City of Oregon City

625 Center Street
Oregon City, OR 97045
503-657-0891

Meeting Agenda - Final-revised

Planning Commission

Monday, April 9, 2018 | **7:00 PM** | **Commission Chambers**

1. Call to Order

2. Public Comments

3. Public Hearing

3a. AN 17-0004 / ZC 17-0005: Park Place Annexation and Rezoning of 92 acres (Continuance)

Sponsors: Pete Walter

Attachments: Commission Report

Summary Memorandum with Additional Findings 04.06.2018

City Attorney Memo on Island Annexation

Planning Commission Packet with Staff Report and Recommendations 02.12.2018

Ordinance 07-1007 Park Place Concept Plan

Park Place Concept Plan DLCD Acknowledgement_002-07

Replinger and Associates Comments 03.29.2018

Lancaster Engineering TIS Addendum 03.27.2018

ODOT comments 04.02.2018

Clackamas County Comments 04.03.2018

Clackamas County Comments 04.06.2018

Goal 5 Historic Sites Map and Inventory

Tom Geil 04.02.2018

Tom Geil 03.30.2018.pdf

Barbara Renken 04.02.2018

Christine Kosinski_03.30.2018

Nick Veroske 02.15.2018

Linda Peterson 02.21.2018

New Comments Entered at Planning Commission 02.12.2018

3b. CD 18-01: Code Interpretation to Allow Structured Parking on a Pre-Existing Nonconforming Use for Lithia Subaru of Oregon City.

Sponsors: Christina Robertson-Gardiner

Attachments: Commission Report

CD 18-01 Staff report

Exhibit 1: Vicinity Map

Exhibit 2: Applicant's Submittal

Exhibit 3: Applicant's Addendum

4. Approval of the Minutes

4a. Minutes of the Planning Commission: April 10, 2017 and May 8, 2017.

Sponsors: Pete Walter

Attachments: PC Draft Minutes 04.10.2017

PC Draft Minutes 05.08.2017

5. Communications

6. Adjournment

Public Comments: The following guidelines are given for citizens presenting information or raising issues relevant to the City but not listed on the agenda.

- *Complete a Comment Card prior to the meeting and submit it to the staff member.*
- *When the Chair calls your name, proceed to the speaker table and state your name and city of residence into the microphone.*
- *Each speaker is given 3 minutes to speak. To assist in tracking your speaking time, refer to the timer at the dais.*
- *As a general practice, Oregon City Officers do not engage in discussion with those making comments.*

Agenda Posted at City Hall, Pioneer Community Center, Library, and City Web site(oregon-city.legistar.com).
Video Streaming & Broadcasts: The meeting is streamed live on Oregon City's Web site at www.orcity.org and is available on demand following the meeting.
ADA: City Hall is wheelchair accessible with entry ramps and handicapped parking located on the east side of the building. Hearing devices may be requested from the City staff member prior to the meeting. Disabled individuals requiring other assistance must make their request known 48 hours preceding the meeting by contacting the City Recorder's Office at 503-657-0891.

City of Oregon City

625 Center Street
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Staff Report

File Number: PC 18-053

Agenda Date: 4/9/2018

Status: Public Hearing

To: Planning Commission

Agenda #: 3a.

From: Pete Walter

File Type: Planning Item

SUBJECT:
AN 17-0004 / ZC 17-0005: Park Place Annexation and Rezoning of 92 acres

RECOMMENDED ACTION (Motion): Review the Applicant's Addendum to the Transportation Impact Study, Consider the Supplemental Findings, Take Testimony, and Recommend Approval with Revised Conditions of Files AN-17-0004 and ZC-17-0005 to the City Commission.

BACKGROUND:
This item was continued from March 12, 2018.
Staff has prepared a memorandum with additional findings to address various issues raised at the February 12, 2018 public hearing.
In response to comments by the Oregon Department of Transportation, the applicant's Transportation Engineer, Lancaster Engineering, has prepared an addendum to the submitted Transportation Impact Study (TIS). Addendum #1 provides new information related to a “worst case” development scenario that is calculated to produce significantly more traffic than that calculated in the original TIS. Addendum #1 presents updated operational analyses for the 16 study area intersections based on the higher trip generation assumed in Addendum #1. Addendum #1 provides some additional discussion of Clackamas County’s operational standards. Addendum #1 provides a calculation of the operational performance of the intersection of Highway 213 and Redland Road assuming it is expanded as specified in Metro’s adopted Regional Transportation Plan (RTP). Finally, Addendum #1 proposes a trip cap on the development proposed for this annexation.
The City's Transportation Consultant, Replinger and Associates, has reviewed the addendum and prepared a revised report in response to the applicant's addendum, with recommendations for modified conditions of approval.
Staff received formal written comments from ODOT and Clackamas County comments regarding the submitted TIS and Transportation Addendum.
Public Comments received since February 12, 2018 from Tom Geil, Linda Peterson, Nick Veroske, Barbara Renken, and Christine Kosinski are attached.
An Annexation and Zone Change was submitted for 14 tax lots located on the south side of Holcomb Blvd and north of S. Livesay Rd and totaling approximately 92 acres into Oregon City. The subject territory is within the Oregon City Urban Growth Boundary, and has Comprehensive Plan designations of LR - Low-Density Residential, MR - Medium Density Residential and MUC

-Mixed Use Corridor, as provided within the Park Place Concept Plan. The applicant requested a Zone Change from County FU-10 to City R-10 Single Family Dwelling District, R-5 Single Family Dwelling District, and NC Neighborhood Commercial District, though has not proposed the development of the property at this time.

A draft staff report was prepared for the Pl;anning Commission's consideration on February 12, 2018. The applicant has proposed to submit a Master Plan (General Development Plan) pusuant to OCMC 17.65 in the future to identify the specific land uses and adequacy of the transportation sytem and other public facililties, including parks, prior to the development of the annexation area.

BUDGET IMPACT:
Amount:
FY(s):
Funding Source:

OREGON CITY

Community Development – Planning

221 Molalla Ave. Suite 200 | Oregon City OR 97045
Ph (503) 722-3789 | Fax (503) 722-3880

April 6, 2018

To:	Chair Denyse McGriff and Planning Commission
From:	Pete Walter, AICP, Planner
Re:	AN-17-0006 / ZC-17-0005: Park Place 92-Acre Annexation and Rezoning – Supplemental Findings to Staff Report of February 12, 2018

Good Evening Commissioners:

Following the initial public hearing for AN-17-06 / ZC-17-01 on February 12, 2018, staff has prepared this summary memorandum responding to various issues raised.

Please Note: *Staff is recommending a continuance of the public hearing to the date certain of April 23, 2018 to allow the Applicant additional time to prepare transportation analysis for the intersection of Redland Road and Anchor Way. This was omitted from the recently submitted Transportation Analysis Addendum.*

Park Place Concept Plan

The Park Place Concept Plan was approved by the City Commission in April, 2007 and acknowledged by the Department of Land Conservation and Development in 2008. See attached Ordinance 07-1007. It was required in order to comply with Metro Title 11 concept planning requirements and provides a foundation for urbanization of the Park Place area brought in the City's Urban Growth Boundary (UGB) in 2002. The Park Place Concept Plan addresses annexation, urban services, residential density and design, housing, commercial and employment uses, transportation, natural resources, public facilities and services, schools, roads, and developable and unbuildable lands. The plan is based on furthering a series of core values developed by the Project Advisory Committee, and supported by the Planning Commission and City Commission, to address these issues. The Park Place Concept Plan was developed through an extensive interactive public process and was guided by a Project Advisory Committee comprised of neighbors, stakeholders, business owners and City residents starting in February 2006, to draft a framework for sustainable development of the Park Place area.

Since its adoption the urbanization objectives contained within the Park Place Concept Plan have been implemented in all subsequent public facilities plan updates for sewer, water, stormwater and transportation. Density levels and the resulting public improvement demand, necessary to support that development, including the widening of Holly Lane, were established by the Park Place Concept Plan. The annexation / zone change request pending review takes the next step in implementing these objectives. Much of the testimony was directed at concerns that were settled upon adoption of the Concept Plan and cannot be revisited as part of this review.

Master Plan Prior to Development

Staff wishes to reiterate the importance of a Master Plan process for the successful implementation of the Park Place Concept Plan. As conditioned, approval of this annexation and zoning proposal requires that a future master plan approval, General and Detailed Development Plan pursuant to OCMC 17.65, including the entire 91-acre annexation area shall be obtained and submitted prior to any development

approval authorized by this zone change. The General Development Plan and all phases of development authorized by it, must implement the Park Place Concept Plan and Oregon City's adopted Public Facilities Plans with regard to the provision of open space, park and trails, sewer, water, stormwater and transportation improvements. Implementation of these plans, through Master Plan review, will ensure that the City can provide urban levels of services to these newly developed areas while continuing to serve existing residents and businesses.

The purpose of a Master Plan is discussed in OCMC 17.65.010:

> *It is the intent of this chapter to foster the growth of major institutions and other large-scale development, while identifying and mitigating the impacts of such growth on surrounding properties and public infrastructure. The city recognizes the valuable services and employment opportunities that these developments bring to Oregon City residents. The master plan process is intended to facilitate an efficient and flexible review process for major developments and to provide them with the assurance they need over the long term so that they can plan for and execute their developments in a phased manner. To facilitate this, the master plan process is structured to allow an applicant to address the larger development issues, such as adequacy of infrastructure and transportation capacity, and reserve capacity of the infrastructure and transportation system before expenditure of final design costs.*

TIS Addendum – Lancaster Engineering

Note: *Staff is recommending a continuance of the public hearing to the date certain of April 23, 2018 to allow the Applicant additional time to prepare transportation analysis for the intersection of Redland Road and Anchor Way. This was omitted from the recently submitted Transportation Analysis Addendum.*

The applicant's Transportation Engineer, Lancaster Engineering, has prepared a memorandum addendum entitled "Transportation Impact Study Addendum #1", to the original Park Place Annexation Transportation Impact Study (TIS), dated August 2nd, 2017. Oregon Department of Transportation requested that trip generation assumptions within the TIS be revised. Accordingly, this addendum re-assesses site trip generation and includes capacity analyses for year 2035 build-out conditions reflecting this change in projected trips generated.

A draft version of this memorandum was distributed to ODOT and City of Oregon City staff in mid-March. The final version of the memo incorporates revisions made by public agency review of the draft report. This includes:

1. Explanation of the assumed number of homes on the site,
2. Additional discussion of pass-by trips and the use of internal trip reduction,
3. Explanation of ODOT's recent interpretation regarding the application of intersection performance standards,
4. A proposal to establish a trip cap for the subject site.

Addendum #1 provides new information related to a "worst case" development scenario that is calculated to produce significantly more traffic than that calculated in the original TIS. Addendum #1 presents updated operational analyses for the 16 study area intersections based on the higher trip generation assumed in Addendum #1. Addendum #1 provides some additional discussion of Clackamas County's operational standards. Addendum #1 provides a calculation of the operational performance of the intersection of Highway 213 and Redland Road assuming it is expanded as specified in Metro's adopted Regional Transportation Plan (RTP). Finally, Addendum #1 proposes a trip cap on the development proposed for this annexation.

The City's Transportation Consultant, Replinger and Associates, has prepared a complete revised review of the TIS and the addendum and will present his findings at the public hearing on April 9. Based on the addendum, Mr. Replinger recommends slightly modified conditions of approval be applied to any subsequent application for a future Master Plan development application.

Staff recommends that the Planning Commission accept these modified recommendations as Conditions of Approval for See attached.

Oregon Department of Transportation (ODOT) Comments

ODOT staff reviewed the application and submitted comments which are attached. Based on their review of the traffic impact study and the planned investments and improvements to improve performance of the transportation system, ODOT is satisfied that the staff report demonstrates compliance with the Transportation Planning Rule. The requirement for a Master Plan affords ODOT and the city a future opportunity to ensure that the infrastructure consistent with the TSP is implemented to meet the criteria for adequate transportation facilities. Additionally ODOT mentions the necessity of the Holly Lane extension, which is clearly identified in the City's TSP as well as other planning documents.

Clackamas County Transportation Comments

Clackamas County transportation staff provided comments on April 3 and April 6 (Attached).

Tree Removal Prior to Annexation

The issue of tree removal prior to annexation was raised during the last hearing as an issue of serious concern. Land within Urban Growth Boundaries that is designated for urban use must be urbanized in order to adequately protect farm and forest land outside of the UGB, since that is the basis behind Oregon's Land Use Planning system.

Currently the City has no adopted policy that restrict or requires mitigation for tree removal on properties that are located outside of the City boundaries but within the Urban Growth Boundary. Individual land owners that are not yet annexed currently have to comply with applicable Clackamas County tree cutting regulations depending on their particular situation. Clackamas County also has regulations protecting the water quality of streams and sloped areas. Lastly, the Forest Practices Act applies to areas of harvestable timber, and may pre-empt local regulations in such cases, though by definition there are few such areas within the Urban Growth Boundary.

Once lands are annexed to Oregon City, the City has various regulations that restrict or require permitting and mitigation for impacts to trees and identified sensitive areas such as wetlands, streams, habitat areas and steep slopes and landslide areas. These include OCMC 17.41 Tree Protection, which applies to development applications, and the Natural Resources Overlay District and Geologic Hazard Overlay District, OCMC 17.49 and 17.44, respectively.

For urbanizable land, there is an iterative process of natural resource evaluation that occurs in successively more detailed phases. This first occurs with the Metro process of UGB expansion study areas wherein Metro evaluates the suitability of land for inclusion within the Urban Growth Boundary pursuant to state law.

Once within the UGB, Metro law protecting Water Quality and Habitat (Titles 3 and 13) applies to both Cities and Counties. This is based on known and accepted inventories and strikes a balance between the need to provide an adequate land supply for urbanization and housing while identifying and preserving sensitive sites, features and areas that should be off limits for development. This is a critical component of the Park Place Concept Plan.

Following Annexation and zoning, the process of Master Planning pursuant to OCMC 17.65 provides yet more opportunity to refine the concept plan and identify and protect the natural features, open space, trails, parks and natural resource areas, and the mechanism by which those features become part of the community amenities in the future. This would necessarily include conditions of approval that clearly identify what the developer is and is not responsible for with respect to protected areas.

Finally, the process of actual development, through land division (subdivision and partitions) and site development approval is reached. For residential subdivisions, the City requires planting of trees on new residential lots, based on the lot size. For non-residential sites, the City's Site Plan and Design Review includes minimum landscaping standards that require trees be planted. Ultimately, the cost of new trees and mitigation for removed trees is passed on to the new homeowners and residents in the sale price for a new home.

Traffic Safety and Speeding Issues

Several citizens shared their concerns about speeding and traffic safety, particularly on Holcomb Boulevard. These issues are important; however, this is an enforcement issue for an existing problem and there is no evidence that identified existing safety concerns will be exacerbated by the subject annexation and zone change request. The applicant has retained a licensed and experienced traffic engineer to analyze crash data, safety issues and speed zones with their required Traffic Impact Study, and will contribute to any share of identified safety improvements in the City's Transportation System Plan for areas that their development may exacerbate, such as for installation of a four-way stop, turn lanes, and traffic signals. The findings in the Traffic Impact Study are then reviewed by three independent licensed traffic engineers who work for the City, the County and for Oregon Department of Transportation. Upon submittal of a Master Plan, the City and residents will have further opportunity to understand the transportation impact of development within the annexation area. Current speeding concerns and safety issues may be addressed to the Clackamas County Traffic Safety Commission or the Oregon City Traffic Safety Committee, or the Oregon City Police Department or Clackamas County Sheriff's Department, as applicable.

Geologic Hazards and Dr. Scott Burns – PSU Geology Professor

The Planning Commission heard testimony about the potential for landslides within the concept plan area and Holly Lane, as well a request that Dr. Scott Burns of Portland State University be invited to speak to the Planning Commission. Dr. Scott Burns is Professor Emeritus of Geology and has studied the geologic hazards of Oregon City for 28 years. Dr. Burns has accepted an invitation to present to both the Planning Commission and the Natural Resources Committee at a joint worksession which is tentatively scheduled for June 11th, 2018.

The City's Geologic Hazard Overlay District code OCMC 17.44 requires applicants to review a variety of official Portland State University (PSU) and Oregon Department of Geology and Mineral Industries (DOGAMI) research documents for landslide hazards in the Oregon City area. Dr. Burns is author or co-author for several of these documents, which are required references for the Geological Assessment and Geotechnical Report required as part of a development application submittal within the overlay district. See 17.44.050 - Development—Application requirements and review procedures and approvals. Applications which do not include these references are considered incomplete and cannot move forward for review by the City's Geologic Engineering consultant.

Cultural and Historic Resources (Goal 5)

Senior Planner Christina Robertson-Gardiner conducted a query of the SHPO historic sites database http://heritagedata.prd.state.or.us/historic/ , and the City's access database for eligible historic resources in or near the annexation area. Eligible resources found in the query are included as an attachment.

There are no resources identified as potentially eligible on the National Register in this Annexation proposal. Three houses were identified as over 50 years old in the annexation area but not eligible for listing on the National register individually, or as part of a district.

- 15110 S Holcomb Blvd
- 16472 Livesay Road
- 16582 Livesay Road

The area of potential effect (APE) looked at properties within 300 feet of the annexed properties. Eligible resources near the annexation include:

- 14493 S Livesay Rd (1948)
- 14508 S Livesay- Rd Kraeft House (1903), a Clackamas County Landmark.
- 15138 s Holcomb Blvd (1940)
- 15172 S Holcomb Blvd- (1935)

A map of these sites is attached and provided below.

Figure 1. SHPO Map of Historic Sites near Annexation Area

The proposed annexation and development will not have an adverse effect on the significance of the Kraeft House as it remains a Clackamas County Landmark. It is located adjacent to Livesay Road with a collection of non-historic farm outbuilding that could be removed and redeveloped allowing the resource to be retained near the street in any future annexation request. The same analysis is consistent with the 1948 and 14993 Livesay Road house.

Livesay Road is a highly constrained rural road made of a combination of non-eligible 1960s ranch homes, and some eligible 1920s typical and 1940s minimal traditional farmhouses, aside from to two resources identified above, the remainder eligible structures are located west of the town center area on Livesay. This area of Livesay has not been identified for street improvements and was specifically identified to be a street designed for local access in the Park Place Concept Plan to preserve a sense of place for this community.

Two modest 1930s and 1940s minimal traditional/early ranches are located near the proposed connector road on Holcomb Blvd.

No adverse impact is identified for these resources as part of the annexation and development as the housing location and orientation to Holcomb Blvd will not change.

Infrastructure Timing

The Planning Commission heard testimony regarding the adequacy of parks and other infrastructure, asking why improvements cannot be in place prior to development. This individual was concerned that the City has not "banked land" for parks within the annexation area. The City has not acquired land within the annexation area at this time for park purposes due to lack of funds. It is for this reason that the staff is recommending, and the applicant has agreed to as a Condition of Approval of the annexation and zone change, a master plan prior to any development so that (prior to issuance of building permits), the City will have the necessary levels of park land available to serve this new development. The applicant is required in the Master Plan process to identify how the City will secure park land for future development.

Additionally, developers **are** required to pay for their fair share of off-site improvements necessary to serve their development and build infrastructure directly related to their development impacts prior to issuance of building permits. The City requires that the burden of new public infrastructure improvement of public infrastructure fall on the developer.

Since developers are only required to provide their proportional share of such improvements, and since public money for large scale capital improvements is constrained, there will inevitably be a lag time between when the development occurs and when the full build-out of an area makes the full share of the improvements possible. Furthermore, developers are legally entitled under state law to use the payment of System Development Charges as a means to meet this requirement, rather than actually construct the improvement at the time of development.

Conclusion and Recommendation

This memorandum, along with the attached exhibits listed below, supplements the original February 12, 2018 staff report and recommended findings, and addresses all issues raised and submitted into the record as of the date of agenda publishing on April 2nd, 2018.

Staff believes that all of the applicable criteria for approval of AN 17-04 / ZC 17-06 are met through the Conditions of Approval, as modified to include the recommendations regarding transportation mitigation prepared by Replinger and Associates.

Exhibits

1. Ordinance 07-1007, Park Place Concept Plan.
2. Department of Land Conservation (DLCD) Acknowledgement of Adoption File 002-07.

3. Goal 5 - Historic Inventory of Sites adjacent to and within the Annexation Area.
    a. SHPO Sites Map
    b. Eligible Adjacent
        i. 14493 S Livesay Rd (1948)
        ii. 14508 S Livesay- Rd Kraeft House (1903), a Clackamas County Landmark.
        iii. 15138 s Holcomb Blvd (1940)
        iv. 15172 S Holcomb Blvd- (1935)
    c. Within the annexation area but not eligible for listing on the National register individually, or as part of a district.
        i. 15110 S Holcomb Blvd
        ii. 16472 Livesay Road
        iii. 16582 Livesay Road
4. Technical Memorandum; *Park Place Annexation - Transportation Impact Study Addendum #1,* Todd Mobley, PE and Daniel Stumpf, EI, Lancaster Engineering, March 27, 2018.
5. *Review of Traffic Impact Study – Park Place Annexation and Rezoning – AN17-04 & ZC17-05,* Replinger and Associates, March 29, 2018.
6. Comments from Marah Danielson, Senior Planner, ODOT Region 1, April 2, 2018

Bateman Seidel

MEMORANDUM

TO: Oregon City Planning Commission

FROM: Carrie Richter, Deputy City Attorney

DATE: April 5, 2018

RE: Island Annexations

At the Planning Commission's hearing on February 12, Commissioner Espe asked for clarification about "island" annexations and how they are addressed under state law. This memorandum is an attempt to explain some element of the island annexation requirements of state law.

Island annexations are authorized by ORS 222.750.[1] Under that statute, a city may annex land that is entirely surrounded by the corporate boundaries of the city after providing notice and holding a public hearing.[2] In an island annexation, the City may initiate an annexation of the surrounded property regardless of whether the owners within the island area consent to the annexation or not.

ORS 222.750 is permissive in that local governments may decide to annex an island over an owner's objection, but a city need not do so. This permissive authorization is

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[1] In relevant part, ORS 222.750 provides:

> "(2) When territory not within a city is surrounded by the corporate boundaries of the city, or by the corporate boundaries of the city and the ocean shore, a river, a creek, a bay, a lake or Interstate Highway 5, the city may annex the territory pursuant to this section after holding at least one public hearing on the subject for which notice has been mailed to each record owner of real property in the territory proposed to be annexed.
>
> "****
>
> "(4) Unless otherwise required by its charter, annexation by a city under this section must be by ordinance or resolution subject to referendum, with or without the consent of any owner of real property within the territory or resident in the territory."

[2] A river or Interstate 5 may also serve as part of the boundaries surrounding an unincorporated island.

implemented in Policy 14.4.3 of the Oregon City Comprehensive Plan, which provides, in relevant part:

> "Policy 14.4.3
>
> "Evaluate and in some instances require that parcels adjacent to proposed annexations be included to:
>
> - "avoid creating unincorporated islands within the city."

Historically, the City has had a practice of encouraging the inclusion of land in an annexation proposal that otherwise would remain an island in part because voter consent was required in order to change the city boundaries under Section 3 of the Oregon City Charter.[3]

The adoption of Senate Bill 1573 in 2016 changed some of the underlying presumptions. SB 1573 authorizes a city to annex lands without being sent to a vote of the City under certain circumstances, notwithstanding any city charter limitation to the contrary. One of those circumstances is that there is unanimous consent to the annexation from the owners of the property in the area to be annexed. If all of the owners do not consent to the annexation, SB 1573 would not apply and the annexation would be subject to voter approval under the City's charter.

Therefore, although state law does allow annexation of land without consent, including the annexation of islands, the City's charter limitation would require an election in all cases where the unanimous consent is secured.

As explained in the staff report, the Planning Commission must determine whether approving this application, given that it will result in the creation of a three-property island satisfies Plan Policy 14.4.3. Does Plan Policy 14.4.3 prohibit the creation of islands? If the answer is no, in what circumstances would an annexation that resulted in an island be acceptable? Does it make any difference if the island remainder will interfere with the extension of public utilities and services necessary to facilitate

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[3] To be clear, the voter consent here involves the consent of the citizens of Oregon City. Any annexation requires dual consent, in that there must be consent from both the property being annexed and the city to which it is being annexed. Typically, consent of the area to be annexed is provided by the double or triple majority process, but it can be foregone if the area is an island, as discussed above. Under state law, the city governing body can provide consent on behalf of the city, but in Oregon City, the Charter requires that the consent be provided by a vote of the citizens of Oregon City.

urbanization of this area? Are there other harms that result from permitting an island that would discourage any approval that would create an island in this case?

The Planning Commission's options with regard to the island issue include:

- Allow the creation of the island in this case because it will not interfere with the urbanization of the surrounding lands. Plan Policy 14.4.3 is satisfied, notwithstanding the island;

- Require that the applicant amend the application in order to satisfy Plan Policy 14.4.3, to include all adjacent property owners, including those remaining in the island. The effect will be to require that any approval is subject to review by the voters; or

- Deny the annexation application upon a finding that Plan Policy 14.4.3 is not met.

ORDINANCE NO. 07-1007

AN ORDINANCE ADOPTING THE PARK PLACE CONCEPT PLAN; ADOPTING AMENDMENTS TO OREGON CITY COMPREHENSIVE PLAN AND ITS ANCILLARY DOCUMENTS (L 07-01)

WHEREAS, the City has worked with Oregon City residents and public advisory groups to develop the overall vision, policies and goals for the future growth and development of the Park Place Concept Plan area; and

WHEREAS, the Park Place Concept Plan is intended to guide the growth and management of the Park Place Concept Plan Area, to support natural, recreational, and economic benefits for the community of Oregon City, and to provide a framework for implementation of identified goals and policies; and

WHEREAS, the Park Place Concept Plan complies and is consistent with Statewide Planning Goals, Metro Ordinance No. 02-969B, and the Metro Regional Framework Plan, specifically Title 11; and

WHEREAS, the City will continue to work with Clackamas County to recommend long-term urban and rural reserves during the upcoming 2-year Metro reserves project for future expansion of the Urban Growth Boundary or designation of urban reserves pursuant to 660 Oregon Administrative Rules Division 21; and

WHEREAS, notice was mailed to all Oregon City property owners in conformance with Measure 56 requirements and notice was published in the local newspaper. Public meetings and workshops were held where the objectives and concepts of the Park Place Concept Plan were presented and discussed; and

WHEREAS, the Planning Commission and the City Commission both held publicly noticed work sessions on the proposed Concept Plan; and

WHEREAS, the Planning Commission held three public hearings on the proposed amendments; and

WHEREAS, the Planning Commission, based on the oral and written testimony they received at the public hearings, adopted minor revisions to the amendments and unanimously recommended it be adopted; and

WHEREAS, in a project of this size and scope, additional editing and refinement will inevitably be necessary after adoption; and

WHEREAS, further amendments to the Oregon City Comprehensive Plan and Map and Zoning Code and Map will be necessary in order to implement the Park Place Concept Plan, and these Amendments will be considered and reviewed in a duly noticed Public Hearing which will be mailed to all Oregon City residents and interested parties in compliance with Measure 56e; and

WHEREAS, adopting the Park Place Concept Plan, and Amendments to the Comprehensive Plan and its ancillary documents is in the best interest of Oregon City to ensure that the goals and policies of the City can be realized,

NOW, THEREFORE, OREGON CITY ORDAINS AS FOLLOWS:

Section 1. The Park Place Concept Plan and Appendix, included as Attachment B of Item 6a on November 7, 2007, is hereby adopted as an Ancillary Document to the Oregon City Comprehensive Plan based on the findings contained in the Staff Report and Record for Planning File L 07-01.

Section 2. The Ancillary Documents to Oregon City Comprehensive Plan, as amended, included as Attachment C of Item 6a on November 7, 2007, are hereby adopted based on the findings contained in the Staff Report and Record for Planning File L 07-01.

Read for the first time at a regular meeting of the City Commission held on the 19th day of March 2008, and the foregoing ordinance was finally enacted by the Commission on this 2nd day of April 2008.

Alice Norris

ALICE NORRIS, Mayor

ATTESTED to this 2nd day of April 2008

Nancy Ide

Nancy Ide
City Recorder

Oregon
Theodore R. Kulongoski, Governor

Department of Land Conservation and Development
635 Capitol Street, Suite 150
Salem, OR 97301-2540
(503) 373-0050
Fax (503) 378-5518
www.lcd.state.or.us

NOTICE OF ADOPTED AMENDMENT

April 16, 2008

TO: Subscribers to Notice of Adopted Plan
or Land Use Regulation Amendments

FROM: Mara Ulloa, Plan Amendment Program Specialist

SUBJECT: City of Oregon City Plan Amendment
DLCD File Number 002-07

The Department of Land Conservation and Development (DLCD) received the attached notice of adoption. Due to the size of amended material submitted, a complete copy has not been attached. A copy of the adopted plan amendment is available for review at the DLCD office in Salem and the local government office.

Appeal Procedures*

DLCD ACKNOWLEDGMENT or DEADLINE TO APPEAL: May 1, 2008

This amendment was submitted to DLCD for review 45 days prior to adoption. Pursuant to ORS 197.830 (2)(b) only persons who participated in the local government proceedings leading to adoption of the amendment are eligible to appeal this decision to the Land Use Board of Appeals (LUBA).

If you wish to appeal, you must file a notice of intent to appeal with the Land Use Board of Appeals (LUBA) no later than 21 days from the date the decision was mailed to you by the local government. If you have questions, check with the local government to determine the appeal deadline. Copies of the notice of intent to appeal must be served upon the local government and others who received written notice of the final decision from the local government. The notice of intent to appeal must be served and filed in the form and manner prescribed by LUBA, (OAR Chapter 661, Division 10). Please call LUBA at 503-373-1265, if you have questions about appeal procedures.

***NOTE:** **THE APPEAL DEADLINE IS BASED UPON THE DATE THE DECISION WAS MAILED BY LOCAL GOVERNMENT. A DECISION MAY HAVE BEEN MAILED TO YOU ON A DIFFERENT DATE THAN IT WAS MAILED TO DLCD. AS A RESULT YOUR APPEAL DEADLINE MAY BE EARLIER THAN THE ABOVE DATE SPECIFIED.**

Cc: Gloria Gardiner, DLCD Urban Planning Specialist
Bob Cortright, DLCD Transportation Planning Coordinator
Amanda Punton, DLCD Natural Resource Specialist
Christine Shirley, FEMA Specialist
Pete Walter, City of Oregon City

<paa> ya/email

FORM 2

DLCD Notice of Adoption

THIS FORM **MUST BE MAILED** TO DLCD
WITHIN 5 WORKING DAYS AFTER THE FINAL DECISION
PER ORS 197.610, OAR CHAPTER 660 - DIVISION 18

Jurisdiction: **City of Oregon City**
Local file number: **L 07-01**
Date of Adoption: **4/2/2008**
Date Mailed: **4/9/2008**
Was a Notice of Proposed Amendment (Form 1) mailed to DLCD? **Yes** Date: 5/23/2007

- ☒ Comprehensive Plan Text Amendment
- ☐ Comprehensive Plan Map Amendment
- ☐ Land Use Regulation Amendment
- ☐ Zoning Map Amendment
- ☐ New Land Use Regulation
- ☐ Other:

Summarize the adopted amendment. Do not use technical terms. Do not write "See Attached".

In 2002, nearly 300 acres of rural land located just east of Oregon City was brought into the Portland Metropolitan Urban Growth Boundary (UGB) to accommodate future growth. The Park Place project area includes the newly expanded UGB section along with areas previously in the UGB but located outside of the city limits. Adoption of the Park Place Concept Plan implements Title 11 of METRO's Urban Growth Management Functional Plan for the Park Place project area.

Does the Adoption differ from proposal? Yes, Please explain below:

Commercial Zoning to be applied will be the City's Neighborhood Commercial (NC) zone rather than the Mixed Use Corridor (MUC) zone orginally anticipated. Actual Zoning map and code amendments to implement the plan designations for the Concept Plan area will be adopted following a separate public hearing process.

Plan Map Changed from: **County/R-10**
to: **Varies: LDR, MDR, Commercial**
Zone Map Changed from: **FU-10/County**
to: **Varies: R3.5, R-5, R-10, NC**
Location: **NE Oregon City: see project plan map**
Acres Involved: **480**
Specify Density: Previous: **1 unit/10 acres**
New: **7.5 units/acre**
Applicable statewide planning goals:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
☒	☒	☐	☐	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☐	☐	☐	☐	☐

Was an Exception Adopted? ☐ YES ☒ NO
Did DLCD receive a Notice of Proposed Amendment...

DLCD # 002-07 (16125)

45-days prior to first evidentiary hearing?	☒ Yes	☐ No
If no, do the statewide planning goals apply?	☐ Yes	☐ No
If no, did Emergency Circumstances require immediate adoption?	☐ Yes	☐ No

DLCD file No. _____

Please list all affected State or Federal Agencies, Local Governments or Special Districts:

Oregon Department of Transportation, METRO, Clackamas County

Local Contact: **Pete Walter, Associate Planner** Phone: **(503) 657-0891** Extension:

Address: **320 Warner Milne Road** Fax Number: **503-722-3880**

City: **Oregon City** Zip: **97215-** E-mail Address: **pwalter@ci.orcity.org**

ADOPTION SUBMITTAL REQUIREMENTS

This form **must be mailed** to DLCD **within 5 working days after the final decision**
per ORS 197.610, OAR Chapter 660 - Division 18.

1. Send this Form and **TWO Complete Copies** (documents and maps) of the Adopted Amendment to:

ATTENTION: PLAN AMENDMENT SPECIALIST
DEPARTMENT OF LAND CONSERVATION AND DEVELOPMENT
635 CAPITOL STREET NE, SUITE 150
SALEM, OREGON 97301-2540

2. Electronic Submittals: At least **one** hard copy must be sent by mail or in person, but you may also submit an electronic copy, by either email or FTP. You may connect to this address to FTP proposals and adoptions: **webserver.lcd.state.or.us**. To obtain our Username and password for FTP, call Mara Ulloa at 503-373-0050 extension 238, or by emailing **mara.ulloa@state.or.us**.

3. Please Note: Adopted materials must be sent to DLCD not later than **FIVE (5) working days** following the date of the final decision on the amendment.

4. Submittal of this Notice of Adoption must include the text of the amendment plus adopted findings and supplementary information.

5. The deadline to appeal will not be extended if you submit this notice of adoption within five working days of the final decision. Appeals to LUBA may be filed within **TWENTY-ONE (21) days** of the date, the Notice of Adoption is sent to DLCD.

6. In addition to sending the Notice of Adoption to DLCD, you must notify persons who participated in the local hearing and requested notice of the final decision.

ORDINANCE NO. 07-1007

AN ORDINANCE ADOPTING THE PARK PLACE CONCEPT PLAN; ADOPTING AMENDMENTS TO OREGON CITY COMPREHENSIVE PLAN AND ITS ANCILLARY DOCUMENTS (L 07-01)

WHEREAS, the City has worked with Oregon City residents and public advisory groups to develop the overall vision, policies and goals for the future growth and development of the Park Place Concept Plan area; and

WHEREAS, the Park Place Concept Plan is intended to guide the growth and management of the Park Place Concept Plan Area, to support natural, recreational, and economic benefits for the community of Oregon City, and to provide a framework for implementation of identified goals and policies; and

WHEREAS, the Park Place Concept Plan complies and is consistent with Statewide Planning Goals, Metro Ordinance No. 02-969B, and the Metro Regional Framework Plan, specifically Title 11; and

WHEREAS, the City will continue to work with Clackamas County to recommend long-term urban and rural reserves during the upcoming 2-year Metro reserves project for future expansion of the Urban Growth Boundary or designation of urban reserves pursuant to 660 Oregon Administrative Rules Division 21; and

WHEREAS, notice was mailed to all Oregon City property owners in conformance with Measure 56 requirements and notice was published in the local newspaper. Public meetings and workshops were held where the objectives and concepts of the Park Place Concept Plan were presented and discussed; and

WHEREAS, the Planning Commission and the City Commission both held publicly noticed work sessions on the proposed Concept Plan; and

WHEREAS, the Planning Commission held three public hearings on the proposed amendments; and

WHEREAS, the Planning Commission, based on the oral and written testimony they received at the public hearings, adopted minor revisions to the amendments and unanimously recommended it be adopted; and

WHEREAS, in a project of this size and scope, additional editing and refinement will inevitably be necessary after adoption; and

WHEREAS, further amendments to the Oregon City Comprehensive Plan and Map and Zoning Code and Map will be necessary in order to implement the Park Place Concept Plan, and these Amendments will be considered and reviewed in a duly noticed Public Hearing which will be mailed to all Oregon City residents and interested parties in compliance with Measure 56e; and

WHEREAS, adopting the Park Place Concept Plan, and Amendments to the Comprehensive Plan and its ancillary documents is in the best interest of Oregon City to ensure that the goals and policies of the City can be realized,

NOW, THEREFORE, OREGON CITY ORDAINS AS FOLLOWS:

Section 1. The Park Place Concept Plan and Appendix, included as Attachment B of Item 6a on November 7, 2007, is hereby adopted as an Ancillary Document to the Oregon City Comprehensive Plan based on the findings contained in the Staff Report and Record for Planning File L 07-01.

Section 2. The Ancillary Documents to Oregon City Comprehensive Plan, as amended, included as Attachment C of Item 6a on November 7, 2007, are hereby adopted based on the findings contained in the Staff Report and Record for Planning File L 07-01.

Read for the first time at a regular meeting of the City Commission held on the 19th day of March 2008, and the foregoing ordinance was finally enacted by the Commission on this 2nd day of April 2008.

ALICE NORRIS, Mayor

ATTESTED to this 2nd day of April 2008

Nancy Ide
City Recorder

Park Place Concept Plan

March 12, 2008
Version 1.4

Park Place Concept Plan Project Advisory Committee (PAC)

Jerry Herrmann – Oregon City Natural Resource Committee
Joe Marek – Clackamas County Transportation
Nancy Walters – Oregon City Historic Review Board
Tim Powell – Oregon City Planning Commission
Mike Riseling – Oregon City School District
Melanie Paulo - Oregon City Transportation Advisory Committee
Gary DiCenzo – Housing Authority of Clackamas County
Ted Schumaker – Oregon City Park and Recreation Advisory Committee
Linda Royer – Livesay Road
Karen Kelly – South of Holcomb Boulevard
Carter Stein – North of Holcomb Boulevard
Michael Kehoe – Holly Lane
Rod Moxley – Holly Lane
Ralph Kiefer – Park Place Neighborhood Association
Charlie Bottita – South of Holcomb Boulevard
Jackie Hammond-Williams – Livesay Road
Doug Neeley – Oregon City Transportation Advisory Committee
Ron Stewart - Oregon City School District
Don Sligar - Oregon City Natural Resource Committee
Steve VanHaverbeke – Park Place Neighborhood Association
Roger Rada - Oregon City School District
Kent Ziegler – Development Interest
Nancy Yuill - Clackamas Community Land Trust
Gene Stringham - Holcomb Outlook CPO
Kami Kehoe – Holcomb Outlook CPO
Steve Morrow – Small Business Owner
Ray Valone - Metro
Ben Baldwin – Tri-Met
Lorraine Gonzales – Clackamas County Planning
Gail Curtis - ODOT
Andrew Johnson - ODOT
Stacy Humphrey – Department of Land Conservation and Development
Ron Weinman – Clackamas County Transportation
Karen Buehrig – Clackamas County Planning

Park Place Concept Plan

March 12, 2008

City of Oregon City

Christina Robertson-Gardiner
Pete Walter
Dan Drentlaw
Nancy Kraushaar

Metro

Raymond Valone

SERA

Tim Smith
Matt Arnold
David Berniker
Allison Wildman
Eric Ridenour
Michelle Marx
Robin Moodie

Johnson Gardner

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David Evans & Associates

Tom Puttman
Jennifer Hoglund
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Josh Cerra

Angelo Planning Group

Frank Angelo
Shayna Rehberg

Kittelson & Associates

Phill Worth
Andrew Cibor
Nick Foster

Cogan Owens Cogan

Matt Hastie
Ellie Fiore

EFA

Ray Bartlett

GRI

Tova Peltz

Acronyms

ADA	Americans with Disabilities Act
ADU	Accessory Dwelling Unit
CEG	Certified Engineering Geologist
CIP	Capital Improvement Plan
CRW	Clackamas River Water
EDU	Equivalent Dwelling Unit
EIS	Environmental Impact Statement
GIS	Geographic Information System
HCA	Habitat Conservation Area
HUD	U.S. Dept. of Housing and Urban Development
LF	Linear Foot
LID	Local Improvement District
LIDAR	Light Detection and Ranging
MDD	Maximum Daily Demand
MHI	Median Household Income
MSTIP	Major Streets Improvement Program
DOGAMI	Oregon Department of Geology and Mineral Industries
OCSD	Oregon City School District
ODOT	Oregon Department of transportation
ORS	Oregon Revised Statutes
PAC	Project Advisory Committee
PE	Public Engineer
SAFTEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SDC	System Development Charge
SFWB	South Fork Water Board
TSP	Transportation System Plan
TCSD	Tri-City Sewer District
UGB	Urban Growth Boundary
WWTP	Wastewater Treatment Plant

Table of Contents

1. Executive Summary

In 2002, nearly 500 acres of rural land located just east of Oregon City was brought into the Portland Metropolitan Urban Growth Boundary (UGB) to accommodate future growth. The Park Place Concept Plan was developed to help the City of Oregon City prepare for this growth by working with local citizens, area stakeholders, and local and regional jurisdictions to develop a common vision for the area. This vision provides a framework for growth that respects and augments the area's context, history, and natural systems. The Park Place Concept Plan emphasizes good urban design, multi-modal connectivity, opportunities for place-making and cultivating community, diversity, and, above all, a way to provide for future growth in a sustainable manner. Ultimately, the Park Place Concept Plan will ensure that the land brought in is planned in an efficient and sustainable manner that will maximize the use of the available lands while protecting the natural resources in the study area.

Key components of the Park Place Concept Plan include:

- Two primary north-south connections between Holcomb Boulevard and Redland Road (Swan Avenue and Holly Lane)
- Two distinct mixed-use neighborhoods (North Village and South Village) that accommodate 1,459 new dwelling units
- Neighborhood-oriented commercial nodes that integrate commercial land uses, residential land uses, and public open space
- An area for a new civic institution, like a library or community center
- An 8-10 acre community park and a 3-5 acre neighborhood park
- A mix of housing types and ranges of affordability
- An extensive system of off-street and on-street trails and pedestrian/bicycle connections
- Innovative, green on-site stormwater treatment methods
- Protected sensitive areas, including drainages and steep slopes
- Streets and buildings oriented for solar access
- The use of green edges to define neighborhoods and buffer developments
- Integration of parks and open spaces into existing and future neighborhoods

The following list describes these components and how elements of the Park Place Concept Plan comply with the established evaluation criteria (see page 71 in Appendix). These planning principles are based on the core values developed during the planning process and applicable local and regional community development standards and practices.

Community Design

Identifiable centers and green edges: The preferred alternative includes two discrete mixed-use/commercial centers, one on Livesay Road and another in the southern portion of the study area near Donovan Road supported by the enhanced transportation system. Each center provides for a mix of civic and commercial uses and spaces to serve the planning area. Edges around and between residential areas and existing

REPLINGER & ASSOCIATES LLC
TRANSPORTATION ENGINEERING

March 29, 2018

Mr. Pete Walter
City of Oregon City
PO Box 3040
Oregon City, OR 97045

SUBJECT: REVIEW OF TRAFFIC IMPACT STUDY – PARK PLACE ANNEXATION AND REZONING – AN17-04 & ZC17-05

Dear Mr. Walter:

In response to your request, I have reviewed the materials submitted in support of the proposed Park Place annexation to the city and rezoning. The relevant materials consisted of the Traffic Impact Study (TIS), dated August 2, 2017 and the TIS Addendum #1, dated March 27, 2018. The TIS was prepared under the direction of Michael T. Ard, PE of Lancaster Engineering. The TIS Addendum #1 was prepared under the direction of Todd Mobley, PE of Lancaster Engineering.

Addendum #1 provides new information related to a "worst case" development scenario that is calculated to produce significantly more traffic than that calculated in the original TIS. Addendum #1 presents updated operational analyses for the 16 study area intersections based on the higher trip generation assumed in Addendum #1. Addendum #1 provides some additional discussion of Clackamas County's operational standards. Addendum #1 provides a calculation of the operational performance of the intersection of Highway 213 and Redland Road assuming it is expanded as specified in Metro's adopted Regional Transportation Plan (RTP). Finally, Addendum #1 proposes a trip cap on the development proposed for this annexation.

For the purposes of this letter, the trip generation and operational analyses described in the original TIS are assumed to have been superseded by those in Addendum #1.

The proposed annexation and rezoning is for 92 acres located to the north and west of S Livesay Road and south of Holcomb Boulevard. Upon annexation, 87.5 acres of the property will be rezoned to R-5 zoning and 4.5 acres of the property will be rezoned to Neighborhood Commercial, in conformance with the city's Comprehensive Plan. The development scenario evaluated in the Addendum #1 was for 533 single-family dwellings and a combination of uses allowed under the neighborhood commercial zoning on 4.5 acres.

Addendum #1 provides a comparison of the future traffic operations for key intersections both with and without the proposed rezoning as a basis for assessing compliance with the

Transportation Planning Rule. Current county zoning is calculated to allow 11 single-family dwellings.

The TIS and Addendum #1 provide a basis upon which the annexation and rezoning proposal can be evaluated.

Comments

1. ***Study Area.*** The study addresses most of the appropriate intersections. The engineer evaluated traffic patterns and traffic volumes and evaluated sixteen locations. The key intersections were:

    1. Interstate 205 (I-205) southbound ramps at McLoughlin Boulevard (OR-99E);
    2. I-205 northbound ramps at OR-99E;
    3. 15th Street at OR-99E;
    4. 14th Street at OR-99E;
    5. Abernethy Road/S Holcomb Boulevard at Redland Road;
    6. Abernethy Road at Washington Street;
    7. 15th Street at Washington Street;
    8. 14th Street at Washington Street;
    9. 14th Street at Main Street;
    10. I-205 southbound ramps at Trails End Highway (OR-213);
    11. I-205 northbound ramps at OR-213;
    12. Prairie Schooner Way/Clackamas River Drive at OR-213;
    13. Redland Road at OR-213;
    14. Beavercreek Road at OR-213;
    15. Holly Lane at S Holcomb Boulevard (future intersection); and
    16. Holly Lane at S Redland Road.

    These intersections were identified for the study in consultation with city staff and the Oregon Department of Transportation (ODOT). The study area is appropriate.

    One additional intersection, Redland Road at Anchor Way, meets the city's criteria for study but was not analyzed in the original TIS or the Addendum. The TIS and Addendum, however, provide sufficient information at adjacent intersections that the absence of an operational analysis in the TIS is not a serious deficiency. A project to upgrade this intersection is included in Oregon City's Transportation System Plan (TSP). Additional discussion of this intersection is included in the Recommendations section of this letter.

2. ***Traffic Counts.*** Most of the traffic counts were conducted in January 2017 and May 2017. Some intersections were counted during 2015 and 2016 but were adjusted to 2017 conditions based on the difference observed at nearby intersections to account for regional growth during the intervening period. The adjustments appear adequate to

account for base year 2017 conditions at the intersections in #1, above. Traffic counts were conducted during the AM and PM peak periods. The base year traffic volumes appear reasonable.

3. Trip Generation. The TIS and Addendum #1 present information on trip generation under both current and proposed zoning. Under current county zoning, the engineer calculated 8 AM peak hour trips; 11 PM peak hour trips; and 104 total weekday trips.

The original TIS based the trip generation of the 4.5 acres of neighborhood commercial using the trip rates for 49,000 square foot shopping center using rates taken from the Institute of Transportation Engineers' *Trip Generation Manual – 9th Edition.* The Oregon Department of Transportation objected to this classification. In response, the applicant's engineer calculated the neighborhood commercial development five specific land uses individually. In Addendum #1, the engineer calculated the trip generation from 1) a 25,000 square-foot supermarket, 2) a 2,000 square foot convenience market, 3) an 8,000 square-foot pharmacy, 4) a 5,000 square-foot high-turnover restaurant, and 5) a 2,000 square-foot fast-food restaurant. For these land uses, the engineer used appropriate rates from ITE's *Trip Generation Manual.* He accounted for internal trips (those that remain within the zone, and pass-by trips for the neighborhood commercial area.

As presented in Addendum #1, the engineer calculated the combination of residences and five individual land uses in the 4.5-acre neighborhood commercial would produce 538 AM peak hour trips; 679 PM peak hour trips; and 7,406 total weekday trips that need to be accounted for on the major street network.

ODOT staff has raised concerns that the methodology used by the applicant's engineer underestimates the total traffic impact by using reductions for both pass-by trips and internal trips. In response to ODOT's concern, the applicant is proposing a trip cap based on the values cited above. The use of a trip cap, as proposed in the conditions of approval, require the applicant to undertake an additional analysis showing compliance with the Transportation Planning Rule if the proposed development exceeded the specified level. This analysis would be required to assess compliance with the Transportation Planning Rule.

4. Trip Distribution. The engineer's trip distribution shows traffic using a variety of routes and distribution to major regional facilities as follows:

- Approximately 25 percent of site trips will travel to/from the northeast along I-205;
- Approximately 15 percent of site trips will travel to/from the southwest along I-205;

- Approximately 13 percent of site trips will travel to/from the southwest along Washington Street;
- Approximately 9 percent of site trips will travel to/from the east along S Holcomb Boulevard;
- Approximately 9 percent of site trips will travel to/from the east along S Redland Road;
- Approximately 8 percent of site trips will travel to/from the north along OR-99E;
- Approximately 4 percent of site trips will travel to/from the south along S Holly Lane;
- Approximately 3 percent of site trips will travel to/from the southwest along Main Street;
- Approximately 3 percent of site trips will travel to/from the southwest along S Anchor Way;
- Approximately 2 percent of site trips will travel to/from the south along OR-213;
- Approximately 1.5 percent of site trips will travel to/from the west along Beavercreek Road;
- Approximately 1 percent of site trips will travel to/from the southwest along OR-99E;
- Approximately 0.5 percent of site trips will travel to/from the east along Beavercreek Road; and
- Approximately 6 percent of site trips will travel to/from locales within the immediate vicinity, including surrounding residential areas, Holcomb Elementary School, and other land-uses such as Steve's Marketplace and the Quick Stop Market.

For traffic to and from the subject area, Redland Road is calculated to be the most heavily utilized route with a lesser amount of traffic using Holcomb Boulevard.

The trip distribution seems reasonable.

5. Traffic Growth. The engineer calculated 2035 traffic volumes using several factors. The predicted increase in total peak hour trips specified in the Transportation System Plan (TSP) were used to develop an annual traffic volume increase applicable to local streets. ODOT's Future Volume Tables were used to calculate increases in traffic on Highway 213 and Highway 99E. This methodology is likely to produce somewhat different future year volumes than those developed from a regional transportation model, as used in the TSP, for example, but the methodology does allow a good assessment of the impact of the proposed zone change with assumed development of the subject property.

The engineer also accounted for the effect of the North Holly Lane Extension between Holcomb Boulevard and Redland Road, project D48 in the TSP. This new facility is predicted to cause some adjustment to existing traffic patterns by allowing traffic from Holcomb Boulevard to go south to Redland Road and beyond.

It is worth noting that transportation analysis zone (TAZ) 726, which includes the subject property, is predicted in the TSP to experience an increase of 397 dwelling units prior to 2035. The development of the subject property as assumed in the TIS is somewhat more intense than assumed in the TSP.

6. ***Analysis.*** Traffic volumes were calculated for the intersections described in #1, above. At each location, the level of service (LOS), delay calculations, and the volume-to-capacity ratio (v/c) were provided to assess operations relative to the ODOT and city's operational standards. The analysis was undertaken for the AM and PM peak hours and included year 2017 existing conditions, 2035 background conditions, and year 2035 traffic conditions with the proposed zone change.

   According to the TIS and Addendum #1, six intersections are predicted to fail to meet the applicable performance standards by 2035, the TSP planning horizon year. At some intersections, the predicted failure is attributable to growth in background traffic with minimal effect from the proposed rezoning. In other cases, some degradation in performance is significant and is attributable to the rezoning. Each of these is discussed below.

   At the I-205/99E interchange, both the northbound and southbound ramp terminals are predicted to fail to meet ODOT performance standards by 2035 with or without the proposed rezoning and development. This prediction is consistent with the TSP, which included projects to improve the southbound ramp terminal (TSP Project D75) and the northbound ramp terminal (TSP Project D76). Addendum #1 predicts that the v/c at the southbound ramp terminal would be 1.21 during the AM peak hour and 1.13 during the PM peak hour with or without the annexation and rezoning. The TIS predicts that the v/c at the northbound ramp terminal would be 1.33 during the AM peak hour and 1.17 during the PM peak hour with or without the annexation and rezoning. The failure of these ramp terminals to meet performance standards is attributable to background traffic growth. With dual turn lanes and ramp widening, both ramp terminals are predicted to operate within adopted performance standards.

   According to Addendum #1, the impact of the zone change and development of the subject property has virtually no effect on the intersection of Highway 213/Beavercreek Road. The predicted increase in traffic volumes from potential development of the 92 acres is only 21 trips during the AM peak hour and 27 trips during the PM peak hour. The calculated v/c is 1.01 during the AM peak hour with or without the annexation and development. The calculated v/c is 1.06 during the PM peak hour with or without the

annexation and development. A project to improve the operation of this intersection was identified in the 2017 Highway 213 Corridor Alternative Mobility Targets study. The project cost was estimated to be $1.5 million. Inclusion of this project in the TSP is anticipated with an amendment planned for 2018.

The intersection of Highway 99E/14th Street is also predicted to operate below adopted performance standards in 2035. Under both 2035 background conditions and 2035 with the annexation, the intersection is predicted to operate at a v/c of 1.14 during the AM peak hour. The long delays and lengthy queues impact adjacent intersections including Main Street/14th Street. Washington Street/14th Street is also predicted to fail to meet operational standard and is calculated to operate at 1.06 and 1.17 under 2035 background conditions during the AM and PM peak hours respectively. With the increased traffic associated with the annexation, the performance is expected to degrade to v/c of 1.12 and 1.26 for the AM and PM peak hours respectively. To address the operational problems at these intersections, the TSP identified Projects D7, D8, and D13. These involve reconfiguration of several streets including 14th Street and 15th Street and signal modifications.

The intersection of Abernethy/Holcomb/Redland Road was predicted to operate at a v/c of 1.14 during the PM peak hour. In the TIS, the engineer explored mitigation concepts that could be used to improve the performance of the Redland Road/Holcomb Boulevard/Abernethy Road intersection. He concludes that adding an eastbound right turn lane to the Abernethy Road approach would improve the intersection's performance to a v/c of 0.93 during the PM peak hour. This offers a feasible, potential solution that would allow the intersection operate better than it would in its current configuration. Additional analysis of this concept could lead to inclusion of a project at this location in the TSP.

The engineer also analyzed two other intersections that are important: Redland Road/Holly Lane and Holcomb Boulevard/Holly Lane. The former is currently a three-leg, T-intersection to which the North Holly Lane Extension would connect; the second does not exist yet. Both are identified in the TSP for future roundabouts. The Redland/Holly intersection is identified as TSP Project D36; the Holcomb/Holly intersection is TSP Project D43. The engineer calculated that the Holcomb/Holly intersection would operate acceptably as a stop-controlled intersection or as a roundabout. He calculated that the Redland/Holly intersection would meet warrants for left-turn lanes on both Redland approaches and it would meet warrants for installation of a traffic signal by 2035. He also calculated that it would operate acceptably either as a signal-controlled intersection or as a roundabout as specified in the TSP.

In its current configuration, the intersection of Highway 213/Redland Road is also predicted to fail to meet intersection performance standards during the PM peak hour in 2035 with or without the proposed rezoning. The predicted performance is worse with the

rezoning. The calculated v/c during the PM peak hour is 1.19 under background conditions and 1.24 with the development. The TSP proposed a solution for the predicted failure to achieve operational standards at the intersection of Highway 213/Redland Road. The principal capacity-increasing feature of this project was increasing the number of through lanes on Highway 213 in both the northbound and southbound directions. The engineer calculated that the PM peak hour v/c would decrease to 0.96, easily meeting the adopted performance standard. The Highway 213/Redland Road project, identified in the TSP as project D79, was listed among the "not likely to be funded" category. It is, however, listed in the financially-constrained project list in the Regional Transportation Plan.

The engineer's operational analysis and explanation of potential mitigation measures appears appropriate.

7. ***Crash Information.*** The TIS provides crash information for the five-year period from 2011 through 2015. Two intersections experienced a crash rate in excess of 1.0 crashes per million entering vehicles. These two intersections are discussed below.

   The crash history at the intersection of Highway 213/Beavercreek Road puts it in the top ten percent of high crash locations in the state. The engineer summarizes the crash history. Rear-end crashes are the most common type. The engineer recommended installation of a queue warning system and notes that the TSP includes a project (D14) that would involve a queue warning system. This project is in the likely to be funded category. The very few numbers of vehicles added to the intersection from the subject annexation and development have no measurable effect on the need for implementation of this project or any other safety mitigation measures at the Highway 213/Beavercreek Road intersection.

   The intersection of Main Street and 14th Street experienced a crash rate of just under 1.5 reported crashes per million entering vehicles. The high crash rate at this intersection has been previously documented. Many of the crashes at this intersection are susceptible to correction by conversion to all-way stop-control. As noted above, TSP projects D7 and D8 would involve modification of this intersection.

   The engineer supports the implementation of the queue warning system at Beavercreek/213 (TSP Project D14) and conversion of Main Street/14th Street (TSP Project D7). There is no reason to expect that the proposed annexation would have a disproportionate effect on the safety of the transportation system.

8. ***Transportation Planning Rule Analysis.*** Because the proposed annexation also involves rezoning of the property to R-10, a TPR analysis is also included. The analysis is predicated on the development of the land at a density that would allow 533 single-family dwellings and 4.5 acres of neighborhood commercial establishments consisting of

1) a 25,000 square-foot supermarket, 2) a 2,000 square foot convenience market, 3) an 8,000 square-foot pharmacy, 4) a 5,000 square-foot high-turnover restaurant, and 5) a 2,000 square-foot fast-food restaurant. The engineer states that the proposal does not change the functional classification of any existing or planned transportation facility and does not alter the standards for implementing the functional classification system.

The applicant's engineer further recommends a trip cap for the entire 92-acre annexation property. He recommends limiting the total trip generation for the residential and commercial property to 538 AM peak hour trips; 679 PM peak hour trips; and 7,406 total weekday trips. Exceeding any of these values under any development proposal would trigger the requirement for a new analysis showing compliance with the Transportation Planning Rule.

As discussed in #6, above, the annexation and development of the subject property is predicted to degrade the performance at key intersections such that these intersections would not meet applicable performance standards. The applicant's participation in the funding of projects identified in the TSP or from other analyses area proposed to mitigate for these impacts.

9. ***Conclusions and Recommendations.*** As stated in the TIS, several intersections are predicted to fail to meet applicable performance standards. The engineer recognizes that conditions may be necessary to limit development to that allowed under current zoning or development agreements provide for mitigation in proportion to the development's impacts.

Conclusions and Recommendations

I find that the TIS and Addendum #1 provide an adequate basis upon which to assess the impacts of the proposed annexation and rezoning. I agree that the proposal does not cause the need for change in the functional classification of any existing or planned facility.

I concur with the engineer's analysis concluding that key intersections will fail to meet adopted performance standards at the following intersections:

- I-205/99E Northbound Ramp Terminal
- I-205/99E Southbound Ramp Terminal
- Highway 99E/14th Street
- 14th Street/Washington Street
- Beavercreek/Highway 213
- Redland Road/Holcomb Boulevard/Abernethy Road

In addition, the TIS and Addendum #1 provide additional evidence of the need to implement TSP projects at the following intersections:

- Highway 213/Redland Road
- Redland Road/Anchor Way
- Main Street/14th Street
- Holly Lane/Holcomb Boulevard
- Holly Lane/Redland Road

In addition, poor operating performance is predicted at the intersection of Redland Road/Holcomb Boulevard/Abernethy Road. The engineer's analysis indicates that the addition of an eastbound right-turn lane would significantly improve the performance of the intersection.

Recommendations

I conclude that the applicant's analysis is sufficient to judge the impact of the proposed annexation and rezoning and its long-term impact and relationship to Oregon City's adopted TSP. The analysis clearly illustrates the need to implement several TSP projects to support and accommodate the planned development for the area subject of this land use action.

This analysis does not, however, provide sufficient information to determine when specific development proposals (e.g. subdivisions of various sizes or retail businesses) will require implementation of TSP projects, construction of local roads, or other mitigation. Such analyses are required under city code when specific development proposals are brought forward. Due to the magnitude (approximately 92 acres) of the current land use action (annexation and rezoning), a master plan performed in conformance with OCMC Chapter 17.65 is appropriate. Among other things, the applicant will need to develop a phasing plan. Under OCMC 17.65 the transportation impacts are assessed for each phase of the development while taking into account the regional traffic growth that is expected during each phase of the applicant's master plan. The applicant must commit to specific implementation measures in connection with each phase.

With regard to the proposed annexation and zone change, I recommend the following conditions of approval:

A. A trip cap is established for the subject property equal to 538 AM peak hour trips; 679 PM peak hour trips; and 7,406 total weekday trips. Any proposal involving development exceeding this trip cap would require additional analysis showing compliance with the Transportation Planning Rule, OAR660-12-060.

B. Prior to any development activity of parcels subject to this land use action, the applicant shall prepare a General Development Plan or Detailed Development Plan for the subject property consistent with the provisions of OCMC Chapter 17.65. The applicant shall address transportation issues including, but not limited to, the land uses, phasing of development, and phasing of transportation infrastructure including both TSP and non-TSP projects.

C. At such time as a Detailed Development Plan is prepared or in connection with specific development proposals for individual subdivisions or parcels, the applicant will need to submit additional materials to address specific requirements outlined in the city's *Guidelines for Transportation Impact Analyses*. These include, but are not limited to requirements associated with intersection spacing, sight distance, turn lanes, and frontage improvements.

D. With regard to the mitigation for off-site transportation impacts of proposed annexation and rezoning, I recommend the following conditions of approval be carried forward to apply to the required General Development Plan and Detailed Development Plan:

i. The developer shall participate in the funding of improvements for the I-205/OR-99E ramp terminal projects (TSP Projects D75 and D76) in proportion to the development's traffic volumes as a percentage of total year 2035 intersection volumes from the TSP. The project cost for D75 is $2,990,000. Based on this methodology and the preliminary PM peak hour trip generation from the proposed development, the development accounts for 0.96 percent of the 2035 volume and the development's share of the project is $28,700. The project cost of D76 is $1,990,000. The development accounts for 0.87 percent of the 2035 volume and the development's share is $17,300.

ii. The developer shall participate in the funding of improvements for the Main Street/14th Street improvements (TSP Projects D7 and D8) in proportion to the development's traffic volume as a percentage of the predicted 2035 traffic volume at the intersection calculated in the TSP. The cost of these projects as listed in the 2017 TSDC Project List is $845,000 and $960,000, respectively. Based on this methodology and the preliminary PM peak hour trip generation from the proposed development, the development accounts for 3.63 percent of the 2035 volume and the development's share of the project is $65,500.

iii. The developer shall participate in the funding of improvements for the Abernethy/Holcomb/Redland intersection in proportion to the development's traffic volume as a percentage of the predicted 2035 traffic volume. No project is currently identified in the TSP. The project concept is to provide an additional lane on the eastbound approach; it may involve restriping or widening and signal modifications. No project cost is available at this time. Based on this

methodology and the preliminary PM peak hour trip generation from the proposed development, the development accounts for 19.7 percent of the 2035 volume.

iv. The developer shall participate in the funding of improvements for the intersection of OR213/Redland Road (TSP Project D79) in proportion to the development's traffic volume as a percentage of the predicted 2035 traffic volume at the intersection calculated in the TSP. The 2017 TSDC Project List shows a project cost of $10,105,000. Based on this methodology and the preliminary PM peak hour trip generation from the proposed development, the development accounts for 4.77 percent of the 2035 volume and the development's share of the project is $482,000.

v. The developer shall participate in the funding of improvements for the Holly Lane/Holcomb Boulevard intersection (TSP Project D43) in proportion to the development's traffic volume as a percentage of the predicted 2035 traffic volume. Project D43 is a roundabout with an estimated project cost $1,040,000 according to the 2017 TSDC Project List. Based on this methodology and the preliminary PM peak hour trip generation from the proposed development, the development accounts for 38.1 percent of the 2035 volume and the development's share of the project is $396,000.

vi. The developer shall participate in the funding of improvements for the Holly Lane/Redland Road intersection (TSP Project D36) in proportion to the development's traffic volume as a percentage of the predicted 2035 traffic volume. Project D36 is a roundabout with an estimated project cost of $1,040,000 according to the 2017 TSDC Project List. Based on this methodology and the preliminary PM peak hour trip generation from the proposed development, the development accounts for 28.3 percent of the 2035 volume and the development's share of the project is $204,000.

vii. The developer shall participate in the funding of improvements for the Highway 213/Beavercreek Road intersection in proportion to the development's traffic volume as a percentage of the predicted 2035 traffic volume. A project to add a right-turn lane on westbound Beavercreek Road and a merge lane on northbound Highway 213 was identified in the July 2017 Highway 213 Corridor Alternative Mobility Study. The project's cost was estimated at $1.5 million. Inclusion of this project in the TSP is anticipated by an amendment planned during 2018. Based on this methodology and the preliminary PM peak hour trip generation from the proposed development, the development accounts for 0.35 percent of the 2035 volume and the development's share of the project is $5,200.

viii. The applicant's preliminary proportionate share for project listed above as conditions of approval are based on the total trip generation for the annexation property using the proposed trip cap of 538 AM peak hour trips; 679 PM peak hour trips; and 7,406 total weekday trips. A less intense development is likely to decrease the applicant's share of projects as calculated above. A more intense development, in addition to requiring analysis showing compliance with the Transportation Planning Rule, is likely to increase the applicant's share of projects as calculated above.

ix. The applicant's final share of project costs may be modified as necessary when a Master Plan is approved to reflect any a modification of the development's trip generation or a change in project costs resulting from revisions to project costs associated with an updates to the City's Transportation System Plan or Capital Improvement Program.

x. The absence of project in this condition of approval does not exempt the applicant from evaluating a project or participating in funding of such projects.

If you have any questions or need any further information concerning this review, please contact me at replinger-associates@comcast.net.

Sincerely,

John Replinger, PE
Principal

Oregon City\2017\AN17-04v4

Technical Memorandum

LANCASTER
ENGINEERING
321 SW 4th Ave., Suite 400
Portland, OR 97204
phone: 503.248.0313
fax: 503.248.9251
lancasterengineering.com

To: Mark Handris, Icon Construction & Development

From: Daniel Stumpf, EI
Todd Mobley, PE

Date: March 27, 2018

Subject: Park Place Annexation:
Transportation Impact Study Addendum #1

Introduction

This memorandum is written as an addendum to the original *Park Place Annexation Transportation Impact Study* (TIS), dated August 2nd, 2017. Oregon Department of Transportation (ODOT) staff have requested that trip generation assumptions within the TIS be revised. Accordingly, this addendum re-assesses site trip generation and includes capacity analyses for year 2035 build-out conditions reflecting this change in projected trips generated.

A draft version of this memorandum was distributed to ODOT and City of Oregon City staff in mid-March. This final version of the memo incorporates revisions made by public agency review of the draft report. This includes:

1. Explanation of the assumed number of homes on the site,
2. Additional discussion of pass-by trips and the use of internal trip reduction,
3. Explanation of ODOT's recent interpretation regarding the application of intersection performance standards,
4. A proposal to establish a trip cap for the subject site.

Trip Generation

Reasonable Worst-Case Development Scenarios

The subject site consists of 34.57 acres currently zoned RRFF-5 and 57.43 acres currently zoned Future-Use 10-acre minimum (FU-10) under Clackamas County. Upon annexation of the site into the Oregon City, the area will be rezoned for 87.5 acres of residential use under R-5 zoning with a minimum lot size of 5,000 square-feet and 4.5 acres of Neighborhood Commercial (NC) zoning.

Under the existing Clackamas County zoning, the site can be developed with up to 11 lots with properties zoned RRFF-5 requiring a minimum lot size of 5 acres and properties zoned FU-10 having a minimum lot size of 10 acres. Each lot may be developed with a single-family home.

Under the proposed zoning, the project site can be developed with up to 533 residential lots in the area zoned R-5[1], as well as the 4.5 acres of neighborhood commercial space. The lots zoned R-5 could each hold a single-family dwelling, and the area zoned NC can accommodate up to 42,000 square-feet of gross floor area for neighborhood commercial uses.

Based on the comparison between the "reasonable worst-case" development scenarios for the existing and proposed zonings, annexation of the subject properties could result in a net increase of up to 522 new homes, as well as 42,000 square-feet of commercial uses.

Trip Generation Methodology

To estimate the number of trips that could be generated under the existing and proposed zones, data from the *TRIP GENERATION MANUAL*[2] was used. The trip projections for the residential uses was determined using data from land-use code 210, *Single-Family Detached Housing*, and is based on the number of dwelling units. Based on correspondence with ODOT and Oregon City staff, trip generation for the NC zone was determined utilizing the following land-use codes:

- 850 – *Supermarket*, 25,000 square-feet;
- 851 – *Convenience Market (Open 24 Hours)*, 2,000 square-feet;
- 881 – *Pharmacy/Drugstore with Drive-Through Window*, 8,000 square-feet;
- 932 – *High-Turnover (Sit-Down) Restaurant*, 5,000 square-feet; and
- 934 – *Fast-Food Restaurant with Drive-Through Window*, 2,000 square-feet.

Given the variety of land-uses that could be developed within the project site (including residential, retail, and restaurant land-uses), some trips generated will be shared or internally captured by other future developed uses and will not impact the nearby transportation system. Using the NCHRP Report 684, internal capture rates for the "reasonable worst-case" development scenario under the proposed zoning were calculated for each land-use during the morning and evening peak hours.

The retail and restaurant land-uses of the "reasonable worst-case" development scenario under the proposed zoning are expected to attract pass-by and diverted trips to the site. Pass-by trips are trips that leave the adjacent roadway to patronize a land-use and then continue in their original direction of travel. Similar to

[1] See attached calculation of residential density from Rick Givens, Planning Consultant, dated March 21, 2018
[2] Institute of Transportation Engineers (ITE), *TRIP GENERATION MANUAL*, 9th Edition, 2012.

pass-by trips, diverted trips are trips that divert from a nearby roadway not adjacent to the site to patronize a land-use before continuing to their original destination. Pass-by trips do not add additional vehicles to the surrounding transportation system; however, they do add additional turning movements at site access intersections. Diverted trips may add turning movements at both site accesses and other nearby intersections.

For the purposes of this analysis, diverted trips were treated as primary trips while pass-by trip rates were determined using data provided in the *TRIP GENERATION HANDBOOK*[3]. Data from land-use codes 850, 851, 881, 932, and 934 were used to determine pass-by rates for the retail and restaurant portions of the "reasonable worst-case" development scenario under the proposed zone. It is assumed that the weekday pass-by rates would approximately match the evening peak hour rates. If no data was provided for a specific land-use during the morning peak hour, it was assumed the morning rate would similarly match the evening peak hour rate.

The calculations indicate that the proposed annexation and zone change could result in up to 538 additional trips during the morning peak hour, with 184 entering and 534 exiting the site. During the evening peak hour, 679 additional trips could be expected, with 412 entering and 267 exiting the site. A daily increase of 7,406 trips is projected, with half entering and half exiting the site.

A summary of the potential trip generation under the proposed zoning is provided in Table 1 on the following page. Table 2 provides a comparison between the trip generation potential under the existing and proposed zones. Detailed trip generation worksheets are included in the attached technical appendix.

ODOT staff has disagreed with the use of both pass-by and internal trips. Regarding this practice, the *TRIP GENERATION HANDBOOK* states on page 63:

> *The application of pass-by trip reductions presented in Chapter 10 should likewise be applicable to mixed-use sites. However, none of the internal trips can be of a pass-by nature because they do not travel on the adjacent (external) street system.* ***Pass-by trip percentages are applicable only to trips that enter or exit the adjacent street system.*** *(emphasis not added, bold text is included in the document referenced)*

The trip generation calculations in the original TIS and in this addendum were prepared in strict compliance with common industry practice and with the guidance from the handbook.

[3] Institute of Transportation Engineers (ITE), *TRIP GENERATION HANDBOOK*, 3rd Edition, 2014.

Table 1 – Trip Generation Summary (Proposed Zoning)

	ITE Code	Size & Rate	Morning Peak Hour			Evening Peak Hour			Weekday Total
			Enter	Exit	Total	Enter	Exit	Total	
Single-Family Homes	210	533 units	100	300	400	299	175	474	4,896
Internal Trips		*12% (13%)*	*24*	*24*	*48*	*31*	*31*	*62*	*636*
External Trips			76	276	352	268	144	412	4,260
Supermarket	850	25 ksf	53	32	85	121	116	237	2,556
Internal Trips		*12% (13%)*	*5*	*5*	*10*	*15*	*15*	*30*	*332*
External Trips			48	27	75	106	101	207	2,224
Pass-by Trips		*36% (36%)*	*14*	*14*	*28*	*37*	*37*	*74*	*800*
Primary Trips			34	13	47	69	64	133	1,424
Convenience Market (24 Hr)	851	2 ksf	67	67	134	54	51	105	1,476
Internal Trips		*12% (13%)*	*8*	*8*	*16*	*7*	*7*	*14*	*192*
External Trips			59	59	118	47	44	91	1,284
Pass-by Trips		*51% (51%)*	*30*	*30*	*60*	*23*	*23*	*46*	*654*
Primary Trips			29	29	58	24	21	45	630
Pharmacy w/ Drive-Thru	881	8 ksf	15	13	28	40	39	79	776
Internal Trips		*12% (13%)*	*2*	*2*	*4*	*5*	*5*	*10*	*100*
External Trips			13	11	24	35	34	69	676
Pass-by Trips		*49% (49%)*	*6*	*6*	*12*	*17*	*17*	*34*	*332*
Primary Trips			7	5	12	18	17	35	344
High-Turnover Restaurant	932	5 ksf	30	24	54	29	20	49	636
Internal Trips		*12% (13%)*	*3*	*3*	*6*	*3*	*3*	*6*	*82*
External Trips			27	21	48	26	17	43	554
Pass-by Trips		*43% (43%)*	*10*	*10*	*20*	*9*	*9*	*18*	*238*
Primary Trips			17	11	28	17	8	25	316
Fast-Food Rest w/ Drive-Thru	934	2 ksf	46	45	91	34	31	65	992
Internal Trips		*12% (13%)*	*5*	*5*	*10*	*4*	*4*	*8*	*128*
External Trips			41	40	81	30	27	57	864
Pass-by Trips		*49% (50%)*	*20*	*20*	*40*	*14*	*14*	*28*	*432*
Primary Trips			21	20	41	16	13	29	432
Total Vehicular Trips			**311**	**481**	**792**	**577**	**432**	**1,009**	**11,332**
Total Internal Trips			***47***	***47***	***94***	***65***	***65***	***130***	***1,470***
Total External Trips			**264**	**434**	**698**	**512**	**367**	**879**	**9,862**
Total Pass-by Trips			***80***	***80***	***160***	***100***	***100***	***200***	***2,456***
Net New Site Trips			**184**	**354**	**538**	**412**	**267**	**679**	**7,406**

Note: AM (PM and ADT).

Table 2 – Trip Generation Comparison (Existing and Proposed Zoning)

	Morning Peak Hour			Evening Peak Hour			Weekday Total
	Enter	Exit	Total	Enter	Exit	Total	
Existing Zoning Trips	2	6	8	7	4	11	104
Proposed Zoning Trips	184	354	538	412	267	679	7,406
Net Increase in Site Trips	**182**	**348**	**530**	**405**	**263**	**668**	**7,302**

Operational Analysis

To reflect the change in projected site trip generation, the TIS capacity analysis was revised for the 2035 build-out scenarios during the morning and evening peak hours. The analysis was conducted for each of the study intersections per the signalized and unsignalized intersection analysis methodologies in the *HIGHWAY CAPACITY MANUAL* (HCM)[4]. The level of service (LOS) of an intersection can range from LOS A, which indicates very little or no delay experienced by vehicles, to LOS F, which indicates a high degree of congestion and delay. The volume-to-capacity (v/c) ratio is a measure that compares the traffic volumes (demand) against the available capacity of an intersection.

Oregon City Capacity Standards

Per Section 12.04.205 of the *Oregon City Municipal Code*, the following minimum acceptable operation standards apply when evaluating traffic impacts associated with the proposed annexation. This language is quoted directly from the City's code:

- For intersections within the Regional Center (Downtown Community Plan), a maximum v/c ratio of 1.10 is permissible during the peak hour, provided that during the second hour the v/c ratio is 0.99 or less. For signalized intersections, these standards apply to the intersection as a whole. For unsignalized intersections, these standards apply to the major-street approaches only. There is no performance standard for unsignalized minor-street approaches.
- For intersections outside the Regional Center but designated on the Arterial and Throughway Network, a maximum v/c ratio of 0.99 shall be maintained. This standard applies to signalized

[4] Transportation Research Board, *HIGHWAY CAPACITY MANUAL 2000* and *2010*.

intersections as a whole, and to the major-street approaches at unsignalized intersections. There is no performance standard for unsignalized minor-street approaches.

- Signalized intersections located outside the Regional Center boundaries and not designated on the Arterial and Throughway Network shall operate at LOS D or better for the intersection as a whole, no approach shall operate worse than LOS E, and the intersection shall operate with a v/c ratio no higher than 1.0 for the sum of critical movements.
- Unsignalized intersections located outside the Regional Center boundaries and not designated on the Arterial and Throughway Network shall operate at LOS E or better for all approaches serving more than 20 peak hour vehicles. LOS F will be tolerated at movements serving no more than 20 vehicles during the peak hour.
- Until the city adopts new performance measures that identify alternative mobility targets, the city exempts proposed developments that are permitted, either conditionally, outright, or through a detailed development master plan approval from compliance with the above mobility standards for identified intersections, including the intersections of OR-99E at the I-205 northbound and southbound ramp terminals, and the intersection of Beavercreek Road at OR-213.

According to Oregon City's Downtown Community Plan, the Regional Center encompasses all of the study intersections except Beavercreek Road at OR-213, the future Holly Lane at S Holcomb Boulevard, and Holly Lane at S Redland Road.

ODOT staff has recently made the interpretation that trips generated outside of a Regional Center, which impact intersections within a Regional Center, are subject to a maximum v/c ratio of 0.99 and not 1.10 during the peak hour. It has not been made clear by ODOT how a state highway intersection within the Regional Center could be analyzed with a mix of vehicles that carry separate applicable performance standards. However, this issue does not change the findings or recommendations contained within the original TIS or this addendum.

The future intersection of Holly Lane at S Holcomb Boulevard will be an unsignalized intersection currently not designated on the Arterial and Throughway Network whereas Holly Lane at S Redland Road is designated on the Arterial and Throughway Network.

Clackamas County Capacity Standards

The roadways of Abernethy Road and S Redland Road operate under the jurisdiction of Clackamas County; therefore, intersections along these roadways must operate acceptably per County standards. According to the *Clackamas County Comprehensive Plan, Chapter 5 – Transportation System Plan*, the following operational standards apply to study intersections along these roadways:

- Urban intersections within Town Centers (Incorporated Cities) are required to operate with a v/c ratio of 1.10 or less during the first hour of the evening peak of traffic and with a v/c ratio of 0.99 or less during the second hour.
- Rural intersections inside a City's Urban Growth Boundary are required to operate with a v/c ratio between 0.80 to 0.95 during the evening peak hour.

Intersection Capacity Analysis

The v/c, delay, and LOS results of the capacity analysis are shown in Table 3 and Table 4 for the morning and evening peak hours. The v/c ratio for two-way stop-controlled intersections represent that highest reported v/c for the major-street approach while LOS and delay are representative of the minor-street approach lane experiencing the highest delay. The reported results are generally based on the analysis methodologies provided in the 2010 HCM; however, for intersections where the 2010 methodology fails to report major-street v/c ratio or does not provide a v/c ratio for a signalized intersection, v/c ratios were evaluated using the HCM 2000 methodologies.

Additionally, the I-205 southbound ramps intersection at OR-213 was analyzed as two separate intersections due to its unique configuration that includes two distinct stop bars for southbound vehicles. Based on the capacity analysis, the highest average control delay experienced for any intersection approach was determined to be the eastbound left-turn from the I-205 off-ramp. The highest projected v/c ratio was for the northbound approach.

Detailed calculations as well as tables showing the relationship between delay and LOS are included in the appendix to this report.

Table 3 – Capacity Analysis Summary (Intersections 1 – 8)

	Morning Peak Hour			Evening Peak Hour		
	LOS	Delay (s)	v/c	LOS	Delay (s)	v/c
1. I-205 SB Ramps at OR-99E						
2035 Planning Horizon (w/o Annexation Trips)	F	> 80	**1.21**	E	71	**1.13**
2035 Planning Horizon (w/ Annexation Trips)	F	> 80	**1.21**	E	71	**1.13**
2. I-205 NB Ramps at OR-99E						
2035 Planning Horizon (w/o Annexation Trips)	F	> 80	**1.33**	E	57	**1.17**
2035 Planning Horizon (w/ Annexation Trips)	F	> 80	**1.33**	E	57	**1.17**
3. 15th St at OR-99E						
2035 Planning Horizon (w/o Annexation Trips)	F	54	0.92	E	43	0.78
2035 Planning Horizon (w/ Annexation Trips)	F	70	0.92	F	52	0.78
4. 14th St at OR-99E						
2035 Planning Horizon (w/o Annexation Trips)	E	62	**1.14**	C	27	0.94
2035 Planning Horizon (w/ Annexation Trips)	E	60	**1.14**	C	32	0.96
5. Abernethy Rd/S Holcomb Blvd at Redland Rd						
2035 Planning Horizon (w/o Annexation Trips)	C	30	0.79	D	41	0.91
2035 Planning Horizon (w/ Annexation Trips)	D	44	0.90	F	84	**1.14**
6. Abernethy Rd at Washington St						
2035 Planning Horizon (w/o Annexation Trips)	C	21	0.85	A	9	0.61
2035 Planning Horizon (w/ Annexation Trips)	C	28	0.93	B	11	0.68
7. 15th St at Washington St						
2035 Planning Horizon (w/o Annexation Trips)	B	19	0.81	B	18	0.73
2035 Planning Horizon (w/ Annexation Trips)	C	25	0.88	C	22	0.78
8. 14th St at Washington St						
2035 Planning Horizon (w/o Annexation Trips)	E	56	1.06	E	70	**1.17**
2035 Planning Horizon (w/ Annexation Trips)	E	68	**1.12**	F	> 80	**1.27**

BOLDED results exceed Oregon City and Clackamas County operational standards.

