in downtown for businesses and transit riders, revival and reinvestment in play equipment for parks, no event space to continue Milwaukie Festival Daze or a bigger Farmer's Market, we need a brewery or distillery to take over The Brew, and we have zero Dutch Bros (Oregon City has 3, not fair!)

Appendix B: Comments on the Vision Statement

These responses come from 19 comment forms collected at the Town Hall, 32 online survey responses on the same material presented at the Town Hall, and results from the 12 table discussions. COG staff has organized these into thematic areas for an easier read by Vision Advisory Committee members at the November 16 meeting. Topic specific statements have also been included in those more specific areas.

General:

- Too long. Focus on important items.
- Just needs a few tweaks.
- Needs to be more succinct.
- Less flowery language, more points.
- Making it say more with less. People do not read past three to four sentences of anything before being bored. Definitely should not be more than a paragraph.
- Statement needs a core (vision draft).
- Let's move on from the Mission Statement. Looks like a lot of thought has already been put in to it. Don't add to it, if anything make it shorter.
- Make more succinct, simpler, and concise.
- Has a little too much environmental wording, but it's good.
- Say more with less.
- Work on what we have (existing Milwaukie assets).
- Add stability and self-empowerment.
- Good start; need action items, time frame for action items.
- Defining what to hold on to and how to develop (who do we want to attract? What businesses?)
- Implementation to move forward.
- Actually doing it.
- More specificity.
- It's good but generic. What about is says "Milwaukie"?
- Add a statement about creating a vibrant community that people come to live, work and play.
- Our voice, our vision: Want City to listen.
- Sustainable development.
- How innovative do we want to be?
- “We” is the collective; everyone involved.
- Eliminate the parts that aren't the city's job: "investing in schools," "providing a range of housing choices." Ok if provide means zoning for others' choices.
- Respect for the people in the community who have made it what it is today. Long time tax payers. [came after thought about mentioning cars in the vision]
- Our small group table kept coming back to the idea of connections--transportation connections, personal connections, being connected to our natural environment. I think this thread runs through everything in the vision statement. I agree with everything in the vision statement--but how is it going to be actually used by the city in a practical way? What will happen when some of those visions conflict with one another (e.g., green spaces vs development)? I also feel that we need to represent the mobility impaired in the transportation section.

Civic Life/Identity/Arts

- People first. Diversity. Welcoming community.
- Robust volunteer outreach—in person.
- Diverse and middle income

- "Diversity" is bigger than "young or old."
- Involved community.
- Activities.
- Vision missing description of identity (breakside if the one place along 224).
- Maintain small feel.
- Culture.
- Stop trying to make Milwaukie like Portland and appreciate the small town scale.
- Reference to supporting the arts as a vital element of a healthy community should be added. Our love of our community is expressed through support of the arts, etc.

Finance/Infrastructure

- More funding for parks/green spaces.

Housing/Urban Design/Form

- Affordable and stable housing./Affordable for all. (2)
- Density—land locked, limited space
- Okay with some density.
- Maintain view of river.
- Prevent affordability crisis.
- Housing diversity – needed.
- Maintain and enrich character
- Need vibrant core of business before high-rise housing.
- Parking lot development of plaza/place.
- Focusing on housing first, schools issues are for the school board and partners to handle
- Focus on homes.
- Not growing "too fast" or "too big".
- Save/keep our single family housing and stop planning to redevelop residential areas.

Milwaukie identity

- Work on dividers between Milwaukie and other places.
- Prevent high rise buildings.
- Put people first - as a priority. Should sound thriving with vitality.

Recreation

- The greenspace protection says nothing about providing recreation options, so I worry it could be used to say all our parks should be natural areas without recognition of the need for playgrounds, ballfields, etc.

Commercial areas/economic development

- More grocery stores.
- A grocery store within walking distance of the light rail station.
- Downtown = “downtown” [focus on cultivating a more robust downtown].
- Would like more good restaurants downtown.
- Business growth without environmental impacts.
- Strengthen prosperity aspect (grocery stores and more, 224 food desert).
- Downtown opportunities.
- Understand business community.
- Corporate money hurting Milwaukie business.
- Sad to see small biz struggle.
- Vitalize downtown in a sustainable way while discouraging chain stores.

- Downtown sense of place/points of interest. Connect to people of Milwaukie.
- Improve workforce development in local economy.
- Keep jobs/work in Milwaukie.
- Make Milwaukie innovation hub.
- Take care of downtown businesses, attract more.
- Encouraging new business, specifically in the Milwaukie Market Place.
-

Access/Transportation

- Safety/sidewalks. (2)
- River is the key/ cohesive connection with river. (2)
- Walkable. (2)
- Sentence 4 - "We invest in transportation systems, providing a variety of choices for **people who walk, bike, ride the bus and drive** to easily and safely travel our neighborhoods and throughout the region."
- Access to parks.
- [Support/integrate the] MAX system.
- Active transportation.
- Make it better for people who use cars. Not mentioned in the statement.

Environment/Energy

- More trees.
- Kellogg creek dam removal.
- Open space, community space, parks.
- Renewal energy.
- Micro grid.
- Smart energy infrastructure.
- People should be stewards of environment.
- "Invest in sources of renewable energy" could be used in the future to press the city for investments that may be inappropriate or overreaching.
- Being more visionary and specific regarding climate change.

Education

- Healthy neighborhood schools.
- Fewer charter/special schools.
- Good school system.

Other/ Detailed Statements from Comment Forms

- HUB updated.
- Neighborhood District Associations (NDA) and commercial hubs.
- Turn NDAs into neighborhoods.
- Transportation choices...I'm a person who does all of those things. Walks, bikes, rides. We aren't one or the other and don't want to put people on sides. We want transportation choices for however you get around for work or play. I feel like some of this visioning is about "old guard" vs "new guard" or "young" vs "old needs to be more common ground. Whether you've lived here for generations or are new to the neighborhood, we share reasons for loving this place." Generally good, but don't want to start this conversation from a place of conflict. Young want something that older folks don't. There are retired folks and young families mixed throughout my neighborhood, and I, personally, feel it's an awesome balance. It don't want to live around only "new" and "young." It is a selling point of this area. Established. Grown up. Quiet. Calm. Safe. We need to build on what originally attracted people to this place and make it relevant to today. Great rebrands pull through the main

threads of what makes the brand/place great, but updates them to make them relevant to today, bringing the core along and attracting new people. Support and grow.

- Will not cut down any trees on any land. Will protect and de-dam the Creek and let it flow through our neighborhoods. If more sidewalks are added they will NOT be made of cement, but material that absorbs water and is easier for people to walk on. Cement is hard, people have back, feet, ankle and knee problems from walking on cement.
- Including something about honoring our mid-1800 historical roots.
- Keeping the Business sector heavily involved with the plan-- like the Transportation Utility fees they are left out of the plan--- they need to feel the council and planning department need them---no proof so far.
- Supporting our local businesses and businesses that are invested in the community long term. Businesses that reflect the diversity of the people living in the neighborhoods and that appeal to culture and ethnic diversity.

Appendix C: Table Specific Discussions on Topic Areas

Reference page numbers:
People – pages 1-4
Place – pages 5-8
Planet – pages 9-11
Prosperity – pages 12-14

PEOPLE: Sense of community, small-town feel, community identity and assets
[Neighborhood centers, festivals and events, community involvement, Safe Routes to School, library, Farmers' Market, schools and educational opportunities (environmental, technology and trade learning centers)]

- Love the library, fit modern needs.
- Public meeting spaces for community groups.
- Good job on small town feel.
- Community center downtown.
- Soup night successful (good for people with kids, knowing neighbors).
- First Friday and Farmers Markets—like size, convenient parking.
- Milwaukie Days: needs organization.
- Safe streets and education.
- Community jeopardy—sense of community.
- More traditional citywide events and more days/hours for farmer's market.
- Charity-focused community for all.
- More vocational/technical opportunities (equal education, school pride, community assets).
- Business cares about people in community.
- I know the mayor.
- Charitable culture/community that provides resources for all through ongoing efforts.
- Quality education.
- Livelier city (boring, plain).
- More options for entertainment.
- More places to hang out during the day.
- Stronger community as a whole.
- Better funding for early education (zero to five years) and daycare.
- More vibrant city.
- More housing in the downtown area.
- Mix of residential and commercial.
- Sidewalks.
- Not turn into a ghost town.
- Community center for sports (all ages).
- Game swaps.
- Nightlife.
- Neighborhood planning for their specific neighborhood theater.
- Socializing but supporting each other at the same time.
- Live work and play.
- Character of NDA matters.
- Similar setbacks to neighborhood.
- Creating more sense of community in outer, more "suburban" neighborhoods like Linwood/Hector Campbell. Safe walking routes and better street lighting. More information and opportunities for engagement for citizens.
- Revitalize the old town, downtown area to make it a place the community can come together. Across from city hall on the empty lot, make it a park and build a walking/biking bridge from the downtown to the river to connect the 2 areas and create a safer way for people to get to the river.

- More community events, more outreach to minorities, families, and young people.
- More inclusion of diverse populations.
- Community building/networking.
- Creating a sense of community for Milwaukie's citizens through a focused effort to fund and support education and provide resources. (Schools and access to education especially for low income, support businesses to grow more job opportunities, fund access to affordable or free physical and mental health care.).
- Health clinics. Community center.
- Support more community events such as Milwaukie Days.
- Public art. Community gardens. Safe routes to school. Economic Diversity.
- Food carts. Summer concerts.
- More activities for all generations.
- Community center large and small.
- Open up schools to community.
- Older/younger people mixing together.
- Gathering spaces in each neighborhood (plazas, community gardens, etc.).
- Each neighborhood having its own identity and businesses.
- We need a parking structure to support the parking needs of downtown businesses and special events. We need an open space with accessible electricity to host events such as Milwaukie Festival Daze, a Christmas Bazaar for the Tree Lighting, some type of comic based event to celebrate Dark Horse Comics to drive more attention to our city, and create opportunity for more events.
- Neighborhood centers for neighbors to communicate (parks).
- Be daring; be unconventional.
- City should have great heart where people want to be.
- Accessible common spaces.
- Vibrant and engaged neighborhood.
- Expand Milwaukie Sunday Market.
- Like Farmer’s Market.
- Farmer’s Market, community events.
- First Friday.
- Need places for people to hang out like wine 30.
- Community center, gym/places people can enjoy, music.
- Meet the 21st century goals of the region.
- Involved community.
- Maintain small feel.
- Downtown sense of place/points of interest. Connect to people of Milwaukie

Quality of life for families and seniors

[Social support networks, safe and convenient transportation, proximity to family and employment, access to nature, youth activities]

- Sidewalks for seniors and families. (2)
- Senior center location—need transportation.
- Good support systems: need centralized organization to coordinate. Should be downtown.
- Local bus system, not TriMet—city route.
- Cohesive center, not disparate services.
- Youth activities: more coordination to bring all kids together, create same league, grow existing programs.
- No hungry children/families due to finances, income.
- Have clean air and water.
- Living wage jobs that offer work/life balance, access to quality housing, happiness.
- Mental health.
- People should be first.
- Honor cultures.
- More inclusive of everyone.
- Youth, family are very important.
- Promote healthy activities.
- Social services.
- Family friendly.
- Socializing but supporting each other at the same time.
- Live work and play.
- Safety, walking access, street repair.
- Need more jobs that pay a living wage. Lack of industrial base is a detriment to future growth.
- A broader employment base paying family wages to reduce transit times and increase residents' quality of life.
- Meet the 21st century goals of the region.
- More child care availability and activities which are age appropriate for everyone.
- Creating a sense of community for Milwaukie's citizens through a focused effort to fund and support education and provide resources. (Schools and access to education especially for low income, support businesses to grow more job opportunities, fund access to affordable or free physical and mental health care.).
- Take care of teachers and schools.
- More activities for all generations.
- Community center large and small.
- Good school system.

Health and Safety

[Crime (absence of), seismic infrastructure upgrades, safe walking and biking routes, active recreational opportunities, street lighting]

- Sidewalks on all streets (2).
- Safe place to live.
- Outside of city = more camping; worries about camping encroaching. Priority.
- Staffing concerns and philosophy/strategy towards issue.
- People become members of community. Helping.
- Annie Ross growth? (expansion?) (congestion, etc, number of people).
- Lake Road has street lighting.
- Safe streets and education.

- No road kill.
- Transportation, safe streets for biking.
- Cleaner streets (parks, city in general).
- Promote healthy activities.
- Disaster preparedness, safe pedestrian walkways.
- Safety.
- Emergency response.
- Increased police attention on drugs/crime vs. ticketing.
- Public presence of cops.
- Public servants living in city.
- Bike cops.
- Community policing.

Transparency and access to information and City government

[Information dissemination, jurisdictional coordination, political continuity, civic pride]

- Information online: local city government meetings, agenda, etc.
- To continue to listen to the community about what makes them happy and feel safe in their community.
- An app that facilitates two way communication between the city and the citizens.
- More surveys like this. More reaching out to businesses and citizens alike on major issues.
- Outreach more about trees in community, parks, and playgrounds.
- City could provide more guides about green use.
- Where's the resilience piece -- need to add emergency preparedness activities and training, both for City functions (water system, etc.) and for residents.
- Removal of Kellogg Dam and restoration of Kellogg Creek.
- Community engagement for DIY in community: community/group improvement to business, homes.
- Robust volunteer outreach—in person.
- Turn NDAs into neighborhoods.
- Density—land locked, limited space.
- I know the mayor.

PLACE: Accessible transportation for cars, bicyclists, pedestrians and transit users

[Complete sidewalks, bike paths, safe and convenient connections across physical barriers, transit options, walkable neighborhoods, convenient access to the Portland region]

- Sidewalks (8)
- New bike lanes (added connections); pedestrian connectivity (off-roads); short transportation times; commercial hub zones in NDAs; small connections inside city limits; transit connections inside city to keep elderly age in place (example: Canby CAT).
- All modes of transport without obstacles, environmentally friendly.
- Cars are forced to travel outside city to get to city through streets be created.
- Parking issues, downtown/new commercial parking below or above.
- Create more creative off-street parking.
- Car sharing program.
- Become less auto dependent.
- Neighborhood commercial centers, 20 minute neighborhoods.
- Walkability for all neighborhoods with local hubs. Include adult activities.
- Build sidewalks and infrastructure to keep people safe.
- Connections to public transit (build sidewalks).
- Connections between neighborhoods.
- Sunday parkways event; more Greenways.
- Multimodal ways to travel.
- Walkable neighborhoods with amenities nearby.
- Frequent bus services.
- Bike paths.
- Parking.
- Alternative transportation modes stitched together better.
- Make more of a walkable community.
- Lot spaces preserved and used correctly.
- Increase connections for people w/ transportation issues (carpool).
- Solve ADA access and repair roads.
- Accessible transportation for cars, bicyclists, pedestrians and transit users.
- Complete sidewalks! Make Railroad Ave walkable, bikeable, and a bus route. Diverse, denser housing options that are developed AROUND environmental features like wetlands and with an eye to public transportation.
- Vision Zero.
- public spaces and transportation nodes being connected.
- No cement sidewalks.
- Better crossings of 224/99E for pedestrians.
- Would be nice to get some new buildings downtown with residences and new businesses.
- Bike lanes.
- Safer streets (lights, speed bumps).
- We still need parking and Park and Ride spots.
- Safe routes to public spaces.
- A network of paths and greenways across the city.
- Car share—Zip Car as option.
- More biking/lanes; also, entire carefree streets in certain areas.
- Make more appeal not to drive; more parking (car/bike) at MAX stations.
- Bike share in tandem with MAX.
- Bus lines better, especially to MAX lines.
- Bridge over Hwy 224 and 99; pedestrian and bikes.
- Transit oriented development —incentivize transit.

- Pedestrian only downtown: car free days.
- Move into the street, parking is not number one.
- Get people out of their cars. Shuttles.
- Need better access across 99 to river ("green bridge"), pedestrian/bike bridge.
- Downtown greenway system; connections.
- Parking for these locations you want people to access.
- More walking/biking paths with good lighting and safe feel. Good police presence on isolated walking paths. Good city involvement to keep area free of trash.
- Clean and safe streets. More parks. Alternate energy.
- Increase percentage of streets with sidewalks. Increase accessibility to riverfront (bridge for walkers?).
- 224: no man's land, barrier, hazard (connect two sides together, sky bridge?).
- Walkable.
- Safety.
- MAX system.
- Active transportation.

Affordable housing and gentrification/displacement pressures

[Diverse housing options, design, affordability, high quality development, homelessness]

- Affordability—same dwellings but some market, some income sensitive. (10)
- Increase density around shopping cores/NDA nodes.
- Increase heights/floors.
- ADU/cottage cluster/tiny houses.
- Reduce zoning numbers, residential.
- Balance of yard vs houses.
- Mixed use: residential/commercial.
- Inclusionary zoning.
- Avoid additional high density housing. We already have a mix of high density, duplex, triplex. Support more senior housing.
- Bring rents down. Create affordable housing and transportation for seniors and low income people.
- Slowing down rent increases.
- Tiny housing.
- Alternative housing plan with rent control.
- Give home owners the right to build tiny houses.
- Maintain downtown.
- Integrating our neighborhoods with "missing middle" housing options -- but NOT with four-story condos like are going up in Sellwood and along SE Division.
- Don't ignore the need for parking spaces, both downtown and with any multi-family housing. The Mayor's vision of a car-free city may happen by 2040, but we have more than a generation until that time.
- Vision Zero, a park within a half mile of every citizen.
- Support efforts to increase affordable housing options and preserve those that already exist.
- Sidewalks. Cafes and neighborhood hubs.
- Rent control ordinance.
- Housing options.
- Affordable options for single income homes.
- Keep Milwaukie affordable.
- Middle housing allowed in all neighborhoods.
- Reduce minimum lot size for duplexes and triplexes. Shouldn't need a 10,000 sf lot for a modest duplex.
- Matching heights.

- Commercial building up front to street.
- Small homes allowed on one lot with shared common spaces.
- Various kinds of housing models and social arrangements.
- Reusing older buildings to add housing above commercial.
- Increase density in downtown, more people living downtown.
- Balancing development and preservation (not tearing down one house to make more).
- Pick best places for density—affordable, mixed use buildings.
- Encourage homeownership downtown.
- Possibly multi-family housing at Milwaukie Market Place.
- Provide denser affordable housing options.
- Prevent high rise buildings.
- Prevent affordability crisis.
- Okay with some density.
- Housing diversity – needed.
- Diverse housing options, design, affordability, high quality development: the way these questions are worded is a bit strange. Ask people to choose one or select an assortment of words.
- Focus on residents.

Art and public space

[Plazas, amphitheaters, public art, tours and exhibits, aesthetic, public programming, playgrounds]

- Again, add City support for the arts because it adds so much to the livability of the community, and fosters creativity among all residents. You have it in the headline, but it needs its own bullet line.
- More community gardens.
- Identify spaces available for people to gather.
- Use spaces creatively.
- More art murals.
- School yards after school hours be used for community purposes.
- Arts accessible to all, and an integral part of the public environment.
- Have art that people like and that people will want to come to Milwaukie to see. Art that inspires, that people admire and look up to. NO Conceptual art that just gets ignored because you need a PhD to understand it.
- Sidewalks, clean steam.
- Art focus in city, centralized with schools.
- Collaborative art shows between two high schools.
- Culture.
- Parking lot development of plaza/place.

PLANET: Riverfront, creeks, trees and other natural resources

[Clean air and water, green space, parks with amenities, restored watersheds, waterfront, gardens, tree canopy and ordinance]

- Parks. (3)
- More green spaces around higher density zones.
- Take advantage of river more: floating restaurant, human-powered regatta, and programming.
- Removal of dam / restore Kellogg Creek.
- Continue to reclaim and preserve waterfront.
- Still have greenery; Parks updated, build a heart, more gardens.
- Movable trees and shrubs. Preserving wetlands.
- Embrace the river. Allow appropriate access yet protect the habitat. Modernize old parks. Make school ground vital civic places (green space).
- Community centers.
- More fruits/edibles in parks.
- More community gardens—use produce to build community, food nights.
- Waldorf has community gardens.
- Preserve heritage trees for better air quality, life quality.
- Save trees as incentive to reduce storm water.
- Tree canopy helps with solar, keep cool.
- Incentive programs around storm water management.
- Drain Kellogg Lake to create a better park.
- Preserve tree canopy. Replacement policy needed.
- Kellogg Creek—an amenity, a community-wide resource.
- Keep trees/green within DT/courtyard/town square; make connections.
- More community garden spaces.
- "Green up" Milwaukie marketplace; improve the resources area, revitalize.
- No more cutting down trees.
- Wildlife and fish protecting.
- Restoring the place.
- Accessible common spaces.
- Less grass, more park.
- Native plants, animals.
- Creating space for animals like bugs, birds, etc.
- Working with partner with environment.
- Bridge over to waterfront.
- Water systems.
- Moving the dam somewhere else.
- Got it back to natural state.
- More community involved into the about environment.
- Live in nature rather than around it.
- Help the forest garden grow, providing food.
- Community garden.
- Reinstate protected areas along creeks and open spaces.
- To keep the lovely large tree next to library on Harrison. Voices want to cut it down to expand library.
- Fix the mess with the sewage treatment plant.
- Restored watersheds and creeks, and development that works around natural areas. Public transportation is also a huge component of the Planet section.
- A free flowing creeks into the river, all creeks.
- Improving water quality and wildlife habitat.