Table 4 – Capacity Analysis Summary (Intersections 9 - 16)

	Morning Peak Hour			Evening Peak Hour		
	LOS	Delay (s)	v/c	LOS	Delay (s)	v/c
9. 14th St at Main St						
2035 Planning Horizon (w/o Annexation Trips)	F	> 80	0.25	F	106	0.35
2035 Planning Horizon (w/ Annexation Trips)	F	> 80	0.26	F	131	0.37
10. I-205 SB Ramps at OR-213						
2035 Planning Horizon (w/o Annexation Trips)	F	> 80	0.68	E	43	0.92
2035 Planning Horizon (w/ Annexation Trips)	F	> 80	0.71	F	51	0.95
12. Prairie Schooner/Clackamas River Dr at OR-213						
2035 Planning Horizon (w/o Annexation Trips)	B	13	0.87	B	14	0.92
2035 Planning Horizon (w/ Annexation Trips)	B	14	0.90	B	16	0.96
13. Redland Rd at OR-213						
2035 Planning Horizon (w/o Annexation Trips)	C	33	1.01	E	77	**1.19**
2035 Planning Horizon (w/ Annexation Trips)	D	42	1.06	F	> 80	**1.24**
Mitigated Conditions (Add 1 NB & SB Th Lane)	C	24	0.81	C	28	0.96
14. Beavercreek Rd at OR-213						
2035 Planning Horizon (w/o Annexation Trips)	E	61	1.01	E	64	1.04
2035 Planning Horizon (w/ Annexation Trips)	E	62	1.01	E	65	1.04
15. Holly Ln at S Holcomb Blvd (Future)						
2035 Planning Horizon (w/o Annexation Trips)	B	11	0.07	B	12	0.16
2035 Planning Horizon (w/ Annexation Trips)	B	13	0.10	C	15	0.21
16. Holly Ln at S Redland Rd*						
2035 Planning Horizon (w/o Annexation Trips)	C	21	0.07	C	22	0.03
2035 Planning Horizon (w/ Annexation Trips)	F	> 80	0.13	F	> 80	0.22

* Intersection converted from three-legged to four-legged under year 2035 conditions.

BOLDED results exceed Oregon City and Clackamas County operational standards.

At the intersection of OR-213 at Redland Road, it was assumed that an additional through lane in each direction on OR-213 will be constructed prior to the planning horizon. This is allowed per the Transportation Planning Rule via OAR 660-12-0060(4)(b)(C) since the highway project is identified in the Financially Constrained project list in the Regional Transportation Plan.

Based on the capacity analysis, the following six study intersections that are not projected to meet the applicable minimum intersection performance standards:

1. I-205 southbound ramps at OR-99E;
2. I-205 northbound ramps at OR-99E;
3. 14th Street at OR-99E;
4. 14th Street at Washington Street;
5. Abernethy Road/S Holcomb Boulevard at Redland Road; and
6. Beavercreek Road at OR-213.

The above listed intersections were reported as not meeting operational standards or exceeding capacity within the original TIS and therefore, mitigation was suggested. All mitigations previously recommended within the TIS are still applicable and are expected to address any additional intersection impacts projected with the increased site trip generation.

Proposed Trip Cap

It is recognized that there is continued discussion with ODOT regarding the trip generation calculations relative to pass-by trips and internal trip capture. To simplify the analysis and come to a consensus, it is recommended that a trip cap be established as part of the annexation process. This will ensure that future development on the site does not generate external trips beyond what is analyzed in this addendum. It is recommended that the trip cap be established as follows:

The total number of external primary trips generated by development on the site shall not exceed the following:

AM Peak Hour:	538 trips
PM Peak Hour:	679 trips
Weekday:	7,406 trips

Rick Givens
Planning Consultant
18680 Sunblaze Dr.
Oregon City, Oregon 97045

March 21, 2018

Todd Mobley
Lancaster Engineering, Inc.
321 SW 4th Avenue, Suite 400
Portland, OR 97204

RE: Park Place Annexation Density

Dear Todd:

The estimate of a maximum residential density of 533 units for the 91 acre Park Place annexation and zone change is based upon the following:

Total Area: 91 Acres
Less MUC Area: 4.5 Acres
Gross Residential Area: 86.5 Acres

Low Density Residential/R-10 Area: 9.5 Acres
Less Unbuildable Stream Corridor: 3.55 Acres
Buildable Site Area: 5.95 Acres
Net Site Area (Less 20% Streets): 4.76 Acres or 207,345 sq. ft.
Maximum Density @ 1 Unit per 10,000 sq. ft.: 21 Units

Medium Density Residential/R-5 Area: 78 Acres
Less Unbuildable Stream Corridor: 4.65 Acres
Buildable Site Area: 73.35 Acres
Net Site Area (Less 20% Streets): 58.68 Acres or 2,560,659 sq. ft.
Maximum Density @ 1 Unit per 5,000 sq. ft.: 512 Units

Total Maximum Density: 533 Units

Note that the actual density achieved would likely be significantly less than this due to the steepness of certain areas of the site.

Please let me know if you have any questions or need further information.

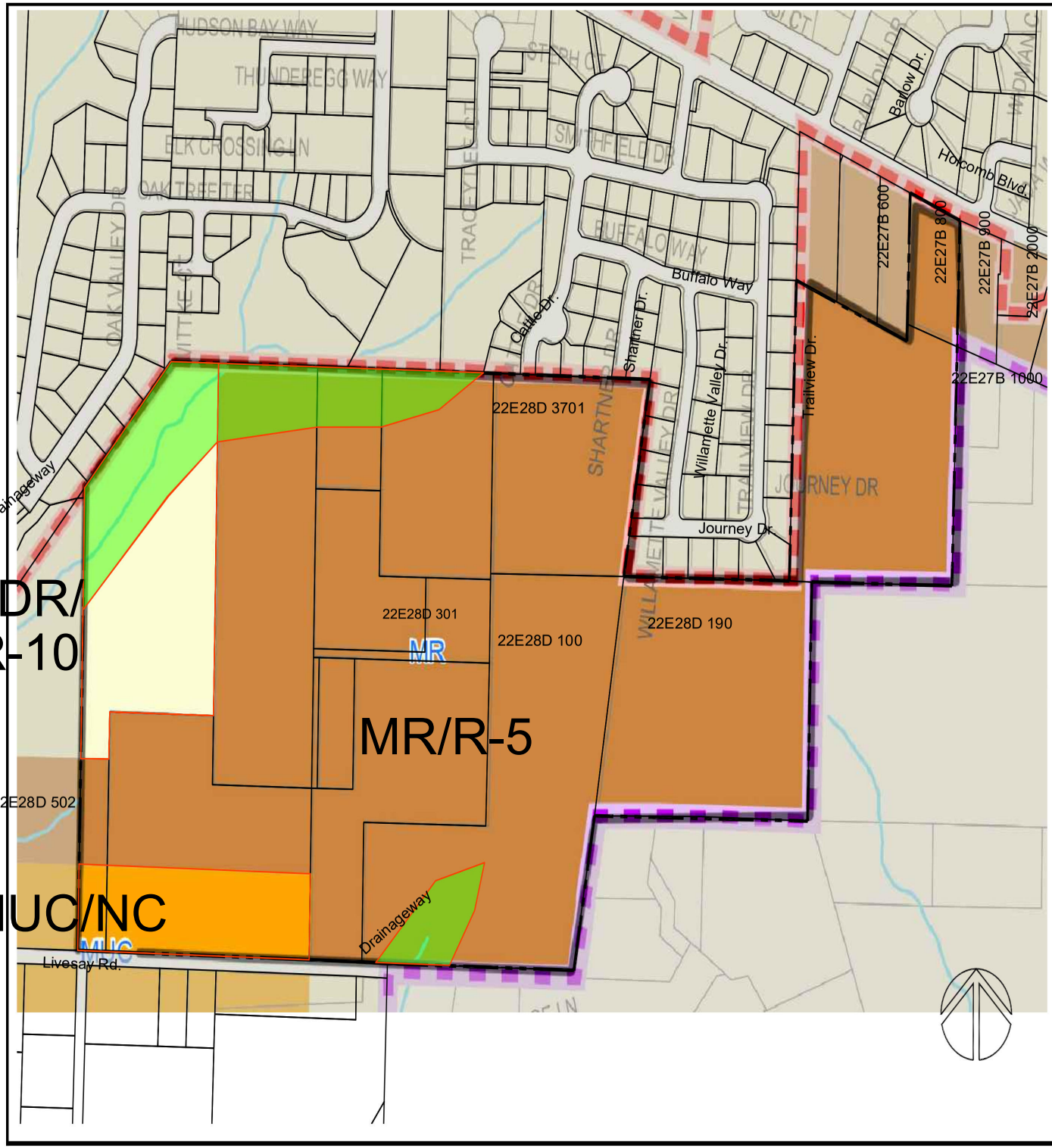
Sincerely yours,

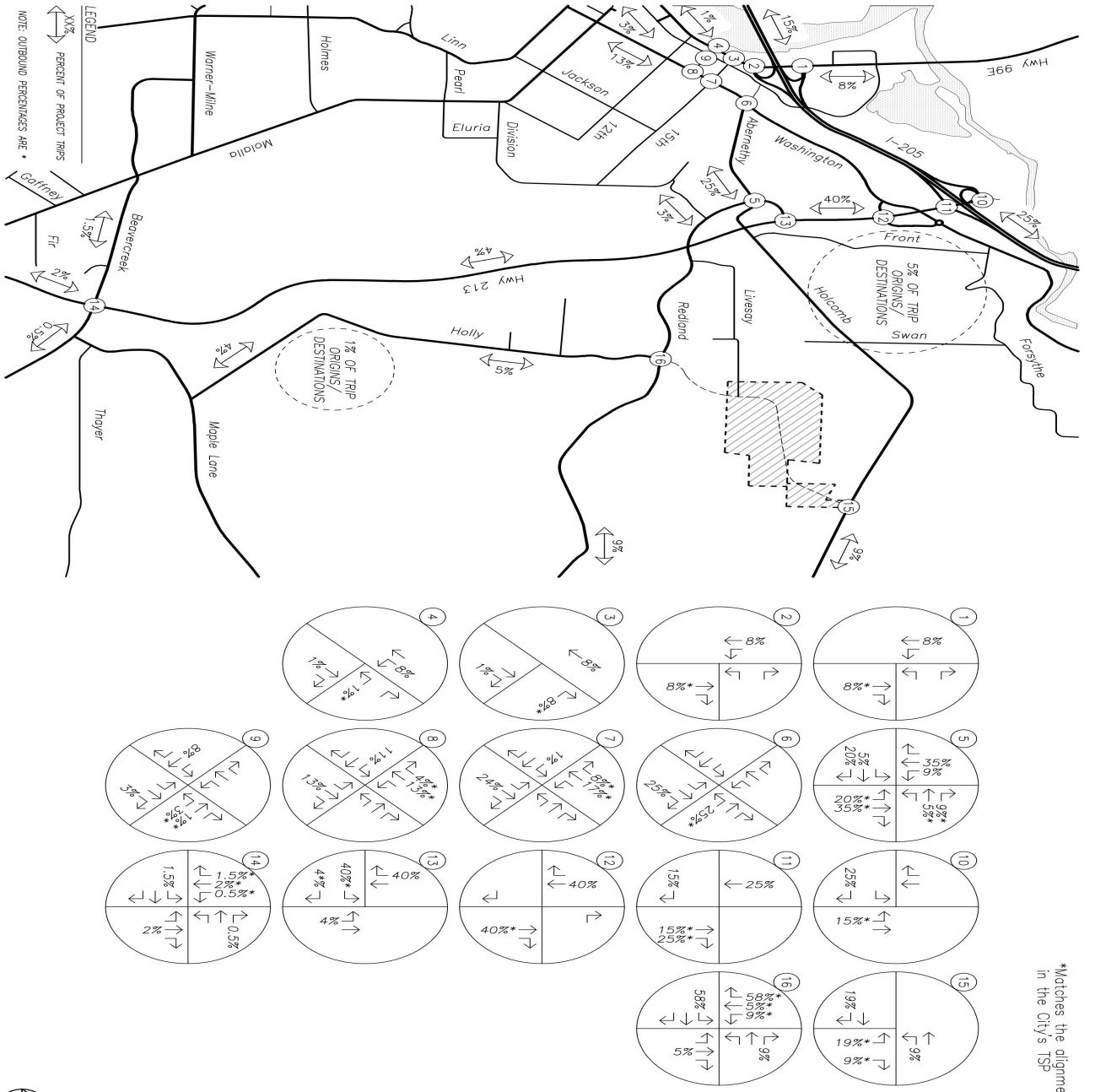
Rick Givens

Rick Givens

Cc: Mike Robinson, Mark Handris

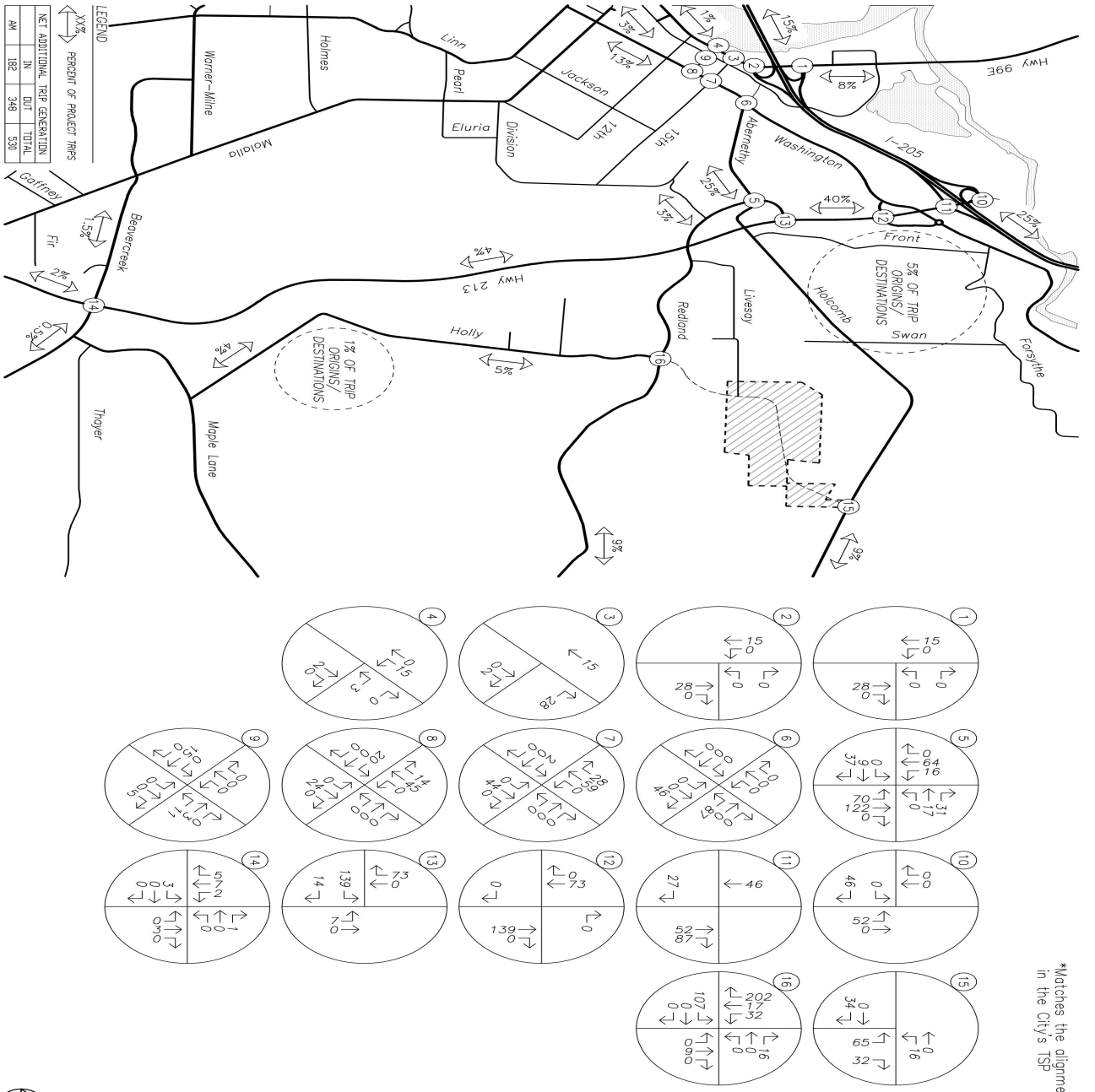
phone: 503-479-0097 | fax: 503-479-0097 | e-mail: rickgivens@gmail.com


HUDSON BAY WAY
THUNDEREGG WAY
ELK CROSSING LN
OAK VALLEY DR
OAK TREE TER
TRACY ELLEN CT
SMITHFIELD DR
BUFFALO WAY
Buffalo Way
Cattle Dr.
Shartner Dr.
Willamette Valley Dr.
Trailview Dr.
Barlow Dr.
Holcomb Blvd.
Jada Way
22E27B 600
22E27B 800
22E27B 900
22E27B 2000
22E27B 1000
22E28D 3701
SHARTNER DR
WILLAMETTE VALLEY DR
TRAILVIEW DR
JOURNEY DR
Journey Dr.
Drainageway
LDR/
R-10
22E28D 301
MR
22E28D 100
22E28D 190
MR/R-5
22E28D 502
MUC/NC
MUC
Livesay Rd.
Drainageway
SCALE 1" = 400'
DATE: 3-21-2018
PROJECT 15-ICN-105
NORTH



SITE TRIP DISTRIBUTION
Inbound & Outbound Percentages – Site Trips
AM & PM Peak Hours

FIGURE 1



*Matches the alignment in the City's TSP

SITE TRIP ASSIGNMENT
Proposed Zone Change – Net Additional Site Trips
AM Peak Hour

FIGURE 2

SITE TRIP ASSIGNMENT

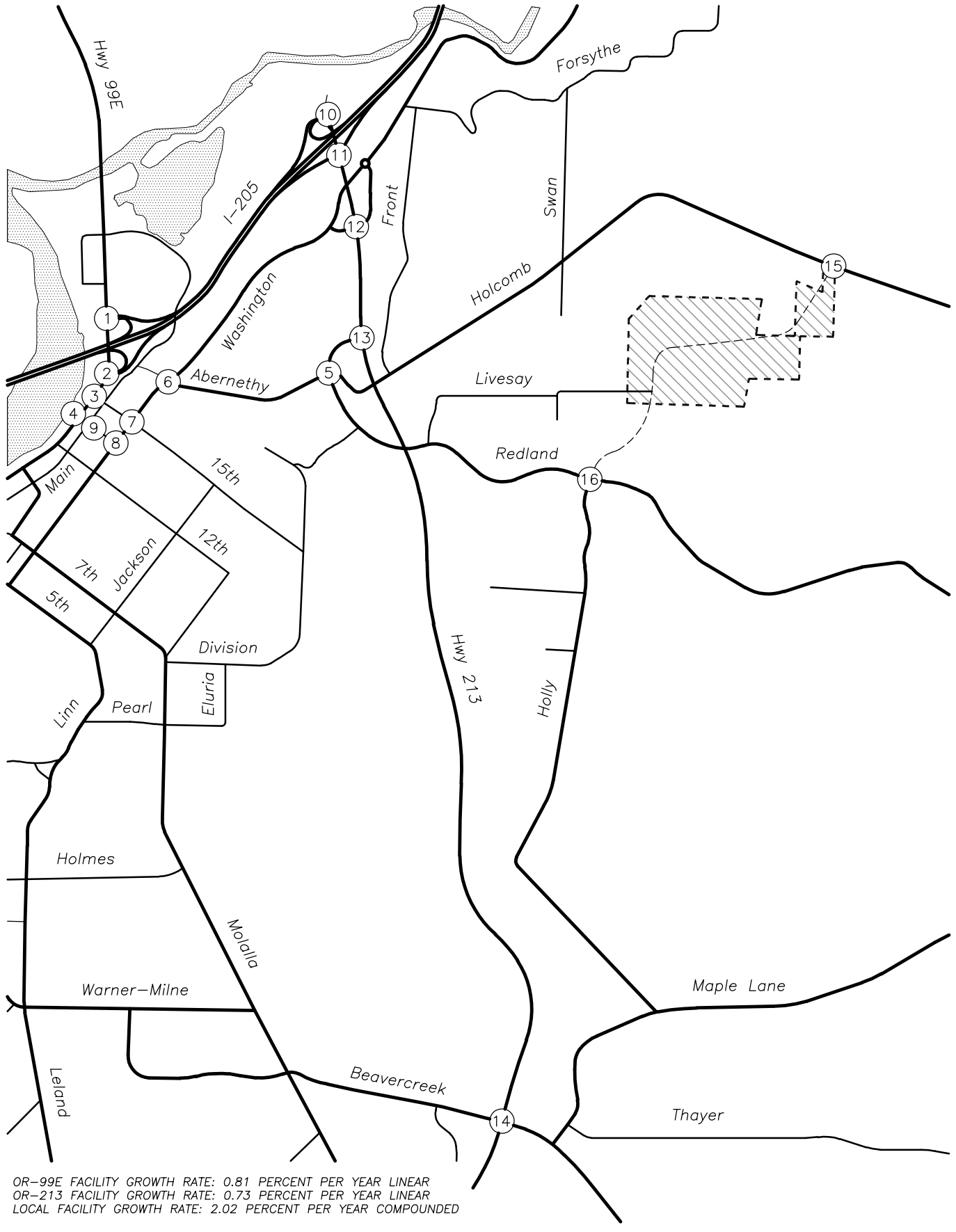
Proposed Zone Change – Net Additional Site Trips

PM Peak Hour

FIGURE 3

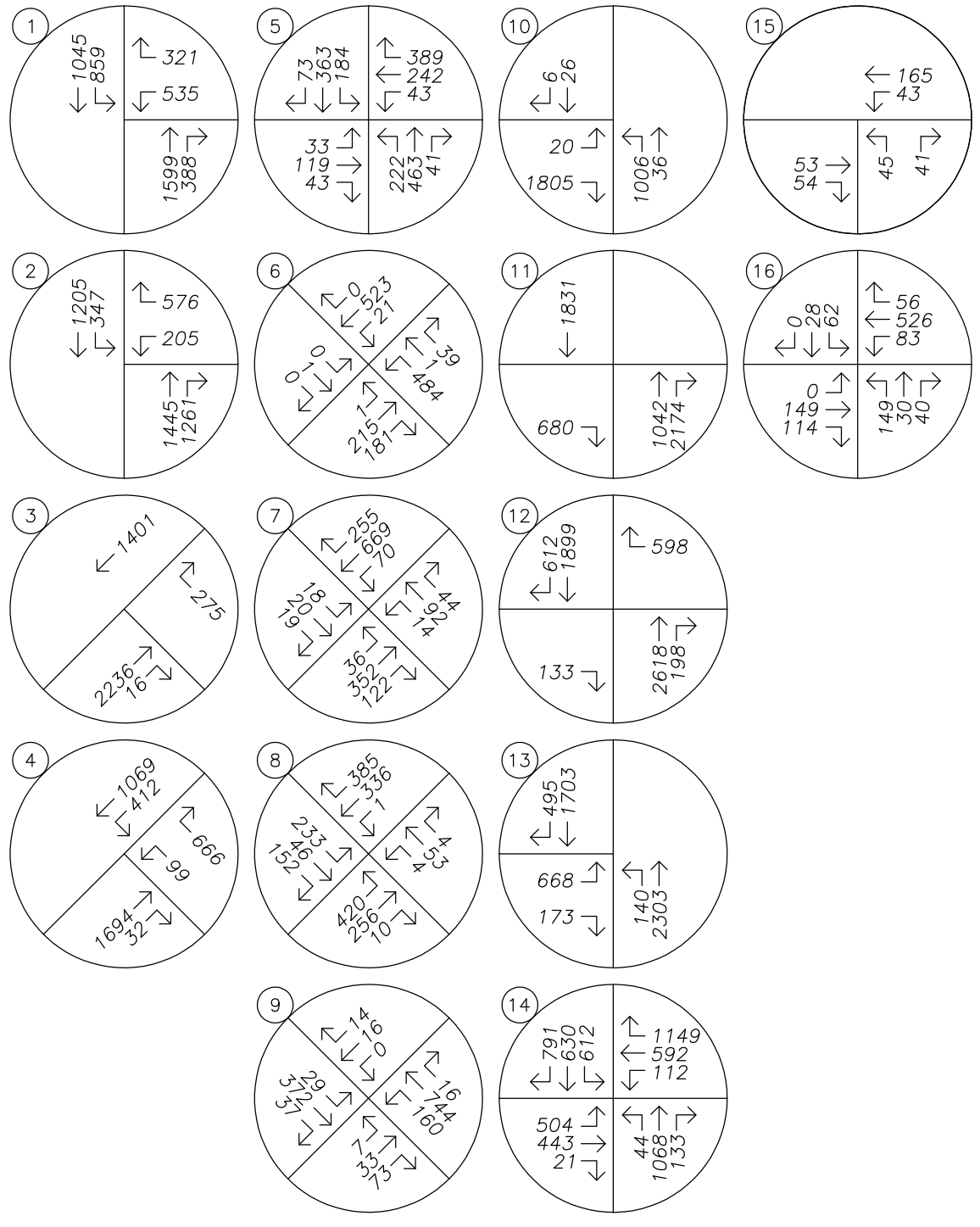
TRAFFIC VOLUMES
Year 2035 Planning Horizon – w/ Holly Extension
AM Peak Hour

FIGURE 4



OR–99E FACILITY GROWTH RATE: 0.81 PERCENT PER YEAR LINEAR
OR–213 FACILITY GROWTH RATE: 0.73 PERCENT PER YEAR LINEAR
LOCAL FACILITY GROWTH RATE: 2.02 PERCENT PER YEAR COMPOUNDED

*Matches the alignment in the City's TSP



No Scale

Hwy 99E
I-205
Washington
Front
Swan
Forsythe
Holcomb
Abernethy
Livesay
Redland
Main
15th
12th
7th
Jackson
5th
Division
Linn
Pearl
Eluria
Holmes
Molalla
Warner-Milne
Leland
Beavercreek
Hwy 213
Holly
Maple Lane
Thayer
OR-99E FACILITY GROWTH RATE: 0.81 PERCENT PER YEAR LINEAR
OR-213 FACILITY GROWTH RATE: 0.73 PERCENT PER YEAR LINEAR
LOCAL FACILITY GROWTH RATE: 2.02 PERCENT PER YEAR COMPOUNDED
*Matches the alignment in the City's TSP
No Scale
TRAFFIC VOLUMES
Year 2035 Planning Horizon – w/ Holly Extension
PM Peak Hour
FIGURE 5

*Matches the alignment in the City's TSP

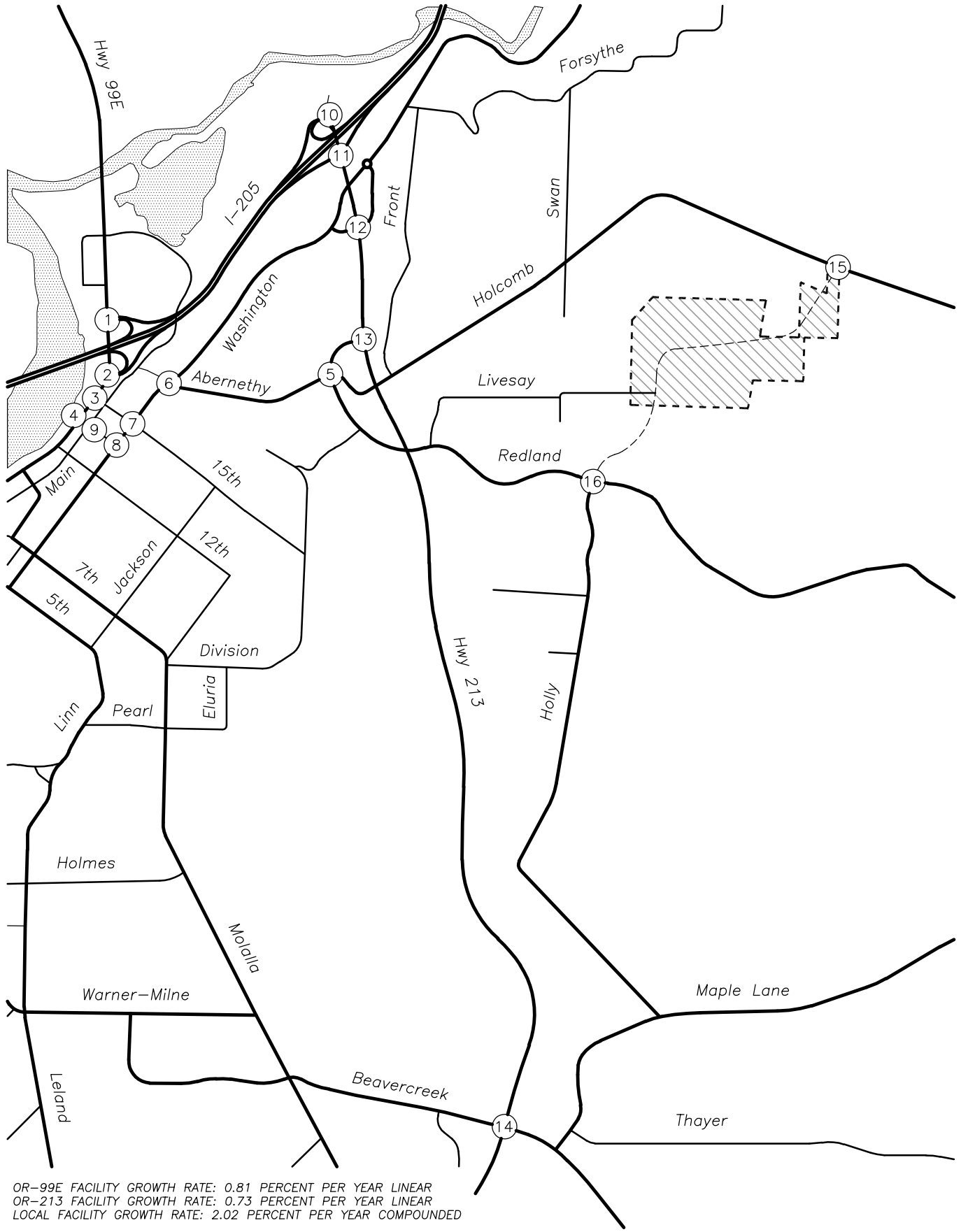
No Scale

TRAFFIC VOLUMES
Year 2035 Planning Horizon plus Annexation
AM Peak Hour

FIGURE 6

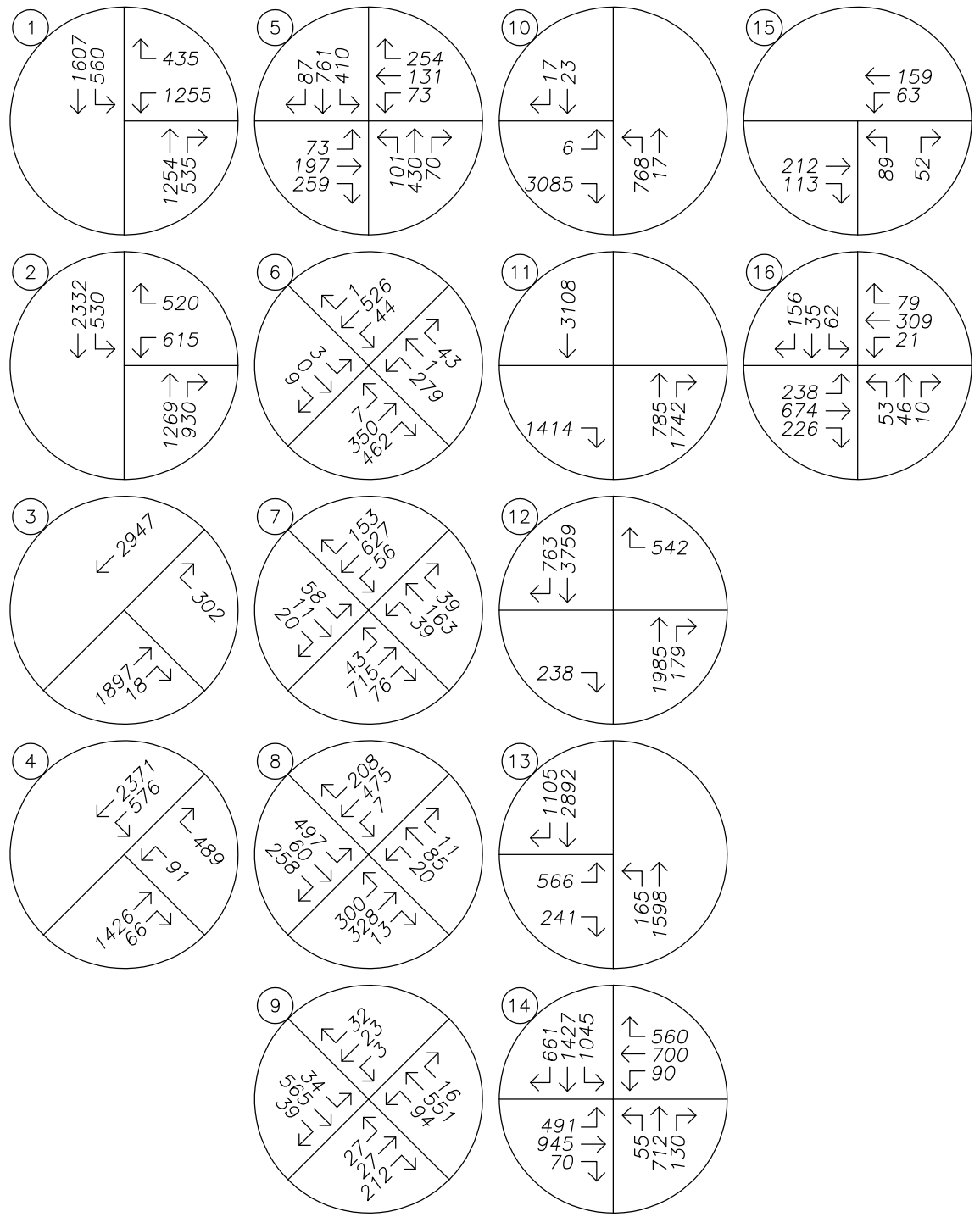
TRAFFIC VOLUMES
Year 2035 Planning Horizon plus Annexation
PM Peak Hour

FIGURE 7



OR-99E FACILITY GROWTH RATE: 0.81 PERCENT PER YEAR LINEAR
OR-213 FACILITY GROWTH RATE: 0.73 PERCENT PER YEAR LINEAR
LOCAL FACILITY GROWTH RATE: 2.02 PERCENT PER YEAR COMPOUNDED

*Matches the alignment in the City's TSP



No Scale

TRIP GENERATION CALCULATIONS

Land Use: Supermarket
Land Use Code: 850
Variable: 1000 Sq Ft Gross Floor Area
Variable Value: 25

AM PEAK HOUR

Trip Rate: 3.40

	Enter	Exit	Total
Directional Distribution	62%	38%	
Trip Ends	**53**	**32**	**85**

PM PEAK HOUR

Trip Rate: 9.48

	Enter	Exit	Total
Directional Distribution	51%	49%	
Trip Ends	**121**	**116**	**237**

WEEKDAY

Trip Rate: 102.24

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	**1,278**	**1,278**	**2,556**

SATURDAY

Trip Rate: 177.59

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	**2,220**	**2,220**	**4,440**

Source: TRIP GENERATION, Ninth Edition

TRIP GENERATION CALCULATIONS

Land Use: Convenience Market (Open 24 Hours)
Land Use Code: 851
Variable: 1,000 Sq Ft Gross Floor Area
Variable Value: 2.0

AM PEAK HOUR

Trip Rate: 67.03

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	**67**	**67**	**134**

PM PEAK HOUR

Trip Rate: 52.41

	Enter	Exit	Total
Directional Distribution	51%	49%	
Trip Ends	**54**	**51**	**105**

WEEKDAY

Trip Rate: 737.99

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	**738**	**738**	**1,476**

SATURDAY

Trip Rate: 863.10

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	**863**	**863**	**1,726**

Source: TRIP GENERATION, Ninth Edition

TRIP GENERATION CALCULATIONS

Land Use: Pharmacy/Drugstore with Drive-Through Window
Land Use Code: 881
Variable: 1,000 Sq Ft Gross Floor Area
Variable Value: 8.0

AM PEAK HOUR

Trip Rate: 3.45

	Enter	Exit	Total
Directional Distribution	52%	48%	
Trip Ends	**15**	**13**	**28**

PM PEAK HOUR

Trip Rate: 9.91

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	**40**	**40**	**79**

WEEKDAY

Trip Rate: 96.91

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	**388**	**388**	**776**

SATURDAY PEAK HOUR

Trip Rate: 8.20

	Enter	Exit	Total
Directional Distribution	49%	51%	
Trip Ends	**32**	**34**	**66**

Source: TRIP GENERATION, Ninth Edition

TRIP GENERATION CALCULATIONS

Land Use: High-Turnover (Sit-Down) Restaurant
Land Use Code: 932
Variable: 1000 Sq Ft Gross Floor Area
Variable Quantity: 5

AM PEAK HOUR

Trip Rate: 10.81

	Enter	Exit	Total
Directional Distribution	55%	45%	
Trip Ends	**30**	**24**	**54**

PM PEAK HOUR

Trip Rate: 9.85

	Enter	Exit	Total
Directional Distribution	60%	40%	
Trip Ends	**29**	**20**	**49**

WEEKDAY

Trip Rate: 127.15

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	**318**	**318**	**636**

SATURDAY

Trip Rate: 158.37

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	**396**	**396**	**792**

Source: TRIP GENERATION, Ninth Edition

TRIP GENERATION CALCULATIONS

Land Use: Fast Food Restaurant with Drive-Through Window
Land Use Code: 934
Variable: 1000 Sq Ft Gross Floor Area
Variable Quantity: 2

AM PEAK HOUR

Trip Rate: 45.42

	Enter	Exit	Total
Directional Distribution	51%	49%	
Trip Ends	**46**	**45**	**91**

PM PEAK HOUR

Trip Rate: 32.65

	Enter	Exit	Total
Directional Distribution	52%	48%	
Trip Ends	**34**	**31**	**65**

WEEKDAY

Trip Rate: 496.12

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	**496**	**496**	**992**

SATURDAY

Trip Rate: 722.03

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	**722**	**722**	**1,444**

Source: TRIP GENERATION, Ninth Edition

NCHRP 8-51 Internal Trip Capture Estimation Tool			
Project Name:	Park Place	**Organization:**	Lancaster Engineering
Project Location:	Oregon City, OR	**Performed By:**	Daniel Stumpf, EI
Scenario Description:	Background + Site Trips	**Date:**	
Analysis Year:	2035	**Checked By:**	
Analysis Period:	**AM Street Peak Hour**	**Date:**	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail	850, 851, 881	35,000	Sq. Ft.	247	135	112
Restaurant	932, 934	7,000	Sq. Ft.	145	76	69
Cinema/Entertainment				0		
Residential	210	533	Dwelling Units	400	100	300
Hotel				0		
All Other Land Uses[2]				0		
Total				792	311	481

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office						
Retail	1.25	0%	0%	1.25	0%	0%
Restaurant	1.25	0%	0%	1.25	0%	0%
Cinema/Entertainment						
Residential	1.25	0%	0%	1.25	0%	0%
Hotel						
All Other Land Uses[2]						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		18	0	3	0
Restaurant	0	12		0	3	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	4	19	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	990	389	601
Internal Capture Percentage	12%	15%	10%
External Vehicle-Trips[3]	697	263	434
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	9%	15%
Restaurant	39%	17%
Cinema/Entertainment	N/A	N/A
Residential	5%	6%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Informational Report*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas Transportation Institute

Project Name:	Park Place
Analysis Period:	**AM Street Peak Hour**

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.25	135	169	1.25	112	140
Restaurant	1.25	76	95	1.25	69	86
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.25	100	125	1.25	300	375
Hotel	1.00	0	0	1.00	0	0

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	41		18	0	20	0
Restaurant	27	12		0	3	3
Cinema/Entertainment	0	0	0		0	0
Residential	8	4	75	0		0
Hotel	0	0	0	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		54	22	0	0	0
Retail	0		48	0	3	0
Restaurant	0	14		0	6	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	29	19	0		0
Hotel	0	7	6	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	16	153	169	122	0	0
Restaurant	37	58	95	46	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	6	119	125	95	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	21	119	140	95	0	0
Restaurant	15	71	86	57	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	23	352	375	282	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 8-51 Internal Trip Capture Estimation Tool			
Project Name:	Park Place	**Organization:**	Lancaster Engineering
Project Location:	Oregon City, OR	**Performed By:**	Daniel Stumpf, EI
Scenario Description:	Background + Site Trips	**Date:**	
Analysis Year:	2035	**Checked By:**	
Analysis Period:	**PM Street Peak Hour**	**Date:**	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail	850, 851, 881	35,000	Sq. Ft.	421	215	206
Restaurant	932, 934	7,000	Sq. Ft.	114	63	51
Cinema/Entertainment				0		
Residential	210	533	Dwelling Units	474	299	175
Hotel				0		
All Other Land Uses[2]				0		
Total				1009	577	432

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office						
Retail	1.25	0%	0%	1.25	0%	0%
Restaurant	1.25	0%	0%	1.25	0%	0%
Cinema/Entertainment						
Residential	1.25	0%	0%	1.25	0%	0%
Hotel						
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail					3000	
Restaurant					3000	
Cinema/Entertainment						
Residential		3000	3000			
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		23	0	22	0
Restaurant	0	26		0	4	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	3	1	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	1,263	722	541
Internal Capture Percentage	13%	11%	15%
External Vehicle-Trips[3]	883	514	369
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	11%	17%
Restaurant	30%	47%
Cinema/Entertainment	N/A	N/A
Residential	7%	2%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Informational Report*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas Transportation Institute

Project Name:	Park Place
Analysis Period:	**PM Street Peak Hour**

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.25	215	269	1.25	206	258
Restaurant	1.25	63	79	1.25	51	64
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.25	299	374	1.25	175	219
Hotel	1.00	0	0	1.00	0	0

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	5		75	10	22	13
Restaurant	2	26		5	4	4
Cinema/Entertainment	0	0	0		0	0
Residential	9	9	5	0		7
Hotel	0	0	0	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		22	2	0	15	0
Retail	0		23	0	172	0
Restaurant	0	135		0	60	0
Cinema/Entertainment	0	11	2		15	0
Residential	0	3	1	0		0
Hotel	0	5	4	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	29	240	269	192	0	0
Restaurant	24	55	79	44	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	26	348	374	278	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	45	213	258	170	0	0
Restaurant	30	34	64	27	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	4	215	219	172	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

Table 7.1a Adjusted Internal Trip Capture Rates for Trip Origins within a Multi-Use Development			
Land Use Pairs		Weekday	
		AM Peak Hour	PM Peak Hour
From OFFICE	To Office	0.0%	0.0%
	To Retail	28.0%	20.0%
	To Restaurant	63.0%	4.0%
	To Cinema/Entertainment	0.0%	0.0%
	To Residential	1.0%	2.0%
	To Hotel	0.0%	0.0%
From RETAIL	To Office	29.0%	2.0%
	To Retail	0.0%	0.0%
	To Restaurant	13.0%	29.0%
	To Cinema/Entertainment	0.0%	4.0%
	To Residential	14.0%	8.6%
	To Hotel	0.0%	5.0%
From RESTAURANT	To Office	31.0%	3.0%
	To Retail	14.0%	41.0%
	To Restaurant	0.0%	0.0%
	To Cinema/Entertainment	0.0%	8.0%
	To Residential	4.0%	5.9%
	To Hotel	3.0%	7.0%
From CINEMA/ENTERTAINMENT	To Office	0.0%	2.0%
	To Retail	0.0%	21.0%
	To Restaurant	0.0%	31.0%
	To Cinema/Entertainment	0.0%	0.0%
	To Residential	0.0%	8.0%
	To Hotel	0.0%	2.0%
From RESIDENTIAL	To Office	2.0%	4.0%
	To Retail	1.0%	4.2%
	To Restaurant	20.0%	2.1%
	To Cinema/Entertainment	0.0%	0.0%
	To Residential	0.0%	0.0%
	To Hotel	0.0%	3.0%
From HOTEL	To Office	75.0%	0.0%
	To Retail	14.0%	16.0%
	To Restaurant	9.0%	68.0%
	To Cinema/Entertainment	0.0%	0.0%
	To Residential	0.0%	2.0%
	To Hotel	0.0%	0.0%

Table 7.2a Adjusted Internal Trip Capture Rates for Trip Destinations within a Multi-Use Development			
Land Use Pairs		Weekday	
		AM Peak Hour	PM Peak Hour
To OFFICE	From Office	0.0%	0.0%
	From Retail	4.0%	31.0%
	From Restaurant	14.0%	30.0%
	From Cinema/Entertainment	0.0%	6.0%
	From Residential	3.0%	57.0%
	From Hotel	3.0%	0.0%
To RETAIL	From Office	32.0%	8.0%
	From Retail	0.0%	0.0%
	From Restaurant	8.0%	50.0%
	From Cinema/Entertainment	0.0%	4.0%
	From Residential	17.0%	1.0%
	From Hotel	4.0%	2.0%
To RESTAURANT	From Office	23.0%	2.0%
	From Retail	50.0%	29.0%
	From Restaurant	0.0%	0.0%
	From Cinema/Entertainment	0.0%	3.0%
	From Residential	20.0%	1.4%
	From Hotel	6.0%	5.0%
To CINEMA/ENTERTAINMENT	From Office	0.0%	1.0%
	From Retail	0.0%	26.0%
	From Restaurant	0.0%	32.0%
	From Cinema/Entertainment	0.0%	0.0%
	From Residential	0.0%	0.0%
	From Hotel	0.0%	0.0%
To RESIDENTIAL	From Office	0.0%	4.0%
	From Retail	2.0%	46.0%
	From Restaurant	5.0%	16.0%
	From Cinema/Entertainment	0.0%	4.0%
	From Residential	0.0%	0.0%
	From Hotel	0.0%	0.0%
To HOTEL	From Office	0.0%	0.0%
	From Retail	0.0%	17.0%
	From Restaurant	4.0%	71.0%
	From Cinema/Entertainment	0.0%	1.0%
	From Residential	0.0%	12.0%
	From Hotel	0.0%	0.0%

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	535	321	1627	388	859	1060
Future Volume (vph)	535	321	1627	388	859	1060
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	1.00	0.91	1.00	1.00	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3273	1509	4988	1510	1752	5036
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3273	1509	4988	1510	1752	5036
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	563	338	1713	408	904	1116
RTOR Reduction (vph)	0	0	0	287	0	0
Lane Group Flow (vph)	563	338	1713	121	904	1116
Confl. Peds. (#/hr)				3	3	
Heavy Vehicles (%)	7%	7%	4%	4%	3%	3%
Turn Type	Prot	pm+ov	NA	Perm	Prot	NA
Protected Phases	8	1	2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	17.6	50.5	26.0	26.0	32.9	63.4
Effective Green, g (s)	17.6	50.5	26.0	26.0	32.9	63.4
Actuated g/C Ratio	0.20	0.56	0.29	0.29	0.37	0.70
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	640	922	1440	436	640	3547
v/s Ratio Prot	c0.17	0.13	c0.34		c0.52	0.22
v/s Ratio Perm		0.09		0.08		
v/c Ratio	0.88	0.37	1.19	0.28	1.41	0.31
Uniform Delay, d1	35.2	10.9	32.0	24.7	28.6	5.1
Progression Factor	1.00	1.00	1.09	2.70	1.00	1.00
Incremental Delay, d2	13.1	0.2	89.8	1.0	194.8	0.2
Delay (s)	48.3	11.2	124.6	67.9	223.4	5.3
Level of Service	D	B	F	E	F	A
Approach Delay (s)	34.4		113.7			102.9
Approach LOS	C		F			F

Intersection Summary			
HCM 2000 Control Delay	95.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	105.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	205	576	1473	1261	347	1220
Future Volume (vph)	205	576	1473	1261	347	1220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	0.91	1.00	1.00	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1719	1538	4940	1496	1719	4940
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1719	1538	4940	1496	1719	4940
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	216	606	1551	1327	365	1284
RTOR Reduction (vph)	0	225	0	328	0	0
Lane Group Flow (vph)	216	381	1551	999	365	1284
Confl. Peds. (#/hr)				3	3	
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	18.5	18.5	43.5	43.5	14.5	62.5
Effective Green, g (s)	18.5	18.5	43.5	43.5	14.5	62.5
Actuated g/C Ratio	0.21	0.21	0.48	0.48	0.16	0.69
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	353	316	2387	723	276	3430
v/s Ratio Prot	0.13		0.31		c0.21	0.26
v/s Ratio Perm		c0.25		c0.67		
v/c Ratio	0.61	1.21	0.65	1.38	1.32	0.37
Uniform Delay, d1	32.5	35.8	17.5	23.2	37.8	5.7
Progression Factor	1.00	1.00	1.00	1.00	0.80	1.82
Incremental Delay, d2	3.1	118.8	1.4	180.6	165.7	0.3
Delay (s)	35.6	154.6	18.9	203.9	195.9	10.6
Level of Service	D	F	B	F	F	B
Approach Delay (s)	123.3		104.2			51.6
Approach LOS	F		F			D

Intersection Summary			
HCM 2000 Control Delay	90.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.33		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	105.1%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Traffic Volume (veh/h)	2236	18	0	1416	0	303
Future Volume (Veh/h)	2236	18	0	1416	0	303
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	2354	19	0	1491	0	319
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	335			372		
pX, platoon unblocked			0.54		0.59	0.54
vC, conflicting volume			2373		2860	1186
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1832		1718	0
tC, single (s)			4.2		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			100		100	45
cM capacity (veh/h)			168		47	582

Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SB 3	NW 1
Volume Total	1569	804	497	497	497	319
Volume Left	0	0	0	0	0	0
Volume Right	0	19	0	0	0	319
cSH	1700	1700	1700	1700	1700	582
Volume to Capacity	0.92	0.47	0.29	0.29	0.29	0.55
Queue Length 95th (ft)	0	0	0	0	0	83
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	18.4
Lane LOS						C
Approach Delay (s)	0.0		0.0			18.4
Approach LOS						C

Intersection Summary				
Average Delay	1.4			
Intersection Capacity Utilization	87.8%	ICU Level of Service		E
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	5.3

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	2236	18	0	1416	0	303
Future Vol, veh/h	2236	18	0	1416	0	303
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	6	6	6	6	2	2
Mvmt Flow	2354	19	0	1491	0	319

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	1186
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	2
Pot Cap-1 Maneuver	-	-	0	-	0	340
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	340
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

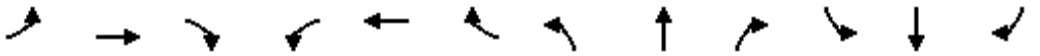
Approach	NB	SB	NW
HCM Control Delay, s	0	0	69.9
HCM LOS			F

Minor Lane/Major Mvmt	NBT	NBR	NWLn1	SBT
Capacity (veh/h)	-	-	340	-
HCM Lane V/C Ratio	-	-	0.938	-
HCM Control Delay (s)	-	-	69.9	-
HCM Lane LOS	-	-	F	-
HCM 95th %tile Q(veh)	-	-	9.7	-

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Traffic Volume (vph)	1696	32	427	1069	102	666
Future Volume (vph)	1696	32	427	1069	102	666
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	1.00		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3395		1703	3406	1736	1553
Flt Permitted	1.00		0.08	1.00	0.95	1.00
Satd. Flow (perm)	3395		139	3406	1736	1553
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1785	34	449	1125	107	701
RTOR Reduction (vph)	2	0	0	0	0	4
Lane Group Flow (vph)	1817	0	449	1125	107	697
Confl. Peds. (#/hr)		1	1		3	
Heavy Vehicles (%)	6%	6%	6%	6%	4%	4%
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases			6			4
Actuated Green, G (s)	47.0		79.5	79.5	11.5	39.5
Effective Green, g (s)	47.0		79.5	79.5	11.5	39.5
Actuated g/C Ratio	0.47		0.80	0.80	0.12	0.40
Clearance Time (s)	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1595		548	2707	199	683
v/s Ratio Prot	c0.54		0.23	0.33	0.06	c0.29
v/s Ratio Perm			0.42			0.16
v/c Ratio	1.14		0.82	0.42	0.54	1.02
Uniform Delay, d1	26.5		27.9	3.1	41.7	30.2
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	70.9		9.3	0.1	2.8	39.9
Delay (s)	97.4		37.3	3.2	44.5	70.1
Level of Service	F		D	A	D	E
Approach Delay (s)	97.4			12.9	66.7	
Approach LOS	F			B	E	

Intersection Summary			
HCM 2000 Control Delay	59.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	96.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	128	80	43	259	420	292	585	41	200	427	73
Future Volume (vph)	33	128	80	43	259	420	292	585	41	200	427	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	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	1.00
Frt	1.00	0.94		1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1656	1629		1752	1845	1568	1752	1827		1736	1827	1553
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1656	1629		1752	1845	1568	1752	1827		1736	1827	1553
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)	35	135	84	45	273	442	307	616	43	211	449	77
RTOR Reduction (vph)	0	30	0	0	0	119	0	3	0	0	0	51
Lane Group Flow (vph)	35	189	0	45	273	323	307	656	0	211	449	26
Confl. Peds. (#/hr)			1	1								
Heavy Vehicles (%)	9%	9%	9%	3%	3%	3%	3%	3%	3%	4%	4%	4%
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases						8						6
Actuated Green, G (s)	3.8	16.5		2.8	15.5	24.9	13.9	25.0		9.4	20.5	24.3
Effective Green, g (s)	3.8	16.5		2.8	15.5	24.9	13.9	25.0		9.4	20.5	24.3
Actuated g/C Ratio	0.05	0.23		0.04	0.22	0.35	0.19	0.35		0.13	0.29	0.34
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
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)	87	374		68	398	642	339	637		227	522	623
v/s Ratio Prot	0.02	0.12		c0.03	c0.15	0.07	c0.18	c0.36		0.12	0.25	0.00
v/s Ratio Perm						0.14						0.01
v/c Ratio	0.40	0.51		0.66	0.69	0.50	0.91	1.03		0.93	0.86	0.04
Uniform Delay, d1	32.9	24.0		34.0	25.9	18.5	28.3	23.4		30.8	24.2	15.9
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.0	1.1		21.6	4.9	0.6	26.4	43.4		40.2	13.5	0.0
Delay (s)	35.9	25.1		55.6	30.7	19.1	54.7	66.8		71.0	37.8	15.9
Level of Service	D	C		E	C	B	D	E		E	D	B
Approach Delay (s)		26.6			25.4			62.9			45.0	
Approach LOS		C			C			E			D	

Intersection Summary					
HCM 2000 Control Delay	44.2	HCM 2000 Level of Service		D	
HCM 2000 Volume to Capacity ratio	0.90				
Actuated Cycle Length (s)	71.7	Sum of lost time (s)		18.0	
Intersection Capacity Utilization	77.2%	ICU Level of Service		D	
Analysis Period (min)	15				

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	0	1	0	571	1	39	1	215	227	21	523	0
Future Volume (vph)	0	1	0	571	1	39	1	215	227	21	523	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor		1.00		1.00	1.00		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	
Flpb, ped/bikes		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	1.00	
Flt Protected		1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1900		1716	1544		1701	1792	1491	1734	1827	
Flt Permitted		1.00		0.76	1.00		0.20	1.00	1.00	0.57	1.00	
Satd. Flow (perm)		1900		1368	1544		360	1792	1491	1041	1827	
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)	0	1	0	634	1	43	1	239	252	23	581	0
RTOR Reduction (vph)	0	0	0	0	22	0	0	0	165	0	0	0
Lane Group Flow (vph)	0	1	0	634	22	0	1	239	87	23	581	0
Confl. Peds. (#/hr)			1	1			3		1	1		3
Heavy Vehicles (%)	0%	0%	0%	5%	5%	5%	6%	6%	6%	4%	4%	4%
Turn Type		NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4		4	8		
Actuated Green, G (s)		28.8		28.8	28.8		19.9	19.9	19.9	19.9	19.9	
Effective Green, g (s)		28.8		28.8	28.8		19.9	19.9	19.9	19.9	19.9	
Actuated g/C Ratio		0.50		0.50	0.50		0.34	0.34	0.34	0.34	0.34	
Clearance Time (s)		4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		948		682	770		124	618	514	359	630	
v/s Ratio Prot		0.00			0.01			0.13			c0.32	
v/s Ratio Perm				c0.46			0.00		0.06	0.02		
v/c Ratio		0.00		0.93	0.03		0.01	0.39	0.17	0.06	0.92	
Uniform Delay, d1		7.2		13.5	7.3		12.4	14.3	13.1	12.7	18.2	
Progression Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.0		19.0	0.0		0.0	0.4	0.2	0.1	19.1	
Delay (s)		7.2		32.5	7.4		12.4	14.7	13.3	12.7	37.3	
Level of Service		A		C	A		B	B	B	B	D	
Approach Delay (s)		7.2			30.9			14.0			36.3	
Approach LOS		A			C			B			D	

Intersection Summary			
HCM 2000 Control Delay	28.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	57.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	73.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	20	20	19	14	92	44	36	396	122	70	728	283
Future Volume (vph)	20	20	19	14	92	44	36	396	122	70	728	283
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99			0.99		1.00	0.99		1.00	0.99	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.96			0.96		1.00	0.96		1.00	0.96	
Flt Protected		0.98			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1478			1669		1703	1720		1735	1739	
Flt Permitted		0.81			0.97		0.07	1.00		0.36	1.00	
Satd. Flow (perm)		1221			1624		130	1720		656	1739	
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)	22	22	21	16	102	49	40	440	136	78	809	314
RTOR Reduction (vph)	0	18	0	0	18	0	0	11	0	0	13	0
Lane Group Flow (vph)	0	47	0	0	149	0	40	565	0	78	1110	0
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	20%	20%	20%	8%	8%	8%	6%	6%	6%	4%	4%	4%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		12.6			12.6		58.1	55.2		60.9	56.6	
Effective Green, g (s)		12.6			12.6		58.1	55.2		60.9	56.6	
Actuated g/C Ratio		0.15			0.15		0.68	0.64		0.71	0.66	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		179			239		141	1109		520	1149	
v/s Ratio Prot							c0.01	0.33		0.01	c0.64	
v/s Ratio Perm		0.04			c0.09		0.18			0.10		
v/c Ratio		0.26			0.62		0.28	0.51		0.15	0.97	
Uniform Delay, d1		32.4			34.3		15.7	8.0		4.5	13.6	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.8			5.0		1.1	0.4		0.1	18.8	
Delay (s)		33.2			39.3		16.8	8.4		4.7	32.4	
Level of Service		C			D		B	A		A	C	
Approach Delay (s)		33.2			39.3			9.0			30.6	
Approach LOS		C			D			A			C	

Intersection Summary			
HCM 2000 Control Delay	24.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	85.6	Sum of lost time (s)	13.5
Intersection Capacity Utilization	74.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	253	46	152	4	53	4	420	280	10	1	381	399
Future Volume (vph)	253	46	152	4	53	4	420	280	10	1	381	399
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	0.97		1.00		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	
Frt		1.00	0.85		0.99		1.00	0.99		1.00	0.92	
Flt Protected		0.96	1.00		1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1749	1506		1838		1752	1833		1716	1646	
Flt Permitted		0.76	1.00		0.97		0.08	1.00		0.57	1.00	
Satd. Flow (perm)		1391	1506		1782		154	1833		1036	1646	
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)	266	48	160	4	56	4	442	295	11	1	401	420
RTOR Reduction (vph)	0	0	127	0	2	0	0	1	0	0	40	0
Lane Group Flow (vph)	0	314	33	0	62	0	442	305	0	1	781	0
Confl. Peds. (#/hr)	1		4	4		1	3		2	2		3
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	3%	3%	3%	5%	5%	5%
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		19.1	19.1		19.1		65.5	60.0		44.4	43.4	
Effective Green, g (s)		19.1	19.1		19.1		65.5	60.0		44.4	43.4	
Actuated g/C Ratio		0.20	0.20		0.20		0.70	0.64		0.47	0.46	
Clearance Time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		283	307		363		408	1175		498	763	
v/s Ratio Prot							c0.20	0.17		0.00	0.47	
v/s Ratio Perm		c0.23	0.02		0.03		c0.55			0.00		
v/c Ratio		1.11	0.11		0.17		1.08	0.26		0.00	1.02	
Uniform Delay, d1		37.2	30.3		30.7		30.3	7.2		12.9	25.1	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		86.2	0.2		0.2		68.8	0.1		0.0	38.6	
Delay (s)		123.4	30.5		30.9		99.1	7.4		12.9	63.7	
Level of Service		F	C		C		F	A		B	E	
Approach Delay (s)		92.0			30.9			61.6			63.7	
Approach LOS		F			C			E			E	

Intersection Summary			
HCM 2000 Control Delay	68.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	93.6	Sum of lost time (s)	13.5
Intersection Capacity Utilization	102.2%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	29	387	37	171	747	16	7	33	78	0	16	14
Future Volume (Veh/h)	29	387	37	171	747	16	7	33	78	0	16	14
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	31	407	39	180	786	17	7	35	82	0	17	15
Pedestrians		2			10			4				
Lane Width (ft)		12.0			12.0			12.0				
Walking Speed (ft/s)		3.5			3.5			3.5				
Percent Blockage		0			1			0				
Right turn flare (veh)									5			
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		187			537							
pX, platoon unblocked	0.88						0.88	0.88		0.88	0.88	0.88
vC, conflicting volume	803			450			1672	1656	440	1692	1666	796
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	712			450			1695	1676	440	1717	1688	705
tC, single (s)	4.1			4.1			7.2	6.6	6.3	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.6	4.1	3.4	3.5	4.0	3.3
p0 queue free %	96			84			83	46	86	100	75	96
cM capacity (veh/h)	777			1101			41	65	594	27	67	388

Direction, Lane #	SE 1	SE 2	NW 1	NE 1	SW 1
Volume Total	31	446	983	124	32
Volume Left	31	0	180	7	0
Volume Right	0	39	17	82	15
cSH	777	1700	1101	180	109
Volume to Capacity	0.04	0.26	0.16	0.69	0.29
Queue Length 95th (ft)	3	0	15	104	28
Control Delay (s)	9.8	0.0	3.9	57.6	51.0
Lane LOS	A		A	F	F
Approach Delay (s)	0.6		3.9	57.6	51.0
Approach LOS				F	F

Intersection Summary			
Average Delay	8.0		
Intersection Capacity Utilization	91.7%	ICU Level of Service	F
Analysis Period (min)	15		

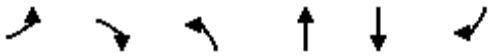
Intersection	
Int Delay, s/veh	7

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	29	387	37	171	747	16	7	33	78	0	16	14
Future Vol, veh/h	29	387	37	171	747	16	7	33	78	0	16	14
Conflicting Peds, #/hr	0	0	4	4	0	0	2	0	10	10	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	-	-	-	-	-	130	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	4	4	4	3	3	3	9	9	9	0	0	0
Mvmt Flow	31	407	39	180	786	17	7	35	82	0	17	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	803	0	0	450	0	0	1665	1655	441	1670	1666	797
Stage 1	-	-	-	-	-	-	492	492	-	1155	1155	-
Stage 2	-	-	-	-	-	-	1173	1163	-	515	511	-
Critical Hdwy	4.14	-	-	4.13	-	-	7.19	6.59	6.29	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.19	5.59	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.19	5.59	-	6.1	5.5	-
Follow-up Hdwy	2.236	-	-	2.227	-	-	3.581	4.081	3.381	3.5	4	3.3
Pot Cap-1 Maneuver	812	-	-	1105	-	-	74	94	602	77	98	390
Stage 1	-	-	-	-	-	-	546	536	-	242	274	-
Stage 2	-	-	-	-	-	-	227	261	-	546	540	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	810	-	-	1094	-	-	43	63	594	29	66	389
Mov Cap-2 Maneuver	-	-	-	-	-	-	43	63	-	29	66	-
Stage 1	-	-	-	-	-	-	523	514	-	233	192	-
Stage 2	-	-	-	-	-	-	140	183	-	418	517	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0.6	1.6	62.4	51.6
HCM LOS			F	F

Minor Lane/Major Mvmt	NELn1	NELn2	NWL	NWT	NWR	SEL	SET	SER	SWLn1
Capacity (veh/h)	58	594	1094	-	-	810	-	-	108
HCM Lane V/C Ratio	0.726	0.138	0.165	-	-	0.038	-	-	0.292
HCM Control Delay (s)	160.6	12	8.9	0	-	9.6	-	-	51.6
HCM Lane LOS	F	B	A	A	-	A	-	-	F
HCM 95th %tile Q(veh)	3.1	0.5	0.6	-	-	0.1	-	-	1.1



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	20	0	1058	36	26	6
Future Volume (Veh/h)	20	0	1058	36	26	6
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	21	0	1114	38	27	6
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	2293	27	27			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2293	27	27			
tC, single (s)	*6.0	6.3	4.1			
tC, 2 stage (s)						
tF (s)	*2.0	3.4	2.2			
p0 queue free %	0	100	29			
cM capacity (veh/h)	20	1037	1568			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	21	1114	38	27	6
Volume Left	21	1114	0	0	0
Volume Right	0	0	0	0	6
cSH	20	1568	1700	1700	1700
Volume to Capacity	1.04	0.71	0.02	0.02	0.00
Queue Length 95th (ft)	71	165	0	0	0
Control Delay (s)	482.3	12.7	0.0	0.0	0.0
Lane LOS	F	B			
Approach Delay (s)	482.3	12.3		0.0	
Approach LOS	F				

Intersection Summary			
Average Delay	20.1		
Intersection Capacity Utilization	75.3%	ICU Level of Service	D
Analysis Period (min)	15		

* User Entered Value

Intersection	
Int Delay, s/veh	20.4

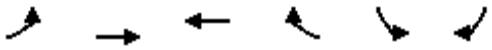
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	0	1058	36	26	6
Future Vol, veh/h	20	0	1058	36	26	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	0	-	0	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	6	6	5	5	18	18
Mvmt Flow	21	0	1114	38	27	6

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2292	-	27	0	-	0
Stage 1	27	-	-	-	-	-
Stage 2	2265	-	-	-	-	-
Critical Hdwy	6	-	4.15	-	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	2	-	2.245	-	-	-
Pot Cap-1 Maneuver	70	0	1568	-	-	0
Stage 1	1741	0	-	-	-	0
Stage 2	102	0	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	~ 20	-	1568	-	-	-
Mov Cap-2 Maneuver	~ 20	-	-	-	-	-
Stage 1	1741	-	-	-	-	-
Stage 2	30	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 489.1	12.3	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT
Capacity (veh/h)	1568	-	20	-
HCM Lane V/C Ratio	0.71	-	1.053	-
HCM Control Delay (s)	12.7	-	$ 489.1	-
HCM Lane LOS	B	-	F	-
HCM 95th %tile Q(veh)	6.6	-	2.9	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1851	0	1094	26	0
Future Volume (Veh/h)	0	1851	0	1094	26	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	1948	0	1152	27	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	1152				974	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1152				974	0
tC, single (s)	4.2				7.2	7.3
tC, 2 stage (s)						
tF (s)	2.3				3.7	3.5
p0 queue free %	100				88	100
cM capacity (veh/h)	580				223	1034

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	974	974	576	576	27
Volume Left	0	0	0	0	27
Volume Right	0	0	576	576	0
cSH	1700	1700	1700	1700	223
Volume to Capacity	0.57	0.57	0.34	0.34	0.12
Queue Length 95th (ft)	0	0	0	0	10
Control Delay (s)	0.0	0.0	0.0	0.0	23.4
Lane LOS					C
Approach Delay (s)	0.0		0.0		23.4
Approach LOS					C

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	61.2%	ICU Level of Service	B
Analysis Period (min)	15		

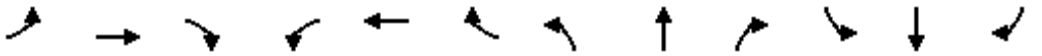
Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	1851	0	1094	26	0
Future Vol, veh/h	0	1851	0	1094	26	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	0	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	6	6	5	5	18	18
Mvmt Flow	0	1948	0	1152	27	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	-	974	-
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	974	-
Critical Hdwy	-	-	-	-	7.16	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	6.16	-
Follow-up Hdwy	-	-	-	-	3.68	-
Pot Cap-1 Maneuver	0	-	0	-	223	0
Stage 1	0	-	0	-	-	0
Stage 2	0	-	0	-	292	0
Platoon blocked, %		-		-		
Mov Cap-1 Maneuver	-	-	-	-	223	-
Mov Cap-2 Maneuver	-	-	-	-	223	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	292	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	23.4
HCM LOS			C

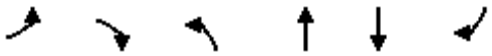
Minor Lane/Major Mvmt	EBT	WBR	SBLn1
Capacity (veh/h)	-	-	223
HCM Lane V/C Ratio	-	-	0.123
HCM Control Delay (s)	-	-	23.4
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	0.4



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	133	0	0	598	0	2757	198	0	1972	612
Future Volume (vph)	0	0	133	0	0	598	0	2757	198	0	1972	612
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.5			4.5		4.5	4.5		4.5	4.5
Lane Util. Factor			0.88			0.88		0.91	1.00		0.91	1.00
Frpb, ped/bikes			1.00			1.00		1.00	0.98		1.00	1.00
Flpb, ped/bikes			1.00			1.00		1.00	1.00		1.00	1.00
Frt			0.85			0.85		1.00	0.85		1.00	0.85
Flt Protected			1.00			1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)			2760			2538		4988	1521		4893	1524
Flt Permitted			1.00			1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)			2760			2538		4988	1521		4893	1524
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	0	137	0	0	616	0	2842	204	0	2033	631
RTOR Reduction (vph)	0	0	67	0	0	13	0	0	74	0	0	118
Lane Group Flow (vph)	0	0	70	0	0	603	0	2842	130	0	2033	513
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	3%	3%	3%	12%	12%	12%	4%	4%	4%	6%	6%	6%
Turn Type			Perm			Perm		NA	Perm		NA	Perm
Protected Phases								2			6	
Permitted Phases			5			1			2			6
Actuated Green, G (s)			7.7			23.5		56.5	56.5		72.3	72.3
Effective Green, g (s)			7.7			23.5		56.5	56.5		72.3	72.3
Actuated g/C Ratio			0.09			0.26		0.63	0.63		0.81	0.81
Clearance Time (s)			4.5			4.5		4.5	4.5		4.5	4.5
Vehicle Extension (s)			3.0			3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)			238			670		3166	965		3974	1238
v/s Ratio Prot								c0.57			0.42	
v/s Ratio Perm			0.03			c0.24			0.09			0.34
v/c Ratio			0.30			0.90		0.90	0.13		0.51	0.41
Uniform Delay, d1			38.1			31.6		13.8	6.5		2.7	2.4
Progression Factor			1.00			1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2			0.7			14.9		3.8	0.1		0.1	0.2
Delay (s)			38.8			46.5		17.6	6.6		2.8	2.6
Level of Service			D			D		B	A		A	A
Approach Delay (s)		38.8			46.5			16.9			2.7	
Approach LOS		D			D			B			A	

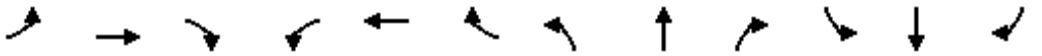
Intersection Summary			
HCM 2000 Control Delay	14.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	89.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	81.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	807	187	147	2303	1703	568
Future Volume (vph)	807	187	147	2303	1703	568
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3400	1568	1736	3471	3471	1553
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3400	1568	1736	3471	3471	1553
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	841	195	153	2399	1774	592
RTOR Reduction (vph)	0	9	0	0	0	27
Lane Group Flow (vph)	841	186	153	2399	1774	565
Heavy Vehicles (%)	3%	3%	4%	4%	4%	4%
Turn Type	Prot	pm+ov	Prot	NA	NA	pm+ov
Protected Phases	4	5	5	2	6	4
Permitted Phases		4				6
Actuated Green, G (s)	28.5	39.9	11.4	82.5	66.6	95.1
Effective Green, g (s)	28.5	39.9	11.4	82.5	66.6	95.1
Actuated g/C Ratio	0.24	0.33	0.10	0.69	0.55	0.79
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	807	580	164	2386	1926	1288
v/s Ratio Prot	c0.25	0.03	0.09	c0.69	0.51	0.10
v/s Ratio Perm		0.09				0.26
v/c Ratio	1.04	0.32	0.93	1.01	0.92	0.44
Uniform Delay, d1	45.8	29.9	53.9	18.8	24.3	4.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	43.2	0.3	50.6	19.7	8.8	0.2
Delay (s)	88.9	30.2	104.6	38.5	33.1	4.2
Level of Service	F	C	F	D	C	A
Approach Delay (s)	77.9			42.5	25.8	
Approach LOS	E			D	C	

Intersection Summary			
HCM 2000 Control Delay	42.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	94.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	507	443	21	112	592	0	44	1071	133	614	637	796
Future Volume (vph)	507	443	21	112	592	0	44	1071	133	614	637	796
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.95		0.97	0.95		1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		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	1.00
Frt	1.00	0.99		1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3273	3348		3400	3505		1719	3438	1538	3335	3438	1538
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3273	3348		3400	3505		1719	3438	1538	3335	3438	1538
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)	534	466	22	118	623	0	46	1127	140	646	671	838
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	93	0	0	218
Lane Group Flow (vph)	534	485	0	118	623	0	46	1127	47	646	671	620
Confl. Peds. (#/hr)			4	4								
Heavy Vehicles (%)	7%	7%	7%	3%	3%	3%	5%	5%	5%	5%	5%	5%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	18.6	30.9		8.2	20.5		4.2	40.4	40.4	22.5	58.7	58.7
Effective Green, g (s)	18.6	30.9		8.2	20.5		4.2	40.4	40.4	22.5	58.7	58.7
Actuated g/C Ratio	0.16	0.26		0.07	0.17		0.04	0.34	0.34	0.19	0.49	0.49
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
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)	507	862		232	598		60	1157	517	625	1681	752
v/s Ratio Prot	c0.16	0.14		0.03	c0.18		0.03	c0.33		c0.19	0.20	
v/s Ratio Perm									0.03			0.40
v/c Ratio	1.05	0.56		0.51	1.04		0.77	0.97	0.09	1.03	0.40	0.82
Uniform Delay, d1	50.7	38.7		54.0	49.8		57.4	39.3	27.2	48.8	19.5	26.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	54.7	0.8		1.8	48.1		43.5	20.9	0.3	44.9	0.7	10.0
Delay (s)	105.4	39.5		55.7	97.9		100.9	60.2	27.6	93.7	20.2	36.3
Level of Service	F	D		E	F		F	E	C	F	C	D
Approach Delay (s)		74.0			91.2			58.2			48.5	
Approach LOS		E			F			E			D	

Intersection Summary			
HCM 2000 Control Delay	61.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	92.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	53	88	59	165	110	73
Future Volume (Veh/h)	53	88	59	165	110	73
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	62	104	69	194	129	86
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			166		446	114
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			166		446	114
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		76	91
cM capacity (veh/h)			1394		542	939

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	166	263	215
Volume Left	0	69	129
Volume Right	104	0	86
cSH	1700	1394	652
Volume to Capacity	0.10	0.05	0.33
Queue Length 95th (ft)	0	4	36
Control Delay (s)	0.0	2.3	13.2
Lane LOS		A	B
Approach Delay (s)	0.0	2.3	13.2
Approach LOS			B

Intersection Summary			
Average Delay	5.4		
Intersection Capacity Utilization	40.7%	ICU Level of Service	A
Analysis Period (min)	15		

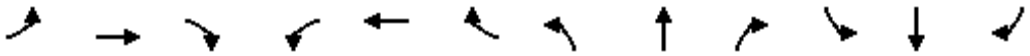
Intersection	
Int Delay, s/veh	5.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	53	88	59	165	110	73
Future Vol, veh/h	53	88	59	165	110	73
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	5	5	5	5	2	2
Mvmt Flow	62	104	69	194	129	86

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	166	0	447	114
Stage 1	-	-	-	-	114	-
Stage 2	-	-	-	-	333	-
Critical Hdwy	-	-	4.15	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.245	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1394	-	569	939
Stage 1	-	-	-	-	911	-
Stage 2	-	-	-	-	726	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1394	-	538	939
Mov Cap-2 Maneuver	-	-	-	-	538	-
Stage 1	-	-	-	-	911	-
Stage 2	-	-	-	-	686	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2	13.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	648	-	-	1394	-
HCM Lane V/C Ratio	0.332	-	-	0.05	-
HCM Control Delay (s)	13.3	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	1.5	-	-	0.2	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	107	149	114	83	526	72	149	39	40	94	45	202
Future Volume (Veh/h)	107	149	114	83	526	72	149	39	40	94	45	202
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	113	157	120	87	554	76	157	41	42	99	47	213
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	630			277			1446	1247	217	1272	1269	592
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	630			277			1446	1247	217	1272	1269	592
tC, single (s)	4.2			4.2			*6.0	*6.0	*6.0	*6.0	*6.0	*6.0
tC, 2 stage (s)												
tF (s)	2.3			2.3			*2.0	*2.0	*2.0	*2.0	*2.0	*2.0
p0 queue free %	87			93			0	84	97	55	81	73
cM capacity (veh/h)	897			1258			126	254	1331	220	246	787

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	390	717	240	359
Volume Left	113	87	157	99
Volume Right	120	76	42	213
cSH	897	1258	167	394
Volume to Capacity	0.13	0.07	1.44	0.91
Queue Length 95th (ft)	11	6	377	240
Control Delay (s)	3.8	1.8	278.7	58.5
Lane LOS	A	A	F	F
Approach Delay (s)	3.8	1.8	278.7	58.5
Approach LOS			F	F

Intersection Summary				
Average Delay	53.1			
Intersection Capacity Utilization	74.0%	ICU Level of Service	D	
Analysis Period (min)	15			

* User Entered Value

Intersection	
Int Delay, s/veh	48

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	107	149	114	83	526	72	149	39	40	94	45	202
Future Vol, veh/h	107	149	114	83	526	72	149	39	40	94	45	202
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	14	14	14	7	7	7	4	4	4	2	2	2
Mvmt Flow	113	157	120	87	554	76	157	41	42	99	47	213

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	629	0	0	277	0	0	1338	1246	217	1250	1268	592
Stage 1	-	-	-	-	-	-	442	442	-	766	766	-
Stage 2	-	-	-	-	-	-	896	804	-	484	502	-
Critical Hdwy	4.24	-	-	4.17	-	-	6	6	6	6	6	6
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.54	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.54	-	6.12	5.52	-
Follow-up Hdwy	2.326	-	-	2.263	-	-	2	2	2	2	2	2
Pot Cap-1 Maneuver	898	-	-	1258	-	-	274	313	1331	311	303	787
Stage 1	-	-	-	-	-	-	955	1028	-	601	683	-
Stage 2	-	-	-	-	-	-	496	648	-	902	955	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	898	-	-	1258	-	-	~ 138	237	1331	214	229	787
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 138	237	-	214	229	-
Stage 1	-	-	-	-	-	-	811	873	-	510	609	-
Stage 2	-	-	-	-	-	-	298	578	-	707	811	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.8	1	236	65.4
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	179	898	-	-	1258	-	-	382
HCM Lane V/C Ratio	1.341	0.125	-	-	0.069	-	-	0.94
HCM Control Delay (s)	236	9.6	0	-	8.1	0	-	65.4
HCM Lane LOS	F	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	14	0.4	-	-	0.2	-	-	10.2

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1255	435	1254	535	560	1607
Future Volume (vph)	1255	435	1254	535	560	1607
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	1.00	0.91	1.00	1.00	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.96	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1568	5085	1526	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3400	1568	5085	1526	1770	5085
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1294	448	1293	552	577	1657
RTOR Reduction (vph)	0	0	0	414	0	0
Lane Group Flow (vph)	1294	448	1293	138	577	1657
Confl. Peds. (#/hr)				6	6	
Confl. Bikes (#/hr)				1		
Heavy Vehicles (%)	3%	3%	2%	2%	2%	2%
Turn Type	Prot	pm+ov	NA	Perm	Prot	NA
Protected Phases	8	1	2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	29.5	54.0	22.5	22.5	24.5	51.5
Effective Green, g (s)	29.5	54.0	22.5	22.5	24.5	51.5
Actuated g/C Ratio	0.33	0.60	0.25	0.25	0.27	0.57
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1114	1019	1271	381	481	2909
v/s Ratio Prot	c0.38	0.12	c0.25		c0.33	0.33
v/s Ratio Perm		0.17		0.09		
v/c Ratio	1.16	0.44	1.02	0.36	1.20	0.57
Uniform Delay, d1	30.2	9.8	33.8	27.8	32.8	12.2
Progression Factor	1.00	1.00	1.25	4.87	1.00	1.00
Incremental Delay, d2	82.9	0.3	23.5	1.5	108.4	0.8
Delay (s)	113.1	10.1	65.7	137.2	141.2	13.0
Level of Service	F	B	E	F	F	B
Approach Delay (s)	86.6		87.1			46.1
Approach LOS	F		F			D