- Food forests. Lots of resources on this in the permaculture movement.
- Clean water. Bringing back creeks and rivers to pristine state.
- Restore our creeks.
- Gray water management. Composting solutions. Tree management. Wildlife habitats.
- Keep our trees protected.
- Trees and flowers to keep city looking nice.
- Freeing up Kellogg Creek.
- Recreation for the river.
- Kayak/recreation businesses that use river.
- Keep parks and natural areas free of litter and polluting camp sites.
- Cohesive connection with river.
- River is the key.
- Maintain view of river.
- Access to parks.
- More trees.
- Kellogg Creek dam removal.
- Open space, community space.

Sustainable energy (green use and production)
[Net-zero buildings, solar panels, fiber optics, renewable energy sources, low-impact, sustainable experimental and demonstrative learning centers]

- Green standards gives efficiency.
- Would love to see more houses with solar panels.
- Mandate for LEED buildings, living buildings, net zero.
- Solar panels on businesses, homes.
- Be example of sustainability.
- As city grows, solar protection for neighboring homes (shadows cover entire yard).
- Compost program.
- Sustainable businesses: eco/environmental businesses, corporate investment in city, incentivize/attract green companies, small/independent businesses.
- Eco-industrial concepts: clean industry, clean practices. Incentives.
- Encourage clean energy (solar/wind), incentivize; promote solar (residential and commercial).
- Climate-conscious planting, construction (native plants).
- Turn invasive plants into resource.
- More recycling cans.
- Giving back to planet.
- Storm rain going to reuse for their own home.
- More solar power—solar farm.
- Green roof recycling water.
- City could provide more guides about green use.
- More composting for schools.
- Where's the resilience piece -- need to add emergency preparedness activities and training, both for City functions (water system, etc.) and for residents.
- Removal of Kellogg Dam and restoration of Kellogg Creek.
- Net Zero city. Tree lined streets and totally restored creeks, Kellogg dam gone, Fiber to home as a city utility like Sandy did.
- Inspire people to put solar on their house with some incentive program to offset the cost of the panels. Inspire people to create backyard habitats in their neighborhoods to attract native bugs and birds back to the area.

- Don't jump into fiber optics, renewable energy, solar panels until some other communities have a long-germ-track-record about the efficiencies and true costs of the above.
- Renewable energy should run the city and its residents.
- Provide more options for private home to be run in a renewable way and to feed into grid (tax credits?).
- Renewal energy.
- Micro grid.
- Smart energy infrastructure.
- Sustainable development.
- Renewal energy.
- Micro grid.
- Smart energy infrastructure.
- Use more public transportation.

Other

- Brownfield remediation program.
- Flood planning.
- Post warnings and begin the cleanup of the chemicals that have been dumped in to our environment from local businesses like Precision Castparts Corp! Have regular monitoring and testing stations.

PROSPERITY: Inclusivity of diverse populations and physical neighborhoods

[Addressing homelessness, diversity, multicultural celebration, social services, neighborhood connections, neighborhood identity, equitable distribution of infrastructure investments]

- Outside of city has more camping; worries about camping encroaching. Priority.
- Diversity for real though, not just lip service.
- Inclusive communities. Welcoming to everyone. Diversity. More businesses and entertainment.
- Welcome more diverse people. More homeless social services.
- Transportation. Cultural events.
- Vibrant neighborhoods to create community.
- Diversity.
- Not leave out other parts of Milwaukie.
- Advocate use of light rail.
- Increase neighborhood access to LR, LR across to business.
- Linking SWC more efficiently, further u toward Oregon City.

Supportive mix of diverse business and local economic growth

[Local businesses, diverse shops, pedestrian-oriented downtown, vibrant Main Street, grocery stores, restaurants, living-wage jobs, large employers]

- Business. Revitalizing the downtown. If you build it, they will come. I'm not sure where business and development is in these goals. Schools.
- Need more jobs that pay a living wage. Lack of industrial base is a detriment to future growth.
- Revitalize downtown.
- Affordable grocery stores (healthy).
- Need to establish a growing employment base before we move to artsy and craft issues.
- Economic Diversity.
- More food options; food coops, grocery stores.
- Create demand downtown; need residents.
- Need to address food desert.
- Cultivate instead of invest.
- Chain stores.
- Business with purpose.
- Businesses that are community stakeholders.
- Encourage good business development.
- Increased use of industrial area.
- Maintain business prosperity in industrial.
- Strong small pedestrian business on main streets (downtown).
- Vibrant downtown.
- Office space to bring business in.
- Grocery store (Green Zebra).
- Convenient healthcare, possibly Zoom Care.
- Food carts.
- Small biz to serve workers.
- Utilize waterfront access for hotels and other business.
- Nicer, affordable grocery store (Trader Joes, outlets, Buffalo Exchange).
- Grocery store downtown (walkable groceries, hubs).
- Need focal points to draw other businesses, draw attention to existing businesses without losing character.
- Supplement downtown businesses with more choices, need restaurants.
- Housing mixed use to provide customers for businesses.

- Fitness businesses.
- Using space for new businesses available.
- Interconnected economic hubs driven by social industry/mixed use industry and social service, convenience, leverage natural and existing attractions of space.
- I would clarify large employers to be large high-wage employers. And NO BIG BOX retail. Balance encouragement of businesses with traffic concerns that some types of businesses will generate.
- Keep chains out of downtown. More grocery shopping/retail opportunities in the neighborhoods between 82nd and downtown.
- Low income housing, work force housing, fees/taxes higher for big businesses and huge house, lower on small houses/businesses, job training for local jobs.
- Yes: Local businesses, diverse shops, pedestrian-oriented downtown, vibrant Main Street, grocery stores. Yes: Zoning and development code that maintains Milwaukie character. No more development in Milwaukie. Use the structures that are already here and revitalize those. Make more green spaces with native plants and trees.
- More businesses. Music store, book store, less pubs, a hobby shop.
- Make downtown and other parts of Milwaukie attractive to more businesses to create jobs and make sure that citizens have access to healthcare including mental care.
- Need more jobs that pay a living wage. Lack of industrial base is a detriment to future growth.
- Local businesses that reflect the community.
- Diverse businesses by type and ownership. Businesses for work and play.
- Open more store fronts downtown.
- The food cart pod is a great idea - and to attract businesses run in a sustainable way.
- Increase vibrancy of downtown. Expand Milwaukie Sunday Market.
- More grocery stores.
- Diverse and middle income.
- Would like more good restaurants downtown.
- Business growth without environmental impacts.
- Downtown opportunities.
- Corporate money hurting Milwaukie business.
- Sad to see small business struggle.
- Need vibrant core of business before high-rise housing.
- Take care of downtown businesses, attract more.
- Keep jobs/work in Milwaukie.

Implementation, Funding and policy

[Zoning and development code that maintains Milwaukie character, increases choice, equitable distribution of infrastructure investments east/west/north/south, business incentives, sustainable funding mechanisms, maintaining and improving infrastructure and services]

- Take into consideration who pays for these services. Car owners footing the total bill. Its time bikers and other transportation pay their fair share.
- Goals are one thing, realities, i.e. costs are another.
- Setting rules for doing business in Milwaukie.
- Starting a business in difficult: fees, development rules.
- Zoning support affordable housing in downtown.
- Zoning to protect natural resources (such as incentive to not develop on natural areas).
- Soliciting/enticing small business.
- Zoning with high required storefront transparency.
- “Working area” zoning in industrial Milwaukie.
- Annexation of park station.
- Focus and theme to increase Milwaukie’s reputation (food, beer, wine).
- Tax incentives to make affordable housing in regular neighborhoods, 80-20 plan.

- Extra floor for low income.
- Needed from city: zoning, develop programs/incentives, mixed-used businesses, more business events (ie: first Fridays).
- Focus on better use of north industrial area. Create better jobs per acre.
- Have a common tax for businesses.
- Grants for small businesses supporting diversity and community.
- Plan to framework for that business to work within.
- Grants for small business to move into undesirable locations. More retail space.
- Implementation to move forward.
- Understand business community.
- Improve workforce development in local economy.
- Make Milwaukie innovation hub.
- More funding for parks/green spaces.

MILWAUKIE ALL ABOARD

TOWN HALL SUMMARY
Vision Advisory Committee Review Draft
March 1, 2017

OVERVIEW

On February 15, 2017 City of Milwaukie convened a second Town Hall for its *Milwaukie All Aboard Community Vision and Action Plan* process. More than 100 community members participated in this event at the Waldorf School. Building upon the work done at the first Town Hall where a preliminary vision statement and topic area goals were drafted within the "quadruple bottom line" sustainability lens of *People, Place, Planet* and *Prosperity,* community members generated action items for each of the Vision's 12 Goal Area Statements.

Mayor Mark Gamba opened the event, thanking everyone for coming. He recalled the recent James Rojas *Place It!* Workshop event in January, highlighting how most participants had noted the role of water and play in their place-based recollection of childhood memories. The Mayor reviewed the goal of the meeting as an opportunity to take the vision that's been refined by the Vision Advisory Committee (VAC) with the community's input over the last several months and transition into creating action strategies that will begin to move the City towards that vision. The Mayor acknowledged and thanked the VAC members, as well as Council Members, City Staff, other elected officials including Clackamas County Jim Bernard and consultants.

Facilitator Kirstin Greene with project consultants Cogan Owens Greene reviewed the agenda, the reference guide and updated draft vision in participants' packets. She introduced the evening's discussion activities, led by volunteer VAC members.

Participants reviewed goal area statements and were invited to sit at the discussion table of their choosing according to their interest. VAC members and Spanish translators then facilitated 13 tables of discussion – three in each of the four quadruple bottom line sustainability lenses, in addition to one Spanish-language group. Each table of participants reviewed a Goal Area Statement and developed and refined a list of action items to implement that statement.

Willamette Falls Community Media streamed the event live online and will make it available for rebroadcast.





ACTION ITEMS BY GOAL STATEMENTS: TABLE DISCUSSIONS



Discussions were robust and collaborative, resulting in dozens of new action items as well as excellent feedback on the preliminary action items that had been developed by the VAC since the November Town Hall. Towards the end of the discussion, participants were asked to identify their highest priority action item from the list developed by their group. Discussion leaders then reported out to the audience the top action item for their goal statement.

NEXT STEPS

At the end of the table discussions and report-out, Mayor Gamba concluded the evening with some final remarks. He reminded participants that the next VAC meeting is on March 1st, 2017, where the VAC will begin to take the community's guidance on the Action Plan and work with the City Council and community to identify priorities and partners for implementation. A preliminary review of input received to date will be presented to City Council on March 21st. Consultants, staff and Milwaukie High School youth will lead ten Community Conversations in March and April focusing on the draft actions. Finally, an online survey will be available in May, focusing on priorities for the agreed-upon actions. A final draft of the Community Vision and Action Plan will be ready by June and is expected to be accepted by Council in July. From that point, the City will begin the process of updating the Comprehensive Plan in depth, building upon the vision, goals and action items developed during this project. The Mayor thanked participants and adjourned the meeting.



A full list of the top action items, generated from the Town Hall discussion groups, the online survey, and VAC and City Department deliberations, are included in Appendix A.

FEBRUARY 15, 2017 TOWN HALL APPENDIX A

PEOPLE #1: ***Milwaukie is an inclusive community of diverse people from a variety of backgrounds that recognize our differences and shared similarities. We are engaged and come together in many ways through various events and community gathering places, where we can celebrate our interests, heritage and passions.***

VAC Preliminary Actions

1. Develop procurement practices that target businesses owned by women and people of color.
2. Host and support cultural events that reflect the diversity of the community.
3. Develop a City program to encourage neighborhood block parties.
4. Organize Community Volunteer Events.
5. Acquire or support land for development of public and community space.

Survey Actions (Top frequently mentioned)

6. Develop procurement practices that prioritize regional vendors and products, as well as veteran/disabled veteran owned businesses. (3)
7. Implement safe, accessible sidewalks and bike paths to allow all residents access to events, parks and playgrounds and essential services such as grocers. (3)
8. Programs specifically geared at bringing teens and children out into the community. (3)
9. Create gathering places and parks that are contiguous with small commercial hubs in each neighborhood. (2)
10. Encourage religious awareness and diversity. (2)
11. Look for ways to encourage diversity throughout the city. (2)

Town Hall Actions (Top Votes)

12. City committee dedicated to community building/inclusivity/diversity. (3 votes)
13. Volunteer coordination (what is available at county level?). Interactive map here – put something on City website with link to volunteer opportunities. (1 vote)
14. Regular town halls are worthy. (1 vote)
15. More casual city council meetings once in a while. More grassroots feeling. (1 vote)
16. Have electronic input feedback situation during meetings for direct citizen feedback. (1 vote)

City Department Head Suggested Actions

17. Ensure continued City government transparency and accessibility through an ongoing evaluation program. Incorporate this into the Citizen Involvement Section of the Comprehensive Plan.
18. Evaluate City decisions and actions based on whether they have an impact on disadvantaged groups of people. Enact programs and make decisions designed to reduce disparities. Ensure that translation services are available.
19. Provide staff support and funding for community events, celebrations, and projects such as the Umbrella Parade, Farmer's Market, and concerts in the park, which strengthen bonds within the community.
20. Develop a community directory or clearinghouse to ensure that community members can find the resources they need to achieve their goals, large and small.
21. Develop neighborhood level resources banks, such as tool libraries, book exchanges, neighborhood work parties and similar activities.

Other Town Hall Actions (Singular Mentions, *Asterisk refers discussion point among group)

22. * Prioritize the outreach of vendors if not selection in reference to action item #1.

23. * Involve people at community gardens more broadly (i.e. weeding party, kid involvement).
24. * Jump over the fence and help out your neighbor.
25. * Partnerships with churches and NAs.
26. City acquire land for resiliency and community/gardens.
27. Priority locations for sidewalk improvements.
28. The way that people are invited to engage – important (common thread through the action ideas could help).
29. Signs available in business windows about being an inclusive community.
30. A city liaison or other committee representative at NA meetings to feel more validating.
31. The power of in-person ideas exchange vs. reading about a project in the newspaper.

PEOPLE #2: ***Milwaukie is a diverse community that provides opportunities and support for all of its residents through a variety of resources and enriching activities. We encourage and support a vibrant local economy that contributes to a high quality of life where residents can live, work, learn, and play.***

VAC Preliminary Actions

1. Expand trade school and continuing education programs.
2. Develop a "Barn-Raising" program.

Survey Actions (Top frequently mentioned)

1. Small business development, mentoring, incubation and entrepreneurial programs. (5)
2. Promote internships with high school students and local businesses, offering grants/scholarships to provide learning opportunities and collaborations. (4)
3. Community gardens. (3)
4. Open an activity center for kids with enriching activities and projects for the 12-17 age group besides sports, also taking into account people of all ages with disabilities. (3)
5. Community tool library. (3)
6. Small business loans and grant programs for neighborhoods to develop retail services in our neighborhood. (2)
7. Develop more parks with amenities (such as an interesting and unique play structure for kids, walking paths/hiking trails for adults, skateboarding /scooter area, water feature for hot days, grassy space for picnic, tables for parties/bbqs, dog areas, etc.). (2)
8. Community space for small classes, such as urban farming. (2)
9. Invite businesses that provide larger numbers of jobs and encourage a family-friendly environment. (2)

Town Hall Actions (Top Votes)

10. A community center. (3 votes)
11. Develop co-working spaces for small local businesses (sole proprietorship). (1 vote)
12. Create a “Welcome to Milwaukie” guide/pamphlet. (1 vote)

City Department Head Suggested Actions

NONE

Other Town Hall Actions (Singular Mentions, *Asterisk refers discussion point among group)

13. Initiate partnerships between schools and local business community.
14. Create grants to support internships with local business community and high school students.
15. Advertise internship opportunities and interaction with different fields/professions.

16. Market and expand new century players (community theaters).
17. Consolidate a list of web resources and links.
18. Grants for space rental for different activities (music, knitting, art, Community Theater).
19. Create more activity-based groups (biking, walking).
20. Expand City's calendar to include smaller community-based events.
21. Create an art installation as a Gateway to Milwaukie.
22. * Hosting meet-up groups at the Masonic Temple.
23. Create Milwaukie Trivia club.
24. Encourage year-round Farmer's Market/craft market/art gallery.

***PEOPLE #3:* The City of Milwaukie is an open portal where information is readily available, easily exchanged and responsive. Residents feel empowered and have opportunities to engage and share ideas.**

VAC Preliminary Actions

1. Initiate a City Youth Advisory Council.

Survey Actions (Top frequently mentioned)

2. Improve the City's website to be transparent, simple, user-friendly and interactive so it can better connect residents to their community and City Council, make meeting minutes and the City events calendar more accessible and improve promotion and discovery of local business. (8)
3. Provide childcare services at meetings and events. (2)
4. Translate materials in Spanish and other languages. (2)
5. Continue to have Town Hall style meetings in large venues to allow for more dialogue and citizen input. (2)

Town Hall Actions (Top Votes)

6. Information centers in all parks, public spaces. (3 votes)
7. Open forums, maybe virtual, live feed, and skype? (2 votes)
8. Make events more family friendly (childcare, activities for children) and more engaging. (1 vote)

City Department Head Suggested Actions

9. Develop more problem-solving relationships between police department and the community through extra programs that help build trust/relationships with the community.
10. Support the growth of the Ledding Library as an integral community resource center.
11. Make the city website a resource for community members.
12. Develop new methods of exchanging information and engaging the community in City projects. Expand communication methods as new platforms become available.

Other Town Hall Actions (Singular Mentions, *Asterisk refers discussion point among group)

13. A more accessible website, no errors.
14. More community events to get the word out.
15. Send agendas/minutes for meetings.
16. Milwaukie Pilot to more people. Electronic?
17. Multi-language signs.
18. A central system of communication.

19. Elder advisory committee.
20. Community classes on how and where to get information.
21. Easily be a spectator.
22. More small groups (all groups feel they have a place for their voice).

<u>PLACE #1:</u> Milwaukie has a complete, clean and attractive network of sidewalks, bike lanes and paths that enable accessibility, mobility, and safety for all. Streets are tree-lined, well-lit and designed to promote a healthy and active lifestyle. There is a seamless transition between walking, biking, and transit to key amenities and neighborhood centers.

VAC Preliminary Actions

1. Adopt Vision Zero.
2. Identify and fill sidewalk gaps and ADA deficiencies in the existing network.
3. Identify safe routes for all modes of transportation.
4. Align transportation infrastructure with the classification of the facility.

Survey Actions (Top frequently mentioned)

5. Maintain streets. (7)
6. Create dedicated bike paths and walking trails to create safe separations between people and cars, facilitating safe and rapid connectivity. (5)
7. Improve walkability and bikeability by creating connections to lodging, parks, waterfront, grocery stores, restaurants and retail outlets. (5)
8. Improve and expand the sidewalk network. (5)
9. Provide opportunities for residents to acquire and maintain appropriate trees on public rights of way and their own property. (4)
10. Implement a Safe Routes to School Program. (4)
11. Provide sufficient parking for vehicles as not everyone is able to walk or bike. (4)
12. Develop a bike share/rental system. (3)
13. Adopt a comprehensive road paving funding plan for neighborhoods with roads in bad repair. (3)
14. Incorporate “Dark Sky” friendly street lighting. (3)
15. Find safe ways across intersections for pedestrians, especially 224 & 99 - the uncontrolled lights are especially hazardous to pedestrians. (3)
16. Consider better alternative construction materials for sidewalks; look at what Lake Oswego has done with asphalt and plants to make it permeable to rain water, cheaper to make, and aesthetically pleasing. (3)
17. Improve access to public transportation for all, including those less mobile. (2)
18. Fill ADA deficiencies in the existing network. (2)

Town Hall Actions (Top Votes)

19. Do a Plan for more neighborhood green streets. (3 votes)
20. Adopt Vision Zero. (2 votes)
21. Identify and fill sidewalks gaps and ADA deficiencies in the existing network. (1 vote)
22. Develop neighborhood parks. (1 vote)
23. Software/online reporting system to record concerns about pedestrian safety. (1 vote)
24. Plan to improve safety at 224 and 99E (pedestrian crossing, over/under crossings). (1 vote)

City Department Head Suggested Actions

25. Proactively address neighborhood livability issues (a form of broken windows theory).
26. Establish a street tree planting program.

Other Town Hall Actions (Singular Mentions, *Asterisk refers discussion point among group)

23. Bicycle/Pedestrian awareness program for the drivers. Better signage/lighting.
24. Prioritize signals for pedestrians.

<u>PLACE #2:</u> Milwaukie invests in housing options that provide affordability, high quality development and good design, promoting quality living environments. It maintains the small neighborhood feel through creative use of space with housing options that embrace community inclusion and promote stability.

VAC Preliminary Actions

1. Decentralize affordable housing.
2. Ensure quality design standards.
3. Streamline permitting and waive system development charges for creative uses of space (i.e. Accessory Dwelling Units, Cottage Clusters, etc.).
4. Encourage community inclusion through multi-generational and multi-cultural community events.

Survey Actions (Top frequently mentioned)

5. Form based zoning to allow more missing middle housing (duplexes, triplexes and cottage clusters, tiny houses) in all neighborhoods. (4)
6. Community gardens and greenspaces would help maintain quality while allowing for density. (2)
7. Stabilize rent and protect renters, especially for low income families. (2)
8. Review zoning to allow more mixed-use buildings. (2)

Town Hall Actions (Top Votes)

9. Streamline permitting and waive system development charges for creative uses of space (i.e. Accessory Dwelling Units, Cottage Cluster, etc.). (3 votes)
10. Annex unincorporated land – expand Urban Growth Boundary. (2 votes)
11. Shipping container homes. (1 vote)
12. Prioritize code updates for housing – land balancing. (1 vote)

City Department Head Suggested Actions

13. Create more affordable housing for seniors, including by helping to identify the multiple funding sources needed to make projects feasible.
14. Support the development of Aging in Place Villages, which combine senior housing with social services and volunteer assistance to seniors.
15. Develop neighborhood plans that define neighborhood character and identify strategies for better integrating new infill housing into neighborhoods. Amend codes as necessary.
16. Partner with Clackamas County in providing affordable housing.
17. Continuously evaluate city programs for their impacts on housing costs.
18. Build improvements identified by the SAFE program and Comp Plan.
19. Support street maintenance.
20. Partner with TriMet to ensure excellent transit. Partner with other to provide on-call transit and paratransit.
21. Support the artMOB and expand art programming throughout the City of Milwaukie.

Other Town Hall Actions (Singular Mentions, *Asterisk refers discussion point among group)

22. City generated program shared between landlord/tenant.
23. Transactional tax.
24. Alternative funding sources.

25. City to set production targets – share with public.

PLACE #3: ***Milwaukie collaborates with community partners to create and preserve spaces to inspire the public to be engaged with the city's past and future. Art and innovation is weaved into the fabric of the city.***

VAC Preliminary Actions

1. Promote diverse programming in public space.
2. Encourage partnerships between local businesses and artists.
3. Provide opportunities for art installations.
4. Promote community-sourced neighborhood design of public spaces.

Survey Actions (Top frequently mentioned)

5. Provide grants, scholarships and funding for the arts through a program such as "1% for the arts." (4)
6. Complete Riverfront Park and create programming to bring the community in to the space year round, like concerts and plays. (4)
7. Focus on parks and green spaces for everyone to enjoy that are safe, green and clean, with restrooms, seating areas and parking. (4)
8. How about neighborhood "tool sheds" and open art studios to pool resources and promote local artists? (2)
9. Complete the amphitheater in Milwaukie Bay Park to create a space for the performing arts. (2)
10. Encourage protection of Historical Resources and identify past historical sites with Historical Markers. (2)
11. Preserve the City's history through research and museum preservation of artifacts and pictures. (2)
12. Provide opportunities to share the Native histories of Milwaukie. (2)
13. Allow citizens to vote on public art that we will be viewing. (2)

Town Hall Actions (Top Votes)

14. Promote diverse programming (education, art, history) in public space (green space, water). (2 votes)
15. Improve access and promote Waterfront Park as a community destination. (2 votes)
16. Bike map connecting parks and community centers. (1 vote)

City Department Head Suggested Actions

17. Create a program to fund improvement of neighborhood plazas, parks, and other amenities.
18. Update the City's historic resources inventory and develop local incentives for preservation and restoration.

Other Town Hall Actions (Singular Mentions, *Asterisk refers discussion point among group)

19. Encourage partnerships between local businesses, artists, NCPRD, and school district.
20. Promote community-sourced neighborhood design of public spaces – water front park.
21. Historical Society – education of natural resources.
22. Map-Activity walking tour of city history / modern adventure.
23. Develop a community communication/message board/online, etc.
24. Modernize and update parks/or new ones.

PLANET #1: ***"The entire city nurtures a connected canopy of trees planted and stewarded by its residents. Smart and focused development honors and prioritizes life-sustaining natural resources.***

VAC Preliminary Actions

1. Develop programs and code to better integrate current development in the existing natural environment. (4 dots)
2. Create a robust urban forestry plan. (3 dots)
3. Create a strong tree ordinance. (2 dots)
4. Develop a Backyard Habitat Program or other ecosystem program. (1 dot)
5. Inventory neighborhood wildlife habitats and track growth.

Survey Actions (Top frequently mentioned)

6. More community gardens. (4)
7. Develop educational classes (perhaps through Library) to teach people about native trees and plants, landscaping basics, and value of vegetation in our community. (3)
8. Create guidelines for "heritage" trees. (2)
9. Develop a citywide composting program similar to Portland's. (2)
10. We need less regulations, not more. (2) *They make it so people cannot freely landscape their own properties and remove diseased trees.*
11. Involve schools and senior citizens in tree planting. (2)

Town Hall Actions (Top Votes)

12. Develop programs and code to better integrate current development into the existing natural environment. (4 dots)
13. Create a robust urban forestry plan. (3 dots)
14. Develop a backyard habitat program/ecosystem program. (1 dot)
15. Public education, outreach, published information about natural features. (1 dot)
16. Urban orchard program. (1 dot)
17. Encourage existing development/infrastructure to renew and nurture underappreciated habitat. (1 dot)

City Department Head Suggested Actions

18. Develop a tree protection and tree replacement program (already above). (Denny)
19. Amend the development code and create incentive programs that promote sustainable development. (Denny)

Other Town Hall Actions (Singular Mentions, *Asterisk refers discussion point among group)

20. Compost program.
21. Storm water mitigation.
22. Track # of trees.
23. Update city code.
24. Identity and implement specific trees.
25. Public education.
26. Conserve old growth.
27. Compost management.
28. Spring creek.
29. Science, prosperity, and habitat.
30. Forest gardens/permaculture.
31. Trees – mature and the right plan (removal of bad trees).

32. Backyard habitat.
33. Bees and birds.
34. Development.
35. Flooding.
36. Pavement.
37. Urban forestry.
38. Crown Density.

PLANET #2: ***"Milwaukie has free flowing, accessible, pristine waterways that are protected by a robust stormwater treatment system. The Willamette waterfront is easily accessed by the public and offers a wide variety of activities and events that can be enjoyed by all.***

VAC Preliminary Actions

1. Replace stormwater and sewer systems.
2. Restore riparian habitats.
3. Increase wetland opportunities for natural stormwater management.
4. Enhance access for boats and other water activities.
5. Perform regular evaluations of air and water quality monitoring.

Survey Actions (Top frequently mentioned)

6. Remove Kellogg dam and restore the creek. (6)
7. Ensure sustainable funding sources are available before any new programs are developed, and make sure they consider potential impact on business growth. (5)
8. Improve walkway and bike access across McLoughlin Blvd, such as via a bridge or tunnel. (4)
9. Repair NOT replace storm water and sewer systems. (2)
10. Address industrial pollution from local business such as PCC. (2)

Town Hall Actions (Top Votes)

11. Build natural systems for storm water. (5 dots)
12. Finish phase 3 of Milwaukie Bay Park. (3 dots)
13. Develop educational campaign about creeks. (2 dots)
14. Better pedestrian access to MBP (flashing lights). (2 dots)
15. Change code to better protect stream areas. (1 dot)

City Department Head Suggested Actions

16. Develop a natural resource plan and funding mechanism for restoration of Kellogg and Johnson Creeks. (Denny)
17. Develop a plan and funding strategy to implement stormwater improvements and treatment prior to discharge into the creeks and river. (Denny)

Other Town Hall Actions (Singular Mentions, *Asterisk refers discussion point among group)

18. Regular monitoring of air and water quality, and enhance protections with updated codes.
19. Restore creek habitats and wildlife corridors.
20. Include permeable surfaces in city infrastructure.

21. More diverse access to Willamette waterfront.
22. Dock for non-motorized crafts and swimming area (Willamette waterfront).
23. Don't cut down Redwood tree in MBP.
24. Pedestrian overpass (over 99 to MBP).
25. Encourage rentals for human-powered crafts.
26. Encourage ODOT to replace bridge so Kellogg Dam can be removed.
27. Include bioswales in new construction.
28. Rebuild/preserve wetlands for new development.
29. Composting toilets in the parks/waterless urinals.

PLANET #3: ***"Milwaukie is a model city that produces more energy through renewable sources than it uses. It is a prepared and resilient community, adaptive to the realities of a changing climate."***

VAC Preliminary Actions

1. Solarize all industrial parks.
2. Conduct an Energy Map and Carbon Wedge Analysis.
3. Harden water and sewer systems.
4. Conduct a Food Systems Analysis.
5. Crete an Emergency Preparedness Plan.

Survey Actions (Top frequently mentioned)

6. Encourage more solar and other renewable energy uses by waiving installation permit fees and giving rebates for solar and other renewable energy use. (7)
7. Harness the power of wind. (2)
8. Consider costs of any new regulations. (2)
9. Develop a rebate program for converting to low water toilets. (2)

Town Hall Actions (Top Votes)

10. Encourage new development with incentives to go renewable/with existing development. (5 dots)
11. Community orchard – urban forester needed? (4 dots)
12. City public land promoting gardening and growing. (2 dots)
13. Enhance community gardens and use food for community. (1 dot)
14. Embrace "healthy" food sellers/growers existing and promote and expand. (1 dot)
15. Communicate City programs of existing conservation efforts. (1 dot)
16. Upgrade energy grid! (1 dot)

City Department Head Suggested Actions

17. Create a program similar to the Green Block initiative, which focuses on ways that individual households can reduce their carbon footprint. (Denny)
18. Develop a Climate Action Plan aimed at reducing impacts of City activities on climate. (Denny and Clare Fuchs)
19. Ensure that the City's infrastructure and buildings are able to reasonably withstand natural or man-made disasters, and that the City can be counted on to provide services to its residents during and after an emergency event. (Clare Fuchs)

20. Expand the City's Solar Program. (Clare Fuchs)
21. Develop an energy plan to achieve net-zero status, which includes a strategy, time frame, benchmarks, and incentives. (Denny)
22. Evaluate current emergency response protocols and revised as needed to develop a community resiliency program for emergency and disaster response. (Denny)

Other Town Hall Actions (Singular Mentions, *Asterisk refers discussion point among group)

23. Community processing area and /or commissary.
24. Incentivize businesses to use non fossil fuels.
25. Promote and encourage environmental positive business.
26. Incentivize residential solar and energy efficiency.
27. Analysis of "weak" links in sewer/water system before it breaks.
28. EPS.
29. Encourage expanding CERT (emergency response) program.
30. Organize Neighborhood District Association meeting places.
31. List of 20 things you need in an emergency.

PROSPERITY #1: ***Milwaukie offers numerous pathways to prosperity through an excellent education system and training programs that are connected to local business. Residents of all ages and backgrounds feel supported to pursue and attain success in our local community.***

VAC Preliminary Actions

1. Host a Career Connections Convention.
2. Create a Library Concierge Position.
3. Develop a K-12 Internship program with local businesses.

Survey Actions (Top frequently mentioned)

4. Support expansion of programs and classes at the Harmony campus of Clackamas Community College. (3)
5. Promote trade schools as an alternative to college. (3)
6. Expand library educational and training programs. (2)
7. Capitalize on bilingual/immersion programs at North Clackamas School District. (2)
8. Create incentives for local businesses to hire residents. (2)

Town Hall Actions (Top Votes)

9. Create library Concierge position for employment and application assistance. (2 dots)
10. Develop a k-12 Internship Program with local businesses. (1 dot)
11. School Mental Health Program. (1 dot)
12. Expand City's role in serving as point of conflict/liaison for Milwaukie businesses to attract/recruit/develop employees. (1 dot)

City Department Head Suggested Actions

13. Support strong schools and grow partnerships with North Clackamas Schools and Clackamas Community College. (Denny)
14. Partner with Clackamas Community College on continuing education that support Milwaukie businesses and industries.

15. Create a city economic development program that emphasizes job retention and development of locally owned businesses. (Denny)
16. Provide incentives for small local businesses that enhance quality of life, including those that enhance learning and increase opportunities for local recreation. (Denny)

Other Town Hall Actions (Singular Mentions, *Asterisk refers discussion point among group)

17. Additional opportunities for younger K-8 school age kids; centralized pathway (fusion, etc).
18. Help identify job skills needed for current/future jobs in Milwaukie and develop our youth to match.
19. Work with NC-12 and other local schools to expand "mapper" spaces and creative opportunities for students.
20. Develop a community center (potentially at library) with flexible/accessible spaces and multiple programs.
21. Improve marketing/communication (outreach) of existing community and educational programs.

PROSPERITY #2: ***Milwaukie's neighborhoods are the center of daily life, with amenities and community-minded local businesses that meet the daily needs of residents. They form a network of unique, interconnected local hubs that together make Milwaukie the livable, equitable, and sustainable community that it is.***

VAC Preliminary Actions

1. Create designated economic hubs.
2. Construct more housing of different types.

Survey Actions (Top frequently mentioned)

3. Attract at least one more grocery store (3). *Replace Albertsons, eliminate food deserts.*
4. Attract locally owned businesses that become connected to and invested in the neighborhood. (2)
5. Affordable, diverse housing in all neighborhoods. (3)
6. All neighborhoods should have walkable hubs. (2) *Would love to see more neighborhoods with walkable areas for shops and restaurants like downtown Milwaukie.*
7. Create more community gathering spaces. (2)
8. Deregulate and encourage private development. (2)

Town Hall Actions (Top Votes)

9. Design in increased housing density around hubs, with affordable housing. (3 dots)
10. Consider existing opportunity sites. (1 dot)
11. Elevated crossings over RR and Highways. (1 dot)
12. Mixed use zoning to facilitate hubs. (1 dot)
13. Safe active transit routes (barriers between car traffic). (1 dot)

City Department Head Suggested Actions

14. Identify and support development of neighborhood level centers or hubs that provide amenities and commercial services for residents in all neighborhoods.

Other Town Hall Actions (Singular Mentions, *Asterisk refers discussion point among group)

15. Traffic calming (traffic circles). (1 red dot)

16. Strategically located hubs – considering highways and other boundaries.
17. Incubate existing commercial hubs.
18. Identify opportunities for adding new.
19. Hub and spoke public transit network.
20. 20 minute hubs throughout city.
21. Design standards to maintain neighborhood character.
22. Maintain/develop greenspace in each hub.

PROSPERITY #3: ***Downtown Milwaukie is a vibrant destination for both residents and visitors from throughout the region. Our industrial areas provide a high density of living-wage jobs across a number of different industries. The City is nimble and responsive to the needs of residents and businesses, with programs and policies that are financially sound, encourage job creation, and help support a strong and resilient local economy.***

VAC Preliminary Actions

1. Encourage higher density, mixed-use buildings.
2. Market the City as a hub for business incubation.
3. Conduct an analysis of the local economy.
4. Provide tax benefits or other incentives to encourage sustainable, long-term, living-wage business to move their operations to Milwaukie.
5. Create initiatives like "Buy Local" and "Best for Milwaukie".

Survey Actions (Top frequently mentioned)

6. Encourage more grocery store options, including at Milwaukie Marketplace, downtown, and in neighborhoods. (6)
7. Ensure future of Milwaukie Farmer's Market. (4) *Create a new plaza that can be used year-round as a hub in downtown which can host events.*
8. Provide more parking downtown to support businesses. (3)
9. Support existing small businesses downtown. (3)
10. Encourage businesses on Main St (and other streets downtown) to be OPEN, inviting, diverse and attractive to the public! Reduce empty store fronts. (2)
11. Preserve industrial areas. (2)
12. Discourage high density buildings unless you have adequate parking. (2) *Not everyone in Milwaukie rides a bike or jogs.*

Town Hall Actions (Top Votes)

13. Recruit businesses that Milwaukie wants to inhabit business space (targeted industries). (2 dots)
14. Turn Milwaukie Marketplace in a community center. (1 dot)
15. Create a "Portland Mercado" type business in the marketplace. (1 dot)
16. Incentivize the use of empty lots as businesses. (1 dot)
17. Incentives for creating business in a mixed use environment. (1 dot)
18. Find and develop B-Corp businesses. (1 dot)
19. Pay it forward home improvement neighborhoods. (1 dot)
20. Create a "Best for Milwaukie" initiative to encourage businesses to compete to be the best for the community. (1 dot)

21. Create a “Buy Local” initiative. (1 dot)

City Department Head Suggested Actions

22. The City is a responsible financial steward, using its resources in a proactive and respectful manner. (Clare Fuchs)
23. Identify neighborhood centers and the level of services and amenities desired in each neighborhood, and develop implementation programs to provide those services and amenities.
24. Support innovative businesses that provide high wages and are environmentally friendly.
25. Partner with CCC and other to ensure Milwaukie residents can be trained for new jobs.

Other Town Hall Actions (Singular Mentions, *Asterisk refers discussion point among group)

26. Identify industry and businesses that fit Milwaukie.
27. Create local business incubators.
28. Develop space efficient business places.
29. Trade incubators inside neighborhoods (carpenters, electricians, etc).

APPENDIX D: Community Conversations

MILWAUKIE ALL ABOARD

SUMMARY OF COMMUNITY CONVERSATIONS
Fall 2016 and Spring 2017

The City of Milwaukie initiated two phases of "Community Conversations" during the *Milwaukie All Aboard Community Vision and Action Plan* process. With consultant team assistance, these activities engaged nearly 300 people, gathering input from a diverse range of community members. This guidance helped shape the topics and themes used in the development of the vision statement, goals and action items.

What are Community Conversations?



"Community Conversations," convened by Cogan Owens Greene (COG), are small group discussions held during regularly scheduled meetings or events with community groups and organizations. By going to where the people are, these "meetings in a box" are hosted on an organization's agenda, allowing for a broader reach to those who may not come to a public meeting or participate in an online survey.

All Community Conversations for the *Milwaukie All Aboard Community Vision and Action Plan* process were structured around a set of agreed upon questions. The discussion was facilitated by City staff or COG team members. A paid Youth Vision Action Team Member was present to take notes. COG organized and summarized themes to inform the development of the vision statement, goals and action items.

Who participated?

In the Fall of 2016, team members facilitated 17 Community Conversations over the course of two months. These included conversations with the following organizations:

- City Budget and Audit Committee
- Citizens Utility Advisory Board
- Hector Campbell Neighborhood District Association
- Historic Milwaukie Neighborhood District Association
- Island Station Neighborhood District Association
- Lake Road Neighborhood District Association
- Ledding Library Board
- Lewelling Neighborhood District Association
- Linwood Neighborhood District Association
- Madres de Corazon
- Metropolitan Family Services
- Milwaukie High School (3 classes)
- Vision Advisory Committee Applicants



- Neighborhood District Association Quarterly Leadership
- Rotary Club

In the Spring of 2017, nine additional Community Conversations were held, including:

- Ardenwald Neighborhood District Association
- Hillside Manor
- Rotary Club
- Historic Milwaukie Neighborhood District Association
- Hector Campbell Neighborhood District Association
- Lewelling Neighborhood District Association
- Lake Road Neighborhood District Association
- Linwood Neighborhood District Association
- Island Station Neighborhood District Association





What were the themes?



In the first phase, participants were asked why they chose Milwaukie to be their home and/or place of business. They discussed what is going well in Mikwaukie, any concerns about the City and community, and what Milwaukie should be like in 2040. Themes included accessible transportation (in terms of choice, access and quality), sense of community (including the "small town feel" and assets like schools), innovative economic growth and development, and affordability.



The second phase focused on the draft vision and discussing preliminary actions. The vision statement was crafted through guidance received from the Vision Advisory Committee (VAC), the first round of Community Conversations, Town Hall Events, James Rojas' hands-on "Place-It" workshops, online surveys, and fairs and events. Community members discussed the action items and any additional implementing partners. These discussions helped the VAC, Steering Committee and staff finalize the action items for the Final Vision and Action Plan.

Facilitators and Staff: David Levitan, Mary Heberling (City of Milwaukie); Anais Mathez, Kirstin Greene (Cogan Owens Greene); Daniel Franco-Nunez (IZO Marketing); Odalis Aguilar-Aguilar, Max Bernardi, Tyrenna Jacobs, Sarai Rodriguez (Milwaukie High School Youth Vision Action Team).

APPENDIX E: Final Survey Results (May 2017)



SURVEY RESULTS

MAY 2017

Milwaukie Community Vision and Action Plan

ABSTRACT

During the month of May 2017, residents of Milwaukie, Oregon were asked to take a survey expressing their personal priorities out of those proposed in the Milwaukie Community Vision and Action Plan. Over a period of three weeks, 216 responses were collected. The results of the survey clearly illustrates the first and second priorities for each of the four plan themes – People, Place, Planet and Prosperity. Respondents also had the opportunity to write in their overall top priority. The results of this survey are summarized within.