Intersection Summary			
HCM 2000 Control Delay	71.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	102.3%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	615	520	1269	930	530	2332
Future Volume (vph)	615	520	1269	930	530	2332
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	0.91	1.00	1.00	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.96	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	5036	1510	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	5036	1510	1770	5085
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	628	531	1295	949	541	2380
RTOR Reduction (vph)	0	331	0	442	0	0
Lane Group Flow (vph)	628	200	1295	507	541	2380
Confl. Peds. (#/hr)				7	7	
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	27.5	27.5	26.5	26.5	22.5	53.5
Effective Green, g (s)	27.5	27.5	26.5	26.5	22.5	53.5
Actuated g/C Ratio	0.31	0.31	0.29	0.29	0.25	0.59
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	540	483	1482	444	442	3022
v/s Ratio Prot	c0.35		0.26		c0.31	0.47
v/s Ratio Perm		0.13		c0.34		
v/c Ratio	1.16	0.41	0.87	1.14	1.22	0.79
Uniform Delay, d1	31.2	24.8	30.2	31.8	33.8	13.9
Progression Factor	1.00	1.00	1.00	1.00	0.89	0.92
Incremental Delay, d2	92.2	0.6	7.4	87.3	111.5	1.2
Delay (s)	123.5	25.4	37.6	119.1	141.6	14.0
Level of Service	F	C	D	F	F	B
Approach Delay (s)	78.6		72.0			37.7
Approach LOS	E		E			D

Intersection Summary			
HCM 2000 Control Delay	57.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	99.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Traffic Volume (veh/h)	1897	18	0	2947	0	302
Future Volume (Veh/h)	1897	18	0	2947	0	302
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	1997	19	0	3102	0	318
Pedestrians					3	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	335			372		
pX, platoon unblocked			0.59		0.77	0.59
vC, conflicting volume			2019		3044	1011
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1332		183	0
tC, single (s)			4.2		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	50
cM capacity (veh/h)			298		608	636

Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SB 3	NW 1
Volume Total	1331	685	1034	1034	1034	318
Volume Left	0	0	0	0	0	0
Volume Right	0	19	0	0	0	318
cSH	1700	1700	1700	1700	1700	636
Volume to Capacity	0.78	0.40	0.61	0.61	0.61	0.50
Queue Length 95th (ft)	0	0	0	0	0	70
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	16.2
Lane LOS						C
Approach Delay (s)	0.0		0.0			16.2
Approach LOS						C

Intersection Summary				
Average Delay	0.9			
Intersection Capacity Utilization	78.4%	ICU Level of Service		D
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	3

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	1897	18	0	2947	0	302
Future Vol, veh/h	1897	18	0	2947	0	302
Conflicting Peds, #/hr	0	3	3	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	3	2	2
Mvmt Flow	1997	19	0	3102	0	318

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	1011
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	2.5
Pot Cap-1 Maneuver	-	-	0	-	0	372
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	371
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

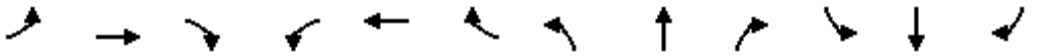
Approach	NB	SB	NW
HCM Control Delay, s	0	0	51.6
HCM LOS			F

Minor Lane/Major Mvmt	NBT	NBR	NWLn1	SBT
Capacity (veh/h)	-	-	371	-
HCM Lane V/C Ratio	-	-	0.857	-
HCM Control Delay (s)	-	-	51.6	-
HCM Lane LOS	-	-	F	-
HCM 95th %tile Q(veh)	-	-	8.1	-

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Traffic Volume (vph)	1426	66	576	2371	91	489
Future Volume (vph)	1426	66	576	2371	91	489
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3446		1770	3539	1787	1599
Flt Permitted	1.00		0.09	1.00	0.95	1.00
Satd. Flow (perm)	3446		161	3539	1787	1599
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1470	68	594	2444	94	504
RTOR Reduction (vph)	3	0	0	0	0	4
Lane Group Flow (vph)	1535	0	594	2444	94	500
Confl. Peds. (#/hr)		2	2			
Heavy Vehicles (%)	4%	4%	2%	2%	1%	1%
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases			6			4
Actuated Green, G (s)	41.8		81.7	81.7	9.3	44.7
Effective Green, g (s)	41.8		81.7	81.7	9.3	44.7
Actuated g/C Ratio	0.42		0.82	0.82	0.09	0.45
Clearance Time (s)	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1440		701	2891	166	786
v/s Ratio Prot	c0.45		0.30	c0.69	0.05	c0.22
v/s Ratio Perm			0.39			0.09
v/c Ratio	1.07		0.85	0.85	0.57	0.64
Uniform Delay, d1	29.1		25.2	5.4	43.4	21.4
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	43.4		9.3	2.4	4.4	1.7
Delay (s)	72.5		34.5	7.9	47.8	23.1
Level of Service	E		C	A	D	C
Approach Delay (s)	72.5			13.1	26.9	
Approach LOS	E			B	C	

Intersection Summary			
HCM 2000 Control Delay	32.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	89.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	73	197	259	73	131	254	101	430	70	410	761	87
Future Volume (vph)	73	197	259	73	131	254	101	430	70	410	761	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.98		1.00	1.00	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	1.00
Frt	1.00	0.91		1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1675		1787	1881	1599	1770	1824		1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1675		1787	1881	1599	1770	1824		1770	1863	1583
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)	77	207	273	77	138	267	106	453	74	432	801	92
RTOR Reduction (vph)	0	63	0	0	0	76	0	8	0	0	0	51
Lane Group Flow (vph)	77	417	0	77	138	191	106	519	0	432	801	41
Confl. Peds. (#/hr)			4	4								
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	2%	2%	2%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases						8						6
Actuated Green, G (s)	3.9	18.1		3.9	18.1	32.6	5.0	19.6		14.5	29.1	33.0
Effective Green, g (s)	3.9	18.1		3.9	18.1	32.6	5.0	19.6		14.5	29.1	33.0
Actuated g/C Ratio	0.05	0.24		0.05	0.24	0.44	0.07	0.26		0.20	0.39	0.45
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
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)	93	409		94	459	800	119	482		346	731	801
v/s Ratio Prot	c0.04	c0.25		0.04	0.07	0.05	0.06	0.28		c0.24	c0.43	0.00
v/s Ratio Perm						0.07						0.02
v/c Ratio	0.83	1.02		0.82	0.30	0.24	0.89	1.08		1.25	1.10	0.05
Uniform Delay, d1	34.8	28.0		34.8	22.8	13.0	34.3	27.2		29.8	22.5	11.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	42.7	49.7		40.4	0.4	0.2	50.3	63.1		133.7	62.5	0.0
Delay (s)	77.5	77.7		75.1	23.2	13.1	84.5	90.4		163.5	85.0	11.7
Level of Service	E	E		E	C	B	F	F		F	F	B
Approach Delay (s)		77.7			25.9			89.4			105.5	
Approach LOS		E			C			F			F	

Intersection Summary			
HCM 2000 Control Delay	84.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	74.1	Sum of lost time (s)	18.0
Intersection Capacity Utilization	95.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	3	0	9	279	1	43	7	350	462	44	526	1
Future Volume (vph)	3	0	9	279	1	43	7	350	462	44	526	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes		0.98		1.00	0.98		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt		0.90		1.00	0.85		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.99		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1655		1733	1526		1785	1881	1561	1749	1844	
Flt Permitted		0.96		0.75	1.00		0.30	1.00	1.00	0.48	1.00	
Satd. Flow (perm)		1612		1367	1526		555	1881	1561	878	1844	
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)	3	0	10	310	1	48	8	389	513	49	584	1
RTOR Reduction (vph)	0	9	0	0	32	0	0	0	271	0	0	0
Lane Group Flow (vph)	0	4	0	310	17	0	8	389	242	49	585	0
Confl. Peds. (#/hr)	1		1	1		1	3		3	3		3
Heavy Vehicles (%)	0%	0%	0%	4%	4%	4%	1%	1%	1%	3%	3%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4		4	8		
Actuated Green, G (s)		15.5		15.5	15.5		21.8	21.8	21.8	21.8	21.8	
Effective Green, g (s)		15.5		15.5	15.5		21.8	21.8	21.8	21.8	21.8	
Actuated g/C Ratio		0.33		0.33	0.33		0.47	0.47	0.47	0.47	0.47	
Clearance Time (s)		4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		539		457	510		261	885	734	413	868	
v/s Ratio Prot					0.01			0.21			c0.32	
v/s Ratio Perm		0.00		c0.23			0.01		0.15	0.06		
v/c Ratio		0.01		0.68	0.03		0.03	0.44	0.33	0.12	0.67	
Uniform Delay, d1		10.3		13.3	10.4		6.6	8.2	7.7	6.9	9.5	
Progression Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.0		4.0	0.0		0.0	0.4	0.3	0.1	2.1	
Delay (s)		10.3		17.2	10.4		6.6	8.5	7.9	7.0	11.6	
Level of Service		B		B	B		A	A	A	A	B	
Approach Delay (s)		10.3			16.3			8.2			11.2	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	10.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	46.3	Sum of lost time (s)	9.0
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	58	11	20	39	163	39	43	715	76	56	627	153
Future Volume (vph)	58	11	20	39	163	39	43	715	76	56	627	153
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.97			0.98		1.00	0.99		1.00	0.97	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1610			1799		1787	1850		1770	1797	
Flt Permitted		0.61			0.94		0.13	1.00		0.13	1.00	
Satd. Flow (perm)		1011			1696		242	1850		240	1797	
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)	61	12	21	41	172	41	45	753	80	59	660	161
RTOR Reduction (vph)	0	16	0	0	12	0	0	5	0	0	12	0
Lane Group Flow (vph)	0	78	0	0	242	0	45	828	0	59	809	0
Confl. Peds. (#/hr)	3		4	4		3	6		3	3		6
Heavy Vehicles (%)	10%	10%	10%	2%	2%	2%	1%	1%	1%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		13.1			13.1		34.0	31.1		34.0	31.1	
Effective Green, g (s)		13.1			13.1		34.0	31.1		34.0	31.1	
Actuated g/C Ratio		0.22			0.22		0.56	0.51		0.56	0.51	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		218			366		209	949		207	922	
v/s Ratio Prot							0.01	0.45		c0.01	c0.45	
v/s Ratio Perm		0.08			c0.14		0.11			0.15		
v/c Ratio		0.36			0.66		0.22	0.87		0.29	0.88	
Uniform Delay, d1		20.2			21.7		9.6	13.0		10.0	13.1	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.0			4.5		0.5	8.9		0.8	9.5	
Delay (s)		21.2			26.2		10.1	21.9		10.7	22.5	
Level of Service		C			C		B	C		B	C	
Approach Delay (s)		21.2			26.2			21.3			21.7	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	22.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	60.6	Sum of lost time (s)	13.5
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	497	60	258	20	85	11	300	328	13	7	475	208
Future Volume (vph)	497	60	258	20	85	11	300	328	13	7	475	208
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	0.96		1.00		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	
Frt		1.00	0.85		0.99		1.00	0.99		1.00	0.95	
Flt Protected		0.96	1.00		0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1795	1534		1800		1787	1868		1746	1744	
Flt Permitted		0.68	1.00		0.64		0.11	1.00		0.55	1.00	
Satd. Flow (perm)		1277	1534		1159		206	1868		1005	1744	
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)	523	63	272	21	89	12	316	345	14	7	500	219
RTOR Reduction (vph)	0	0	176	0	5	0	0	2	0	0	19	0
Lane Group Flow (vph)	0	586	96	0	117	0	316	357	0	7	700	0
Confl. Peds. (#/hr)	2		9	9		2	5		5	5		5
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	1%	1%	1%	3%	3%	3%
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		29.5	29.5		29.5		45.1	39.6		33.1	32.1	
Effective Green, g (s)		29.5	29.5		29.5		45.1	39.6		33.1	32.1	
Actuated g/C Ratio		0.35	0.35		0.35		0.54	0.47		0.40	0.38	
Clearance Time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		450	541		408		271	884		406	669	
v/s Ratio Prot							c0.12	0.19		0.00	0.40	
v/s Ratio Perm		c0.46	0.06		0.10		c0.51			0.01		
v/c Ratio		1.30	0.18		0.29		1.17	0.40		0.02	1.05	
Uniform Delay, d1		27.0	18.7		19.5		22.7	14.3		15.3	25.7	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		151.5	0.2		0.4		107.2	0.3		0.0	47.5	
Delay (s)		178.5	18.8		19.9		129.9	14.6		15.3	73.2	
Level of Service		F	B		B		F	B		B	E	
Approach Delay (s)		127.9			19.9			68.6			72.7	
Approach LOS		F			B			E			E	

Intersection Summary			
HCM 2000 Control Delay	88.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.27		
Actuated Cycle Length (s)	83.6	Sum of lost time (s)	13.5
Intersection Capacity Utilization	103.1%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	34	565	39	94	551	16	27	27	212	3	23	32
Future Volume (Veh/h)	34	565	39	94	551	16	27	27	212	3	23	32
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	36	595	41	99	580	17	28	28	223	3	24	34
Pedestrians		1			7			9				
Lane Width (ft)		12.0			12.0			12.0				
Walking Speed (ft/s)		3.5			3.5			3.5				
Percent Blockage		0			1			1				
Right turn flare (veh)									5			
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		187			537							
pX, platoon unblocked	0.90						0.90	0.90		0.90	0.90	0.90
vC, conflicting volume	597			645			1530	1492	632	1586	1504	590
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	496			645			1533	1491	632	1596	1504	488
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			89			50	70	53	89	74	94
cM capacity (veh/h)	965			932			56	94	470	28	94	525

Direction, Lane #	SE 1	SE 2	NW 1	NE 1	SW 1
Volume Total	36	636	696	279	61
Volume Left	36	0	99	28	3
Volume Right	0	41	17	223	34
cSH	965	1700	932	374	143
Volume to Capacity	0.04	0.37	0.11	0.75	0.43
Queue Length 95th (ft)	3	0	9	147	47
Control Delay (s)	8.9	0.0	2.6	42.6	47.7
Lane LOS	A		A	E	E
Approach Delay (s)	0.5		2.6	42.6	47.7
Approach LOS				E	E

Intersection Summary				
Average Delay	9.9			
Intersection Capacity Utilization	87.7%	ICU Level of Service		E
Analysis Period (min)	15			

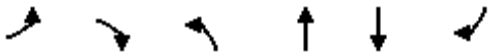
Intersection	
Int Delay, s/veh	9.2

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	34	565	39	94	551	16	27	27	212	3	23	32
Future Vol, veh/h	34	565	39	94	551	16	27	27	212	3	23	32
Conflicting Peds, #/hr	0	0	9	9	0	0	1	0	7	7	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	-	-	-	-	-	130	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	2	2	2	4	4	4	0	0	0
Mvmt Flow	36	595	41	99	580	17	28	28	223	3	24	34

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	597	0	0	645	0	0	1512	1491	631	1494	1502	589
Stage 1	-	-	-	-	-	-	696	696	-	786	786	-
Stage 2	-	-	-	-	-	-	816	795	-	708	716	-
Critical Hdwy	4.11	-	-	4.12	-	-	7.14	6.54	6.24	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.54	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.54	-	6.1	5.5	-
Follow-up Hdwy	2.209	-	-	2.218	-	-	3.536	4.036	3.336	3.5	4	3.3
Pot Cap-1 Maneuver	985	-	-	940	-	-	97	122	477	102	123	512
Stage 1	-	-	-	-	-	-	429	440	-	388	406	-
Stage 2	-	-	-	-	-	-	368	397	-	429	437	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	984	-	-	934	-	-	63	98	470	36	99	512
Mov Cap-2 Maneuver	-	-	-	-	-	-	63	98	-	36	99	-
Stage 1	-	-	-	-	-	-	410	420	-	374	341	-
Stage 2	-	-	-	-	-	-	268	334	-	201	417	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0.5	1.3	42	43.3
HCM LOS			E	E

Minor Lane/Major Mvmt	NELn1	NELn2	NWL	NWT	NWR	SEL	SET	SER	SWLn1
Capacity (veh/h)	77	470	934	-	-	984	-	-	153
HCM Lane V/C Ratio	0.738	0.475	0.106	-	-	0.036	-	-	0.399
HCM Control Delay (s)	130.7	19.4	9.3	0	-	8.8	-	-	43.3
HCM Lane LOS	F	C	A	A	-	A	-	-	E
HCM 95th %tile Q(veh)	3.5	2.5	0.4	-	-	0.1	-	-	1.7



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	6	0	768	17	23	17
Future Volume (Veh/h)	6	0	768	17	23	17
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	6	0	808	18	24	18
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	1658	24	24			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1658	24	24			
tC, single (s)	*6.0	6.2	4.1			
tC, 2 stage (s)						
tF (s)	*2.0	3.3	2.2			
p0 queue free %	93	100	49			
cM capacity (veh/h)	85	1050	1578			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	6	808	18	24	18
Volume Left	6	808	0	0	0
Volume Right	0	0	0	0	18
cSH	85	1578	1700	1700	1700
Volume to Capacity	0.07	0.51	0.01	0.01	0.01
Queue Length 95th (ft)	6	76	0	0	0
Control Delay (s)	50.7	9.7	0.0	0.0	0.0
Lane LOS	F	A			
Approach Delay (s)	50.7	9.4		0.0	
Approach LOS	F				

Intersection Summary				
Average Delay	9.3			
Intersection Capacity Utilization	59.2%	ICU Level of Service		B
Analysis Period (min)	15			

* User Entered Value

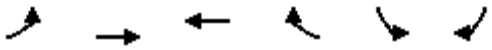
Intersection	
Int Delay, s/veh	9.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	0	768	17	23	17
Future Vol, veh/h	6	0	768	17	23	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	0	-	0	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	4	4	0	0
Mvmt Flow	6	0	808	18	24	18

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1659	-	24	0	-	0
Stage 1	24	-	-	-	-	-
Stage 2	1635	-	-	-	-	-
Critical Hdwy	6	-	4.14	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	2	-	2.236	-	-	-
Pot Cap-1 Maneuver	174	0	1578	-	-	0
Stage 1	1748	0	-	-	-	0
Stage 2	233	0	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	85	-	1578	-	-	-
Mov Cap-2 Maneuver	85	-	-	-	-	-
Stage 1	1748	-	-	-	-	-
Stage 2	114	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	50.7	9.4	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT
Capacity (veh/h)	1578	-	85	-
HCM Lane V/C Ratio	0.512	-	0.074	-
HCM Control Delay (s)	9.7	-	50.7	-
HCM Lane LOS	A	-	F	-
HCM 95th %tile Q(veh)	3.1	-	0.2	-



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	3085	0	785	23	0
Future Volume (Veh/h)	0	3085	0	785	23	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	3247	0	826	24	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	826				1624	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	826				1624	0
tC, single (s)	4.2				*6.5	6.9
tC, 2 stage (s)						
tF (s)	2.2				*2.5	3.3
p0 queue free %	100				81	100
cM capacity (veh/h)	794				128	1091

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	1624	1624	413	413	24
Volume Left	0	0	0	0	24
Volume Right	0	0	413	413	0
cSH	1700	1700	1700	1700	128
Volume to Capacity	0.95	0.95	0.24	0.24	0.19
Queue Length 95th (ft)	0	0	0	0	16
Control Delay (s)	0.0	0.0	0.0	0.0	39.5
Lane LOS					E
Approach Delay (s)	0.0		0.0		39.5
Approach LOS					E

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	95.3%	ICU Level of Service	F
Analysis Period (min)	15		

* User Entered Value

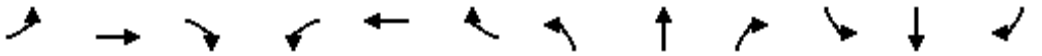
Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑		↱↱	↰	
Traffic Vol, veh/h	0	3085	0	785	23	0
Future Vol, veh/h	0	3085	0	785	23	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	0	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	4	4	0	0
Mvmt Flow	0	3247	0	826	24	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	-	1624	-
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	1624	-
Critical Hdwy	-	-	-	-	6.5	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	-	-	2.5	-
Pot Cap-1 Maneuver	0	-	0	-	128	0
Stage 1	0	-	0	-	-	0
Stage 2	0	-	0	-	175	0
Platoon blocked, %		-		-		
Mov Cap-1 Maneuver	-	-	-	-	128	-
Mov Cap-2 Maneuver	-	-	-	-	128	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	175	-

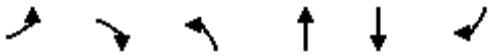
Approach	EB	WB	SB
HCM Control Delay, s	0	0	39.6
HCM LOS			E

Minor Lane/Major Mvmt	EBT	WBR	SBLn1
Capacity (veh/h)	-	-	128
HCM Lane V/C Ratio	-	-	0.189
HCM Control Delay (s)	-	-	39.6
HCM Lane LOS	-	-	E
HCM 95th %tile Q(veh)	-	-	0.7



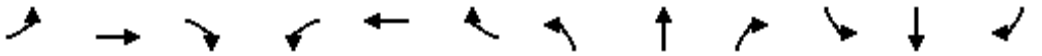
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	238	0	0	542	0	1985	179	0	3759	763
Future Volume (vph)	0	0	238	0	0	542	0	1985	179	0	3759	763
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.5			4.5		4.5	4.5		4.5	4.5
Lane Util. Factor			0.88			0.88		0.91	1.00		0.91	1.00
Frt			0.85			0.85		1.00	0.85		1.00	0.85
Flt Protected			1.00			1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)			2814			2760		5085	1583		5085	1583
Flt Permitted			1.00			1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)			2814			2760		5085	1583		5085	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	0	245	0	0	559	0	2046	185	0	3875	787
RTOR Reduction (vph)	0	0	53	0	0	19	0	0	60	0	0	160
Lane Group Flow (vph)	0	0	192	0	0	540	0	2046	125	0	3875	627
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	2%	2%	2%	2%	2%	2%
Turn Type			Perm			Perm		NA	Perm		NA	Perm
Protected Phases								2			6	
Permitted Phases			5			1			2			6
Actuated Green, G (s)			12.3			24.7		70.9	70.9		83.3	83.3
Effective Green, g (s)			12.3			24.7		70.9	70.9		83.3	83.3
Actuated g/C Ratio			0.12			0.24		0.68	0.68		0.80	0.80
Clearance Time (s)			4.5			4.5		4.5	4.5		4.5	4.5
Vehicle Extension (s)			3.0			3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)			330			651		3446	1072		4049	1260
v/s Ratio Prot								0.40			c0.76	
v/s Ratio Perm			0.07			c0.20			0.08			0.40
v/c Ratio			0.58			0.83		0.59	0.12		0.96	0.50
Uniform Delay, d1			43.7			37.9		9.1	5.9		9.1	3.6
Progression Factor			1.00			1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2			2.6			8.6		0.3	0.0		6.8	0.3
Delay (s)			46.3			46.6		9.4	5.9		15.9	3.9
Level of Service			D			D		A	A		B	A
Approach Delay (s)		46.3			46.6			9.1			13.8	
Approach LOS		D			D			A			B	

Intersection Summary			
HCM 2000 Control Delay	15.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	104.6	Sum of lost time (s)	9.0
Intersection Capacity Utilization	88.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	566	241	165	1598	2892	1105
Future Volume (vph)	566	241	165	1598	2892	1105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1752	3505	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	1752	3505	3539	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	578	246	168	1631	2951	1128
RTOR Reduction (vph)	0	2	0	0	0	8
Lane Group Flow (vph)	578	244	168	1631	2951	1120
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%
Turn Type	Prot	pm+ov	Prot	NA	NA	pm+ov
Protected Phases	4	5	5	2	6	4
Permitted Phases		4				6
Actuated Green, G (s)	18.5	27.0	8.5	92.5	79.5	98.0
Effective Green, g (s)	18.5	27.0	8.5	92.5	79.5	98.0
Actuated g/C Ratio	0.15	0.22	0.07	0.77	0.66	0.82
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	529	415	124	2701	2344	1352
v/s Ratio Prot	c0.17	0.04	c0.10	0.47	c0.83	0.13
v/s Ratio Perm		0.11				0.58
v/c Ratio	1.09	0.59	1.35	0.60	1.26	0.83
Uniform Delay, d1	50.8	41.5	55.8	5.9	20.2	6.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	66.7	2.1	203.2	1.0	120.2	4.3
Delay (s)	117.5	43.7	259.0	6.9	140.4	10.6
Level of Service	F	D	F	A	F	B
Approach Delay (s)	95.5			30.4	104.5	
Approach LOS	F			C	F	

Intersection Summary			
HCM 2000 Control Delay	83.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	116.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	491	945	70	90	700	560	55	712	130	1045	1427	661
Future Volume (vph)	491	945	70	90	700	560	55	712	130	1045	1427	661
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99	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	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3467	3532		3467	3574	1577	1752	3505	1544	3433	3539	1555
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3467	3532		3467	3574	1577	1752	3505	1544	3433	3539	1555
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	506	974	72	93	722	577	57	734	134	1077	1471	681
RTOR Reduction (vph)	0	4	0	0	0	396	0	0	105	0	0	183
Lane Group Flow (vph)	506	1042	0	93	722	181	57	734	29	1077	1471	498
Confl. Peds. (#/hr)	1		6	6		1	3		1	1		3
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	3%	3%	3%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	16.7	35.1		5.1	23.5	23.5	4.0	26.3	26.3	35.5	57.8	57.8
Effective Green, g (s)	16.7	35.1		5.1	23.5	23.5	4.0	26.3	26.3	35.5	57.8	57.8
Actuated g/C Ratio	0.14	0.29		0.04	0.20	0.20	0.03	0.22	0.22	0.30	0.48	0.48
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	482	1033		147	699	308	58	768	338	1015	1704	748
v/s Ratio Prot	c0.15	c0.29		0.03	0.20		0.03	c0.21		c0.31	0.42	
v/s Ratio Perm						0.12			0.02			0.32
v/c Ratio	1.05	1.01		0.63	1.03	0.59	0.98	0.96	0.09	1.06	0.86	0.67
Uniform Delay, d1	51.6	42.5		56.5	48.2	43.9	58.0	46.3	37.3	42.2	27.6	23.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	54.7	30.1		8.6	42.8	2.9	111.4	23.3	0.5	45.9	6.1	4.7
Delay (s)	106.3	72.5		65.1	91.0	46.7	169.4	69.6	37.8	88.2	33.7	28.4
Level of Service	F	E		E	F	D	F	E	D	F	C	C
Approach Delay (s)		83.6			70.9			71.1			50.7	
Approach LOS		F			E			E			D	

Intersection Summary			
HCM 2000 Control Delay	64.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	97.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	212	113	63	159	89	52
Future Volume (Veh/h)	212	113	63	159	89	52
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	236	126	70	177	99	58
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			362		616	299
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			362		616	299
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			94		77	92
cM capacity (veh/h)			1186		427	741

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	362	247	157
Volume Left	0	70	99
Volume Right	126	0	58
cSH	1700	1186	506
Volume to Capacity	0.21	0.06	0.31
Queue Length 95th (ft)	0	5	33
Control Delay (s)	0.0	2.7	15.3
Lane LOS		A	C
Approach Delay (s)	0.0	2.7	15.3
Approach LOS			C

Intersection Summary			
Average Delay	4.0		
Intersection Capacity Utilization	48.0%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	3.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	212	113	63	159	89	52
Future Vol, veh/h	212	113	63	159	89	52
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	4	4	2	2
Mvmt Flow	236	126	70	177	99	58

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	361	0	615	298
Stage 1	-	-	-	-	298	-
Stage 2	-	-	-	-	317	-
Critical Hdwy	-	-	4.14	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.236	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1187	-	455	741
Stage 1	-	-	-	-	753	-
Stage 2	-	-	-	-	738	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1187	-	425	741
Mov Cap-2 Maneuver	-	-	-	-	425	-
Stage 1	-	-	-	-	753	-
Stage 2	-	-	-	-	690	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.3	15.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	504	-	-	1187	-
HCM Lane V/C Ratio	0.311	-	-	0.059	-
HCM Control Delay (s)	15.3	-	-	8.2	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	1.3	-	-	0.2	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	238	674	226	21	309	79	53	46	10	62	35	156
Future Volume (Veh/h)	238	674	226	21	309	79	53	46	10	62	35	156
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	251	709	238	22	325	83	56	48	11	65	37	164
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	408			947			1923	1782	828	1776	1860	366
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	408			947			1923	1782	828	1776	1860	366
tC, single (s)	4.1			4.1			*6.0	*6.0	*6.0	*6.0	*6.0	*6.0
tC, 2 stage (s)												
tF (s)	2.2			2.2			*2.0	*2.0	*2.0	*2.0	*2.0	*2.0
p0 queue free %	78			97			5	56	98	17	63	85
cM capacity (veh/h)	1151			721			59	110	565	79	99	1080

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	1198	430	115	266
Volume Left	251	22	56	65
Volume Right	238	83	11	164
cSH	1151	721	82	196
Volume to Capacity	0.22	0.03	1.41	1.35
Queue Length 95th (ft)	21	2	224	381
Control Delay (s)	5.4	0.9	330.3	235.2
Lane LOS	A	A	F	F
Approach Delay (s)	5.4	0.9	330.3	235.2
Approach LOS			F	F

Intersection Summary			
Average Delay	53.5		
Intersection Capacity Utilization	110.5%	ICU Level of Service	H
Analysis Period (min)	15		

* User Entered Value

Intersection	
Int Delay, s/veh	127.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	238	674	226	21	309	79	53	46	10	62	35	156
Future Vol, veh/h	238	674	226	21	309	79	53	46	10	62	35	156
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	3	3	3	2	2	2	2	2	2
Mvmt Flow	251	709	238	22	325	83	56	48	11	65	37	164

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	408	0	0	947	0	0	1841	1782	828	1770	1859	367
Stage 1	-	-	-	-	-	-	1329	1329	-	411	411	-
Stage 2	-	-	-	-	-	-	512	453	-	1359	1448	-
Critical Hdwy	4.12	-	-	4.13	-	-	6	6	6	6	6	6
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.227	-	-	2	2	2	2	2	2
Pot Cap-1 Maneuver	1151	-	-	721	-	-	134	145	565	148	130	1079
Stage 1	-	-	-	-	-	-	266	332	-	1001	1072	-
Stage 2	-	-	-	-	-	-	866	1017	-	254	284	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1151	-	-	721	-	-	~ 39	71	565	~ 42	64	1079
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 39	71	-	~ 42	64	-
Stage 1	-	-	-	-	-	-	136	170	-	513	1029	-
Stage 2	-	-	-	-	-	-	680	976	-	91	145	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.9	0.5	$ 682.2	$ 660.5
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	54	1151	-	-	721	-	-	117
HCM Lane V/C Ratio	2.125	0.218	-	-	0.031	-	-	2.276
HCM Control Delay (s)	$ 682.2	9	0	-	10.2	0	-	$ 660.5
HCM Lane LOS	F	A	A	-	B	A	-	F
HCM 95th %tile Q(veh)	11.4	0.8	-	-	0.1	-	-	23

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

From:	Marah.B.Danielson@odot.state.or.us
To:	marah.b.danielson@odot.state.or.us; Pete Walter; abraham.tayar@odot.state.or.us
Cc:	john.makler@odot.state.or.us
Subject:	ODOT Case # 7459 Park Place 91 Acre Annexation & Zone Change
Date:	Monday, April 02, 2018 2:39:43 PM
Attachments:	07459_08992_RESPDFTPR.docx

Hi Pete,
Attached are ODOT comments on the Park Place Annexation and Zone Change. Please forward to the Planning Commission and interested parties. Let me know if you have any questions.

Thank you,
Marah Danielson, Senior Planner
ODOT Development Review Program
marah.b.danielson@odot.state.or.us
503-731-8258

Oregon
Kate Brown, Governor

Department of Transportation
Region 1 Headquarters
123 NW Flanders Street
Portland, Oregon 97209
(503) 731.8200
FAX (503) 731.8259

April 2nd, 2018

ODOT Case No: 7459

To:: Pete Walter, AICP, Planner

From: Marah Danielson, Senior Planner

Subject: PA-16-57: Park Place 91 Acre Annexation & Zone Change

We have reviewed the proposed annexation and zone change of six properties on N. side of Holcomb Blvd totaling 91 acres into Oregon City. The subject territory is within the Oregon City Urban Growth Boundary, and has a Comprehensive Plan designation of LR – Low Density Residential. The site is in the vicinity of I-205, OR 213 and OR 99E. ODOT has permitting authority for these facilities and an interest in assuring that the proposed zone change is consistent with the identified function, capacity and performance standards of these facilities.

The traffic impact analysis properly documents the significant congestion challenges facing Oregon City, including both local and state roadways. The analysis identifies the investments and improvements that are needed to ensure that the entire system operates with safety, efficiency and reliability. These investments include improvements to the local street network that are critical to the performance of the local and state roadways. The necessary transportation improvements are described in the city's Transportation System Plan (TSP). The need for adequate street connections, including the Holly Lane extension, are clearly identified in this as well as other planning documents.

Based on our review of the traffic impact study and the planned investments and improvements to improve performance of the transportation system, ODOT is satisfied that the staff report demonstrates compliance with the Transportation Planning Rule. The requirement for a Master Plan affords ODOT and the city a future opportunity to ensure that the infrastructure consistent with the TSP is implemented to meet the criteria for adequate transportation facilities.

Thank you for providing ODOT the opportunity to participate in this land use review. If you have any questions regarding this matter, please contact me at 503.731.8258.

C: Avi Tayar, P.E., Jon Makler, ODOT Region 1

City of Oregon City

625 Center Street
Oregon City, OR 97045
503-657-0891

Staff Report

File Number: PC 18-018

Agenda Date: 2/12/2018

Status: Agenda Ready

To: Planning Commission

Agenda #: 3a.

From: Christina Robertson-Gardiner

File Type: Planning Item

SUBJECT:
Review Staff Report and Request for Continuance to March 12, 2018: AN 17-0004 / ZC 17-0005: Park Place Annexation and Rezoning of 92 acres

RECOMMENDED ACTION (Motion): Staff recommends the Planning Commission take testimony and continue Planning file AN 17-0004 and ZC 17 -0005 to March 12, 2018.

BACKGROUND:
An Annexation and Zone Change was submitted for 14 tax lots located on the south side of Holcomb Blvd and north of S. Livesay Rd and totaling approximately 92 acres into Oregon City. The subject territory is within the Oregon City Urban Growth Boundary, and has Comprehensive Plan designations of LR - Low-Density Residential, MR - Medium Density Residential and MUC -Mixed Use Corridor, as provided within the Park Place Concept Plan. The applicant requested a Zone Change from County FU-10 to City R-10 Single Family Dwelling District, R-5 Single Family Dwelling District, and NC Neighborhood Commercial District, though has not proposed the development of the property at this time.

A draft staff report is attached, however, in response to a recent concern, the staff has asked that the applicant consider revising the transportation impact study to nominally increase the potential worst-case scenario at buildout of the development. The transportation impact will be analyzed at multiple points throughout the development of this property. The current analysis associated with these applications reviews the transportation impact of a reasonable worst case scenario when the subject site is built out to determine compliance with the Annexation and Zone Change criteria in the Oregon City Municipal Code. The applicant has proposed to create a Master Plan in the future to identify the specific uses for construction and adequacy of the transportation (and other facilities such as utilities) prior to the development of the site. As the development is proposed onside the transportation impact will be analyzed again for compliance with the Oregon City Municipal Code. As the applicant will be providing an additional analysis, staff recommends the Planning Commission accept public testimony and continue the hearing until March 12, 2018

BUDGET IMPACT:
Amount:

FY(s):
Funding Source:

City of Oregon City

625 Center Street
Oregon City, OR 97045
503-657-0891

Staff Report

File Number: PC 18-018

Agenda Date: 2/12/2018

Status: Agenda Ready

To: Planning Commission

Agenda #: 3a.

From: Christina Robertson-Gardiner

File Type: Planning Item

SUBJECT:
Review Staff Report and Request for Continuance to March 12, 2018: AN 17-0004 / ZC 17-0005: Park Place Annexation and Rezoning of 92 acres

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BUDGET IMPACT:
Amount:

FY(s):
Funding Source:

OREGON CITY

Community Development – Planning

221 Molalla Ave. Suite 200 | Oregon City OR 97045
Ph (503) 722-3789 | Fax (503) 722-3880

STAFF REPORT WITH FINDINGS AND RECOMMENDATION
February 5, 2018

FILE NOs.: AN-17-0004 / ZC-17-0005

APPLICATION TYPE: Type IV - Annexation with Zone Change

HEARING DATE: *Planning Commission*
Monday, February 12th, 2018 - 7:00 p.m., Oregon City City Hall
625 Center Street, Oregon City, OR 97045

APPLICANT: Mark Handris, Hidden Falls Development LLC
1980 Willamette Falls Dr., Ste. 200, West Linn, OR 97068

OWNER(s):

Address:	Tax Lot:	Acres	Owner
No Address	2-2E-27B -01000	9.69	Erickson
15110 S HOLCOMB BLVD	2-2E-27B -02000	1.45	Erickson
No Address	2-2E-28D -00100	14.11	Hidden Falls Development LLC
No Address	2-2E-28D -00190	10.75	Hidden Falls Development LLC
No Address	2-2E-28D -00302	0.16	Hidden Falls Development LLC
16582 S LIVESAY RD	2-2E-28D -00400	10.43	Hidden Falls Development LLC
14631 S LIVESAY RD	2-2E-28D -00500	10.73	Hidden Falls Development LLC
16472 S LIVESAY RD	2-2E-28D -03700	6.86	Hidden Falls Development LLC
16530 S LIVESAY RD	2-2E-28D -00200	5.17	Kirk and Michelle Tolstrup
16644 S LIVESAY RD	2-2E-28D -00300	3.1	George Thomas
No Address	2-2E-28D -00301	1.43	George Thomas
No Address	2-2E-28D -00303	1.77	George Thomas
14631 S LIVESAY RD	2-2E-28D -00502	9.42	Robert Tershel
No Address	2-2E-28D -03701	6.48	Redland Road LLC

REPRESENTATIVE: Rick Givens, 18680 Sunblaze Dr, Oregon City, OR 97045

REQUEST: Annexation and Zone Change of 14 tax lots located on the south side of Holcomb Blvd and north of S. Livesay Rd and totaling approximately 92 acres into Oregon City. (See attached map.) The subject territory is within the Oregon City Urban Growth Boundary, and has Comprehensive Plan designations of LR – Low Density Residential, MR – Medium Density Residential and MUC -Mixed Use Corridor. Applicant has requested a Zone Change from County FU-10 to City R-10 Single Family Dwelling District, R-5 Single Family Dwelling District, and NC Neighborhood Commercial District.

LOCATION:	See above under "Owners" and attached vicinity map. The annexation territory extends from the south side of Holcomb Blvd to S. Livesay Rd, abutting the UGB to the east.
STAFF REVIEWERS:	Pete Walter, AICP, Planner Christina Robertson-Gardiner, AICP, Senior Planner
COMP. PLAN DESIGNATIONS:	LR – Low Density Residential (~9.5 ac) MR – Medium Density Residential (~77.3 ac) MUC – Mixed Use Corridor (~4.5 ac)
PROPOSED ZONING:	R-10 – Single Family Residential R-5 - Dweling District NC – Neighborhood Commercial
CURRENT ZONING:	Clackamas County FU-10 (~57 ac) Clackamas County RRF-5 (~35 ac)
RECOMMENDATION:	Approval with conditions

PROCESS: The applicant and all documents submitted by or on behalf of the applicant are available for inspection at no cost at the Oregon City Planning Division, 221 Molalla Avenue, Oregon City, Oregon 97045, from 8:30am to 3:30pm Monday thru Friday. The staff report, with all the applicable approval criteria, will also be available for inspection 7 days prior to the hearings. Copies of these materials may be obtained for a reasonable cost in advance.

Please be advised that this is a Type IV proceeding. All new evidence must be submitted before the Planning Commission closes the public record. The City Commission's review will be on the record and limited to evidence that was submitted before the Planning Commission. Any issue that is intended to provide a basis for appeal must be raised before the close of the City Commission hearing, in person or by letter, with sufficient specificity to afford the City Commission and the parties an opportunity to respond to the issue. Failure to raise an issue with sufficient specificity will preclude any appeal on that issue. After considering the recommendation by the Planning Commission, the City Commission will make a determination as to whether the application has or has not complied with the factors set forth in section 14.04.060 of the Oregon City Municipal Code. Since the site has an acknowledged Comprehensive Plan map designation, upon annexation, the site shall be rezoned to implement the comprehensive plan.

I. INTRODUCTION

GENERAL INFORMATION

This application requests approval to annex approximately 92 acres of land within the Urban Growth Boundary "UGB" to the City of Oregon City. This application also requests that City apply zoning to the annexed area in conformance with the land use designations in the adopted and acknowledged Oregon City Comprehensive Plan. The zoning would change from Clackamas County Future Urbanizable-10 (FU-10) and RRF5 (Rural Farm and Forest 5-Acre) to City of Oregon City R-10 Single-Family Dwelling District, R-5 Dwelling District, and NC – Neighborhood Commercial District pursuant to OCMC 17.68.025A.

The proposed zoning designations, if approved, represent an initial step in implementing the vision for the "North Village" of the adopted Park Place Concept Plan, adopted by the City in 2008. The concept plan is discussed in detail below.

EXISTING CONDITIONS

The annexation territory is located on the south side of Holcomb Blvd west of its intersection with Jada Way. South Livesay Road forms the southerly border of the annexation area. Journey Drive, Shartner Drive, and Cattle Drive are all stubbed into the subject area from existing residential neighborhoods to the north.

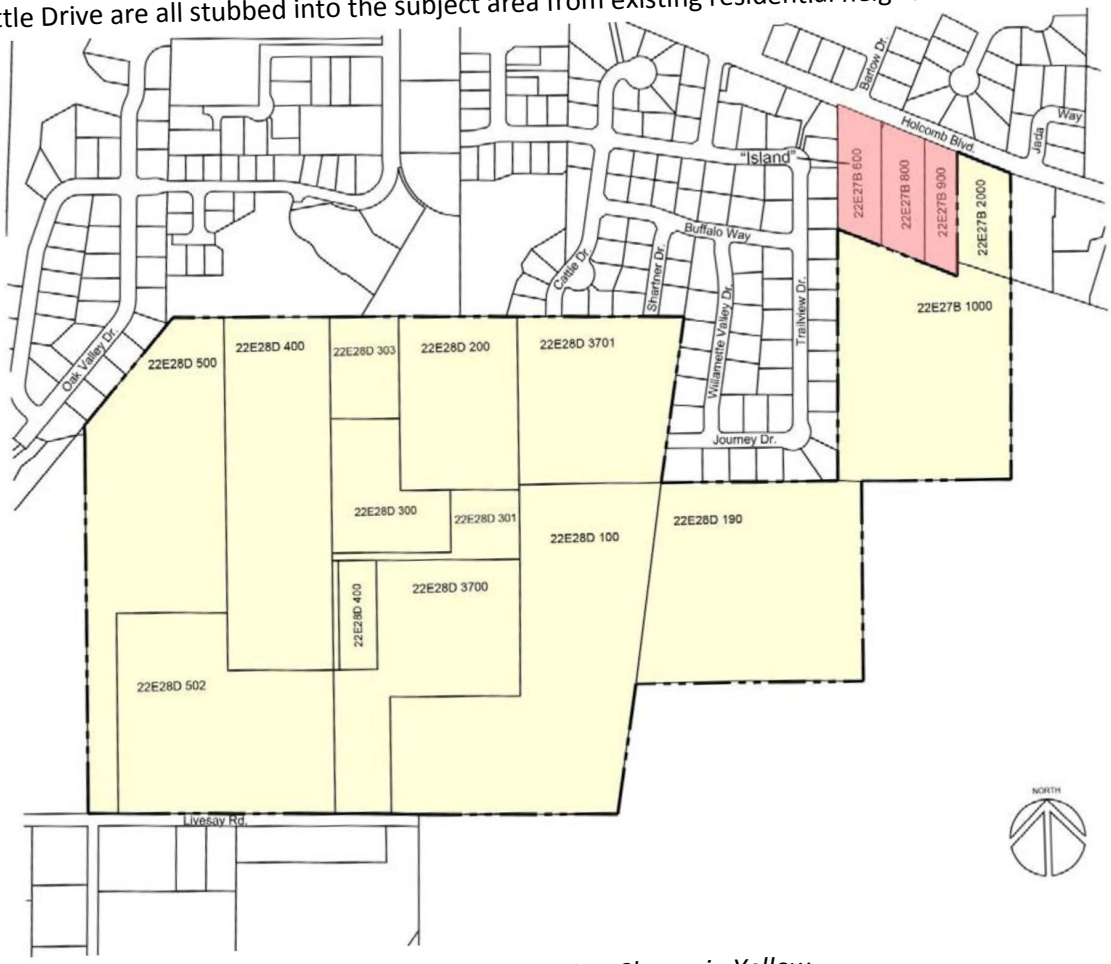


Figure #1: Subject Site Shown in Yellow

The properties included within this annexation proposal (highlighted in yellow above) contain a total of 7 single-family homes developed at rural densities on acreage tractswith various scattered outbuildings. The properties are located in the North Village Neighborhood area identified in the Park Place Concept Plan. As

discussed in the applicant's report, the future development of the subject property will provide for a mixture of residential, park, natural open space areas, and neighborhood commercial development consistent with the Park Place Concept Plan, provided the recommendations of this report are implemented.

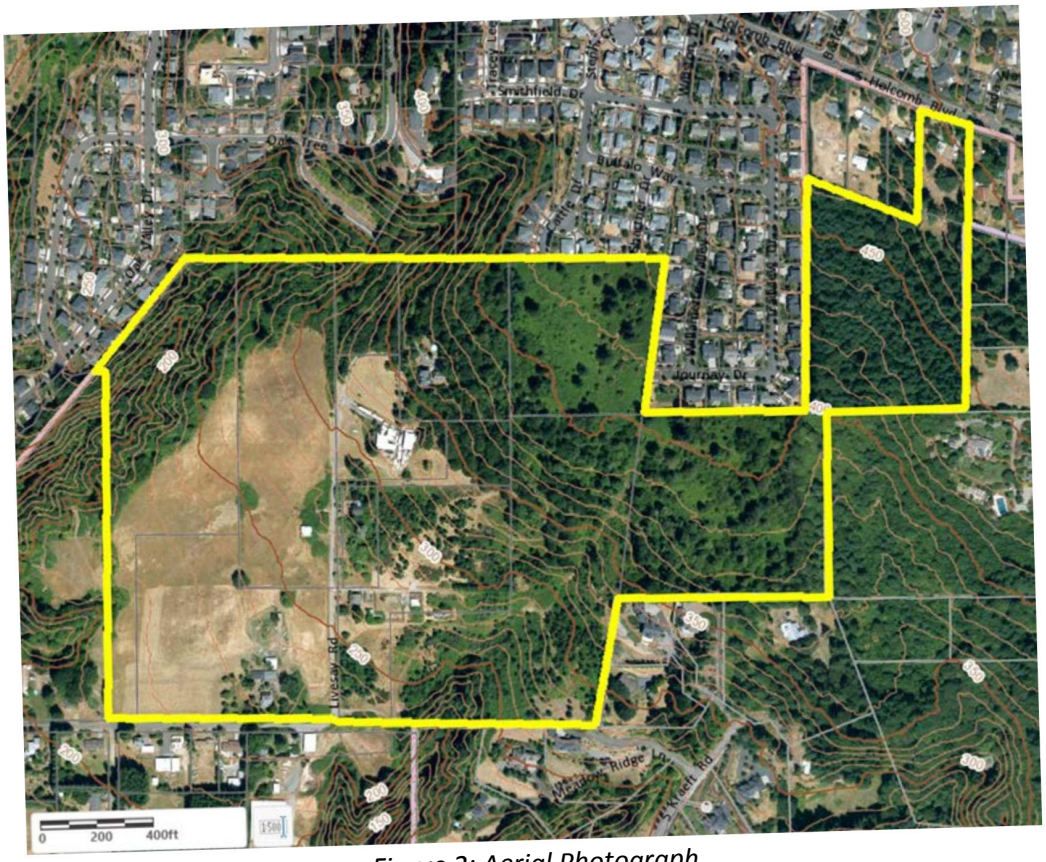


Figure 2: Aerial Photograph

The annexation will also provide a needed step in developing the northern segment of Holly Lane as a collector street extension that will eventually connect from S. Holcomb Blvd. to Redland Rd in accordance with the 2013 Oregon City Transportation System Plan (TSP).

Slopes are varied, with most areas having between zero and 25 percent grade. Slopes adjacent to the drainageway that forms the northwest border of the annexation area exceed 35% grade in certain areas. The property slopes generally to the southwest, downhill from Holcomb Blvd. The drainage of Livesay Creek runs along a northwestern portion of the annexation area for approximately 1000 feet.

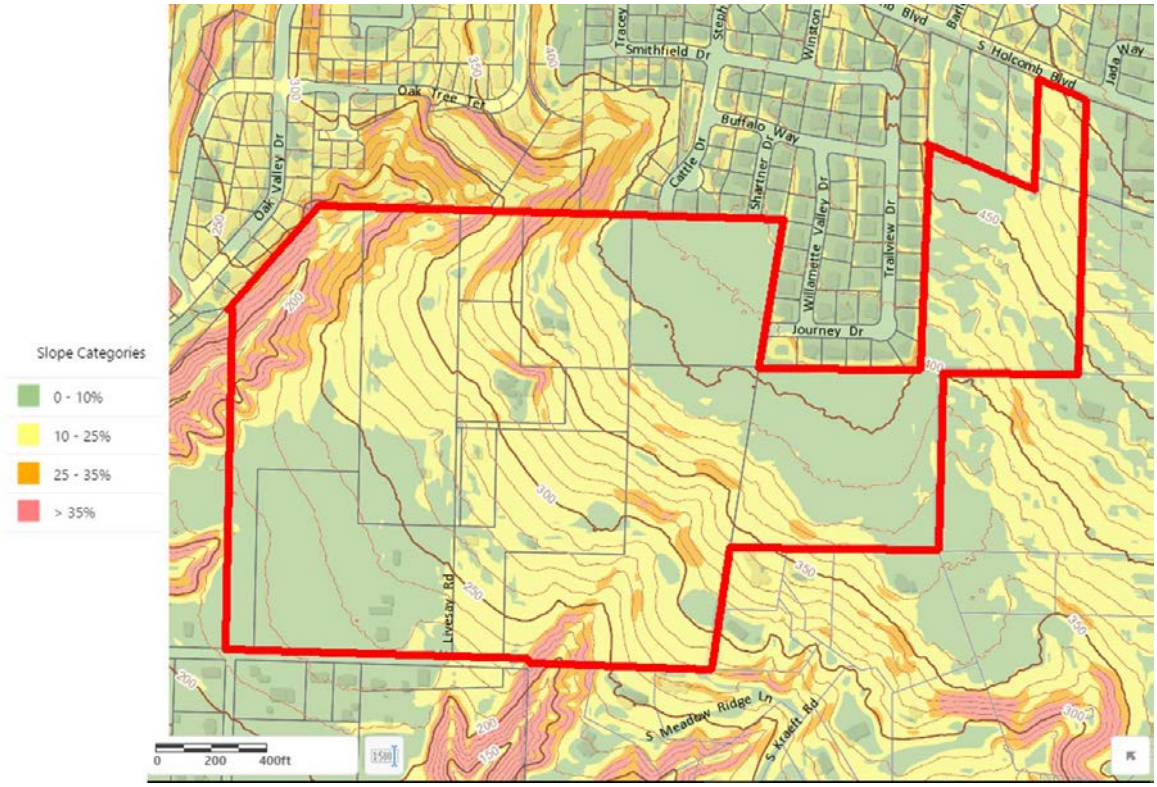


Figure 3: Site Topography

The majority of the property is otherwise undeveloped, but portions have been in use for pasture and hay fields. Tax Lot 2-2E-27B -01000 consists of 9.69 acres which is heavily forested.

The annexation petition is signed by all of the owners of all of the land in the territory. The petition thus meets the requirement for initiation set forth in ORS 222.125.

The following table provides current taxlot information for the properties.

APN	Address	Taxpayer	Acres	Assessed Value
2-2E-27B -01000		MICHAEL ERICKSON	9.69	$ 3,709.00
2-2E-27B -02000	15110 S HOLCOMB BLVD	ERICKSON MICHAEL K TRUSTEE	1.45	$ 176,352.00
2-2E-28D -00100		HIDDEN FALLS DEVELOPMENT LLC	14.11	$ 262,203.00
2-2E-28D -00190		HIDDEN FALLS DEVELOPMENT LLC	10.75	$ 106,951.00
2-2E-28D -00200	16530 S LIVESAY RD	KIRK D & MICHELLE D TOLSTRUP	5.17	$ 404,057.00
2-2E-28D -00300	16644 S LIVESAY RD	GEORGE E THOMAS	3.1	$ 292,428.00
2-2E-28D -00301		GEORGE E THOMAS	1.43	$ 24,447.00
2-2E-28D -00302		HIDDEN FALLS DEVELOPMENT LLC	0.16	$ 7,181.00
2-2E-28D -00303		GEORGE E THOMAS	1.77	$ 29,879.00
2-2E-28D -00400	16582 S LIVESAY RD	HIDDEN FALLS DEVELOPMENT LLC	10.43	$ 347,178.00
2-2E-28D -00500	14631 S LIVESAY RD	HIDDEN FALLS DEVELOPMENT LLC	10.73	$ 229,571.00
2-2E-28D -00502	14631 S LIVESAY RD	ROBERT TERSHEL	9.42	$ 374,667.00
2-2E-28D -03700	16472 S LIVESAY RD	HIDDEN FALLS DEVELOPMENT LLC	6.86	$ 268,674.00
2-2E-28D -03701		REDLAND ROAD LLC	6.48	$ 133,972.00
Totals			91.55	$ 2,661,269.00

**From Clackamas Co. Assessor's Office (2017)*

ISLANDS

As discussed in greater detail below, Oregon City Comprehensive Plan Policy 14.4.3 requires that the City "evaluate" and "avoid creating unincorpated islands within the City." There are three tax lots (3.7 acres), abutting Holcomb Road, at the northern edge of the proposed annexation area that are not included as part of this annexation proposal. See the pink properties in Figure 1. The applicant indicates that they tried unsuccessfully to include these properties in their annexation.

If approved, these three tax lots will be surrounded on all four sides by land included within the city creating an unincorporated island. Policy 14.4.3 provides that "in some instances", the City may "require that parcels adajacent to the proposed annexation" be included as part of the annexation request. Therefore, the Planning Commission, and ultimately the City Commission, must decide if the circumstances warrant forcing the three properties to become part of this annexation request. The city's options for finding compliance with Polity 14.4.3 are discussed in greater detail below.

However, should the city require annexation of these three lots, voter approval would be required, since there would no longer be 100% owner consent for the annexation.

PARK PLACE CONCEPT PLAN

The proposed annexation is within the Park Place Concept Plan area, adjacent to Oregon City's Park Place neighborhood on the northeastern edge of the City. The total land area within the Concept Plan is approximately 480 acres, of which 180 acres are located immediately adjacent to Oregon City limits in the vicinity of Livesay Road. These 180 acres were brought into the UGB in the 1980s, but were not annexed into the City of Oregon City. The remaining 300 acres were brought into the UGB in 2002.

The whole area within the UGB was comprised of 138 individual property owners as of 2008, consisting mainly of single-family homes on large parcels. To date, the largest amount of acreage in the concept plan area under single ownership is approximately 48 acres. Thirty-eight acres are in public ownership, the majority of which comprise Ogden Middle School (Oregon City School District). Nearly half of the parcels in the study area are one acre or less.

The Park Place Concept Plan "PPCP" (Adopted March 12, 2008) will integrate a multi-modal transportation system with a mixed-use development pattern to achieve a highly efficient and sustainable design. The PPCP identifies a network of internal and external pedestrian, bicycle, transit and street connections that serve the study area and connect it to the surrounding community and the broader region. The Concept Plan was developed through an extensive interactive public process, guided by a Project Advisory Committee comprised of neighbors, stakeholders, business owners and City residents. An extensive public hearing process before the Oregon City Planning Commission and City Commission occurred prior to final adoption of the Park Place Concept Plan.

DISCUSSION OF ZONE CHANGE CRITERIA

Concurrent Zoning Map Amendment from FU-10 to R-5, R-10 & NC.

The Site has acknowledged Oregon City Comprehensive Plan Map designations of Medium Density Residential (MR), Low Density Residential (LDR) and Mixed Use-Corridor (MUC). Oregon City Municipal Code ("OCMC") 17.68.025.A. provides that "notwithstanding any other section of this code", a concurrent zoning map application under OCMC Chapter 17.50 is required. Further, this section requires that the zoning map designation correlate to the corresponding Comprehensive Plan map designation for the site as shown in OCMC 17.68.025.A. The section is mandatory; it provides that "the property shall be rezoned upon annexation to the corresponding zoning designation as follows..."(emphasis added). In other words, there is no discretion to be applied to the zoning map amendment and not only is a concurrent zoning map amendment required, the outcome is automatic based on the acknowledged OCMC. Further, compliance

with OCMC Chapter 17.50 requires a zoning map amendment application but does not require compliance with the discretionary zoning map amendment application criteria in OCMC 17.68.020.

In this instance, the zoning districts to be applied per the table in OCMC 17.68.025.A are R-5 for the MR area, R-10 for the LDR area, and Neighborhood Commercial (NC) for the MUC area.

The Planning Commission must determine that the Application satisfies the approval criteria in OCMC 17.68.025.A. and B. in order for the zone change to be approved.

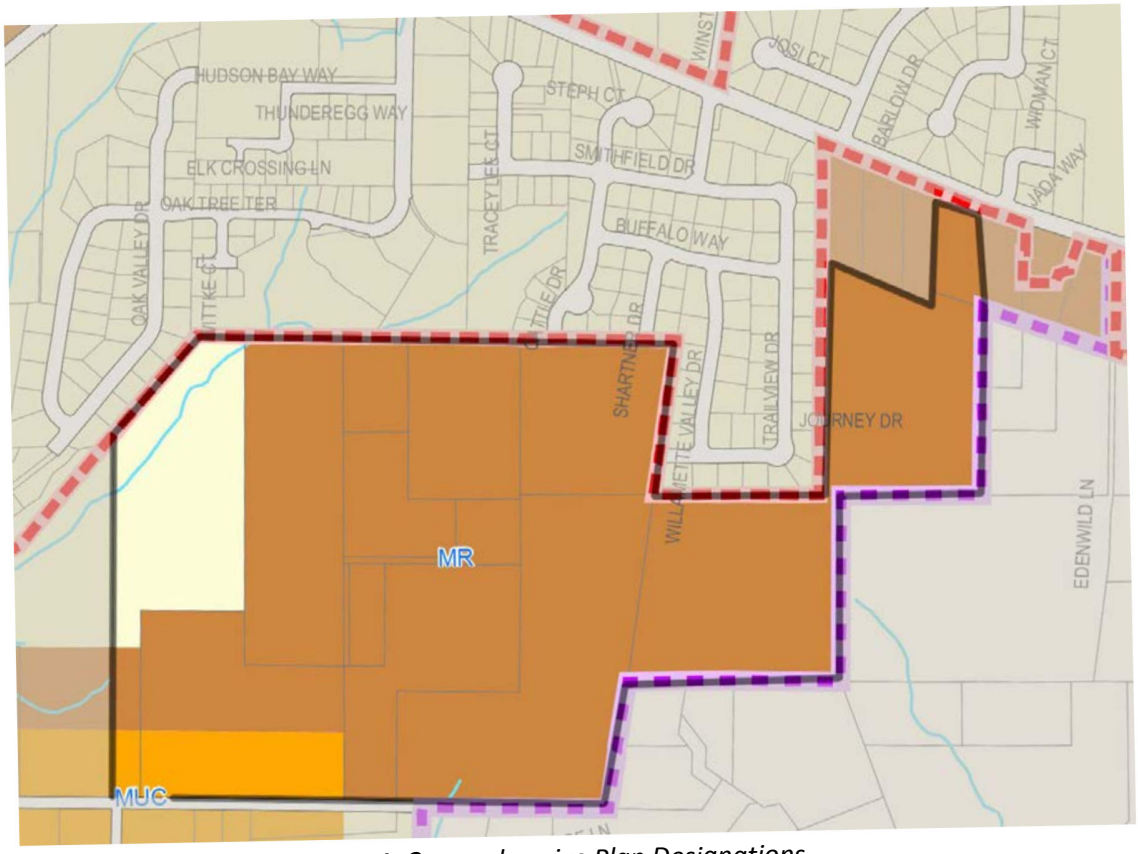


Figure 4: Comprehensive Plan Designations

Additional analysis is provided within this report.

II. APPLICABLE REGULATIONS AND APPROVAL CRITERIA

The remainder of this staff report provides findings to demonstrate that the proposed annexation and zone change is consistent with applicable approval criteria.

Annexations in Oregon City are governed at local (city), regional (Metro), and State levels. Locally, annexations are regulated by Title 14 of the Oregon City Municipal Code, and by goals and policies in the adopted Comprehensive Plan. Regionally, annexations are regulated by Metro's Code Section 3.09, which establishes requirements for local government boundary changes.

Annexations are required to demonstrate a "positive balance of factors" in order to comply with the approval criteria in Chapter 14.04.060. Findings for compliance with the Annexation criteria are provided in section II.A. below.

Zone Changes in Oregon City are governed by the criteria in *OCMC Chapter 17.68 – Zoning Changes and Amendments*, and *OCMC Chapter 17.06 – Zoning District Classifications.* Each of these two chapters includes a specific subsection related to zoning of annexed areas. Findings for compliance with the applicable zone change criteria are provided in section II.B. In the case of annexation areas, the Applicant's proposal is that staff apply the R-10, R-5 and NC zones to the applicable properties without discretion pursuant to the pursuant to OCMC 17.68.025.A.

Annexation and Zone Changes are both discretionary decisions requiring the Planning Commission make a recommendation to the City Commission regarding the approval or denial of the application and any conditions necessary to assure compliance with the applicable approval criteria.

II A. ANNEXATION CRITERIA
COMPLIANCE WITH METRO CODE 3.09 – LOCAL GOVERNMENT BOUNDARY CHANGES
Metro Code Section 3.09 establishes requirements for local government boundary changes. The criteria for a minor boundary change are found in Section 3.09.050.A-D and are applicable to this annexation request. This annexation is considered an expedited decision pursuant to Metro code. Additional petition and notice requirements are also noted below.

3.09.030 Notice Requirements
B. Within 45 days after a reviewing entity determines that a petition is complete, the entity shall set a time for deliberations on a boundary change. The reviewing entity shall give notice of its proposed deliberations by mailing notice to all necessary parties, by weatherproof posting of the notice in the general vicinity of the affected territory, and by publishing notice in a newspaper of general circulation in the affected territory. Notice shall be mailed and posted at least 20 days prior to the date of deliberations. Notice shall be published as required by state law.
Finding: The proposal is consistent with this requirement. The public notice requirements for the first evidentiary hearing on February 12th, 2018 are met pursuant to OCMC 17.50 and in accordance with Metro Code 3.09.030. The application was deemed complete on December 5th, 2017.

Legally Required
Newspaper: published on January 11, 2018, within 45 days of the public hearing.
300' mailed notice: January 5th, 2018, more than 20 days prior to the public hearing.
Property Posted with Signs: January 22nd, 2018, 21 days prior to the public hearing.
Affected Agencies (including Metro): Mailed Notice on January 5th, 2018 and Emailed on January 12th, 2018, more than 20 days prior to the public hearing.

Additional Courtesy Notices
Email Transmittal: to Neighborhood Association Chairs, three abutting County Planning Organizations, and affected departments and agencies, January 12th, 2018, more than 20 days prior to the public hearing.
Project Webpage https://www.orcity.org/planning/project/17-0004-zc-17-0005 created: January 12th, 2018.

Public Comments
The following written public comments were received 10 days prior to the public hearing pursuant to the public notice (by 5:00 pm, Friday, 2nd of February, 2018).

Christine Kosinski submitted comments (Exhibit 3) identifying concerns regarding development on unstable slopes, poor soil conditions, landslides, sinkholes, and difficulty in obtaining landslide insurance. The comments assert that Oregon City does not regulate slopes less than 25% and includes geologic hazards reports which discuss the slope of the site. A variety of exhibts are provided discussing examples of landslides. Other jurisdiction's regulations are discussed and the comments indicate that the proposal does not comply with Goal 7. In addition, concerns about the traffic impact of the annexation and identified a past project of the developer.

Oregon City Police Chief Jim Band submitted comments (Exhibit 3) indicating that they do not anticipate any problems being able to patrol and serve the annexation area and that response times will be witin industry standards.

The comments are incorporated into the analysis of this report. Comments received after this deadline will be forwarded to the Planning Commision at the next public hearing.

3.09.040 Requirements for Petitions

A. A petition for a boundary change must contain the following information:
1. The jurisdiction of the reviewing entity to act on the petition;
2. A map and a legal description of the affected territory in the form prescribed by the reviewing entity;
3. For minor boundary changes, the names and mailing addresses of all persons owning property and all electors within the affected territory as shown in the records of the tax assessor and county clerk; and
4. For boundary changes under ORS 198.855(3), 198.857, 222.125 or 222.170, statements of consent to the annexation signed by the requisite number of owners or electors.

Finding: The proposal is consistent with this requirement. Items 1-4 were submitted.

Consistency with Metro Code 3.09.045(D)(1) for Expedited Decisions

D. To approve a boundary change through an expedited process, the city shall:
1. Find that the change is consistent with expressly applicable provisions in
a. Any applicable urban service agreement adopted pursuant to ORS 195.065;

Finding: The proposal is consistent with this requirement. This criterion requires that annexations be consistent with applicable provision of annexation plans and/or agreements that have been adopted pursuant to ORS 195. Urban services are defined as: sanitary sewers, water, fire protection, parks, open space, recreation and streets, roads and mass transit, and have been addressed in the Statements of Availability of Facilities and Services findings of this report as required by under OCMC 14.04 .040 and Metro Code 3.09.

The City has an Intergovernmental cooperative agreement (IGA) with Clackamas River Water (CRW) known as the HOPP Area Water Service Plan (Holcomb-Outlook-Park Place) agreement adopted in 1998 to provide water service for urbanizing areas above the 450' pressure zone from the Barlow Crest Pump Station and the upstream Hunter's Heights Reservoir system. The HOPP agreement is provided as an exhibit. The HOPP agreement generally states that CRW will service homes above the 450 foot elevation within the specified HOPP boundary. Only the upper northeast corner of the annexation area, near Holcomb Boulevard would be within the area to be served by CRW, as shown on the map below and provided in the application.

The proposed boundary change does not conflict and is consistent with the HOPP Agreement.

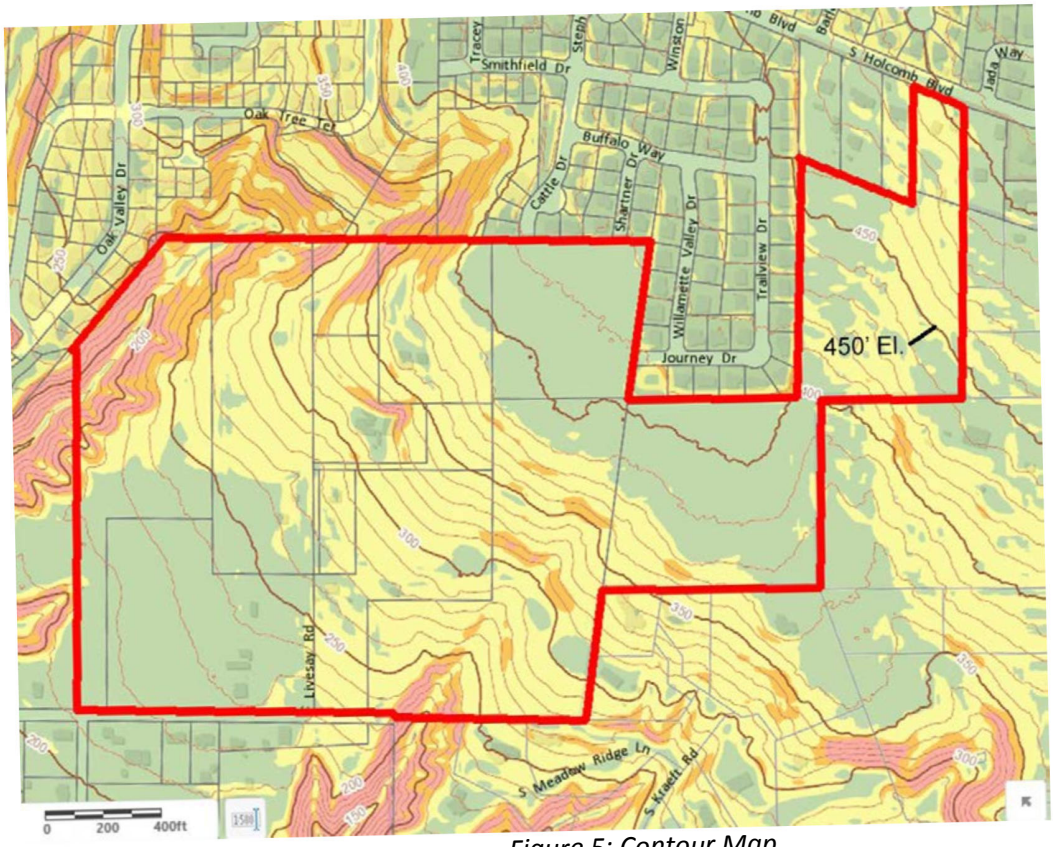


Figure 5: Contour Map

b. Any applicable annexation plan adopted pursuant to ORS 195.205;
Finding: This criteria is not applicable. There is no annexation plan applicable to the subject site. Therefore, this criterion does not apply.

c. Any applicable cooperative planning agreement adopted pursuant to ORS 195.020(2) between the affected entity and a necessary party;
Finding: The proposal is consistent with this requirement. The City and the County have an Urban Growth Management Agreement (UGMA) for the portions of the property, which is a part of their respective Comprehensive Plans.

Urban Growth Management Agreement (UGMA, 1990)
The City and the County have an Urban Growth Management Agreement (UGMA), which is a part of their respective Comprehensive Plans. The territory to be annexed falls within the Urban Growth Management Boundary (UGMB) identified for Oregon City and is subject to the agreement.

The Agreement presumes that all the urban lands within the UGMB will ultimately annex to the City. It specifies that the city is responsible for the public facilities plan required by Oregon Administrative Rule Chapter 660, division 11. The Agreement goes on to say:

- ~~*City and County Notice and Coordination*~~

* * *

D. The CITY shall provide notification to the COUNTY, and an opportunity to participate, review and comment, at least 20 days prior to the first public hearing on all proposed annexations . . .

** * **

5. City Annexations

A. CITY may undertake annexations in the manner provided for by law within the UGMB. CITY annexation proposals shall include adjacent road right-of-way to properties proposed for annexation. COUNTY shall not oppose such annexations.

B. *Upon annexation, CITY shall assume jurisdiction of COUNTY roads and local access roads that are within the area annexed. As a condition of jurisdiction transfer for roads not built to CITY street standards on the date of the final decision on the annexation, COUNTY agrees to pay to CITY a sum of money equal to the cost of a two-inch asphaltic concrete overlay over the width of the then-existing pavement; however, if the width of pavement is less than 20 feet, the sum shall be calculated for an overlay 20 feet wide. The cost of asphaltic concrete overlay to be used in the calculation shall be the average of the most current asphaltic concrete overlay projects performed by each of CITY and COUNTY. Arterial roads will be considered for transfer on a case- by-case basis. Terms of transfer for arterial roads will be negotiated and agreed to by both jurisdictions.*

Finding: The proposal is consistent with this requirement. The required notice was provided to Clackamas County at least 20 days before the Planning Commission hearing. The UGMA requires that adjacent road rights-of-way be included within annexations. The right-of-way of Holcomb Boulevard adjacent to the subject site have been included in the annexation area legal description. Holcomb Boulevard is a Minor Arterial Road and will be subject to applicable street improvements for a minor arterial road when a development application is submitted to the city. These improvements will be subject to joint review by the City and County if complete jurisidictional transfer to the City of Oregon City has not occurred prior to a development application.

C. Public sewer and water shall be provided to lands within the UGMB in the manner provided in the public facility plan . . .

Finding: The proposed annexation site is inside the UGB, contiguous with the city limits, and directly adjacent to developed areas that currently receive public facilities and services. Public facilities (water, sewer and transportation) are available near the proposed annexation site and the city has adopted public facilities plans that provide for extension of those facilities to serve the site to accommodate future development. A future development application will need to be filed and approved by the City of Oregon City prior to any development occurring. Upon approval of a development plan, the developer will provide for the installation of needed public facilities and services.

d. Any applicable public facility plan adopted pursuant to a statewide planning goal on public facilities and services;

Finding: The proposal is consistent with this requirement. The proposed annexation is consistent with the applicable adopted public facility plans. Per statewide planning goal 11 the city's public facility plan describes the water, sewer and transportation facilities which are to support the land uses designated in the appropriate acknowledged comprehensive plan within the urban growth boundary. The public facilities listed below are described in the findings regarding the applicant's Statements of Availability of Public Services under OCMC 14.04.050(E)(7)(a) - (g) NARRATIVE STATEMENTS.

- Water Distribution System Master Plan (WMP (2012)
- Sanitary Sewer Master Plan (2014)
- Transportation System Plan (2013)

Additional applicable Public Facility Plans and service providers include the following:

Metro Regional Transportation Plan (RTP).

Finding: The proposal is consistent with this requirement. The City's Transportation System Plan complies with the Metro Regional Transportation Plan. The 2013 Oregon City Transportation System Plan (TSP) update and the adopted amendments to the Oregon City Municipal Code (OCMC or "code") that implemented the City's TSP complies with the requirements set out in the Metro Regional Transportation Functional Plan (RTFP). As established in the RTFP, demonstrating compliance with the RTFP constitutes compliance with the Regional Transportation Plan (RTP).

South Fork Water Board (SFWB) – Water Master Plan (2016)
Finding: The proposal is consistent with this requirement. SFWB is the water provider for the cities of Oregon City and West Linn and their intake plant is located in Oregon City. SFWB recently updated their master plan to include an updated Capital Improvement Plan updated System Development Charges (SDCs), which are passed through to developers within the city limit as part of the City's SDC schedule. The emphasis of the master plan update is on providing priority upgrades related to system capacity and seismic deficiencies. SFWB's master plan, SDCs analysis and associated capital improvement plan span a 20-year planning period starting in 2016 and ending in 2036.

e. Any applicable comprehensive plan;
Finding: The proposal is consistent with this requirement.

Oregon City Comprehensive Plan
The Oregon City Comprehensive Plan and zoning code will guide future development in the proposed annexation area. Oregon City's Comprehensive Plan Land Use Map within the acknowledged Oregon City Comprehensive Plan designates the subject property Low Density Residential, Medium Density Residential, and Mixed Use Commercial. These designations also implement the land uses envisioned in the Park Place Concept Plan for the annexation area. The proposed zoning amendment would not change the map designation and the R-10, R-5 and NC zoning are implementing zones for those designations.

Specific Findings for consistency with the Goals and Policies of the Oregon City Comprehensive Plan are provided in this report.

Clackamas County Comprehensive Plan
The Clackamas County Comprehensive Plan implements the Oregon City Comprehensive Plan for lands within the Urban Growth Boundary. The plan designation for the proposed annexation properties on the County's Urban Area Land Use Plan the properties as Urban. According to the County's Plan,

> *"Urban areas include all land inside urban growth boundaries. Urban areas are either developed or planned to be developed with adequate supportive public services provided by cities or by special districts. Urban areas have concentrations of people, jobs, housing, and commercial activity."*

The Land Use section of the Clackamas County Comprehensive Plan, Chapter 4, further distinguishes Urban Areas into Immediate Urban Areas and Future Urban Areas.

Immediate Urban Areas: Immediate urban areas are lands that are within urban growth boundaries, are planned and zoned for urban uses, and meet at least one of the following conditions:

1. Served by public facilities, including sanitary sewage treatment, water, storm drainage, and transportation facilities;
2. Included within boundaries of cities or within special districts capable of providing public facilities and planned to be served in the near future; or
3. Substantially developed or surrounded by development at urban densities.

The County's plan and map 4-1 identifies the territory proposed for annexation as a future urban area, which is defined as:

"Future urbanizable areas are lands within the Urban Growth Boundaries but outside Immediate Urban areas. Future Urbanizable areas are planned to be served with public sewer, but are currently lacking a provider of sewer service. Future Urbanizable areas are substantially underdeveloped and will be retained in their current use to insure future availability for urban needs.

Section 4.A of the County's Plan includes several policies that address the conversion of Future Urbanizable lands to Immediate Urban lands to "Provide for an orderly and efficient transition to urban land use." and "Encourage development in areas where adequate public services and facilities can be provided in an orderly and economic way."

Further, County Land Use Policy 4.A.1 requires that the County "Coordinate with Metro in designating urban areas within Metro's jurisdiction. Recognize the statutory role of Metro in maintenance of and amendments to the Portland Metropolitan Urban Growth Boundary."

Finally, 4.C. the County's Future Urban Policy 4.C.1. requires that the County control premature development (before services are available) by:

4.C.1.1. Applying a future urban zone with a 10-acre minimum lot size within the Portland Metropolitan UGB except those lands identified in Subsection 7.1.b.

The subject site is adjacent to the City limits of Oregon City. As demonstrated within this report, public facilities and urban services can be provided in an orderly economically efficient manner to the subject site. Nothing in the County Plan speaks directly to criteria for annexation of property from the County to the City, although the Urban Growth Management Agreement (UGMA) between the City and the County does address these requirements as discussed above.

f. Any applicable concept plan; and
Finding: The proposal is consistent with the Park Place Concept Plan.

With the exception of 1.45 acres that fronts on Holcomb Blvd. (Tax Lot 22E27B 02000), all of the subject property lies within the boundaries of the Park Place Concept Plan. The proposed annexation and concurrent zone change are a first step towards implementing this plan.

The total land area within the Concept Plan is approximately 480 acres, of which 180 acres are located immediately adjacent to Oregon City limits in the vicinity of Livesay Road. These 180 acres were brought into the UGB in the 1980s, but were not annexed into the City of Oregon City. The remaining 300 acres were brought into the UGB in 2002. The whole area within the UGB was comprised of 138 individual property owners as of 2008, consisting mainly of single-family homes on large parcels. To date, the largest amount of acreage in the concept plan area under single ownership is approximately 48 acres. Thirty-eight acres are in public ownership, the majority of which comprise Ogden Middle School (Oregon City School District). Nearly half of the parcels in the study area are one acre or less. The 6.5 acres proposed to be annexed into the city are located within the area included within the UGB in the 1980s. This annexation area includes land identified as the "north village" in the Park Place Concept Plan.

The Park Place Concept Plan "PPCP" (Adopted March 12, 2008) will integrate a multi-modal transportation system with a mixed-use development pattern to achieve a highly efficient and sustainable design. The

PPCP identifies a network of internal and external pedestrian, bicycle, transit and street connections that serve the study area and connect it to the surrounding community and the broader region. The Concept Plan was developed through an extensive interactive public process, guided by a Project Advisory Committee comprised of neighbors, stakeholders, business owners and City residents. An extensive public hearing process before the Oregon City Planning Commission and City Commission occurred prior to final adoption of the Park Place Concept Plan.

The Park Place Concept Plan's Figure 3-2 "North Village Neighborhood", bears a note stating, "This map is for concept planning purposes only. The specific locations of natural resource boundaries, open space, parks, land uses, roads, trail, infrastructure and related improvements may change and is subject to on-site verification and design at the time of development." The Park Place Concept Plan is an ancillary document to the City's Comprehensive Plan. However, designations depicted on the Oregon City Comprehensive Plan Map, as adopted by Ordinance No. 08-1014, are authoritative for purposes of the requested zone change in conjunction with annexation of this property. It is understood that a future zone change/comprehensive plan map amendment application will be necessary at the time of preparation of the future master plan in order to implement the general conceptual design called for by the North Village Plan.

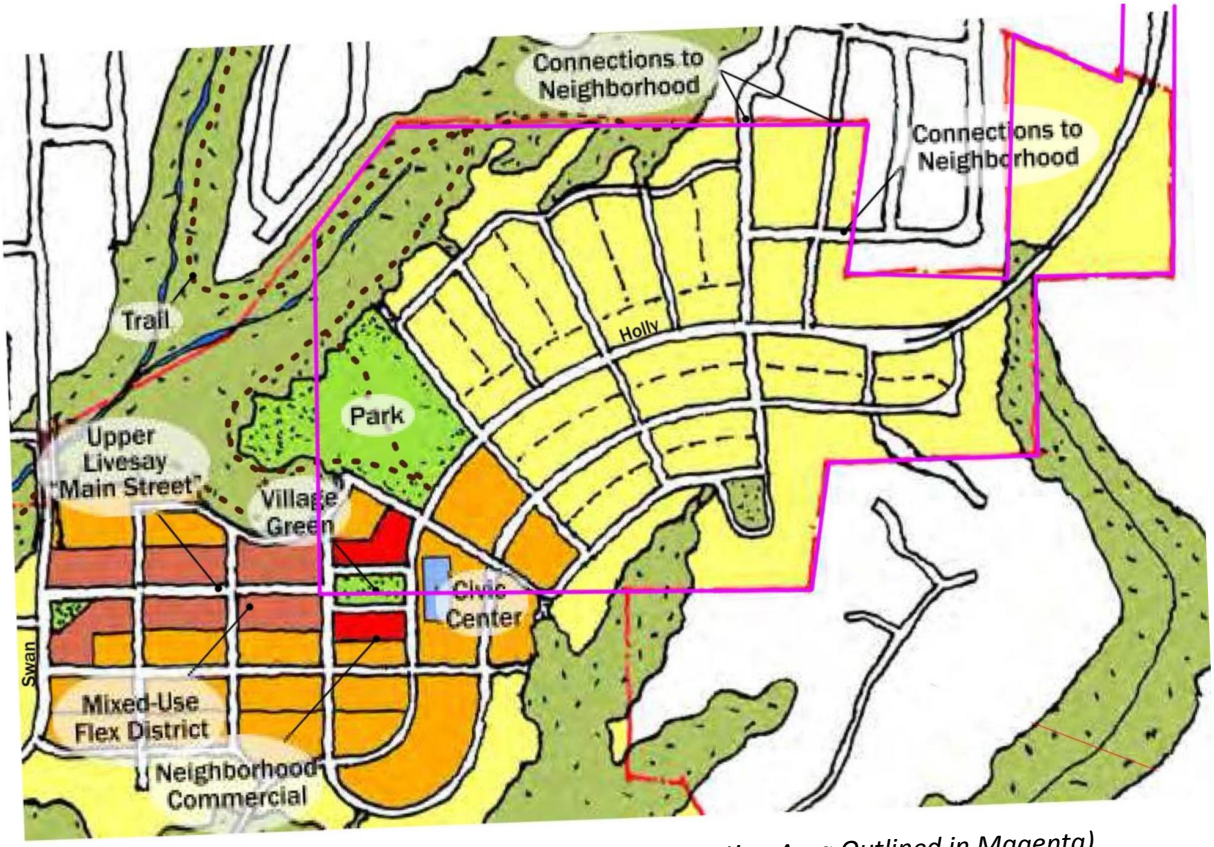


Figure 6: North Village Neighborhood (Annexation Area Outlined in Magenta)

The plan for the North Village area includes commercial development along a new main street along Upper Livesay Road. This area is shown in red on the map above and impacts a small area of the subject property. The orange color depicts Medium/High-Density Residential (R-3.5, minimum 9 units/acre) which would likely be developed with a mix of townhouse and duplex units. The yellow area is planned for Low/Medium-Density Residential (proposed R-5, minimum 6 units/acre) that would be a mix of single-family detached and single-family attached dwellings. A community park is also called for in the Plan. A collector road called the Holly Lane north extension would provide a roadway corridor tying Holcomb Blvd.

through to Redland Road, which would be a significant improvement for the Park Place neighborhood that presently is restricted to the Holcomb Blvd. corridor for access.