Cogan Owens Greene

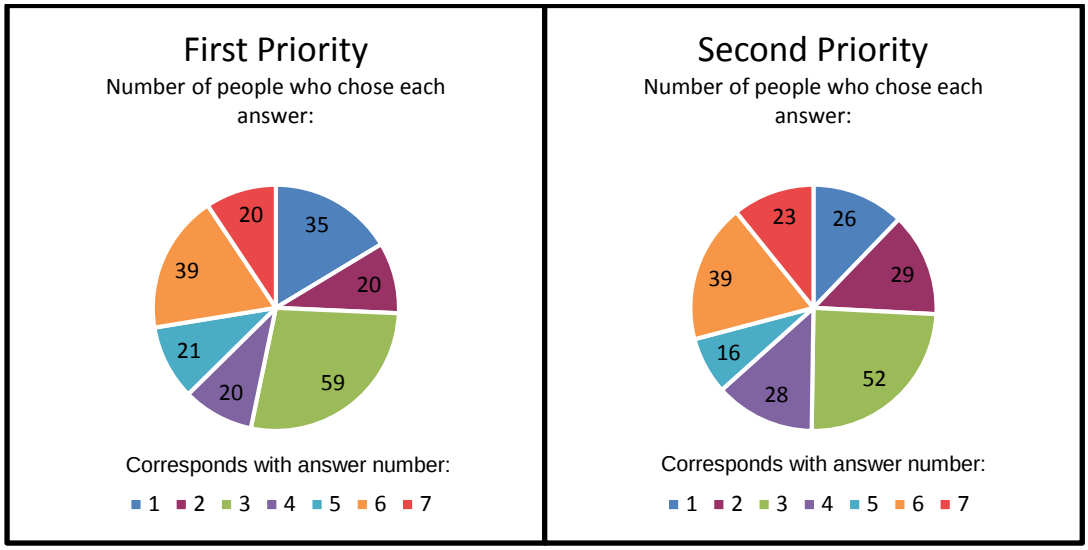
Last update August 18, 2017

RS1052

Q1 Please select your first and second-highest priority actions:

Answered: 214 Skipped: 2

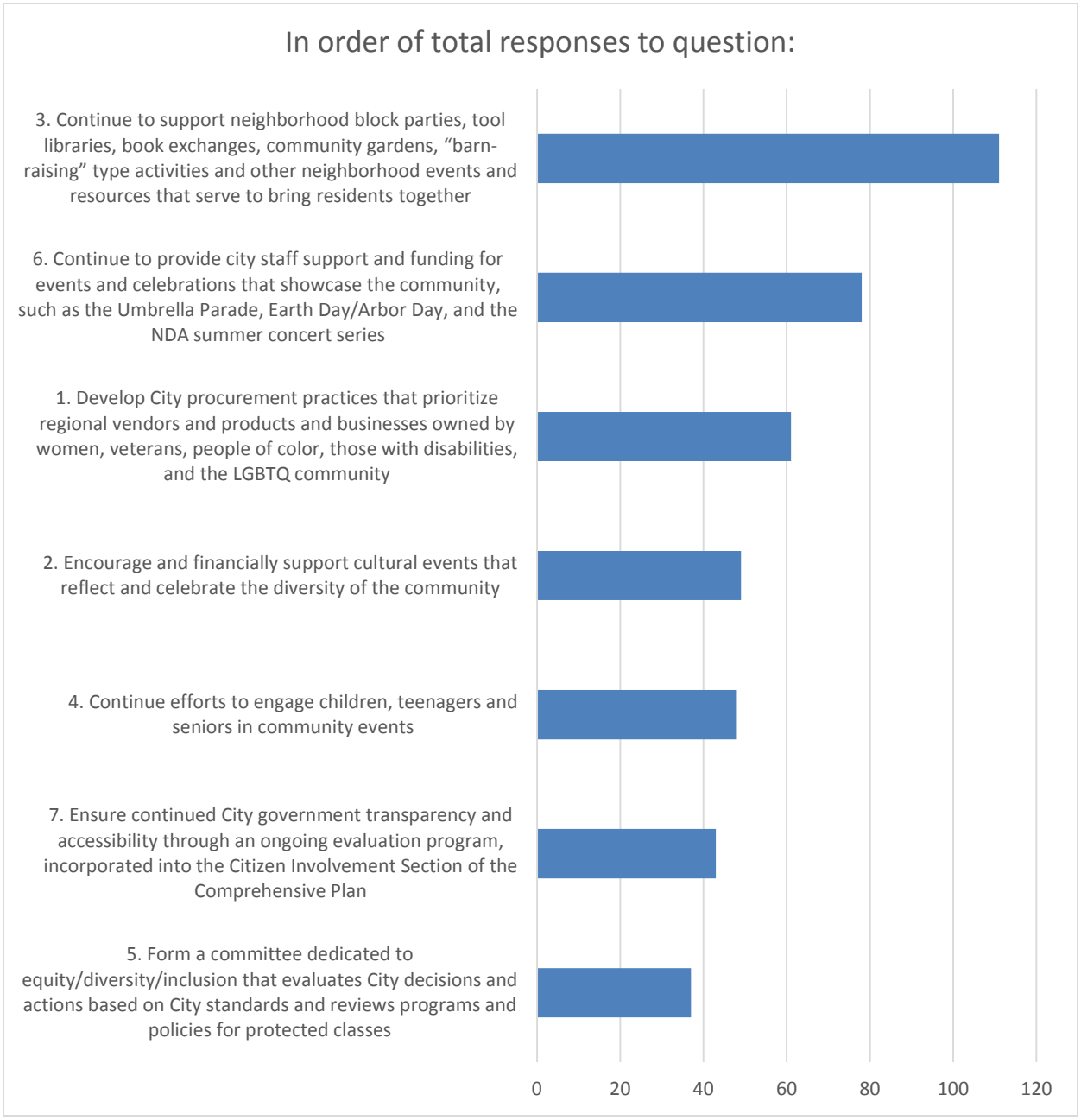
Theme 1: People - Goal Statement 1: *Milwaukie is an inclusive community of diverse people from a variety of backgrounds that honors our differences and shared similarities. We are engaged and come together in many ways through various events and community gathering places, where we can celebrate our interests and passions.*



Of the 214 people who responded to this question the majority chose answer 3, “Continue to support neighborhood block parties, tool libraries, book exchanges, community gardens, ‘barn-raising’ type activities and other neighborhood events and resources that serve to bring residents together”, as their first priority. This answer was also favored as the top second priority.

Priority	First Priority	Second Priority	Total
1. Develop City procurement practices that prioritize regional vendors and products and businesses owned by women, veterans, people of color, those with disabilities, and the LGBTQ community	**57.38%** 35	**42.62%** 26	61
2. Encourage and financially support cultural events that reflect and celebrate the diversity of the community	**40.82%** 20	**59.18%** 29	49
3. Continue to support neighborhood block parties, tool libraries, book exchanges, community gardens, “barn-raising” type activities and other neighborhood events and resources that serve to bring residents together	**53.15%** 59	**46.85%** 52	111
4. Continue efforts to engage children, teenagers and seniors in community events	**41.67%** 20	**58.33%** 28	48
5. Form a committee dedicated to equity/diversity/inclusion that evaluates City decisions and actions based on City standards and reviews programs and policies for protected classes	**56.76%** 21	**43.24%** 16	37
6. Continue to provide city staff support and funding for events and celebrations that showcase the community, such as the Umbrella Parade, Earth Day/Arbor Day, and the NDA summer concert series	**50.00%** 39	**50.00%** 39	78
7. Ensure continued City government transparency and accessibility through an ongoing evaluation program, incorporated into the Citizen Involvement Section of the Comprehensive Plan	**46.51%** 20	**53.49%** 23	43

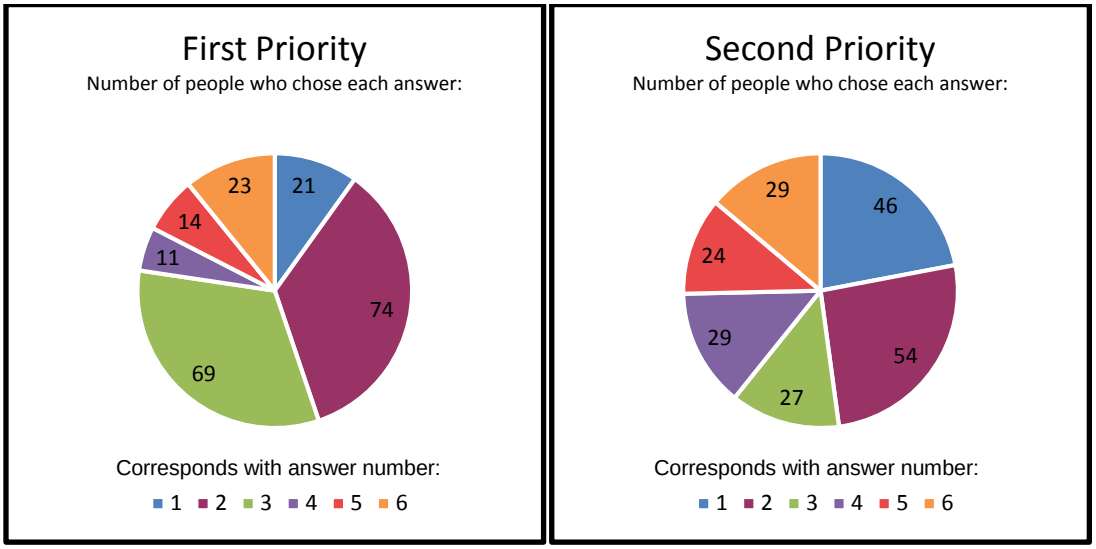
Theme 1: People - Goal Statement 1: *Milwaukie is an inclusive community of diverse people from a variety of backgrounds that honors our differences and shared similarities. We are engaged and come together in many ways through various events and community gathering places, where we can celebrate our interests and passions.*



Q2 Please select your first and second-highest priority actions:

Answered: 212 Skipped: 4

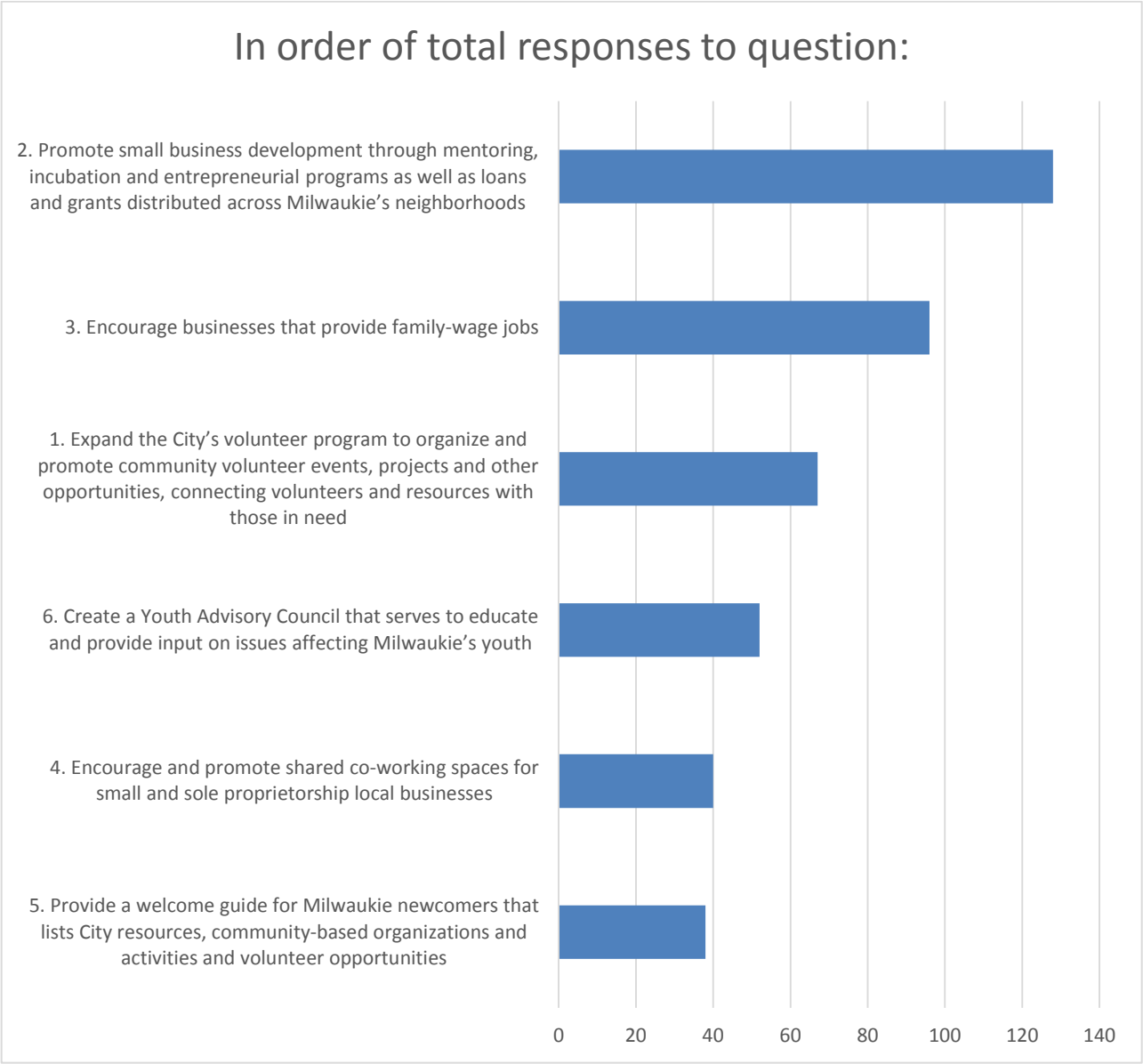
Theme 1: People - Goal Statement 2: *Milwaukie is a diverse community that provides opportunities and support for all of its residents through a variety of resources and enriching activities. We encourage and support a vibrant local economy that contributes to a high quality of life where residents can live, work, learn, and play.*



For this question, 212 people responded with a near split for top first priority. By a small margin the option to “Promote small business development through mentoring, incubation and entrepreneurial programs as well as loans and grants distributed across Milwaukie’s neighborhoods” came out as the first priority. The top second priority option, the same option as chosen for first priority, also came in by a small margin.

Priority	First Priority	Second Priority	Total
1. Expand the City’s volunteer program to organize and promote community volunteer events, projects and other opportunities, connecting volunteers and resources with those in need	**31.34%** 21	**68.66%** 46	67
2. Promote small business development through mentoring, incubation and entrepreneurial programs as well as loans and grants distributed across Milwaukie’s neighborhoods	**57.81%** 74	**42.19%** 54	128
3. Encourage businesses that provide family-wage jobs	**71.88%** 69	**28.13%** 27	96
4. Encourage and promote shared co-working spaces for small and sole proprietorship local businesses	**27.50%** 11	**72.50%** 29	40
5. Provide a welcome guide for Milwaukie newcomers that lists City resources, community-based organizations and activities and volunteer opportunities	**36.84%** 14	**63.16%** 24	38
6. Create a Youth Advisory Council that serves to educate and provide input on issues affecting Milwaukie’s youth	**44.23%** 23	**55.77%** 29	52

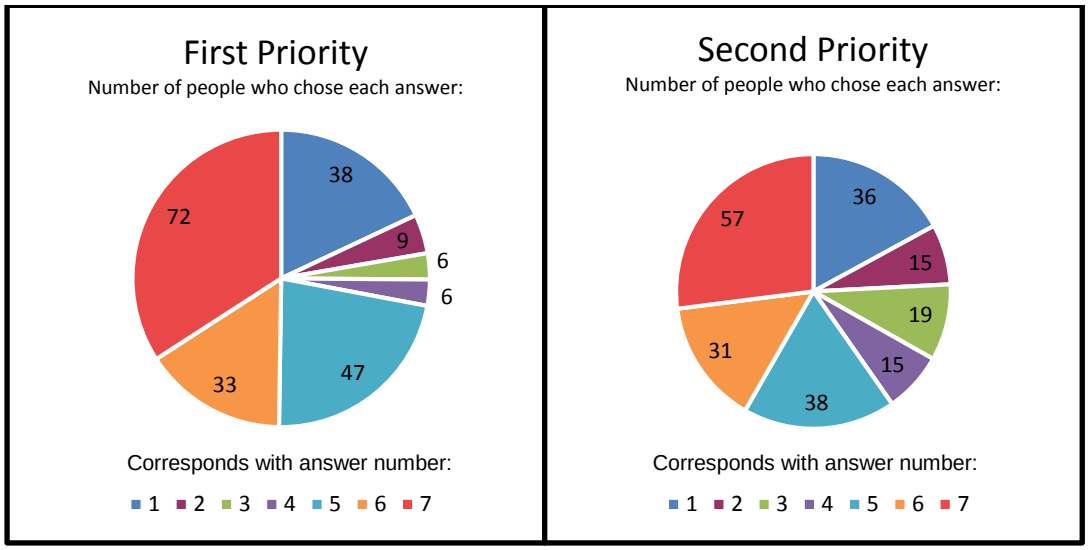
Theme 1: People - Goal Statement 2: *Milwaukie is a diverse community that provides opportunities and support for all of its residents through a variety of resources and enriching activities. We encourage and support a vibrant local economy that contributes to a high quality of life where residents can live, work, learn, and play.*



Q3 Please select your first and second-highest priority actions:

Answered: 212 Skipped: 4

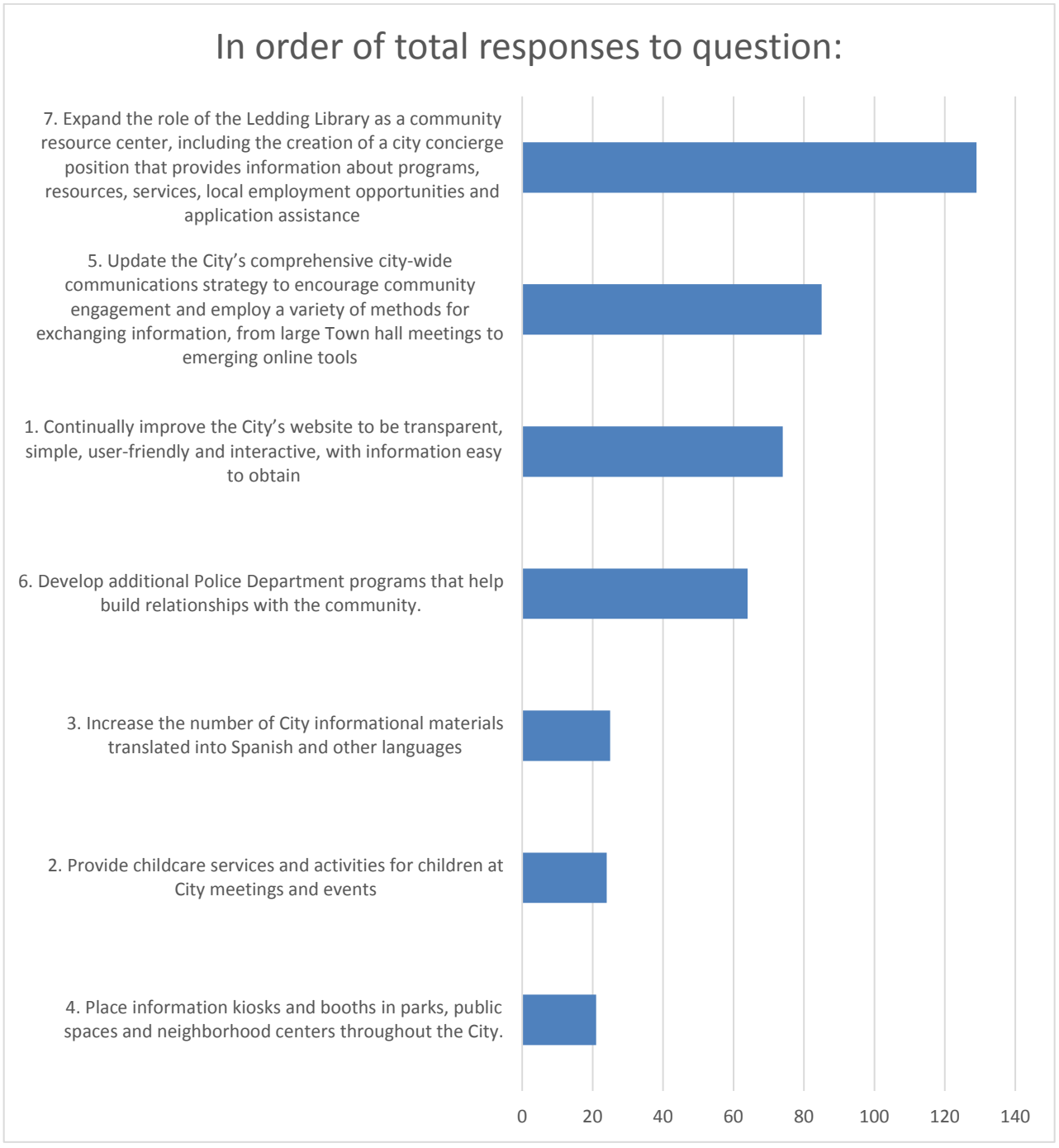
Theme 1: People - Goal Statement 3: *The City of Milwaukie is an open portal where information is readily available, easily exchanged, and responsive. Residents feel empowered and have opportunities to engage and share ideas.*



By an overwhelming margin, 212 people chose “Expand the role of the Ledding Library as a community resource center, including the creation of a city concierge position that provides information about programs, resources, services, local employment opportunities and application assistance” as their number one priority on this question. As with the first two questions, the same answer came in as the top choice for second priority.

Priority	First Priority	Second Priority	Total
1. Continually improve the City's website to be transparent, simple, user-friendly and interactive, with information easy to obtain	**51.35%** 38	**48.65%** 36	74
2. Provide childcare services and activities for children at City meetings and events	**37.50%** 9	**62.50%** 15	24
3. Increase the number of City informational materials translated into Spanish and other languages	**24.00%** 6	**76.00%** 19	25
4. Place information kiosks and booths in parks, public spaces and neighborhood centers throughout the City.	**28.57%** 6	**71.43%** 15	21
5. Update the City's comprehensive city-wide communications strategy to encourage community engagement and employ a variety of methods for exchanging information, from large Town hall meetings to emerging online tools	**55.29%** 47	**44.71%** 38	85
6. Develop additional Police Department programs that help build relationships with the community.	**51.56%** 33	**48.44%** 31	64
7. Expand the role of the Ledding Library as a community resource center, including the creation of a city concierge position that provides information about programs, resources, services, local employment opportunities and application assistance	**55.81%** 72	**44.19%** 57	129

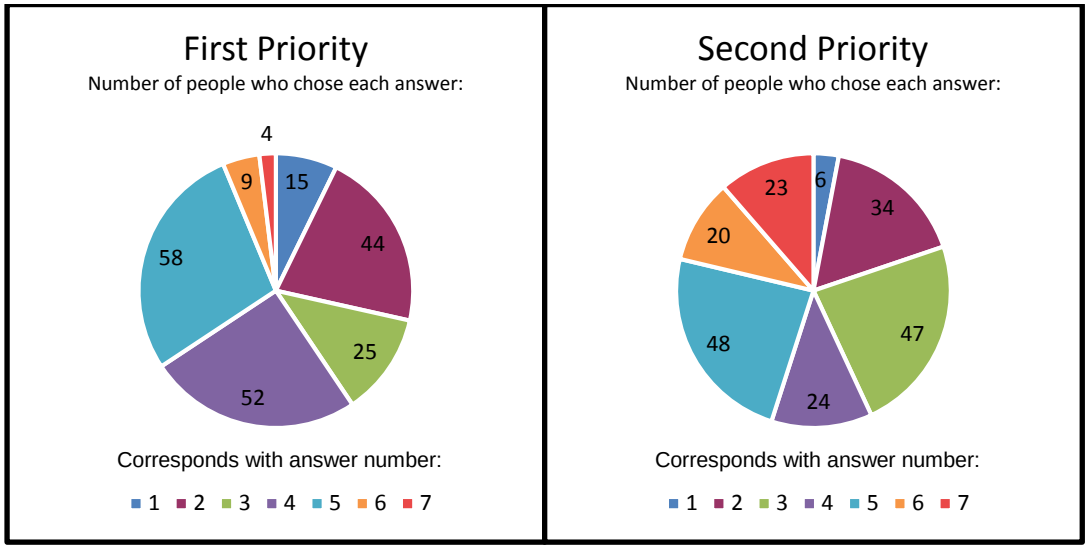
Theme 1: People - Goal Statement 3: *The City of Milwaukie is an open portal where information is readily available, easily exchanged, and responsive. Residents feel empowered and have opportunities to engage and share ideas.*



Q4 Please select your first and second-highest priority actions:

Answered: 206 Skipped: 10

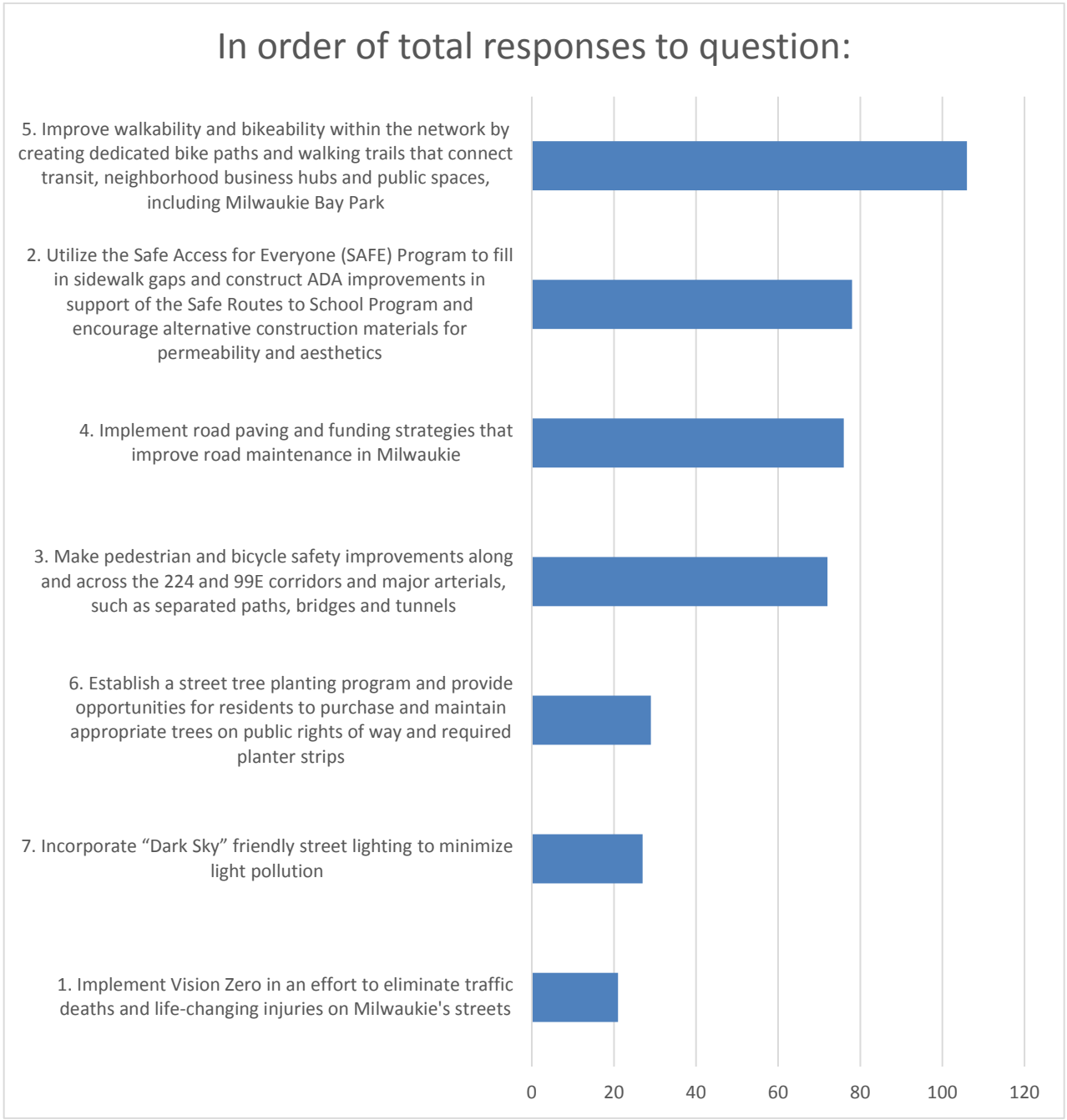
Theme 2: Place - Goal Statement 1: *Milwaukie has a complete, clean and attractive network of sidewalks, bike lanes and paths that enable accessibility, mobility, and safety for all. Streets are tree-lined, well-lit and designed to promote a healthy and active lifestyle. There is a seamless transition between walking, biking, and transit to key amenities and neighborhood centers.*



The answer, “Improve walkability and bikeability within the network by creating dedicated bike paths and walking trails that connect transit, neighborhood business hubs and public spaces, including Milwaukie Bay Park”, took top first and top second priority by only a few points each. Runner up for first priority was “Implement road paving and funding strategies that improve road maintenance in Milwaukie” while “Make pedestrian and bicycle safety improvements along and across the 224 and 99E corridors and major arterials, such as separated paths, bridges and tunnels” came in close for second priority.

Priority	First Priority	Second Priority	Total
1. Implement Vision Zero in an effort to eliminate traffic deaths and life-changing injuries on Milwaukie's streets	**71.43%** 15	**28.57%** 6	21
2. Utilize the Safe Access for Everyone (SAFE) Program to fill in sidewalk gaps and construct ADA improvements in support of the Safe Routes to School Program and encourage alternative construction materials for permeability and aesthetics	**56.41%** 44	**43.59%** 34	78
3. Make pedestrian and bicycle safety improvements along and across the 224 and 99E corridors and major arterials, such as separated paths, bridges and tunnels	**34.72%** 25	**65.28%** 47	72
4. Implement road paving and funding strategies that improve road maintenance in Milwaukie	**68.42%** 52	**31.58%** 24	76
5. Improve walkability and bikeability within the network by creating dedicated bike paths and walking trails that connect transit, neighborhood business hubs and public spaces, including Milwaukie Bay Park	**54.72%** 58	**45.28%** 48	106
6. Establish a street tree planting program and provide opportunities for residents to purchase and maintain appropriate trees on public rights of way and required planter strips	**31.03%** 9	**68.97%** 20	29
7. Incorporate “Dark Sky” friendly street lighting to minimize light pollution	**14.81%** 4	**85.19%** 23	27

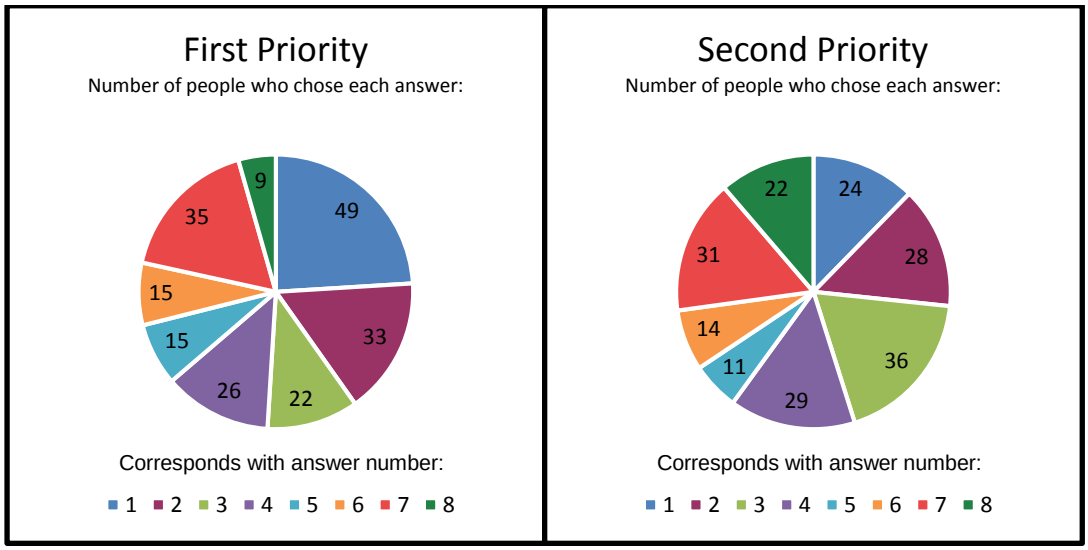
Theme 2: Place - Goal Statement 1: *Milwaukie has a complete, clean and attractive network of sidewalks, bike lanes and paths that enable accessibility, mobility, and safety for all. Streets are tree-lined, well-lit and designed to promote a healthy and active lifestyle. There is a seamless transition between walking, biking, and transit to key amenities and neighborhood centers.*



Q5 Please select your first and second-highest priority actions:

Answered: 203 Skipped: 13

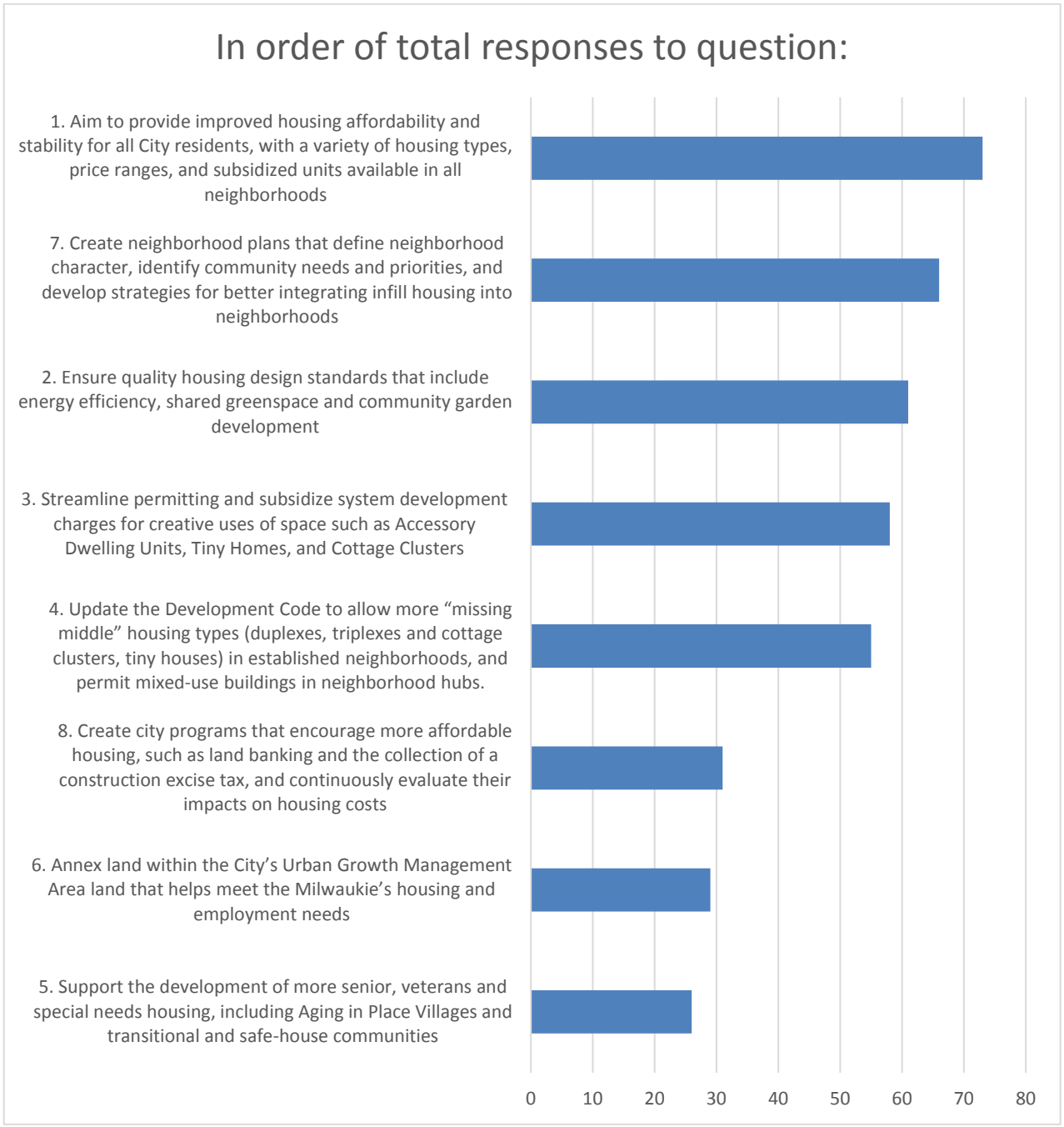
Theme 2: Place - Goal Statement 2: *Milwaukie invests in housing options that provide affordability, high quality development and good design, promoting quality living environments. It maintains the small neighborhood feel through creative use of space with housing options that embrace community inclusion and promote stability.*



The option “Aim to provide improved housing affordability and stability for all City residents, with a variety of housing types, price ranges, and subsidized units available in all neighborhoods” was clearly first choice as first priority. The second priority, “Streamline permitting and subsidize system development charges for creative uses of space such as Accessory Dwelling Units, Tiny Homes, and Cottage Clusters”, came in by as first in a tight race of three options.

Priority	First Priority	Second Priority	Total
1. Aim to provide improved housing affordability and stability for all City residents, with a variety of housing types, price ranges, and subsidized units available in all neighborhoods	**67.12%** 49	**32.88%** 24	73
2. Ensure quality housing design standards that include energy efficiency, shared greenspace and community garden development	**54.10%** 33	**45.90%** 28	61
3. Streamline permitting and subsidize system development charges for creative uses of space such as Accessory Dwelling Units, Tiny Homes, and Cottage Clusters	**37.93%** 22	**62.07%** 36	58
4. Update the Development Code to allow more “missing middle” housing types (duplexes, triplexes and cottage clusters, tiny houses) in established neighborhoods, and permit mixed-use buildings in neighborhood hubs.	**47.27%** 26	**52.73%** 29	55
5. Support the development of more senior, veterans and special needs housing, including Aging in Place Villages and transitional and safe-house communities	**57.69%** 15	**42.31%** 11	26
6. Annex land within the City’s Urban Growth Management Area land that helps meet the Milwaukie’s housing and employment needs	**51.72%** 15	**48.28%** 14	29
7. Create neighborhood plans that define neighborhood character, identify community needs and priorities, and develop strategies for better integrating infill housing into neighborhoods	**53.03%** 35	**46.97%** 31	66
8. Create city programs that encourage more affordable housing, such as land banking and the collection of a construction excise tax, and continuously evaluate their impacts on housing costs	**29.03%** 9	**70.97%** 22	31

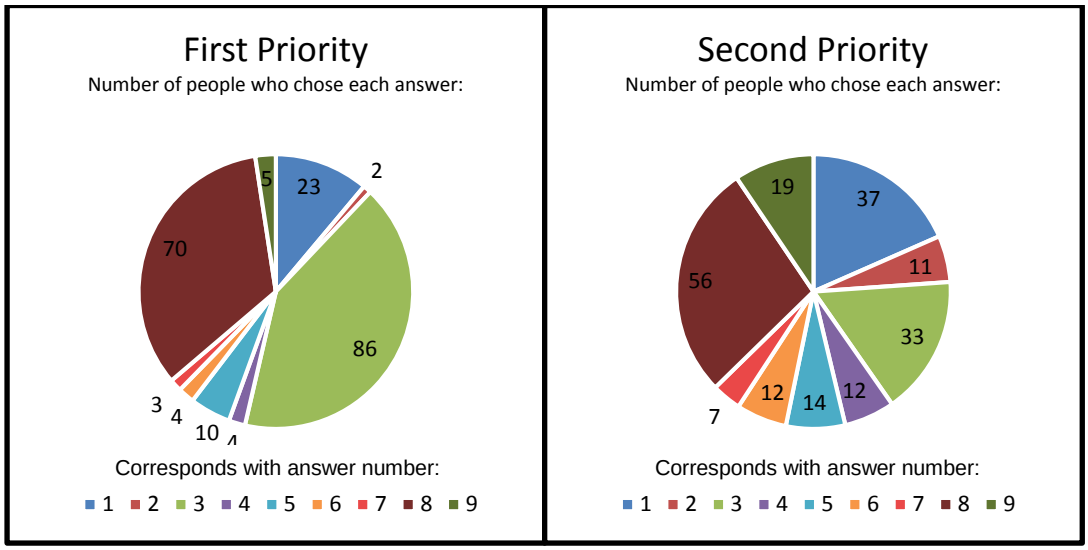
Theme 2: Place - Goal Statement 2: *Milwaukie invests in housing options that provide affordability, high quality development and good design, promoting quality living environments. It maintains the small neighborhood feel through creative use of space with housing options that embrace community inclusion and promote stability.*



Q6 Please select your first and second-highest priority actions:

Answered: 206 Skipped: 10

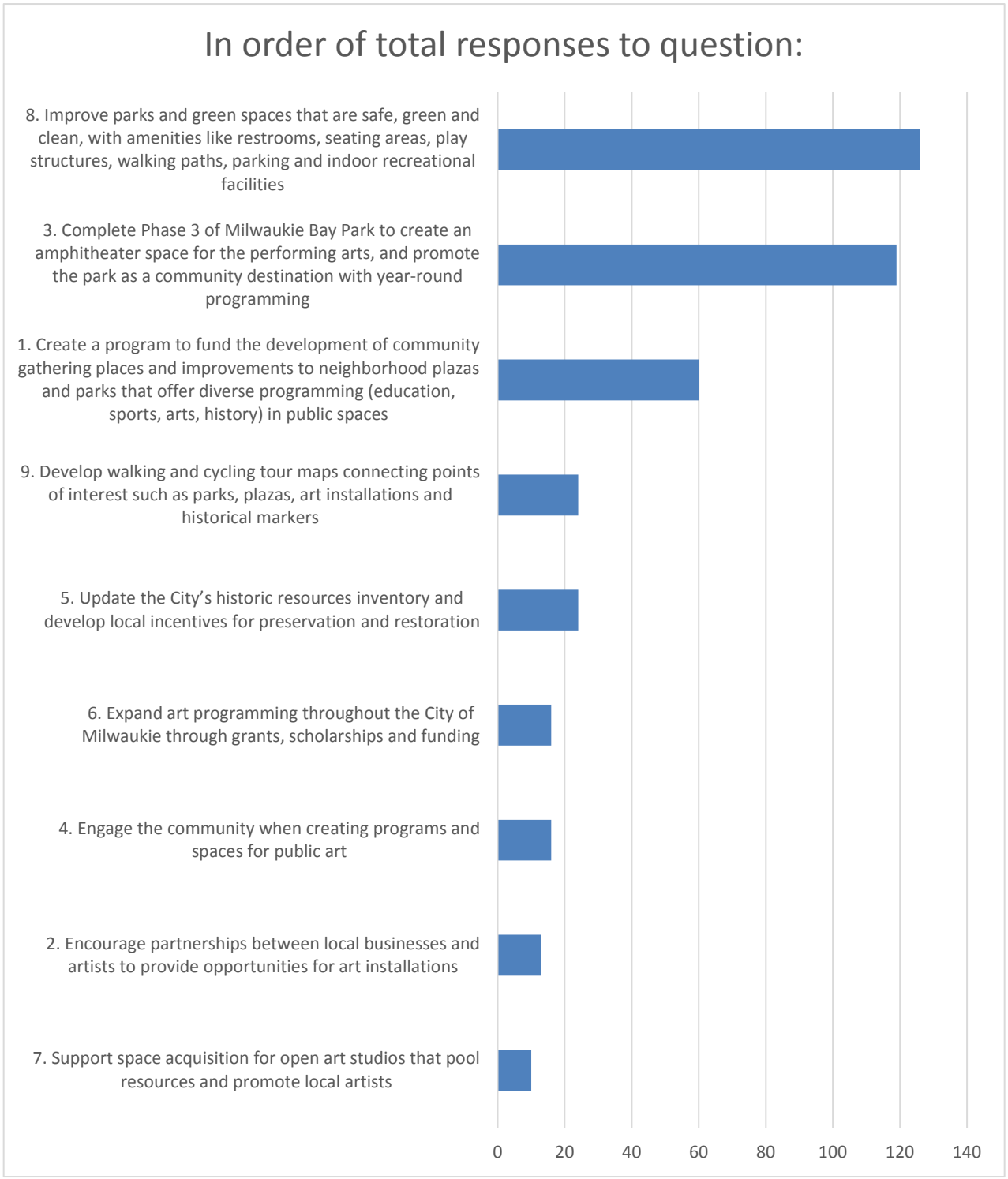
Theme 2: Place - Goal Statement 3: *Milwaukie collaborates with community partners to create and preserve spaces to inspire the public to be engaged with the city's past and future. Art and innovation is weaved into the fabric of the city.*



Nearly half of all respondents chose "Complete Phase 3 of Milwaukie Bay Park to create an amphitheater space for the performing arts, and promote the park as a community destination with year-round programming" as their first priority. The top second priority, "Improve parks and green spaces that are safe, green and clean, with amenities like restrooms, seating areas, play structures, walking paths, parking and indoor recreational facilities" was also a popular first priority.