The key components of the Park Place Concept Plan are listed on page 1 of that document:

- Two primary north-south connections between Holcomb Boulevard and Redland Road (Swan Avenue and Holly Lane)
- Two distinct mixed-use neighborhoods (North Village and South Village) that accommodate 1,459 new dwelling units
- Neighborhood-oriented commercial nodes that integrate commercial land uses, residential land uses, and public open space
- An area for a new civic institution, like a library or community center
- An 8-10 acre community park and a 3-5 acre neighborhood park
- A mix of housing types and ranges of affordability
- An extensive system of off-street and on-street trails and pedestrian/bicycle connections
- Innovative, green on-site stormwater treatment methods
- Protected sensitive areas, including drainages and steep slopes
- Streets and buildings oriented for solar access
- The use of green edges to define neighborhoods and buffer developments
- Integration of parks and open spaces into existing and future neighborhoods

The subject property includes part of the Holly Lane north extension, but is not involved in the Swan Avenue connection. The area of the annexation site along Livesay Road includes neighborhood commercial development, some of the civic institution uses and a major portion of the planned community park. As shown on the North Village Neighborhood plan, there are areas of sensitive land associated with drainageways that will need to be protected as open space. The plan will also include trails that will tie open spaces to residential and commercial components.

The present application involves only the annexation and application of the zoning that is consistent with the adopted Comprehensive Plan Map. *It is not relevant to discuss the goals and policies of the Park Place Community Plan in detail at this early stage.* The future submittal of a phased Master Plan, further zone change and site specific development applications will be reviewed for compliance with all relevant goals and objectives of the Park Place Concept Plan at such time as those applications are submitted.

Consideration under Metro Code 3.09.045(D)(2) for Expedited Decisions
The applicable approval criteria under the Metro Code are:

A. Whether the proposed boundary change will promote the timely, orderly and economic provision of public facilities and services.

Comment: all required public facilities and services will be available at the time of development. No development will occur until such time as the Alternative Mobility standards are adopted and compliance with the Transportation Planning Rule OAR 12-660 can be met. Upon approval of a future development plan, the developer will provide for the installation of needed public facilities and services.
Finding: The proposal is consistent with this requirement. The proposed annexation site is inside the UGB, contiguous with the city limits, and directly adjacent to developed areas that currently receive public facilities and services. Public facilities (water, sewer and transportation) are available near the proposed annexation site and the city has adopted public facilities plans that provide for extension of those facilities to serve the site to accommodate future development. A future development application will need to be filed and approved by the City of Oregon City prior to any development occurring. Upon approval of a

development plan, the developer will provide for the installation of needed public facilities and services. The City has initiated an engineering study that will add more detailed analysis to the adopted Water Master Plan within the Park Place Concept Plan area. This study will guide preliminary design elements to serve the proposed annexation area and refine the CIP. The study is expected to be completed by Fall of 2018.

b. Whether the proposed boundary change will affect the quality and quantity of urban services
Finding: The proposal is consistent with this requirement, as conditioned. The city has updated its sewer, water and transportation facilities master plans to plan for future extension of those services into the proposed annexation area at the time of development. The City has initiated an engineering study that will add more detailed analysis to the adopted Water Master Plan within the Park Place Concept Plan area. This study will guide preliminary design elements to serve the proposed annexation area and refine the CIP. The study is expected to be completed by Fall of 2018.

The annexation of this property will have no immediate impact upon the quality or quantity of urban services since development of the property will be prohibited until such time as the Alternative Mobility standards are adopted and compliance with Article 12 can be met. At such time as the site is developed in the future, it will be in a manner consistent with the North Village Concept Plan and consistent with the Low Density Residential designation of the property. The City has planned for the provision of necessary public facilities and services in this area in its Public Facilities Plan and Transportation Systems Plan. Since the future development will conform to the anticipated level of development, it will not have a negative impact upon the quality or quantity of urban services.

The future development application will provide for a master plan consistent with the design concept of the North Village Plan. The applicant acknowledges that the future master plan for the annexation area will need to provide for the dedication of a community park and other public facilities consistent with the Park Place Concept Plan. Staff recommends that this annexation area be subject to a Master Plan pursuant to OCMC 17.65 prior to any development of the property at densities greater than that permitted under current County zoning. Master Planning of the annexation area pursuant to OCMC 17.65 would allow for the specific phasing of development over time as well as greater control and predictability regarding the timing of and cost of public imporvements, including water, stormwater, sewer, transportation, parks, trails and open space. A master plan also allows development more flexibility to vary from prescriptive standards if approved pursuant to OCMC 17.65. Any master plan, along with a future comprehensive plan amendment and zone change for the subject property cannot proceed until such time as the regional transportation issues are resolved.

In accordance with City, County and State transportation requirements, no development, except that permitted under the County's Future Urban FU-10 zoning designation, in effect as of the date of this application's submittal, shall be allowed until the following occurs, acknowledged and the Applicant demonstrates compliance with these requirements:

a. A refinement plan for Highway 213 at Beavercreek Road (Alternative Mobility Targets), including elements such as financially constrained projects and alternative mobility standards, and amendments to OCMC Chapter 12.04 implementing the new Refinement Plan, are be adopted and acknowledged.
b. Amendments to OCMC 12.04 which allow development affecting the intersection of Highway 213/Beavercreek are adopted.

I. Adopt amendments to the City's Transportation System Plan and OCMC Chapter 12.04 to include projects that satisfy the then-applicable performance standards and these standards must be acknowledged; or

II. Condition the approval of a land division application that satisfies then-applicable OCMC Chapter 12.04 by including proportional mitigation of the application's impacts on that intersection, or such other mitigation measure(s) as may be approved which assure(s) that the intersection will either meet, or perform no worse than, the then-applicable performance standards

c. Eliminate or avoid unnecessary duplication of facilities or services.

Finding: The proposal is consistent with this requirement. The city notified all applicable service providers of this annexation request for their review and comment. Annexation to, or withdrawal from, service provider districts has been addressed in this report as part of the final recommendations, and will be done concurrent or subsequent to this proposed annexation. All services in this area will be provided by the City of Oregon City with the exception of water service to areas served by Clackamas River Water under the existing HOPP Agreement, so there will be no unnecessary duplication of facilities and services.

The Metro Code also contains a second set of 10 factors that are to be considered where: 1) no ORS 195 agreements have been adopted, and 2) a necessary party is contesting the boundary change. Those 10 factors are not applicable at this time to this annexation because no necessary party has contested the proposed annexation.

COMPLIANCE WITH OREGON CITY MUNICIPAL CODE

OCMC Chapter 14.04

14.04.050 - Annexation Procedures

A. Application Filing Deadlines

Finding: The proposal is consistent with this requirement. Annexation of these properties may not be subject to vote provided that the application meets all of the requirements of SB 1573. Should an annexation approval require subsequent approval by the Voters of Oregon City, staff will prepare the necessary ballot title and resolution scheduling an election pursuant to this requirement and in sufficient time for the matter to be submitted to the voters as provided by the election laws of the State of Oregon.

B. Pre-Application Review

Finding: The proposal is consistent with this requirement. The applicant and applicant's representative attended a pre-application review meeting with city staff on November 29, 2016. Pre-application meeting notes are included with the application.

C. Neighborhood Contact

Finding: The proposal is consistent with this requirement. The subject property is within the Park Place Neighborhood Association boundaries. The applicant contacted the Park Place Neighborhood Association, as required by city standards, and a meeting was held on June 7, 2016 at Alliance Charter Academy. A second Neighborhood Meeting on December 6, 2016 was conducted in order to address the need to include a concurrent zone change application.

D. Signatures on Consent Form and Application.

Finding: The proposal is consistent with this requirement. The application submittal package includes the application form and consent form signed by the owners of the subject properties.

E. Contents of Application. An applicant seeking to annex land to the city shall file with the city the appropriate application form approved by the city manager. The application shall include the following:
1. Written consent form to the annexation signed by the requisite number of affected property owners, electors or both, provided by ORS 222, if applicable;
2. A legal description of the territory to be annexed, meeting the relevant requirements of the Metro Code and ORS Ch. 308. If such a description is not submitted, a boundary survey may be required. A lot and block description may be substituted for the metes and bounds description if the area is platted. If the legal description contains any deed or book and page references, legible copies of these shall be submitted with the legal description;
3. A list of property owners within three hundred feet of the subject property and, if applicable, those property owners that will be "islanded" by the annexation proposal, on mailing labels acceptable to the city manager;
4. Two full quarter-section county tax assessor's maps, with the subject property(ies) outlined;
5. A site plan, drawn to scale (not greater than one inch = fifty feet), indicating:
a. The location of existing structures (if any);
b. The location of streets, sewer, water, electric and other utilities, on or adjacent to the property to be annexed;
c. The location and direction of all water features on and abutting the subject property. Approximate location of areas subject to inundation, stormwater overflow or standing water. Base flood data showing elevations of all property subject to inundation in the event of one hundred year flood shall be shown;
d. Natural features, such as rock outcroppings, marshes or wetlands (as delineated by the Division of State Lands), wooded areas, identified habitat conservation areas, isolated preservable trees (trees with trunks over six inches in diameter—as measured four feet above ground), and significant areas of vegetation;
e. General land use plan indicating the types and intensities of the proposed, or potential development;
6. If applicable, a double-majority worksheet, certification of ownership and voters. Certification of legal description and map, and boundary change data sheet on forms provided by the city.
Finding: The proposal is consistent with this requirement. The materials required in items 1 through 6 are included in the application submittal.

AVAILABLE PUBLIC FACILITIES AND SERVICES
OCMC 14.04.050(E)(7)(a) - (g) NARRATIVE STATEMENTS
This code section requires a series of narrative statements explaining how and when public facilities and services will be provided to serve the annexation property when development occurs. These statements and the findings that follow provide additional factual basis for a determination of a "positive balance of factors" required for approval of an annexation petition, as required under OCMC 14.04.060, which section follows this one.

In addition to the narrative submitted at the time of application, the applicant's planner provided an additional narrative regarding the adequacy and availability of public water, sanitary sewer and storm drainage on February 13, 2017. These responses were reviewed by the Development Services Engineering Division, whose findings are incorporated into this report. As explained by the applicant's planner,

> *The property can presently be developed with three homes under County zoning. With the annexation and zone change to City R-10 zoning, the development potential would increase to approximately 124 units. This assumes a deduction of 20 percent of the 35.65 acre site for streets and infrastructure. The proposed re-zoning would, therefore, add potential future development of 121 lots over the existing condition. It should be noted that the actual development of the site cannot occur until some point in the future when the City adopts alternative mobility standards for the transportation system.*

The applicant's narrative statements required under this section are summarized below.

7. A narrative statement explaining the conditions surrounding the proposal and addressing the factors contained in the ordinance codified in this chapter, as relevant, including:
a. Statement of availability, capacity and status of existing water, sewer, drainage, transportation, park and school facilities;
b. Statement of increased demand for such facilities to be generated by the proposed development, if any, at this time;
c. Statement of additional facilities, if any, required to meet the increased demand and any proposed phasing of such facilities in accordance with projected demand;
Finding: The proposal is consistent with these requirements as conditioned. There is no proposal to develop the subject property at the present time. Development cannot occur because it is not possible to meet the criteria of Chapter 12.04 of the OCMC until such time as Alternative Mobility Standards are adopted by the City of Oregon City. However, services are available to allow for the future development of this site at such time as the transportation issues are resolved. A condition of approval will be applied to the zone change to prohibit development beyond what is allowed under existing County zoning until such time as it is possible to meet the Alternative Mobility Standards.

Prior to annexation, the property owners or assigns will record a covenant, to be approved by the City Attorney, which limits development of the site until such time that a zone change to a City zoning designation has been approved. The covenant shall acknowledge that development is reviewed for compliance with the Oregon City Municipal Code and Clackamas County Zoning and Development Ordinance. Further, until a zone change is approved the site use shall not change or intensify, or receive approval of a land division or development of the site including, but not limited to: new structures or additions to existing structures or site grading that triggers erosion control permits or overlay district review. In addition the property shall be subject to the City's overlay districts, fence regulations in OCMC 17.54.100 as well as the City's nuisance, business licensing and animal regulations.

The following information describes the existing availability, estimate of increased demand, and notes improvements that may be required to provide these services:

<u>Water</u>
The applicant states that, *"The annexation area is currently partially served by the Clackamas River Water District (CRW). The City and CRW have an urban service agreement (Holcomb-Outlook-Park Place or HOPP agreement) for portions of the annexation area. The HOPP agreement generally states that CRW will service homes above the 450 foot elevation within the specified HOPP boundary. Only the upper northeast corner of the annexation area, near Holcomb Blvd. would be within the area to be served by CRW, as shown on the map below:*

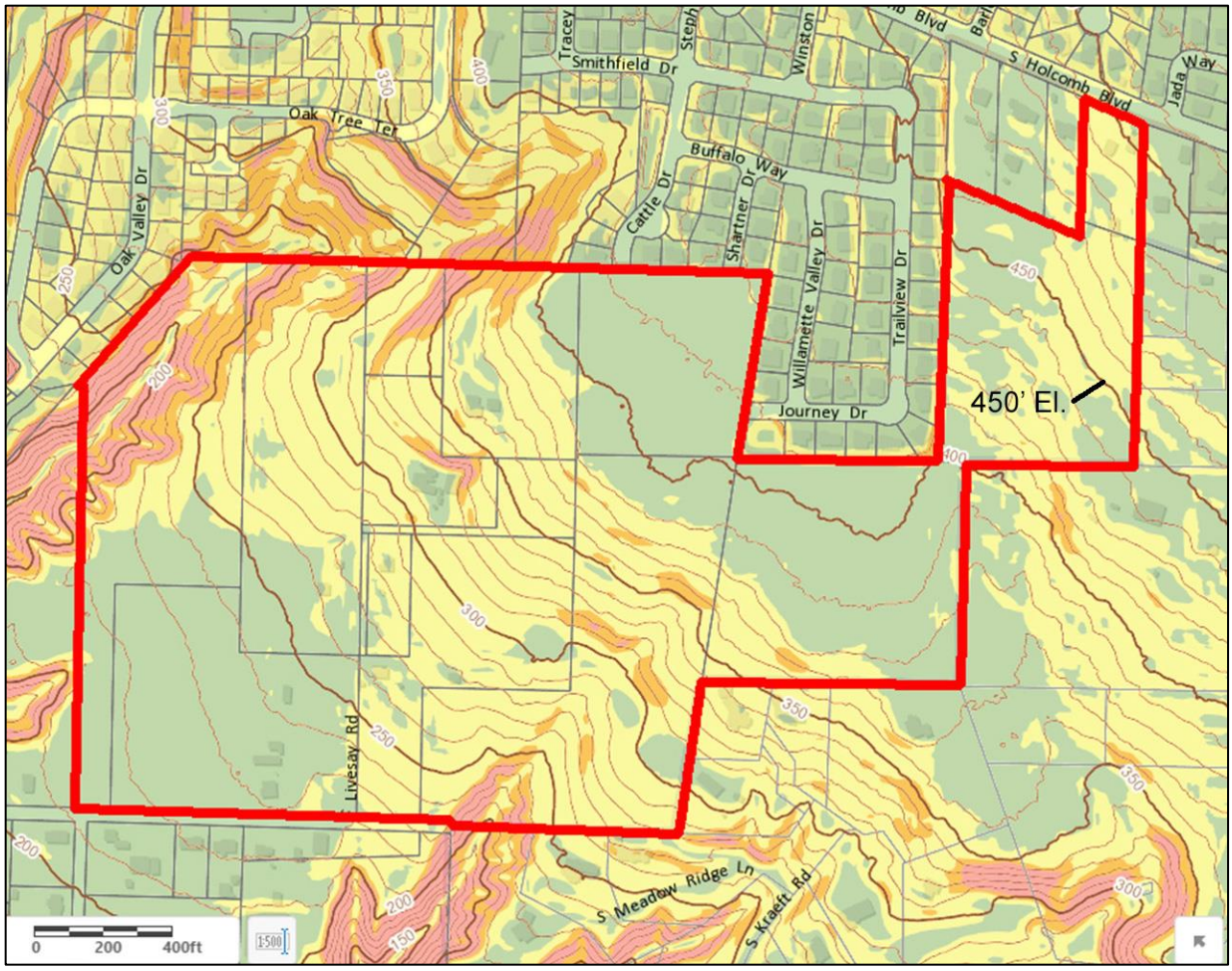


Figure 7: Contour Map

At the most recent pre-application conference (PA-16-40), information was presented by Clackamas River Water District indicating that they have an issue in meeting the required fire flow standard of 1,000 gallons per minute. That issue is expected to be resolved with system upgrades that include replacing approximately 4,000 lineal feet of substandard water main within S Bradley Road with a 12-inch pipe. This improvement would be provided in conjunction with the construction of the Abernethy Landing subdivision (TP 16-0001). Contact with Adam M. Bjornstedt, P.E., Principal Engineer for CRW, on November 6, 2017, indicate that the plans for that project are on schedule. CRW has an existing 12" water line in Holcomb Blvd. that is capable of providing for service to the portion of the subject property that is within the HOPP area. Mr. Bjornstedt indicated that CRW has adequate storage capacity.

The majority of the site will be served with by the City of Oregon City. There is an existing 16-inch City of Oregon City water main in Holcomb Blvd. along the subject property's frontage on that street. A 4-inch water line is located in Livesay Road at the lower end of the subject property. There will be a requirement to construct a 12 inch water main in the future collector street from Holcomb Blvd. to Livesay Road, together with a pressure reducing station and the cost of removing an existing water pump station on Livesay Road. At the present time the additional costs for these improvements are not included in the City's capital improvement program. The applicant will be seeking to have the CIP amended prior to development to include these regional costs.

We estimate that at full build-out the future development of the annexation properties will yield between 400 and 450 residential dwelling units. The City and Clackamas River Water District have adequate water storage capacity to service the proposed annexation area. The details of water service for the subject property will be worked out at the time of future development, but there is an adequate water supply available in the area to service this site.

For the immediate future, until future development occurs, the existing homes within the annexation area will continue to make use of private wells and Clackamas River Water service."

Pursuant to the City's request for additional analysis on public water infrastructure needed to serve the proposed annexation area, the applicant submitted an infrastructure analysis worksheet. In summary, the applicant anticipates water system infrastructure improvements to adequately serve the annexation area to include 4000 LF of 12-inch water main; 1 pressure-reducing valve (PRV), and decommissioning of 1 pump station.

Staff has reviewed the submittal and prepared a memorandum in response to the applicant's analysis worksheet. In summary, Staff anticipates water system infrastructure improvements to adequately serve the annexation area to include 10,700 LF of 8- to 12-inch water main; 1 pressure-reducing valve (PRV), decommissioning of 1 pump station, and replacement of 4 services to existing properties on Livesay Road. Extension of local waterlines within the future street system, typical to all developments, was not included in these figures. The applicant also anticipates the City amending our Capital Improvement Plan (CIP) to include the infrastructure required to serve this development and receive SDC credits. The City does not anticipate SDC credit being available as a funding source for the required water infrastructure. This needs to be considered when the developer evaluates the financial feasibility of future development within the annexation area.

Sanitary Sewer

The applicant states that:

> *"The existing homes within the annexation area are served with private septic systems and these facilities will remain in place until such time as the area is developed in the future. The Oregon City Sanitary Sewer Master Plan calls for service to this area to be provided in accordance with the figure below:*

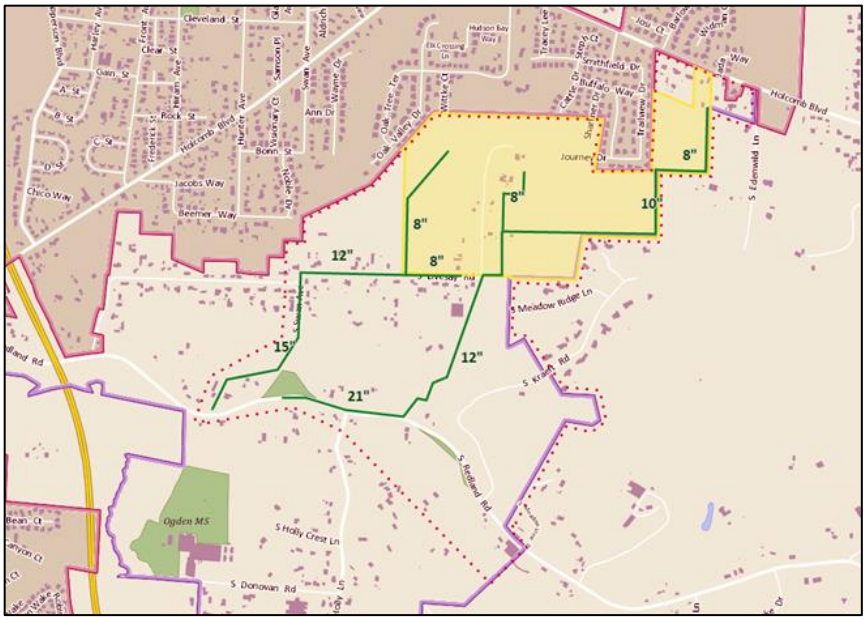


Figure 8: Sewer Master Plan

As a practical matter, the sewer master plan was prepared absent knowledge of the order in which the North Village area would be developed. It is practicable to service all of the proposed annexation area either from the Livesay Road sewer main or from the easterly sewer main. It would not be necessary to construct both of the off-site sewer lines in order to service the annexation area. Since the Livesay Road sewer is largely to be located within existing public road right-of-way, that would be the most likely route to be used in the future development of this area. The cost of this off-site sewer would be borne by the future developer, likely with a pay-back provision for a proportionate contribution for use by others as downhill properties are developed in the future.

The cost of the off-site sewer will be impacted significantly whether the project is done by the City or as a private construction project. We have completed City work sheets on estimated costs based upon information from the City's water and sewer master plans. We estimate that private construction would save at least 25 to 30 percent over public constructon costs."

Pursuant to the City's request for additional analysis on public sanitary sewer infrastructure needed to serve the proposed annexation area, the applicant submitted an infrastructure analysis worksheet. In summary, the applicant anticipates Sanitary Sewer system infrastructure improvements to adequately serve the annexation area to include 7000 LF of 8- to 21-inch sanitary main and 30,000 sf of offsite public easement.

Staff has reviewed the submittal and prepared a memorandum in response to the applicant's analysis worksheet. In summary, staff anticipates Sanitary Sewer system infrastructure improvements to adequately serve the annexation area to include 9300 LF of 8- to 21-inch sanitary main and 20,000 sf of offsite public easement. Extension of local sanitary sewer lines within the future street system, typical to all developments, was not included in these figures.

The City's Sanitary Sewer Master Plan of 2014 shows two sanitary trunklines flowing southwesterly to Redland Road to accommodate flows from the proposed annexation area. The applicant's preliminary analysis indicates the property can be served by eliminating the easterly system and utilizing only the

westerly system. The City Engineer has conceptually approved this modification to the Sanitary Sewer master plan. The applicant will be required to prepare a project master plan prior to commencement of any further development in the annexation area. With this master plan, the applicant will be required to provide a thorough engineering analysis of the proposed modifications. The analysis shall include upsizing of downstream pipe segments as needed to accommodate elimination of the easterly trunkline. The analysis will also need to demonstrate that all properties can be adequately served by the westerly trunkline as a result of elimination of the easterly trunkline.

The applicant has indicated a Reimbursement District may be established as a potential source of funding for the required sanitary sewer infrastructure. The City does not anticipate SDC credit being available as a funding source for the required sanitary sewer infrastructure.

Stormwater Drainage

The applicant states that

> *"An existing storm sewer system drains across a portion of the subject property serving the Trail Ridge subdivision to the north of this site. Based upon natural topography, storm water run-off generated from future development will generally flow in a southerly direction from Holcomb Blvd. and will need to be conveyed to natural drainage channels as shown on the map below.*

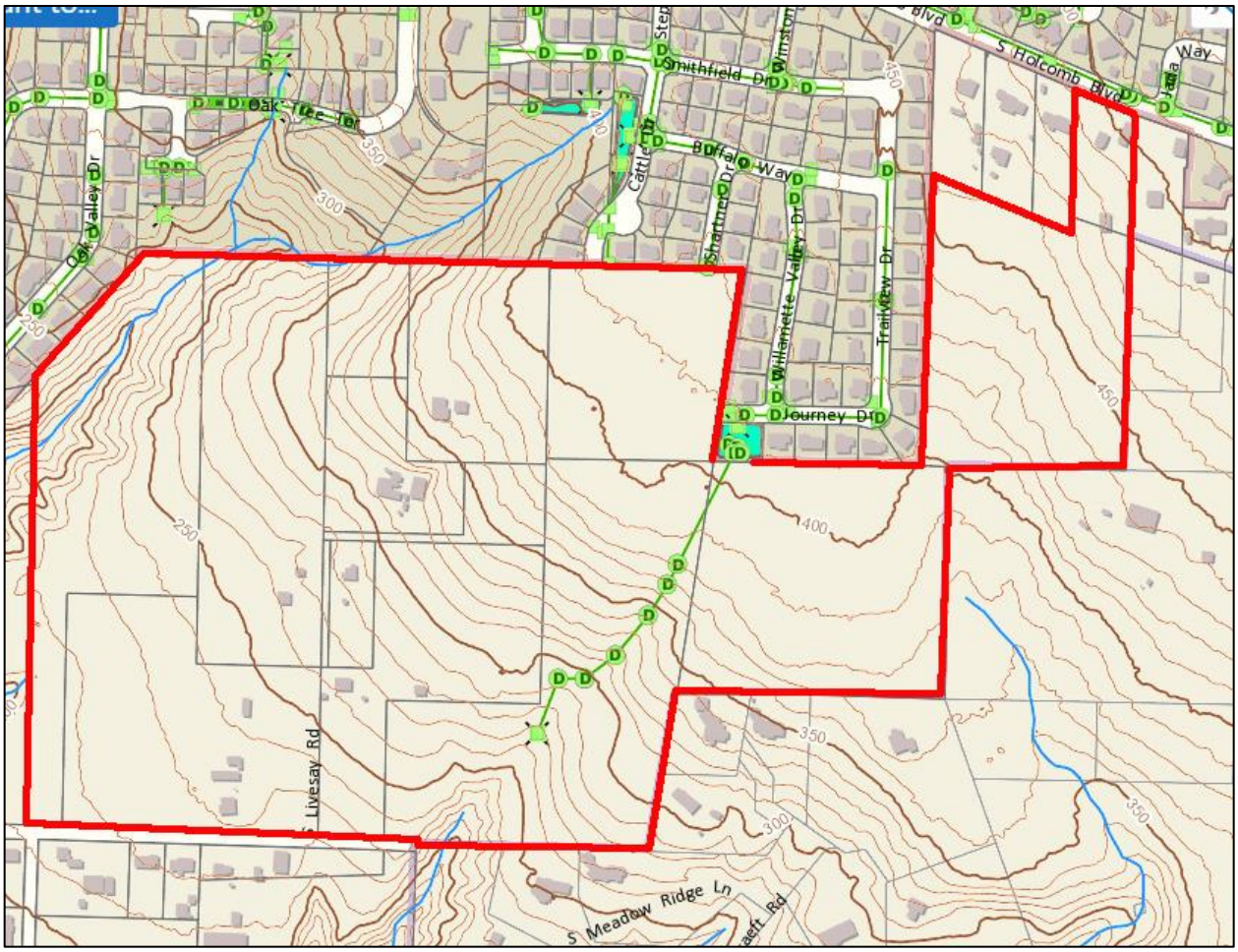


Figure 9: Storm Drainage

The future development of the site will require the construction of a storm sewer system that will collect runoff from the development. Storm water treatment and detention facilities will be required in accordance with City standards prior to release of storm water to the natural drainageways. The detention facilities will maintain the rate of runoff at predevelopment rates per City standards."

Staff concurs that provision of stormwater management facilities and conveyance systems will be contained within the annexation area. It is anticipate that the facilities can be provided in the manner typical of all land development, without unusual or additional requirements.

Transportation

The existing transportation network currently serving the proposed annexation area consists of Holcomb Boulevard and some county gravel roads that abut the site to the north and east.

For a discussion of the transportation impact analysis (TIA) of future development, please refer to the applicant's submitted TIA, and City Transportation Consultant's review of the TIA and the findings on pages 36.

The nearest available public transit (TriMet bus lines) are located along Holcomb Boulevard at the Clackamas Housing Authority View Manor site approximately ¼ mile to the west. Additioanl transportation findings are provided within this report.

Parks

The applicant provided the following narrative regarding parks and trails.

There is a need for additional parks in the Park Place neighborhood. The closest developed City park to the subject property is Park Place Park, a mile to a mile and half to the northwest of the site at the intersection of Hiram Avenue and Cleveland Street. The Park Place Concept Plan calls for a new community park to be developed between Redland Road and Holcomb Blvd., partially within the proposed annexation area. The map below shows the proposed annexation area overlaid on Figure 32 from the Park Place Concept Plan, which shows the North Village area of the plan. The proposed park site is situated on the western border of the annexation area and continues to the west.

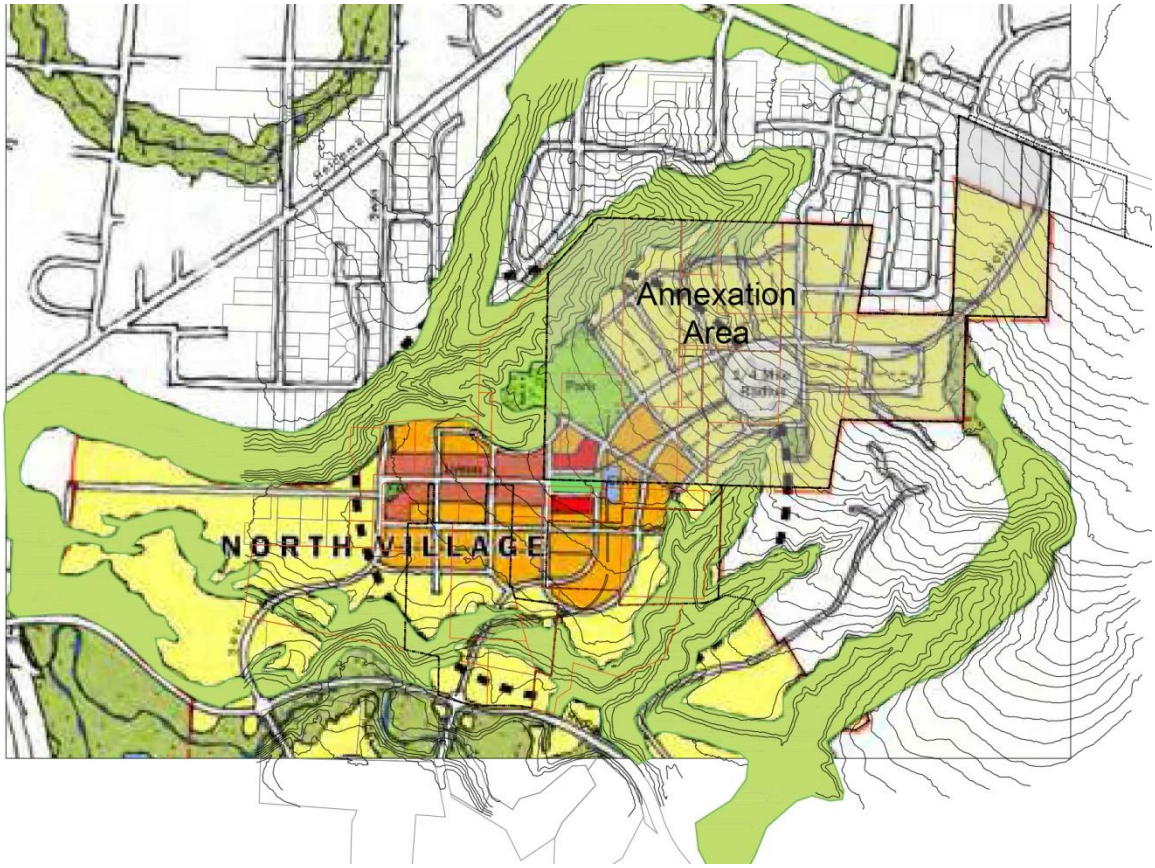


Figure 10: Park Place North Village Plan

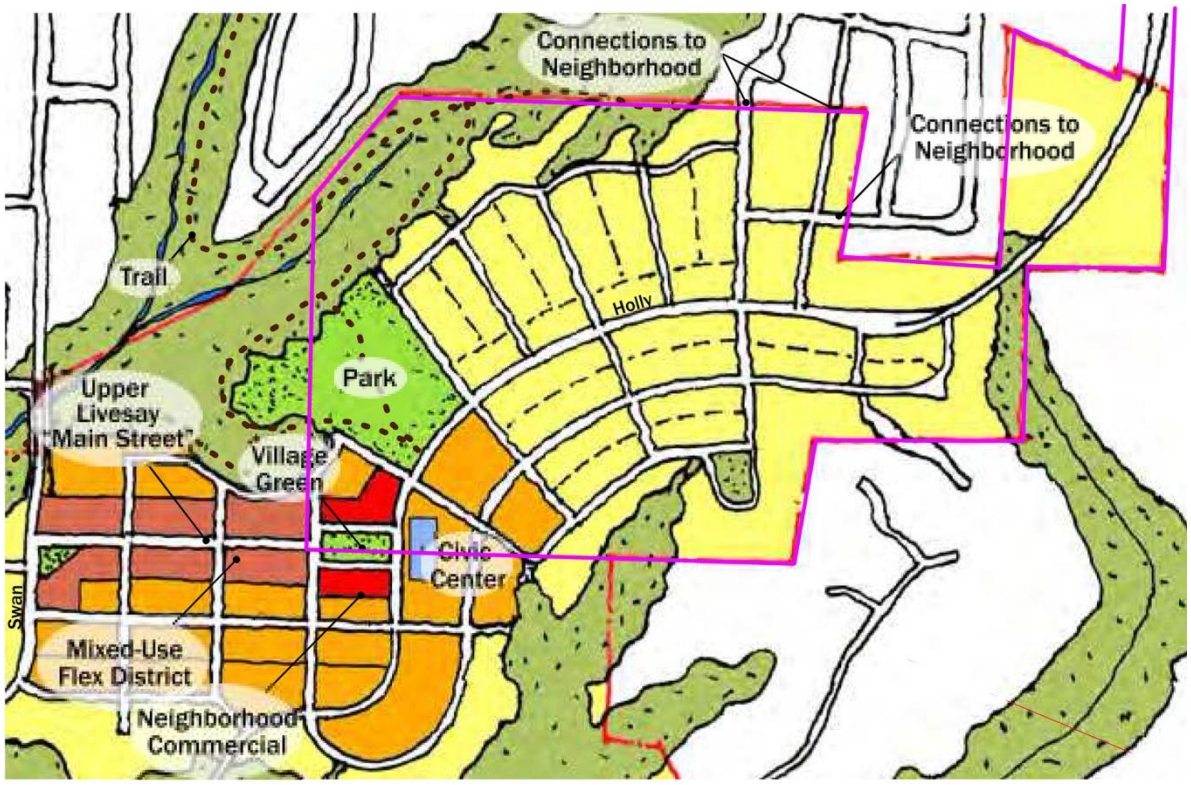


Figure 11: Park Place North Village Detail

The Park Place Concept Plan says the following about the community park in the North Village:
"The parks are intended to provide basic recreational opportunities for residents and may include amenities such as play equipment, athletic fields, picnic tables or shelters, walking trails, and other features. The neighborhood park in the North Village is approximately eight to ten acres and within walking distance of the Livesay Main Street."
(Final Concept Plan, Page 31)

Comments in the City's letter of May 12, 2017 from Community Services Director Phil Lewis state that "*we would ideally have a 12-15 acre community park in that location which would allow appropriate sizing for sports fields and parking."*

There is a need for a larger park in order to provide for soccer and other athletic fields. This comment, while indicative of the Director's assessment of City park needs, is not consistent with the park size called for by the adopted Park Place Community Plan. Further, topographic constraints associated with a drainageway to the northwest of the proposed park location, as well as the constraint of the proposed alignment of Holly Lane right-of-way, would limit the ability to provide a park of that size at this location with level enough areas for more athletic fields.

The applicant acknowledges that the future master plan for the annexation area will need to provide for the dedication of a community park consistent with the Park Place Concept Plan. The future comprehensive plan amendment and zone change will provide for the designation of the park site with the corresponding Park designation. It is the applicant's expectation that the City will make any necessary amendments to its Parks and Recreation Master Plan to make the dedication of the community park eligible for systems development charges credits. This will allow for lots in the master plan area to receive SDC credits in exchange for providing compensation to the owners of properties containing proposed park dedication areas.

The 2008 Parks Master Plan update states that focus groups who participated in the update identified the Park Place area as one of several areas of the city that are currently "underserved" by parks and recreation facilities (P. 51), and which also have challenging physical characteristics that serve as a barrier to pedestrian access to existing facilities due to major roads, railroads and natural features (P. 93). Based on the Level-of-Service (LOS) methodology used in the plan, Area 3 – Park Place has an LOS of 28.63 compared to the City's average LOS of 45, and the plan states that the "Quality and diversity of services in this area should be improved in the future, especially if the area continues to develop and expand to the west" (P. 94). The 2008 update mentions the following Goals, Objectives and Strategies that are pertinent to the area affected by the annexation:

(See P.12, Oregon City, Parks and Recreation Master Plan Update 2008)
Goal 3: Increase access to parks by implementing trails plan.
Objective: Continue to plan for parkland acquisition.
Future park acquisition should be considered on an individual basis for its current or potential recreational value.
Strategies:
• Work to fund Tier 1 local trails as identified in the 2004 Trails Master Plan. Place emphasis on constructing trails that connect parks to other parks, trails, or neighborhoods. For example: Park Place Development Trails (L4), Barclay Park Connection (L11), Parks Trail (L21), and Wesley Lynn – Chapin Trail (L23).
• Continue to fund planning and construction for Tier 1 Regional Trails as identified in the 2004 Trails Master Plan. Use the Trails Master Plan for priorities and specifics about implementation costs.

• As funding permits, determine the existing condition and location of the Oregon Trail-Barlow Road Historic Corridor and review the existing standards within the Oregon City Municipal Code to determine if modifications to the development standards and/or City master plans are necessary to protect the corridor. If modifications to the existing code language are proposed, they should include methods to encourage property owners to preserve the historic corridor in the original condition while allowing the property to be used in an economically viable manner. This strategy recommendation shall utilize/reference the Barlow Road Historic Corridor Westernmost Segment of the Oregon Trail Background Report & Management Plan (Clackamas County, 1993), or most current adopted report.

The Park Place Concept Plan identifies a large 8-10 acre park on the South side of Holcomb Boulevard, in additional to protected natural areas within stream buffers and areas which would remain undeveloped due to slopes and geologic hazards. This park would serve existing and future developed areas within a half mile both north and south of Holcomb Boulevard, provided adequate pedestrian and bicycle access via path, sidewalks and trails is provided.

Currently, there are no specific code requirements that require developers to dedicate land for trails and open space as exactions. Typically the process for obtaining park land requires several additional steps by the Community Services Department, which is responsible for City parks, involving identification of property, appraisal, negotiation and purchase. Due to extremely limited resources the Parks Department has been challenged with maintaining the current park system without further expansions. The most recent capital improvement master planning for parks was for the regional park west of Oregon City High School and south of Clackamas Community College off Glen Oak Road and long awaited improvements to the Filbert Run park site to serve the South End / Hazel Grove - Westling Farms neighborhoods.

In light of this uncertainty and lack of resources, in order to demonstrate adequacy of parks facilities, the City has relied on the long-standing policy that future development must pay Parks System Development Charges in accordance with OCMC 13.20 with building permits. The current 2017 Parks SDC for a Single Family Home is $4,881. It should be noted that the Parks SDC fee, as with other city SDCs, is increased annually based on the Engineering News Record Construction Cost Index and, in the case of the parks SDCs only, is also tied to the Average Market Value Growth Rate for Clackamas County. The typical SDC increase varies on average annually between 2-4%, while the Average Market Value Growth Rate for Clackamas County was 26% in 2017[1]. The actual Parks SDC increases for the last four years are as follows:

Effective Date	Fee
1/1/2017	$4,881
1/1/2016	$4,279
1/1/2015	$4,034
1/1/2014	$3,835

The Park's SDC methodology may need to be updated to include needed park facilities in the three concept plan areas (Park Place, South End and Beavercreek Road). Other sources of funding that the City has relied upon in the past to support park and trail improvements include grants from Metro and funding organizations and donations.

This approach is consistent with the City's policy of charging SDS's, along with development exactions and dedications permitted by code, for adequacy of public facilities when the exact location and impact of

[1] Communication with Oregon City Finance Department staff.

to find that this approach is suitable for the subject annexation proposal.
Based on the above facts, it is feasible and likely that adequate park facilities can be made available to serve the annexation area at the time of development.

Trails
The North Village Concept Plan also calls for a system of trails and paths to be included in the master plan for this area, as shown on the map below:

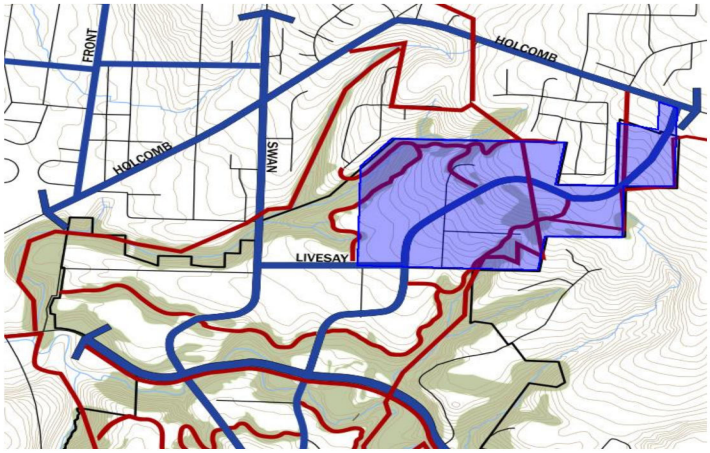


Figure 12: North Village Trails and Paths

It is understood by the applicants that the future master plan for the annexation area will need to incorporate park area and trails consistent with the Park Place Concept Plan. The most likely scenario for the funding of the dedications would be through Systems Development Credits (SDCs). The Plan states the following regarding funding mechanisms.

"Once the Park Place Concept Plan is adopted, Oregon City and the regional agencies that fund or own elements of the services will have to amend their master plans and systems development charges."
(Final Concept Plan, Page 6)

The two parks identified in the Concept Plan have to be integrated into Oregon City's parks master plan and at that time decide how to fund the proposed parks. It may be funded entirely from system development charges or as an integral part of the master plan's financing strategies.
(Final Concept Plan, Page 6)

The trails shown are largely conceptual. Most need to be further studied and designed. The location of the trails may change as a result.

With regard to implementation, the trails master plan clearly states in Chapter IV. Recommended Trail Network and Implementation Measures on Page 50:

> *"many of the trails shown on the Conceptual Trails Map, particularly local trails located along roadways or intended as accessways, will be developed over time by Oregon City property owners*

developed. In some cases, the City will be able to require the property owner to construct the trail as part of the development review process. In other cases, the City will work with the property owner to ensure the City can develop the trail itself in the future."

It is feasible that an appropriate mechanism for construction of the needed trail system can be determined at the time of development review, including, as the applicant notes, amending the Parks SDC to include the Park Place neighborhood so that future homes built on this property and other properties in this neighborhood contribute to the costs of park acquisitions. Based on the above facts, it is feasible and likely that adequate trail facilities can be made available to serve the annexation area at the time of development. It is understood by the applicants that the future master plan (General Development Plan pursuant to OCMC 17.65) for the annexation area will need to incorporate park area and trails consistent with the Park Place Concept Plan. The most likely scenario for the funding of the dedications would be through Systems Development Credits (SDCs). The Park Place Concept Plan states the following regarding funding mechanisms.

"Once the Park Place Concept Plan is adopted, Oregon City and the regional agencies that fund or own elements of the services will have to amend their master plans and systems development charges."

(Final Concept Plan, Page 6)

The two parks identified in the Concept Plan have to be integrated into Oregon City's parks master plan and at that time decide how to fund the proposed parks. It may be funded entirely from system development charges or as an integral part of the master plan's financing strategies.
(Final Concept Plan, Page 6)

Based on the above facts and recommended conditions, it is feasible and likely that adequate parks and trail facilities can be made available to serve the annexation area at the time of development.

Schools

Oregon City School District received notice of the application and did not comment as of the date of this Staff Report.

The subject property is served by Oregon City Public Schools. The schools serving this site are Redland Elementary School, Ogden Middle School, and Oregon City High School. Although there will be no immediate development of this site that would impact the school system, discussions with School District staff indicate that there are no immediate capacity problems with these schools.

A letter dated March 13, 2017 from Mr. Wes Rogers, Director of Operations for Oregon City Public Schools, regarding school capacity associated with the Serres property annexation (File AN-16-0004, ZC 16-0001) makes the following comments regarding the subject annexation of approximately 92 acres:

"As to the larger 92 acre Park Place/Holcomb annexation mentioned by Mr. Givens but is not a direct part of this file, the District has always known that as the Park Place Concept Plan was significantly developed, additional elementary and middle school capacity would have to be constructed. Currently the elementary school of attendance for this area would be Redland Elementary.

Forecasted enrollment growth is not new to the District and the Oregon City School Board and administration have been studying facility needs for the past several years. Although well maintained, District facilities do not support current educational practice and all District facilities

are in need of serious renovation or replacement and in some cases minor expansion. Preliminary plans to ask for a school construction bond have not been finalized but the current draft scenario shows that the District (with voter support) would have additional middle school capacity within 5 years and additional elementary school capacity within 5-10 years. In the meantime the District has several other tools to help with over capacities by installing semi-permanent buildings and/or redrawing attendance boundaries."

Staff coordinates with the Oregon City School District ways during the development review process in accordance with adopted Comprehensive Plan Goals and Policies. Standard procedures for the Planning Division includes notice of all land use actions, both long range and current proposals, to the School District, the School District actively participates at pre-application conferences in anticipation of development. The School District, not the City, is responsible for long range planning of needed school facilities.

The applicant states that the anticipated time frame to begin construction within the annexation area, dependent upon resolution of the alternative mobility standards issue, would be in approximately two to three years. Full build-out is expected to be in the range of five to ten years. This schedule is consistent with the School District's stated timeline to provide additional school capacity.

Police, Emergency and Fire Protection:

Finding: The proposal is consistent with this requirement. The area to be annexed lies within the Clackamas County Service District for Enhanced Law Enforcement, which provides additional police protection to the area. The combination of the county-wide service and the service provided through the Enhanced Law Enforcement CSD results in a total level of service of approximately 1 officer per 1000 population. According to ORS 222.120 (5) the City may provide in its approval ordinance for the automatic withdrawal of the territory from the District upon annexation to the City. If the territory were withdrawn from the District, the District's levy would no longer apply to the property.

Upon annexation, the Oregon City Police Department will serve the subject site. Oregon City currently fields approximately 1.25 officers per 1,000 people. The Oregon City Police Department has a goal of four-minute emergency response, 7 to 9 minute actual, and twenty-minute non-emergency response times. As no development is proposed as part of this annexation application, this annexation will have a minimal impact on police services.

The Oregon City Police Department has submitted a letter indicating that they have the resources to service this annexation area.

The proposed annexation area is currently, and will remain, within the Clackamas Fire District #1. The Clackamas Fire District provides all fire protection for Oregon City since the entire city was annexed into their district in 2007. The closest station is located at 300 Longview Way, within the Clackamas County View Manor housing development off of Holcomb Blvd. Clackamas Fire District #1 was provided notice of the proposed annexation and did not comment. Oregon Revised Statute 222.120 (5) allows the City to specify that the territory be automatically withdrawn from the District upon approval of the annexation; however, based on the November 2007 fire district annexation approval, staff recommends that the properties remain within the fire district.

Emergency Medical Services to the area are provided through American Medical Response (AMR) through a contract with Clackamas County. Oregon City and the unincorporated areas surrounding Oregon City are all part of the AMR contract service area. Clackamas Fire District#1 provides EMS service to all areas they serve include ALS (advanced life support) staffing. This means all fire apparatus are staffing with a minimum

of one firefighter/paramedic; usually there are more than one. Additionally, Clackamas Fire does provide ambulance transport when an AMR unit is not readily available. Therefore EMS services are provided from Clackamas Fire #1 with AMR being dispatched as well.

The above item applies to development being proposed at this time and anticipates that no development may be proposed as part of an annexation application. No development is being proposed as part of this annexation application.

As discussed elsewhere in this report, all applicable public facilities and services to serve future development of the site have been or will be made available pursuant to the adopted Public Facilities plans that the City has adopted, which take future development within the Urban Growth Boundary into account based on estimates of growth capacity for the area in question. Although not required for approval of the annexation, the City is required by law to assure that System Development Charges commensurate with the projected level of demand for public facilities are applicable and payable by new development.

There are four recent major public facilities master plan updates which are part of the City's Capital Improvement Program; the Water System Master Plan (2012), the Sanitary Sewer Master Plan (2014), the Transportation System Plan (2013), and the Stormwater and Grading Design Standards (2015). These facilities are mainly funded, part of the City's Capital Improvement Program, and the City is collecting System Development Charges to fund these improvements.

d. Statement outlining method and source of financing required to provide additional facilities, if any;

Finding: The proposal is consistent with this requirement. The applicant indicated that the required improvements will be made concurrently with the future development of this property. Each of the City's recently adopted public facilities for Transportation, Sewer, and Water include a discussion of methods and sources of financing required to provide such facilities to the proposed annexation area. Specific funding mechanisms are not required to be identified until the time a development is proposed. Although not required for approval of the annexation, the City is required by law to assure that System Development Charges commensurate with the projected level of demand for public facilities are applicable and payable by new development.

Typical development funded improvements to offset direct impacts of planned development include dedications of right-of-way and land for storm detention, easements, exactions, and construction of sewer, water, stormwater and transportation improvements.

Given the size of the annexation area it is anticipated that the developer will be wholly responsible for the cost of providing and constructing public improvements and that should other methods of financing capital improvements be required, then they will utilize full capital-cost and operating cost recovery methods to avoid unsustainable fiscal impacts to the City's general fund. Hence, existing funding sources, including System Development Charges (SDCs), utility fees, connection charges and rates, and capital improvement programs are in place prior to annexation and development.

Advance financing required for system upsizing and large sewer improvements would likely require some form of developer or city financing, which could include the use of a local improvement district, reimbursement district, grants, bonds and loan, though none of these has been determined to be necessary at this time.

The future development application will provide for a master plan consistent with the design concept of the North Village Plan pursuant to OCMC 17.65. The applicant acknowledges that the future master plan for the annexation area will need to provide for the dedication of a community park and other public facilities consistent with the Park Place Concept Plan. Staff recommends that this annexation area be subject to a Master Plan prior to any development of the property at densities greater than that permitted under current County zoning. Master Planning of the annexation area pursuant to OCMC 17.65 would allow for the specific phasing of development over time as well as greater control and predictability regarding the timing of and cost of public imporvements, including water, stormwater, sewer, transportation, parks, trails and open space. A master plan also allows development more flexibility to vary from prescriptive standards if approved pursuant to OCMC 17.65. Any master plan, along with a future comprehensive plan amendment and zone change for the subject property cannot proceed until such time as the regional transportation issues are resolved.

e. Statement of overall development concept and methods by which the physical and related social environment of the site, surrounding area and community will be enhanced;

Finding: The proposal is consistent with this requirement. The adopted City of Oregon City Comprehensive Plan designation is Low Density Residential. The implementing default zones for this plan designation are R-10, R-5 and NC. The applicant has requested the default zoning of R-10, R-5 and NC at this time. The development of this site in a manner consistent with the adopted Comprehensive Plan will serve to provide needed housing to accommodate the projected population growth of the City of Oregon City. The site is well suited from a physical standpoint to be developed in this manner as it is free of any significant development constraints, other than a very small area of moderately steep slopes. Providing for future development of needed housing within walking distance of Holcomb Elementary School for school and recreational services will assist in providing for a beneficial social environment in this neighborhood.

The applicant indicates that the majority of the subject property is within the boundaries of the Park Place Concept Plan, specifically, the North Village Plan, and the eventual development of this site will be subject to the land uses and densities set forth in that document. The future development application will provide for a master plan pursuant to OCMC 17.65 consistent with the design concept of the North Village Plan. The future development application will likely need to include proposals to rezone the property to resolve certain discrepancies between the land use areas in the North Village Plan and the existing designations Oregon City Comprehensive Plan Map. One property, Tax Lot 2000 on Map 22E27B and which fronts on Holcomb Blvd., is located outside of the North Village Plan, is designated MR by the Comprehensive Plan and will be zoned R-5. That property will be developed in conjunction with the rest of the properties included in this annexation and zone change. The future development of this property will provide a mixture of approximately 400 to 450 single-family detached and attached housing units, as well as neighborhood commercial, park and community uses as shown on the North Village Plan. It will also aid in providing a needed collector road connection from the Holcomb Blvd. area down to Redland Road. It is anticipated that the development will occur in several phases over an approximate 10 year development plan, which will be further defined through a General Development Plan pursuant to OCMC 17.65.

f. Statement of potential physical, aesthetic, and related social effects of the proposed, or potential development on the community as a whole and on the small subcommunity or neighborhood of which it will become a part; and proposed actions to mitigate such negative effects, if any;

Finding: The proposal is consistent with this requirement. There will be no immediate physical, aesthetic, or related social effects from the annexation and rezoning of this property because there will be no development until several additional steps are taken, which include the adoption of Alternative Mobility Standards in compliance with the Trnasportation Planning Rule, approval of a Master Plan, including a phased General Development Plan by the Planning Commission, and the submittal of development

applications through either the subdivion process or the detailed development plan process for the neighborhood commercial zoned areas. Future development of the property will result in typical impacts on traffic, schools, and public infrastructure, but these impacts have been anticipated by the City's Comprehensive Plan. Impacts to public facilities and services have been assessed in the existing public facilities plans adopted by the City for the Urban Growth Boundary, and mitigation measures will be further determined when development is proposed.

In terms of physical effects of potential development, the annexation area will eventually be developed with a mix of housing types and densities. A new street network will be developed. Public facilities will be extended to serve the site. The annexation site will be subject to existing city code requirements related to impacts of new development, including protection of natural resources, street design, and buffering and landscaping.

Socially, the proposed annexation site will ultimately be developed to be part of a complete community, one that integrates a diverse mix of uses, including housing, services, and public spaces. Eventually the North Village concept for the Park Place Concept Plan will develop and provide greater commercial amenities and housing choices. New streets and street improvements will be designed to maximize safety and convenience for all users, including pedestrians and cyclists. Natural resources will be protected and managed for optimum ecological health to help protect watersheds.

Overall, the annexation site will be developed in accordance with the vision identified in the Park Place Concept Plan and Oregon City Comprehensive Plan that was adopted by the city to guide future growth in a way that will contribute to Oregon City as a whole.

g. Statement indicating the type and nature of any comprehensive plan text or map amendments, or zoning text or map amendments that may be required to complete the proposed development;
Finding: The proposal is consistent with this requirement, subject to conditions. No change to the comprehensive plan text or map designations are proposed at this time. The applicant requests that the default zone change from Clackamas County zoning to Oregon City R-10, R-5 and NC per the provisions of OCMC 17.68.025.A. This zone change is in conformance with the acknowledged Low and Medium Density Residential and Mixed Use land use designations for the property pursuant to the adopted Park Place Concept Plan. Please refer to the discussion of the zone change proposal and conditions of approval in this report.

In accordance with City, County and State transportation requirements, no development, except that permitted under the County's Future Urban FU-10 zoning designation, in effect as of the date of this application's submittal, shall be allowed until the following occurs, acknowledged and the Applicant demonstrates compliance with these requirements:

a. A refinement plan for Highway 213 at Beavercreek Road (Alternative Mobility Targets), including elements such as financially constrained projects and alternative mobility standards, and amendments to OCMC Chapter 12.04 implementing the new Refinement Plan, are be adopted and acknowledged.
b. Amendments to OCMC 12.04 which allow development affecting the intersection of Highway 213/Beavercreek are adopted.
    I. Adopt amendments to the City's Transportation System Plan and OCMC Chapter 12.04 to include projects that satisfy the then-applicable performance standards and these standards must be acknowledged; or
    II. Condition the approval of a land division application that satisfies then-applicable OCMC Chapter 12.04 by including proportional mitigation of the application's impacts on that intersection, or such other mitigation measure(s) as may be approved which assure(s) that the intersection will either meet, or perform no worse than, the then-applicable performance standards

8. The application fee for annexations established by resolution of the city commission and any fees required by metro. In addition to the application fees, the city manager shall require a deposit, which is adequate to cover any and all costs related to the election;
Finding: The proposal is consistent with this requirement. The application fee was paid as part of this application submittal.

9. Paper and electronic copies of the complete application as required by the community development director.
Finding: The proposal is consistent with this requirement. Paper and electronic copies of this narrative and accompanying reports were submitted as part of the complete application.Compliance with OCMC 14.04.060 – Annexation Factors
A. When reviewing a proposed annexation, the commission shall consider the following factors, as relevant:
1. Adequacy of access to the site;
Finding: The proposal is consistent with this requirement. The site has direct access onto Holcomb Blvd., an arterial street. This street would serve as the primary access for the future development of the property. Additional accesses are available from the local streets stubbed to the property: Journey

Drive, Shartner Drive, and Cattle Drive as well as Livesay Road. Future development of the property will provide for the construction of a north extension of Holly Lane from Holcomb Blvd. to Livesay Road. Future development of properties to the south will eventually extend this street to Redland Road, pursuant to the adopted Transportation Sytem Plan.

The specific design of the local street system for the subject site has not been determined at this time, but is subject to additional review by the city at the time a development is proposed. It is expected that the overal design of the local street system will be further refined when a Master Plan, including phased General Development Plan for the subject site is proposed, with subsequent phases of subdivisions providing even greater refinement. These include, but are not limited to, addressing the timing of parkland acquisitions and development, proposed phasing of major roads to ensure a timely connection to Holly Lane and an analysis of utility phasing that can foster redevelopment of the entire concept plan area.

Therefore, prior to issuing any development approval other than as identified in condition of approval #2, the applicant shall obtain General and Detailed Development Plan approval, including the entire 91-acre property, pursuant to OCMC 17.65. The General Development Plan and all phases of development authorized by it, must implement the Park Place Concept Plan and Oregon City's adopted Public Facilities Plans with regard to the provision of open space, park and trails, sewer, water, stormwater and transportation improvements.

2. Conformity of the proposal with the city's comprehensive plan;
Finding: The proposal is consistent with this requirement. The proposed annexation is consistent with the comprehensive plan in that the property is within the UGB, is designated Low Density Residential, and is intended to be served by the City of Oregon City. Compliance with specific plan policies is discussed below in this report.

Goal 1: Citizen Involvement

Goal 1.1 – Citizen Involvement Program

Policy 1.1.1 *Utilize neighborhood associations as the vehicle for neighborhood-based input to meet the requirements of the Land Conservation and Development Commission (LCDC) Statewide Planning Goal 1, Citizen Involvement. The Citizen Involvement Committee (CIC) shall serve as the officially recognized citizen committee needed to meet LCDC Statewide Planning Goal 1.*
Fnding: The proposal is consistent with this Goal and Policy. The applicant attended neighborhood meetings with the Park Place Neighborhood Association to present the proposed annexation and zone change applications. The City's procedures for review of the application provided notice to Park Place Neighborhood Association and allow opportunity for public comment on the application.

Goal 1.4 – Community Involvement

Policy 1.4.1 *Notify citizens about community involvement opportunities when they occur.*
Fnding: The proposal is consistent with this Goal and Policy. The City's procedures for review of the proposed annexation and zone change provide for notice to owners of affected properties and will provide opportunities for citizen input regarding the applications.

Comprehensive Plan Section 2 Land Use

Goal 2.1 Efficient Use of Land
Ensure that property planned for residential, commercial, office, and industrial uses is used efficiently and that land is developed following principles of sustainable development.

Policy 2.1.3 *Encourage sub-area master planning for larger developments or parcels, including re-development, where it may be feasible to develop more mixed uses, or campus-style industrial parks, with shared parking and landscaping areas. Allow developments to vary from prescriptive standards if planned and approved under this provision.*
Finding: The proposal is consistent with this Goal and Policy. The proposed annexation property is part of the Urban Growth Boundary and is located within the Park Place Concept Plan, which provides sub-area master planning for this area. The future development of this property will provide mixed uses, including various types of residential development, parks, open spaces, commercial and institutional uses consistent with the North Village concept plan.

Goal 2.4 Neighborhood Livability
Provide a sense of place and identity for residents and visitors by protecting and maintaining neighborhoods as the basic unit of community life in Oregon City while implementing the goals and policies of the other sections of the Comprehensive Plan.

Policy 2.4.1 *Develop local neighborhood plans to strengthen and protect residential neighborhoods and historic areas from infill development; such as development along linear commercial corridors.*
Finding: The proposal is consistent with this Goal and Policy. The Park Place Concept Plan provides for a unified neighborhood plan that will serve as a guide to development of a desirable and diverse community in this area of the city.

Policy 2.4.2 *Strive to establish facilities and land uses in every neighborhood that help give vibrancy, a sense of place, and a feeling of uniqueness; such as activity centers and points of interest.*
Finding: The proposal is consistent with this policy. The Park Place Concept Plan includes parks, natural open space areas, trails, neighborhood commercial and institutional uses that will provide vibrancy and a sense of place in the future development of this property.

Policy 2.4.3 *Promote connectivity between neighborhoods and neighborhood commercial centers through a variety of transportation modes.*
Finding: The proposal is consistent with this policy. The Park Place Concept Plan encourages connectivity and diverse modes of transportation. The plan calls for the construction of Holly Lane to provide a much needed connection between Holcomb Blvd. and Redland Road. The plan also encourages an internal circulation system within the future neighborhood that will ensure connectivity and minimize out of direction travel. A trail system is planned that will provide greater opportunity for bicycle and pedestrian modes of transportation.

Policy 2.4.4 *Where environmental constraints reduce the amount of buildable land, and/or where adjacent land differs in uses or density, implement Comprehensive Plan and zoning designations that encourage compatible transitional uses.*

Finding: The proposal is consistent with this policy. The subject property includes environmentally sensitive areas associated with drainageways. The Park Place Concept Plan and City ordinances provide for these water resource areas to be preserved as natural open spaces.

Policy 2.4.5
Ensure a process is developed to prevent barriers in the development of neighborhood schools, senior and childcare facilities, parks, and other uses that serve the needs of the immediate area and the residents of Oregon City.
Finding: The proposal is consistent with this requirement. Development of the subject site will be subject to adopted public facilities plans. Development of this Low Density Residential property will require payment of construction excise taxes for school development. The eventual development of this area will not present a barrier to the development of any of the facilities identified in this policy.

The following excerpt is from the Oregon City Comprehensive Plan Section 11 - Public Facilities - Education, on Page. 83:

> *K-12. The public education system in Oregon City consists of elementary schools, middle schools, and one high school. The Oregon City School District projects enrollment based on demographic trends and a ratio of 0.94 school children per residential household. A rolling five-year projection is done every fall to ensure that the facilities will accommodate growth. The preferred number of students per classroom is 25, with the maximum considered to be 30.*
>
> *To the extent possible, future school facilities should be located in, or at least adjacent to, residential areas to reduce traffic impact, maintain convenience for students, provide a focus for the neighborhoods, and promote energy conservation. Neighborhood schools and their athletic facilities should also serve as community centers by being available for community meetings and events in the evenings and on weekends.*

Finding: The proposal is consistent with this requirement. No school sites have been identified within the subject property at this time. The site is closest to Holcomb Elementary School and Ogden Middle School and would eventually be connected to these schools through additional road, trail, and sidewalk improvements.

The City continues to coordinate with the school district to review new development and development of this Low Density Residential property will require payment of construction excise taxes for school development. The eventual development of this area close to an existing school could help to achieve many of the benefits discussed above.

As discussed on Page 118 of the Comprehensive Plan under *Partnerships with Other Governments.*

> *The City does not provide all of the urban services within the city limits. Clackamas County, the Oregon City School District, the Oregon Department of Transportation, the TriCities Sewer District, Clackamas Community College, and many other agencies also provide necessary services to residents and employees. In order to efficiently and effectively use the public dollars available to all of these different agencies, the City should be proactive in forming excellent working relationships with other agencies to address urban service issues.*

Goal 2.5 Retail and Neighborhood Commercial

Policy 2.5.1 *Encourage the redevelopment of linear commercial corridors in ways that encourage expansion of existing businesses and infill development, and at the same time reduces conflicting traffic movements, improves the aesthetic character of these commercial areas, and encourages trips by transit, bicycling and walking.*
Finding: Not applicable. The subject property does not contain any linear commercial corridors. The Park Place Concept Plan calls for limited neighborhood commercial development, but there is no existing commercial development within the area.

Policy 2.5.2 *Allow and encourage the development of small retail centers in residential neighborhoods that provide goods and services for local residents and workers. Generally, these centers should be located at the intersections of two or more streets that are classified as neighborhood collectors or higher.*
Finding: The proposal is consistent with this policy. The North Village Concept Plan calls for a small area of neighborhood commercial zoning in the southwest corner of the annexation area. This area is identified in the Park Place Concept Plan as a part of "Livesay Main Street". The Plan states the following regarding anticipated uses within this area of neighborhood commercial development:

Small-scale commercial businesses, like a coffee shop, bookstore, dry cleaners, or café, are proposed to anchor the intersection of Holly Lane Extension and Livesay Main Street and surround the Village Green.

Policy 2.5.3 *Review design standards and the sign code to ensure compatibility with existing neighborhoods.*
Finding: The proposal is consistent with this Policy. Design standards for single family development in the Park Place Concept Plan area are implemented by OCMC 17.21 and commercial/multi-family design standards are identified in OCMC 17.62 and 17.62. The future development of this area will be reviewed for compliance with these standards prior to construction.

Policy 2.5.4 *Encourage the development of successful commercial areas organized as centers surrounded by higher density housing and office uses, rather than as commercial strips adjacent to low-density housing.*
Finding: The proposal is consistent with this policy. The commercial development in this area is intended to be small in scale and service-oriented. It is seen by the Park Place Concept Plan as helping to provide a neighborhood identity rather than providing for the full range of commercial needs that are available elsewhere in Oregon City, as discussed in the following quote from page 18 of the Concept Plan:

> *"Commercial development in the planning area is not seen as necessary for the success of the area, which is expected to be developed largely as residential. The commercial needs of the planning area can be met outside of the concept planning area by existing and planned developments. However, commercial development can serve to organize the Park Place Concept Plan by providing a "center" to the community. In addition, commercial development can meet some of the needs of the community, providing a marketable amenity for residential development while reducing trips out of the neighborhood."*

Policy 2.5.5 *Encourage commercial and industrial development that enhances livability of neighborhoods through the design of attractive LEEDTM-certified buildings and environmentally responsible landscaping that uses native vegetation wherever possible, and by ensuring that development is screened and buffered from adjoining residential neighborhoods and access is provided by a variety of transportation modes.*

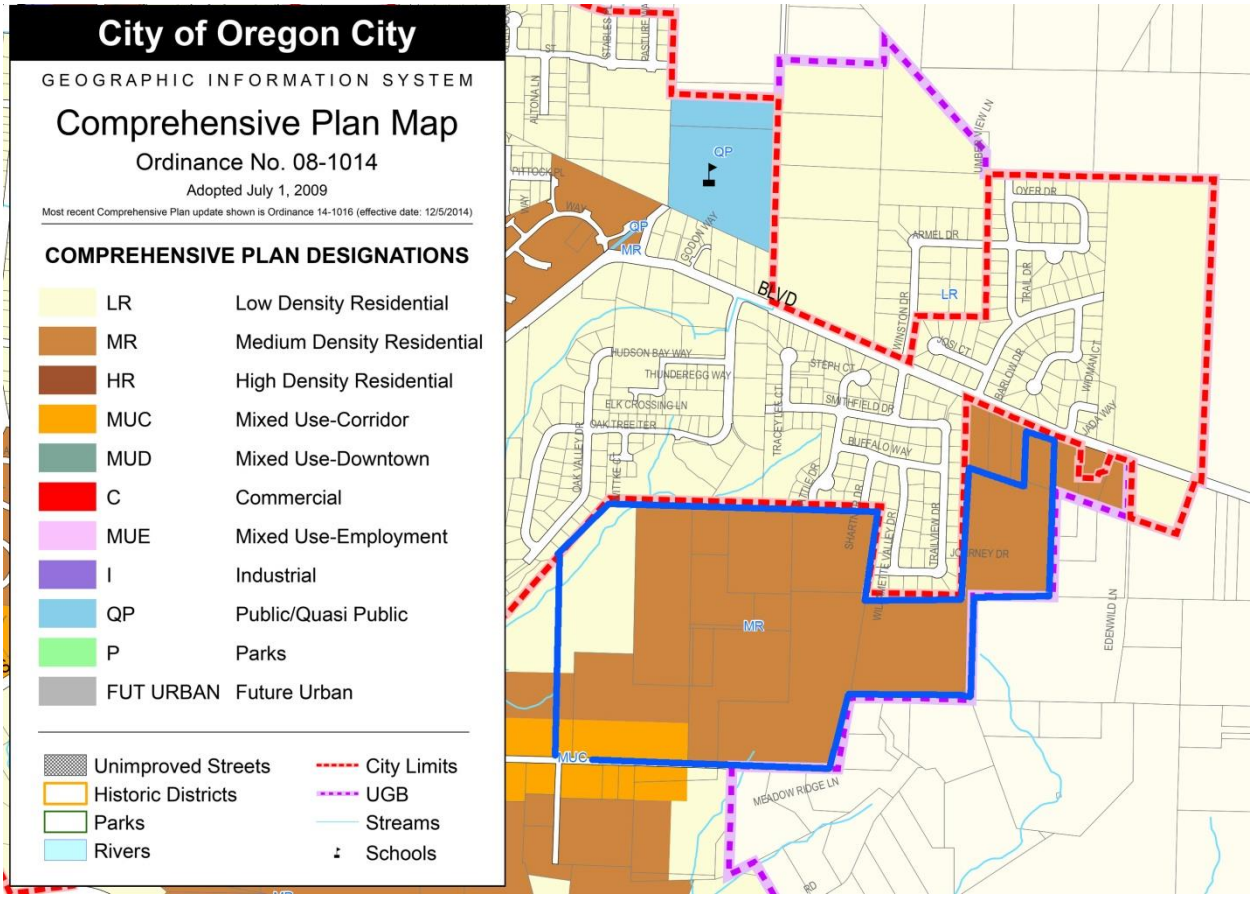
Finding: The proposal is consistent with this policy. These provisions are implemented by design standards within the OCMC that will be reviewed prior to site development.

Goal 2.7 Oregon City Comprehensive Plan Land-Use Map
Maintain the Oregon City Comprehensive Plan Land-Use Map as the official long-range planning guide for land-use development of the city by type, density and location.

Policy 2.7.2 *Use the following 11 land-use classifications on the Oregon City Comprehensive Plan Land-Use Map to determine the zoning classifications that may be applied to parcels:*

- *Low Density Residential (LR)*
- *Medium Density Residential (MR)*
- *High Density Residential (HR)*
- *Commercial (C)*
- *Mixed Use Corridor (MUC)*
- *Mixed Use Employment (MUE)*
- *Mixed Use Downtown (MUD)*
- *Industrial (I)*
- *Public and Quasi-Public (QP)*
- *Parks (P)*
- *Future Urban Holding (FUH)*

Finding: The proposal is consistent with this policy. The Oregon City Comprehensive Plan Land-Use Map remains the long-range planning guide for development in the city and applies to this area. Therefore, this annexation application has no impact on this policy. The cropped section from the Oregon City Comprehensive Plan Land Use Map below shows the designations applicable to the subject area (outlined in blue):



The majority of the area is designated Medium Density Residential, which is implemented by the R-5 zone. There is a small area of Low Density Residential designation in the northwest corner of the annexation area. The R-10 through R-6 zones implement this designation, but R-10 is proposed. There is also a portion of the site that is designated Mixed Use-Corridor. The proposed zoning is consistent with the adopted comprehensive land use plan.

Goal 5: Open Spaces, Scenic and Historic Areas, and Natural Resources

Goal 5.1 – Open Space

Policy 5.1.1 *Conserve open space along creeks, urban drainage ways, steep hillsides, and throughout Newell Creek Canyon.*
Finding: the proposal is consistent with this policy. There is one major drainageway in the northwest corner of the proposed annexation area and the top of a drainageway in the southeast corner. Consistent with this policy, at the time of development these areas will be retained as open space in accordance with the stormwater master plan, OCMC Chapter 17.44 and OCMC Chapter 17.49 which require a restricve easement or separate tract of land limiting or prohibiting development for the protection of unstable slopes or natural resources.

Policy 5.1.2 *Manage open space areas for their value in linking citizens and visitors with the natural environment, providing solace, exercise, scenic views and outdoor education. Built features in open space sites should harmonize with natural surroundings.*
Finding: the proposal is consistent with this policy. Future open space areas will be provided at the time of development to assist in meeting this policy.

Goal 5.2 Scenic Views and Scenic Sites

Policy 5.2.1 *Identify and protect significant views of local and distant features such as Mt. Hood, the Cascade Mountains, the Clackamas River Valley, the Willamette River, Willamette Falls, the Tualatin Mountains, Newell Creek Canyon, and the skyline of the city of Portland, as viewed from within the city.*
Finding: the proposal is consistent with this policy. The site is located on a hillside with some nice vistas. These will be considered in the development of the future master plan for this area.

Policy 5.2.2 *Maximize the visual compatibility and minimize the visual distraction of new structures or development within important viewsheds by establishing standards for landscaping, placement, height, mass, color, and window reflectivity.*
Finding: the proposal is consistent with this policy. Not applicable to this annexation and zone change application and not directly applicable to the future development of this site. This policy is a guide to city action in developing standards to protect visual compatibility.

Goal 5.3 Historic Resources

Policy 5.3.3 Promote the designation of qualifying properties outside Historic and Conservation Districts as historic.
Finding: the proposal is consistent with this policy. The applicants are not aware of any historic resources within the annexation area and none are identified in the Park Place Concept Plan or Oregon City Comprehensive Plan. The Oregon State Historic Preservation Office and various tribes will be

contacted during the development of the future master plan in order to determine if there are any significant archeological sites within the annexation area.

Policy 5.3.8 Preserve and accentuate historic resources as part of an urban environment that is being reshaped by new development projects.
Finding: the proposal is consistent with this policy. The applicants are not aware of any historic resources within the annexation area.

Goal 5.4 Natural Resources

Policy 5.4.1 *Conserve and restore ecological structure, processes and functions within the city to closely approximate natural ecosystem structure, processes, and functions.*
Finding: the proposal is consistent with this policy. During the development of the future master plan for the annexation area, care will be taken to identify any sensitive ecological areas within the site boundaries.

Policy 5.4.5 *Ensure that riparian corridors along streams and rivers are conserved and restored to provide maximum ecological value to aquatic and terrestrial species. This could include an aggressive tree and vegetation planting program to stabilize slopes, reduce erosion, and mitigate against invasive species and stream impacts where appropriate.*
Finding: the proposal is consistent with this policy. The riparian corridors along the natural drainageways within the annexation boundary will be protected as open space. All development on property within the natural Resource Overlay District will be reviewed upon submittal of a development application for protection of the vegetated corridor/riparian areas through covenants or tracts which restrict or prohibit development and require associated mitigaiton.

Policy 5.4.9 *Protect and enhance riparian corridors along streams in Oregon City to increase shade, reduce streambank erosion and intrusion of sediments, and provide habitat for a variety of plants, animals, and fish.*
Finding: the proposal is consistent with this policy. All development on property within the natural Resource Overlay District will be reviewed upon submittal of a development application for protection of the vegetated corridor/riparian areas through covenants or tracts which restrict or prohibit development and require associated mitigaiton.

Policy 5.4.12 *Use a watershed-scale assessment when reviewing and planning for the potential effects from development, whether private or public, on water quality and quantity entering streams.*
Finding: the proposal is consistent with this policy. Consistent with this policy and City standards regarding storm water treatment and detention, during development of the future master plan the project engineer will look at the regional watershed in determining appropriate methods of handling storm drainage.

Policy 5.4.13 *Adopt and/or establish standards for all new development that promote the use of pervious surfaces and prevent negative ecological effects of urban stormwater runoff on streams, creeks and rivers.*
Finding: the proposal is consistent with this policy. This policy is fully implemented by the City's adopted storm water management standards. The project engineer will comply with these standards during preparation of the future master plan for this area.

Policy 5.4.16 *Protect surfacewater quality by:*

- *providing a vegetated corridor to separate protected water features from development*
- *maintaining or reducing stream temperatures with vegetative shading*
- *minimizing erosion and nutrient and pollutant loading into water*
- *providing infiltration and natural water purification by percolation through soil and vegetation*

Finding: the proposal is consistent with this policy. A vegetated corridor will be preserved in the future master plan along drainageways in the annexation area to accomplish the objectives of this policy. In addition, upon the submittal of a development application, the stormwater manual will analyze the impacts of development and specify standards for stormwater.

Policy 5.4.18 *Encourage use of native and hardy plants such as trees, shrubs and groundcovers to maintain ecological function and reduce maintenance costs and chemical use.*

Finding: the proposal is consistent with this policy. Not applicable to this application for annexation and zoning. Landscape plans for future commercial and/or multi-family development will be reviewed in accordance with adopted City standards that implement this policy.

Goal 6: Quality of Air, Water, and Land Resources

Goal 6.1 Air Quality

Policy 6.1.1 *Promote land-use patterns that reduce the need for distance travel by single occupancy vehicles and increase opportunities for walking, biking and/or transit to destinations such as places of employment, shopping and education.*

Finding: the proposal is consistent with this policy. The future master plan will be designed with a system of interconnected streets and pathways that will satisfy this policy.

Goal 6.2 Water Quality

Policy 6.2.1 *Prevent erosion and restrict the discharge of sediments into surface- and groundwater by requiring erosion prevention measures and sediment control practices.*
Finding: the proposal is consistent with this policy. Consistent with this policy and adopted City storm water standards, the future master plan for this project will include plans for erosion and sediment control to mitigate for site grading and other development activities.

Policy 6.2.2 *Where feasible, use open, naturally vegetated drainage ways to reduce stormwater and improve water quality.*
Finding: the proposal is consistent with this policy. The natural drainageways and a vegetated corridor abutting them will be protected as open space in the future master plan for this area.

Goal 6.3 Nightlighting

Policy 6.3.2 *Encourage new developments to provide even and energy-efficient lighting that ensures safety and discourages vandalism. Encourage existing developments to retrofit when feasible.*
Finding: the proposal is consistent with this policy. The future development of this site will employ street lighting consistent with City and PGE standards that satisfy this policy.

Goal 6.4 Noise

Policy 6.4.1 *Provide for noise abatement features such as sound-walls, soil berms, vegetation, and setbacks, to buffer neighborhoods from vehicular noise and industrial uses.*
Finding: the proposal is consistent with this policy. There are no significant noise sources that impact this annexation site.

Goal 7: Natural Hazards

Policy 7.1.1 *Limit loss of life and damage to property from natural hazards by regulating or prohibiting development in areas of known or potential hazards.*
Finding: the proposal is consistent with this policy. Chapter 17.44 of the Oregon City Municipal Code protects unstable slopes including areas of slope 25% or greater and all known landslide areas**.** City GIS mapping of natural hazards shows a couple of small areas of mapped landslide hazards and other areas with steep slopes. These areas are associated with the drainageways on portions of the property near Livesay Canyon. The majority of this area will be preserved as open spaces (in the form of restrictive easements or tracts) in the future master plan. Where development will occur on or in proximity to geologic hazard areas, appropriate geotechnical studies will be performed to determine site stability during the development review process. Geologic Hazards were reviewed during the Concept Plan process to identify the buildable lands availability onsite. This analysis will be further refined as development is proposed and conditions of approval will be placed upon development proposals to ensure compliance with OCMC 17.44 Geologic Hazards Overlay.

Policy 7.1.8 *Provide standards in City Codes for planning, reviewing, and approving development in areas of potential landslides that will prevent or minimize potential landslides while allowing appropriate development.*
Finding: the proposal is consistent with this policy. This policy is implemented in Chapter 17.44 – Geologic Hazards. Chapter 17.44 of the Oregon City Municipal Code protects unstable slopes including areas of slope 25% or greater and all known landslide areas**.** City GIS mapping of natural hazards shows a couple of small areas of mapped landslide hazards and other areas with steep slopes. At the time development is proposed, the applicant is generally required to conduct a geotechinical study which is reviewed by a City consultant for protection of lands through preservation and restrictions of development (in the form of restrictive easements or tracts).

Policy 7.1.9 *Locate, design, and construct structures in conformance with current building codes and standards for seismic-resistant design.*
Finding: the proposal is consistent with this policy. Not applicable to this application for annexation and zone change. All future structures to be built on this site will obtain required building permits that include provisions to address this policy.

Policy 7.1.11 *Prioritize roadways needed for public service, medical, and emergency vehicles during emergencies.*
Finding: the proposal is consistent with this policy. The future connection of Holly Lane through to Redland Road will be provide a much-needed route connecting the Holcomb Blvd. area to medical, emergency and public services. At the present time access is limited to Holcomb Blvd. and, to a lesser degree, Forsythe Road. The future development of this site will aid in meeting this policy.

Goal 8: Parks and Recreation

Policy 8.1.1 *Provide an active neighborhood park-type facility and community park-type facility within a reasonable distance from residences, as defined by the Oregon City Park and Recreation Master Plan, to residents of Oregon City*
Finding: the proposal is consistent with this policy. There are presently no parks within convenient walking distance of the annexation area. The future development of this site will provide for a community park, consistent with this policy and the Park Place Concept Plan.

Policy 8.1.5 *Identify and construct a network of off-street trails throughout the city for walking and jogging.*
Finding: the proposal is consistent with this policy. The Park Place Concept Plan calls for a system of off-street trails through the proposed annexation area. The future master plan for this site will address this requirement.

Policy 8.1.6 *Provide land for specialized facilities such as sports fields and indoor recreational facilities.*
Finding: the proposal is consistent with this policy. It is anticipated that the community park that will be developed on a portion of the annexation area will provide for sports fields.

Policy 8.1.9 *Emphasize retaining natural conditions and the natural environment in proposed passive recreation areas.*
Finding: the proposal is consistent with this policy. The future master plan will provide open spaces associated with the drainageway areas within the annexation area and these will be preserved in their natural condition.

Policy 8.1.12 *Identify and protect land for parks and recreation within the Urban Growth Boundary.*
Finding: the proposal is consistent with this policy. The Park Place Concept Plan calls for a community park that is mostly within the proposed annexation area. The future master plan for this site will address this requirement.

Prior to issuing any development approval other than as identified in condition of approval #2, the applicant shall obtain General and Detailed Development Plan approval, including the entire 91-acre property, pursuant to OCMC 17.65. The General Development Plan and all phases of development authorized by it, must implement the Park Place Concept Plan and Oregon City's adopted Public Facilities Plans with regard to the provision of open space, park and trails, sewer, water, stormwater and transportation improvements. These include, but are not limited to, addressing the timing of parkland acquisitions and development, proposed phasing of major roads to ensure a timely connection to Holly Lane and an analysis of utility phasing that can foster redevelopment of the entire concept plan area.

Policy 8.1.14 *Require or encourage developers to dedicate park sites as part of the subdivision review process. When possible, require or encourage developers to build parks to City standards and give them to the City to operate and maintain.*
Finding: the proposal is consistent with this policy. The future master plan will provide for the dedication of a community park consistent with this policy and other City standards.

Goal 10: Housing

Policy 10.1.1 *Maintain the existing residential housing stock in established older neighborhoods by maintaining existing Comprehensive Plan and zoning designations where appropriate.*

Finding: the proposal is consistent with this policy. Not applicable. The subject property is not located within an established older neighborhood. There are a few homes on large acreage tracts and most of these will be removed to allow for redevelopment. However the proposal would implement existing Comprehensive Plan designations.

Policy 10.1.3 *Designate residential land for a balanced variety of densities and types of housing, such as single-family attached and detached, and a range of multi-family densities and types, including mixed-use development.*
Finding: the proposal is consistent with this policy. The North Village Plan within the Park Place Concept Plan calls for a mixture of housing types and densities, as well as neighborhood commercial and institutional uses within the annexation area. The future master plan will implement these land uses.

Policy 10.1.4 *Aim to reduce the isolation of income groups within communities by encouraging diversity in housing types within neighborhoods consistent with the Clackamas County Consolidated Plan, while ensuring that needed affordable housing is provided.*
Finding: the proposal is consistent with this policy. The Park Place Concept Plan calls for a variety of types of housing that will help in addressing this policy. The Comprehensive Plan designation supports this diversity with a variety of zoning designations.

Policy 10.1.7 *Use a combination of incentives and development standards to promote and encourage well-designed single-family subdivisions and multi-family developments that result in neighborhood livability and stability.*
Finding: the proposal is consistent with this policy. The City has adopted design standards in Chapter 17.21 that implement this policy. The future development will conform to these standards.

Policy 10.2.2 *Allow increases in residential density (density bonuses) for housing development that would be affordable to Oregon City residents earning less than 50 percent of the median income for Oregon City.*
Finding: the proposal is consistent with this policy. The Comprehensive Plan designation supports this diversity with a variety of zoning designations.

Goal 11: Public Facilities

Policy 11.1.1 *Ensure adequate public funding for the following public facilities and services, if feasible: Transportation infrastructure • Wastewater collection • Stormwater management • Police protection • Fire protection • Parks and recreation • Water distribution • Planning, zoning and subdivision regulation • Library services • Aquatic Center • Carnegie Center • Pioneer Community Center • City Hall • Buena Vista House • Ermatinger House*
Finding: the proposal is consistent with this policy. Not applicable to this application for annexation and zone change. Future development will pay for system development charges and taxes.

Policy 11.1.2 *Provide public facilities and services consistent with the goals, policies and implementing measures of the Comprehensive Plan, if feasible.*
Finding: the proposal is consistent with this policy. As discussed above in this application, public facilities and services are available or will be provided concurrently with future development of this site to allow development consistent with this policy.

Policy 11.1.3 *Confine urban public facilities and services to the city limits except where allowed for safety and health reasons in accordance with state land-use planning goals and regulations. Facilities that serve the public will be centrally located and accessible, preferably by multiple modes of transportation.*
Finding: the proposal is consistent with this policy. The proposed future development of this site will occur only after annexation to the City of Oregon City. Although sanitary sewer from Redland Road will have to pass through unincorporated areas, no service connections will be provided to areas outside of the city limits in conjunction with the development of this site.

Policy 11.1.5 *Design the extension or improvement of any major public facility and service to an area to complement other public facilities and services at uniform levels.*
Finding: the proposal is consistent with this policy. Public services will be provided in accordance with adopted plans and standards that conform to this policy.

Policy 11.1.6 *Enhance efficient use of existing public facilities and services by encouraging development at maximum levels permitted in the Comprehensive Plan, implementing minimum residential densities, and adopting an Accessory Dwelling Unit Ordinance to infill vacant land.*
Finding: the proposal is consistent with this policy. The future development of this site will be at densities planned in the Park Place Concept Plan. This development will be dense enough to make efficient use of existing and planned public facilities and services.

Policy 11.2.4 *Seek economical means to reduce inflow and infiltration of surface- and groundwater into the wastewater collection system. As appropriate, plant riparian vegetation to slow stormwater, and to reduce erosion and stream sedimentation.*
Finding: the proposal is consistent with this policy. The sanitary sewer system that will serve the future development of this site will be installed in accordance with City standards and will be pressure tested to ensure that surface and ground waters do not enter the system. Storm water will be collected via a storm sewer system that will drain to storm water treatment and detention facilities that will be designed to City standards that include measures to slow stormwater to reduce erosion and stream sedimentation.

Policy 11.3.3 *Maintain adequate reservoir capacity to provide all equalization, operational, emergency, and fire flow storage required for the City's distribution system.*
Finding: the proposal is consistent with this policy. Information provided at the pre-application conference indicates that the City and Clackamas River Water District have adequate water storage capacity to service the proposed annexation area.

Policy 11.4.1 *Plan, operate, and maintain the stormwater management system for all current and anticipated city residents within Oregon City's existing Urban Growth Boundary and plan strategically for future expansion areas.*
Finding: the proposal is consistent with this policy. The future master plan will provide for a stormwater management system that conforms to City standards.

Policy 11.4.2 *Adopt "green streets" standards to reduce the amount of impervious surface and increase the use of bioswales for stormwater retention where practicable.*
Finding: the proposal is consistent with this policy. The City has adopted standards for Low Impact Development streets that implement this policy. Where appropriate grades exist, the future master plan can employ these standards to provide for stormwater management consistent with this policy.

Policy 11.4.4 *Maintain existing drainageways in a natural state for maximum water quality, water resource preservation, and aesthetic benefits.*
Finding: the proposal is consistent with this policy. The existing drainageway areas within the annexation area will be maintained as natural open spaces in the future master plan, in accordance with this policy.

Policy 11.4.5 *Design stormwater facilities to discharge surface water at pre-development rates and enhance stormwater quality in accordance with criteria in City of Oregon City Public Works Stormwater and Grading Design Standards.*
Finding: the proposal is consistent with this policy. This policy is implemented by the City's stormwater standards. The future master plan will be designed to conform to these standards.

Goal 12: Transportation

Policy 12.1.1 *Maintain and enhance citywide transportation functionality by emphasizing multi-modal travel options for all types of land uses.*
Finding: the proposal is consistent with this policy, as conditioned. The future development of this site will provide for a connected system of roadways and pathways that will provide for multi-modal forms of travel.

In accordance with City, County and State transportation requirements, no development, except that permitted under the County's Future Urban FU-10 zoning designation, in effect as of the date of this application's submittal, shall be allowed until the following occurs, acknowledged and the Applicant demonstrates compliance with these requirements:

a. A refinement plan for Highway 213 at Beavercreek Road (Alternative Mobility Targets), including elements such as financially constrained projects and alternative mobility standards, and amendments to OCMC Chapter 12.04 implementing the new Refinement Plan, are be adopted and acknowledged.
b. Amendments to OCMC 12.04 which allow development affecting the intersection of Highway 213/Beavercreek are adopted.
    I. Adopt amendments to the City's Transportation System Plan and OCMC Chapter 12.04 to include projects that satisfy the then-applicable performance standards and these standards must be acknowledged; or
    II. Condition the approval of a land division application that satisfies then-applicable OCMC Chapter 12.04 by including proportional mitigation of the application's impacts on that intersection, or such other mitigation measure(s) as may be approved which assure(s) that the intersection will either meet, or perform no worse than, the then-applicable performance standards

Policy 12.1.2 *Continue to develop corridor plans for the major arterials in Oregon City, and provide for appropriate land uses in and adjacent to those corridors to optimize the land use-transportation connection.*
Finding: the proposal is consistent with this policy. The future master plan will provide for the extension of Holly Lane, consistent with the Park Place Concept Plan and this policy.

Policy 12.1.3 *Support mixed uses with higher residential densities in transportation corridors and include a consideration of financial and regulatory incentives to upgrade existing buildings and transportation systems.*
Finding: the proposal is consistent with this policy. Not applicable. The subject property is not located in a transportation corridor.

Policy 12.1.4 *Provide walkable neighborhoods. They are desirable places to live, work, learn and play, and therefore a key component of smart growth.*
Finding: the proposal is consistent with this policy. The future master plan will include a network of sidewalks and pathways that will provide for a walkable neighborhood with access to residential, commercial, parks and natural open space areas.

Policy 12.3.1 *Provide an interconnected and accessible street system that minimizes vehicle-miles-traveled and inappropriate neighborhood cut-through traffic.*
Finding: the proposal is consistent with this policy. The future master plan will be designed with a network of interconnected streets. Primary access through the neighborhood will be via Holly Lane, which will discourage neighborhood cut-through traffic.

Policy 12.3.2 *Provide an interconnected and accessible pedestrian system that links residential areas with major pedestrian generators such as employment centers, public facilities, and recreational areas.*
Finding: the proposal is consistent with this policy. There are no employment centers in the vicinity of the subject property, but the future master plan will provide for pedestrian connectivity to both parks and open space recreational areas.

Policy 12.3.3 *Provide a well-defined and accessible bicycle network that links residential areas, major bicycle generators, employment centers, recreational areas, and the arterial and collector roadway network.*
Finding: the proposal is consistent with this policy. The future master plan will include a bicycle lane on Holly Lane, bicycle/pedestrian trails, as well as a network of bicycle-friendly local streets.

Policy 12.3.4 *Ensure the adequacy of pedestrian and bicycle connections to local, county, and regional trails.*
Finding: the proposal is consistent with this policy. The future master plan will provide for connections to planned trails depicted in the Park Place Concept Plan.

Policy 12.3.5 *Promote and encourage a public transit system that ensures efficient accessibility, mobility, and interconnectivity between travel modes for all residents of Oregon City.*
Finding: the proposal is consistent with this policy. There is presently no bus service in the vicinity of the subject property. The completion of the Holly Lane north extension may provide for a logical bus route in this area in the future.

Policy 12.3.6 *Establish a truck route network that ensures efficient access and mobility to commercial and industrial areas while minimizing adverse residential impacts.*
Finding: Not applicable. There are no commercial or industrial areas in the vicinity of the subject property.

Policy 12.6.1 *Provide a transportation system that serves existing and projected travel demand.*

Finding: the proposal is consistent with this policy. Please refer to the Lancaster Engineering traffic study included with this application.

Policy 12.6.2 *Identify transportation system improvements that mitigate existing and projected areas of congestion.*
Finding: the proposal is consistent with this policy, as conditioned . The future completion of the Holly Lane north extension will provide for another access route from the Holcomb area that will be consistent with this policy.
In accordance with City, County and State transportation requirements, no development, except that permitted under the County's Future Urban FU-10 zoning designation, in effect as of the date of this application's submittal, shall be allowed until the following occurs, acknowledged and the Applicant demonstrates compliance with these requirements:

a. A refinement plan for Highway 213 at Beavercreek Road (Alternative Mobility Targets), including elements such as financially constrained projects and alternative mobility standards, and amendments to OCMC Chapter 12.04 implementing the new Refinement Plan, are be adopted and acknowledged.
b. Amendments to OCMC 12.04 which allow development affecting the intersection of Highway 213/Beavercreek are adopted.
    I. Adopt amendments to the City's Transportation System Plan and OCMC Chapter 12.04 to include projects that satisfy the then-applicable performance standards and these standards must be acknowledged; or
    II. Condition the approval of a land division application that satisfies then-applicable OCMC Chapter 12.04 by including proportional mitigation of the application's impacts on that intersection, or such other mitigation measure(s) as may be approved which assure(s) that the intersection will either meet, or perform no worse than, the then-applicable performance standards

Policy 12.6.3 *Ensure the adequacy of travel mode options and travel routes (parallel systems) in areas of congestion.*
Finding: the proposal is consistent with this policy. The future completion of the Holly Lane north extension will provide for another access route from the Holcomb area that will be consistent with this policy.

Policy 12.6.4 *Identify and prioritize improved connectivity throughout the city street system.*
Finding: the proposal is consistent with this policy. The future master plan will be designed to provide connectivity consistent with this policy.

Goal 13 – Energy

Policy 13.1.2 *Encourage siting and construction of new development to take advantage of solar energy, minimize energy usage, and maximize opportunities for public transit.*
Finding: the proposal is consistent with this policy. The subject property is located on a south-facing hill that will afford opportunities in the design of the future master plan for taking advantage of solar energy. A network of connected neighborhood streets will also be consistent with this policy.

Policy 13.2.1 *Promote mixed-use development, increased densities near activity centers, and home-based occupations (where appropriate).*
Finding: the proposal is consistent with this policy. The Park Place Concept Plan proposes a mixed-use development pattern for the north village area that will include commercial, recreational and institutional uses, as well as a variety of residential types. The densities proposed in the Park Place Concept Plan are higher than other areas of the City, which is consistent with this policy.

Policy 13.2.2 *Create commercial nodes in neighborhoods that are underserved to reduce vehicle miles traveled.*
Finding: the proposal is consistent with this policy. The Park Place Concept Plan includes the provision of a small amount of neighborhood commercial development near Livesay Road, which is consistent with this policy.

Policy 13.2.3 *Plan for complementary mixed uses when considering annexation of new, under- or undeveloped areas so that new urban residential areas have closer access to jobs and services.*
Finding: the proposal is consistent with this policy. The Park Place Concept Plan includes some neighborhood commercial development that will provide for some commercial services in the neighborhood, consistent with this policy.

Section 14 Urbanization

Goal 14.3 Orderly Provision of Services to Growth Areas
Plan for public services to lands within the Urban Growth Boundary through adoption of a concept plan and related Capital Improvement Program, as amendments to the Comprehensive Plan.
Finding: The proposal is consistent with this requirement. Details regarding planned capital improvements to provide public services to the annexation site were provided earlier in this report.

Policy 14.3.1
Maximize new public facilities and services by encouraging new development within the Urban Growth Boundary at maximum densities allowed by the Comprehensive Plan.
Finding: The proposal is consistent with this requirement. The proposed zoning is consistent with the adopted and acknowledged Oregon City Comprehensive Plan Map. A condition of approval will temporarily prohibit urban-density development due to on-going traffic policy considerations. At such time as the Alternative Mobility standards are adopted and the requirements of Article 12 can be met, development will take place at densities consistent with the Park Place Concept Plan and the City's Comprehensive Plan. The proposed development will be reviewed for compliance with maximum and minimum density standards at the time of application for subdivision approval.

The subject property is designated Low Density Residential, Medium Density Residential and Mixed Use Corridor by the Oregon City Comprehensive Plan. The proposed default zoning districts R-10, R-5 and NC implements the designations applicable to this property. A zone change to a higher density may be included in a future application for development of the property. Any future development of the property will be reviewed for compliance with maximum and minimum density standards at the time of application for subdivision approval.

Policy 14.3.2
Ensure that the extension of new services does not diminish the delivery of those same services to existing areas and residents in the city.

Finding: The proposal is consistent with this requirement. As noted previously, the city has updated its water, sewer and transportation master plans to plan for extension of services to the annexation area. The updated public facility master plans take into account the demand for services from both existing and planned development in the city. Public facility plans identify future capital improvement projects intended to ensure that public services can be maintained and extended as needed to meet demand. The proposed annexation does not affect the ability of the city to deliver services to existing areas, at existing densities, and residents in the city.

Further analysis of the adequacy of the public facilities to serve the site without diminishing service to existing customers is required prior to any subsequent development proposal of the annexed property, including any zone changes, land divisions, or other development approvals required. Future development of the annexed properties will be required to construct or pay fee-in-lieu of construction of all necessary city public facilities to serve the subject site, as well as paying applicable System Development Charges.

Prior to issuing any development approval other than as identified in condition of approval #2, the applicant shall obtain General and Detailed Development Plan approval, including the entire 91-acre property, pursuant to OCMC 17.65. The General Development Plan and all phases of development authorized by it, must implement the Park Place Concept Plan and Oregon City's adopted Public Facilities Plans with regard to the provision of open space, park and trails, sewer, water, stormwater and transportation improvements. These include, but are not limited to, addressing the timing of parkland acquisitions and development, proposed phasing of major roads to ensure a timely connection to Holly Lane and an analysis of utility phasing that can foster redevelopment of the entire concept plan area.

Policy 14.3.3
Oppose the formation of new urban services districts and oppose the formation of new utility districts that may conflict with efficient delivery of city utilities within the Urban Growth Boundary.
Finding: Not applicable. The proposed annexation does not involve formation of any new urban service or utility districts.

Policy 14.3.4
Ensure the cost of providing new public services and improvements to existing public services resulting from new development are borne by the entity responsible for the new development to the maximum extent allowed under state law for Systems Development Charges.
Finding: The proposal is consistent with this requirement. All utilities that will be provided to serve the future development of this site will be the responsibility of the developer. The future homes to be built on this property will pay required Systems Development Charges at the time of application for building permits. As noted previously, the city's water, sewer and transportation master plans have been updated to plan for extension of those services to the proposed annexation area. Capital improvement projects needed to provide those services are identified in the master plans and the city's system development charges (SDCs) have been updated accordingly. The updated SDCs will ensure that new development in the annexation area will fund those public improvements to the maximum extent allowed under state law.

Goal 14.4 Annexation of Lands to the City

Annex lands to the city through a process that considers the effects on public services and the benefits to the city as a whole and ensures that development within the annexed area is consistent with the Oregon City Comprehensive Plan, City ordinances, and the City Charter.
Finding: The proposal is consistent with this requirement. This annexation application will be reviewed through a process that considers the effects on public services and benefits to the city. Consistency with the Comprehensive Plan and applicable city ordinances is required for annexation approval and has been demonstrated in this narrative and in the supporting materials provided with the application package.

The annexation includes a zone change, and the applicant has provided additional narrative to adequately demonstrate that the impacts due to the development that would be authorized by approval of the zone change can be mitigated in accordance with the City's comprehensive plan.

Further, as no additional development is proposed as part of this annexation and rezoning application, the proposal annexation will have no greater effect on public services that it currently does with the lands located outside city boundaries but within the UGB.

By approving this annexation and zoning, the city takes the next step in urbanizing this area, realizing the objectives identified in the Comprehensive Plan. Several significant reviews steps remain to be taken by both the City and the applicant in order to authorize development of the property, further ensuring consistency with this Goal.

Policy 14.4.1 *Promote compact urban form and support efficient delivery of public services by ensuring that lands to be annexed are within the City's Urban Growth Boundary, and contiguous with the city limits. Do not consider long linear extensions, such as cherry stems and flag lots, to be contiguous with the city limits.*
Finding: The proposal is consistent with this requirement. This application supports this policy by proposing annexation of property that is within the city's urban growth boundary and is contiguous with the existing city limits. The subject property is entirely within the City's Urban Growth Boundary and is contiguous with the existing city limits along its entire western border and its frontage on Holcomb Blvd. This application does not propose long linear extensions such as cherry stems or flag lots.

Policy 14.4.2 *Include an assessment of the fiscal impacts of providing public services to unincorporated areas upon annexation, including the costs and benefits to the city as a whole as a requirement for concept plans.*
Finding: The proposal is consistent with this requirement, as conditioned. This policy contains a requirement that the city include a fiscal impact assessment as part of the preparation of concept plans. This annexation area is part of a concept plan which included a fiscal assessment of the cost of public facilities to serve this area, and subsequent public facilities plans and System Development Charge updates have been implemented based on those assessments. The proposed annexation will have no immediate fiscal impacts upon the cost of providing public services because no development will be allowed until such time as transportation planning issues are resolved. The City's Public Facilities Plan and Transportation System Plan anticipate the future development of the subject property at densities consistent with the Comprehensive Plan and provide an analysis of the costs of providing adequate levels of services in this area of the city. The future development of this property will contribute to these costs by providing on-site infrastructure, as well as potential off-site sanitary sewer improvements, at the cost of the developer. Each home will be assessed appropriate System Development Charges to cover the proportionate impact of the future development of this site.

Furthermore, the future development application will provide for a master plan consistent with the design concept of the North Village Plan. The applicant acknowledges that the future master plan for the annexation area will need to provide for the dedication of a community park and other public facilities consistent with the Park Place Concept Plan. Staff recommends that this annexation area be subject to a Master Plan pursuant to OCMC 17.65 prior to any development of the property at densities greater than that permitted under current County zoning. Master Planning of the annexation area pursuant to OCMC 17.65 would allow for the specific phasing of development over time as well as greater control and predictability regarding the timing of and cost of public imporvements, including water, stormwater, sewer, transportation, parks, trails and open space. A master plan also allows development more flexibility to vary from prescriptive standards if approved pursuant to OCMC 17.65. Any master plan, along with a future comprehensive plan amendment and zone change for the subject property cannot proceed until such time as the regional transportation issues are resolved.

Prior to issuing any development approval other than as identified in condition of approval #2, the applicant shall obtain General and Detailed Development Plan approval, including the entire 91-acre property, pursuant to OCMC 17.65. The General Development Plan and all phases of development authorized by it, must implement the Park Place Concept Plan and Oregon City's adopted Public Facilities Plans with regard to the provision of open space, park and trails, sewer, water, stormwater and transportation improvements. These include, but are not limited to, addressing the timing of parkland acquisitions and development, proposed phasing of major roads to ensure a timely connection to Holly Lane and an analysis of utility phasing that can foster redevelopment of the entire concept plan area.

Policy 14.4.3 *Evaluate and in some instances require that parcels adjacent to proposed annexations be included to:*

- *avoid creating unincorporated islands within the city;*
- *enable public services to be efficiently and cost-effectively extended to the entire area; or*
- *implement a concept plan or sub-area master plan that has been approved by the Planning and City Commissions.*

Finding: The proposal is consistent with this requirement. As pointed out above, this proposal would create an "unincorpoated island" within the City. Therefore, it is up to the Planning Commission, and ultimately the City Commission to interpret this requirement. Staff has identified three options:

1) Find that this policy discourages rather than prohibits the creation of islands as a result of annexation. Use of the term "some instances" in this plan policy gives the city some discretion indicating that the policy is cautionary rather than mandatory, and implies that there are cases in which the evaluation of a potential island may result in a decision to create an island. Staff has analyzed the utility and transportation demands needed to realize the Park Place Concept Plan objectives and concludes that allowing this island to remain in the County will not compromise urbanization of the concept plan areas. Therefore, allowing this island to remain will not compromise any identified planning objective.
2) Find that this policy prohibits the creation of an island and amend the application, forcing the three adjacent properties to annex as part of this request. This approach would require a forced annexation and trigger voter approval of the annexation. The city does not have an established precedent for forcing non-consenting property owners to annex.
3) Find that forcing annexation from non-consenting property owners should not be initiated by the city and therefore, conclude that this plan policy is not met and deny the application.

This is a question of interpretation for the Planning Commission and ultimately the City Commission to determine. Staff recommends an interpretation that prohibits islands where it can be found that they compromise the efficiency and cost-effectiveness of extending public improvements.

The annexation of these three tax lots at this time is not needed in order to implement the Park Place Concept Plan. In fact, the Park Place Concept Plan boundary does not encompass the three properties that would be "islanded", although they share the same Comprehensive Plan Designation of MR Medium Density Residential consistent with the properties adjacent and within the Park Place Concept Plan.

The annexation area is contiguous to the existing city limits along its northern boundary. The proposed annexation will create a small unincorporated island within the city. The island area is shown in pink on the map below. The owners of three parcels along Holcomb Blvd., Tax Lots 22E27B 600, 800 & 900, were contacted, but preferred not to join the annexation proposal at this time.

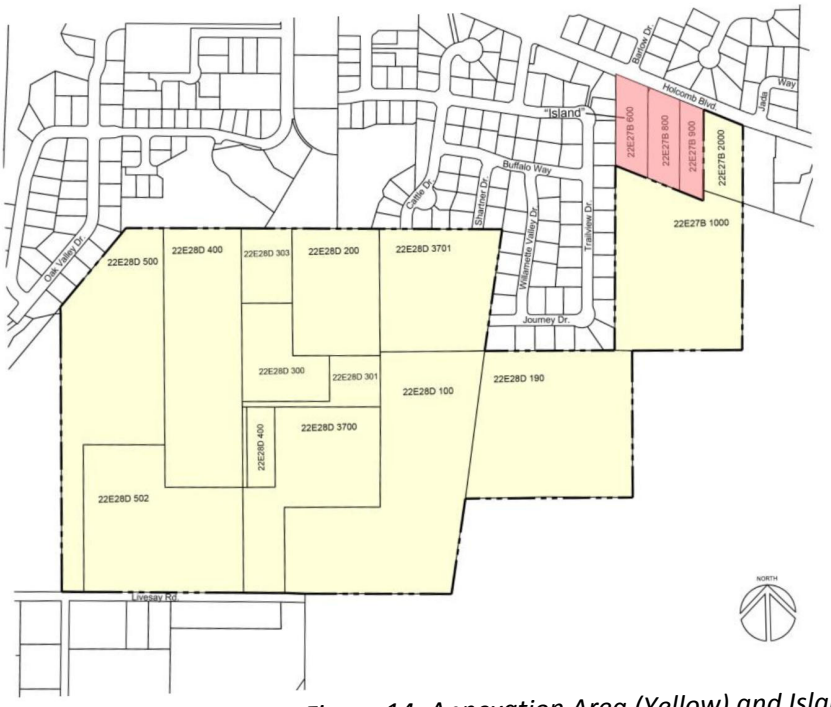


Figure 14: Annexation Area (Yellow) and Island (Pink)

The language of this policy calls for an evaluation of whether the creation of an island, by itself or in conjunction with the other listed factors, would be sufficiently problematic that the annexation proposal must be altered to include the area of the potential island. The island itself is not problematic for the City in any significant way. It is small in size at 3.7 acres, and involves only three properties. All of these properties are developed with single-family homes. The island would only be separated from other unincorporated land by approximately 180 feet along Holcomb Blvd. No further development of these properties, pursuant to city zoning, would be allowed until such time as they are annexed to the City in the future. Rising land values and the provision of urban services available to these properties sometime in the future are likely to bring an incentive for future development that will result in the voluntary annexation of these properties.

The creation of this island will have no impact upon the efficient provision of public services. Storm sewer and sanitary sewer drain to the south, away from the island area, and will be provided with the development of the annexation area. Holcomb Blvd. along the frontage of these properties is entirely within the city limits and access to water service is available in that right-of-way. While there will be a need for additional right-of-way to be dedicated from the islanded properties in order for Holcomb Blvd. to be developed to full City arterial standards. Such dedication and improvement of the road will likely not occur until such time as the owners of these properties choose to annex and develop their land. On the other hand, should the City desire to make these improvements on its own, the creation of an island at this time would have no impact on the City's ability to do so. It has the ability to annex islanded properties on its own motion and to acquire needed right-of-way either by purchase or by condemnation.

The inclusion of the island area in the annexation proposal is not needed to implement a concept plan or sub-area master plan that has been approved by the Planning and City Commissions. The three properties that would be islanded in this proposal are not a part of the Park Place Concept Plan or any other sub-area master plan. In the future, at such time as the island neighbors wish to annex to the City, the future developer of the subject properties will be provide to pay applicable System Development Charges, City taxes, and any additional facility connections.

Policy 14.4.4
Expedite the annexation of property as provided by state law in order to provide sewer service to adjacent unincorporated properties when a public health hazard is created by a failing septic tank sewage system.
Finding: Not applicable. The subject property is not subject to a public health hazard associated with a failing septic system.

Urbanization
Policy 14.5.2
Coordinate public facilities, services and land-use planning through intergovernmental agreements with the school district, Clackamas Community College, Clackamas County Fire District #1, Tri-Cities Services District and other public entities as appropriate.
Finding: The proposal is consistent with this requirement. The City continues to coordinate with the school district to conduct long range planning within the UGB through the adoption of concept plans and other planning efforts, and to review current development proposals. Development of this Low Density Residential property will require payment of construction excise taxes for school development. At this time, the school district has not indicated that an intergovernmental agreement is necessary to assure adequacy of school facilities to serve the proposed annexation property, which is already within the school district.

Compliance with OCMC 14.04.060 – Annexation Factors – Continued

3. Adequacy and availability of public facilities and services to service potential development;
Finding: The proposal is consistent with this requirement. The adequacy and availability of public facilities and services to service the potential development of the property was discussed earlier under the applicant's statements section.

4. Compliance with applicable sections of ORS Ch. 222, and Metro Code Section 3.09;

Finding: The proposal is consistent with this requirement. See findings earlier in this report for Metro 3.09. ORS 222 requires the proposed annexation property be contiguous with the city and provides several options for annexing land into a city. As noted in 14.04.050(E)(1), this annexation relies on ORS 222.125, annexation by consent of all land owners and a majority of electors. ORS Ch. 222 was amended in 2016 with the adoption of Senate Bill 1573 with respect to voter approval. Those requirements are addressed later in this report. The requirements of ORS 222, then, are met.

Metro Section 3.09 is addressed separately in earlier in this report.

Compliance with OCMC 14.04.060 – Annexation Factors – Continued

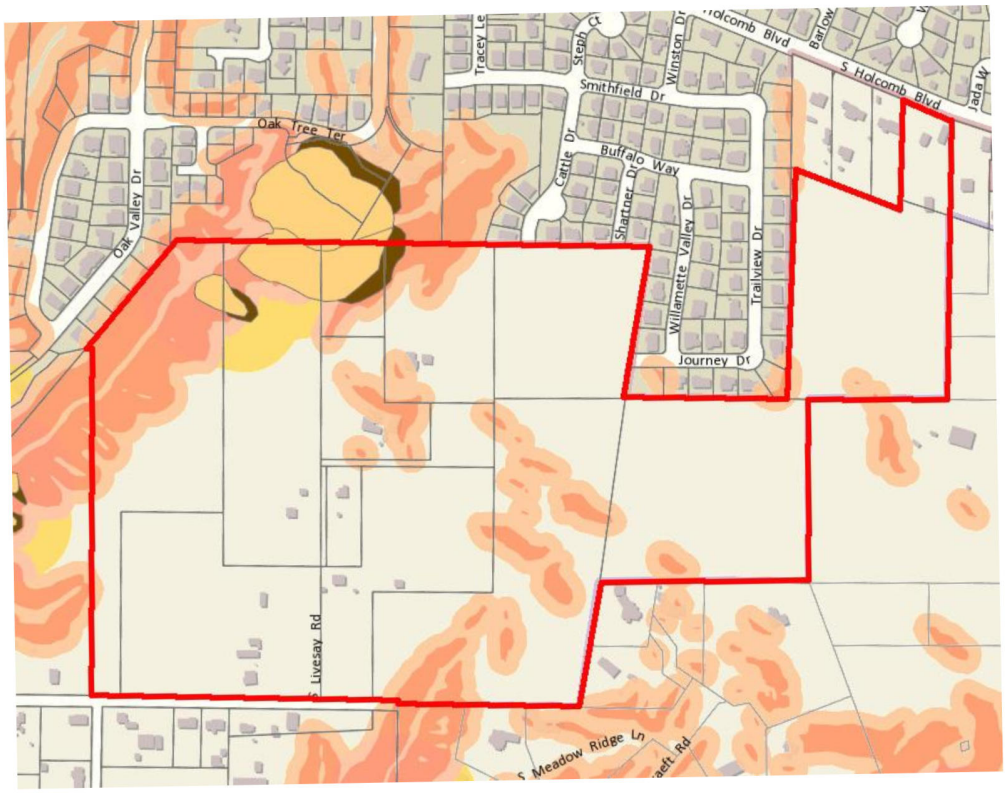
5. Natural hazards identified by the city, such as wetlands, floodplains and steep slopes;

Finding: The proposal is consistent with this requirement. The City Comprehensive Plan identifies water resource and steep slope areas that will require further investigation at time of development to demonstrate compliance with Oregon City's overlay district zoning; OCMC Chapter 17.49 regulating water resource and habitat protection and OCMC Chapter 17.44 regulating development in and near geologic hazards and steep slopes. Future development of the site will be required to meet all applicable city, state and federal requirements, which will be addressed through the land development processes (site plan and design review, land divisions, etc.). As no development is proposed as part of this annexation and rezoning application, this annexation will have no impact on identified natural hazards to any greater degree than development that is currently permitted.

Oregon City's NROD standards are in substantial compliance with Metro Title 3 and Title 13 and Statewide Goal 5. Oregon City's adopted Geologic Hazard Overlay District OCMC 17.44 complies with Statewide Goal 7 – Natural Hazards. The Geologic Hazard Overlay District code requirements were significantly amended during and following the adoption process for the Park Place Concept Plan and several changes were made to the previous code to include, among other pertinent requirements:

- Peer third-party review of an applicant's geotechnical and geologic reports, and construction plans by an expert geologic engineer working for the City;
- Requirements that the geologic engineer of record for the applicant review and sign-off on final construction plans to ensure that initial recommendations are following during construction;
- Addition of a 200' foot review buffer from known landslide areas;
- Requirement for literature review of current scholarly reports and DOGAMI mapping information related to slide prone areas within the City limits relevant to the subject area.

The subject property does have areas of potential natural hazards associated with steep slopes, primarily along ravines associated with drainageways and areas of steeper hillside grades. The map below from the City's GIS system shows these areas.



When the property is developed in the future, the natural drainageways will remain undeveloped as open space. A geotechnical report will be prepared at the time of future development application to assess the safety of other potential hazard areas and the recommendations of that report will be followed in designing the future development plan.

6. Any significant adverse effects on specially designated open space, scenic, historic or natural resource areas by urbanization of the subject property at time of annexation;

Finding: The proposal is consistent with this requirement. The above mentioned resources are Goal 5 resources that were are addressed in detail in the Natural Resource and cultural and historic inventories as part of the existing conditions analysis required during the last Comprehensive Plan update. OCMC 17.44 and 17.49 code require that further on-site analysis be conducted to determine the current extent of any protected resources or hazards which initially was done with the comprehensive plan. More detailed, site specific delineations of the resources and the required associated vegetated corridors next to any wetlands or streams is required prior to development, along with impact analysis and mitigation for impacts. These existing restrictions will adequately protect natural resource areas and to the extent necessary serve as a natural resource protection plan.

No additional historic or cultural resources have been identified at this that are not regulated under existing city codes or state law.

7. Lack of any significant adverse effects on the economic, social and physical environment of the community by the overall impact of the annexation.

Finding: The proposal is consistent with this requirement. The adopted City of Oregon City Comprehensive Plan designation is Low Density Residential. The implementing default zones for this plan designation are R-10, R-5 and NC. The applicant has requested the default zoning of R-10, R-5 and

NC at this time. The development of this site in a manner consistent with the adopted Comprehensive Plan will serve to provide needed housing to accommodate the projected population growth of the City of Oregon City. The site is well suited from a physical standpoint to be developed in this manner as it is free of any significant development constraints, other than a very small area of moderately steep slopes. Providing for future development of needed housing within walking distance of Holcomb Elementary School for school and recreational services will assist in providing for a beneficial social environment in this neighborhood.

The applicant indicates that the majority of the subject property is within the boundaries of the Park Place Concept Plan, specifically, the North Village Plan, and the eventual development of this site will be subject to the land uses and densities set forth in that document. The future development application will provide for a master plan pursuant to OCMC 17.65 consistent with the design concept of the North Village Plan. The future development application will likely need to include proposals to rezone the property to resolve certain discrepancies between the land use areas in the North Village Plan and the existing designations Oregon City Comprehensive Plan Map. One property, Tax Lot 2000 on Map 22E27B and which fronts on Holcomb Blvd., is located outside of the North Village Plan, is designated MR by the Comprehensive Plan and will be zoned R-5. That property will be developed in conjunction with the rest of the properties included in this annexation and zone change. The future development of this property will provide a mixture of approximately 400 to 450 single-family detached and attached housing units, as well as neighborhood commercial, park and community uses as shown on the North Village Plan. It will also aid in providing a needed collector road connection from the Holcomb Blvd. area down to Redland Road. It is anticipated that the development will occur in several phases over an approximate 10 year development plan, which will be further defined through a General Development Plan pursuant to OCMC 17.65. As such, the future development of the property will not have any significant impact upon the economic, social and physical environment of the community.

COMPLIANCE WITH APPLICABLE PROVISIONS OF ORS 222

Finding: The proposal is consistent with this requirement. ORS 222 requires the proposed annexation property be contiguous with the city and provides several options for annexing land into a city. As noted in 14.04.050(E)(1), this annexation relies on ORS 222.125, annexation by consent of all land owners and a majority of electors.

SB 1573

If the City Commission determines that the proposed annexation should be approved, the City Commission is required by the Charter to submit the annexation to the electors of the City. However, the passage of SB 1573 has modified ORS 222 and noe requires that the City annex the territory without submitting the proposal to the electors pursuant to the following provisions.

SECTION 1. Section 2 of this 2016 Act is added to and made a part of ORS 222.111 to 222.180.
SECTION 2. (1) This section applies to a city whose laws require a petition proposing annexation of territory to be submitted to the electors of the city.
(2) Notwithstanding a contrary provision of the city charter or a city ordinance, upon receipt of a petition proposing annexation of territory submitted by all owners of land in the territory, the legislative body of the city shall annex the territory without submitting the proposal to the electors of the city if:
(a) The territory is included within an urban growth boundary adopted by the city or Metro, as defined in ORS 197.015;
(b) The territory is, or upon annexation of the territory into the city will be, subject to the acknowledged comprehensive plan of the city;

(c) At least one lot or parcel within the territory is contiguous to the city limits or is separated from the city limits only by a public right of way or a body of water; and
(d) The proposal conforms to all other requirements of the city's ordinances.
Finding: The Oregon City Municipal Code and City Charter requires annexations to be referred to the voters for final approval through an election. However, in this instance, the proposed annexation meets the requirements of the new State law in that it includes a petition that is signed by all owners of land in the territory, the area is within the adopted urban growth boundary, is within an area subject to the adopted and acknowledged Oregon City Comprehensive Plan, and the property is contiguous to the existing city limits. As demonstrated in this narrative, this proposal conforms to all other requirements of the city's ordinances, so long as the city does not decide to force the island properties to be included with this request. Thus, the proposal meets items (a) through (d).

(3) The territory to be annexed under this section includes any additional territory described in ORS 222.111 (1) that must be annexed in order to locate infrastructure and right of way access for services necessary for development of the territory described in subsection (2) of this section at a density equal to the average residential density within the annexing city.
Finding: No such additional territory is required in order to locate infrastructure and right-of-way access for services necessary for development of the annexing territory.

(4) When the legislative body of the city determines that the criteria described in subsection (2) of this section apply to territory proposed for annexation, the legislative body may declare that the territory described in subsections (2) and (3) of this section is annexed to the city by an ordinance that contains a description of the territory annexed.
Finding: The required ordinance will be adopted by the City Commission upon approval of this annexation proposal.

II B. ZONE CHANGE CRITERIA

CONCURRENT ZONING MAP AMENDMENT FROM FU-10 TO R-5, R-10 & NC.
Finding: The Site has acknowledged Oregon City Comprehensive Plan Map designations of Medium Density Residential (MR), Low Density Residential (LDR) and Mixed Use-Corridor (MUC). Oregon City Municipal Code ("OCMC") 17.68.025.A. provides that "notwithstanding any other section of this code", a concurrent zoning map application under OCMC Chapter 17.50 is required. Further, this section requires that the zoning map designation correlate to the corresponding Comprehensive Plan map designation for the site as shown in OCMC 17.68.025.A. The section is mandatory; it provides that "the property shall be rezoned upon annexation to the corresponding zoning designation as follows..."(emphasis added). In other words, there is no discretion to be applied to the zoning map amendment and not only is a concurrent zoning map amendment required, the outcome is automatic based on the acknowledged OCMC. Further, compliance with OCMC Chapter 17.50 requires a zoning map amendment application but does not require compliance with the discretionary zoning map amendment application criteria in OCMC 17.68.020.

In this instance, the zoning districts to be applied per the table in OCMC 17.68.025.A are R-5 for the MR area, R-10 for the LDR area, and Neighborhood Commercial (NC) for the MUC area.

The Planning Commission can find that the Application satisfies the approval criteria in OCMC 17.68.025.A. and B. and the zoning map amendment shall be approved.

Please note that neither the process of annexation or zoning is not considered "Development" under the City's zoning code definition.[2]

In accordance with City, County and State transportation requirements, no development, except that permitted under the County's Future Urban FU-10 zoning designation, in effect as of the date of this application's submittal, shall be allowed until the following occurs, acknowledged and the Applicant demonstrates compliance with these requirements:

a. A refinement plan for Highway 213 at Beavercreek Road (Alternative Mobility Targets), including elements such as financially constrained projects and alternative mobility standards, and amendments to OCMC Chapter 12.04 implementing the new Refinement Plan, are be adopted and acknowledged.
b. Amendments to OCMC 12.04 which allow development affecting the intersection of Highway 213/Beavercreek are adopted.
    I. Adopt amendments to the City's Transportation System Plan and OCMC Chapter 12.04 to include projects that satisfy the then-applicable performance standards and these standards must be acknowledged; or
    II. Condition the approval of a land division application that satisfies then-applicable OCMC Chapter 12.04 by including proportional mitigation of the application's impacts on that intersection, or such other mitigation measure(s) as may be approved which assure(s) that the intersection will either meet, or perform no worse than, the then-applicable performance standards

The applicant further asserts that compliance with OCMC Chapter 17.50 requires a zoning map amendment application but does not require compliance with the discretionary zoning map amendment application in OCMC 17.68.020. See also 17.68.025B.

For this reason, the applicant did not respond to the criteria for a zone change which are typically applied when a development seeks a discretionary zone change decision, which are provided below:

17.68.020 - Criteria.
The criteria for a zone change are set forth as follows:
A. The proposal shall be consistent with the goals and policies of the comprehensive plan.
B. That public facilities and services (water, sewer, storm drainage, transportation, schools, police and fire protection) are presently capable of supporting the uses allowed by the zone, or can be made available prior to issuing a certificate of occupancy. Service shall be sufficient to support the range of uses and development allowed by the zone.
C. The land uses authorized by the proposal are consistent with the existing or planned function, capacity and level of service of the transportation system serving the proposed zoning district.
D. Statewide planning goals shall be addressed if the comprehensive plan does not contain specific policies or provisions which control the amendment.

[2] OCMC 17.04.300 - *Development.* "Development" means a building or grading operation, making a material change in the use or appearance of a structure or land, dividing land into two or more parcels, partitioning or subdividing of land as provided in ORS 92.010 to 92.285 or the creation or termination of an access right.

The applicant requests that the Planning Commission find that the application satisfies the approval criteria in OCMC 17.68.025.A. and B. and the zoning map amendment be approved.
Finding: The criteria are addressed within this report. Staff agrees that OCMC 17.68.025.A requires a concurrent zone change when the lands subject to annexation are designated by an acknowledged City Comprehensive Plan. Use of the term "shall" suggests that re-zoning is mandatory and cannot be subject to the highly discretionary criteria contained within OCMC 17.68.020. Such an approach makes sense because R-10 development was fully contemplated and planned for in the City's Comprehensive Plan and utility master plans. This makes the act of re-zoning largely ministerial. Although staff believes that these criteria are not applicable, as a practical matter, staff notes that they mirror the annexation factors and as a result, would be satisfied, with the exception of the transportation impacts which are dealt with through a condition of approval.

In accordance with City, County and State transportation requirements, no development, except that permitted under the County's Future Urban FU-10 zoning designation, in effect as of the date of this application's submittal, shall be allowed until the following occurs, acknowledged and the Applicant demonstrates compliance with these requirements:

a. A refinement plan for Highway 213 at Beavercreek Road (Alternative Mobility Targets), including elements such as financially constrained projects and alternative mobility standards, and amendments to OCMC Chapter 12.04 implementing the new Refinement Plan, are be adopted and acknowledged.
b. Amendments to OCMC 12.04 which allow development affecting the intersection of Highway 213/Beavercreek are adopted.
    I. Adopt amendments to the City's Transportation System Plan and OCMC Chapter 12.04 to include projects that satisfy the then-applicable performance standards and these standards must be acknowledged; or
    II. Condition the approval of a land division application that satisfies then-applicable OCMC Chapter 12.04 by including proportional mitigation of the application's impacts on that intersection, or such other mitigation measure(s) as may be approved which assure(s) that the intersection will either meet, or perform no worse than, the then-applicable performance standards

17.06.030 - Zoning of annexed areas.
All lands within the urban growth boundary of Oregon City have been classified according to the appropriate city land use designation as noted on the comprehensive plan map (per the city/county urban growth management area agreement). The planning department shall complete a review of the final zoning classification within sixty days after annexation. The zoning classification shall reflect the city land use classification as illustrated in Table 17.06.

Table 17.06.030

CITY LAND USE CLASSIFICATIONS	
Residential Plan Classification	*City Zone*
Low-Density Residential	*R-10, R-8, R-6*
Medium-Density Residential	*R-3.5, R-5*
High-Density Residential	*R-2*

CITY LAND USE CLASSIFICATIONS	
Commercial Plan Classification	*City Zone*
General Commercial	*C*
Mixed-Use Downtown	*MUD, WFDD*
Mixed-Use Corridor	*MUC I, MUC 2, NC, HC*
Mixed-Use Employment	*MUE*
Industrial Plan Classification	*City Zone*
Industrial	*CI, GI*

In those cases where only a single city zoning designation corresponds to the comprehensive plan designation and thus the rezoning decision does not require the exercise of legal or policy judgment on the part of the community development director, Chapter 17.68 shall control. The decision in these cases shall be a ministerial decision of the community development director made without notice or any opportunity for a hearing.
A. A public hearing shall be held by both the planning commission and city commission in accordance with the procedures outlined in Chapter 17.68 (except for the provisions of Section 17.68.025) for those instances in which more than one zoning designation carries out a city plan classification.
Finding: The proposal is consistent with this requirement, as conditioned.
The applicant states that compliance with OCMC Chapter 17.50 requires a zoning map amendment application but does not require compliance with the discretionary zoning map amendment application in OCMC 17.68.020. Since the applicant has requested the lowest density zone applicable to the LR – Low Density Residential land use category, R-10, the rezoning decision does not require the exercise of legal or policy judgment on the part of the community development director, and Chapter 17.68 controls.

Plan Designation	***Zone***
Low-Density Residential	*R-10 - Single Family Dwelling*
Medium-Density Residential	*R-5 - Single Family Dwelling*
Mixed-Use Commercial	*NC - Neighborhood Commercial*

Based on the additional analysis provided by the applicant as documented in this report regarding impacts to the public transportation system, sewer, water and stormwater, and police and emergency services, staff supports the default zone change to R-10 with the findings and conditions attached to the staff report. Note that with the condition of approval proposed by the applicant, no development beyond that permitted under the County's FU-10 zoning may occur until compliance with specific transportation system requirements met, as discussed below.

No change to the comprehensive plan text or map designation is proposed for this site. The zone change application that has been filed with the annexation proposal is a mandatory and non-discretionary re-zoning required pursuant to OCMC 17.68.025.A. This zone change is required concurrently with the annexation in order to replace Clackamas County RRFF-5 zoning and apply the appropriate City zones that implement the City's Comprehensive Plan Map designations for the site. In this instance, Neighborhood Commercial is proposed for the MUC area and R-10 would be applied to the LDR

designation. It is understood that a future application will be required at the time that a master plan for the development of the property is proposed in order to amend the Comprehensive Plan and zoning for the site comply with the Park Place Concept Plan's conceptual plan for the North Village area. The master plan and the future comprehensive plan amendment and zone change for the subject property cannot proceed until such time as the regional transportation issues are resolved.

In accordance with City, County and State transportation requirements, no development, except that permitted under the County's Future Urban FU-10 zoning designation, in effect as of the date of this application's submittal, shall be allowed until the following occurs, acknowledged and the Applicant demonstrates compliance with these requirements:

a. A refinement plan for Highway 213 at Beavercreek Road (Alternative Mobility Targets), including elements such as financially constrained projects and alternative mobility standards, and amendments to OCMC Chapter 12.04 implementing the new Refinement Plan, are be adopted and acknowledged.
b. Amendments to OCMC 12.04 which allow development affecting the intersection of Highway 213/Beavercreek are adopted.
    I. Adopt amendments to the City's Transportation System Plan and OCMC Chapter 12.04 to include projects that satisfy the then-applicable performance standards and these standards must be acknowledged; or
    II. Condition the approval of a land division application that satisfies then-applicable OCMC Chapter 12.04 by including proportional mitigation of the application's impacts on that intersection, or such other mitigation measure(s) as may be approved which assure(s) that the intersection will either meet, or perform no worse than, the then-applicable performance standards

2. TRANSPORTATION PLANNING RULE ("TPR") COMPLIANCE (OAR 660-012-0060)

OAR 660-012-0060(1) and (2) require land use regulation amendments, including amendments to zoning maps, to determine if the amendment will have a "significant affect" on transportation facilities and, if so, can it be mitigated. However, OAR 660-012-0060(9) provides that a zoning map amendment does not need to include this analysis, and the City can make a finding of no "significant affect", if:

a. A zoning map amendment is consistent with the existing comprehensive plan designation and does not change the map designation;

b. The City has an acknowledged Transportation System Plan ("TSP"); and

c. The area of the zoning map amendment was not exempted from the TPR at the time of the UGB amendment. OAR 660-012-0060(9)(a)-(c).

Finding: The proposal is consistent with the Transportation Planning Rule.

The subject property complies with these criteria as follows:

a. Oregon City's Comprehensive Plan Land Use Map within the acknowledged Oregon City Comprehensive Plan designates the subject property Low Density Residential, Medium

Density Residential, and Mixed Use Commercial. The proposed zoning amendment would not change the map designation and the R-10, R-5 and NC zoning are implementing zones for those designations.

b. An updated Transportation System Plan (TSP) and associated amendments to the Oregon City Municipal Code (OCMC) was approved by the City Commission and became effective August 16, 2013. The TSP was acknowledged by DLCD on August 9, 2013 (DLCD File Number 001-13).

c. The subject property has been in the City's UGB since the time of the adoption of the Comprehensive Plan and was not exempted from the Transportation Planning Rule.

The City can find that all three (3) of these requirements are met. Therefore, the City can find that the zoning map amendment does not "significantly affect" a transportation facility.

Finally, OCMC Title 12 does not apply to the concurrent annexation and zoning map amendments as they do not constitute "development" as that term is defined in the OCMC and ORS 227.160(2). The City will apply OCMC Title 12 when "development" is proposed for this site. A condition of approval will be applied to the zone change application to ensure that development does not occur until such time as the requirements of Title 12 can be met.

Alternatively, the applicant would expect to propose that the City adopt a condition of approval based on OAR 660-012-0060(2)(e).

Prior to annexation, the property owners or assigns will record a covenant, to be approved by the City Attorney, which limits development of the site until such time that a zone change to a City zoning designation has been approved. The covenant shall acknowledge that development is reviewed for compliance with the Oregon City Municipal Code and Clackamas County Zoning and Development Ordinance. Further, until a zone change is approved the site use shall not change or intensify, or receive approval of a land division or development of the site including, but not limited to: no new structures or additions to existing structures or site grading that triggers erosion control permits or overlay district review. In addition the property shall be subject to the City's overlay districts, fence regulations in OCMC 17.54.100 as well as the City's nuisance, business licensing and animal regulations.

The applicant submitted a Transportation Impact Analysis (TIA), prepared by Lancaster Engineering, which includes an analysis of future trip generation and distribution, safety analysis, operational analysis and a discussion of compliance with the State Transportation Planning Rule OAR in support of the requested rezoning to R-10.

The TIA was prepared in consultation with City and Oregon Department of Transportation (ODOT) staff and analyses the performance of three off-site intersections that would be impacted by future development of the annexation area.

The City's transportation consultant, Replinger and Associates, reviewed the applicant's TIA and TPR analysis and provided findings with recommended conditions of approval for the annexation and rezoning.

OAR 660-012-0060(1) and (2) requires land use regulation amendments, including amendments to zoning maps, to determine if the amendment will have a "significant affect" on transportation facilities and, if so, mitigation is required.

In this instance, the proposed zone change would be expected to degrade the performance of several study area intersections that are otherwise not projected to meet the relevant performance standards of Oregon City and ODOT.

Having determined that the proposed annexation and zone change may result in a significant effect on operation of several study area intersections, the TPR also includes the following language:

(9) Notwithstanding section (1) of this rule, a local government may find that an amendment to a zoning map does not
significantly affect an existing or planned transportation facility if all of the following requirements are met.

- *(a) The proposed zoning is consistent with the existing comprehensive plan map designation and the amendment does not change the comprehensive plan map;*
- *(b) The local government has an acknowledged TSP and the proposed zoning is consistent with the TSP; and*
- *(c) The area subject to the zoning map amendment was not exempted from this rule at the time of an urban growth boundary amendment as permitted in OAR 660-024-0020(1)(d), or the area was exempted from this rule but the local government has a subsequently acknowledged TSP amendment that accounted for urbanization of the area.*

In this instance, the proposed zoning is consistent with the Comprehensive Plan map designation, Oregon City has an acknowledged TSP that accounted for future development under the proposed zoning, and the area was not exempted from the rule at the time of the urban growth boundary amendment. Accordingly, the city may find that the proposed annexation and zone change is consistent with the city's adopted plans and does not significantly effect an existing or planned transportation facility.

Alternatively, if it is determined that mitigation may be required for the proposed annexation and zone change, the requirements of the TPR are as follows:

> *(2) If a local government determines that there would be a significant effect, then the local government must ensure that allowed land uses are consistent with the identified function, capacity, and performance standards of the facility measured at the end of the planning period identified in the adopted TSP through one or a combination of the remedies listed in (a) through (e) below, unless the amendment meets the balancing test in subsection (2)(e) of this section or qualifies for partial mitigation in section (11) of this rule. A local government using subsection (2)(e), section (3), section (10) or section (11) to approve an amendment recognizes that additional motor vehicle traffic congestion may result and that other facility providers would not be expected to provide additional capacity for motor vehicles in response to this congestion.*
>
> > *(a) Adopting measures that demonstrate allowed land uses are consistent with the planned function, capacity, and performance standards of the transportation facility.*
> > *(b) Amending the TSP or comprehensive plan to provide transportation facilities, improvements or services adequate to support the proposed land uses consistent with the requirements of this division; such amendments shall include a funding plan or mechanism consistent with section (4) or include an amendment to the transportation*

finance plan so that the facility, improvement, or service will be provided by the end of the planning period.
(c) Amending the TSP to modify the planned function, capacity or performance standards of the transportation facility.
(d) Providing other measures as a condition of development or through a development agreement or similar funding method, including, but not limited to, transportation system management measures or minor transportation improvements. Local governments shall, as part of the amendment, specify when measures or improvements provided pursuant to this subsection will be provided.
(e) Providing improvements that would benefit modes other than the significantly affected mode, improvements to facilities other than the significantly affected facility, or improvements at other locations, if:

(A) The provider of the significantly affected facility provides a written statement that the system-wide benefits are sufficient to balance the significant effect, even though the improvements would not result in consistency for all performance standards;
(B) The providers of facilities being improved at other locations provide written statements of approval; and
(C) The local jurisdictions where facilities are being improved provide written statements of approval.

The required transportation improvements identified by the City's 2013 Transportation System Plan to serve the area were discussed earlier in this report. Additionally the applicant submitted a Transportation Impact Analysis (TIA) to support the requested Zone Change to R-10, R-5 and NC. The TIA was prepared by Daniel Stumpf, EI and Mike Ard, P.E. of Lancaster Engineering, and reviewed by the City's Transportation Consultant, John Replinger, P.E. The TIA was prepared in consultation with the City and ODOT engineering staff and analyzed various intersections that would be impacted by the eventual development of the annexation property.
Because the proposed annexation also involves rezoning of the property, a TPR analysis is also included. The analysis is predicated on the development of the land at a density that would allow 522 additional dwellings and up to 49,000 square feet of commercial retail land use.

The applicant's engineer states that the proposed zone change will not necessitate changes to the functional classification of existing or planned transportation facilities.

Mr. Replinger's conclusion regarding the TIA and TPR analysis follows:

Because the proposed annexation also involves rezoning of the property to R-10, a TPR analysis is also included. The analysis is predicated on the development of the land at a density that would allow 533 single-family dwellings and 4.5 acres of neighborhood commercial establishments. The engineer states that the proposal does not change the functional classification of any existing or planned transportation facility and does not alter the standards for implementing the functional classification system.

….the annexation and development of the subject property is predicted to degrade the performance at key intersections such that these intersections would not meet applicable

performance standards. The applicant's participation in the funding of projects identified in the TSP or from other analyses area proposed to mitigate for these impacts.

The Oregon Department of Transportation has raised concerns that the amount and type of development analyzed for the neighborhood commercial area does not represent the reasonable worst case development scenario. Further analysis of a more intense development scenario for the 4.5 acres of neighborhood commercial land will be necessary to fully assess compliance with the Transportation Planning Rule.

A new analysis of a more intense development scenario will be needed to adjust the applicant's share for funding of projects. A more intense development scenario can be expected to slightly increase the applicant's share of projects needed to serve the development.

I find that the TIS provides an adequate basis upon which to assess the impacts of the proposed annexation and rezoning. I agree that the proposal does not cause the need for change in the functional classification of any existing or planned facility. I concur with the engineer's analysis concluding that key intersections will fail to meet adopted performance standards at the following intersections:

- *I-205/99E Northbound Ramp Terminal*
- *I-205/99E Southbound Ramp Terminal*
- *Highway 213/Redland Road*
- *Highway 99E/14th Street*
- *14th Street/Washington Street*
- *Beavercreek/Highway 213*

Two intersections critical to the development of the subject property will need to be created or significantly modified to serve their role in the city's transportation network: Holcomb Boulevard/Holly Lane and Redland Road/Holly Lane.

In addition, poor operating performance is predicted at the intersection of Redland Road/Holcomb Boulevard/Abernethy Road. The engineer's analysis indicates that the addition of an eastbound right-turn lane would significantly improve the performance of the intersection.

Planning staff concurs with Mr. Replinger and recommends that the annexation and zoning decision, if approved, include the conditions included with the findings attached to this report.

II. STAFF RECOMMENDATION

Based on the study and the Proposed Findings and Reasons for Decision for this annexation, the staff recommends that the Planning Commission:

Make a recommendation on Proposal No. AN-16-0007 / ZC-16-0005 to the City Commission regarding how the proposal has or has not complied with the factors set forth in Section 14.04.060. Staff has prepared draft Findings and stands ready to adjust them as needed.

If the Planning Commission sends forward a positive recommendation, then the staff further recommends that the Planning Commission forward the following proposed findings and reasons for decision for adoption by the City Commission.

IV. PROPOSED FINDINGS AND REASONS FOR DECISION

Based on the Findings provided above, the Commission determines:

1. The Metro Code calls for consistency of the annexation with the Regional Framework Plan or any functional plan. The Commission concludes the annexation is not inconsistent with this criterion because there were no directly applicable criteria for boundary changes found in the Regional Framework Plan, the Urban Growth Management Function Plan, or the Regional Transportation Plan.

2. Metro Code 3.09.050(d)(1) requires the Commission's findings to address consistency with applicable provisions of urban service agreements or annexation plans adopted pursuant to ORS 195. As noted in the Findings, there are no such plans or agreements in place. Therefore the Commission finds that there are no inconsistencies between these plans/agreements and this annexation.

3. The Metro Code, at 3.09.050(d)(3), requires the City's decision to be consistent with any "directly applicable standards or criteria for boundary changes contained in comprehensive land use plans and public facilities plans." The County Plan also states that conversion of future urban lands to immediate urban lands "Provide for an orderly and efficient transition to urban land use" and "encourage development in areas where adequate public services and facilities can be provided in an orderly and economic way." The applicant has demonstrated that the City can provide all necessary urban services. Nothing in the County Plan speaks directly to criteria for annexation. Therefore the Commission finds this proposal is consistent with the applicable plan as required Metro Code 3.09.050 (d)(3).

4. The Commission concludes that the annexation is consistent with the City Comprehensive Plan that calls for a full range of urban services to be available to accommodate new development as noted in the Findings above. The City operates and provides a full range of urban services. Specifically with regard to water and sewer service, the City has both of these services available to serve some of the area from existing improvements in Holcomb Boulevard.

5. Water service is available in large water mains in Holcomb Boulevard; the existing homes will continue to be serviced by Clackamas River Water (CRW) pursuant to the existing HOPP Intergovernmental Agreement.

6. With regard to storm drainage, the City has the service available in the form of regulations to protect and control stormwater management. The specifics of applying these will be a part of the development review process.

7. The Commission notes that the Metro Code also calls for consistency of the annexation with urban planning area agreements. As stated in the Findings, the Oregon City-Clackamas County Urban Growth Management Agreement specifically provides for annexations by the City.

8. Metro Code 3.09.050(d)(5) states that another criterion to be addressed is "Whether the proposed change will promote or not interfere with the timely, orderly, and economic provision

of public facilities and services." Based on the evidence in the Findings, the Commission concludes that the annexation will not interfere with the timely, orderly, and economic provision of services.

9. The Oregon City Code Chapters 14 and 17 contains provisions on annexation processing. Section 6 of the ordinance requires that the City Commission consider seven factors if they are relevant. These factors are covered in the Findings and on balance the Commission believes they are adequately addressed to justify approval of this annexation.

10. The City Commission concurs with Tri-City Service District's annexation of the subject property in the enacting City ordinance.

11. The Commission determines that the property should be withdrawn from the Clackamas County Service District for Enhanced Law Enforcement as allowed by statute since the City will provide police services upon annexation.

12. The Commission determines that the property should not be withdrawn from the Clackamas Fire District #1 as allowed by statute.

13. The Commission determines that the property should be not be withdrawn from the Clackamas River Water District at this time and remain in the District pursuant to the existing HOPP IGA with CRW.

14. In accordance with City, County and State transportation requirements, no development, except that permitted under the County's Future Urban FU-10 zoning designation, in effect as of the date of this application's submittal, shall be allowed until the following occurs and the Applicant demonstrates compliance with these requirements:

    a. Highway 213 at Redland Road intersection (an Oregon Highway intersection) is forecasted to fall below adopted performance standards prior to year 2035. As a result, a new Refinement Plan, including elements such as financially constrained projects and alternative mobility standards, and amendments to OCMC Chapter 12.04 implementing the new Refinement Plan, shall be adopted and acknowledged.
    b. Redland Road at Holcomb Boulevard/Abernethy Road (a non-Oregon Highway intersection) is forecasted to fall below adopted performance standards prior to year 2035. As a result, the City must do one of the following:
        i. Adopt amendments to the City's Transportation System Plan and OCMC Chapter 12.04 to include projects that satisfy the then-applicable performance standards and these standards must be acknowledged; or
        ii. Condition the approval of a land division application that satisfies then-applicable OCMC Chapter 12.04 by including proportional mitigation of the application's impacts on that intersection, or such other mitigation measure(s) as may be approved which assure(s) that the intersection will either meet, or perform no worse than, the then-applicable performance standards.

15. The City Commission concur with the applicant's proposal that a future master plan (General Development Plan pursuant to OCMC 17.65) for the annexation area shall be submitted and that the General Development Plan and all subsequent phases will need to incorporate open space,

park areas, trails, sewer, water, stormwater and transportation improvements consistent with the Park Place Concept Plan and Oregon City's adopted Public Facilities Plans. Prior to any development of the subject site above and beyond that permitted under the exsiting Clackamas County zoning designations for subject properties, the applicant shall apply for a General Development Plan pursuant to OCMC 17.65. All subsequent subdivision of land or site plan and design review applications shall be in conformance with the submitted Master Plan, although the normal provisions for Amendments to Master Plans apply.

16. The Commission agrees with the applicant's proposal that a future master plan approval, General and Detailed Development Plan pursuant to OCMC 17.65, including the entire 91-acre annexation area shall be obtained submitted prior to any development approval authorized by this zone change. The General Development Plan and all phases of development authorized by it, must implement the Park Place Concept Plan and Oregon City's adopted Public Facilities Plans with regard to the provision of open space, park and trails, sewer, water, stormwater and transportation improvements.

17. The City Commission acknowledges that further refinement and studies of the annexation area are needed prior to development and that a Master Plan application will provide further refinements regarding the costs of public facilities to serve the development of the site.

18. Prior to issuing any development approval authorized by this zone change, the applicant shall obtain General and Detailed Development Plan approval, including the entire 91-acre property, pursuant to OCMC 17.65. All land division and site plan and design review applications shall be in conformance with the approved Master Plan, although the normal provisions for Amendments to Master Plans apply.

19. At such time as a detailed development plan is prepared or in connection with development of a master plan, the applicant will need to submit additional materials to address specific requirements outlined in the city's *Guidelines for Transportation Impact Analyses*. These include, but are not limited to requirements associated with intersection spacing and sight distance. The applicant will also need to address trip generation associated with the specific uses proposed in such developments, especially as it relates to the 4.5-acre community commercial property, which for this TIS was evaluated using the generic "shopping center" category.

20. At the time that a General Development Plan or Detailed Development Plan for the subject property is approved the following conditions shall appl: Note that the applicant's final share may be modified as necessary when a Master Plan is approved to reflect any modifications of the development's trip generation based on a refined proposal or when there is a change in project costs resulting from revisions to project costs associated with an update to the City's Transportation System Plan or Capital Improvement program:

    a. The developer shall participate in the funding of improvements for the I-205/OR-99E ramp terminal projects (TSP Projects D75 and D76) in proportion to the development's traffic volumes as a percentage of total year 2035 intersection volumes from the TSP. The project cost for D75 is $3,000,000. Based on this methodology and the preliminary PM peak hour trip generation from the proposed development, the development accounts for 0.76 percent of the 2035 volume and the development's share of the project is

$22,800. The project cost of D76 is $3,000,000. The development accounts for 0.70 percent of the 2035 volume and the development's share is $21,000.

b. The developer shall participate in the funding of improvements for the Main Street/14th Street improvements (TSP Projects D7 and D8) in proportion to the development's traffic volume as a percentage of the predicted 2035 traffic volume at the intersection calculated in the TSP. The higher cost option in the TSP is listed at $670,000. Based on this methodology and the preliminary PM peak hour trip generation from the proposed development, the development accounts for 2.98 percent of the 2035 volume and the development's share of the project is $19,966.

c. The developer shall participate in the funding of improvements for the Abernethy/Holcomb/Redland intersection in proportion to the development's traffic volume as a percentage of the predicted 2035 traffic volume. No project is currently identified in the TSP. The project concept is to provide an additional lane on the eastbound approach; it may involve restriping or widening and signal modifications. No project cost is available at this time. Based on this methodology and the preliminary PM peak hour trip generation from the proposed development, the development accounts for 13.34 percent of the 2035 volume.

d. The developer shall participate in the funding of improvements for the intersection of OR213/Redland Road (TSP Project D79) in proportion to the development's traffic volume as a percentage of the predicted 2035 traffic volume at the intersection calculated in the TSP. The TSP project cost is listed at $10,060,000. Based on this methodology and the preliminary PM peak hour trip generation from the proposed development, the development accounts for 3.58 percent of the 2035 volume and the development's share of the project is $360,148.

e. The developer shall participate in the funding of improvements for the Holly Lane/Holcomb Boulevard intersection (TSP Project D43) in proportion to the development's traffic volume as a percentage of the predicted 2035 traffic volume. Project D43 is a roundabout with an estimated project cost in the TSP of $505,000. Based on this methodology and the preliminary PM peak hour trip generation from the proposed development, the development accounts for 22.67 percent of the 2035 volume and the development's share of the project is $114,484.

f. The developer shall participate in the funding of improvements for the Holly Lane/Redland Road intersection (TSP Project D36) in proportion to the development's traffic volume as a percentage of the predicted 2035 traffic volume. Project D36 is a roundabout with an estimated project cost in the TSP of $515,000. Based on this methodology and the preliminary PM peak hour trip generation from the proposed development, the development accounts for 21.33 percent of the 2035 volume and the development's share of the project is $109,850.

g. The developer shall participate in the funding of improvements for the Highway 213/Beavercreek Road intersection in proportion to the development's traffic volume as a percentage of the predicted 2035 traffic volume. A project to add a right-turn lane on westbound Beavercreek Road and a merge lane on northbound Highway 213 was

identified in the July 2017 Highway 213 Corridor Alternative Mobility Study. The project's cost was estimated at $1.5 million. Inclusion of this project in the TSP is anticipated by an amendment planned during 2018. Based on this methodology and the preliminary PM peak hour trip generation from the proposed development, the development accounts for 0.30 percent of the 2035 volume and the development's share of the project is $4,500.

The applicant's preliminary proportionate share for project listed above as conditions of approval are based on the assumption that the 4.5 acre commercial development is developed as a shopping center. A more intense development is likely to increase the applicant's share of projects as calculated above.

V. RECOMMENDED CONDITIONS OF APPROVAL

1. The application of the proposing Oregon City zoning designation shall not occur until the following are effective and acknowledged:

    a. A refinement plan for Highway 213 at Beavercreek Road (Alternative Mobility Targets), including elements such as financially constrained projects and alternative mobility standards, and amendments to OCMC Chapter 12.04 implementing the new Refinement Plan, are be adopted and acknowledged.
    b. Amendments to OCMC 12.04 which allow development affecting the intersection of Highway 213/Beavercreek are adopted.
        I. Adopt amendments to the City's Transportation System Plan and OCMC Chapter 12.04 to include projects that satisfy the then-applicable performance standards and these standards must be acknowledged; or
        II. Condition the approval of a land division application that satisfies then-applicable OCMC Chapter 12.04 by including proportional mitigation of the application's impacts on that intersection, or such other mitigation measure(s) as may be approved which assure(s) that the intersection will either meet, or perform no worse than, the then-applicable performance standards

2. Prior to annexation, the property owners or assigns will record a covenant, to be approved by the City Attorney, which limits development of the site until such time that a zone change to a City zoning designation has been approved. The covenant shall acknowledge that development is reviewed for compliance with the Oregon City Municipal Code and Clackamas County Zoning and Development Ordinance. Further, until a zone change is approved the site use shall not change or intensify, or receive approval of a land division or development of the site including, but not limited to: no new structures or additions to existing structures or site grading that triggers erosion control permits or overlay district review. . In addition the property shall be subject to the City's overlay districts, fence regulations in OCMC 17.54.100 as well as the City's nuisance, business licensing and animal regulations.

3. Prior to issuing any development approval other than as identified in condition of approval #2, the applicant shall obtain General and Detailed Development Plan approval, including the entire 91-acre property, pursuant to OCMC 17.65. The General Development Plan and all phases of development authorized by it, must implement the Park Place Concept Plan and Oregon City's adopted Public Facilities Plans with regard to the provision of open space, park and trails, sewer, water, stormwater and transportation improvements. These include, but are not limited to, addressing the timing of parkland acquisitions and development, proposed phasing of major roads to ensure a timely connection to Holly Lane and an analysis of utility phasing that can foster redevelopment of the entire concept plan area.

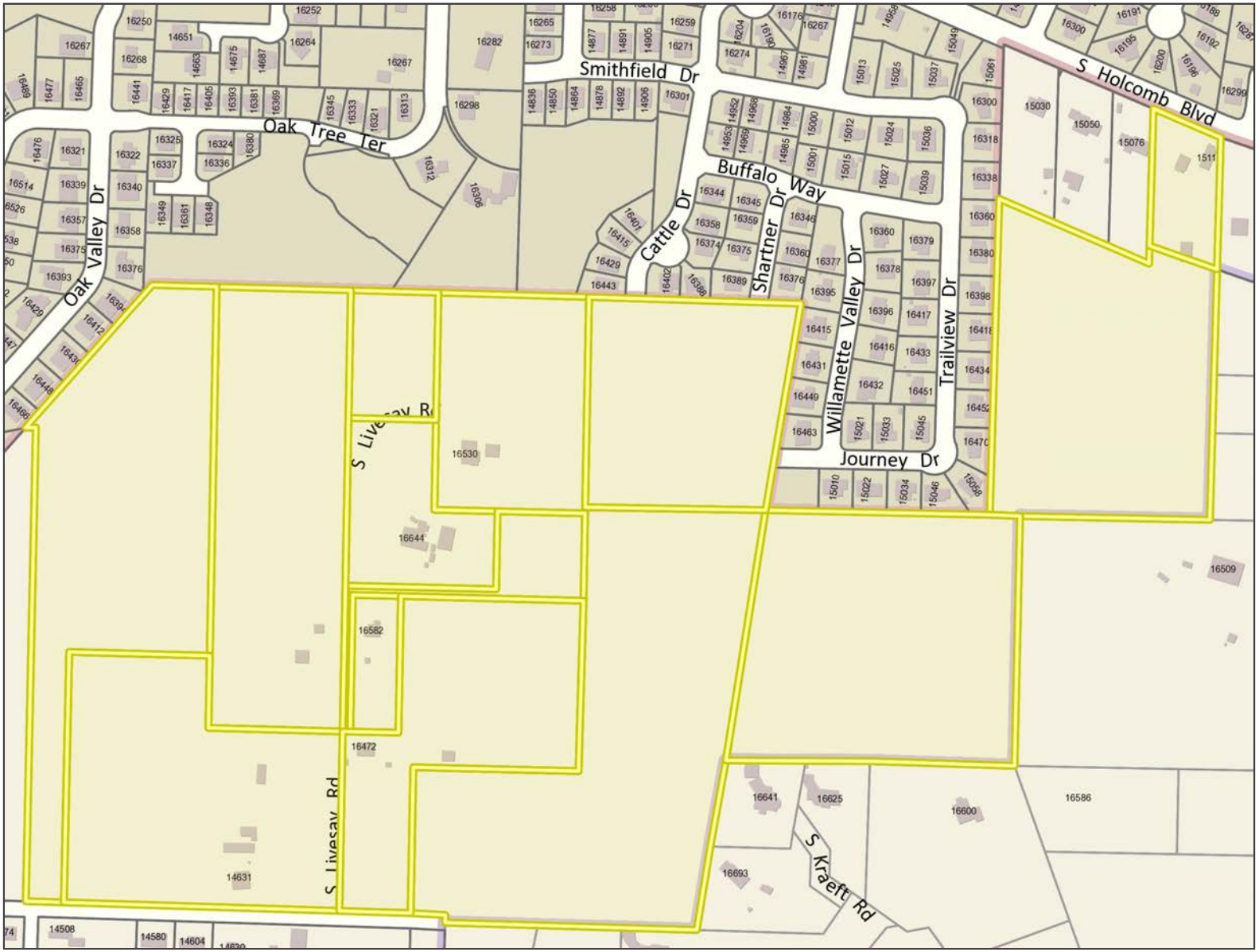
4. At such time as a Master Plan is reviewed, the applicant shall submit additional materials to address specific requirements outlined in the city's Guidelines for Transportation Impact Analyses and calculate the proportionate share of transportation impacts of the proposed development including proportional mitigation of the application's impacts on that intersection, or such other mitigation measure(s) as may be approved which assure(s) that the intersection will either meet, or perform no worse than, the then-applicable performance standards. More intense development than identified in this report is likely to increase the applicant's share of projects as calculated above. The applicant's final share may be modified as necessary when a Master Plan is approved to reflect any a modification of the development's trip generation or a change in project costs resulting from revisions to project costs associated with an updates to the City's Transportation System Plan or Capital Improvement program.

5. The subject property is within the Park Place Neighborhood Association boundaries. The applicant contacted the Park Place Neighborhood Association, as required by city standards, and a meeting was held on June 7, 2016 at Alliance Charter Academy. A second Neighborhood Meeting on December 6, 2016 was conducted in order to address the need to include a concurrent zone change application. Prior to approval of this application, the applicant shall provide staff with meeting agends or sign-in sheets for these to meetings.

EXHIBITS

1. Vicinity Map
2. Applicant's Submittal
3. Comments Received
   a. March 13, 2017 letter from Mr. Wes Rogers, Director of Operations for Oregon City Public Schools
   b. Oregon City Police Department comments
   c. Christine Kosinski
4. Replinger and Associates Comments
5. Staff Memorandum in response to the applicant's analysis worksheet
6. Tri City Service District (TCSD) Annexation Packet

Oregon City GIS Map



Legend

- Taxlots
- Taxlots (Outside UGB)
- Unimproved ROW
- City Limits
- UGB
- Basemap

Notes

Overview Map

0 400 800 Feet

1: 4,800

The City of Oregon City makes no representations, express or implied, as to the accuracy, completeness and timeliness of the information displayed. This map is not suitable for legal, engineering, surveying or navigation purposes. Notification of any errors is appreciated.

Map created 12/19/2017

City of Oregon City
PO Box 3040
625 Center St
Oregon City
OR 97045
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OREGON CITY

Community Development – Planning

221 Molalla Ave. Suite 200 | Oregon City OR 97045
Ph (503) 722-3789 | Fax (503) 722-3880

LAND USE APPLICATION FORM

Type I (OCMC 17.50.030.A)	Type II (OCMC 17.50.030.B)	Type III / IV (OCMC 17.50.030.C)
❑ Compatibility Review	❑ Extension	❑ Annexation
❑ Lot Line Adjustment	❑ Detailed Development Review	❑ Code Interpretation / Similar Use
❑ Non-Conforming Use Review	❑ Geotechnical Hazards	❑ Concept Development Plan
❑ Natural Resource (NROD) Verification	❑ Minor Partition (<4 lots)	❑ Conditional Use
❑ Site Plan and Design Review	❑ Minor Site Plan & Design Review	❑ Comprehensive Plan Amendment (Text/Map)
	❑ Non-Conforming Use Review	❑ Detailed Development Plan
	❑ Site Plan and Design Review	❑ Historic Review
	❑ Subdivision (4+ lots)	❑ Municipal Code Amendment
	❑ Minor Variance	❑ Variance
	❑ Natural Resource (NROD) Review	☒ Zone Change

File Number(s): ZC 17-05 AN 17-04

Proposed Land Use or Activity: Zone Change in conjunction with annexation of property to Oregon City, from County FU-10 to Oregon City R-5 and Neighborhood Commercial.

Project Name: N/A Number of Lots Proposed (If Applicable): N/A

Physical Address of Site: Multiple properties. See attached list.

Clackamas County Map and Tax Lot Number(s): 100, 190, 200, 300, 301, 302, 303, 400, 500, 502, 3700, and 3701 (Map # 2-2E-28D)
1000 and 2000 (Map # 2-2E-27B)

Applicant(s):

Applicant(s) Signature: [signature]

Applicant(s) Name Printed: Mark Handris, Hidden Falls Development LLC Date: 11/28/17

Mailing Address: 1980 Willamette Falls Drive, Suite 200, West Linn, OR 97068

Phone: (503) 657-0406 Fax: (503) 655-5991 Email: handris@aol.com

Property Owner(s):

Property Owner(s) Signature: Please see attached list. & signatures

Property Owner(s) Name Printed: _____ Date: _____

Mailing Address: _____

Phone: _____ Fax: _____ Email: _____

Representative(s):

Representative(s) Signature: _____

Representative (s) Name Printed: Rick Givens, Planning Consultant Date: _____

Mailing Address: 18680 Sunblaze Drive, Oregon City, OR 97045

Phone: (503) 479-0097 Fax: _____ Email: rickgivens@gmail.com

All signatures represented must have the full legal capacity and hereby authorize the filing of this application and certify that the information and exhibits herewith are correct and indicate the parties willingness to comply with all code requirements.

Annexation and Zone Change Authorization

Redland Road, LLC is the owner of the property described below and hereby authorizes that it be included in the zone change and annexation application indicated on the attached Oregon City land use application form.

Property Address	Legal Description
No Situs Address	2-2E-28D -03701

Owner	Redland Road, LLC
Mailing Address	1980 Willamette Falls Drive, Suite 200
	West Linn, OR 97068

Redland Road, LLC, By: Mark Handris

1/8/18

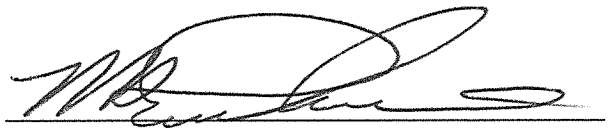
Date

Annexation and Zone Change Authorization

I, Michael Erickson, am the owner of the properties described below and I hereby authorize that they be included in the zone change and annexation application indicated on the attached Oregon City land use application form.

Property Address	Legal Description
NO SITUS ADDRESS	2-2E-27B -01000
15110 S HOLCOMB BLVD	2-2E-27B -02000

Owner	Michael Erickson
Mailing Address	10260 SW Greenburg Rd. #1020
	Tigard, OR 97223



Michael Erickson

12-6-17

Date

Annexation and Zone Change Authorization

I, Robert Tershel, am the owner of the property described below and I hereby authorize that it be included in the zone change and annexation application indicated on the attached Oregon City land use application form.