Priority	First Priority	Second Priority	Total
1. Create a program to fund the development of community gathering places and improvements to neighborhood plazas and parks that offer diverse programming (education, sports, arts, history) in public spaces	**38.33%** 23	**61.67%** 37	60
2. Encourage partnerships between local businesses and artists to provide opportunities for art installations	**15.38%** 2	**84.62%** 11	13
3. Complete Phase 3 of Milwaukie Bay Park to create an amphitheater space for the performing arts, and promote the park as a community destination with year-round programming	**72.27%** 86	**27.73%** 33	119
4. Engage the community when creating programs and spaces for public art	**25.00%** 4	**75.00%** 12	16
5. Update the City's historic resources inventory and develop local incentives for preservation and restoration	**41.67%** 10	**58.33%** 14	24
6. Expand art programming throughout the City of Milwaukie through grants, scholarships and funding	**25.00%** 4	**75.00%** 12	16
7. Support space acquisition for open art studios that pool resources and promote local artists	**30.00%** 3	**70.00%** 7	10
8. Improve parks and green spaces that are safe, green and clean, with amenities like restrooms, seating areas, play structures, walking paths, parking and indoor recreational facilities	**55.56%** 70	**44.44%** 56	126
9. Develop walking and cycling tour maps connecting points of interest such as parks, plazas, art installations and historical markers	**20.83%** 5	**79.17%** 19	24

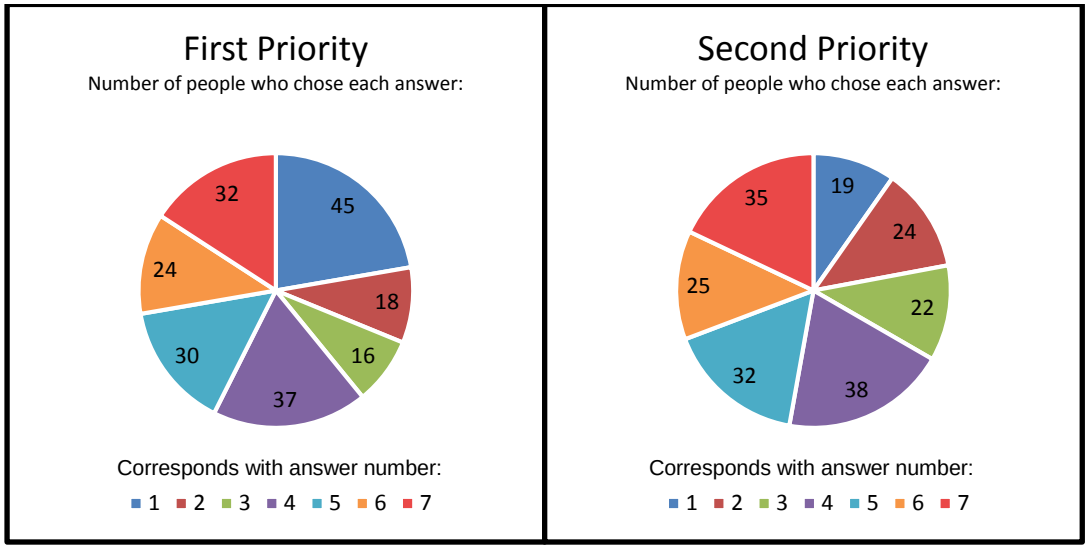
Theme 2: Place - Goal Statement 3: *Milwaukie collaborates with community partners to create and preserve spaces to inspire the public to be engaged with the city's past and future. Art and innovation is weaved into the fabric of the city.*



Q7 Please select your first and second-highest priority actions:

Answered: 201 Skipped: 15

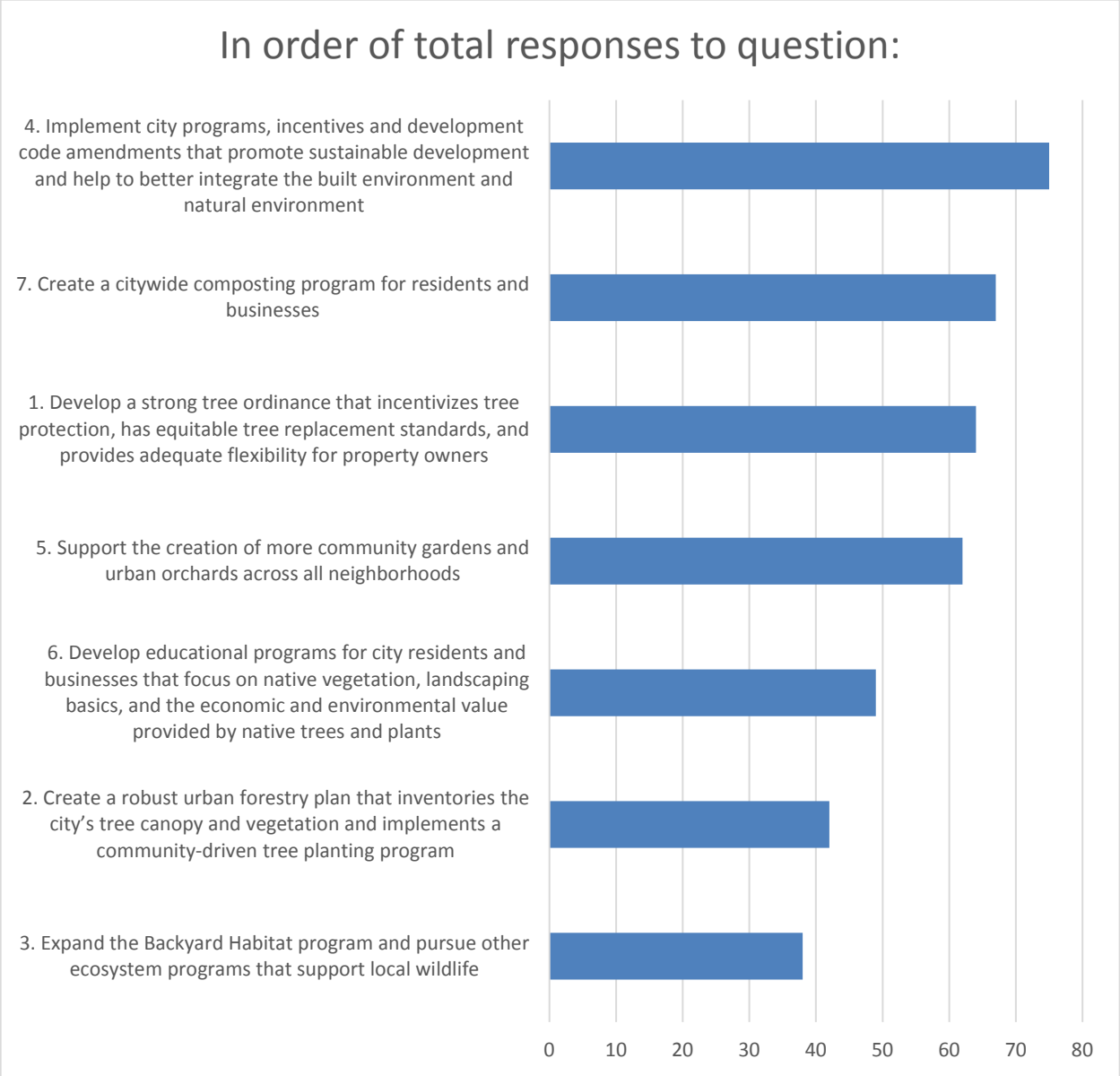
Theme 3: Planet - Goal Statement 1: *The entire city nurtures a connected canopy of trees planted and stewarded by its residents. Smart and focused development honors and prioritizes life-sustaining natural resources.*



First priority, “Develop a strong tree ordinance that incentivizes tree protection, has equitable tree replacement standards, and provides adequate flexibility for property owners”, took first place as 1/4 of all responses. The second priority responses were far more divisive with three options coming in close. The winner, by only 3, was “Implement city programs, incentives and development code amendments that promote sustainable development and help to better integrate the built environment and natural environment.”

Priority	First Priority	Second Priority	Total
1. Develop a strong tree ordinance that incentivizes tree protection, has equitable tree replacement standards, and provides adequate flexibility for property owners	**70.31%** 45	**29.69%** 19	64
2. Create a robust urban forestry plan that inventories the city’s tree canopy and vegetation and implements a community-driven tree planting program	**42.86%** 18	**57.14%** 24	42
3. Expand the Backyard Habitat program and pursue other ecosystem programs that support local wildlife	**42.11%** 16	**57.89%** 22	38
4. Implement city programs, incentives and development code amendments that promote sustainable development and help to better integrate the built environment and natural environment	**49.33%** 37	**50.67%** 38	75
5. Support the creation of more community gardens and urban orchards across all neighborhoods	**48.39%** 30	**51.61%** 32	62
6. Develop educational programs for city residents and businesses that focus on native vegetation, landscaping basics, and the economic and environmental value provided by native trees and plants	**48.98%** 24	**51.02%** 25	49
7. Create a citywide composting program for residents and businesses	**47.76%** 32	**52.24%** 35	67

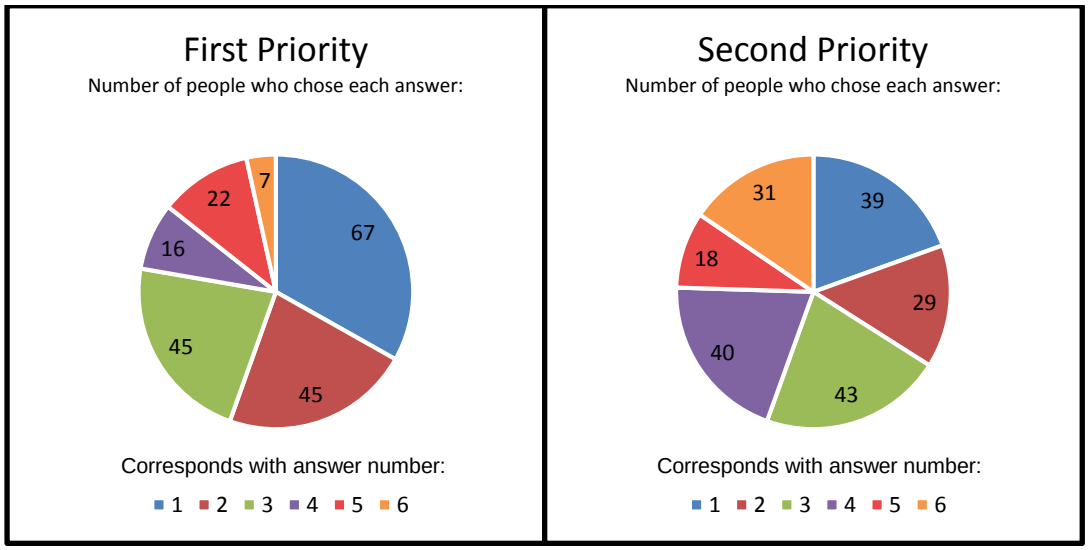
Theme 3: Planet - Goal Statement 1: *The entire city nurtures a connected canopy of trees planted and stewarded by its residents. Smart and focused development honors and prioritizes life-sustaining natural resources.*



Q8 Please select your first and second-highest priority actions:

Answered: 203 Skipped: 13

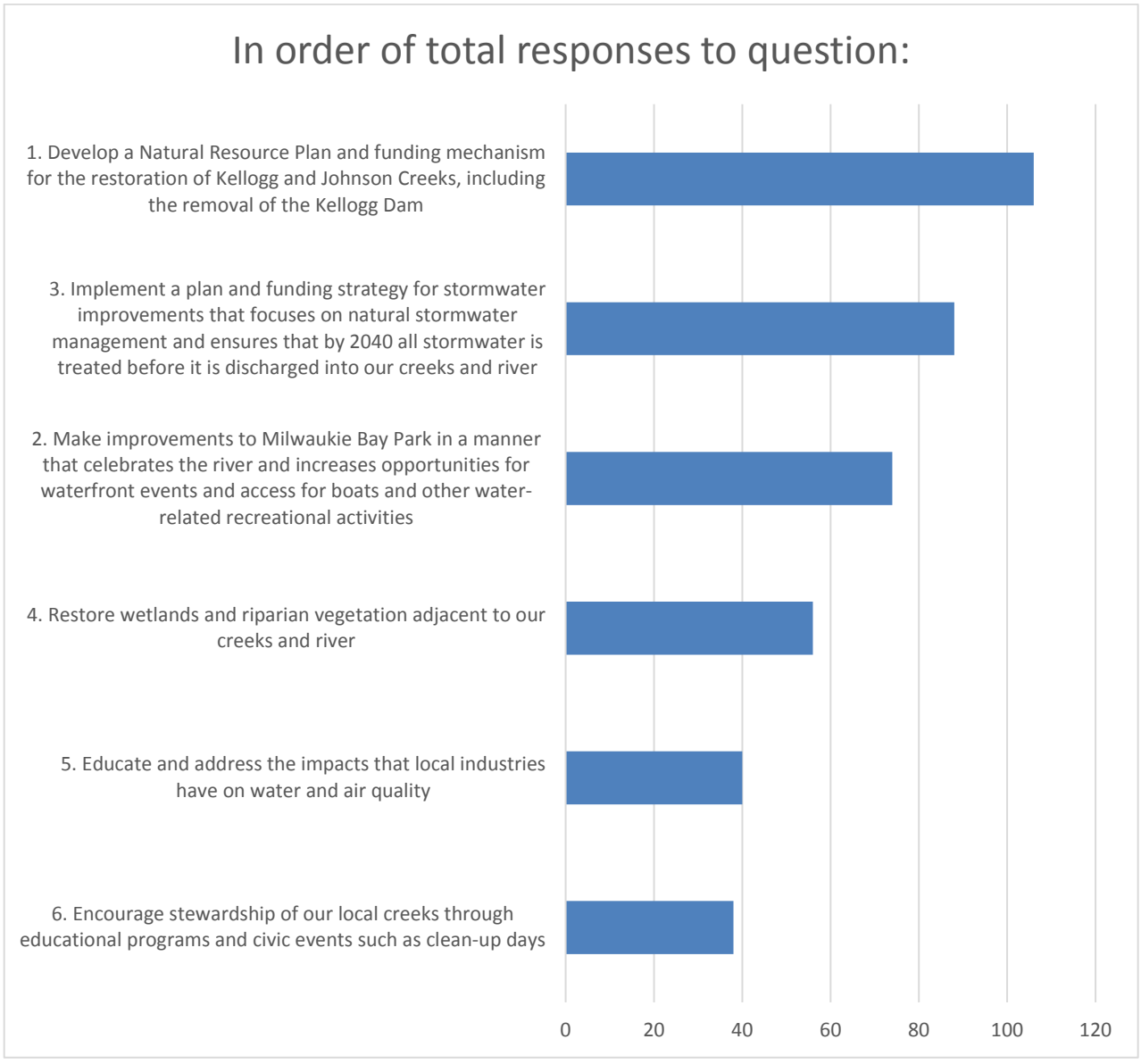
Theme 3: Planet - Goal Statement 2: *Milwaukie has free flowing, accessible, pristine waterways that are protected by a robust stormwater treatment system. Stewardship over the Willamette waterfront ensures that this natural resource can be enjoyed for generations.*



The option, “Develop a Natural Resource Plan and funding mechanism for the restoration of Kellogg and Johnson Creeks, including the removal of the Kellogg Dam”, was top first priority. Second priority was once again very divisive with three options in a dead heat. The top choice, winning by 3, was “Implement a plan and funding strategy for stormwater improvements that focuses on natural stormwater management and ensures that by 2040 all stormwater is treated before it is discharged into our creeks”.

Priority	First Priority	Second Priority	Total
1. Develop a Natural Resource Plan and funding mechanism for the restoration of Kellogg and Johnson Creeks, including the removal of the Kellogg Dam	**63.21%** 67	**36.79%** 39	106
2. Make improvements to Milwaukie Bay Park in a manner that celebrates the river and increases opportunities for waterfront events and access for boats and other water-related recreational activities	**60.81%** 45	**39.19%** 29	74
3. Implement a plan and funding strategy for stormwater improvements that focuses on natural stormwater management and ensures that by 2040 all stormwater is treated before it is discharged into our creeks and river	**51.14%** 45	**48.86%** 43	88
4. Restore wetlands and riparian vegetation adjacent to our creeks and river	**28.57%** 16	**71.43%** 40	56
5. Educate and address the impacts that local industries have on water and air quality	**55.00%** 22	**45.00%** 18	40
6. Encourage stewardship of our local creeks through educational programs and civic events such as clean-up days	**18.42%** 7	**81.58%** 31	38

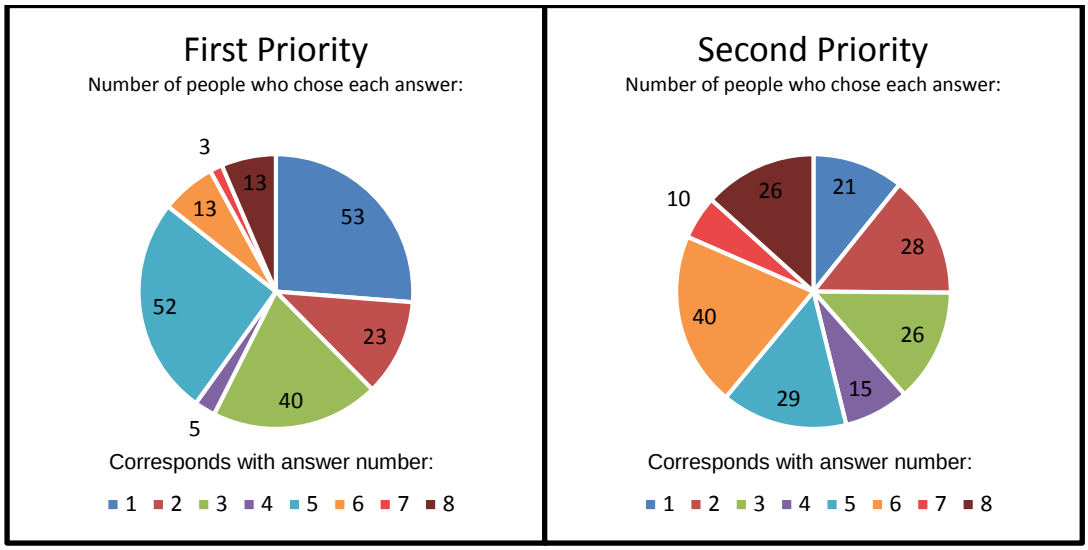
Theme 3: Planet - Goal Statement 2: *Milwaukie has free flowing, accessible, pristine waterways that are protected by a robust stormwater treatment system. Stewardship over the Willamette waterfront ensures that this natural resource can be enjoyed for generations.*



Q9 Please select your first and second-highest priority actions:

Answered: 200 Skipped: 16

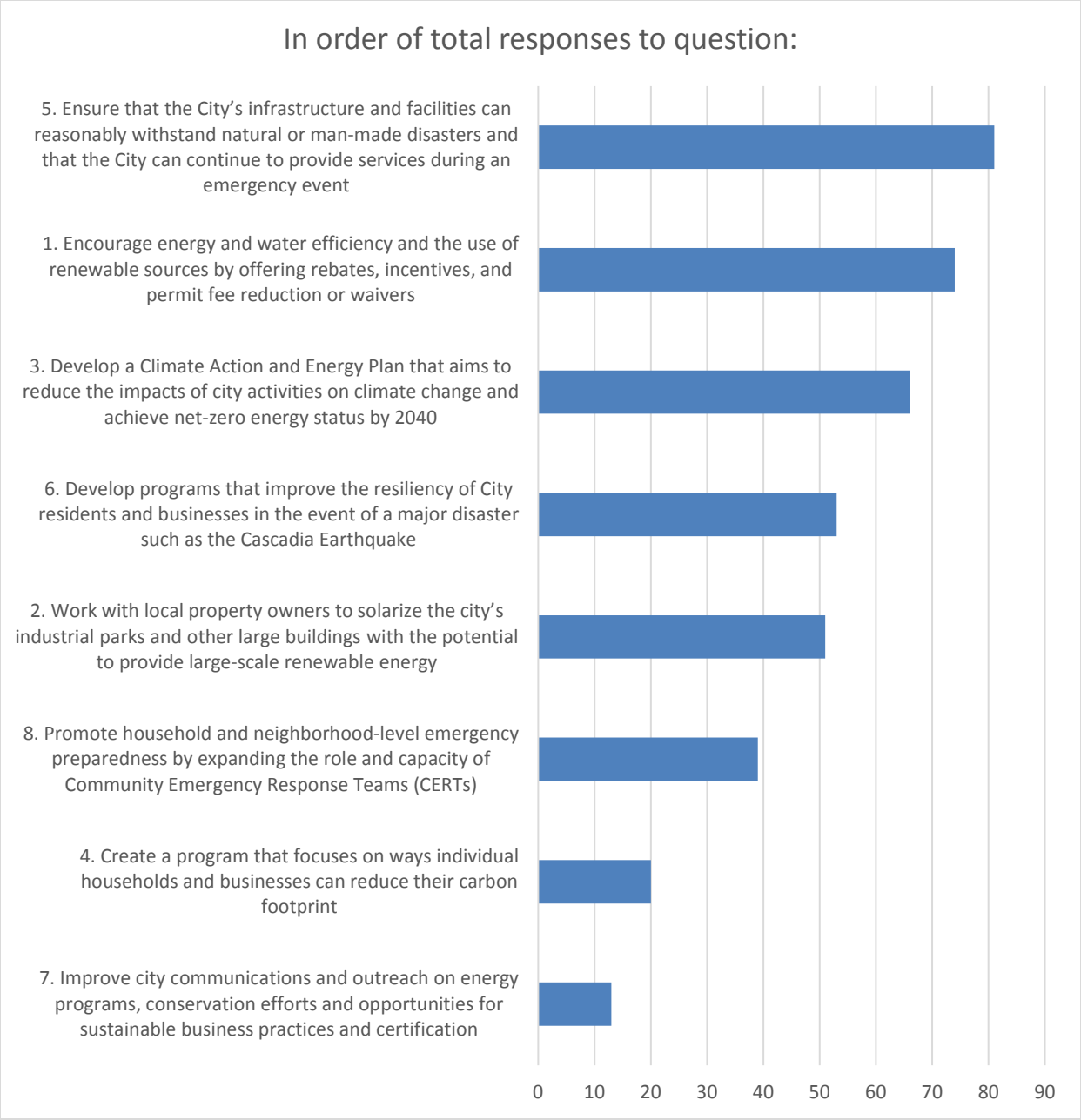
Theme 3: Planet - Goal Statement 3: *Milwaukie is a model city that produces more energy through renewable sources than it uses. It is a prepared and resilient community, adaptive to the realities of a changing climate.*



Two choices came in one point apart. The winner was, “Encourage energy and water efficiency and the use of renewable sources by offering rebates, incentives, and permit fee reduction or waivers”. Second priority was clearly, “Develop programs that improve the resiliency of City residents and businesses in the event of a major disaster such as the Cascadia Earthquake”.