Property Address	Legal Description
14631 S Livesay Rd	2-2E-28D -00502

Owner	Robert Tershel
Mailing Address	5933 SW Ralston Dr.
	Portland, OR 97239

Robert Tershel

Date 1/7/2018

Annexation and Zone Change Authorization

I, George Thomas, am the owner of the properties described below and I hereby authorize that they be included in the zone change and annexation application indicated on the attached Oregon City land use application form.

Property Address	Legal Description
16644 S Livesay Rd	2-2E-28D -00300
No Situs Address	2-2E-28D -00301
No Situs Address	2-2E-28D -00303

Owner	George Thomas
Mailing Address	16644 S Livesay Rd
	Oregon City, OR 97045

George Thomas

11-28-2017
Date

Annexation and Zone Change Authorization

We, Kirk and Michelle Tolstrup, are the owners of the property described below. We hereby authorize that it be included in the zone change and annexation application indicated on the attached Oregon City land use application form.

Property Address	Legal Description
16530 S LIVESAY RD	2-2E-28D -00200

Owners	Kirk and Michelle Tolstrup
Mailing Address	16530 S Livesay Rd
	Oregon City, OR 97045

Kirk Tolstrup — Date: 11/30/2017

Michelle Tolstrup — Date: 11-30-17

Annexation and Zone Change Authorization

I, Michael Erickson, am the owner of the properties described below and I hereby authorize that they be included in the zone change and annexation application indicated on the attached Oregon City land use application form.

Property Address	Legal Description
NO SITUS ADDRESS	2-2E-27B -01000
15110 S HOLCOMB BLVD	2-2E-27B -02000

Owner	Michael Erickson
Mailing Address	10260 SW Greenburg Rd. #1020
	Tigard, OR 97223

Michael Erickson

12-6-17

Date

OREGON CITY

Community Development – Planning

221 Molalla Ave. Suite 200 | Oregon City OR 97045
Ph (503) 722-3789 | Fax (503) 722-3880

LAND USE APPLICATION FORM

Type I (OCMC 17.50.030.A)	Type II (OCMC 17.50.030.B)	Type III / IV (OCMC 17.50.030.C)
☐ Compatibility Review	☐ Extension	☐ Annexation
☐ Lot Line Adjustment	☐ Detailed Development Review	☐ Code Interpretation / Similar Use
☐ Non-Conforming Use Review	☐ Geotechnical Hazards	☐ Concept Development Plan
☐ Natural Resource (NROD) Verification	☐ Minor Partition (<4 lots)	☐ Conditional Use
☐ Site Plan and Design Review	☐ Minor Site Plan & Design Review	☐ Comprehensive Plan Amendment (Text/Map)
	☐ Non-Conforming Use Review	☐ Detailed Development Plan
	☐ Site Plan and Design Review	☐ Historic Review
	☐ Subdivision (4+ lots)	☐ Municipal Code Amendment
	☐ Minor Variance	☐ Variance
	☐ Natural Resource (NROD) Review	☒ Zone Change

File Number(s): _____

Proposed Land Use or Activity: Zone Change in conjunction with annexation of property to Oregon City, from County FU-10 to Oregon City R-5 and Neighborhood Commercial.

Project Name: N/A Number of Lots Proposed (If Applicable): N/A

Physical Address of Site: Multiple properties. See attached list.

Clackamas County Map and Tax Lot Number(s): 100, 190, 200, 300, 301, 302, 303, 400, 500, 502, 3700, and 3701 (Map # 2-2E-28D)
1000 and 2000 (Map # 2-2E-27B)

Applicant(s):

Applicant(s) Signature: _____

Applicant(s) Name Printed: Mark Handris, Hidden Falls Development LLC Date: _____

Mailing Address: 1980 Willamette Falls Drive, Suite 200, West Linn, OR 97068

Phone: (503) 657-0406 Fax: (503) 655-5991 Email: handris@aol.com

Property Owner(s):

Property Owner(s) Signature: Please see attached list. & signatures

Property Owner(s) Name Printed: _____ Date: _____

Mailing Address: _____

Phone: _____ Fax: _____ Email: _____

Representative(s):

Representative(s) Signature: _____

Representative (s) Name Printed: Rick Givens, Planning Consultant Date: _____

Mailing Address: 18680 Sunblaze Drive, Oregon City, OR 97045

Phone: (503) 479-0097 Fax: _____ Email: rickgivens@gmail.com

All signatures represented must have the full legal capacity and hereby authorize the filing of this application and certify that the information and exhibits herewith are correct and indicate the parties willingness to comply with all code requirements.

Annexation and Zone Change Authorization

I, George Thomas, am the owner of the properties described below and I hereby authorize that they be included in the zone change and annexation application indicated on the attached Oregon City land use application form.

Property Address	Legal Description
16644 S Livesay Rd	2-2E-28D -00300
No Situs Address	2-2E-28D -00301
No Situs Address	2-2E-28D -00303

Owner	George Thomas
Mailing Address	16644 S Livesay Rd
	Oregon City, OR 97045

George Thomas

11-28-2017
Date

List of Properties Included in Annexation/Zone Change

Address	Legal Description	Acreage
NO SITUS ADDRESS	2-2E-27B -01000	9.69
15110 S Holcomb Blvd	2-2E-27B -02000	1.45
No Situs Address	2-2E-28D -00100	14.11
No Situs Address	2-2E-28D -00190	10.75
16530 S Livesay Rd	2-2E-28D -00200	5.17
16644 S Livesay Rd	2-2E-28D -00300	3.1
No Situs Address	2-2E-28D -00301	1.43
No Situs Address	2-2E-28D -00302	0.16
No Situs Address	2-2E-28D -00303	1.77
16582 S Livesay Rd	2-2E-28D -00400	10.43
14631 S Livesay Rd	2-2E-28D -00500	10.73
14631 S Livesay Rd	2-2E-28D -00502	9.42
16472 S Livesay Rd	2-2E-28D -03700	6.86
No Situs Address	2-2E-28D -03701	6.48

Annexation and Zone Change Authorization

I, George Thomas, am the owner of the properties described below and I hereby authorize that they be included in the zone change and annexation application indicated on the attached Oregon City land use application form.

Property Address	Legal Description
16644 S Livesay Rd	2-2E-28D -00300
No Situs Address	2-2E-28D -00301
No Situs Address	2-2E-28D -00303

Owner	George Thomas
Mailing Address	16644 S Livesay Rd
	Oregon City, OR 97045

George Thomas

11-28-2017
Date

Annexation and Zone Change Authorization

We, Kirk and Michelle Tolstrup, are the owners of the property described below. We hereby authorize that it be included in the zone change and annexation application indicated on the attached Oregon City land use application form.

Property Address	Legal Description
16530 S LIVESAY RD	2-2E-28D -00200

Owners	Kirk and Michelle Tolstrup
Mailing Address	16530 S Livesay Rd
	Oregon City, OR 97045

Kirk Tolstrup — Date: 11/30/2017

Michelle Tolstrup — Date: 11-30-17

Annexation & Zone Change Narrative

91 Acres, Holcomb Blvd./Livesay Rd.

Introduction:

This application requests approval of the annexation of approximately 91 acres of land within the Portland Metropolitan Urban Growth Boundary ("UGB") to the City of Oregon City. This application also requests that City apply zoning to the annexed area in conformance with the land use designations in the adopted and acknowledged Oregon City Comprehensive Plan. The subject property is located on the south side of Holcomb Blvd. west of its intersection with Jada Way. Livesay Road forms the southerly border of the annexation area. Journey Drive, Shartner Drive, and Cattle Drive are all stubbed into the subject area from existing residential neighborhoods to the north.

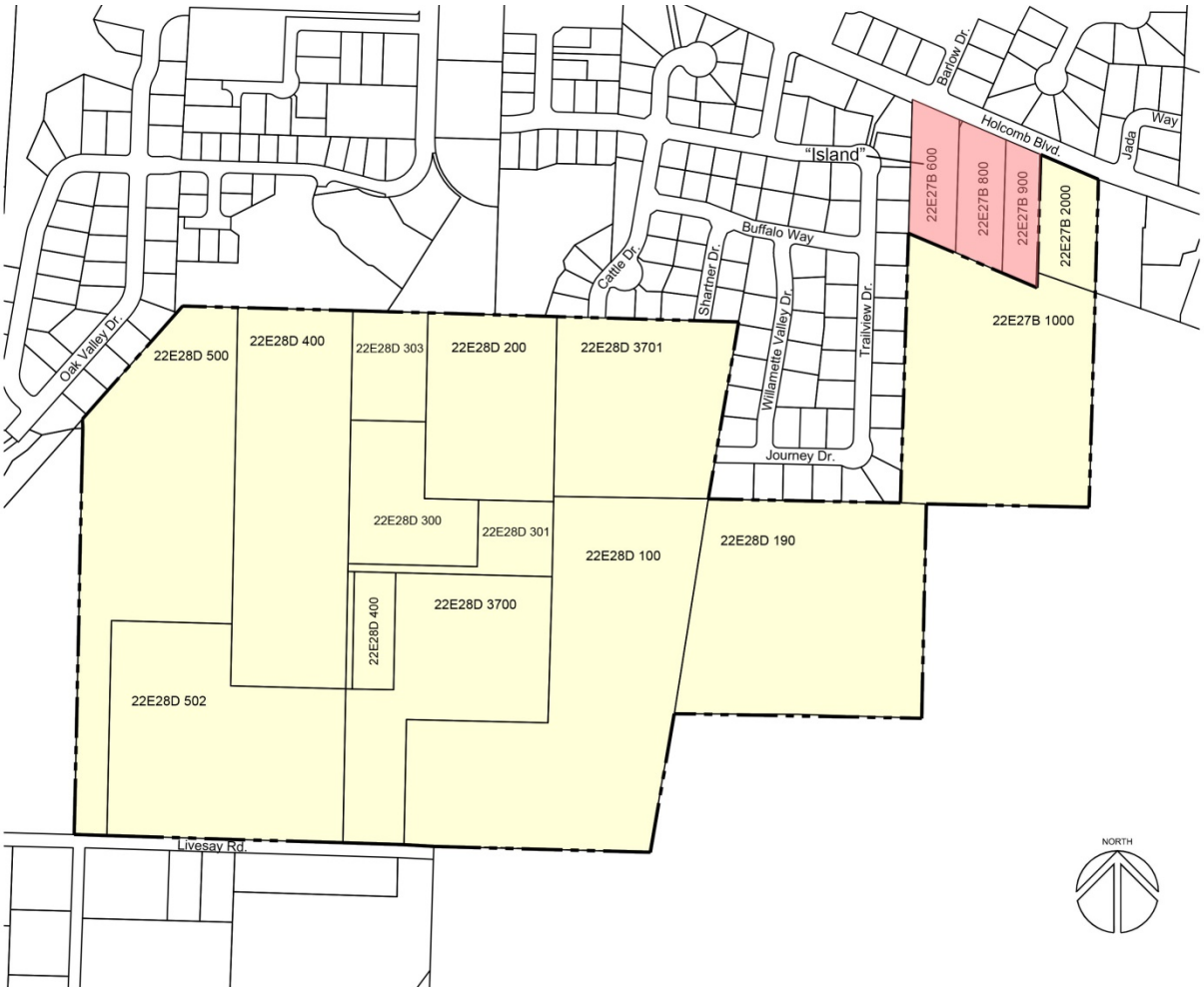


Figure 1: Vicinity Map

The subject property is comprised of the following parcels: Tax Lots 1000 and 2000 of Clackamas County Assessor's Map 22E27B, and Tax Lots 100, 190, 300, 301, 302, 303, 400, 500, 502, 3700 & 3701 of Assessor's Map 22E 28D.

There is no proposal to develop this site at the present time. Rather, the property is proposed to be annexed and re-zoned in accordance with the land use designations shown on the adopted Oregon City Comprehensive Plan Map.

The annexation area is located in a portion of the Oregon City planning area that relies upon streets that intersect with the Highway 213 corridor. In 2012, during the Transportation System Plan (TSP) update, it was determined that the intersection of Hwy 213 & Beavercreek Road would not meet Oregon Highway Plan mobility standards through the TSP planning horizon year of 2035. The TSP recommended that the City move forward with a project to address the need for a refinement plan at this intersection. The City is presently working with citizen groups and ODOT to consider options to improve traffic function at this intersection, as well as the Hwy. 213, Redland Rd. intersection. Ultimately, this process will lead to a refinement plan and the adoption of alternative mobility targets. Until issues regarding transportation planning impacting the Hwy. 213 corridor are resolved, it would not be possible for any development in this area to conform to the standards of Chapter 12 of the Oregon City Municipal Code. Therefore, the City is unable to approve any development that would allow for increased traffic in this area. As a result, a condition of approval will be applied to the zone change that would preclude further development until such time as the refinement plan and alternative mobility targets are adopted. At such time as the traffic issues are resolved, a separate application for land use approvals needed to adopt a master plan consistent with the Park Place Concept Plan will be filed.

Site Characteristics:

The properties included within this annexation proposal contain a total of 7 single-family homes developed at rural densities on acreage tracts. The properties are located in the North Village Neighborhood area identified in the Park Place Concept Plan. As discussed later in this report, the future development of the subject property will provide for a mixture of residential, park, natural open space areas, and neighborhood commercial development consistent with the Park Place Concept Plan. It will also provide a needed step in developing Holly Lane as a collector street extension that will eventually connect from S. Holcomb Blvd. to Redland Rd.

Slopes are varied, with most areas having between zero and 25 percent grade. Slopes adjacent to the drainageway that forms the northwest border of the annexation area exceed 35% grade in certain areas. The property slopes generally to the southwest, downhill from Holcomb Blvd.

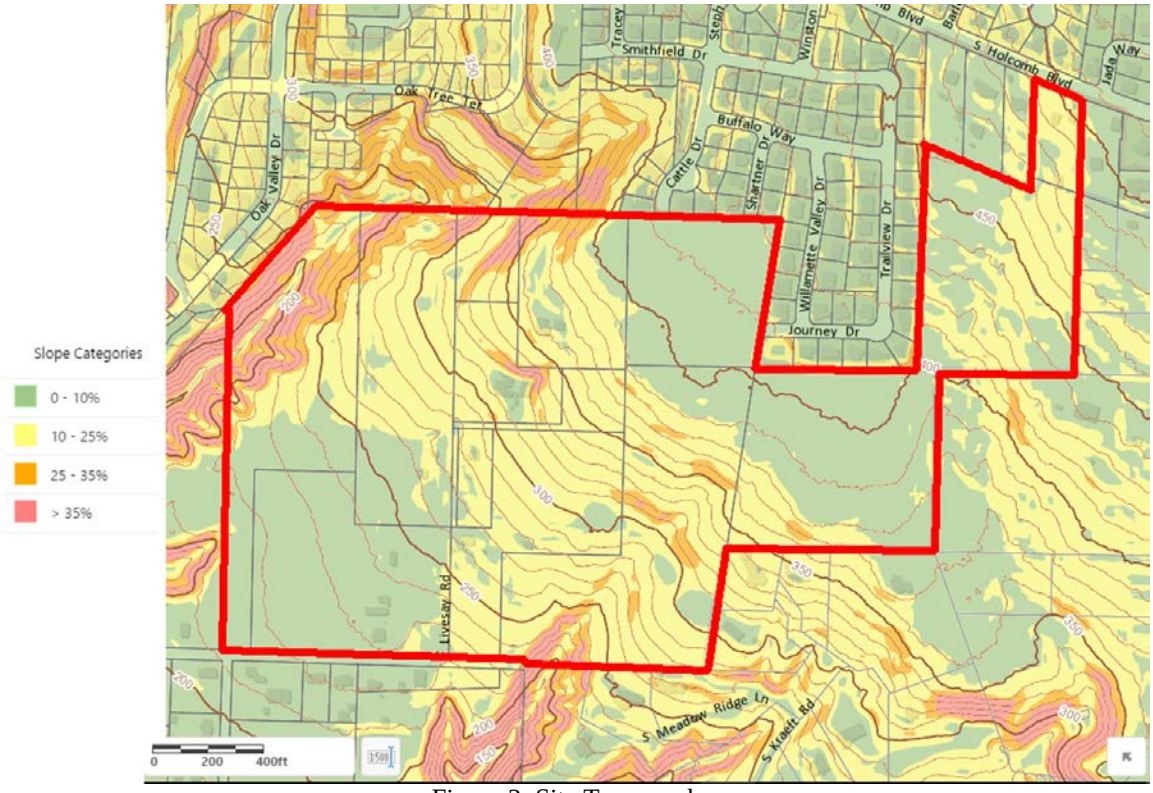


Figure 2: Site Topography

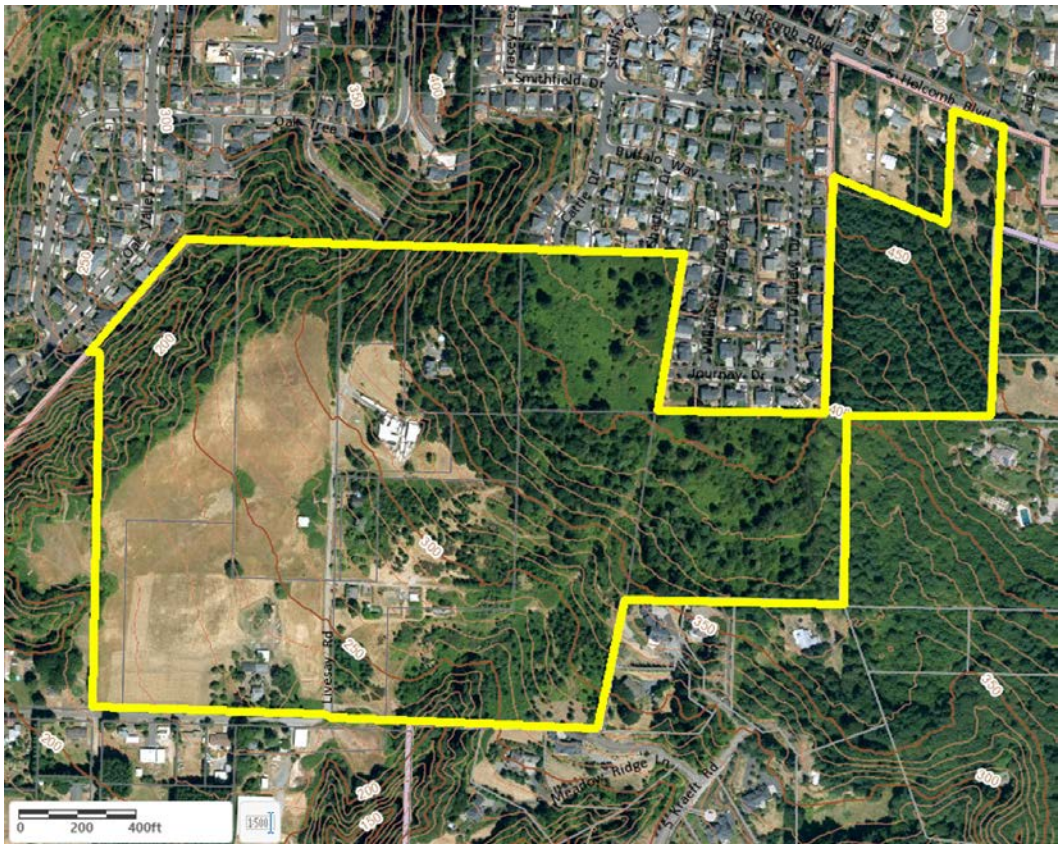


Figure 3: Aerial Photograph

As shown Figure 2, an 2015 aerial photograph from the City's GIS, the annexation area has mixed vegetation cover. The drainageway in the northwest corner of the area is wooded, as are some of the steeper grades, as well as Tax Lot 1000, on the eastern border of the annexation area. Open fields are found north of Livesay Road.

Compliance with Approval Criteria:

1. Concurrent Zoning Map Amendment from FU-10 to R-5, R-10 & NC.

The Site has acknowledged Oregon City Comprehensive Plan Map designations of Medium Density Residential (MR), Low Density Residential (LDR) and Mixed Use-Corridor (MUC). Oregon City Municipal Code ("OCMC") 17.68.025.A. provides that "notwithstanding any other section of this code", a concurrent zoning map application under OCMC Chapter 17.50 is required. Further, this section requires that the zoning map designation correlate to the corresponding Comprehensive Plan map designation for the site as shown in OCMC 17.68.025.A. The section is mandatory; it provides that "the property *shall* be rezoned upon annexation to the corresponding zoning designation as follows..."(emphasis added). In other words, there is no discretion to be applied to the zoning map amendment and not only is a concurrent zoning map amendment required, the outcome is automatic based on the acknowledged OCMC. Further, compliance with OCMC Chapter 17.50 requires a zoning map amendment application but does not require compliance with the discretionary zoning map amendment application criteria in OCMC 17.68.020.

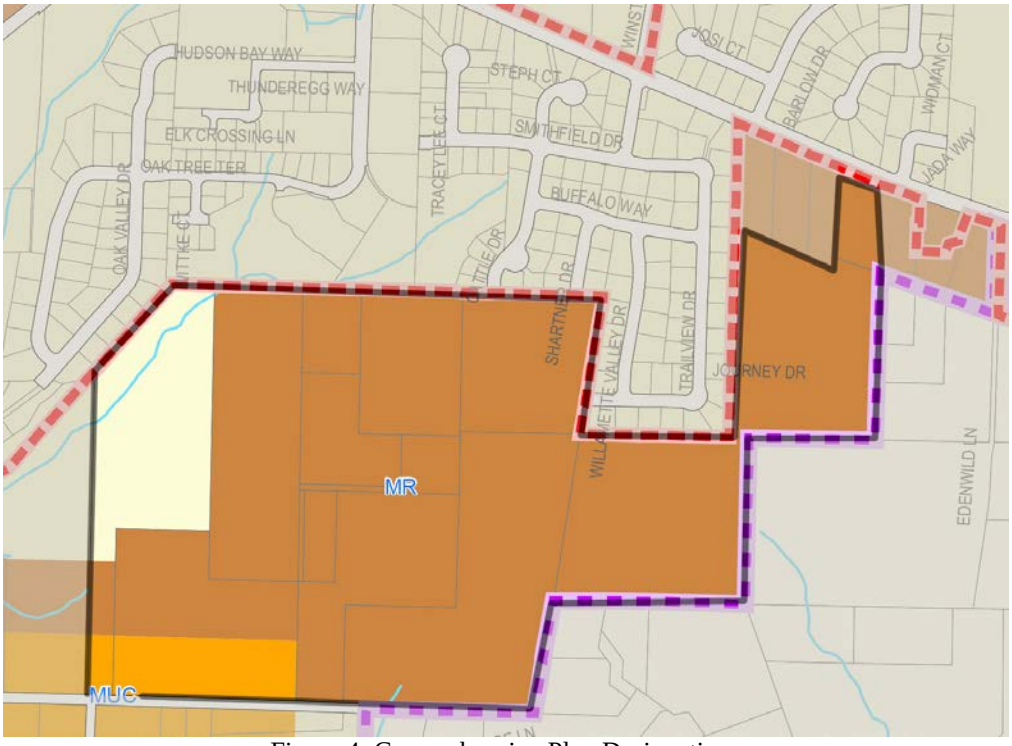


Figure 4: Comprehensive Plan Designations

In this instance, the zoning districts to be applied per the table in OCMC 17.68.025.A are R-5 for the MR area, R-10 for the LDR area, and Neighborhood Commercial (NC) for the MUC area. The Planning Commission can find that the Application satisfies the approval criteria in OCMC 17.68.025.A. and B. and the zoning map amendment shall be approved.

2. Transportation a Planning Rule ("TPR") Compliance.

OAR 660-012-0060(1) and (2) require land use regulation amendments, including amendments to zoning maps, to determine if the amendment will have a "significant affect" on transportation facilities and, if so, can it be mitigated. However, OAR 660-012-0060(9) provides that a zoning map amendment does not need to include this analysis, and the City can make a finding of no "significant affect", if:

a. A zoning map amendment is consistent with the existing comprehensive plan designation and does not change the map designation;

b. The City has an acknowledged Transportation System Plan ("TSP"); and

c. The area of the zoning map amendment was not exempted from the TPR at the time of the UGB amendment. OAR 660-012-0060(9)(a)-(c).

The subject property complies with these criteria as follows:

a. Oregon City's Comprehensive Plan Land Use Map within the acknowledged Oregon City Comprehensive Plan designates the subject property Low Density Residential, Medium Density Residential, and Mixed Use Commercial. The proposed zoning amendment would not change the map designation and the R-10, R-5 and NC zoning are implementing zones for those designations.

b. An updated Transportation System Plan (TSP) and associated amendments to the Oregon City Municipal Code (OCMC) was approved by the City Commission and became effective August 16, 2013. Information provided by City staff at the pre-application conference on November 29, 2016 indicate that this TSP is based upon the application of the default zoning consistent with the adopted Comprehensive Plan designations for this area.

c. The subject property has been in the City's UGB since the time of the adoption of the Comprehensive Plan and was not exempted from the Transportation Planning Rule.

The City can find that all three (3) of these requirements are met. Therefore, the City can find that the zoning map amendment does not "significantly affect" a transportation facility.

Finally, OCMC Title 12 does not apply to the concurrent annexation and zoning map amendments as they do not constitute "development" as that term is defined in the OCMC and ORS 227.160(2). The City will apply OCMC Title 12 when "development" is proposed for this

site. A condition of approval will be applied to the zone change application to ensure that development does not occur until such time as the requirements of Title 12 can be met.

Alternatively, the applicant would expect to propose that the City adopt a condition of approval based on OAR 660-012-0060(2)(e) similar to that in the Serres Farm annexation application.

Compliance with Title 14 – Annexations:

OCMC 14.04.050 Annexation Procedures

This section lists the submittal requirements and procedures to be followed in annexing property to the City of Oregon City.

A. Application Filing Deadlines. Annexation elections shall be scheduled for March, May, September and November of each year. Each application shall first be approved by the city commission, which shall provide a valid ballot title in sufficient time for the matter to be submitted to the voters as provided by the election laws of the state of Oregon.

Comment: SB 1573 is a validly enacted law. SB 1573 provides that, assuming certain conditions are met, charter and municipal code provisions requiring voter approval of annexations may not be applied. The requirements are that a site to be annexed must be within an Urban Growth Boundary ("UGB"), is subject to and complies with the acknowledged Comprehensive Plan and is contiguous to the City to which the real property is proposed to be annexed. In the case of this application, all of these conditions are met. The City has an acknowledged Comprehensive Plan. This application satisfies Plan Policies relevant to annexation and the concurrent Comprehensive Plan map and zoning map applications. Finally, the property to be annexed is contiguous to the City's current boundaries.

B. Preapplication Review. Prior to submitting an annexation application, the applicant shall confer in the manner provided by Section 17.50.050(A) with the representative of the planning division appointed by the city manager.

Comment: The initial pre-application conference to discuss the annexation of the subject property was held on November 17, 2015 (PA 15-35). Because the application was not submitted within six months of the pre-app date, and because the size of the annexation area increased, a second pre-application conference was held on October 3, 2016 (PA 16-40). The notes from this second pre-application conference were included in the initial submittal package for the annexation application. An additional pre-application conference was held on November 29, 2016 to discuss a zone change in conjunction with annexation.

C. Neighborhood Contact. Prior to filing an annexation application, the applicant is encouraged to meet with the city-recognized neighborhood association or associations within which the property proposed to be annexed is located. If the city manager deems

that more than one such association is affected, the applicant is encouraged to meet with each such association, as identified by the city manager. Unwillingness or unreasonable unavailability of a neighborhood association to meet shall not be deemed a negative factor in the evaluation of the annexation application.

Comment: The subject property is within the Park Place Neighborhood Association boundaries. The applicant contacted the Park Place Neighborhood Association, as required by city standards, and a meeting was held on June 7, 2016 at Alliance Charter Academy. A second neighborhood meeting was held on December 6, 2016 at 7:00pm at Alliance Charter Academy to discuss the application of city zoning to the annexation area.

D. *Signatures on Consent Form and Application. The applicant shall sign the consent form and the application for annexation. If the applicant is not the owner of the property proposed for annexation, the owner shall sign the consent form and application in writing before the city manager may accept the same for review.*

Comment: The consent form and the application for annexation are signed by the owners of record for the subject property.

E. *Contents of Application. An applicant seeking to annex land to the city shall file with the city the appropriate application form approved by the city manager. The application shall include the following:*
   1. *Written consent form to the annexation signed by the requisite number of affected property owners, electors or both, provided by ORS 222, if applicable;*
   2. *A legal description of the territory to be annexed, meeting the relevant requirements of the Metro Code and ORS Ch. 308. If such a description is not submitted, a boundary survey may be required. A lot and block description may be substituted for the metes and bounds description if the area is platted. If the legal description contains any deed or book and page references, legible copies of these shall be submitted with the legal description;*
   3. *A list of property owners within three hundred feet of the subject property and, if applicable, those property owners that will be "islanded" by the annexation proposal, on mailing labels acceptable to the city manager;*
   4. *Two full quarter-section county tax assessor's maps, with the subject property(ies) outlined;*
   5. *A site plan, drawn to scale (not greater than one inch = fifty feet), indicating:*
   6. *If applicable, a double-majority worksheet, certification of ownership and voters. Certification of legal description and map, and boundary change data sheet on forms provided by the city.*

Comment: The materials required in items 1 through 6 are included in our application submittal. Note that the applicant has paid the required fee for the City of Oregon City to provide the list and mailing labels for properties within three hundred feet of the subject

property and that this will include those property owners who will be "islanded" by the annexation proposal. The owners of the three islanded properties are as follows:

22E27B 00600: John & Joanne Miller, Kevin R. & Linda S. Miller
15030 S Holcomb Blvd.
Oregon City, OR 97045

22E27B 00800: Tod R. & Deanna L. Townsend
15050 S. Holcomb Blvd.
Oregon City, OR 97045

22E27B 00900: Mickey & Barbara Clift
15076 S. Holcomb Blvd.
Oregon City, OR 97045

7. *A narrative statement explaining the conditions surrounding the proposal and addressing the factors contained in the ordinance codified in this chapter, as relevant, including:*
   a. *Statement of availability, capacity and status of existing water, sewer, drainage, transportation, park and school facilities;*
   b. *Statement of increased demand for such facilities to be generated by the proposed development, if any, at this time;*
   c. *Statement of additional facilities, if any, required to meet the increased demand and any proposed phasing of such facilities in accordance with projected demand;*

Comment: There is no proposal to develop the subject property at the present time. Development cannot occur because it is not possible to meet the criteria of Chapter 12 of the OCMC until such time as Alternative Mobility Standards are adopted by the City of Oregon City. However, services are available to allow for the future development of this site at such time as the transportation issues are resolved. A condition of approval will be applied to the zone change to prohibit development beyond what is allowed under existing County zoning until such time as it is possible to meet the Alternative Mobility Standards.

The following information describes the existing availability, estimate of increased demand, and notes improvements that may be required to provide these services:

Water: The annexation area is currently partially served by the Clackamas River Water District (CRW). The City and CRW have an urban service agreement (Holcomb-Outlook-Park Place or HOPP agreement) for portions of the annexation area. The HOPP agreement generally states that CRW will service homes above the 450 foot elevation within the specified HOPP boundary. Only the upper northeast corner of the annexation area, near Holcomb Blvd. would be within the area to be served by CRW, as shown on the map below.

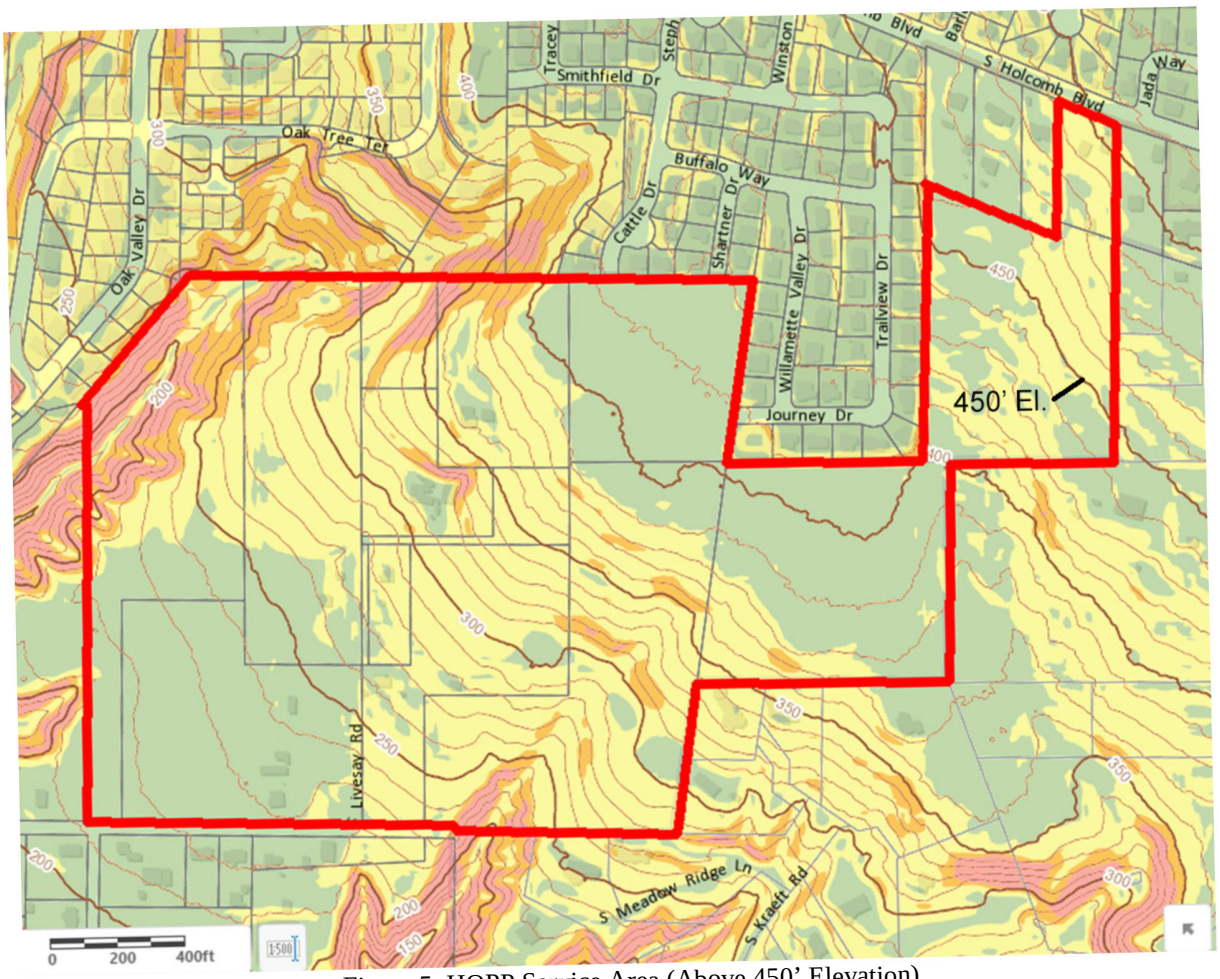


Figure 5: HOPP Service Area (Above 450' Elevation)

At the most recent pre-application conference (PA-16-40), information was presented by Clackamas River Water District indicating that there they have an issue in meeting the required fire flow standard of 1,000 gallons per minute. That issue is expected to be resolved with system upgrades that include replacing approximately 4,000 lineal feet of substandard water main within S Bradley Road with a 12-inch pipe. This improvement would be provided in conjunction with the construction of the Abernethy Landing subdivision (TP 16-0001). Contact with Adam M. Bjornstedt, P.E., Principal Engineer for CRW, on November 6, 2017, indicate that the plans for that project are on schedule. CRW has an existing 12" water line in Holcomb Blvd. that is capable of providing for service to the portion of the subject property that is within the HOPP area. Mr. Bjornstedt indicated that CRW has adequate storage capacity.

The majority of the site will be served with by the City of Oregon City. There is an existing 16-inch City of Oregon City water main in Holcomb Blvd. along the subject property's frontage on that street. A 4-inch water line is located in Livesay Road at the lower end of the subject property. There will be a requirement to construct a 12 inch water main in the future collector street from Holcomb Blvd. to Livesay Road, together with a pressure reducing station and the cost of removing an existing water pump station on Livesay Road. At the present time the additional costs for these improvements are not included in the City's capital improvement

program. The applicant will be seeking to have the CIP amended prior to development to include these regional costs.

We estimate that at full build-out the future development of the annexation properties will yield between 400 and 450 residential dwelling units. The City and Clackamas River Water District have adequate water storage capacity to service the proposed annexation area. The details of water service for the subject property will be worked out at the time of future development, but there is an adequate water supply available in the area to service this site. For the immediate future, until future development occurs, the existing homes within the annexation area will continue to make use of private wells and Clackamas River Water service.

Sanitary Sewer: The existing homes within the annexation area are served with private septic systems and these facilities will remain in place until such time as the area is developed in the future. The Oregon City Sanitary Sewer Master Plan calls for service to this area to be provided in accordance with the figure below:

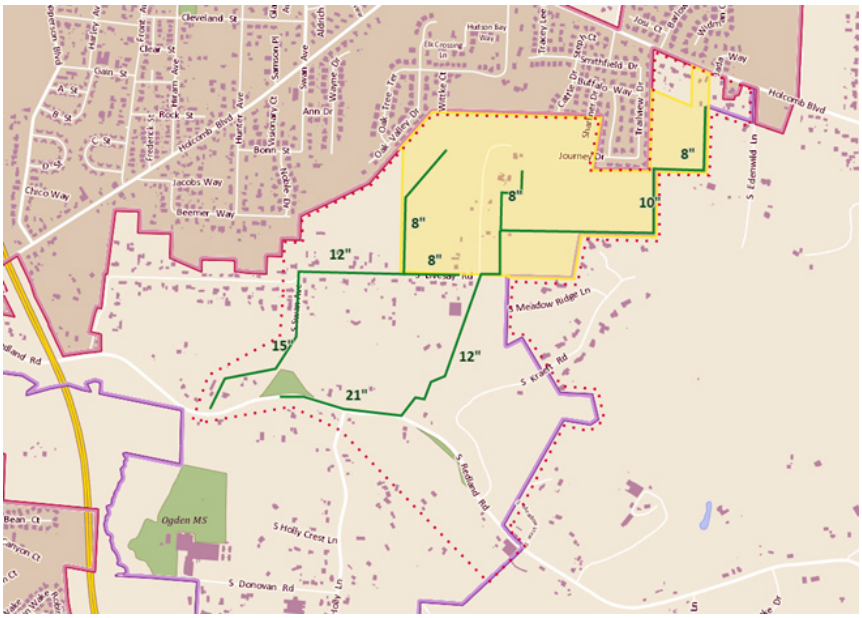


Figure 6: Sewer Master Plan

As a practical matter, the sewer master plan was prepared absent knowledge of the order in which the North Village area would be developed. It is practicable to service all of the proposed annexation area either from the Livesay Road sewer main or from the easterly sewer main. It would not be necessary to construct both of the off-site sewer lines in order to service the annexation area. Since the Livesay Road sewer is largely to be located within existing public road right-of-way, that would be the most likely route to be used in the future development of this area. The cost of this off-site sewer would be borne by the future developer, likely with a pay-back provision for a proportionate contribution for use by others as downhill properties are developed in the future.

The cost of the off-site sewer will be impacted significantly whether the project is done by the City or as a private construction project. We have completed City work sheets on estimated

costs based upon information from the City's water and sewer master plans. We estimate that private construction would save at least 25 to 30 percent over public constructon costs.

Storm Drainage: An existing storm sewer system drains across a portion of the subject property serving the Trail Ridge subdivision to the north of this site. Based upon natural topography, storm water run-off generated from future development will generally flow in a southerly direction from Holcomb Blvd. and will need to be conveyed to natural drainage channels as shown on the map below.

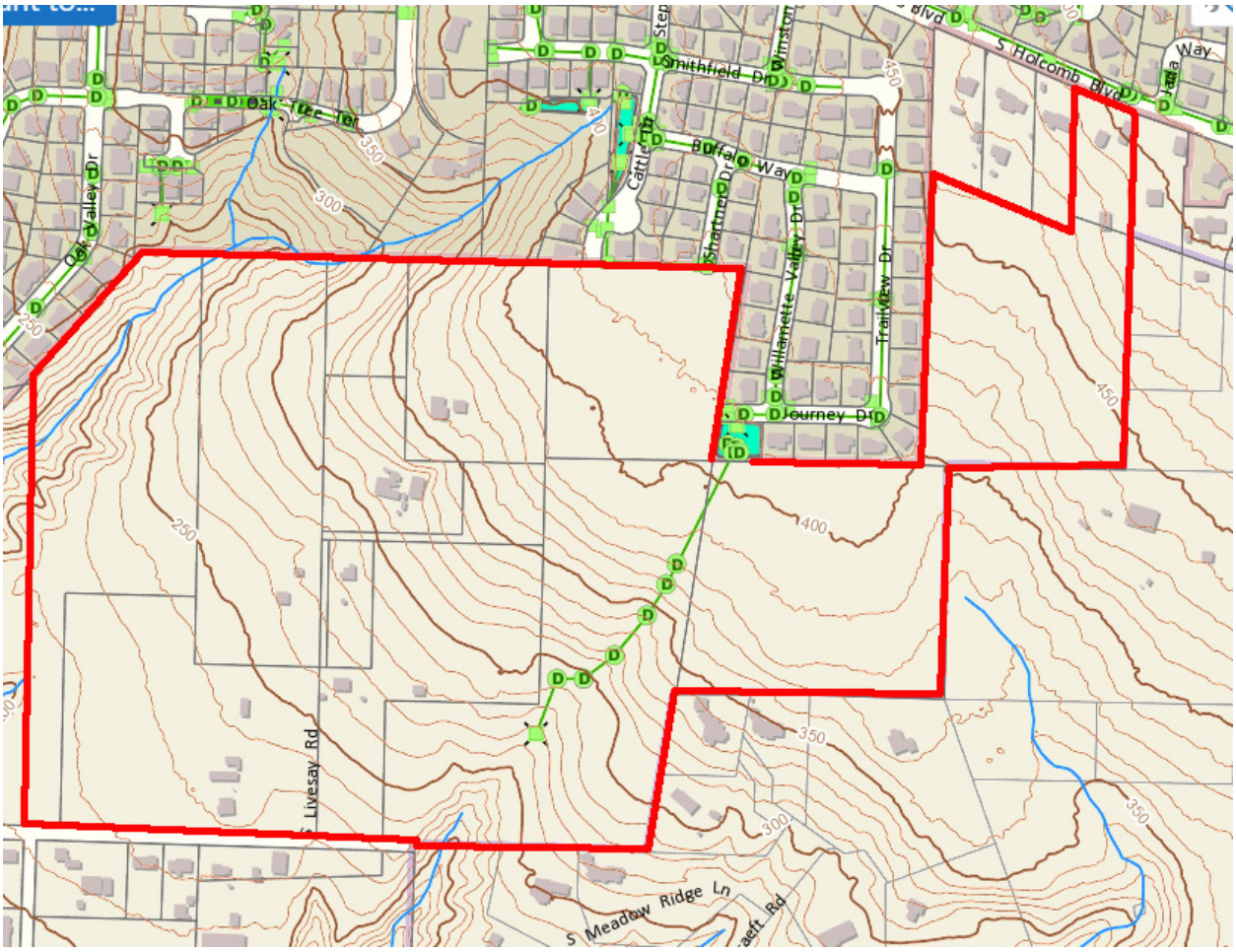


Figure 7: Storm Drainage

The future development of the site will require the construction of a storm sewer system that will collect runoff from the development. Storm water treatment and detention facilities will be required in accordance with City standards prior to release of storm water to the natural drainageways. The detention facilities will maintain the rate of runoff at predevelopment rates per City standards.

Transportation: No development of this property is being proposed at this time. No development may occur until such time as the requirements of OCMC Title 12 can be met.

This will not be feasible until Alternative Mobility standards are adopted by the City and approved by the ODOT. It is understood by the applicant that there are on-going regional transportation discussions between the City, Metro and ODOT affecting the larger Park Place Neighborhood area that will need to be resolved before development may be approved. Because no development will occur as a direct result of this annexation, the transportation analysis will be deferred until the time of a future development application. A condition of approval is proposed to be added to the zone change that would prohibit development until the transportation issues are resolved. Please see the discussion under the zone change portion of this application.

The primary access to the subject property will be from Holcomb Blvd., an arterial street. The Park Place Concept Plan calls for the future extension of Holly Lane as a collector street through the annexation area from Redland Road through to Holcomb Blvd. Local streets are stubbed to the annexation area from adjacent single-family neighborhoods at Journey Drive, Shartner Drive, and Cattle Drive and in the future development of this site, connections to these streets will be made. Livesay Road forms the lower border of the subject property and will be tied into the future development plan. Please refer to the Transportation Impact Analysis prepared by Lancaster Engineering, Inc. for more details on the transportation system.

The City has requested that we address the potential impacts of the future development of the proposed annexation area upon projects identified in the TSP for the area in proximity to the annexation. The applicable TSP projects are listed in the table below:

Proj. Number	Project Description	Project Extent	Project Elements	Phase	Likely to be funded ?
D15	Holcomb Boulevard Curve Warning System	Holcomb Boulevard just to the west of the OR 213 overcrossing	Install a curve warning system on Holcomb Boulevard that activates when a motorist approaches the curve at a high speed.	Long-term Phase 3	No
D16	Holcomb Boulevard Speed Warning System	Holcomb Boulevard east of Jada Way	Install a speed warning system that activates when a motorist approaches at high speed.	Long-Term Phase 4	No
D35	Redland Road/Anchor Way Operational Enhancement	Redland Road/Anchor Way	Install a traffic signal	Long-Term Phase 4	No
D36	Redland Road/Holly Lane Operational Enhancement	Redland Road/Holly Lane	Install a single-lane roundabout	Long-term Phase 4	No
D43	Holcomb Boulevard/Holly Lane North Extension Operational Enhancement	Holcomb Boulevard/Holly Lane North Extension	Install a single-lane roundabout	Long-term	Yes
D48	Holly Lane North extension	Redland Road to Holcomb Blvd	Extend Holly Lane from Redland Road to Holcomb Boulevard as a Residential Minor Arterial. Create local street connections to Cattle Drive and Journey Drive.	Long-term	Yes
D49	Swan Avenue extension	Livesay Road to Redland Road	Extend Swan Avenue from Livesay Road to Redland Road as an Residential Collector	Long-term	Yes
D50	Swan Avenue extension	Redland Road to Morton Road	Extend Swan Avenue from Redland Road to Morton Road as an Residential Collector	Long-term	Yes
D86	Livesay Road Upgrade	Redland Road to Swan Avenue	Improve to Residential Collector cross-section.	Long-term Phase 3	No
D87	Livesay Road Upgrade	Swan Avenue to Holly Lane extension	Improve to Mixed-Use Collector cross-section.	Long-term Phase 3	No
D91	Redland Road Upgrade	Holcomb Boulevard to Holly Lane	Improve to Minor Arterial cross-section, as a constrained street	Long-term Phase 2	No

Figure 8: TSP Projects in Vicinity

Comment: The future development of the subject property will increase traffic on S. Holcomb Blvd. Projects D15 and D16 would provide safety improvements on this roadway. These improvements are not required from a capacity standpoint, but would improve the safety of this roadway. Transportation SDCs from the future development of the property should reasonably be applied to the provision of these improvements.

Project D35 involves the Redland Rd/Anchor Way intersection. Traffic from the future development of the subject property would not be expected to contribute significantly to the need for these improvements due to distance from the site.

Project D43 calls for a future roundabout at the intersection of Holly Lane and Redland Rd. This improvement will not be needed until such time as Holly Lane is completed down to Redland Rd. from the subject property. That improvement will not occur until there is future development of intervening properties.

Project D48 calls for the extension of Holly Lane from Redland Rd. north to Holcomb Blvd. A significant portion of this project will be provided with the future development of the subject property.

Projects D49 and D50 relate to the future extension of Swan Avenue south from Livesay Rd. to the south, across Redland Road, to Morton Rd. This future planned extension is west of the subject property. Given that the majority of site-generated traffic will eventually make use of the Holly Lane connection to Redland Rd., the impact of future site traffic on the need for these improvements is negligible.

Projects D86 and D87 call for future upgrades to Livesay Road. The future development of the subject property will bring about frontage improvements on Livesay Road for a significant stretch of this roadway.

Project D91 relates to planned future upgrades to Redland Road from Holcomb Blvd. to Holly Lane. The need for these improvements will not be impacted by the future development of the subject property until such time as Holly Lane is connected from the subject property to the south to Redland Road. This will not happen until additional properties are annexed and developed.

Parks:

There is a need for additional parks in the Park Place neighborhood. The closest developed City park to the subject property is Park Place Park, a mile to a mile and half to the northwest of the site at the intersection of Hiram Avenue and Cleveland Street. The Park Place Concept Plan calls for a new community park to be developed between Redland Road and Holcomb Blvd., partially within the proposed annexation area. The map below shows the proposed annexation area overlaid on Figure 32 from the Park Place Concept Plan, which shows the North Village area of the plan. The proposed park site is situated on the western border of the annexation area and continues to the west.

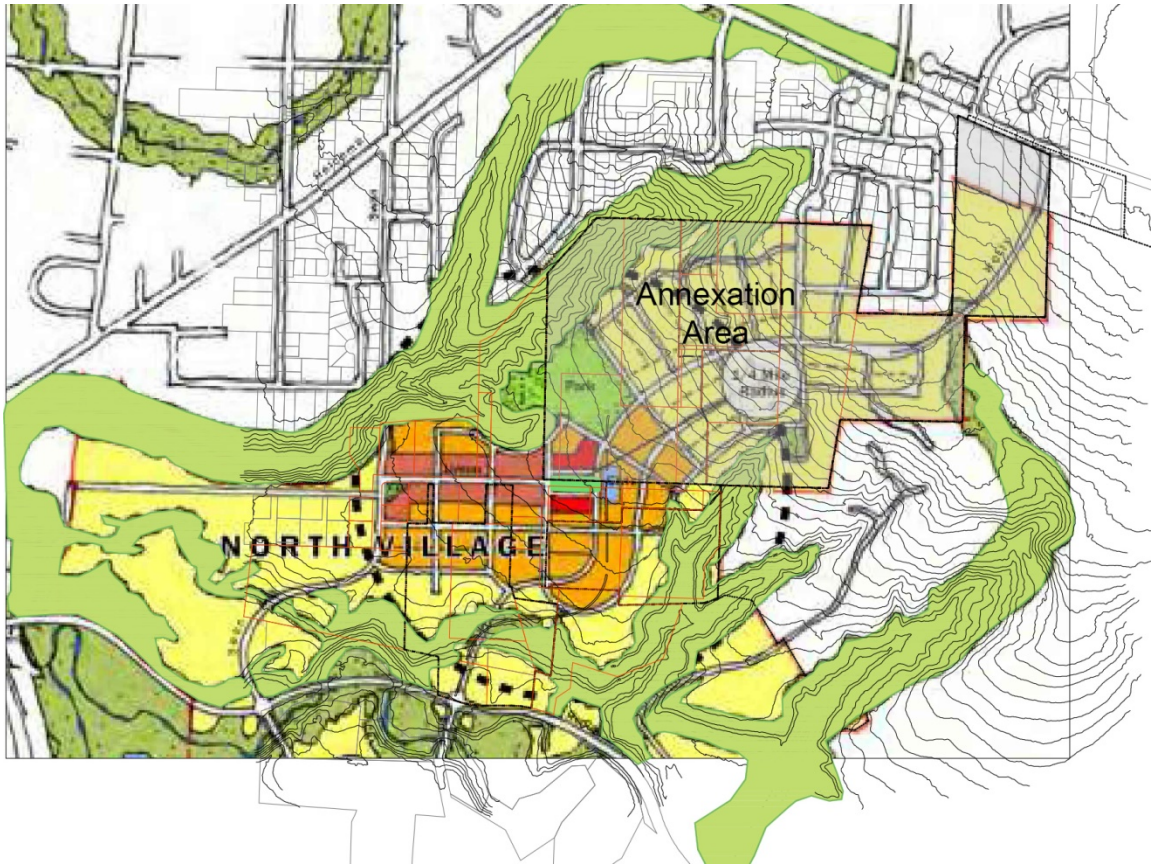


Figure 9: Park Place North Village Plan

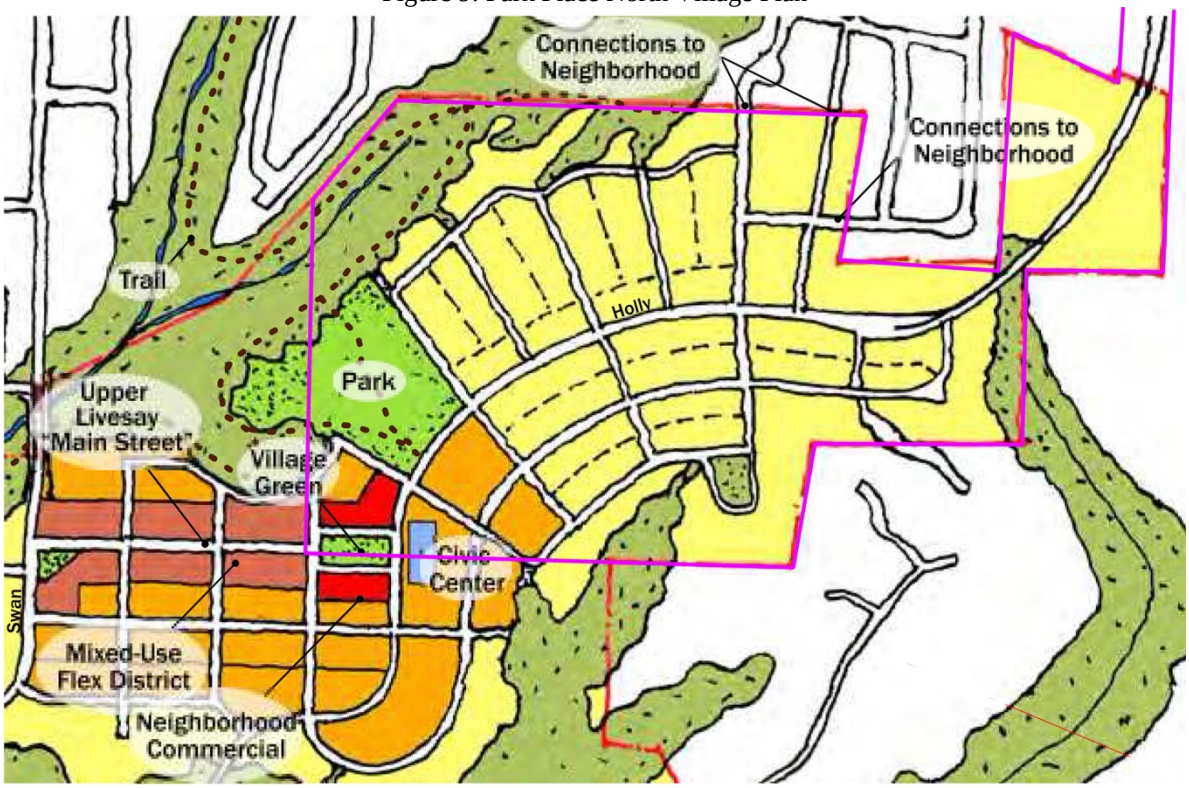


Figure 10: Park Place North Village Detail

The Park Place Concept Plan says the following about the community park in the North Village:

"The parks are intended to provide basic recreational opportunities for residents and may include amenities such as play equipment, athletic fields, picnic tables or shelters, walking trails, and other features. The neighborhood park in the North Village is approximately eight to ten acres and within walking distance of the Livesay Main Street."
(Final Concept Plan, Page 31)

Comments in the City's letter of May 12, 2017 from Community Services Director Phil Lewis state that "*we would ideally have a 12-15 acre community park in that location which would allow appropriate sizing for sports fields and parking.*" In a phone call with Mr. Lewis, he indicated his opinion that there is a need for a larger park in order to provide for soccer and other athletic fields. This comment, while indicative of the Director's assessment of City park needs, is not consistent with the park size called for by the adopted Park Place Community Plan. Further, topographic constraints associated with a drainageway to the northwest of the proposed park location, as well as the constraint of the proposed alignment of Holly Lane right-of-way, would limit the ability to provide a park of that size at this location with level enough areas for more athletic fields.

The applicant acknowledges that the future master plan for the annexation area will need to provide for the dedication of a community park consistent with the Park Place Concept Plan. The future comprehensive plan amendment and zone change will provide for the designation of the park site with the corresponding Park designation. It is the applicant's expectation that the City will make any necessary amendments to its Parks and Recreation Master Plan to make the dedication of the community park eligible for systems development charges credits. This will allow for lots in the master plan area to receive SDC credits in exchange for providing compensation to the owners of properties containing proposed park dedication areas.

The North Village Concept Plan also calls for a system of trails and paths to be included in the master plan for this area, as shown on the map below:

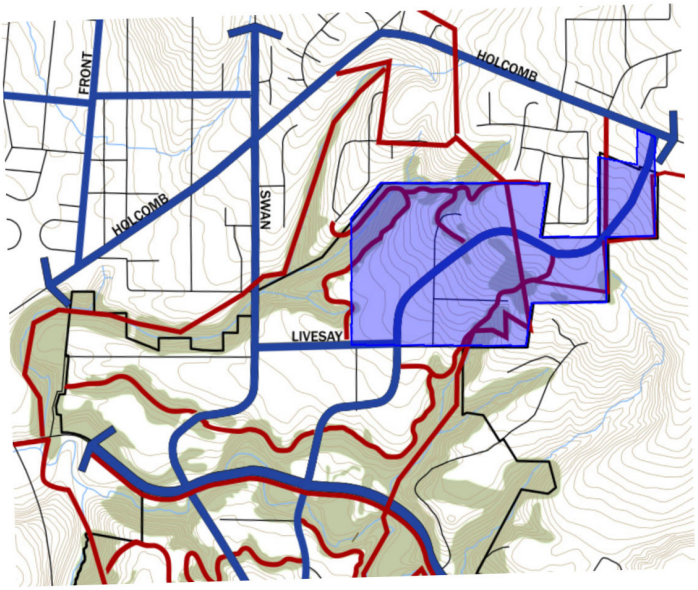


Figure 11: North Village Trails and Paths

It is understood by the applicants that the future master plan for the annexation area will need to incorporate park area and trails consistent with the Park Place Concept Plan. The most likely scenario for the funding of the dedications would be through Systems Development Credits (SDCs). The Plan states the following regarding funding mechanisms.

"**Once the Park Place Concept Plan is adopted, Oregon City and the regional agencies that fund or own elements of the services will have to amend their master plans and systems development charges.**"
(Final Concept Plan, Page 6)

Parks: The two parks identified in the Concept Plan have to be integrated into Oregon City's parks master plan and at that time decide how to fund the proposed parks. It may be funded entirely from system development charges or as an integral part of the master plan's financing strategies.
(Final Concept Plan, Page 6)

Schools:

The subject property is served by Oregon City Public Schools. The schools serving this site are Redland Elementary School, Ogden Middle School, and Oregon City High School. Although there will be no immediate development of this site that would impact the school system, discussions with School District staff indicate that there are no immediate capacity problems with these schools.

A letter dated March 13, 2017 from Mr. Wes Rogers, Director of Operations for Oregon City Public Schools, regarding school capacity associated with the Serres property annexation (File AN-16-0004, ZC 16-0001) makes the following comments regarding the subject annexation of approximately 92 acres:

"As to the larger 92 acre Park Place/Holcomb annexation mentioned by Mr. Givens but is not a direct part of this file, the District has always known that as the Park Place Concept Plan was significantly developed, additional elementary and middle school capacity would have to be constructed. Currently the elementary school of attendance for this area would be Redland Elementary.

Forecasted enrollment growth is not new to the District and the Oregon City School Board and administration have been studying facility needs for the past several years. Although well maintained, District facilities do not support current educational practice and all District facilities are in need of serious renovation or replacement and in some cases minor expansion. Preliminary plans to ask for a school construction bond have not been finalized but the current draft scenario shows that the District (with voter support) would have additional middle school capacity within 5 years and additional elementary school capacity within 5-10 years. In the meantime the District has several other tools to help with over capacities by installing semi-permanent buildings and/or redrawing attendance boundaries."

The anticipated time frame to begin construction within the annexation area, dependent upon resolution of the alternative mobility standards issue, would be in approximately two to three years. Full build-out is expected to be in the range of five to ten years. This schedule is consistent with the School District's stated timeline to provide additional school capacity.

Fire Protection: Fire protection services will be provided by Clackamas Fire District #1. The closest station is located at 300 Longview Way, off of Holcomb Blvd.

Police Protection: Police protection will be provided by the Oregon City Police Dept.

d. Statement outlining method and source of financing required to provide additional facilities, if any;

Comment: The required improvements to public services will be made by the developer concurrently with the future development of this property.

e. Statement of overall development concept and methods by which the physical and related social environment of the site, surrounding area and community will be enhanced;

Comment: The majority of the subject property is within the boundaries of the Park Place Concept Plan, specifically, the North Village Plan, and the eventual development of this site will be subject to the land uses and densities set forth in that document. The future development application will provide for a master plan consistent with the design concept of the North Village Plan. The future development application will likely need to include proposals to rezone the property to resolve apparent conflicts between the North Village Plan and the existing Oregon City Comprehensive Plan Map. One property, Tax Lot 2000 on Map 22E27B and which fronts on Holcomb Blvd., is located outside of the North Village Plan, is designated MR by the Comprehensive Plan and will be zoned R-5. That property will be developed in conjunction with the rest of the properties included in this annexation and zone change. The future development of this property will provide a mixture of approximately 400 to 450 single-family detached and attached housing units, as well as neighborhood commercial, park and community uses as shown on the North Village Plan. It will also aid in providing a needed collector road connection from the Holcomb Blvd. area down to Redland Road. It is anticipated that the development will occur in several phases over an approximate 10 year development plan.

f. Statement of potential physical, aesthetic, and related social effects of the proposed, or potential development on the community as a whole and on the small subcommunity or neighborhood of which it will become a part; and proposed actions to mitigate such negative effects, if any;

Comment: There will be no immediate physical, aesthetic, or related social effects from the annexation of this property because there will be no development at this time. Future development of the property will result in typical residential development impacts on traffic, schools, and public infrastructure, but these impacts have been anticipated by the City's Comprehensive Plan. No mitigation measures are anticipated to be needed.

g. Statement indicating the type and nature of any comprehensive plan text or map amendments, or zoning text or map amendments that may be required to complete the proposed development;

Comment: No change to the comprehensive plan text or map designation is proposed for this site. The zone change application that has been filed with the annexation proposal is a mandatory and non-discretionary re-zoning required pursuant to OCMC 17.68.025.A. This zone change is required concurrently with the annexation in order to replace Clackamas County RRFF-5 zoning and apply the appropriate City zones that implement the City's Comprehensive Plan Map designations for the site. In this instance, Neighborhood Commercial is proposed for the MUC area and R-10 would be applied to the LDR designation. It is understood that a future application will be required at the time that a master plan for the development of the property is proposed in order to amend the Comprehensive Plan and zoning for the site comply with the Park Place Concept Plan's conceptual plan for the North Village area. The master plan and the future comprehensive plan amendment and zone change for the subject property cannot proceed until such time as the regional transportation issues are resolved.

8. The application fee for annexations established by resolution of the city commission and any fees required by metro. In addition to the application fees, the city manager shall require a deposit, which is adequate to cover any and all costs related to the election;

9. Paper and electronic copies of the complete application as required by the community development director.

Comment: The required application fee and paper and digital copies of the application are included in the application submittal.

OCMC 14.04.060 - Annexation factors.

A. When reviewing a proposed annexation, the commission shall consider the following factors, as relevant:

1. Adequacy of access to the site;

Comment: The site has direct access onto Holcomb Blvd., an arterial street. This street would serve as the primary access for the future development of the property. Additional accesses are available from the local streets stubbed to the property: Journey Drive, Shartner Drive, and Cattle Drive as well as Livesay Road. Future development of the property will provide for the construction of a north extension of Holly Lane from Holcomb Blvd. to Livesay Road. Future development of properties to the south will eventually extend this street to Redland Road.

2. Conformity of the proposal with the city's comprehensive plan;

Comment: The proposed annexation is consistent with the comprehensive plan in that the property is within the UGB, is designated for residential and mixed use development, and is intended to be served by the City of Oregon City. Compliance with specific plan policies is discussed below in this report.

3. Adequacy and availability of public facilities and services to service potential development;

Comment: The adequacy and availability of public facilities and services is discussed in the preceding section of this report. Please refer to our comments there.

4. Compliance with applicable sections of ORS Ch. 222, and Metro Code Section 3.09;

ORS Ch. 222 was amended in 2016 with the adoption of Senate Bill 1573 as follows:

SECTION 1. Section 2 of this 2016 Act is added to and made a part of ORS 222.111 to 222.180.

SECTION 2. (1) This section applies to a city whose laws require a petition proposing annexation of territory to be submitted to the electors of the city.

(2) Notwithstanding a contrary provision of the city charter or a city ordinance, upon receipt of a petition proposing annexation of territory submitted by all owners of land in the territory, the legislative body of the city shall annex the territory without submitting the proposal to the electors of the city if:

(a) The territory is included within an urban growth boundary adopted by the city or Metro, as defined in ORS 197.015;

(b) The territory is, or upon annexation of the territory into the city will be, subject to the acknowledged comprehensive plan of the city;

(c) At least one lot or parcel within the territory is contiguous to the city limits or is separated from the city limits only by a public right of way or a body of water; and

(d) The proposal conforms to all other requirements of the city's ordinances.

Comment: The Oregon City Municipal Code requires annexations to be approved through an election. However, in this instance, the proposed annexation meets the requirements of the new State law in that it includes a petition that is signed by all owners of land in the territory, the area is within the adopted urban growth boundary, is within an area subject to the adopted and acknowledged Oregon City Comprehensive Plan, and the property is contiguous to the existing city limits. As demonstrated in this narrative, this proposal conforms to all other requirements of the city's ordinances.

(3) The territory to be annexed under this section includes any additional territory described in ORS 222.111 (1) that must be annexed in order to locate infrastructure and right of way access for services necessary for development of the territory described in subsection (2) of this section at a density equal to the average residential density within the annexing city.

Comment: No such additional territory is required for this property.

(4) When the legislative body of the city determines that the criteria described in subsection (2) of this section apply to territory proposed for annexation, the legislative body may declare that the territory described in subsections (2) and (3) of this section is annexed to the city by an ordinance that contains a description of the territory annexed.

Comment: The required ordinance will be adopted by the City upon approval of this annexation proposal.

5. *Natural hazards identified by the city, such as wetlands, floodplains and steep slopes;*

Comment: The subject property does have areas of potential natural hazards associated with steep slopes, primarily along ravines associated with drainageways and areas of steeper hillside grades. The map below from the City's GIS system shows these areas:

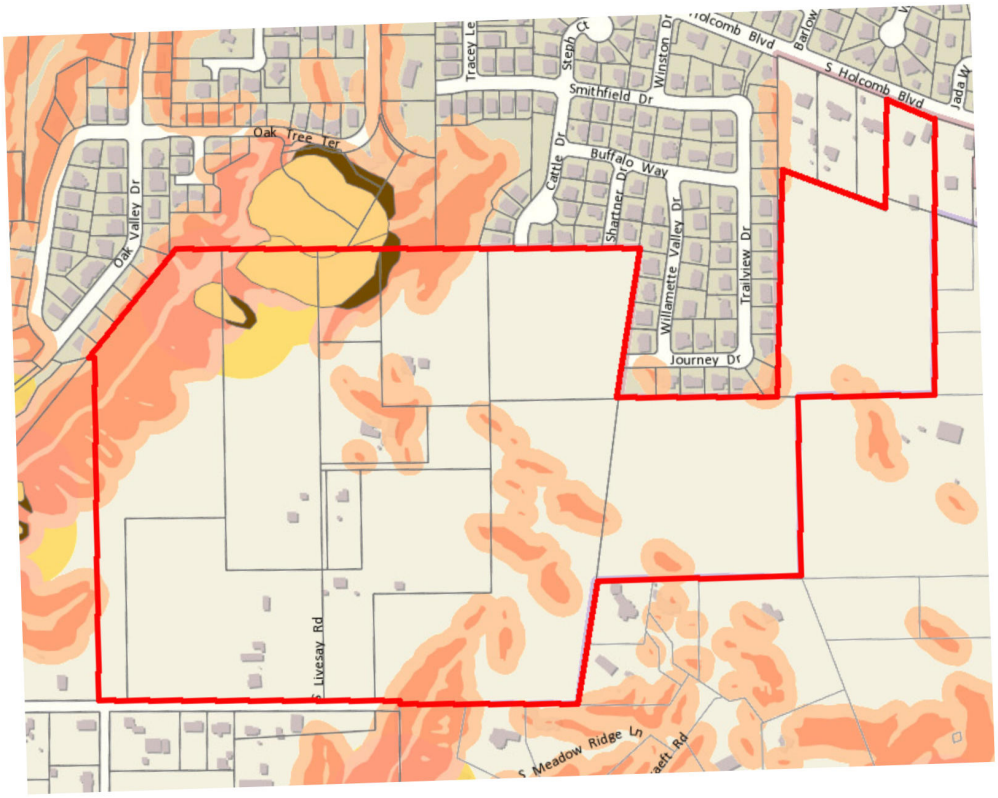


Figure 12: Potential Natural Hazards

When the property is developed in the future, the natural drainageways will remain undeveloped as open space. A geotechnical report will be prepared at the time of future development application to assess the safety of other potential hazard areas and the recommendations of that report will be followed in designing the future development plan.

6. *Any significant adverse effects on specially designated open space, scenic, historic or natural resource areas by urbanization of the subject property at time of annexation;*

Comment: No development will occur at this time and a condition of approval will preclude development until such time as the Alternative Mobility standards are adopted. Thus, there will be no impacts upon resource areas associated with this annexation. Assessment of impacts upon resource and hazard areas will be examined in detail at the time that the development plan is prepared for compliance with the standards set forth in the Oregon City Municipal Code.

7. *Lack of any significant adverse effects on the economic, social and physical environment of the community by the overall impact of the annexation.*

Comment: Because there will be no development on this site until off-site transportation issues are resolved, there will be no immediate impact upon the economic, social and physical environment of the community by the annexation. At such time as the site is developed, it will be in a manner consistent with the planned residential designation set for the property in the Park Place Concept Plan. This land use has been determined by the City, through the adoption of the Park Place Concept Plan, to be consistent with the surrounding land use pattern. Required public utilities and services are available or will be made available concurrently with the development of the site. The future development application for this property will provide a geotechnical report and the site plan will be designed to comply with the recommendations of that report so that the safety of future residents is assured. As such, the future development of the property will not have any significant impact upon the economic, social and physical environment of the community.

14.04.110 - Setting of boundaries and proclamation of annexation.
Upon approval by the voters of the proposed annexation, the city commission, by ordinance, shall set the boundaries of the area to be annexed by a legal description, adopt findings, and proclaim the results of the election.

Comment: SB 1573, adopted by the last legislative session, provides that, assuming certain conditions are met, charter and municipal code provisions requiring voter approval of annexations may not be applied. The requirements are that a site to be annexed must be within an Urban Growth Boundary ("UGB"), is subject to and complies with the acknowledged Comprehensive Plan and is contiguous to the City to which the real property is proposed to be annexed. In the case of this application, all of these conditions are met.

14.04.120 - Exceptions.
The city commission may authorize an exception to any of the requirements of this chapter. An exception shall require a statement of findings that indicates the basis for the exception. Exceptions may be granted for identified health hazards and for those matters which the city commission determines that the public interest would not be served by undertaking the entire annexation process. All annexations, however, shall be referred to the voters of the

city except those exempted by state law. An exception referring to an annexation application that meets the approval criteria to an election cannot be granted except as provided for in the Oregon Revised Statutes.

Comment: As discussed under OCMC 14.04.110, the annexation of properties consistent with SB 1573 is exempted from local requirements for voter approval. The subject property meets the requirements of SB 1573, as discussed above in comments on OCMC 14.04.050A.

Metro Code 3.09.045.A-D (Boundary Change Criteria)

The applicable approval criteria under the Metro Code are:

- *Whether the proposed boundary change will promote the timely, orderly and economic provision of public facilities and services.*

  Comment: As discussed above, all required public facilities and services will be available at the time of development. No development will occur until such time as the Alternative Mobility standards are adopted and compliance with Article 12 can be met. Upon approval of a future development plan, the developer will provide for the installation of needed public facilities and services.

- *Whether the proposed boundary change will affect the quality and quantity of urban services*

Comment: The annexation of this property will have no immediate impact upon the quality or quantity of urban services since development of the property will be prohibited until such time as the Alternative Mobility standards are adopted and compliance with Article 12 can be met. At such time as the site is developed in the future, it will be in a manner consistent with the North Village Concept Plan. The City has planned for the provision of necessary public facilities and services in this area in its Public Facilities Plan and Transportation Systems Plan. Since the future development will conform to the anticipated level of development, it will not have a negative impact upon the quality or quantity of urban services.

- *Whether the proposed boundary change would eliminate or avoid unnecessary duplication of facilities or services.*

Comment: With the exception of water, all services in this area will be provided by the City of Oregon City so there will be no unnecessary duplication of facilities and services. Water services in this area are provided by the City and Clackamas River Water District. These agencies have a plan and agreement that governs the provision of water services so as to avoid unnecessary duplication of facilities and services.

Oregon City Comprehensive Plan – Applicable Goals and Policies

Goal 1: Citizen Involvement

Goal 1.1 – Citizen Involvement Program

Policy 1.1.1 *Utilize neighborhood associations as the vehicle for neighborhood-based input to meet the requirements of the Land Conservation and Development Commission (LCDC) Statewide Planning Goal 1, Citizen Involvement. The Citizen Involvement Committee (CIC) shall serve as the officially recognized citizen committee needed to meet LCDC Statewide Planning Goal 1.*

Comment: The applicant attended neighborhood meetings with the Park Place Neighborhood Association to present the proposed annexation and zone change applications. The City's procedures for review of the application provided notice to Park Place Neighborhood Association and allow opportunity for public comment on the application.

Goal 1.4 – Community Involvement

Policy 1.4.1 *Notify citizens about community involvement opportunities when they occur.*

Comment: The City's procedures for review of the proposed annexation and zone change provide for notice to owners of affected properties and will provide opportunities for citizen input regarding the applications.

Goal 2: Land Use

Goal 2.1 – Efficient Use of Land

Policy 2.1.3 *Encourage sub-area master planning for larger developments or parcels, including re-development, where it may be feasible to develop more mixed uses, or campus-style industrial parks, with shared parking and landscaping areas. Allow developments to vary from prescriptive standards if planned and approved under this provision.*

Comment: The subject property is located within the Park Place Concept Plan, which provides sub-area master planning for this area. The future development of this property will provide mixed uses, including various types of residential development, parks, open spaces, commercial and institutional uses consistent with the North Village concept plan.

Goal 2.4 Neighborhood Livability

Policy 2.4.1 *Develop local neighborhood plans to strengthen and protect residential neighborhoods and historic areas from infill development; such as development along linear commercial corridors.*

Comment: The Park Place Concept Plan provides for a unified neighborhood plan that will serve as a guide to development of a desirable and diverse community in this area of the city.

Policy 2.4.2 *Strive to establish facilities and land uses in every neighborhood that help give vibrancy, a sense of place, and a feeling of uniqueness; such as activity centers and points of interest.*

Comment: The Park Place Concept Plan includes parks, natural open space areas, trails, neighborhood commercial and institutional uses that will provide vibrancy and a sense of place in the future development of this property.

Policy 2.4.3 *Promote connectivity between neighborhoods and neighborhood commercial centers through a variety of transportation modes.*

Comment: The Park Place Concept Plan encourages connectivity and diverse modes of transportation. The plan calls for the construction of Holly Lane to provide a much needed connection between Holcomb Blvd. and Redland Road. The plan also encourages an internal circulation system within the future neighborhood that will ensure connectivity and minimize out of direction travel. A trail system is planned that will provide greater opportunity for bicycle and pedestrian modes of transportation.

Policy 2.4.4 *Where environmental constraints reduce the amount of buildable land, and/or where adjacent land differs in uses or density, implement Comprehensive Plan and zoning designations that encourage compatible transitional uses.*

Comment: The subject property includes environmentally sensitive areas associated with drainageways. The Park Place Concept Plan and City ordinances provide for these water resource areas to be preserved as natural open spaces.

Goal 2.5 Retail and Neighborhood Commercial

Policy 2.5.1 *Encourage the redevelopment of linear commercial corridors in ways that encourage expansion of existing businesses and infill development, and at the same time reduces conflicting traffic movements, improves the aesthetic character of these commercial areas, and encourages trips by transit, bicycling and walking.*

Comment: Not applicable. The subject property does not contain any linear commercial corridors. The Park Place Concept Plan calls for limited neighborhood commercial development, but there is no existing commercial development within the area.

Policy 2.5.2 *Allow and encourage the development of small retail centers in residential neighborhoods that provide goods and services for local residents and workers. Generally, these centers should be located at the intersections of two or more streets that are classified as neighborhood collectors or higher.*

Comment: As shown on Figure 10 on page 12 of this report, the North Village Concept Plan calls for a small area of neighborhood commercial zoning in the southwest corner of the annexation area. This area is identified in the Park Place Concept Plan as a part of “Livesay Main Street”. The Plan (page 25) states the following regarding anticipated uses within this area of neighborhood commercial development:

Small-scale commercial businesses, like a coffee shop, bookstore, dry cleaners, or café, are proposed to anchor the intersection of Holly Lane Extension and Livesay Main Street and surround the Village Green.

Policy 2.5.3 *Review design standards and the sign code to ensure compatibility with existing neighborhoods.*

Comment: Design standards for single family development in the Park Place Concept Plan area are implemented by OCMC 17.21. The future development of this area will be reviewed for compliance with these standards prior to construction.

Policy 2.5.4 *Encourage the development of successful commercial areas organized as centers surrounded by higher density housing and office uses, rather than as commercial strips adjacent to low-density housing.*

Comment: The commercial development in this area is intended to be small in scale and service-oriented. It is seen by the Park Place Concept Plan as helping to provide a neighborhood identity rather than providing for the full range of commercial needs that are available elsewhere in Oregon City, as discussed in the following quote from page 18 of the Concept Plan:

"Commercial development in the planning area is not seen as necessary for the success of the area, which is expected to be developed largely as residential. The commercial needs of the planning area can be met outside of the concept planning area by existing and planned developments. However, commercial development can serve to organize the Park Place Concept Plan by providing a "center" to the community. In addition, commercial development can meet some of the needs of the community, providing a marketable amenity for residential development while reducing trips out of the neighborhood."

Policy 2.5.5 *Encourage commercial and industrial development that enhances livability of neighborhoods through the design of attractive LEEDTM-certified buildings and environmentally responsible landscaping that uses native vegetation wherever possible, and by ensuring that development is screened and buffered from adjoining residential neighborhoods and access is provided by a variety of transportation modes.*

Comment: These provisions are implemented by design standards within the OCMC that will be reviewed prior to site development.

Goal 2.7 Oregon City Comprehensive Plan Land-Use Map

Policy 2.7.2 *Use the following 11 land-use classifications on the Oregon City Comprehensive Plan Land-Use Map to determine the zoning classifications that may be applied to parcels:*

- *Low Density Residential (LR)*
- *Medium Density Residential (MR)*
- *High Density Residential (HR)*
- *Commercial (C)*
- *Mixed Use Corridor (MUC)*
- *Mixed Use Employment (MUE)*
- *Mixed Use Downtown (MUD)*
- *Industrial (I)*
- *Public and Quasi-Public (QP)*
- *Parks (P)*
- *Future Urban Holding (FUH)*

Comment: The cropped section from the Oregon City Comprehensive Plan Land Use Map below shows the designations applicable to the subject area (outlined in blue):

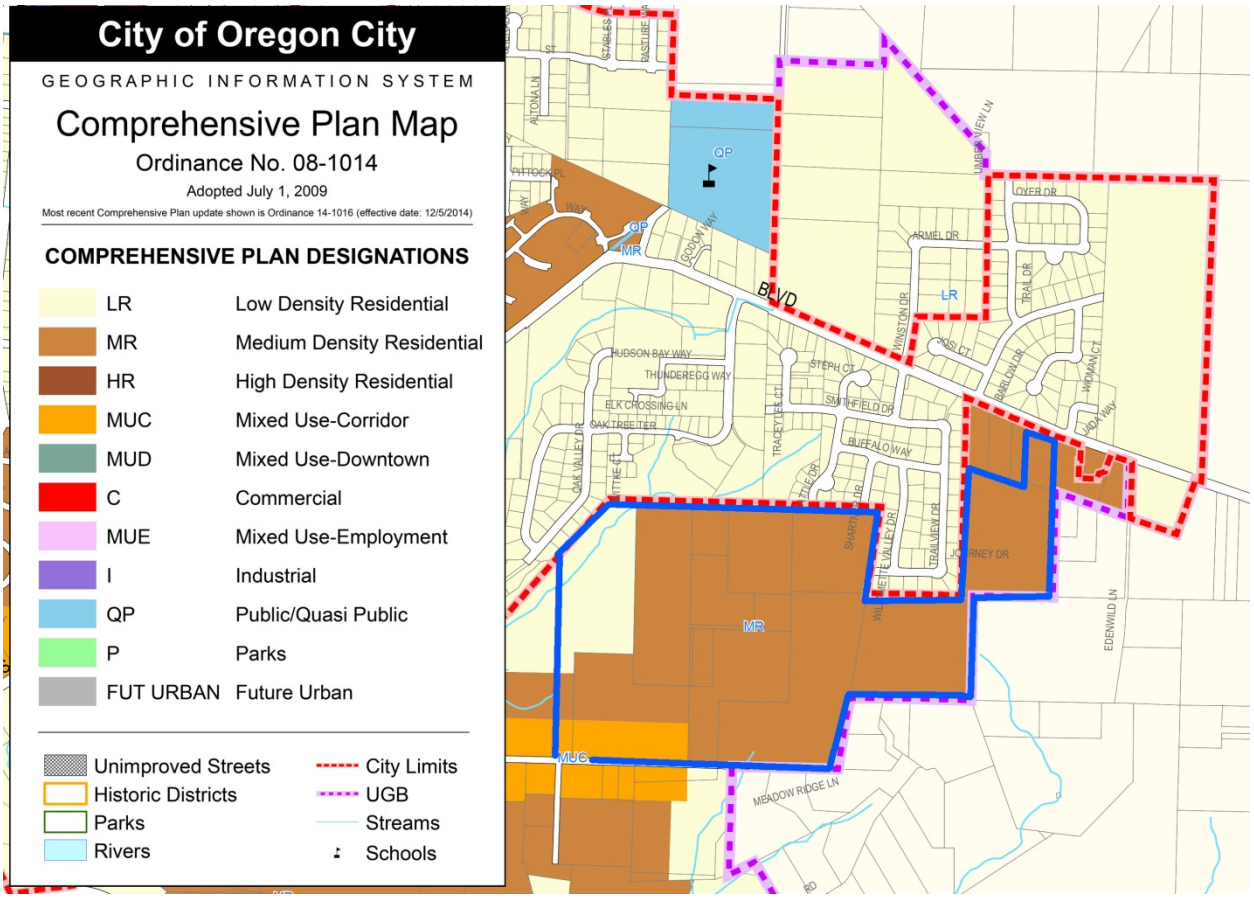


Figure 13: Comprehensive Plan Designations

The majority of the area is designated Medium Density Residential, which is implemented by the R-5 zone. There is a small area of Low Density Residential designation in the northwest corner of the annexation area. The R-10 through R-6 zones implement this designation, but R-10 is proposed. There is also a portion of the site that is designated Mixed Use-Corridor. The proposed zoning is consistent with the adopted comprehensive land use plan.