Priority			
	First Priority	Second Priority	Total
1. Encourage energy and water efficiency and the use of renewable sources by offering rebates, incentives, and permit fee reduction or waivers	**71.62%** 53	**28.38%** 21	74
2. Work with local property owners to solarize the city’s industrial parks and other large buildings with the potential to provide large-scale renewable energy	**45.10%** 23	**54.90%** 28	51
3. Develop a Climate Action and Energy Plan that aims to reduce the impacts of city activities on climate change and achieve net-zero energy status by 2040	**60.61%** 40	**39.39%** 26	66
4. Create a program that focuses on ways individual households and businesses can reduce their carbon footprint	**25.00%** 5	**75.00%** 15	20
5. Ensure that the City’s infrastructure and facilities can reasonably withstand natural or man-made disasters and that the City can continue to provide services during an emergency event	**64.20%** 52	**35.80%** 29	81
6. Develop programs that improve the resiliency of City residents and businesses in the event of a major disaster such as the Cascadia Earthquake	**24.53%** 13	**75.47%** 40	53
7. Improve city communications and outreach on energy programs, conservation efforts and opportunities for sustainable business practices and certification	**23.08%** 3	**76.92%** 10	13
8. Promote household and neighborhood-level emergency preparedness by expanding the role and capacity of Community Emergency Response Teams (CERTs)	**33.33%** 13	**66.67%** 26	39

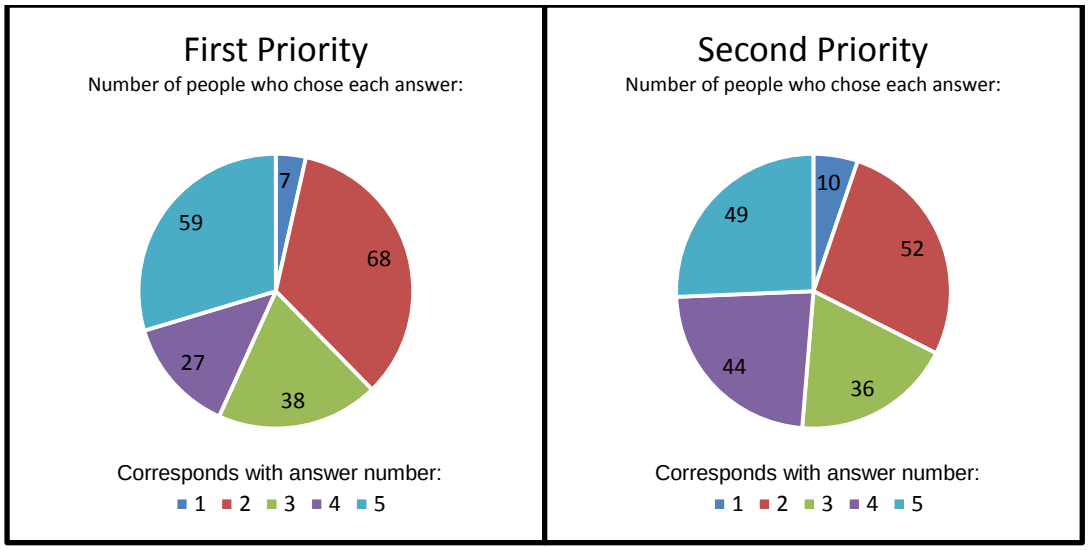
Theme 3: Planet - Goal Statement 3: *Milwaukie is a model city that produces more energy through renewable sources than it uses. It is a prepared and resilient community, adaptive to the realities of a changing climate.*



Q10 Please select your first and second-highest priority actions:

Answered: 198 Skipped: 18

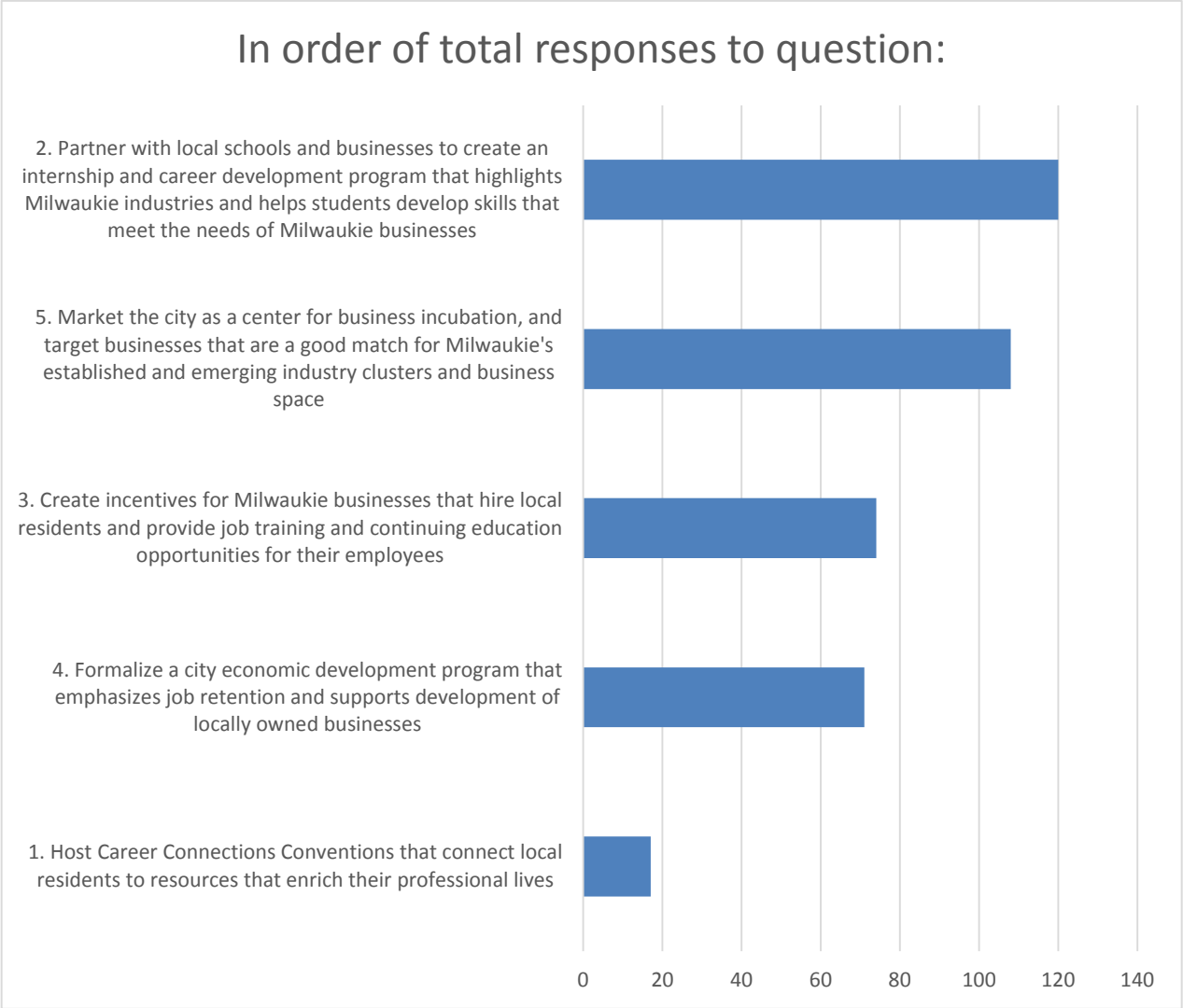
Theme 4: Prosperity - *Goal Statement 1:* *Milwaukie offers numerous pathways to prosperity through an excellent education system and training programs that are connected to local business. Residents of all ages and backgrounds feel supported to pursue and attain success in our local community.*



The clear winner of first priority for this question was, “Partner with local schools and businesses to create an internship and career development program that highlights Milwaukie industries and helps students develop skills that meet the needs of Milwaukie”. This also came in as top second priority, but only by a few points.

Priority	First Priority	Second Priority	Total
1. Host Career Connections Conventions that connect local residents to resources that enrich their professional lives	**41.18%** 7	**58.82%** 10	17
2. Partner with local schools and businesses to create an internship and career development program that highlights Milwaukie industries and helps students develop skills that meet the needs of Milwaukie businesses	**56.67%** 68	**43.33%** 52	120
3. Create incentives for Milwaukie businesses that hire local residents and provide job training and continuing education opportunities for their employees	**51.35%** 38	**48.65%** 36	74
4. Formalize a city economic development program that emphasizes job retention and supports development of locally owned businesses	**38.03%** 27	**61.97%** 44	71
5. Market the city as a center for business incubation, and target businesses that are a good match for Milwaukie's established and emerging industry clusters and business space	**54.63%** 59	**45.37%** 49	108

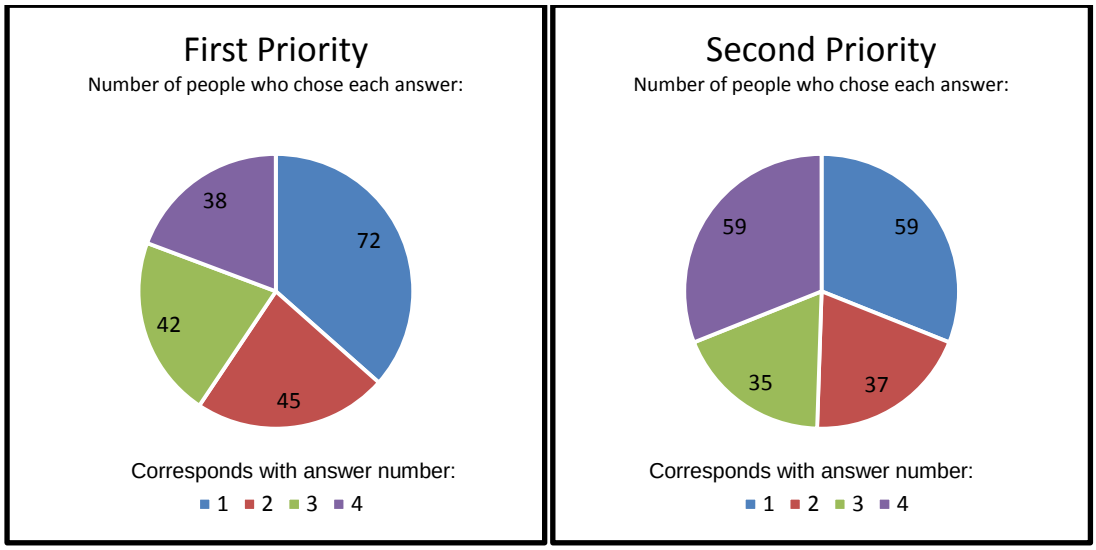
Theme 4: Prosperity - *Goal Statement 1:* *Milwaukie offers numerous pathways to prosperity through an excellent education system and training programs that are connected to local business. Residents of all ages and backgrounds feel supported to pursue and attain success in our local community.*



Q11 Please select your first and second-highest priority actions:

Answered: 196 Skipped: 20

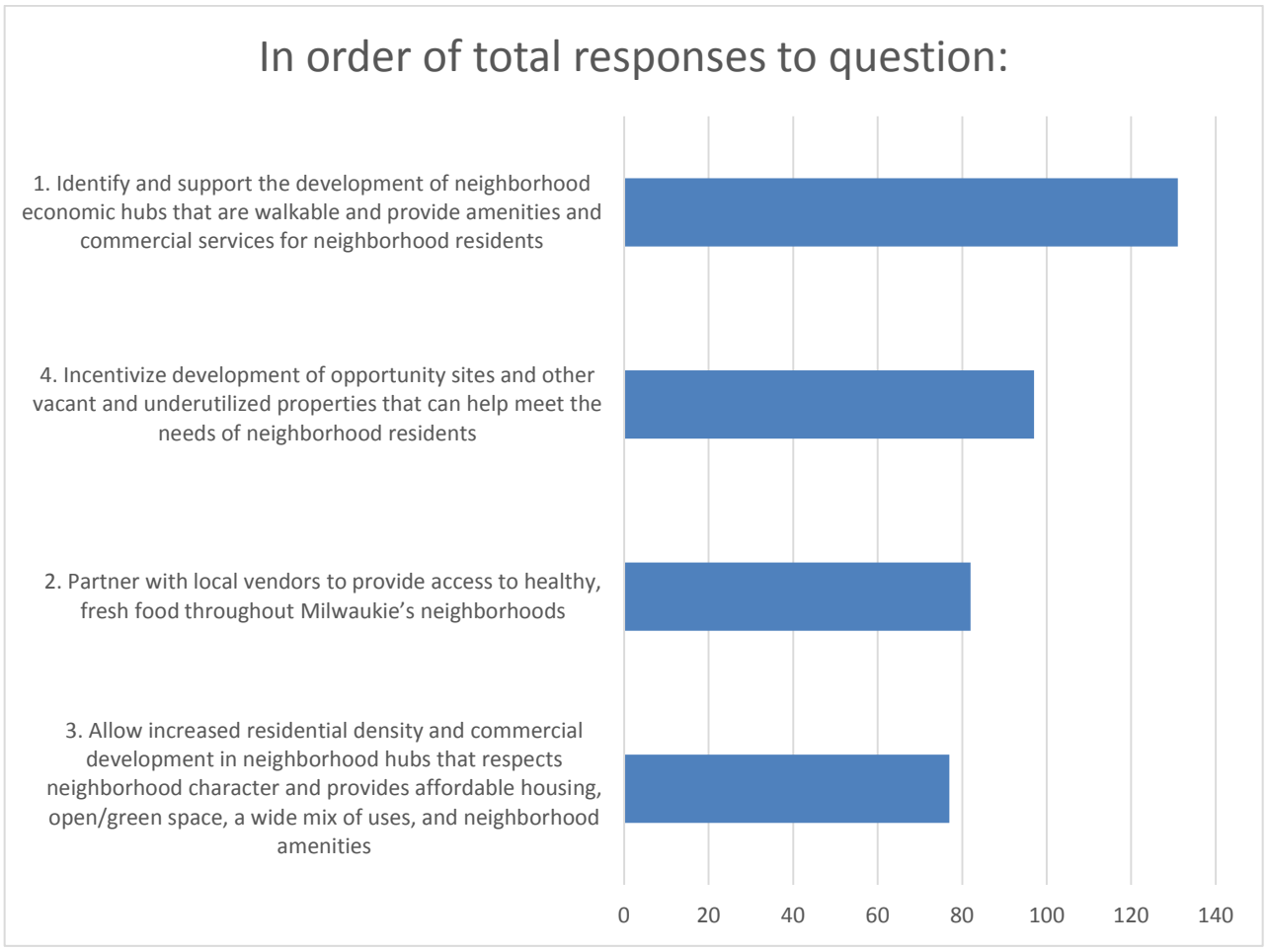
Theme 4: Prosperity - *Goal Statement 2:* *Milwaukie's neighborhoods are the center of daily life, with amenities and community-minded local businesses that meet the daily needs of residents. They form a network of unique, interconnected local hubs that together make Milwaukie the livable, equitable, and sustainable community that it is.*



The popular choice for first priority was, "Identify and support the development of neighborhood economic hubs that are walkable and provide amenities and commercial services for neighborhood residents". The second priority came out as a tie with the first priority winner and the "Incentivize development of opportunity sites and other vacant and underutilized properties that can help meet the needs of neighborhood residents" option.

Priority	First Priority	Second Priority	Total
1. Identify and support the development of neighborhood economic hubs that are walkable and provide amenities and commercial services for neighborhood residents	**54.96%** 72	**45.04%** 59	131
2. Partner with local vendors to provide access to healthy, fresh food throughout Milwaukie's neighborhoods	**54.88%** 45	**45.12%** 37	82
3. Allow increased residential density and commercial development in neighborhood hubs that respects neighborhood character and provides affordable housing, open/green space, a wide mix of uses, and neighborhood amenities	**54.55%** 42	**45.45%** 35	77
4. Incentivize development of opportunity sites and other vacant and underutilized properties that can help meet the needs of neighborhood residents	**39.18%** 38	**60.82%** 59	97

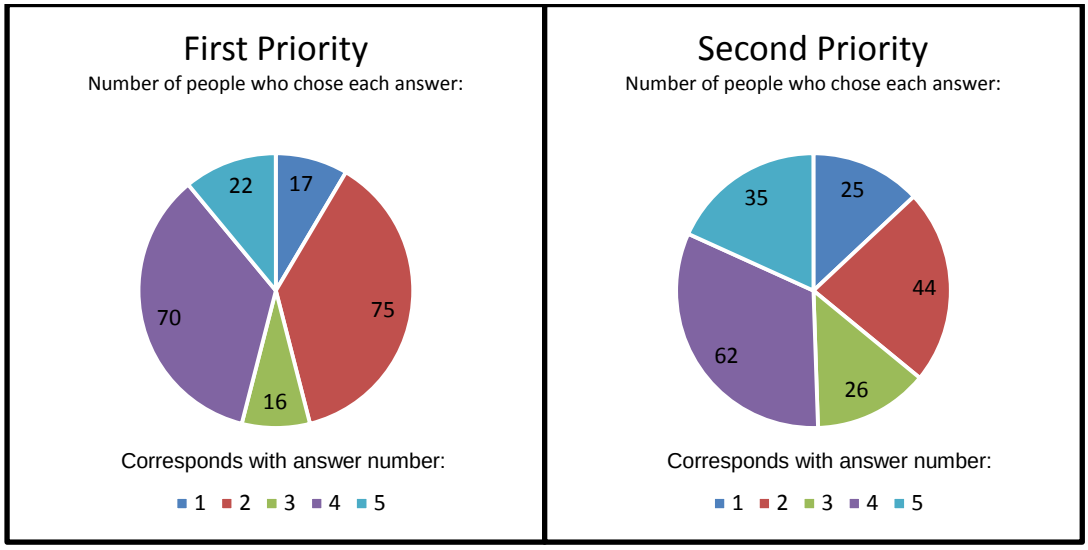
Theme 4: Prosperity - *Goal Statement 2:* *Milwaukie's neighborhoods are the center of daily life, with amenities and community-minded local businesses that meet the daily needs of residents. They form a network of unique, interconnected local hubs that together make Milwaukie the livable, equitable, and sustainable community that it is.*



Q12 Please select your first and second-highest priority actions:

Answered: 198 Skipped: 18

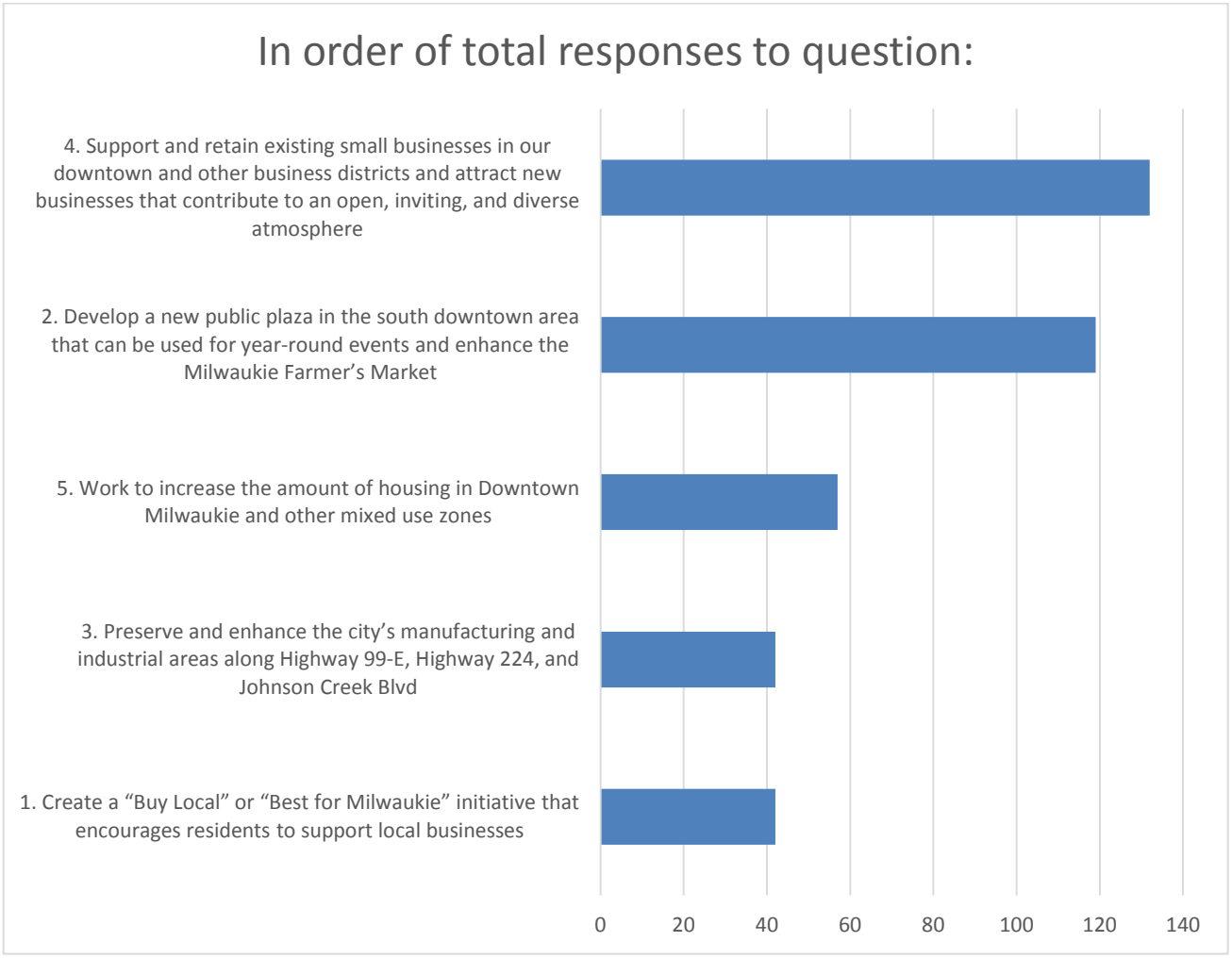
Theme 4: Prosperity - *Goal Statement 3:* *Downtown Milwaukie is a vibrant destination for both residents and visitors from throughout the region. Our industrial areas provide a high density of living-wage jobs across a number of different industries. The City is nimble and responsive to the needs of residents and businesses, with programs and policies that are financially sound, encourage job creation and help support a strong and resilient local economy.*



In yet another close count, "Develop a new public plaza in the south downtown area that can be used for year-round events and enhance the Milwaukie Farmer's Market "came out only slightly ahead. However, "Support and retain existing small businesses in our downtown and other business districts and attract new businesses that contribute to an open, inviting, and diverse atmosphere" was clearly the popular choice as second priority.

Priority	First Priority	Second Priority	Total
1. Create a "Buy Local" or "Best for Milwaukie" initiative that encourages residents to support local businesses	**40.48%** 17	**59.52%** 25	42
2. Develop a new public plaza in the south downtown area that can be used for year-round events and enhance the Milwaukie Farmer's Market	**63.03%** 75	**36.97%** 44	119
3. Preserve and enhance the city's manufacturing and industrial areas along Highway 99-E, Highway 224, and Johnson Creek Blvd	**38.10%** 16	**61.90%** 26	42
4. Support and retain existing small businesses in our downtown and other business districts and attract new businesses that contribute to an open, inviting, and diverse atmosphere	**53.03%** 70	**46.97%** 62	132
5. Work to increase the amount of housing in Downtown Milwaukie and other mixed use zones	**38.60%** 22	**61.40%** 35	57

Theme 4: Prosperity - *Goal Statement 3:* *Downtown Milwaukie is a vibrant destination for both residents and visitors from throughout the region. Our industrial areas provide a high density of living-wage jobs across a number of different industries. The City is nimble and responsive to the needs of residents and businesses, with programs and policies that are financially sound, encourage job creation and help support a strong and resilient local economy.*



Q13 Of all your selections, what is your #1 top priority overall?

Answered: 178 Skipped: 38



All answers to open-ended question include those showing below. Most common responses include the following, noted by number of times mentioned.

Most common words:

Safe/Safety (22)
Walk/ Walking/Walkable/Walkability (22)
Park/Parks (21)
Sustainable/Sustainability/Green (20)
Local (businesses, shops, restaurants) (17)
Affordable Housing (14)
Environment/Environmental (13)
Bike/Biking/Bikeability (12)
Sidewalks (11)
Nature/Natural (7)
Streets (7)

All responses follow.

- Prosperity and goal #3, a vibrant city that is interconnected, safe walking with your dog, biking, running, having awesome destinations like our river or bay, elk rock, attractive art & all kinds of buildings, architectural interests.
- Making downtown Milwaukie a dense downtown of office, residential, and retail that everyone in Milwaukie can enjoy as a hub of Clackamas.
- Neighborhood livability with groceries, hair salons, restaurants, etc within walking distance.

- Environmental Protection, Sustainable Practices and Emergency Preparedness
- Side walks
- Encourage businesses that provide family-wage jobs.
- Downtown covered area for year round events
- Preparation for natural disasters
- Continue to revitalize downtown
- Theme 2: Place
- Promote Milwaukie liveability in walking, biking, and local shops that attract foot traffic.
- Safe Routes to School--walking/biking infrastructure
- Improve walkability and bikeability within the network by creating dedicated bike paths and walking trails that connect transit, neighborhood business hubs and public spaces, including Milwaukie Bay Park.
- Save trees and wildlife. No housing density where it doesn't fit into the existing neighborhood.
- "Planet' goals and actions that strengthen the ecology around Milwaukie-
- Affordable housing
- Affordable housing.
- Waterfront in Milwaukie
- Reducing automobiles and increasing public transportation connections, safe biking, etc. to prepare for population growth and foster sustainability.
- Investing in areas that make Milwaukie more of a draw. The waterfront, a more cohesive downtown and walkability.
- Create internships
- River Park Phase 3
- Enhancing and creating safe bike routes, bike access to schools, and safe pedestrian/bike crossings of 99e and 224.
- Economic development plan to attract new locally owned businesses to Milwaukie
- Stream/river protection and restoration
- More affordable housing by allowing changes to code to allow for tiny homes, cottage code, ADUs, etc as well as higher density mixed use development.
- Environmental health, tree preservation.
- Encourage local business development.
- Protect our existing trees and tree canopy on both private and public lands.
- Promote sustainable and venerable development of local small businesses and economic/community opportunities for more walkable and livable neighborhoods.
- You should warn us this question is coming! Overall, I feel like it's important to get good planning in place in the next five years. It's easy to be aspirational for 2040, but we need to invest time and effort in the next five years in determining how to get there.
- The top priority that I see that was not mentioned in this survey directly was the Monroe Greenway Project. Safety in these neighborhoods with the higher traffic coming from Happy Valley needs to be addressed.
- Affordable housing
- Clean air and water
- I think of all the selections, the people section is most important. Making the people happy and supporting togetherness will help create a diverse and open community. Communities are essential to make change as well.
- Environmental concerns
- Promote diversity & "green" city practices.
- Having affordable energy efficient socially conscious housing options across the board.
- Obviously Milwaukee is on the verge of booming and that as it happens hopefully it can happen with the participation of its citizens (such as this survey) and reflect the nature and values of the historic and incoming residents alike. Growth often is uncomfortable yet so necessary. With appreciation.

    - Focus some outreach effort on engaging all citizens helping them exercise their agency and
      educate them to recognize the value in each other and in making the best possible locally-focused city their priority. When people care and are engaged, everything else will follow.
    - Housing Affordability
    - Net zero city by 2040
- Safety
- Affordable Housing
- Development of Milwaukie Bay (Riverfront) Park
- Prosperity 3-5
- Educating and having opportunities for the youth to expand thief potential
- Complete Milwaukie Bay Park
- It's important to have growth but to not taken away from the residents currently living here, i.e. make sure people don't cut down all the large trees on their property without paying a fee but encourage native plantings, make sure you can't rezone a lot just because someone wants to make more money when selling, think of the existing people first rather than the ones trying to come in.
- Creating diverse, open support for artistry and new businesses.
- Finish Milwaukee Bay Park with safe walkable access to it.
- Green space/natural areas (not ball fields), wildlife protection.
- To see improved parks and sidewalks as well as ADA accessibility. I live in the lake neighborhood and we lack most sidewalks that run north to south
- ADA & Safe Routes to Schools
- Investing in housing options that provide affordability, high quality development and good design, promoting quality living environments. It maintains the small neighborhood feel through creative use of space with housing options that embrace community inclusion and promote stability.
- Creating an inviting downtown environment through new art and local businesses, along with safe routes to get their (sidewalks, lighting, bike routes, etc.)
- A tie between building up housing in neighborhoods and downtown, and building up local businesses and restaurants downtown
- Support, retain and develop new local businesses.
- Develop a new public plaza in the south downtown area that can be used for year round events and enhances the Milwaukie Farmer's Market.
- Implement SAFE routes to school-type initiatives, more sidewalks, ADA, curb ramps
- Develop City procurement practices that prioritize regional vendors and products and businesses owned by women, veterans, people of color, those with disabilities, and the LGBTQ community
- Sidewalks for our neighborhoods and improved areas for biking.
- #1 immediate priority for me would be improving our streets; more long-term, I'd love to see more development of the downtown Milwaukie area as a destination.
- Develop a serious plan for downtown and anticipate population growth in the next ten years. Fight infill.
- Sustainability
- Anything to support local business
- Grow the Down town areas in density, by creating more development and mix use spaces. But also keep the current industrial business. Promote and develop more community spaces. Provide incentives to local business. Make sure all public buildings are resilient.
- Code changes to better protect and restore natural resource areas
- Completing Milwaukie Bay Park (some of the options here are overlapping in this regard)
- Develop Downtown- it's a vastly underutilized asset!
- Cultural diversity

- Neighborhood hubs that are walkable.
- Support for small business
- Job growth.
- Bring in more parks
- Getting rid of the Kellogg Dam
- Stormwater management
- Sustainability.
- Maintain Milwaukie's current character and STOP trying to turn us into a mini Portland. I'm a die-hard green greeny, an environmentalist to the core, but your so called vision plan is ridiculous, ignores values of your core citizens and thrusts Sustainability down their throats. Given the backlash that led to Trump's election, your plan is irresponsible and will likely create a local backlash. Please reconsider and act with wisdom, not pipe dreams.
- Environmental impact, composting, walking and cycling, zero pollution.
- Affordable housing
- Affordable housing
- Jobs and affordable housing
- More housing that is affordable for moderate and low income families.
- Prosperity
- Housing at affordable levels
- The development of safe walking and biking paths, in particular from neighborhoods east of OR 224 to downtown.
- Safe walking and biking paths and improved public transit to neighborhood centers and from eastern neighborhoods to downtown
- Finish phase 3 of Milwaukie Bay waterfront
- Making Milwaukie an inviting and sustainable place for small businesses.
- Livability and cultural needs
- My top priority is the place section. More specifically replacing and repairing the roads in our city. Examples being 42nd leading to Safeway and King road near the hospital.
- Thursday or Saturday night market in downtown Milwaukie for art vendors, summer music outdoors
- Enhancing and revitalizing the downtown area to make it a destination for shopping, dining, etc.
- Dog park,
- Improving bike pathways and sidewalks
- Preparing Milwaukie's infrastructure for coming disasters. If we aren't prepared for the Cascadia earthquake, then none of our other improvements will matter. With such efforts we could set an example for the whole region.
- Building downtown Milwaukie by encouraging small business growth and community involvement. Having a safe and clean area for our community.
- Retain local businesses and search for new ones that fit the Milwaukie community
- I want my street to be smooth. Drive down Olsen St. from 32nd. It is a mess. I want curbs, and sidewalks.
- Attracting business to the Milwaukie area
- Parks and educational opportunities for children
- Safety
- Improving a vibrant downtown and creating new vibrant areas of businesses and restaurants
- Increasing ecological initiatives such as composting, solar power and community green spaces.
- Just keeping Milwaukie as a small town and manage traffic in and around it.
- Composting program.
- Improve community hubs so that there are places to walk to.

- Focus on utilizing our downtown and waterfront area. It's our best asset. We should have one or two high end restaurants on the waterfront. We should also move our water plant to O.C. Expand our water access and add a kayak launch.
- Welcoming young families with playgrounds, sidewalks, restaurants, shops, etc
- Goal Statement 3.4
- 5. Market the city as a center for business incubation, and target businesses that are a good match for Milwaukie's established and emerging industry clusters and business space
- affordable housing
- Incentives for energy and water conservation. At this time the city offers nothing for those of us who make concerted efforts to save our natural resources.
- Livability and walkable
- Creation and retention of living wage jobs
- Filling vacant commercial properties rather than making any area more dense
- You expect me remember all that?
  Local fresh food, sustainable practices.
- Diversity and Inclusion and Existing Downtown Business Revitalization and Sustainability practices
- Keeping housing affordable, especially for renters.
- Road maintenance
- Support local businesses and enhance infrastructure.
- All of them are important, but since my husband is a bicycle commuter I have to say my top priority overall is to Implement Vision Zero in an effort to eliminate traffic deaths and life-changing injuries on Milwaukie's streets
- None. Creation of high-speed fiber will increase the business wanting to locate in the City and improve life for everyone. It must be City owned to keep the cost affordable.
- Be involved in the community, know the community and its children/teen
- Safe Biking corridors down Washington Street.
- Developing and clearly defining sustainable strategies that protect our rivers, such as mitigating the impacts of stormwater, incentivize 'green' building practices and engage those whose who possess related professional skills, and develop a funding program for such efforts.
- Improving pedestrian and bicycle use along 224 and 99E, like bridges, tunnels, pathways.
- Action.
- Living wage business and the environment
- adequate parking in downtown area for visitors
- Partner with local vendors to provide access to healthy, fresh food throughout Milwaukie’s neighborhoods.
- Planet
- My #1 priority is to keep Milwaukie from becoming Portland.
- Getting a grocery store at Milwaukie Marketplace.
- Bicycle lanes! Especially along Washington St. and/or Lake Rd. Few people are going to get out of their cars and bike until it is safe and enjoyable.
- Update the Development Code to allow more “missing middle” housing types in established neighborhoods.
  Current zoning requirements for most of the city have unnecessarily high square footage minimums for new development of duplexes.
- Make downtown more people friendly. Farmers Market was a good start. The vibrancy of downtown sets the reputation for all of Milwaukie.
- Find ways to involve seniors & people with disabilities, so we can feel included & take part in volunteer opportunities and Milwaukie events. And get us a good grocery we can walk to.

- Moving forward with the housing options and mixed use buildings that bring in businesses to downtown Milwaukie especially grocery stores to help end the current food dessert in the area.
- Increase housing in Downtown and other mixed use zones
- Increased employment opportunities for skilled workers.
- Sustainable Energy
- Removal of Kellogg dam!
- Kellogg Dam removal.
- Education programs for our youth.
- Develop without cutting existing old trees.
- The one about Parks. Was that Planet? I can't remember at this point in the survey.
- Environmental sustainability, particularly protecting the waterways.
- Environmental concerns for long-term effects
- Preserve the nature around Milwaukie. We do not want it to look like New York City. We want it to look like Milwaukie, One of a kind.
- Attracting amenities that make neighborhoods more comfortable and increase property values and resident satisfaction. As an example, there are many empty shops in the Milwaukie plaza. A facelift and full stores would be better for the economy and the local neighborhoods.
  Feedback on the overall vision: I agree with nearly everything in the vision statement, but think the language is likely out of touch for the average citizen. I have a master's degree and had to look up two words. I would suggest simplifying the language and shortening it, but I agree with the overall message.
- Encourage private enterprise to foster development goals and get city government out of the role of regulation, incentivisation and subsidization.
- More bike paths throughout the city, as well as paths leading out of the city.
  I think paths going North, South and East out of Milwaukie are doing well, but there needs to be going West over the railroad bridge into Lake Oswego.
  The rich people in LO have kept everyone out of their area for long enough. It's time for Milwaukie to break down that wall.
  Both cities would benefit from such a path (whether LO would admit it or not).
  Bike bridge through LO pleasssssse.
- Disaster preparedness.
- job growth
- Finish Milwaukie Bay Riverfront park
- Maintaining neighborhood feelings and tree canopy
- Connecting residents to what is available.
- I would really like to see Kellogg damn gone and the area that is now Kellogg lake made into a natural type park, with a parking lot at the old Cash Spot was, so there is lots of parking for water front and that park.
- Walk/bikibility east of 224 for neighborhood community to get to nearby resources
- Tree ordinance with a heritage/orchard program
- Create opportunities for small businesses to come to Downtown Milwaukie.
- Improving the condition of our roads and sidewalks
- Economic & Sustainable Development
- Improved business in downtown and the city overall.
- Access to local business to meet all needs
- Complete Phase 3 of Milwaukie Bay Park to create an amphitheater space for the performing arts, and promote the park as a community destination with year-round programming
- Revitalization of downtown, allowing for mixed use development to bring in more businesses like small grocers, restaurants and shops.

- Walking, environment
- SAFE Program
- Development of neighborhood hubs that enhance livability
- Bicycle/Pedestrian safety
- 1. Implement Vision Zero in an effort to eliminate traffic deaths and life-changing injuries on Milwaukie's streets
- Improve City streets both in terms of pedestrian facilities and pavement maintenance

CITY OF MILWAUKIE

COUNCIL **RESOLUTION No.**

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF MILWAUKIE, OREGON, ADOPTING THE MILWAUKIE COMMUNITY VISION.

WHEREAS, the City adopted its current Vision Statement in 1995; and

WHEREAS, in January 2016 the Council directed City staff to explore a visioning process that would result in a Community Vision that included an updated Vision Statement and a new Action Plan component; and

WHEREAS, the Council appointed members to the Vision Advisory Committee in August 2016; and

WHEREAS, City staff worked with the Vision Advisory Committee over the course of the past year to gather community input through an extensive public engagement process, including multiple Town Halls, community events, Community Conversations, and online surveys; and

WHEREAS, the Vision Advisory Committee met seven times over the past year to work on synthesizing community input into a Vision Statement and Action Plan; and

WHEREAS, the Vision Advisory Committee held its final meeting on June 21, 2017, at which it recommended approval of the Community Vision by the Council; and

WHEREAS, the Council held work sessions on July 5 and August 1, 2017 to review and provide feedback on the Community Vision, and to discuss the future process for updating and evaluating implementation of the Action Plan; and

WHEREAS, the Council held a public hearing on September 5, 2017 to review the final version of the Community Vision.

Now, Therefore, be it Resolved by the City Council of the City of Milwaukie, Oregon, that the Community Vision is adopted.

Introduced and adopted by the City Council on **September 5, 2017**.

This resolution is effective immediately.

Mark Gamba, Mayor

ATTEST:

APPROVED AS TO FORM:
Jordan Ramis PC

Scott S. Stauffer, City Recorder

City Attorney

MILWAUKIE CITY COUNCIL
Office of the City Recorder

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Speaker Registration

The City of Milwaukie encourages all citizens to express their views to their city leaders in a **respectful** and **appropriate** manner. If you wish to speak before the City Council, fill out this card and hand it to the City Recorder. Note that this Speakers Registration card, once submitted to the City Recorder, becomes part of the public record.

Name: Misty Addey

Organization:

Address:

Phone:

Email:

Meeting Date: 9/5 **Topic:** _____

Agenda Item You Wish to Speak to:

- ☐ #4 Audience Participation
- ☐ #5 Public Hearing, Topic:
- ☒ #6 Other Business, Topic: A

You are Speaking...

- ☐ in Support
- ☐ in Opposition
- ☐ from a Neutral Position
- ☐ to ask a Question

Comments:

RS 6. A.
9/5/17
Presentation

MILWAUKIE
ALL ABOARD

Milwaukie Community Vision and Action Plan

City Council Adoption Hearing
Milwaukie City Hall
September 5, 2017


HEALTHCARE
FOR ALL
JOBS WITH JUSTICE
Prosperity
1
EXIT













The Quadruple Bottom Line Framework



Superactions



Next Steps

1. Comprehensive Plan Update
2. Alignment with Council goals
3. Regular reporting and updates














MUSTANGS
FOOTBALL

Thank You!

Visit us online at:
www.milwaukievision.org

For more information, contact David Levitan, LevitanD@milwaukieoregon.gov, (503) 786-7627