Goal 5: Open Spaces, Scenic and Historic Areas, and Natural Resources

Goal 5.1 – Open Space

Policy 5.1.1 *Conserve open space along creeks, urban drainage ways, steep hillsides, and throughout Newell Creek Canyon.*

Comment: There is one major drainageway in the northwest corner of the proposed annexation area and the top of a drainageway in the southeast corner. Consistent with this policy, at the time of development these areas will be retained as open space.

Policy 5.1.2 *Manage open space areas for their value in linking citizens and visitors with the natural environment, providing solace, exercise, scenic views and outdoor education. Built features in open space sites should harmonize with natural surroundings.*

Comment: Future open space areas will be provided at the time of development to assist in meeting this policy.

Goal 5.2 Scenic Views and Scenic Sites

Policy 5.2.1 *Identify and protect significant views of local and distant features such as Mt. Hood, the Cascade Mountains, the Clackamas River Valley, the Willamette River, Willamette Falls, the Tualatin Mountains, Newell Creek Canyon, and the skyline of the city of Portland, as viewed from within the city.*

Comment: The site is located on a hillside with some nice vistas. These will be considered in the development of the future master plan for this area.

Policy 5.2.2 *Maximize the visual compatibility and minimize the visual distraction of new structures or development within important viewsheds by establishing standards for landscaping, placement, height, mass, color, and window reflectivity.*

Comment: Not applicable to this annexation and zone change application and not directly applicable to the future development of this site. This policy is a guide to city action in developing standards to protect visual compatibility.

Goal 5.3 Historic Resources

Policy 5.3.3 Promote the designation of qualifying properties outside Historic and Conservation Districts as historic.

Comment: The applicants are not aware of any historic resources within the annexation area and none are identified in the Park Place Concept Plan or Oregon City Comprehensive Plan. The Oregon State Historic Preservation Office will be contacted during the development of the future master plan in order to determine if there are any significant archeological sites within the annexation area.

Policy 5.3.8 Preserve and accentuate historic resources as part of an urban environment that is being reshaped by new development projects.

Comment: The applicants are not aware of any historic resources within the annexation area.

Goal 5.4 Natural Resources

Policy 5.4.1 *Conserve and restore ecological structure, processes and functions within the city to closely approximate natural ecosystem structure, processes, and functions.*

Comment: During the development of the future master plan for the annexation area, care will be taken to identify any sensitive ecological areas within the site boundaries.

Policy 5.4.5 *Ensure that riparian corridors along streams and rivers are conserved and restored to provide maximum ecological value to aquatic and terrestrial species. This could include an aggressive tree and vegetation planting program to stabilize slopes, reduce erosion, and mitigate against invasive species and stream impacts where appropriate.*

Comment: The riparian corridors along the natural drainageways within the annexation boundary will be protected as open space.

Policy 5.4.9 *Protect and enhance riparian corridors along streams in Oregon City to increase shade, reduce streambank erosion and intrusion of sediments, and provide habitat for a variety of plants, animals, and fish.*

Comment: There are no streams within the annexation area, but there are seasonal drainageways with areas of sensitive steep slopes. These areas will be protected as open space in the future master plan.

Policy 5.4.12 *Use a watershed-scale assessment when reviewing and planning for the potential effects from development, whether private or public, on water quality and quantity entering streams.*

Comment: Consistent with this policy and City standards regarding storm water treatment and detention, during development of the future master plan the project engineer will look at the regional watershed in determining appropriate methods of handling storm drainage.

Policy 5.4.13 *Adopt and/or establish standards for all new development that promote the use of pervious surfaces and prevent negative ecological effects of urban stormwater runoff on streams, creeks and rivers.*

Comment: This policy is fully implemented by the City's adopted storm water management standards. The project engineer will comply with these standards during preparation of the future master plan for this area.

Policy 5.4.16 *Protect surfacewater quality by:*

- *providing a vegetated corridor to separate protected water features from development*
- *maintaining or reducing stream temperatures with vegetative shading*
- *minimizing erosion and nutrient and pollutant loading into water*
- *providing infiltration and natural water purification by percolation through soil and vegetation*

Comment: A vegetated corridor will be preserved in the future master plan along drainageways in the annexation area to accomplish the objectives of this policy.

Policy 5.4.18 *Encourage use of native and hardy plants such as trees, shrubs and groundcovers to maintain ecological function and reduce maintenance costs and chemical use.*

Comment: Not applicable to this application for annexation and zoning. Landscape plans for future commercial and/or multi-family development will be reviewed in accordance with adopted City standards that implement this policy.

Goal 6: Quality of Air, Water, and Land Resources

Goal 6.1 Air Quality

Policy 6.1.1 *Promote land-use patterns that reduce the need for distance travel by single occupancy vehicles and increase opportunities for walking, biking and/or transit to destinations such as places of employment, shopping and education.*

Comment: The future master plan will be designed with a system of interconnected streets and pathways that will satisfy this policy.

Goal 6.2 Water Quality

Policy 6.2.1 *Prevent erosion and restrict the discharge of sediments into surface- and groundwater by requiring erosion prevention measures and sediment control practices.*

Comment: Consistent with this policy and adopted City storm water standards, the future master plan for this project will include plans for erosion and sediment control to mitigate for site grading and other development activities.

Policy 6.2.2 *Where feasible, use open, naturally vegetated drainage ways to reduce stormwater and improve water quality.*

Comment: The natural drainageways and a vegetated corridor abutting them will be protected as open space in the future master plan for this area.

Goal 6.3 Nightlighting

Policy 6.3.2 *Encourage new developments to provide even and energy-efficient lighting that ensures safety and discourages vandalism. Encourage existing developments to retrofit when feasible.*

Comment: The future development of this site will employ street lighting consistent with City and PGE standards that satisfy this policy.

Goal 6.4 Noise

Policy 6.4.1 *Provide for noise abatement features such as sound-walls, soil berms, vegetation, and setbacks, to buffer neighborhoods from vehicular noise and industrial uses.*

Comment: There are no significant noise sources that impact this annexation site.

Goal 7: Natural Hazards

Policy 7.1.1 *Limit loss of life and damage to property from natural hazards by regulating or prohibiting development in areas of known or potential hazards.*

Comment: City GIS mapping of natural hazards shows a couple of small areas of mapped landslide hazards and other areas with steep slopes. These areas are associated with the drainageways on portions of the property. The majority of this area will be preserved as open spaces in the future master plan. Where development will occur in proximity to these areas, appropriate geotechnical studies will be performed to determine site stability.

Policy 7.1.8 *Provide standards in City Codes for planning, reviewing, and approving development in areas of potential landslides that will prevent or minimize potential landslides while allowing appropriate development.*

Comment: This policy is implemented in Chapter 17.44 – Geologic Hazards. The future master plan will address the standards of this chapter.

Policy 7.1.9 *Locate, design, and construct structures in conformance with current building codes and standards for seismic-resistant design.*

Comment: Not applicable to this application for annexation and zone change. All future structures to be built on this site will obtain required building permits that include provisions to address this policy.

Policy 7.1.11 *Prioritize roadways needed for public service, medical, and emergency vehicles during emergencies.*

Comment: The future connection of Holly Lane through to Redland Road will be provide a much-needed route connecting the Holcomb Blvd. area to medical, emergency and public services. At the present time access is limited to Holcomb Blvd. and, to a lesser degree, Forsythe Road. The future development of this site will aid in meeting this policy.

Goal 8: Parks and Recreation

Policy 8.1.1 *Provide an active neighborhood park-type facility and community park-type facility within a reasonable distance from residences, as defined by the Oregon City Park and Recreation Master Plan, to residents of Oregon City*

Comment: There are presently no parks within convenient walking distance of the annexation area. The future development of this site will provide for a community park, consistent with this policy and the Park Place Concept Plan.

Policy 8.1.5 *Identify and construct a network of off-street trails throughout the city for walking and jogging.*

Comment: The Park Place Concept Plan calls for a system of off-street trails through the proposed annexation area. The future master plan for this site will address this requirement.

Policy 8.1.6 *Provide land for specialized facilities such as sports fields and indoor recreational facilities.*

Comment: It is anticipated that the community park that will be developed on a portion of the annexation area will provide for sports fields.

Policy 8.1.9 *Emphasize retaining natural conditions and the natural environment in proposed passive recreation areas.*

Comment: The future master plan will provide open spaces associated with the drainageway areas within the annexation area and these will be preserved in their natural condition.

Policy 8.1.12 *Identify and protect land for parks and recreation within the Urban Growth Boundary.*

Comment: The Park Place Concept Plan calls for a community park that is mostly within the proposed annexation area. The future master plan for this site will address this requirement.

Policy 8.1.14 *Require or encourage developers to dedicate park sites as part of the subdivision review process. When possible, require or encourage developers to build parks to City standards and give them to the City to operate and maintain.*

Comment: The future master plan will provide for the dedication of a community park consistent with this policy and other City standards.

Goal 10: Housing

Policy 10.1.1 *Maintain the existing residential housing stock in established older neighborhoods by maintaining existing Comprehensive Plan and zoning designations where appropriate.*

Comment: Not applicable. The subject property is not located within an established older neighborhood. There are a few homes on large acreage tracts and most of these will be removed to allow for redevelopment.

Policy 10.1.3 *Designate residential land for a balanced variety of densities and types of housing, such as single-family attached and detached, and a range of multi-family densities and types, including mixed-use development.*

Comment: The North Village Plan within the Park Place Concept Plan calls for a mixture of housing types and densities, as well as neighborhood commercial and institutional uses within the annexation area. The future master plan will implement these land uses.

Policy 10.1.4 *Aim to reduce the isolation of income groups within communities by encouraging diversity in housing types within neighborhoods consistent with the Clackamas County Consolidated Plan, while ensuring that needed affordable housing is provided.*

Comment: The Park Place Concept Plan calls for a variety of types of housing that will help in addressing this policy.

Policy 10.1.7 *Use a combination of incentives and development standards to promote and encourage well-designed single-family subdivisions and multi-family developments that result in neighborhood livability and stability.*

Comment: The City has adopted design standards in Chapter 17.21 that implement this policy. The future development will conform to these standards.

Policy 10.2.2 *Allow increases in residential density (density bonuses) for housing development that would be affordable to Oregon City residents earning less than 50 percent of the median income for Oregon City.*

Comment: Not directly applicable to this application or the future master plan.

Goal 11: Public Facilities

Policy 11.1.1 *Ensure adequate public funding for the following public facilities and services, if feasible: Transportation infrastructure • Wastewater collection • Stormwater management • Police protection • Fire protection • Parks and recreation • Water distribution • Planning, zoning and subdivision regulation • Library services • Aquatic Center • Carnegie Center • Pioneer Community Center • City Hall • Buena Vista House • Ermatinger House*

Comment: Not applicable to this application for annexation and zone change.

Policy 11.1.2 *Provide public facilities and services consistent with the goals, policies and implementing measures of the Comprehensive Plan, if feasible.*

Comment: As discussed above in this application, public facilities and services are available or will be provided concurrently with future development of this site to allow development consistent with this policy.

Policy 11.1.3 *Confine urban public facilities and services to the city limits except where allowed for safety and health reasons in accordance with state land-use planning goals and regulations. Facilities that serve the public will be centrally located and accessible, preferably by multiple modes of transportation.*

Comment: The proposed future development of this site will occur only after annexation to the City of Oregon City. Although sanitary sewer from Redland Road will have to pass through unincorporated areas, no service connections will be provided to areas outside of the city limits in conjunction with the development of this site.

Policy 11.1.5 *Design the extension or improvement of any major public facility and service to an area to complement other public facilities and services at uniform levels.*

Comment: Public services will be provided in accordance with adopted plans and standards that conform to this policy.

Policy 11.1.6 *Enhance efficient use of existing public facilities and services by encouraging development at maximum levels permitted in the Comprehensive Plan, implementing minimum residential densities, and adopting an Accessory Dwelling Unit Ordinance to infill vacant land.*

Comment: The future development of this site will be at densities planned in the Park Place Concept Plan. This development will be dense enough to make efficient use of existing and planned public facilities and services.

Policy 11.2.4 *Seek economical means to reduce inflow and infiltration of surface- and groundwater into the wastewater collection system. As appropriate, plant riparian vegetation to slow stormwater, and to reduce erosion and stream sedimentation.*

Comment: The sanitary sewer system that will serve the future development of this site will be installed in accordance with City standards and will be pressure tested to ensure that surface and ground waters do not enter the system. Storm water will be collected via a storm sewer system that will drain to storm water treatment and detention facilities that will be designed to City standards that include measures to slow stormwater to reduce erosion and stream sedimentation.

Policy 11.3.3 *Maintain adequate reservoir capacity to provide all equalization, operational, emergency, and fire flow storage required for the City's distribution system.*

Comment: Information provided at the pre-application conference indicates that the City and Clackamas River Water District have adequate water storage capacity to service the proposed annexation area.

Policy 11.4.1 *Plan, operate, and maintain the stormwater management system for all current and anticipated city residents within Oregon City's existing Urban Growth Boundary and plan strategically for future expansion areas.*

Comment: The future master plan will provide for a stormwater management system that conforms to City standards.

Policy 11.4.2 *Adopt "green streets" standards to reduce the amount of impervious surface and increase the use of bioswales for stormwater retention where practicable.*

Comment: The City has adopted standards for Low Impact Development streets that implement this policy. Where appropriate grades exist, the future master plan can employ these standards to provide for stormwater management consistent with this policy.

Policy 11.4.4 *Maintain existing drainageways in a natural state for maximum water quality, water resource preservation, and aesthetic benefits.*

Comment: The existing drainageway areas within the annexation area will be maintained as natural open spaces in the future master plan, in accordance with this policy.

Policy 11.4.5 *Design stormwater facilities to discharge surface water at pre-development rates and enhance stormwater quality in accordance with criteria in City of Oregon City Public Works Stormwater and Grading Design Standards.*

Comment: This policy is implemented by the City's stormwater standards. The future master plan will be designed to conform to these standards.

Goal 12: Transportation

Policy 12.1.1 *Maintain and enhance citywide transportation functionality by emphasizing multi-modal travel options for all types of land uses.*

Comment: The future development of this site will provide for a connected system of roadways and pathways that will provide for multi-modal forms of travel.

Policy 12.1.2 *Continue to develop corridor plans for the major arterials in Oregon City, and provide for appropriate land uses in and adjacent to those corridors to optimize the land use-transportation connection.*

Comment: The future master plan will provide for the extension of Holly Lane, consistent with the Park Place Concept Plan and this policy.

Policy 12.1.3 *Support mixed uses with higher residential densities in transportation corridors and include a consideration of financial and regulatory incentives to upgrade existing buildings and transportation systems.*

Comment: Not applicable. The subject property is not located in a transportation corridor.

Policy 12.1.4 *Provide walkable neighborhoods. They are desirable places to live, work, learn and play, and therefore a key component of smart growth.*

Comment: The future master plan will include a network of sidewalks and pathways that will provide for a walkable neighborhood with access to residential, commercial, parks and natural open space areas.

Policy 12.3.1 *Provide an interconnected and accessible street system that minimizes vehicle-miles-traveled and inappropriate neighborhood cut-through traffic.*

Comment: The future master plan will be designed with a network of interconnected streets. Primary access through the neighborhood will be via Holly Lane, which will discourage neighborhood cut-through traffic.

Policy 12.3.2 *Provide an interconnected and accessible pedestrian system that links residential areas with major pedestrian generators such as employment centers, public facilities, and recreational areas.*

Comment: There are no employment centers in the vicinity of the subject property, but the future master plan will provide for pedestrian connectivity to both parks and open space recreational areas.

Policy 12.3.3 *Provide a well-defined and accessible bicycle network that links residential areas, major bicycle generators, employment centers, recreational areas, and the arterial and collector roadway network.*

Comment: The future master plan will include a bicycle lane on Holly Lane, bicycle/pedestrian trails, as well as a network of bicycle-friendly local streets.

Policy 12.3.4 *Ensure the adequacy of pedestrian and bicycle connections to local, county, and regional trails.*

Comment: The future master plan will provide for connections to planned trails depicted in the Park Place Concept Plan.

Policy 12.3.5 *Promote and encourage a public transit system that ensures efficient accessibility, mobility, and interconnectivity between travel modes for all residents of Oregon City.*

Comment: There is presently no bus service in the vicinity of the subject property. The completion of the Holly Lane north extension may provide for a logical bus route in this area in the future.

Policy 12.3.6 *Establish a truck route network that ensures efficient access and mobility to commercial and industrial areas while minimizing adverse residential impacts.*

Comment: Not applicable. There are no commercial or industrial areas in the vicinity of the subject property.

Policy 12.6.1 *Provide a transportation system that serves existing and projected travel demand.*

Comment: Please refer to the Lancaster Engineering traffic study included with this application.

Policy 12.6.2 *Identify transportation system improvements that mitigate existing and projected areas of congestion.*

Comment: The future completion of the Holly Lane north extension will provide for another access route from the Holcomb area that will be consistent with this policy.

Policy 12.6.3 *Ensure the adequacy of travel mode options and travel routes (parallel systems) in areas of congestion.*

Comment: The future completion of the Holly Lane north extension will provide for another access route from the Holcomb area that will be consistent with this policy.

Policy 12.6.4 *Identify and prioritize improved connectivity throughout the city street system.*

Comment: The future master plan will be designed to provide connectivity consistent with this policy.

Goal 13 – Energy

Policy 13.1.2 *Encourage siting and construction of new development to take advantage of solar energy, minimize energy usage, and maximize opportunities for public transit.*

Comment: The subject property is located on a south-facing hill that will afford opportunities in the design of the future master plan for taking advantage of solar energy. A network of connected neighborhood streets will also be consistent with this policy.

Policy 13.2.1 *Promote mixed-use development, increased densities near activity centers, and home-based occupations (where appropriate).*

Comment: The Park Place Concept Plan proposes a mixed-use development pattern for the north village area that will include commercial, recreational and institutional uses, as well as a variety of residential types. The densities proposed in the Park Place Concept Plan are higher than other areas of the City, which is consistent with this policy.

Policy 13.2.2 *Create commercial nodes in neighborhoods that are underserved to reduce vehicle miles traveled.*

Comment: The Park Place Concept Plan includes the provision of a small amount of neighborhood commercial development near Livesay Road, which is consistent with this policy.

Policy 13.2.3 *Plan for complementary mixed uses when considering annexation of new, under- or undeveloped areas so that new urban residential areas have closer access to jobs and services.*

Comment: The Park Place Concept Plan includes some neighborhood commercial development that will provide for some commercial services in the neighborhood, consistent with this policy.

Goal 14.3 Orderly Provision of Services to Growth Areas

Plan for public services to lands within the Urban Growth Boundary through adoption of a concept plan and related Capital Improvement Program, as amendments to the Comprehensive Plan.

Policy 14.3.1
Maximize new public facilities and services by encouraging new development within the Urban Growth Boundary at maximum densities allowed by the Comprehensive Plan.

Comment: The proposed zoning is consistent with the adopted and acknowledged Oregon City Comprehensive Plan Map. A condition of approval will temporarily prohibit urban-density development due to on-going traffic policy considerations. At such time as the Alternative

Mobility standards are adopted and the requirements of Article 12 can be met, development will take place at densities consistent with the Park Place Concept Plan and the City's Comprehensive Plan. The proposed development will be reviewed for compliance with maximum and minimum density standards at the time of application for subdivision approval.

Policy 14.3.2
Ensure that the extension of new services does not diminish the delivery of those same services to existing areas and residents in the city.

Comment: As discussed above in this report, all required urban services will be available to serve this property concurrently with its future development. The City's Public Facilities Plan and Transportation Systems Plan will ensure that there are adequate supplies of services so that services to existing areas and residents in the city are not diminished.

Policy 14.3.3
Oppose the formation of new urban services districts and oppose the formation of new utility districts that may conflict with efficient delivery of city utilities within the Urban Growth Boundary.

Comment: Not applicable. No new urban services or utility districts are proposed. Services will be provided by the City of Oregon City, with the exception of any water services that may be appropriate to be provided by Clackamas River Water District pursuant to an agreement between the City and Water District.

Policy 14.3.4
Ensure the cost of providing new public services and improvements to existing public services resulting from new development are borne by the entity responsible for the new development to the maximum extent allowed under state law for Systems Development Charges.

Comment: All utilities that will be provided to serve the future development of this site will be the responsibility of the developer. The future homes to be built on this property will pay required Systems Development Charges at the time of application for building permits.

Goal 14.4 – Annexation of Lands to the city

Annex lands to the city through a process that considers the effects on public services and the benefits to the city as a whole and ensures that development within the annexed area is consistent with the Oregon City Comprehensive Plan, City ordinances, and the City Charter.

Policy 14.4.1
Promote compact urban form and support efficient delivery of public services by ensuring that lands to be annexed are within the City's Urban Growth Boundary, and contiguous with the city limits. Do not consider long linear extensions, such as cherry stems and flag lots, to be contiguous with the city limits.

Comment: The subject property is entirely within the City's Urban Growth Boundary and is contiguous with the existing city limits along its entire northern border and its frontage on Holcomb Blvd.

Policy 14.4.2
Include an assessment of the fiscal impacts of providing public services to unincorporated areas upon annexation, including the costs and benefits to the city as a whole as a requirement for concept plans.

Comment: The proposed annexation will have no immediate fiscal impacts upon the cost of providing public services because no development will be allowed until such time as transportation planning issues are resolved. The City's Public Facilities Plan and Transportation System Plan anticipate the future development of the subject property at densities consistent with the Comprehensive Plan and provide an analysis of the costs of providing adequate levels of services in this area of the city. The future development of this property will contribute to these costs by providing on-site infrastructure, as well as potential off-site sanitary sewer improvements, at the cost of the developer. Each home will be assessed appropriate System Development Charges to cover the proportionate impact of the future development of this site.

Policy 14.4.3

Comment: Creation of an island does not violate an applicable, mandatory Oregon City Comprehensive Plan policy. Oregon City Comprehensive Plan Policy 14.4.3 provides in its entirety:

> **"Evaluate and in some instances require that parcels adjacent to proposed annexations be included to:**
>
> - **avoid creating unincorporated islands within the city;**
> - **enable public services to be efficiently and cost-effectively extended to the entire area; or**
> - **implement a concept plan or sub-area master plan that has been approved by the Planning and City Commissions."**

Comprehensive Plan Policy 14.4.3 is an aspirational policy and not a mandatory policy. *Spiering v. Yamhill County*, 25 Or LUBA 695 (1993) (Aspirational comprehensive plan goals are not mandatory approval criteria). Had the City Commission wanted to prohibit the creation of islands, it would have used the word "shall", which is mandatory. *See Terra v. City of Newport*, 36 Or LUBA 582 (1999) (the word "shall in a comprehensive plan policy makes the policy a mandatory approval criteria). Moreover, nothing in ORS Chapter 222, or Metro Chapter 3.09 governing annexations, prohibits creation of an island. The Planning Commission can find that the creation of an island is not relevant to a mandatory approval standard.

The annexation area is contiguous to the existing city limits along its northern boundary. The proposed annexation will create a small unincorporated island within the city. The island area is

shown in pink on the map below. The owners of three parcels along Holcomb Blvd., Tax Lots 22E27B 600, 800 & 900, were contacted, but preferred not to join the annexation proposal at this time.

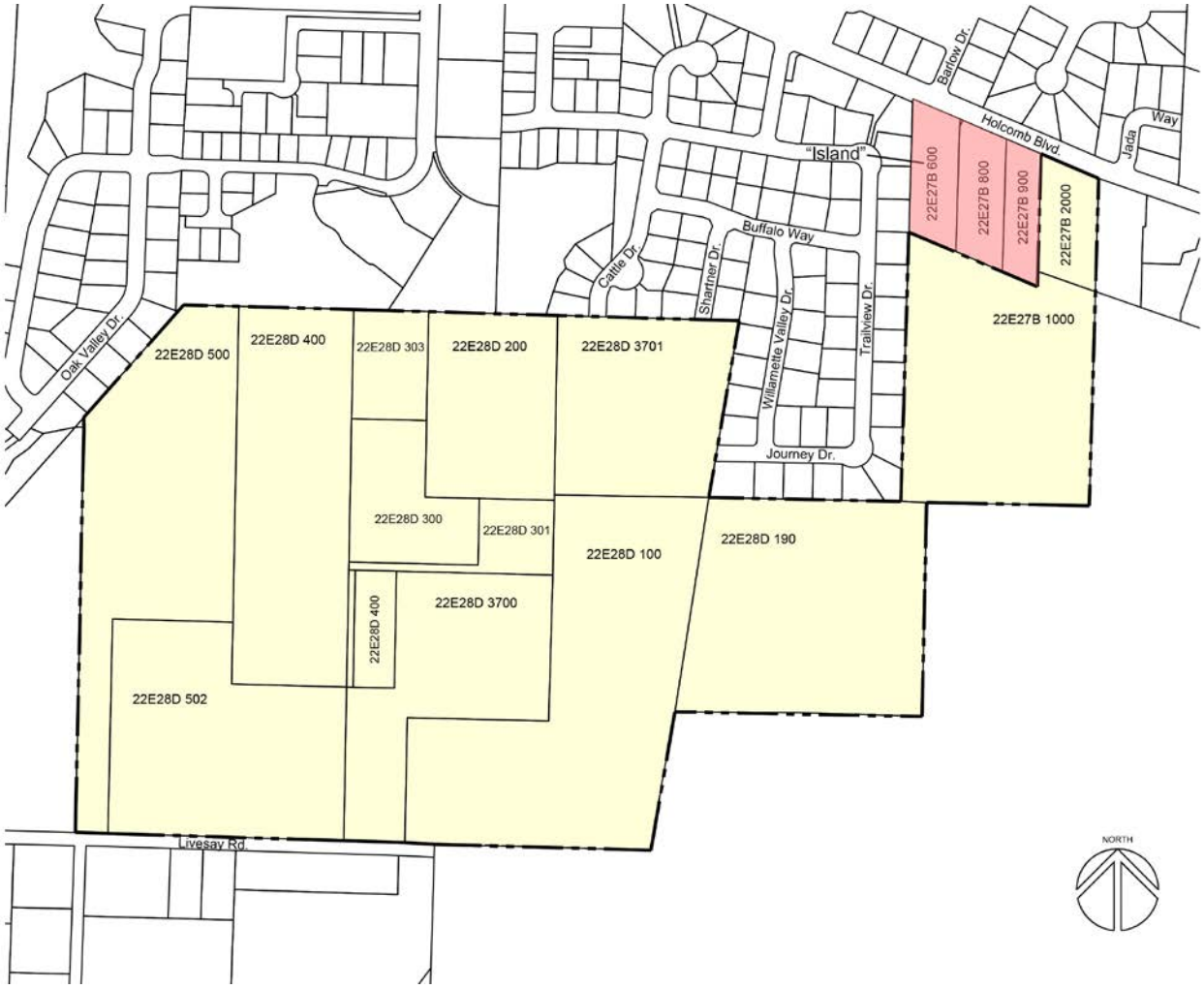


Figure 14: Annexation Area and Island

It is important to note that although this policy discourages island formation, it does not preclude them and they may be allowed when it is otherwise reasonable to do so. In fact implementing submittal language listed in OCMC 14.050.C3 clearly envisions that proposals may create islands in that it requires that public notification mailing labels include those property owners that will be "islanded" by the annexation proposal.

The language of this policy calls for an evaluation of whether the creation of an island, by itself or in conjunction with the other listed factors, would be sufficiently problematic that the annexation proposal must be altered to include the area of the potential island. The island itself is not problematic for the City in any significant way. It is small in size at 3.7 acres, and involves only three properties. All of these properties are developed with single-family homes. The island would only be separated from other unincorporated land by approximately 180 feet along Holcomb Blvd. No further development of these properties would be allowed until such time as

they are annexed to the City in the future. Rising land values and the provision of urban services to these properties are likely to bring an incentive for future development that will result in the voluntary annexation of these properties.

The creation of this island will have no impact upon the efficient provision of public services. Storm sewer and sanitary sewer drain to the south, away from the island area, and will be provided with the development of the annexation area. Holcomb Blvd. along the frontage of these properties is entirely within the city limits and access to water service is available in that right-of-way. While there will be a need for additional right-of-way to be dedicated from the islanded properties in order for Holcomb Blvd. to be developed to full City arterial standards. Such dedication and improvement of the road will likely not occur until such time as the owners of these properties choose to annex and develop their land. On the other hand, should the City desire to make these improvements on its own, the creation of an island at this time would have no impact on the City's ability to do so. It has the ability to annex islanded properties on its own motion and to acquire needed right-of-way either by purchase or by condemnation.

The inclusion of the island area in the annexation proposal is not needed to implement a concept plan or sub-area master plan that has been approved by the Planning and City Commissions. The three properties that would be islanded in this proposal are not a part of the Park Place Concept Plan or any other sub-area master plan.

Policy 14.4.4
Expedite the annexation of property as provided by state law in order to provide sewer service to adjacent unincorporated properties when a public health hazard is created by a failing septic tank sewage system.

Comment: Not applicable. The subject property is not subject to a public health hazard associated with a failing septic system.

Park Place Concept Plan

With the exception of 1.45 acres that fronts on Holcomb Blvd. (Tax Lot 22E27B 02000), all of the subject property lies within the boundaries of the Park Place Concept Plan. The proposed annexation and concurrent zone change are a first step towards implementing this plan.

The Park Place Concept Plan's Figure 3-2 "North Village Neighborhood", bears a note stating, "This map is for concept planning purposes only. The specific locations of natural resource boundaries, open space, parks, land uses, roads, trail, infrastructure and related improvements may change and is subject to on-site verification and design at the time of development." The Park Place Concept Plan is an ancillary document to the City's Comprehensive Plan. However, designations depicted on the Oregon City Comprehensive Plan Map, as adopted by Ordinance No. 08-1014, are authoritative for purposes of the requested zone change in conjunction with annexation of this property. It is understood that a future zone change/comprehensive plan map amendment application will be necessary at the time of preparation of the future master plan in order to implement the general conceptual design called for by the North Village Plan.

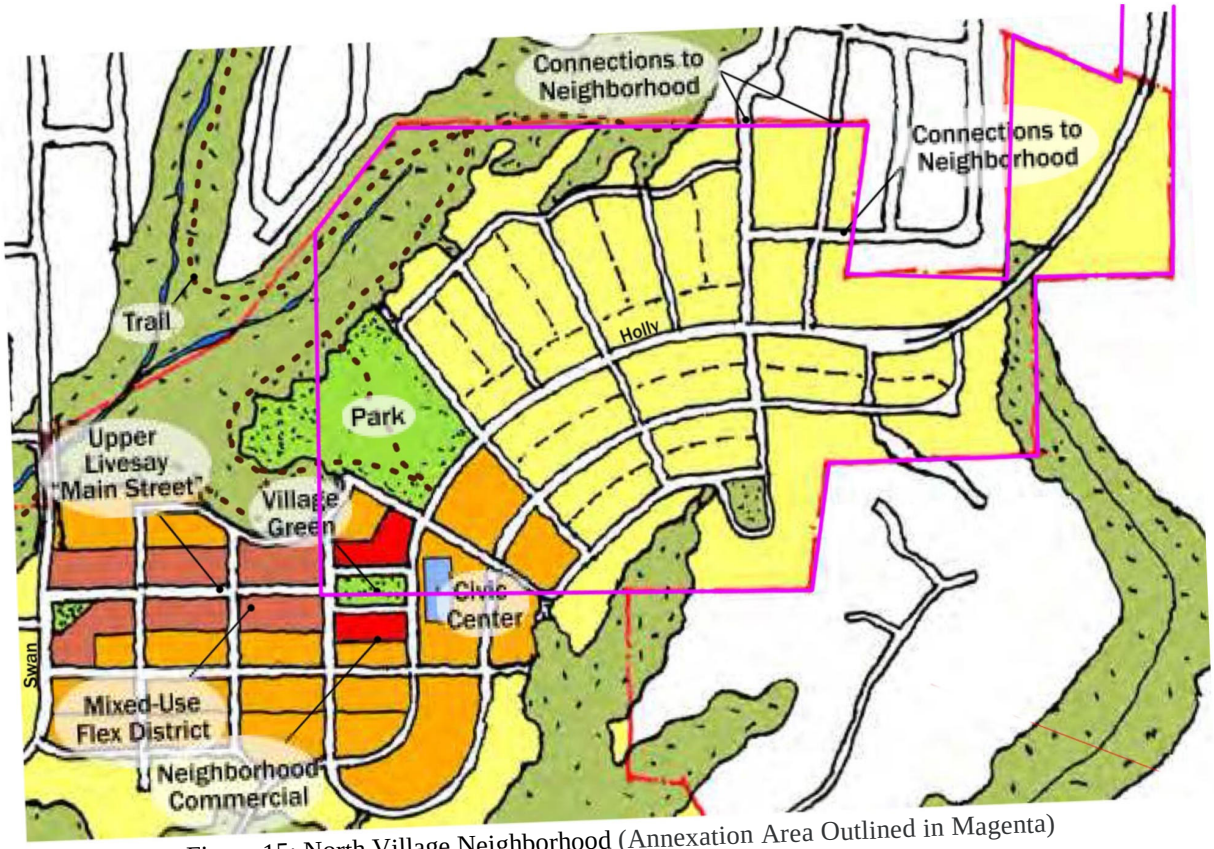


Figure 15: North Village Neighborhood (Annexation Area Outlined in Magenta)

The plan for the North Village area includes commercial development along a new main street along Upper Livesay Road. This area is shown in red on the map above and impacts a small area of the subject property. The orange color depicts Medium/High-Density Residential (R-3.5, minimum 9 units/acre) which would likely be developed with a mix of townhouse and duplex units. The yellow area is planned for Low/Medium-Density Residential (proposed R-5, minimum 6 units/acre) that would be a mix of single-family detached and single-family attached dwellings. A community park is also called for in the Plan. A collector road called the Holly Lane north extension would provide a roadway corridor tying Holcomb Blvd. through to Redland Road, which would be a significant improvement for the Park Place neighborhood that presently is restricted to the Holcomb Blvd. corridor for access.

The key components of the Park Place Concept Plan are listed on page 1 of that document:

- Two primary north-south connections between Holcomb Boulevard and Redland Road (Swan Avenue and Holly Lane)
- Two distinct mixed-use neighborhoods (North Village and South Village) that accommodate 1,459 new dwelling units
- Neighborhood-oriented commercial nodes that integrate commercial land uses, residential land uses, and public open space
- An area for a new civic institution, like a library or community center
- An 8-10 acre community park and a 3-5 acre neighborhood park
- A mix of housing types and ranges of affordability
- An extensive system of off-street and on-street trails and pedestrian/bicycle connections

- Innovative, green on-site stormwater treatment methods
- Protected sensitive areas, including drainages and steep slopes
- Streets and buildings oriented for solar access
- The use of green edges to define neighborhoods and buffer developments
- Integration of parks and open spaces into existing and future neighborhoods

The subject property includes part of the Holly Lane north extension, but is not involved in the Swan Avenue connection. The area of the annexation site along Livesay Road includes neighborhood commercial development, some of the civic institution uses and a major portion of the planned community park. As shown on the North Village Neighborhood plan, there are areas of sensitive land associated with drainageways that will need to be protected as open space. The plan will also include trails that will tie open spaces to residential and commercial components.

The present application involves only the annexation and application of the zoning that is consistent with the adopted Comprehensive Plan Map. It is not appropriate to discuss the goals and policies of the Park Place Community Plan in detail at this early stage. The future zone change and development applications will be reviewed for compliance with all relevant goals and objectives of the Park Place Concept Plan at such time as those applications are submitted.

CERTIFICATION OF LEGAL DESCRIPTION AND MAP

I hereby certify that the description of the property included within the attached petition (located on Assessor's Map 22E28D, 22E27B) has been checked by me and it is a true and exact description of the property under consideration, and the description corresponds to the attached map indicating the property under consideration.

NAME Amber Staley

TITLE Cartographer II

DEPARTMENT Assessment & Taxation

COUNTY OF Clackamas

DATE 9/8/16

CENTERLINE CONCEPTS
LAND SURVEYING, INC.

SEP 2016
RECEIVED
CLACKAMAS
COUNTY
ASSESSOR

Exhibit "A"
Annexation
Legal Description (Page 1 of 3)

A Tract of land being all of the Tracts of land described in the following Document Numbers: 2013-045391, 84-04898, 2008-082067, 2015-013359, 2015-063896, 2014-020739, 2015-065124, 94-049182, 86-50150, 2003-086776, 2014-013360, and 89-38723 Clackamas County Deed Records, located in the Northwest one-quarter of Section 27 and the Southeast one-quarter and the Northeast one-quarter of Section 28, Township 2 South, Range 2 East of the Willamette Meridian, County of Clackamas, State of Oregon, being more particularly described as follows:

BEGINNING at the Southwest corner of the Plat of "Trailview", Clackamas County Plat Record, being coincident with the Northwest corner of that Tract of land described in Deed Document Number 2013-045391, Clackamas County Deed Records; thence along the North line of said Document Number 2013-045391, being coincident with the South line of said "Trailview", N90°00'00"E, 589.00 feet more or less to the Southwest corner of that Tract of land described in Deed Document Number 2014-013360, Clackamas County Deed Records; thence along the West line of said Document Number 2014-013360, being coincident with the East line of said "Trailview", N00°02'00"E, 832.00 feet to the Northwest corner of said Document Number 2014-013360; thence along the North line of said Document Number 2014-013360, being coincident with the South line of those Tract of land described in Deed Document Numbers 94-049182, 86-50150, and 2003-086776, Clackamas County Deed Records, S68°15'00"E, 430.77 feet to the Southeast corner of said Document Number 2003-086776; thence along the East line of said Document Number 2003-086776, being coincident with the West line of that Tract of land described in Deed Document Number 2014-020739, Clackamas County Deed Records, N00°02'00"E, 435.00 feet to the centerline of Holcomb Boulevard; thence along the centerline of said Holcomb Boulevard, S68°15'00"E, 192.68 feet to the East line of said Document Number 2014-020739; thence along said East line, and continuing along the East line of said Document Number 2014-013360, S00°02'00"W, 1030.30 feet to the South line of said Document Number 2014-013360, being coincident with the East and West centerline of Section 27; thence along said South line, being coincident with said East and West Section line, N90°00'00"W, 508.20 feet more or less to the Quarter Section corner between Sections 27 and 28; thence along the East line of that Tract of land described in Deed Document Number 2013-045391, Clackamas County Deed Records, being coincident with the Section line between said Section 27 and 28, S00°00'00"E, 659.60 feet more or less to the Southeast corner of said Document Number 2013-045391; thence along the South line of said Document Number 2013-045391, S90°00'00"W,

CENTERLINE CONCEPTS
LAND SURVEYING, INC.

Exhibit "A"
Annexation
Legal Description (Page 2 of 3)

751.91 feet more or less to the East line of that Tract of land described in Deed Document Number 2013-045391, Clackamas County Deed Records, being coincident with the East line of the George Abernethy Donation Land Claim Number 58; thence along the East line of said Deed Document Number 2013-045391, being coincident with the East line of the George Abernethy Donation Land Claim Number 58, S08°00'00"W, 462.00 feet more or less to the South line of said Document Number 2013-045391; thence along said South line, and the South line of the Tracts of land described in Deed Document Numbers 2015-063896, 2011-063635 and 2015-013359, Clackamas County Deed Records, being coincident with the North line of "Meadow Ridge Estates", Clackamas County Plat Records, and the North right of way line of Livesay Road, being 20.00 feet North of centerline when measure at right angles, N90°00'00"W, 1946.57 feet more or less to the Southwest corner of that Tract of land described in Deed Document Number 2015-013359, Clackamas County Deed Records; thence along the West line of said Document Number 2015-013359, N00°00'00"E, 1350.12 feet more or less to the Northeast corner of that Tract of land described in Deed Document Number 2013-005499, Clackamas County Deed Records; thence along the North line of said Document Number 2013-005499, S90°00'00"W, 27.06 feet to the most Easterly corner of said Document Number 2015-013359, being coincident with the Southeasterly line of "Holcomb Ridge Estates No. 2", Clackamas County Plat Records; thence along the Northwesterly line of said Document Number 2015-013359, and the Southeasterly line of said "Holcomb Ridge Estates No. 2", N58°00'00"E, 590.45 feet to the North line of said Document Number 2015-013359, being coincident with the South line of "Wittke Estates", Clackamas County Plat Records; thence along the North line of said Document Number 2015-013359, and the North line of the Tracts of land described in Deed Document Numbers 2008-2067, 84-04898, 89-38723, and 2015-065124, Clackamas County Deed Records, being coincident with the South line of said "Wittke Estates", and the South line of "Tracey Heights" and "Wasko Acres", Clackamas County Plat Records, N90°00'00"E, 1706.62 feet more or less to the East line of said Document Number 2015-065124, being coincident with

CENTERLINE CONCEPTS
LAND SURVEYING, INC.

Exhibit "A"
Annexation
Legal Description (Page 3 of 3)

the East line of the George Abernethy Donation Land Claim Number 58, and the West line of said "Trail View"; thence along the East line of said Document Number 2015-065124, being coincident with a the East line of the George Abernethy Donation Land Claim Number 58, and the West line of said "Trail View", S08°00'00"W, 557.00 feet more or less to the ***POINT OF BEGINNING.***

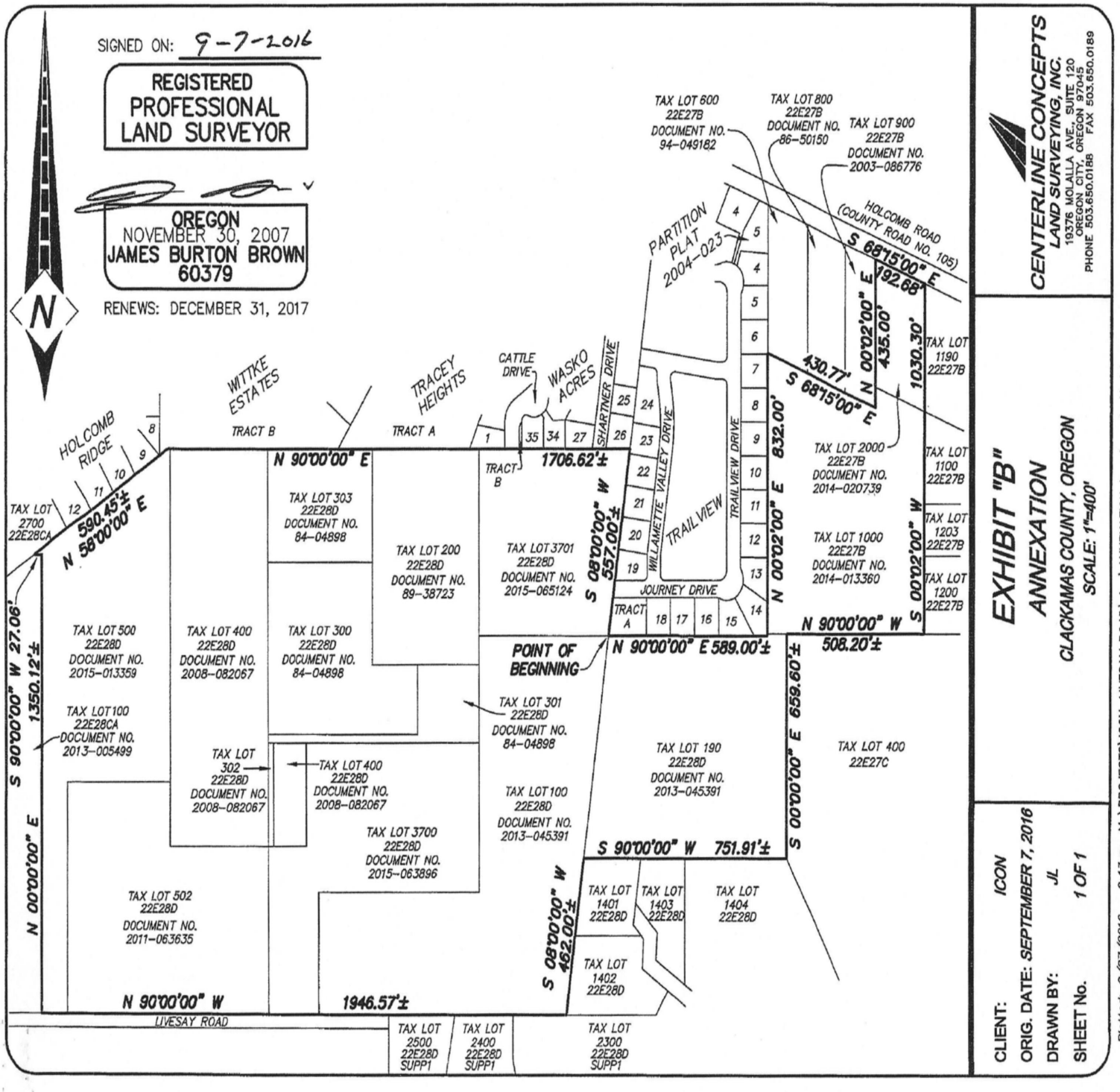
Contains 99 acres more or less.

SIGNED ON: 9-7-2016

REGISTERED
PROFESSIONAL
LAND SURVEYOR

OREGON
NOVEMBER 30, 2007
JAMES BURTON BROWN
60379

VALID THROUGH DECEMBER 31, 2017


SIGNED ON: 9-7-2016
REGISTERED PROFESSIONAL LAND SURVEYOR
OREGON
NOVEMBER 30, 2007
JAMES BURTON BROWN
60379
RENEWS: DECEMBER 31, 2017
N
CENTERLINE CONCEPTS
LAND SURVEYING, INC.
19376 MOLALLA AVE., SUITE 120
OREGON CITY, OREGON 97045
PHONE 503.650.0188 FAX 503.650.0189
EXHIBIT "B"
ANNEXATION
CLACKAMAS COUNTY, OREGON
SCALE: 1"=400'
CLIENT: ICON
ORIG. DATE: SEPTEMBER 7, 2016
DRAWN BY: JL
SHEET No. 1 OF 1
Plotted: 9/07/2016 - 9:13am, M:\PROJECTS\ICON-LIVESAY ROAD\dwg\ANNEXATION.dwg, Layout: Model
TAX LOT 600 22E27B DOCUMENT NO. 94-049182
TAX LOT 800 22E27B DOCUMENT NO. 86-50150
TAX LOT 900 22E27B DOCUMENT NO. 2003-086776
HOLCOMB ROAD (COUNTY ROAD NO. 105)
S 68°15'00" E 192.68'
PARTITION PLAT 2004-023
N 00°02'00" E 435.00'
1030.30'
TAX LOT 1190 22E27B
430.77'
S 68°15'00" E
N 00°02'00" E 832.00'
TAX LOT 2000 22E27B DOCUMENT NO. 2014-020739
TAX LOT 1100 22E27B
TAX LOT 1203 22E27B
TAX LOT 1200 22E27B
S 00°02'00" W
TAX LOT 1000 22E27B DOCUMENT NO. 2014-013360
N 90°00'00" W 508.20'±
WITTKE ESTATES
TRACT B
TRACEY HEIGHTS
TRACT A
CATTLE DRIVE
WASKO ACRES
SHARTNER DRIVE
WILLAMETTE VALLEY DRIVE
TRAILVIEW DRIVE
TRAIL VIEW
JOURNEY DRIVE
HOLCOMB RIDGE
TAX LOT 2700 22E28CA
N 58°00'00" E 590.45'±
N 90°00'00" E
1706.62'±
TRACT B
TRACT A
S 08°00'00" W 557.00'±
TAX LOT 303 22E28D DOCUMENT NO. 84-04898
TAX LOT 200 22E28D DOCUMENT NO. 89-38723
TAX LOT 3701 22E28D DOCUMENT NO. 2015-065124
TAX LOT 500 22E28D DOCUMENT NO. 2015-013359
TAX LOT 400 22E28D DOCUMENT NO. 2008-082067
TAX LOT 300 22E28D DOCUMENT NO. 84-04898
POINT OF BEGINNING
N 90°00'00" E 589.00'±
S 90°00'00" W 27.06'
1350.12'±
TAX LOT 100 22E28CA DOCUMENT NO. 2013-005499
TAX LOT 301 22E28D DOCUMENT NO. 84-04898
TAX LOT 190 22E28D DOCUMENT NO. 2013-045391
TAX LOT 400 22E27C
S 00°00'00" E 659.60'±
TAX LOT 302 22E28D DOCUMENT NO. 2008-082067
TAX LOT 400 22E28D DOCUMENT NO. 2008-082067
TAX LOT 100 22E28D DOCUMENT NO. 2013-045391
TAX LOT 3700 22E28D DOCUMENT NO. 2015-063896
S 90°00'00" W 751.91'±
N 00°00'00" E
TAX LOT 502 22E28D DOCUMENT NO. 2011-063635
S 08°00'00" W 462.00'±
TAX LOT 1401 22E28D
TAX LOT 1403 22E28D
TAX LOT 1404 22E28D
TAX LOT 1402 22E28D
N 90°00'00" W
1946.57'±
LIVESAY ROAD
TAX LOT 2500 22E28D SUPP1
TAX LOT 2400 22E28D SUPP1
TAX LOT 2300 22E28D SUPP1

CERTIFICATION OF LEGAL DESCRIPTION AND MAP

I hereby certify that the description of the property included within the attached petition (located on Assessor's Map 22E28D, 22E27B) has been checked by me and it is a true and exact description of the property under consideration, and the description corresponds to the attached map indicating the property under consideration.

NAME Amber Staley

TITLE Cartographer II

DEPARTMENT Assessment & Taxation

COUNTY OF Clackamas

DATE 9/8/16

CENTERLINE CONCEPTS
LAND SURVEYING, INC.

SEP 2016
RECEIVED
CLACKAMAS
COUNTY
ASSESSOR

Exhibit "A"
Annexation
Legal Description (Page 1 of 3)

A Tract of land being all of the Tracts of land described in the following Document Numbers: 2013-045391, 84-04898, 2008-082067, 2015-013359, 2015-063896, 2014-020739, 2015-065124, 94-049182, 86-50150, 2003-086776, 2014-013360, and 89-38723 Clackamas County Deed Records, located in the Northwest one-quarter of Section 27 and the Southeast one-quarter and the Northeast one-quarter of Section 28, Township 2 South, Range 2 East of the Willamette Meridian, County of Clackamas, State of Oregon, being more particularly described as follows:

BEGINNING at the Southwest corner of the Plat of "Trailview", Clackamas County Plat Record, being coincident with the Northwest corner of that Tract of land described in Deed Document Number 2013-045391, Clackamas County Deed Records; thence along the North line of said Document Number 2013-045391, being coincident with the South line of said "Trailview", N90°00'00"E, 589.00 feet more or less to the Southwest corner of that Tract of land described in Deed Document Number 2014-013360, Clackamas County Deed Records; thence along the West line of said Document Number 2014-013360, being coincident with the East line of said "Trailview", N00°02'00"E, 832.00 feet to the Northwest corner of said Document Number 2014-013360; thence along the North line of said Document Number 2014-013360, being coincident with the South line of those Tract of land described in Deed Document Numbers 94-049182, 86-50150, and 2003-086776, Clackamas County Deed Records, S68°15'00"E, 430.77 feet to the Southeast corner of said Document Number 2003-086776; thence along the East line of said Document Number 2003-086776, being coincident with the West line of that Tract of land described in Deed Document Number 2014-020739, Clackamas County Deed Records, N00°02'00"E, 435.00 feet to the centerline of Holcomb Boulevard; thence along the centerline of said Holcomb Boulevard, S68°15'00"E, 192.68 feet to the East line of said Document Number 2014-020739; thence along said East line, and continuing along the East line of said Document Number 2014-013360, S00°02'00"W, 1030.30 feet to the South line of said Document Number 2014-013360, being coincident with the East and West centerline of Section 27; thence along said South line, being coincident with said East and West Section line, N90°00'00"W, 508.20 feet more or less to the Quarter Section corner between Sections 27 and 28; thence along the East line of that Tract of land described in Deed Document Number 2013-045391, Clackamas County Deed Records, being coincident with the Section line between said Section 27 and 28, S00°00'00"E, 659.60 feet more or less to the Southeast corner of said Document Number 2013-045391; thence along the South line of said Document Number 2013-045391, S90°00'00"W,

CENTERLINE CONCEPTS
LAND SURVEYING, INC.

Exhibit "A"
Annexation
Legal Description (Page 2 of 3)

751.91 feet more or less to the East line of that Tract of land described in Deed Document Number 2013-045391, Clackamas County Deed Records, being coincident with the East line of the George Abernethy Donation Land Claim Number 58; thence along the East line of said Deed Document Number 2013-045391, being coincident with the East line of the George Abernethy Donation Land Claim Number 58, S08°00'00"W, 462.00 feet more or less to the South line of said Document Number 2013-045391; thence along said South line, and the South line of the Tracts of land described in Deed Document Numbers 2015-063896, 2011-063635 and 2015-013359, Clackamas County Deed Records, being coincident with the North line of "Meadow Ridge Estates", Clackamas County Plat Records, and the North right of way line of Livesay Road, being 20.00 feet North of centerline when measure at right angles, N90°00'00"W, 1946.57 feet more or less to the Southwest corner of that Tract of land described in Deed Document Number 2015-013359, Clackamas County Deed Records; thence along the West line of said Document Number 2015-013359, N00°00'00"E, 1350.12 feet more or less to the Northeast corner of that Tract of land described in Deed Document Number 2013-005499, Clackamas County Deed Records; thence along the North line of said Document Number 2013-005499, S90°00'00"W, 27.06 feet to the most Easterly corner of said Document Number 2015-013359, being coincident with the Southeasterly line of "Holcomb Ridge Estates No. 2", Clackamas County Plat Records; thence along the Northwesterly line of said Document Number 2015-013359, and the Southeasterly line of said "Holcomb Ridge Estates No. 2", N58°00'00"E, 590.45 feet to the North line of said Document Number 2015-013359, being coincident with the South line of "Wittke Estates", Clackamas County Plat Records; thence along the North line of said Document Number 2015-013359, and the North line of the Tracts of land described in Deed Document Numbers 2008-2067, 84-04898, 89-38723, and 2015-065124, Clackamas County Deed Records, being coincident with the South line of said "Wittke Estates", and the South line of "Tracey Heights" and "Wasko Acres", Clackamas County Plat Records, N90°00'00"E, 1706.62 feet more or less to the East line of said Document Number 2015-065124, being coincident with

CENTERLINE CONCEPTS
LAND SURVEYING, INC.

Exhibit "A"
Annexation
Legal Description (Page 3 of 3)

the East line of the George Abernethy Donation Land Claim Number 58, and the West line of said "Trail View"; thence along the East line of said Document Number 2015-065124, being coincident with a the East line of the George Abernethy Donation Land Claim Number 58, and the West line of said "Trail View", S08°00'00"W, 557.00 feet more or less to the ***POINT OF BEGINNING.***

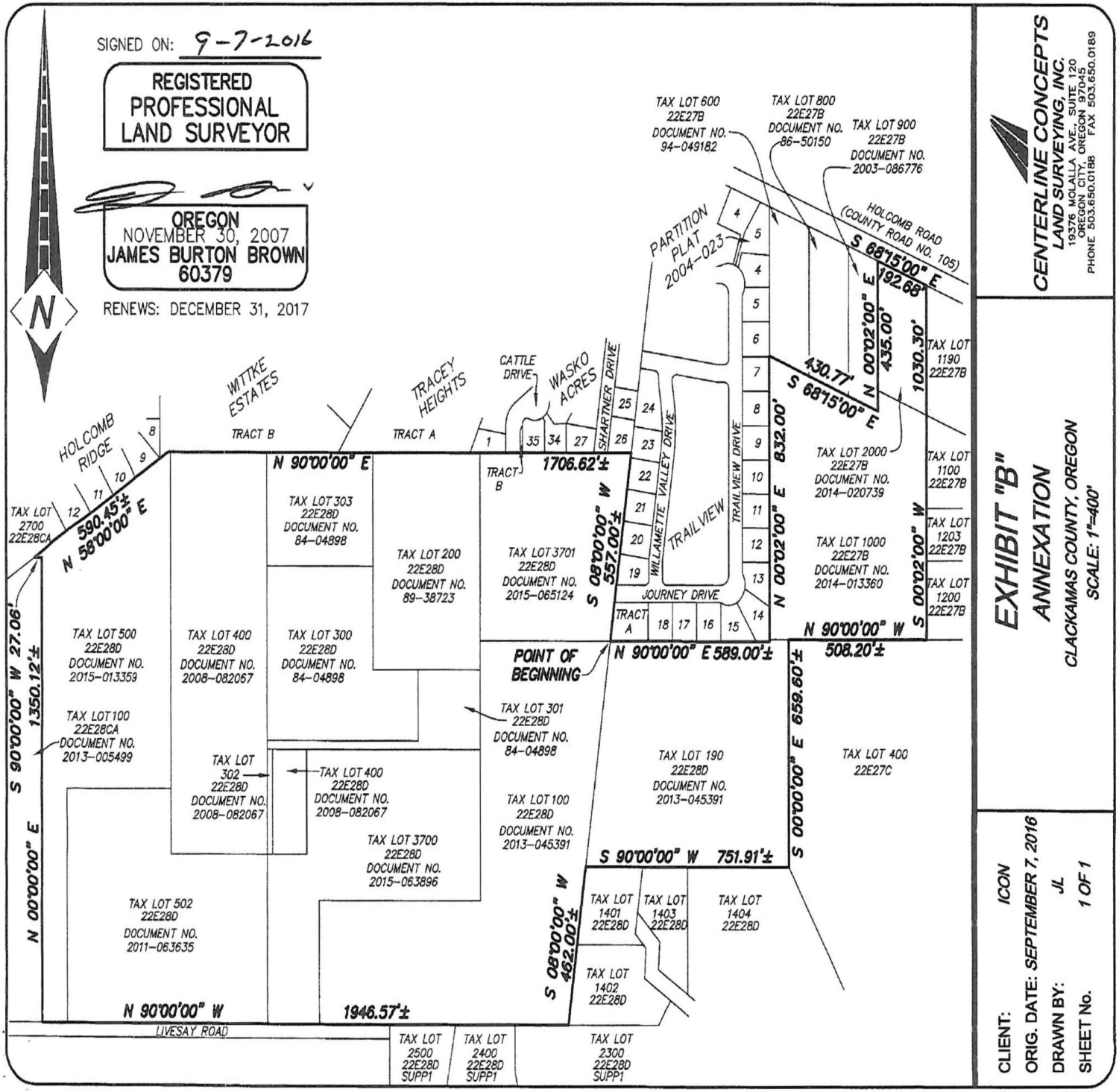
Contains 99 acres more or less.

SIGNED ON: 9-7-2016

REGISTERED
PROFESSIONAL
LAND SURVEYOR

OREGON
NOVEMBER 30, 2007
JAMES BURTON BROWN
60379

VALID THROUGH DECEMBER 31, 2017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OREGON
NOVEMBER 30, 2007
JAMES BURTON BROWN
60379
RENEWS: DECEMBER 31, 2017
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TAX LOT 800 22E27B DOCUMENT NO. 86-50150
TAX LOT 900 22E27B DOCUMENT NO. 2003-086776
HOLCOMB ROAD (COUNTY ROAD NO. 105)
S 68°15'00" E 192.68'
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TAX LOT 2500 22E28D SUPP1
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TAX LOT 2300 22E28D SUPP1
CENTERLINE CONCEPTS
LAND SURVEYING, INC.
19376 MOLALLA AVE., SUITE 120
OREGON CITY, OREGON 97045
PHONE 503.650.0188 FAX 503.650.0189
EXHIBIT "B"
ANNEXATION
CLACKAMAS COUNTY, OREGON
SCALE: 1"=400'
CLIENT: ICON
ORIG. DATE: SEPTEMBER 7, 2016
DRAWN BY: JL
SHEET No. 1 OF 1
Plotted: 9/07/2016 - 9:13am, M:\PROJECTS\ICON-LIVESAY ROAD\dwg\ANNEXATION.dwg, Layout: Model

CERTIFICATION OF PROPERTY OWNERSHIP OF

100% OF LAND AREA

(City 100% Ownership Method)

I hereby certify that the attached petition for a proposed boundary change involving the territory described in the petition contains the names of the owners* of 100% of the land area within the annexation area described in the petition, as shown on the last available complete assessment roll.

NAME Mary Neigel

TITLE GIS Cartographer II

DEPARTMENT Assessment & Tax

COUNTY OF Clackamas

DATE 12-19-17

* "Owner" means the legal owner of record or, where there is a recorded land contract which is in force, the purchaser thereunder. If there is a multiple ownership in a parcel of land each consenting owner shall be counted as a fraction to the same extent as the interest of the owner in the land bears in relation to the interest of the other owners and the same fraction shall be applied to the parcel's land mass and assessed value for purposes of the consent petition. If a corporation owns land in territory proposed to be annexed, the corporation shall be considered the individual owner of that land.

CERTIFICATION OF PROPERTY OWNERSHIP OF

100% OF LAND AREA

(City 100% Ownership Method)

I hereby certify that the attached petition for a proposed boundary change involving the territory described in the petition contains the names of the owners* of 100% of the land area within the annexation area described in the petition, as shown on the last available complete assessment roll.

NAME Amber Staley

TITLE Cartographer II

DEPARTMENT Assessment & Taxation

COUNTY OF Clackamas

DATE 9/8/16

* "Owner" means the legal owner of record or, where there is a recorded land contract which is in force, the purchaser thereunder. If there is a multiple ownership in a parcel of land each consenting owner shall be counted as a fraction to the same extent as the interest of the owner in the land bears in relation to the interest of the other owners and the same fraction shall be applied to the parcel's land mass and assessed value for purposes of the consent petition. If a corporation owns land in territory proposed to be annexed, the corporation shall be considered the individual owner of that land.

CITY OF OREGON CITY

ANNEXATION PETITION

By signing below I indicate my consent to and support of being annexed into the City of Oregon City, and my consent for having my signature (below) used for any application form required for the annexation, including but not limited to the City of Oregon City's Land Use Application Form.

NOTE: This petition may be signed by qualified persons even though they may not know their property description or precinct number.

SIGNATURE	PRINTED NAME	I AM A *			ADDRESS	PROPERTY DESCRIPTION				PRECINCT #	DATE
		PO	RV	OV		LOT #	1/4 SEC	TWNSHP	RANGE		
	Emily Tolstrup		X		16530 Livesay Rd. Oregon City, OR 97045	200	28D	2S	2E	519	9/8/16
	Sarah Tolstrup		X		16530 Livesay Rd. Oregon City, OR 97045	200	28D	2S	2E	519	9-8-16
	Daniel Tolstrup		X		16530 Livesay Rd. Oregon City, OR 97045	200	28D	2S	2E	519	9/8/16
	Colin StClair		X		16644 Livesay Rd. Oregon City, OR 97045	300	28D	2S	2E	519	
	Allen Yoder		X		16644 Livesay Rd. Oregon City, OR 97045	300	28D	2S	2E	519	
	Linda Thomas		X		16644 Livesay Rd. Oregon City, OR 97045	300	28D	2S	2E	519	9-9-16
	Brandi StClair		X		16644 Livesay Rd. ~~Oregon City, OR 97045~~	300	28D	2S	2E	519	
	Candice Covington		X		16472 Livesay Rd. Oregon City, OR 97045	3700	28D	2S	2E	519	

* PO = Property Owner
RV = Registered Voter
OV = Owner and Registered Voter

CITY OF OREGON CITY

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SIGNATURE	PRINTED NAME	I AM A *			ADDRESS	PROPERTY DESCRIPTION				PRECINCT #	DATE
		PO	RV	OV		LOT #	1/4 SEC	TWNSHP	RANGE		
	Hidden Falls Development LLC	X			1980 Willamette Falls Dr. #200 West Linn, OR 97068	302,400 & 500	28D	2S	2E	NA	12-18-2017

* PO = Property Owner
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OV = Owner and Registered Voter

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SIGNATURE	PRINTED NAME	I AM A *			ADDRESS	PROPERTY DESCRIPTION				PRECINCT #	DATE
		PO	RV	OV		LOT #	1/4 SEC	TWNSHP	RANGE		
	~~Kevin Miller~~			X	~~15030 Holcomb Blvd. Oregon City, OR 97045~~	600	27B	2S	2E	519	
	~~Linda Miller~~			X	~~15030 Holcomb Blvd. Oregon City, OR 97045~~	600	27B	2S	2E	519	
	~~Ted Townsend~~			X	~~15050 Holcomb Blvd. Oregon City, OR 97045~~	800	27B	2S	2E	519	
	~~Deanna Townsend~~			X	~~15050 Holcomb Blvd Oregon City, OR 97045~~	800	27B	2S	2E	519	
	~~Mickey Clift, Sr.~~			X	~~15076 Holcomb Blvd. Oregon City, OR 97045~~	900	27B	2S	2E	519	
	~~Barbara Clift~~			X	~~15076 Holcomb Blvd. Oregon City, OR 97045~~	900	27B	2S	2E	519	
	Michael Erickson	X			10260 SW Greenburg Rd.#1020 Tigard, OR 97223	1000	27B	2S	2E	NA	7-25-16
	Michael Erickson	X			10260 SW Greenburg Rd.#1020 Tigard, OR 97223	2000	27B	2S	2E	NA	7-25-16

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CITY OF OREGON CITY

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SIGNATURE	PRINTED NAME	I AM A *			ADDRESS	PROPERTY DESCRIPTION				PRECINCT #	DATE
		PO	RV	OV		LOT #	1/4 SEC	TWNSHP	RANGE		
	Robert Tershel	X			5933 SW Ralston Dr. Portland, OR 97239	502	28D	2S	2E	519	7/24/2016
	Chelsie Harmon		X								8/11/2016
	~~Mark~~ Hankins for Redland Rd LLC	X			1983 Willamette Falls West Linn, OR 97068	3701	28D	2S	2E	NA	9/8/2016

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CITY OF OREGON CITY

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SIGNATURE	PRINTED NAME	I AM A *			ADDRESS	PROPERTY DESCRIPTION				PRECINCT #	DATE
		PO	RV	OV		LOT #	1/4 SEC	TWNSHP	RANGE		
	Hidden Falls Development LLC	X			1980 Willamette Falls Dr.#200 West Linn, OR 97068	100	28D	2S	2E	NA	
	Hidden Falls Development LLC	X			1980 Willamette Falls Dr.#200 West Linn, OR 97068	190	28D	2S	2E	NA	
	Hidden Falls Development LLC	X			1980 Willamette Falls Dr.#200 West Linn, OR 97068	3700	28D	2S	2E	NA	
	Michael Erickson	X			1980 Willamette Falls Dr.#200 West Linn, OR 97068	3701	28D	2S	2E	NA	
Kirk Tolstrup	Kirk Tolstrup			X	16530 Livesay Rd. Oregon City, OR 97045	200	28D	2S	2E	519	April 22, 2016
Michelle Tolstrup	Michelle Tolstrup			X	16530 Livesay Rd. Oregon City, OR 97045	200	28D	2S	2E	519	"
George E Thomas	George Thomas	X			16644 Livesay Rd. Oregon City, OR 97045	300	28D	2S	2E	NA	4-22-16
George E. Thomas	George Thomas			X	16644 Livesay Rd. Oregon City, OR 97045	301	28D	2S	2E	519	4-22-16
	Park Place Enterprises LLC	X			25020 Valley View Rd. West Linn, OR 97068	302	28D	2S	2E	NA	
George E. Thomas	George Thomas	X			16644 Livesay Rd. Oregon City, OR 97045	303	28D	2S	2E	NA	4-22-16
	Park Place Enterprises LLC	X			25020 Valley View Rd. West Linn, OR 97068	400	28D	2S	2E	NA	
	Nel Investors LLC	X			13504 NE 84th St.#103-313 Vancouver, WA 98682	500	28D	2S	2E	NA	

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RECEIVED
AUG 08 2016

CITY OF OREGON CITY

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NOTE: This petition may be signed by qualified persons even though they may not know their property description or precinct number.

SIGNATURE	PRINTED NAME	I AM A *			ADDRESS	PROPERTY DESCRIPTION				PRECINCT #	DATE
		PO	RV	OV		LOT #	1/4 SEC	TWNSHP	RANGE		
	Hidden Falls Development LLC	X			1980 Willamette Falls Dr.#200 West Linn, OR 97068	100	28D	2S	2E	NA	9-8-16
	Hidden Falls Development LLC	X			1980 Willamette Falls Dr.#200 West Linn, OR 97068	190	28D	2S	2E	NA	9-8-16
	Hidden Falls Development LLC	X			1980 Willamette Falls Dr.#200 West Linn, OR 97068	3700	28D	2S	2E	NA	9-8-16 +1
	Michael Erickson	X			1980 Willamette Falls Dr.#200 West Linn, OR 97068	3701	28D	2S	2E	NA	
	Kirk Tolstrup			X	16530 Livesay Rd. Oregon City, OR 97045	200	28D	2S	2E	519	
	Michelle Tolstrup			X	16530 Livesay Rd. Oregon City, OR 97045	200	28D	2S	2E	519	
	George Thomas	X			16644 Livesay Rd. Oregon City, OR 97045	300	28D	2S	2E	NA	
	George Thomas			X	16644 Livesay Rd. Oregon City, OR 97045	301	28D	2S	2E	519	
	~~Park Place Enterprises LLC~~	~~X~~			~~25020 Valley View Rd. West Linn, OR 97068~~	~~302~~	~~28D~~	~~2S~~	~~2E~~	NA	9/8/16
	George Thomas	X			16644 Livesay Rd. Oregon City, OR 97045	303	28D	2S	2E	NA	
	~~Park Place Enterprises LLC~~	~~X~~			~~25020 Valley View Rd. West Linn, OR 97068~~	~~400~~	~~28D~~	~~2S~~	~~2E~~	~~NA~~	9/8/16
	~~Nei Investors LLC~~	~~X~~			~~13504 NE 84th St.#103-313 Vancouver, WA 98682~~	~~500~~	~~28D~~	~~2S~~	~~2E~~	~~NA~~	8/9/16

* PO = Property Owner
RV = Registered Voter
OV = Owner and Registered Voter

CERTIFICATION OF REGISTERED VOTERS

I hereby certify that the attached petition for annexation of territory described herein to the City of Oregon City contains the names of at least a majority of the electors registered in the territory to be annexed.

NAME PAUL HANES

TITLE DEPUTY CLERK

DEPARTMENT CLERK / ELECTIONS

COUNTY OF CLACKAMAS

DATE 9/9/16

COUNTY OF CLACKAMAS 43 STATE OF OREGON

CLACKAMAS COUNTY ELECTIONS
SHERRY HALL, COUNTY CLERK
1710 RED SOILS CT, SUITE 100
OREGON CITY, OR 97045

AN 16-05 Fiscal impact to provide public services, over typical project cost

Note: The easterly off-site sewer mains shown on the map below (12" & 21") are NOT needed to serve the annexation area. Those costs would be borne by the future annexation of property south of Livesay Road.

SANITARY SEWER:

Oregon City Sanitary Master Plan 2014 and Park Place Concept Plan

Green = mains to be constructed per master plan
Yellow = AN 16-05
Red dotted line = approximate total boundary of basin to lower convergence point on Redland Road

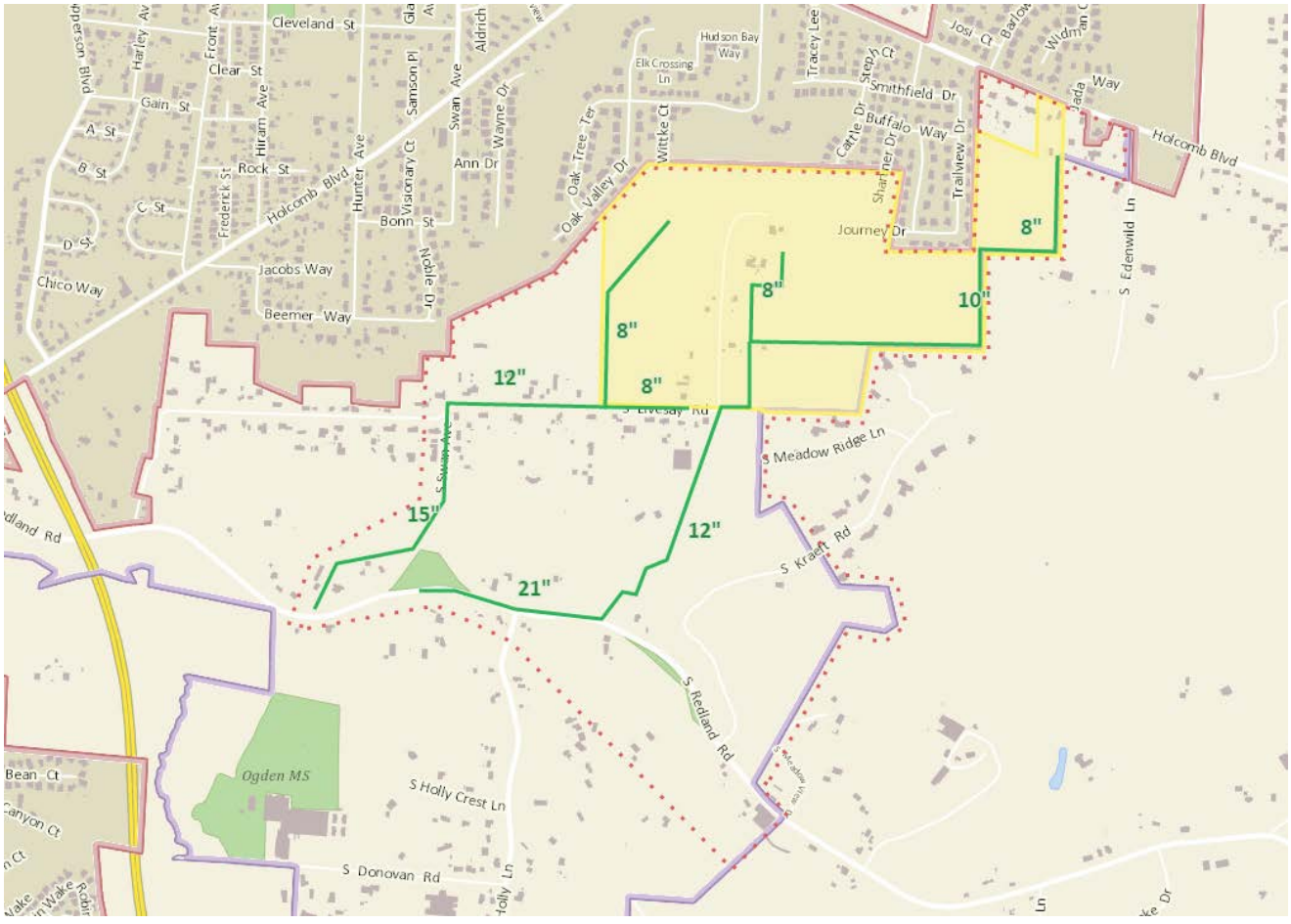
1. Within Site Boundary: In yellow area, AN 16-05 derives 100% of benefit from sanitary mains lying within boundaries. These mains are the minimum size needed to serve the development, and should not be included in the fiscal impact figure.

2. Offsite Improvements: Outside yellow area, within red dotted line, AN 16-05 derives a portion of the benefit from sanitary mains lying between site boundary and total basin boundary, or 91 acres/265 acres = 34%
   _3,000_ LF x $225 /LF x 34% = $ 229,500

3. Offsite easement or right-of-way: _30,000_ SF x $_2.50_/SF land acquisition cost = $_75,000_

4. No SDC Credits anticipated at this time.

5. **Approximate fiscal impact of providing public sanitary service, over typical project cost = $**_304,500__



WATER:
Oregon City Water Master Plan 2012 and Park Place Concept Plan

Red dashed area = approximate limits of AN 16-05

- Proposed annexation area appears to be located within the Park Place Intermediate pressure zone, Park Place Upper pressure zone, and Park Place Livesay Road pressure zone.
  - Upper Zone is served by Clackamas River Water (CRW) through HOPP Agreement.
  - Intermediate zone is served by Oregon City.
  - Livesay Road Zone is a sub-zone that will be rezoned with the development of the annexation area.
- Water Infrastructure required:
  - 12”-inch waterline required through annexation area providing transmission/distribution main from Holcomb Boulevard to Livesay Road.
  - One pressure reducing valve station between Park Place Intermediate zone and Park Place Lower zone.
  - Removal of one water pump station at Livesay Road when Livesay Road zone is rezoned to Intermediate zone.

Within limits of annexation Site Boundary: AN 16-05 needs 100% of 12” water main from Holcomb Boulevard to Livesay Road, one pressure reducing valve station, and removal of one water pump station.

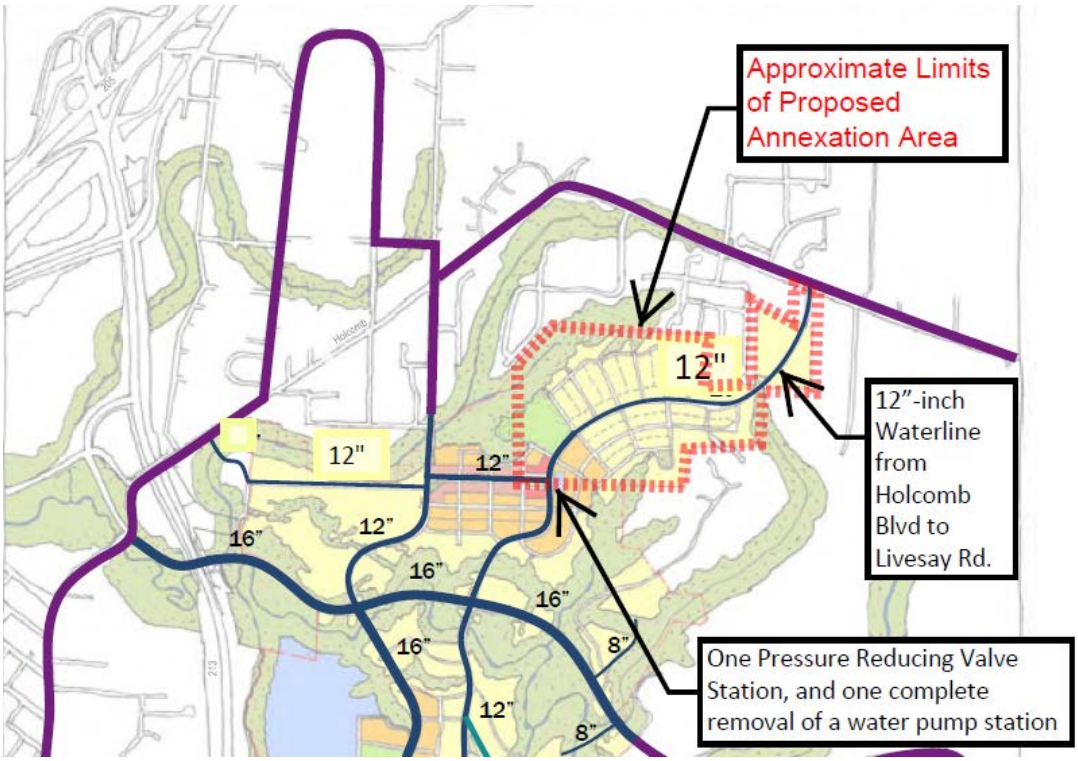
1. (4,000 LF of 12-inch waterline and all appurtenances) x $_170_/LF x 100% = $__680,000____

2. (one pressure reducing valve station) x $20,000_ Lump Sum x 100% = $20,000___

3. (one complete removal of water pump station) x $15,000 Lump Sum x 100% = $15,000____

4. No SDC Credits anticipated at this time.

5. **Approximate fiscal impact of providing public water service, over typical project cost = $715,000**



Park Place Annexation

Transportation Impact Study

Oregon City, Oregon

Date:
August 2, 2017

Prepared for:
Mark Handris

Prepared by:
Daniel Stumpf, EI
Michael Ard, PE

8/2/17

REGISTERED PROFESSIONAL ENGINEER
54983PE
OREGON
JULY 10, 2002
MICHAEL T. ARD

EXPIRES: 12/31/17

LANCASTER ENGINEERING

321 SW 4th Ave., Suite 400 | Portland, OR 97204 | 503.248.0313 | lancasterengineering.com

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Executive Summary

- A 92-acre property north and west of S Livesay Road and south of S Holcomb Boulevard is proposed for annexation into the Oregon City. Upon annexation, 87.5 acres of the property will be rezoned to R-5 zoning and 4.5 acres of the property will be rezoned to Neighborhood Commercial, in conformance with the city's Comprehensive Plan.
- Based on a comparison of the allowed uses under the existing and proposed zoning of the subject property, the proposed annexation could result in up to 385 additional trips during the morning peak hour, with 100 entering and 285 exiting the site. During the evening peak hour, 531 additional site trips are projected, with 322 entering and 209 exiting the site.
- Based on the operational analysis, several study intersections are not projected to meet the relevant operational standards of Oregon City and ODOT under year 2035 traffic conditions either with or without the addition of site trips from the proposed annexation and zone change. Although the intersection of Beavercreek Road at OR-213 is not projected to experience a significant change in operation as a result of the proposed annexation and zone change, several other study intersections are projected to experience further degradation in performance upon development within the subject property.
- Based on the Transportation Planning Rule analysis, the city may find that the proposed annexation and zone change will not significantly effect an existing or planned transportation facility since the city's acknowledged Transportation System Plan already accounted for development under the proposed zoning. Alternatively, conditions of development or a development agreement may be implemented to ensure that no development can occur except as permitted under the existing zoning until appropriate refinement plans are prepared to address future capacity concerns, or proportionate mitigation is provided concurrent with development to offset the actual traffic impacts of the development.
- Based on the detailed review of crash history at the study area intersections, the intersection of Beavercreek Road at OR-213 was found to be among the top ten percent of high-crash intersections in the State of Oregon, with the vast majority of the reported crashes being rear-end collisions. One potential safety mitigation would be installing flashing warning signs that alert drivers to the potential for stopped queues ahead. These warning signs are most appropriate for the high-speed approaches on OR-213, and particularly the southbound approach which has uninterrupted flow for 2.5 miles. This project is already included as a "likely to be funded" project for near-term implementation in the city's Transportation System Plan.
- The intersection of 14th Street at Main Street was also identified as having a high crash rate. Per Oregon City's Transportation System Plan, project D13, the intersection could be converted to all-way stop control to be consistent with the traffic countrols at surrouding intersections along Main Street. Additionally, by implementing project D7 and restriping 14th Street to allow one-way eastbound travel, it is expected that the potential for crashes at the intersection will be reduced. Both projects are listed as "likely to be funded" in the city's TSP.
- All other study intersections are currently operating acceptably with respect to safety.

- Left-turn lane warrants are projected to be met for the following three intersection approaches:
    - Northwest-bound approach at the intersection of 14th Street at Main Street under existing conditions during the morning and evening peak hours;
    - Eastbound approach at the intersection of Holly Lane at S Redland Road under the 2035 planning horizon year, with the proposed annexation, during the morning and evening peak hours; and
    - Westbound approach at the intersection of Holly Lane at S Redland Road under existing conditions during the morning peak hour.

  14th Street may be planned for conversion to one-way eastbound travel in the near-term. If the one-way street conversion is implemented, the left-turn lane warrant will no longer be applicable.
- Traffic signal warrants are projected to be met for the intersection of Holly Lane at S Redland Road under the 2035 planning year with site trips from the proposed annexation per Condition B – *Interruption of Continuous Traffic*, and a *Combination Warrant*. Alternatively, a roundabout could be installed at the intersection in conformance with the city's TSP. Traffic signal warrants are not projected to be met for any of the other unsignalized intersections under any of the analysis scenarios.

Project Description and Location

Introduction

A 92-acre property north and west of S Livesay Road and south of S Holcomb Boulevard is proposed for annexation into Oregon City. The proposed annexation will also result in a zone change from the existing Clackamas County zoning to 87.5 acres of R-5 zoning and 4.5 acres of Neighborhood Commercial zoning, in conformance with Oregon City's Comprehensive Plan.

Base on the scope of work conforming to Oregon City and ODOT standards and approved by Oregon City's transportation engineering consultant, John Replinger, this report addresses the impact of the proposed development on the nearby street system and includes safety and operational analyses of the following intersections:

1. Interstate 205 (I-205) southbound ramps at Mcloughlin Boulevard (OR-99E);
2. I-205 northbound ramps at OR-99E;
3. 15th Street at OR-99E;
4. 14th Street at OR-99E;
5. Abernethy Road/S Holcomb Boulevard at Redland Road;
6. Abernethy Road at Washington Street;
7. 15th Street at Washington Street;
8. 14th Street at Washington Street;
9. 14th Street at Main Street;
10. I-205 southbound ramps at Trails End Highway (OR-213);
11. I-205 northbound ramps at OR-213;
12. Prairie Schooner Way/Clackamas River Drive at OR-213;
13. Redland Road at OR-213;
14. Beavercreek Road at OR-213;
15. Holly Lane at S Holcomb Boulevard (future intersection); and
16. Holly Lane at S Redland Road.

The purpose of this study is to assess the potential impacts of the proposed annexation and address the transportation analysis requirements of Oregon City, the Oregon Department of Transportation (ODOT), and Oregon's Transportation Planning Rule. The report will identify the potential net increase in traffic and examine the transportation impacts of the added trips at the planning horizon. The report will also include level-of-service calculations and volume-to-capacity calculations for existing conditions as well as year 2035

traffic conditions both with and without the proposed annexation and zone change. Additionally, a review and assessment of crash history at the study intersections was conducted.

Detailed information on traffic counts, crash data, and level-of-service calculations are included in the appendix to this report.

Location Description

The subject site is located south of S Holcomb Boulevard and north of S Redland Road in a predominately residential area, and has frontage along S Holcomb Boulevard and S Livesay Road. The site includes multiple properties which are either currently undeveloped or are occupied by a single-family house.

Vicinity Streets

OR-99E is classified by ODOT as a Regional Highway south and a District Highway north of I-205 and by Oregon City as a Major Arterial. The roadway has a varying cross-section of four to eight travel lanes and has a posted speed of 40 mph north and 30 mph south of 14th Street. On-street parking is permitted along both sides of the roadway at marked locations south of 14th Street. Curbs, sidewalks, and bicycle lanes are intermittently provided along both sides of the roadway.

Main Street is classified by Oregon City as a Collector. The roadway has a two-lane cross-section with on-street parking permitted along both sides of the roadway south of 15th Street where either adequate roadway width is provided or spaces are marked. Bicycle lanes are provided along both sides of the roadway north while sharrows are marked within vehicle travel lanes south of 15th Street. Curbs and sidewalks are provided along both sides of the roadway south of 15th Street while only partially provided to the north.

Washington Street is classified by Oregon City as a Minor Arterial north and a Local Street south of 5th Street. The roadway has a varying cross-section between two to six travel lanes and has a posted speed which varies between 25 mph and 35 mph within the study area. On-street parking is permitted along both sides of the roadway south of 11th Street while bicycle lanes are provided along both sides to the north. Curbs and sidewalks are provided along both sides of the roadway south and intermittently provided north of Abernethy Road.

OR-213 is classified by ODOT as a District Highway and by Oregon City as an Expressway. The roadway has a varying cross-section between four to seven travel lanes and has a posted speed of 45 mph north and 55 mph south of Prairie Schooner Way. Bicycle lanes or shoulders are provided along both sides of the roadway. Curbs and sidewalks are intermittently provided along both sides of the roadway.

Holly Lane is classified by Oregon City as a Minor Arterial. The roadway has a two-lane cross-section and has a posted speed of 40 mph. Curbs, sidewalks, and bicycle lanes are not provided along either side of the roadway. The Oregon City Transportation System Plan (TSP) includes a planned project to extend Holly Lane from S Redland Road to S Holcomb Boulevard. The planned extension is listed as a "Likely To Be Funded" project.

Prairie Schooner Way is classified by Oregon City as a Minor Arterial. The roadway has a three to five-lane cross-section, with two eastbound and one to three westbound travel lanes. Curbs and bicycle lanes are provided along both sides of the roadway.

Clackamas River Drive is classified by Oregon City as a Minor Arterial. The roadway has a two-lane cross-section north of the roundabout at Washington Street, and a four-lane cross-section to the south with two southbound travel lanes, a two-way left-turn lane, and a northbound travel lane. It has a posted speed of 40 mph north and 30 mph south of S Melinda Street. Bicycle lanes are provided along both sides of the roadway while curbs and sidewalks are intermittently provided.

Redland Road is classified by Oregon City as a Minor Arterial. The roadway has a five-lane cross-section between OR-213 and Abernethy Road/S Holcomb Boulevard and a two-lane cross-section south of S Holcomb Boulevard. It has a posted speed of 45 mph. Bicycle lanes are provided along both sides of the roadway while curbs and sidewalks are only available for approximately 450 feet south of Abernethy Road/S Holcomb Boulevard.

Abernethy Road is classified by Oregon City as a Minor Arterial. The roadway has a three-lane cross-section, with one travel lane and a center two-way left-turn lane, and has a posted speed of 35 mph. Bicycle lanes are provided along both sides of the roadway while curbs and sidewalks are intermittently provided along both sides.

S Holcomb Boulevard is classified by Oregon City as a Minor Arterial. The roadway has a two-lane cross-section and has a posted speed of 40 mph. Curbs, sidewalks, and bicycle lanes are intermittently provided along both sides of the roadway.

15th Street is classified by Oregon City as a Collector. The roadway has a two-lane cross-section and has a posted speed of 25 mph. On-street parking is permitted along both sides of the roadway east of Washington Street where adequate roadway width is available. Curbs and sidewalks are intermittently provided along both sides of the roadway.

14th Street is classified by Oregon City as a Collector west and Local Street east of Washington Street. The roadway has a four-lane cross-section between OR-99E and Main Street, with two travel lanes in each direction, and a two-lane cross-section east of Main Street. On-street parking is permitted along both sides of the roadway east of Washington Street. Curbs and sidewalks are provided along both sides of the roadway.

Beavercreek Road is classified by Oregon City as a Major Arterial east of Molalla Avenue. The roadway has a five-lane cross-section, with two travel lanes in each direction and either a center two-way left-turn lane or raised median. It has a posted speed is 35 mph. Curbs, sidewalks, and bicycle lanes are provided along both sides of the roadway.

Study Intersections

The I-205 southbound ramps intersection at OR-99E is a three-legged intersection that is controlled by a traffic signal. The northbound approach has three through lanes and one channelized right-turn lane that

operates under yield control. The southbound approach has three through lanes and one left-turn lane served by protected phasing. The westbound approach has two left-turn lanes and one right-turn lane served by permitted/overlapping phasing. One crosswalk is marked across the eastern intersection leg.

The I-205 northbound ramps intersection at OR-99E is a three-legged intersection that is controlled by a traffic signal. The northbound approach has three through lanes and one right-turn lane served by permitted/overlapping phasing. The southbound approach has three through lanes and one left-turn lane served by protected phasing. The westbound approach has one left-turn lane and one channelized right-turn lane that operates under yield control. One crosswalk is marked across the eastern intersection leg.

The intersection of 15th Street at OR-99E is a three-legged intersection that is stop-controlled for the westbound approach of 15th Street. The northeast-bound approach has one through lane and one shared through/right-turn lane. The southwest-bound approach has three through lanes. The northwest-bound approach has one right-turn lane. One crosswalk is marked across the southeastern intersection leg.

The intersection of 14th Street at OR-99E is a three-legged intersection that is controlled by a traffic signal. The northeast-bound approach has one through lane and one shared through/right-turn lane. The southwest-bound approach has two through lanes and a left-turn lane served by flashing-yellow-arrow phasing. The northwest-bound approach of 14th Street has one left-turn lane and one right-turn lane served by permitted/overlapping phasing. Crosswalks are marked across all intersection legs.

The intersection of 14th Street at Main Street is a four-legged intersection that is two-way stop-controlled for the northeast-bound and southwest-bound approaches of Main Street. The northeast-bound approach has one shared left-turn/through lane and one right-turn lane. The southwest-bound and northwest-bound approaches each have one shared lane for all turning movements. The southeast-bound approach has one left-turn lane and one shared through/right-turn lane. Crosswalks are marked across all intersection legs.

The intersection of 14th Street at Washington Street is a four-legged intersection that is controlled by a traffic signal. The northeast-bound and southwest-bound approaches of Washington Street each have one left-turn lane served by flashing-yellow-arrow phasing, one shared through/right-turn lane, and a bicycle lane to the right of the outermost standard travel lane. The northwest-bound approach has one shared lane for all turning movements. The southeast-bound approach has one shared left-turn/through lane and one right-turn lane. Crosswalks are marked across all intersection legs.

The intersection of 15th Street at Washington Street is a four-legged intersection that is controlled by a traffic signal. The northeast-bound and southwest-bound approaches of Washington Street each have one left-turn lane served by flashing-yellow-arrow phasing, one shared through/right-turn lane, and a bicycle lane to the right of the outermost standard travel lane. The northwest-bound and southeast-bound approaches each have one shared lane for all turning movements. Crosswalks are marked across all intersection legs.

The intersection of Abernethy Road at Washington Street is a four-legged intersection that is controlled by a traffic signal. The northeast-bound approach has one left-turn lane served by permitted phasing, one through lane, one right-turn lane, and a bicycle lane situated between the through and right-turn lanes. The southwest-bound approach has one left-turn turn lane served by permitted phasing, one shared through/right-turn lane, and a bicycle lane to the right of the outermost standard travel lane. The northwest-bound approach has one

left-turn lane served by permitted phasing and one shared through/right-turn lane. The southeast-bound approach has one shared lane for all turning movements. Crosswalks are marked across all intersection legs.

The I-205 southbound ramps intersection at OR-213 is a three-legged intersection that is stop-controlled for the eastbound approach's left-turn movement and the southbound approach's through movement. The northbound approach has one left-turn lane, one through lane, and a bicycle lane to the right of the outermost standard travel lane. The southbound approach has one channelized right-turn lane that yields to other vehicles entering the freeway on-ramp, one through lane, and a bicycle lane situated in between the right-turn and through lanes. The eastbound approach has one left-turn lane and two free-flowing channelized right-turn lanes. Crosswalks are unmarked across all three intersection legs.

The I-205 northbound ramps intersection at OR-213 is a four-legged intersection with continuous flow for all approach lanes. The northbound approach has one through lane, one shared through/right-turn lane, one right-turn lane, and a bicycle lane to the right of the outermost standard travel lane. The southbound approach has two through lanes and a bicycle lane to the right of the outermost standard travel lane. The eastbound approach has one right-turn lane. Crosswalks are unmarked across all four intersection legs.

The intersection of Prairie Schooner Way/Clackamas River Drive at OR-213 is a four-legged intersection that is controlled by a traffic signal. The northbound and southbound approaches of OR-213 each have three through lanes, one channelized right-turn lane that operates without stop/yield/signal controls, and a bicycle lane to the right of the outermost standard travel lane. The eastbound and westbound approaches of Prairie Schooner Way and Clackamas River Drive, respectively, each have two right-turn lanes that prohibit turns during the red indication and a bicycle lane to the right of the outermost standard travel lane. Crosswalks are marked across the eastern and western intersection legs.

The intersection of Redland Road at OR-213 is a three-legged intersection that is controlled by a traffic signal. The northbound approach has one left-turn lane served with protected phasing, two through lanes, and a bicycle lane to the right of the outermost standard travel lane. The southbound approach has two through lanes, one right-turn lane served with permitted/overlap phasing, and a bicycle lane to the right of the outermost standard travel lane. The eastbound approach has two left-turn lanes served with protected phasing, one right-turn lane served with permitted/overlap phasing, and a bicycle lane to the right of the outermost standard travel lane. Crosswalks are marked across the southern and western intersection legs.

The intersection of Beavercreek Road at OR-213 is a four-legged intersection that is controlled by a traffic signal. The northbound approach has one left-turn lane served with protected phasing, two through lanes, one channelized right-turn lane that operates under yield control, and a bicycle lane to the right of the outermost standard travel lane. The southbound approach has two left-turn lanes served with protected phasing, two through lanes, and one channelized right-turn lane that operates under yield control. The eastbound approach has two left-turn lanes served with protected phasing, one through lane, one shared through/right-turn lane, and a bicycle lane to the right of the outermost standard travel lane. The westbound approach has two left-turn lanes served with protected phasing, two through lanes, one channelized right-turn lane that operates under yield control, and a bicycle lane situated in between the outermost through and right-turn lanes. Crosswalks are marked across all four intersection legs.

The intersection of Holly Lane at S Redland Road is a three-legged intersection that is stop-controlled for the northbound approach of Holly Lane. The northbound approach has one shared lane for all turning movements. The eastbound and westbound approaches of S Redland Road each have one shared lane for all turning movements and a bicycle lane to the right of the standard travel lane. Crosswalks are unmarked across all three intersection legs.

A vicinity map displaying the project site, vicinity streets, and the study intersections with their associated lane configurations is shown in Figure 1 on page 9.

Traffic Counts

Manual turning movement counts were conducted at the study intersections on the following dates, during which school was in session and no adverse weather nor abnormal travel conditions were present:

- Tuesday, January 24th, 2017 from 4:00 PM to 6:00 PM;
- Wednesday, January 25th, 2017 from 4:00 PM to 6:00 PM;
- Thursday, January 26th, 2017 from 7:00 AM to 9:00 AM;
- Tuesday, May 2nd, 2017 from 4:00 PM to 6:00 PM; and
- Wednesday, May 3rd, 2017 from 7:00 AM to 9:00 AM.

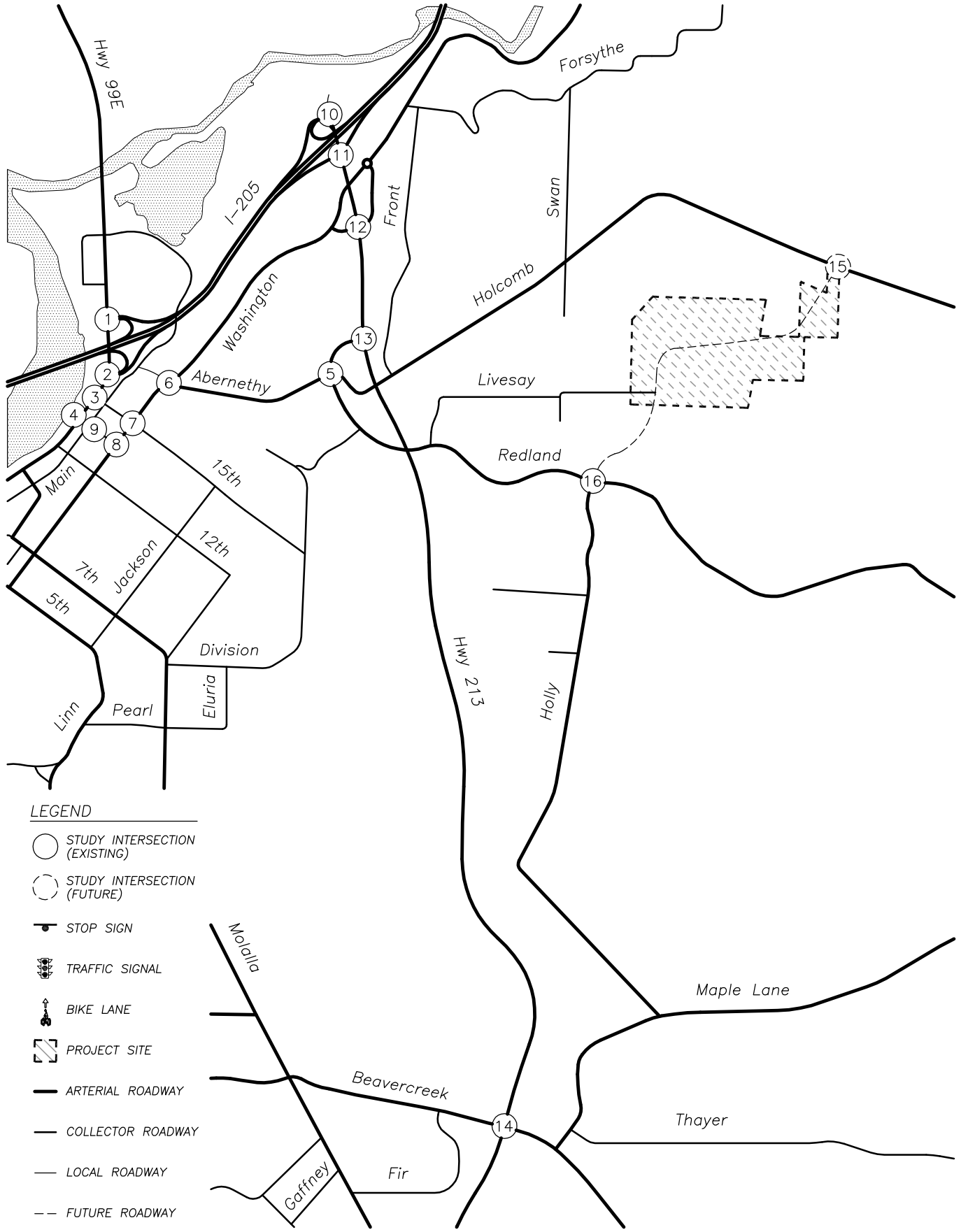
Data was used from each intersection's respective morning and evening peak hours.

Count data for the intersection of Holly Lane at S Redland Road was collected on March 17th, 2015 and adjusted based on the increase in traffic volumes collected between March 17th, 2015 and January 24th/25th, 2017 on the south leg of the intersection of Abernethy Road/S Holcomb Boulevard at Redland Road. The measured growth rate on S Redland Road during this time period was 2.69 percent per year, which was applied over a period of two years. For the segment of S Holcomb Boulevard anticipated to accommodate the future Holly Lane extension, through traffic volumes on S Holcomb Boulevard were determined based on traffic counts collected on June 21st, 2016 at the intersection of S Holcomb Boulevard at Jada Lane, located immediately east of the anticipated Holly Lane extension location. The 2016 counts were adjusted to account for one year of growth at a rate of 3.85 percent per year based on the observed historical growth in traffic volumes on Holcomb Boulevard, as measured at the east leg of the intersection of Redland Road at Holcomb Boulevard.

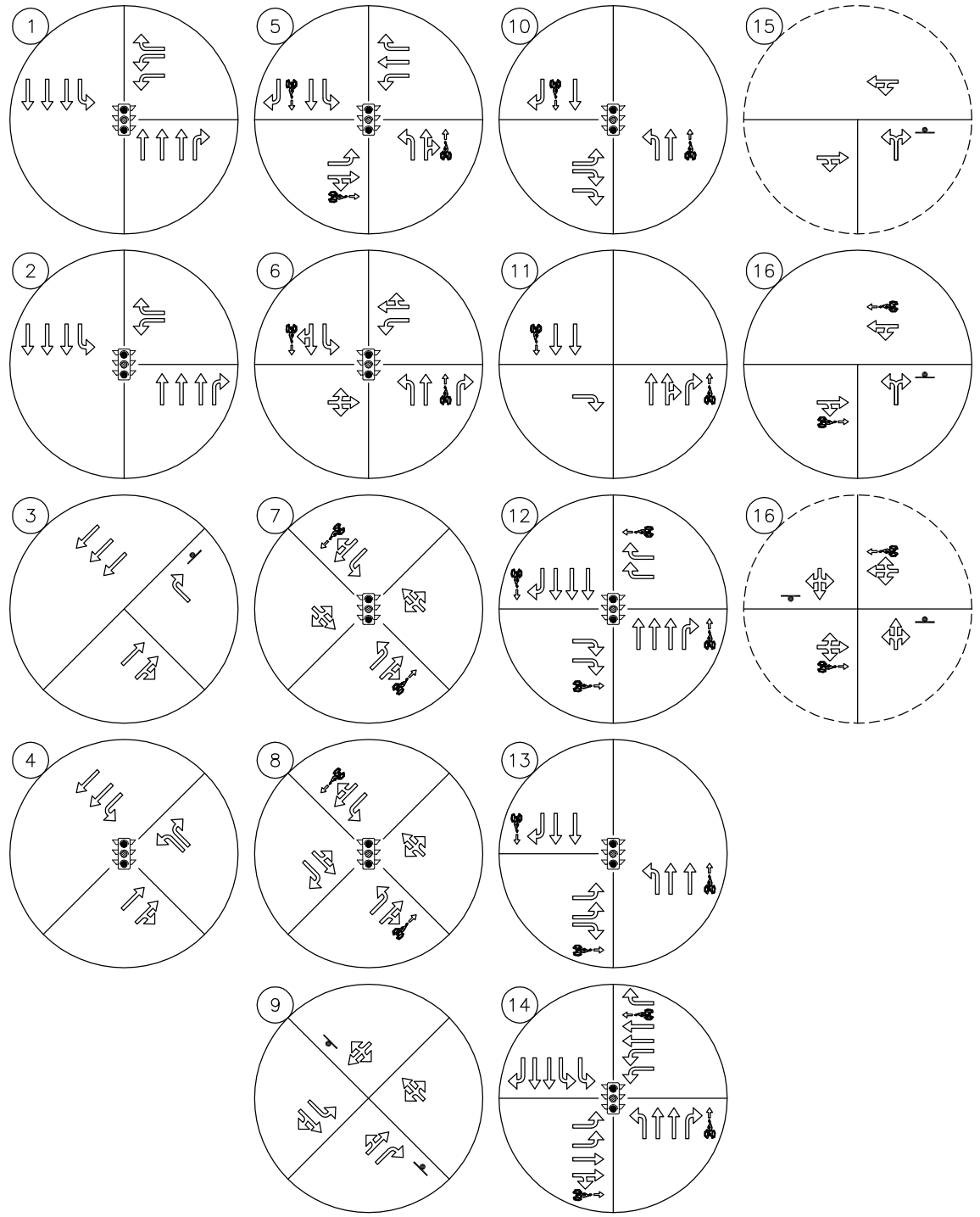
Figure 2 on page 10 and Figure 3 on page 11 show the existing morning and evening peak hour traffic volumes at the study intersections, respectively. Detailed traffic count data is included in the appendix to this report.

VICINITY MAP
Intersection Configurations
Traffic Control Devices and Lane Configurations

FIGURE 1
Page 9



*Matches the alignment in the City's TSP



No Scale

TRAFFIC VOLUMES
Existing Conditions
AM Peak Hour

FIGURE 2
Page 10

TRAFFIC VOLUMES
Existing Conditions
PM Peak Hour

FIGURE 3
Page 11

Site Trips

Trip Generation

The subject site consists of 34.57 acres currently zoned RRFF-5 and 57.43 acres currently zoned Future-Use 10-acre minimum (FU-10) by Clackamas County. Upon annexation of the property into the City of Oregon City, the property will be rezoned for 87.5 acres of residential use under R-5 zoning with a minimum lot size of 5,000 sf and 4.5 acres of Neighborhood Commercial zoning.

Under the existing Clackamas County zoning, the property can be developed with up to 11 lots with properties zoned RRFF-5 requiring a minimum lot size of 5 acres and properties zoned FU-10 having a minimum lot size of 10 acres. Each lot may be developed with a single-family home.

Under the proposed zoning, the property can be developed with up to 533 lots in the area zoned R-5, as well as the 4.5 acres of Neighborhood Commercial property. The lots zoned R-5 could each hold a single-family dwelling, and the property zoned Neighborhood Commercial can accommodate up to 49,000 square feet of gross floor area for neighborhood commercial uses.

Based on the comparison between the "reasonable worst-case" development scenarios for the existing and proposed zonings, annexation of the subject property could result in a net increase of up to 522 new homes within the subject property, as well as 49,000 square feet of retail uses.

To estimate the number of trips that could be generated under the existing and proposed zonings, trip generation data from the *TRIP GENERATION MANUAL*, 9th Edition, published by the Institute of Transportation Engineers was used. The trip projections for the residential uses was drawn from land use 210, *Single-Family Detached Housing*, and is based on the number of dwelling units. The trip data for the NC zoning was drawn from land use 820, *Shopping Center*.

The calculations indicate that the proposed annexation and zone change could result in up to 385 additional trips during the morning peak hour, with 100 entering and 285 exiting the site. During the evening peak hour, 531 additional trips could be expected, with 329 entering and 209 exiting the site. A daily increase of 5,608 trips is projected, with half entering and half exiting the site.

A summary of the potential trip generation under the proposed zoning is provided in Table 1 on the following page. Table 2 provides a comparison between the trip generation potential under the existing and proposed zones. Detailed trip generation worksheets are included in the attached technical appendix.

Table 1 - Trip Generation Summary (Proposed Zoning)

	ITE Code	Size	Morning Peak Hour			Evening Peak Hour			Weekday Total
			Enter	Exit	Total	Enter	Exit	Total	
Single-Family Homes	210	533 units	100	300	400	299	175	474	4,896
Internalization (9%)			-18	-18	-36	-21	-21	-42	-440
Shopping Center	820	49 ksf	29	18	47	87	95	182	2,092
Internalization (9%)			-2	-2	-4	-8	-8	-16	-188
Pass-by Trips (34%)			-7	-7	-14	-28	-28	-56	-648
Total Driveway Trips			129	318	447	386	270	656	6,988
Total Internal Trips			-20	-20	-40	-29	-29	-58	-628
Total Pass-by Trips			-7	-7	-14	-28	-28	-56	-648
Net Site Trips			**102**	**291**	**393**	**329**	**213**	**542**	**5,712**

Table 2 - Trip Generation Comparison (Existing and Proposed Zoning)

	Morning Peak Hour			Evening Peak Hour			Weekday Total
	Enter	Exit	Total	Enter	Exit	Total	
Existing Zoning Trips	2	6	8	7	4	11	104
Proposed Zoning Trips	102	291	393	329	213	542	5,712
Net Increase in Site Trips	**100**	**285**	**385**	**322**	**209**	**531**	**5,608**

Trip Distribution

The distribution of site trips was determined based on the locations of likely trip destinations as well as the locations of major transportation facilities in the site vicinity. Since the subject property has frontage on both S Holcomb Boulevard and S Livesay Road, it is anticipated that upon development of the subject property a new connection through the property will be available between S Holcomb Boulevard and S Redland Road. At the planning horizon, it is anticipated that this connection will take the form of the North Holly Lane Extension, which is included within the financially constrained project list of the city's TSP. With completion of this new street connection, it is anticipated that site trips will access the site via both S Holcomb Boulevard and S Redland Road.

The following distribution was estimated and used for analysis:

- Approximately 25 percent of site trips will travel to/from the northeast along I-205;
- Approximately 15 percent of site trips will travel to/from the southwest along I-205;
- Approximately 13 percent of site trips will travel to/from the southwest along Washington Street;
- Approximately 9 percent of site trips will travel to/from the east along S Holcomb Boulevard;
- Approximately 9 percent of site trips will travel to/from the east along S Redland Road;
- Approximately 8 percent of site trips will travel to/from the north along OR-99E;
- Approximately 4 percent of site trips will travel to/from the south along S Holly Lane;
- Approximately 3 percent of site trips will travel to/from the southwest along Main Street;
- Approximately 3 percent of site trips will travel to/from the southwest along S Anchor Way;
- Approximately 2 percent of site trips will travel to/from the south along OR-213;
- Approximately 1.5 percent of site trips will travel to/from the west along Beavercreek Road;
- Approximately 1 percent of site trips will travel to/from the southwest along OR-99E;
- Approximately 0.5 percent of site trips will travel to/from the east along Beavercreek Road; and
- Approximately 6 percent of site trips will travel to/from locales within the immediate vicinity, including surrounding residential areas, Holcomb Elementary School, and other land-uses such as Steve's Marketplace and the Quick Stop Market.

Since the majority of the subject property is located west of the anticipated future intersection of S Holcomb Boulevard at the Holly Lane north extension, most residents would be expected to prefer the more direct travel path available on S Redland Road rather than S Holcomb Boulevard for trips to and from the west. Accordingly, site trips from origins within the proposed development were assumed to be four times more likely to utilize S Redland Road for such trips than to utilize S Holcomb Boulevard. This distribution reflects the fact that only residents in the northeastern-most portion of the site would be expected to experience

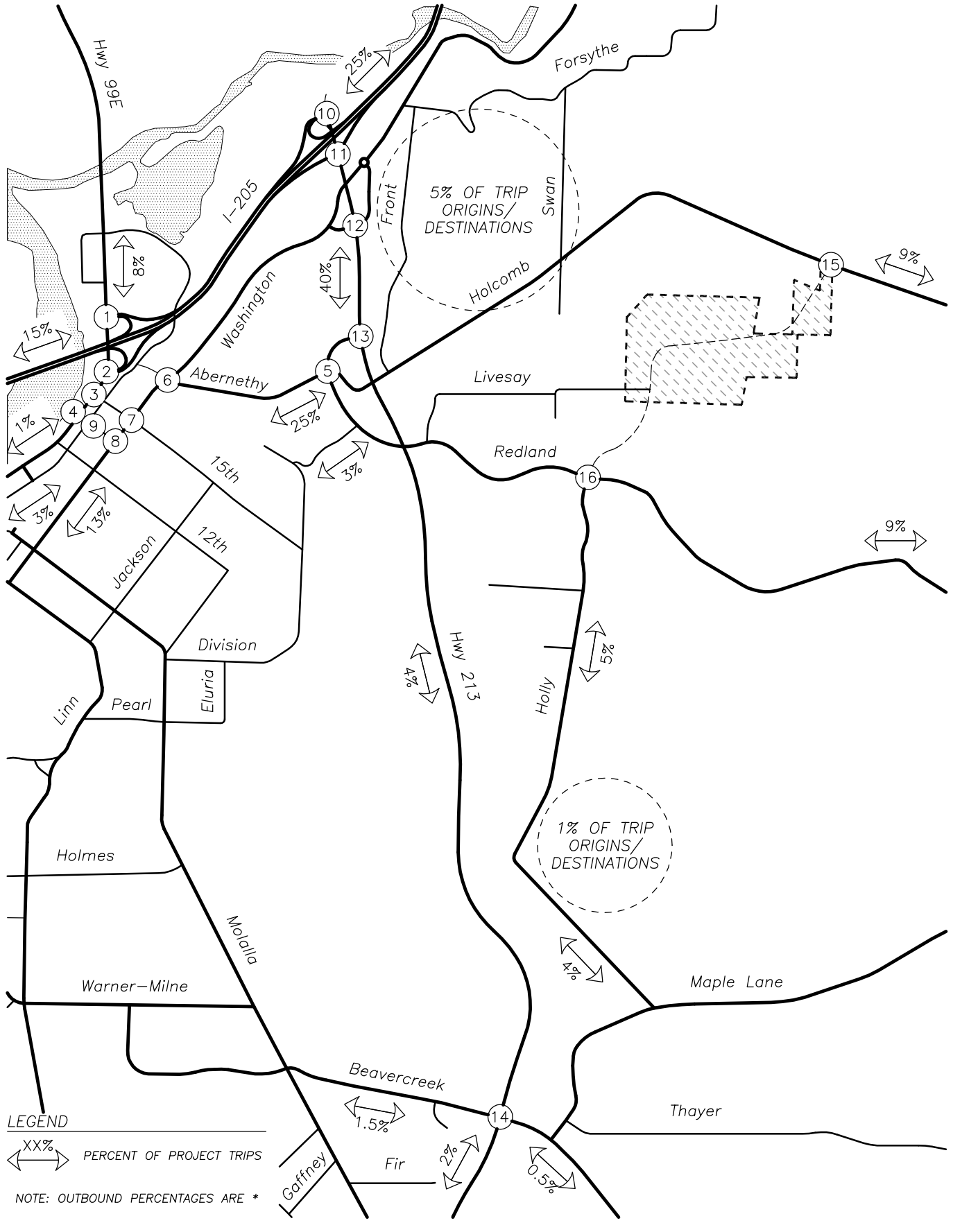
similar travel times regardless of whether they utilize S Holcomb Boulevard or S Redland Road to travel to and from the west.

The trip distribution percentages utilized for the site trips generated by the proposed development are shown in Figure 4 on page 16 at each of the study intersections. The trip assignment for the site trips generated by the proposed development during the morning and evening peak hours are shown in Figure 5 on page 17 and Figure 6 on page 18, respectively.

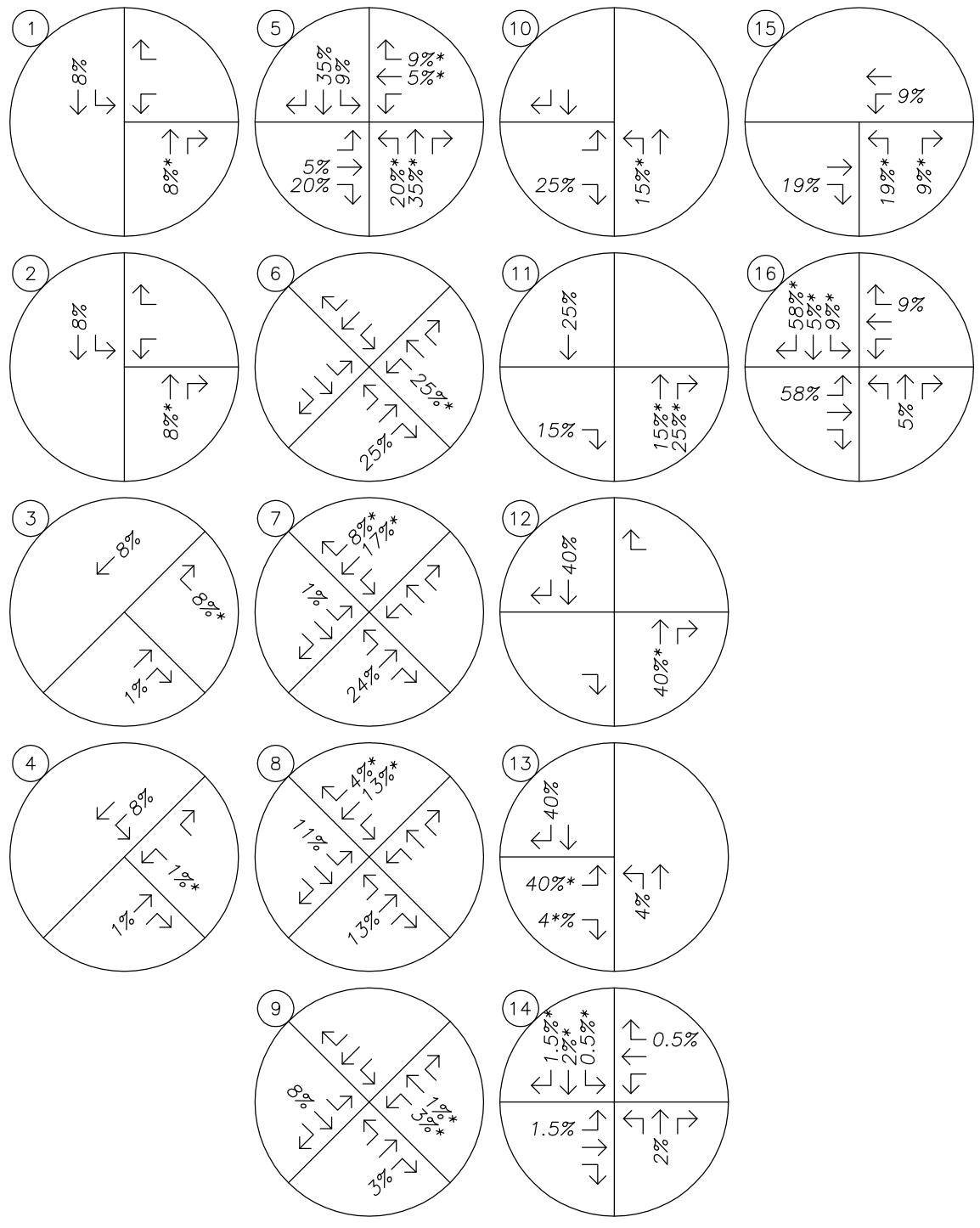
SITE TRIP DISTRIBUTION

Inbound & Outbound Percentages – Site Trips
AM & PM Peak Hours

FIGURE 4
Page 16



*Matches the alignment in the City's TSP



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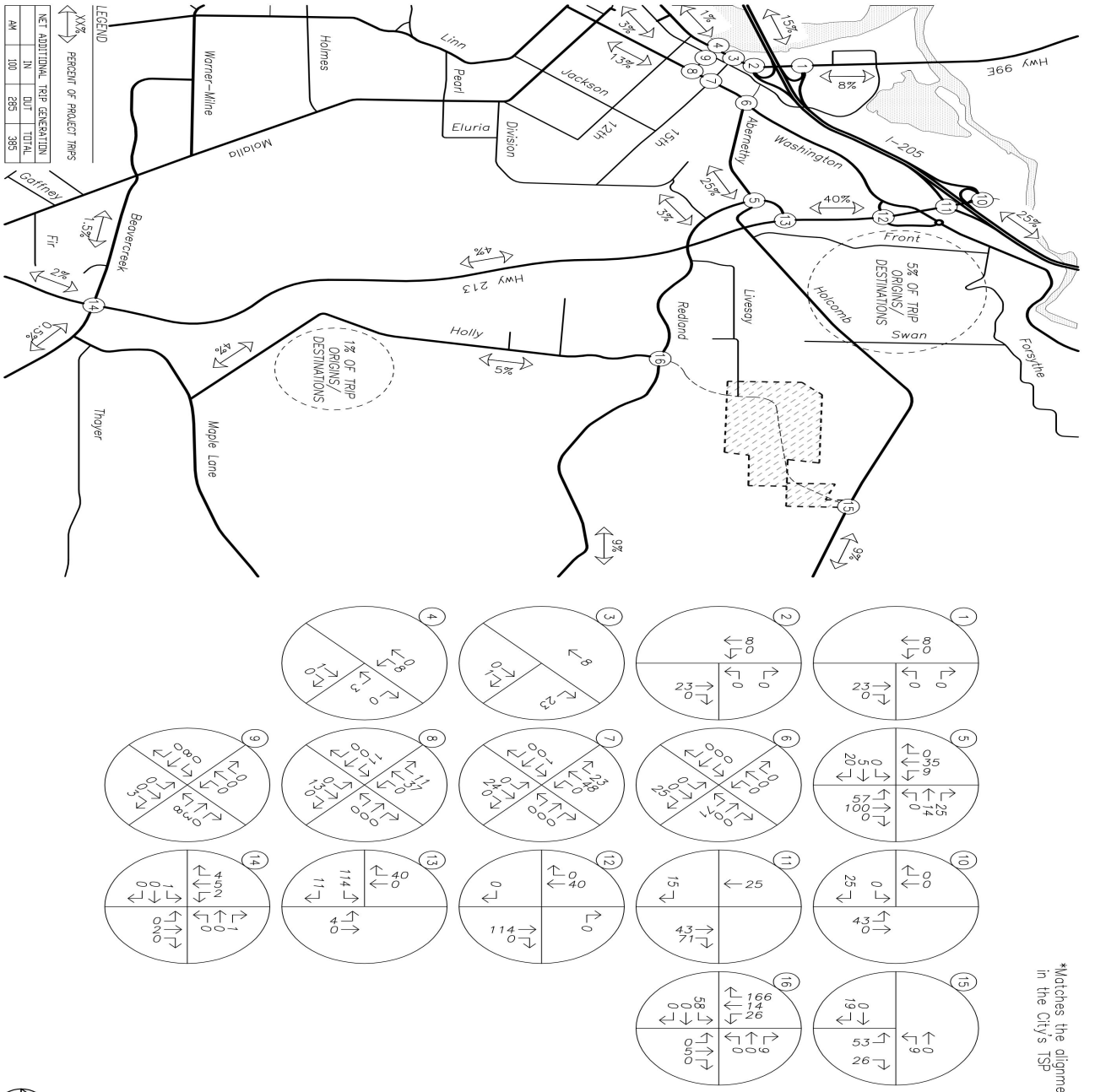
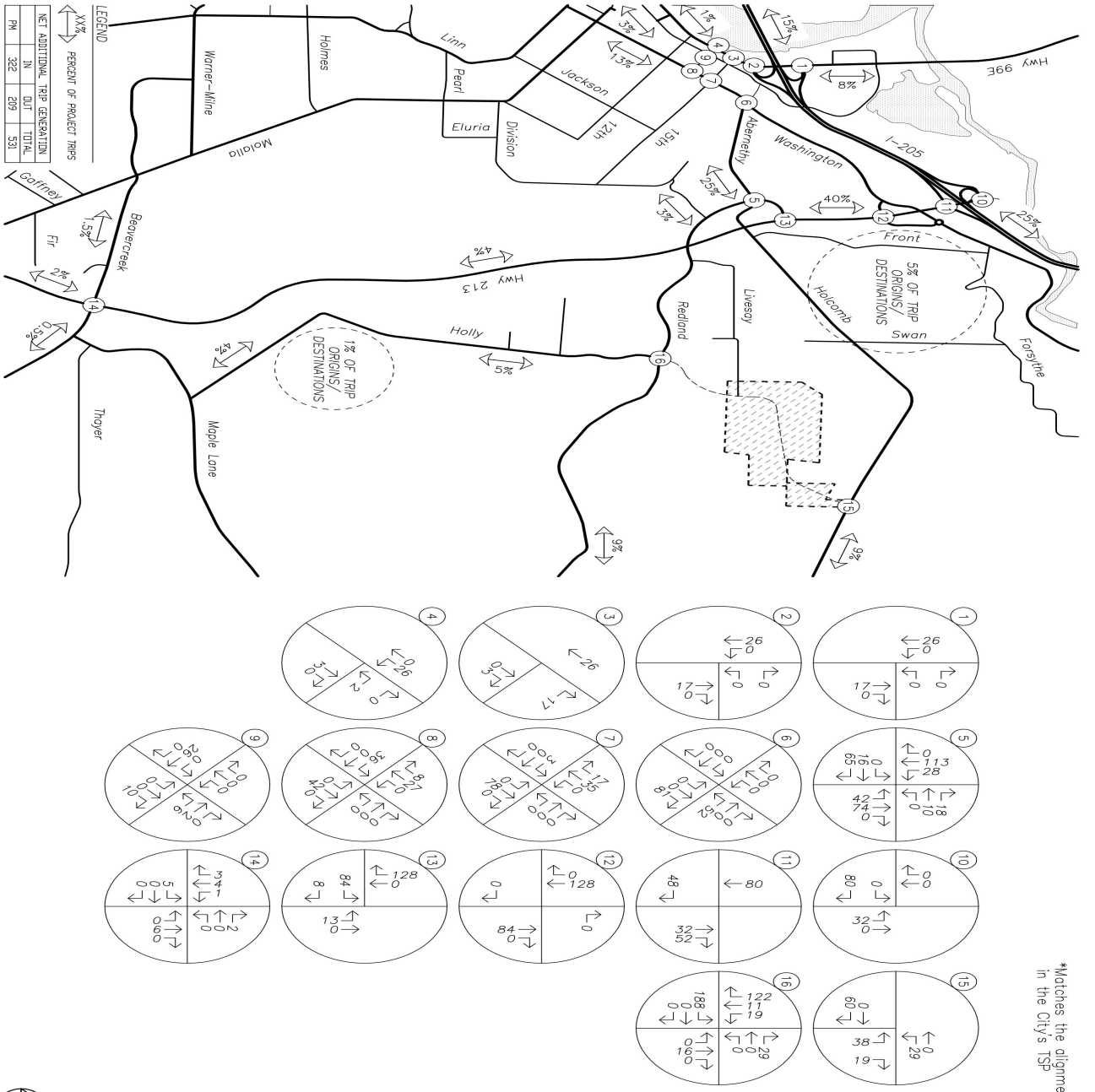


*Matches the alignment in the City's TSP

No Scale

SITE TRIP ASSIGNMENT
Proposed Zone Change – Net Additional Site Trips
AM Peak Hour

FIGURE 5
Page 17



*Matches the alignment in the City's TSP

No Scale

SITE TRIP ASSIGNMENT
Proposed Zone Change – Net Additional Site Trips
PM Peak Hour

FIGURE 6
Page 18

Operational Analysis

Background Volumes

In order to assess the impacts of the proposed annexation on traffic conditions at the planning horizon, the existing traffic volumes at the study area intersections were increased to account for anticipated growth through year 2035. Growth for most facilities within Oregon City was estimated based on conformance with growth data from the 2013 TSP, which shows an overall growth from 33,012 trips during the evening peak hour in 2010 to 54,461 trips during the evening peak hour in 2035. This equates to an exponential growth rate of 2.02 percent per year, which was applied to all intersection movements except the through movements along OR-99E and OR-213. Traffic volume growth along OR-99E and OR-213 was estimated using data from ODOT's Future Volume Tables, which show projected linear growth rates of 0.81 percent per year and 0.73 percent per year, respectively.

For the intersections of Beavercreek Road at OR-213; the I-205 southbound ramps at OR-99E; and the I-205 northbound ramps at OR-99E, Oregon City's 2013 TSP included projected year 2035 volumes for the evening peak hour. In order to ensure consistency with the city's TSP, these volumes were used for this intersection's evening peak hour analysis scenario. Additionally, traffic volumes for other intersections along OR-99E and OR-213 were balanced along each respective highway to ensure that the analysis of all intersections along these facilities remains consistent with the TSP. ODOT Ramp Interchange Volume Diagrams were also referenced to accurately determine turning-movement volumes at the intersections of OR-213 with the I-205 northbound on/off ramps.

In addition to the increase in traffic volumes within the site vicinity, completion of the North Holly Lane Extension is expected to result in some re-distribution of existing traffic volumes in the site vicinity. Specifically, it is anticipated that approximately two thirds of the trips between S Holcomb Boulevard and S Redland Road south of S Holcomb Boulevard will utilize the new Holly Lane extension, since this route will provide a more direct connection between these roadways. It is also anticipated that some site trips between S Holcomb Boulevard and OR-213 south of Redland Road will utilize the new North Holly Lane extension, since this route will provide a good connection between S Holcomb Boulevard and destinations such as Oregon City High School and the Berry Hill Shopping Center.

The background conditions analysis volumes include all city-identified projected development through the 2035 planning horizon, with the exception of the Park Place property. Omission of this property from the background conditions allows for a meaningful comparison between future background conditions without approval of the proposed annexation and zone change and the 2035 "annexation and zone change" conditions, which include the addition of site trips from the Park Place property.

Figure 7 on page 21 and Figure 8 on page 22 show the projected year 2035 background traffic volumes at the study intersections during the morning and evening peak hours, respectively.

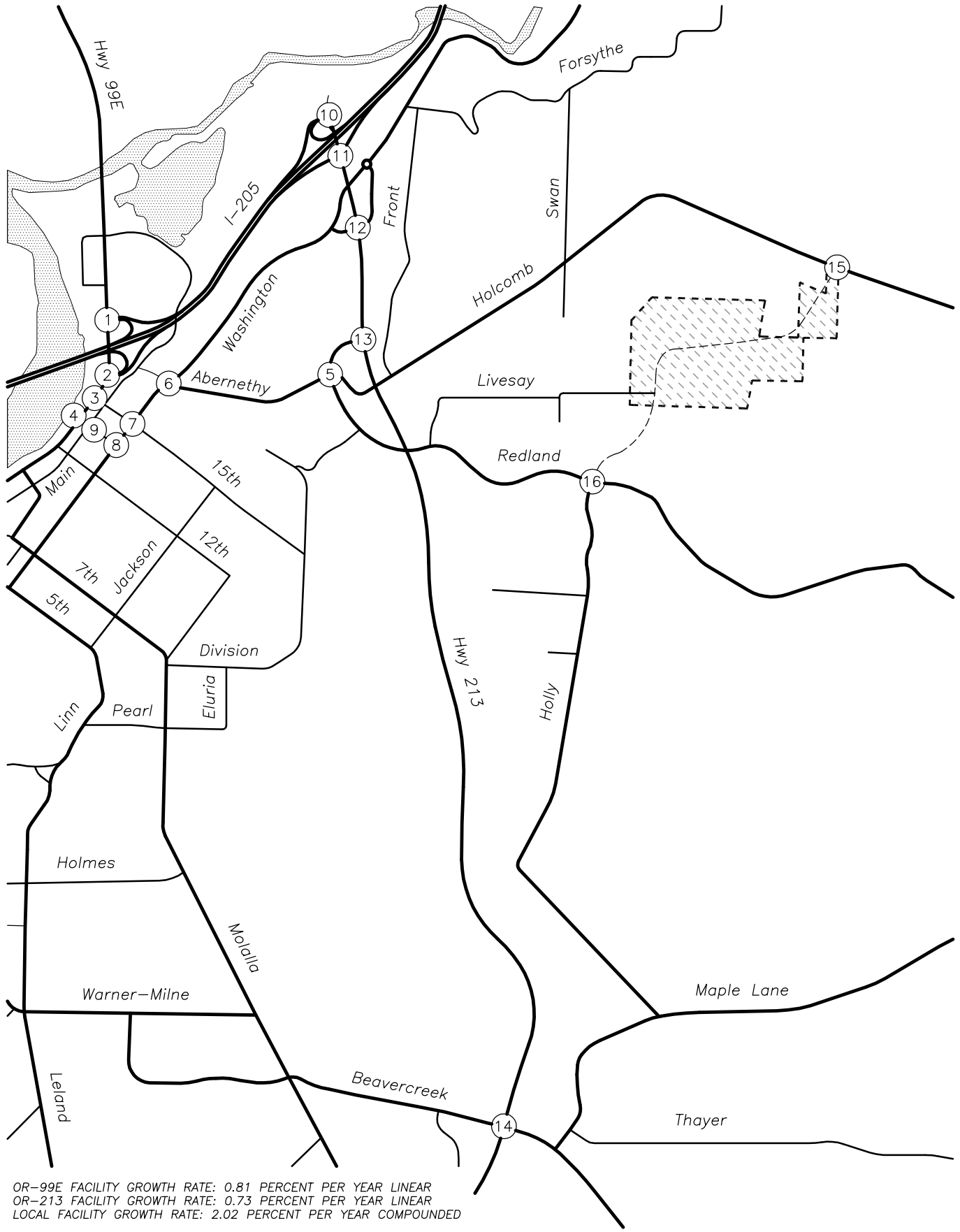
Background Volumes plus Site Trips

Peak hour trips calculated to be generated by the proposed development, as described earlier within the *Site Trips* section, were added to the projected year 2035 background traffic volumes to obtain the expected 2035 background volumes plus site trips.

Figure 9 on page 23 and Figure 10 on 24 show the projected year 2035 peak hour background traffic volumes plus the addition of site trips at the study intersections during the morning and evening peak hours, respectively.

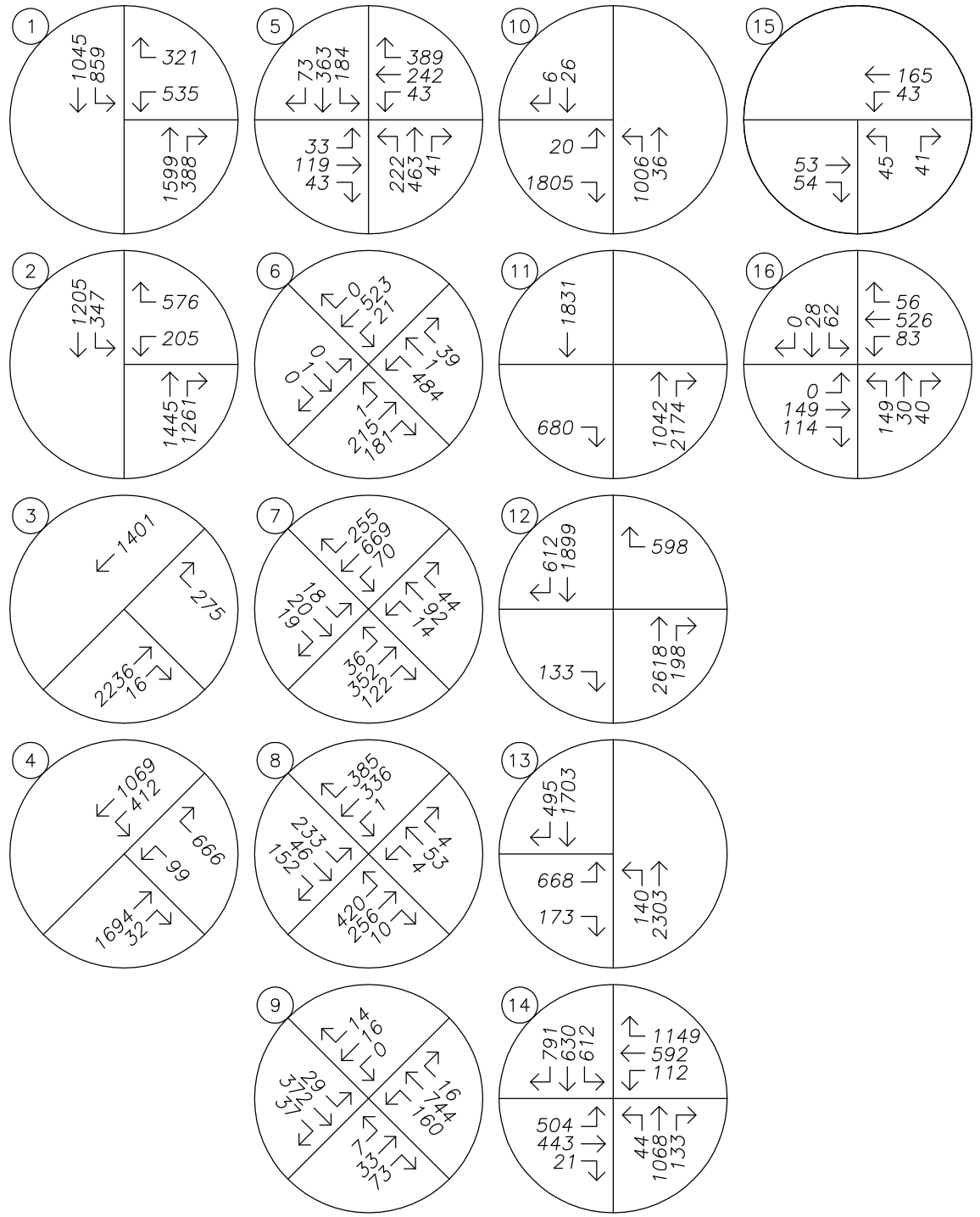
TRAFFIC VOLUMES
Year 2035 Planning Horizon – w/ Holly Extension
AM Peak Hour

FIGURE 7
Page 21



OR–99E FACILITY GROWTH RATE: 0.81 PERCENT PER YEAR LINEAR
OR–213 FACILITY GROWTH RATE: 0.73 PERCENT PER YEAR LINEAR
LOCAL FACILITY GROWTH RATE: 2.02 PERCENT PER YEAR COMPOUNDED

*Matches the alignment in the City's TSP



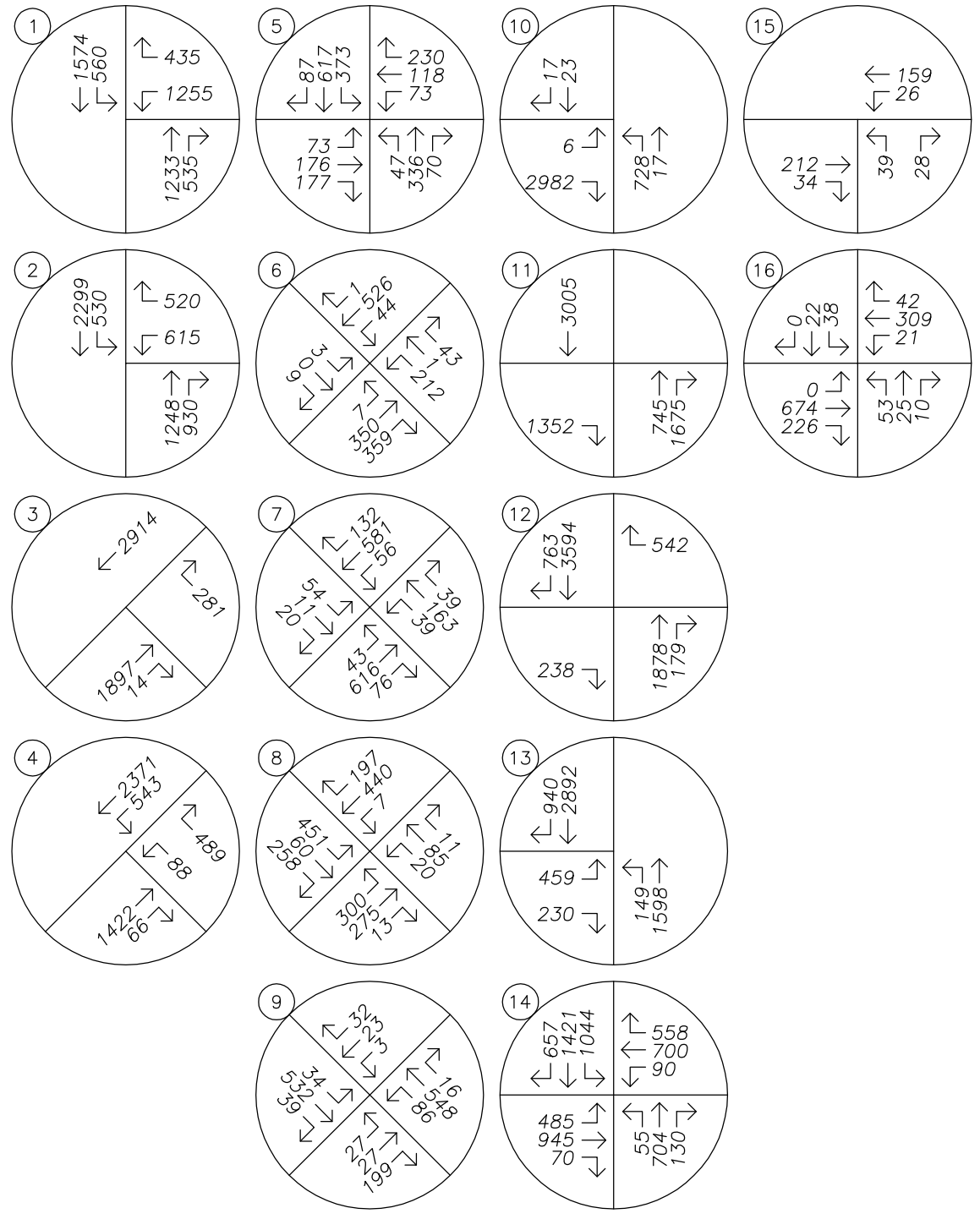
No Scale

TRAFFIC VOLUMES
Year 2035 Planning Horizon – w/ Holly Extension
PM Peak Hour

FIGURE 8
Page 22

OR–99E FACILITY GROWTH RATE: 0.81 PERCENT PER YEAR LINEAR
OR–213 FACILITY GROWTH RATE: 0.73 PERCENT PER YEAR LINEAR
LOCAL FACILITY GROWTH RATE: 2.02 PERCENT PER YEAR COMPOUNDED

*Matches the alignment in the City's TSP

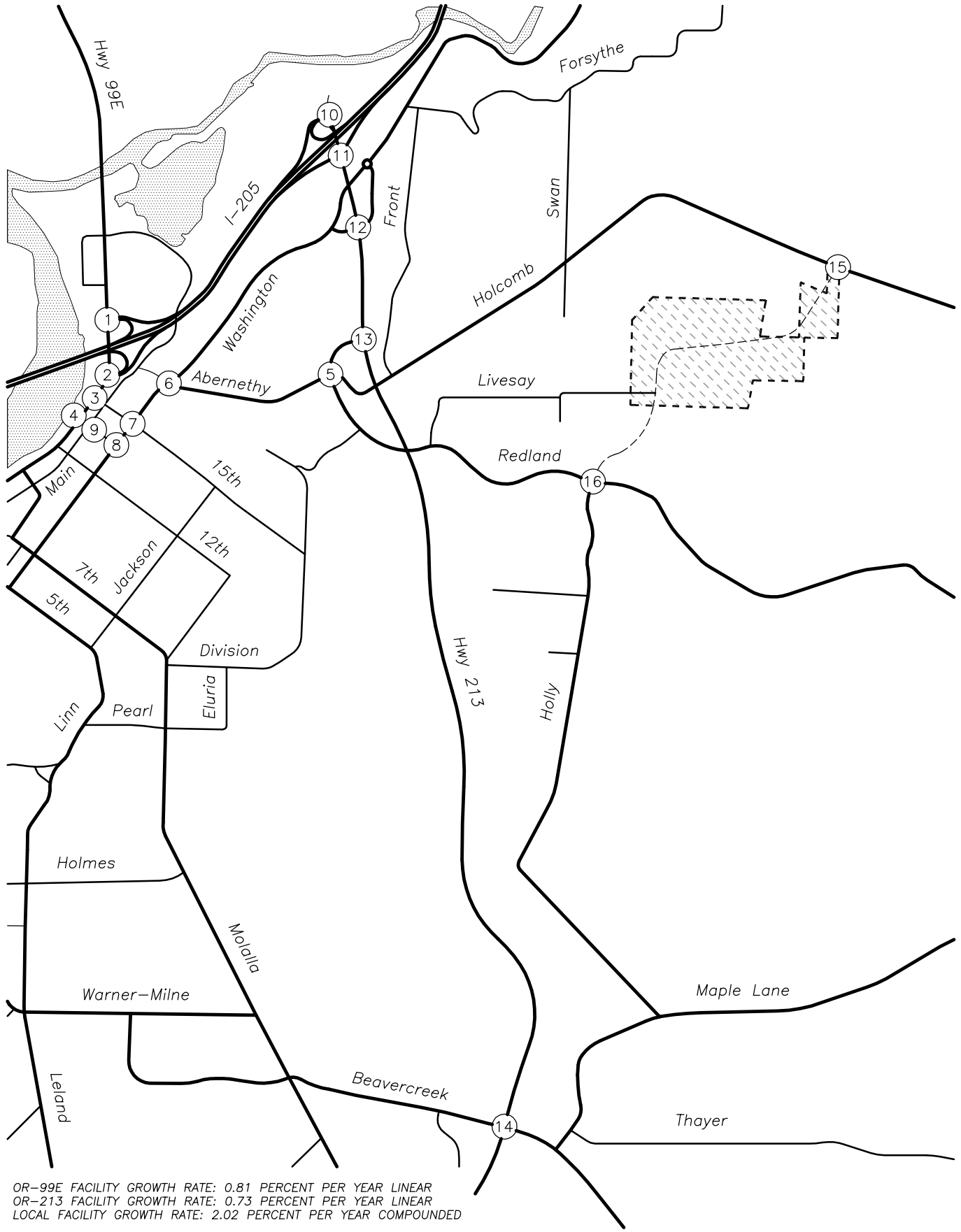


No Scale

Hwy 99E
I-205
Washington
Front
Swan
Forsythe
Holcomb
Abernethy
Livesay
Redland
Main
15th
12th
7th
Jackson
5th
Division
Linn
Pearl
Eluria
Hwy 213
Holly
Holmes
Molalla
Warner-Milne
Leland
Beavercreek
Maple Lane
Thayer
OR-99E FACILITY GROWTH RATE: 0.81 PERCENT PER YEAR LINEAR
OR-213 FACILITY GROWTH RATE: 0.73 PERCENT PER YEAR LINEAR
LOCAL FACILITY GROWTH RATE: 2.02 PERCENT PER YEAR COMPOUNDED
*Matches the alignment in the City's TSP
No Scale
TRAFFIC VOLUMES
Year 2035 Planning Horizon plus Annexation
AM Peak Hour
FIGURE 9
Page 23

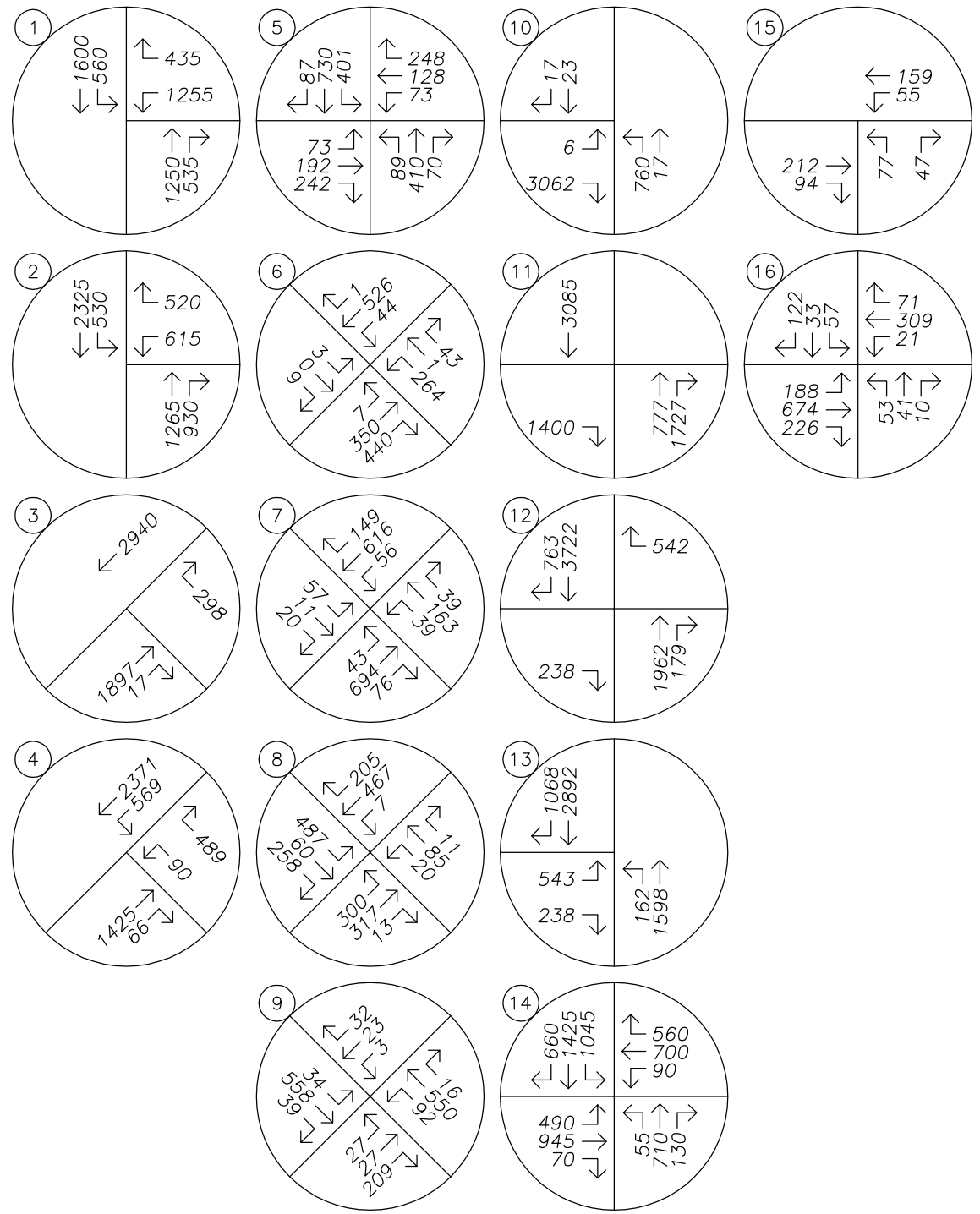
TRAFFIC VOLUMES
Year 2035 Planning Horizon plus Annexation
PM Peak Hour

FIGURE 10
Page 24



OR-99E FACILITY GROWTH RATE: 0.81 PERCENT PER YEAR LINEAR
OR-213 FACILITY GROWTH RATE: 0.73 PERCENT PER YEAR LINEAR
LOCAL FACILITY GROWTH RATE: 2.02 PERCENT PER YEAR COMPOUNDED

*Matches the alignment in the City's TSP



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Capacity Analysis

A capacity and delay analysis was conducted for each of the study intersections per the signalized and unsignalized intersection analysis methodologies in the *HIGHWAY CAPACITY MANUAL* (HCM)[1]. The level-of-service (LOS) of an intersection can range from LOS A, which indicates very little or no delay experienced by vehicles, to LOS F, which indicates a high degree of congestion and delay. The volume-to-capacity (v/c) ratio is a measure that compares the traffic volumes (demand) against the available capacity of an intersection.

Per Section 12.04.205 of the *Oregon City Municipal Code*, the following minimum acceptable operation standards apply when evaluating traffic impacts associated with the proposed annexation.

- For intersections within the Regional Center (Downtown Community Plan), a maximum v/c ratio of 1.10 is permissible during the peak hour, provided that during the second hour the v/c ratio is 0.99 or less. For signalized intersections, these standards apply to the intersection as a whole. For unsignalized intersections, these standards apply to the major-street approaches only. There is no performance standard for unsignalized minor-street approaches.
- For intersections outside the Regional Center but designated on the Arterial and Throughway Network, a maximum v/c ratio of 0.99 shall be maintained. This standard applies to signalized intersections as a whole, and to the major-street approaches at unsignalized intersections. There is no performance standard for unsignalized minor-street approaches.
- Signalized intersections located outside the Regional Center boundaries and not designated on the Arterial and Throughway Network shall operate at LOS D or better for the intersection as a whole, no approach shall operate worse than LOS E, and the intersection shall operate with a v/c ratio no higher than 1.0 for the sum of critical movements.
- Unsignalized intersections located outside the Regional Center boundaries and not designated on the Arterial and Throughway Network shall operate at LOS E or better for all approaches serving more than 20 peak hour vehicles. LOS F will be tolerated at movements serving no more than 20 vehicles during the peak hour.
- Until the city adopts new performance measures that identify alternative mobility targets, the city exempts proposed developments that are permitted, either conditionally, outright, or through a detailed development master plan approval from compliance with the above mobility standards for identified intersections, including the intersections of OR-99E at the I-205 northbound and southbound ramp terminals, and the intersection of Beavercreek Road at OR-213.

According to Oregon City's Downtown Community Plan, the Regional Center encompasses all of the study intersections except Beavercreek Road at OR-213, the future Holly Lane at S Holcomb Boulevard, and Holly Lane at S Redland Road.

[1] Transportation Research Board, *HIGHWAY CAPACITY MANUAL 2000* and *HIGHWAY CAPACITY MANUAL 2010*.

The future intersection of Holly Lane at S Holcomb Boulevard will be an unsignalized intersection currently not designated on the Arterial and Throughway Network whereas Holly Lane at S Redland Road is designated on the Arterial and Throughway Network.

The I-205 southbound ramps intersection at OR-213 was analyzed as two separate intersections due to its unique configuration that includes two distinct stop bars for southbound vehicles. Based on the capacity analysis, the highest average control delay experienced for any intersection approach was determined to be for the eastbound left-turn from the I-205 off-ramp. The highest projected v/c ratio was for the northbound approach.

The I-205 southbound ramps intersection at OR-99E currently operates with v/c ratios of 0.95 during the morning peak hour and 0.91 during the evening peak hour. Under planning year 2035 conditions, regardless the addition of site trips from the proposed annexation and zone change, the intersection is projected to operate with v/c ratios in excess of 1.10 during both the morning and evening peak hours.

The I-205 northbound ramps intersection at OR-99E currently operates with v/c ratios of 0.78 during the morning peak hour and 0.71 during the evening peak hour. Under year 2035 conditions, regardless of the addition of site trips from the proposed annexation and zone change, the intersection is projected to operate with v/c ratios in excess of 1.10 during both the morning and evening peak hours.

The intersection of 15th Street at OR-99E operates with v/c ratios of 0.92 or less during the morning peak hour and 0.78 or less during the evening peak hour for all analysis scenarios.

The intersection of 14th Street at OR-99E currently operates with v/c ratios of 0.90 during the morning peak hour and 0.80 during the evening peak hour. Under planning year 2035 conditions, regardless of the addition of site trips from the proposed annexation and zone change, the intersection is projected to operate with v/c ratios in excess of 1.10 during the morning peak hour and 0.96 or less during the evening peak hour.

The intersection of Abernethy Road/S Holcomb Boulevard at Redland Road operates with v/c ratios of 0.88 or less during the morning peak hour and 0.91 or less during the evening peak hour for the existing and background analysis scenarios. Under planning year 2035 conditions with inclusion of site trips from the proposed annexation and zone change, the intersection is projected to operate with a v/c ratio of 0.88 during the morning peak hour and 1.08 during the evening peak hour.

The intersection of Abernethy Road at Washington Street is projected to operate with v/c ratios of 0.91 or less during the morning peak hour and 0.66 or less during the evening peak hour for all analysis scenarios.

The intersection of 15th Street at Washington Street is projected to operate with v/c ratios of 0.87 or less during the morning peak hour and 0.77 or less during the evening peak hour for all analysis scenarios.

The intersection of 14th Street at Washington Street currently operates with v/c ratios of 0.78 during the morning peak hour and 0.80 during the evening peak hour. Under planning year 2035 conditions without inclusion of site trips from the proposed annexation and zone change, the intersection is projected to operate with v/c ratios of 1.06 during the morning peak hour and in excess of 1.10 during the evening peak hour.

With inclusion of site trips from the proposed annexation and zone change, the intersection is projected to operate with v/c ratios in excess of 1.10 during both the morning and evening peak hours.

The intersection of 14th Street at Main Street is projected to operate with v/c ratios of 0.26 or less during the morning peak hour and 0.37 or less during the evening peak hour for all analysis scenarios.

The I-205 southbound ramp intersection at OR-213 is projected to operate with v/c ratios of 0.70 or less during the morning peak hour and 0.95 or less during the evening peak hour for all analysis scenarios.

The intersection of Prairie Schooner Way/Clackamas River Drive at OR-213 is projected to operate with v/c ratios of 0.89 or less during the morning peak hour and 0.95 or less during the evening peak hour under all analysis scenarios.

The intersection of Redland Road at OR-213 currently operates with v/c ratios of 0.87 during the morning peak hour and 1.01 during the evening peak hour. Under planning year 2035 conditions without inclusion of site trips from the proposed annexation and zone change, the intersection is projected to operate with v/c ratios of 1.01 during the morning peak hour and in excess of 1.10 during the evening peak hour. With inclusion of site trips from the proposed annexation and zone change, the intersection is projected to operate with v/c ratios of 1.05 during the morning peak hour and in excess of 1.10 during the evening peak hour.

The intersection of Beavercreek Road at OR-213 currently operates with v/c ratios of 0.79 during the morning peak hour and 0.92 during the evening peak hour. Under planning year 2035 conditions, regardless of the addition of site trips from the proposed annexation and zone change, the intersection is projected to operate with v/c ratios of 1.01 during the morning peak hour and 1.04 during the evening peak hour.

The future intersection of Holly Lane at S Holcomb Boulevard is projected to operate at LOS B with v/c ratios of 0.09 or less during the morning peak hour and 0.20 or less during the evening peak hour for all analysis scenarios.

The intersection of Holly Lane at S Redland Road is projected to operate with v/c ratios of 0.07 or less during the morning peak hour and 0.17 or less during the evening peak hour for all analysis scenarios.

The v/c, delay, and LOS results of the capacity analysis are shown in Table 3 - Table 5 for the morning and evening peak hours. The v/c ratio for two-way stop-controlled intersections represent that highest reported v/c for the major-street approach while LOS and delay are representative of the minor-street approach lane experiencing the highest delay. The reported results are generally based on the analysis methodologies provided in the 2010 HCM; however, for intersections where the 2010 methodology fails to report major-street v/c ratio or does not provide a v/c ratio for a signalized intersection, v/c ratios were evaluated using the HCM 2000 methodologies. Detailed calculations as well as tables showing the relationship between delay and LOS are included in the appendix to this report.

Table 3 - Capacity Analysis Summary (Intersections 1 – 6)

	Morning Peak Hour			Evening Peak Hour		
	LOS	Delay (s)	v/c	LOS	Delay (s)	v/c
1. I-205 SB Ramps at OR-99E						
2017 Existing Conditions	D	40	0.95	C	28	0.91
2035 Planning Horizon (w/o Annexation Trips)	F	> 80	**1.21**	E	71	**1.13**
2035 Planning Horizon (w/ Annexation Trips)	F	> 80	**1.21**	E	71	**1.13**
2. I-205 NB Ramps at OR-99E						
2017 Existing Conditions	C	21	0.78	B	17	0.71
2035 Planning Horizon (w/o Annexation Trips)	F	> 80	**1.33**	E	57	**1.17**
2035 Planning Horizon (w/ Annexation Trips)	F	> 80	**1.33**	E	57	**1.17**
3. 15th St at OR-99E						
2017 Existing Conditions	C	24	0.82	C	21	0.68
2035 Planning Horizon (w/o Annexation Trips)	F	54	0.92	E	43	0.78
2035 Planning Horizon (w/ Annexation Trips)	F	67	0.92	E	50	0.78
4. 14th St at OR-99E						
2017 Existing Conditions	C	23	0.90	B	15	0.80
2035 Planning Horizon (w/o Annexation Trips)	E	62	**1.14**	C	27	0.94
2035 Planning Horizon (w/ Annexation Trips)	E	60	**1.14**	C	31	0.96
5. Abernethy Rd/S Holcomb Blvd at Redland Rd						
2017 Existing Conditions	C	27	0.75	C	29	0.78
2035 Planning Horizon (w/o Annexation Trips)	C	30	0.79	D	41	0.91
2035 Planning Horizon (w/ Annexation Trips)	D	40	0.88	E	71	1.08
6. Abernethy Rd at Washington St						
2017 Existing Conditions	B	13	0.70	A	7	0.49
2035 Planning Horizon (w/o Annexation Trips)	C	21	0.85	A	9	0.61
2035 Planning Horizon (w/ Annexation Trips)	C	27	0.91	B	10	0.66

BOLDED results exceed Oregon City operational standards.

Table 4 - Capacity Analysis Summary (Intersections 7 - 13)

	Morning Peak Hour			Evening Peak Hour		
	LOS	Delay (s)	v/c	LOS	Delay (s)	v/c
7. 15th St at Washington St						
2017 Existing Conditions	B	11	0.66	B	11	0.58
2035 Planning Horizon (w/o Annexation Trips)	B	19	0.81	B	18	0.73
2035 Planning Horizon (w/ Annexation Trips)	C	23	0.87	C	21	0.77
8. 14th St at Washington St						
2017 Existing Conditions	C	25	0.78	C	26	0.80
2035 Planning Horizon (w/o Annexation Trips)	E	56	1.06	E	70	**1.17**
2035 Planning Horizon (w/ Annexation Trips)	E	65	**1.12**	F	> 80	**1.26**
9. 14th St at Main St						
2017 Existing Conditions	D	35	0.18	D	30	0.26
2035 Planning Horizon (w/o Annexation Trips)	F	> 80	0.25	F	106	0.35
2035 Planning Horizon (w/ Annexation Trips)	F	> 80	0.26	F	128	0.37
10. I-205 SB Ramps at OR-213						
2017 Existing Conditions	F	> 80	0.60	D	30	0.80
2035 Planning Horizon (w/o Annexation Trips)	F	> 80	0.68	E	43	0.92
2035 Planning Horizon (w/ Annexation Trips)	F	> 80	0.70	E	49	0.95
12. Prairie Schooner/Clackamas River Dr at OR-213						
2017 Existing Conditions	A	9	0.78	A	9	0.83
2035 Planning Horizon (w/o Annexation Trips)	B	13	0.87	B	14	0.92
2035 Planning Horizon (w/ Annexation Trips)	B	14	0.89	B	15	0.95
13. Redland Rd at OR-213						
2017 Existing Conditions	C	22	0.87	D	38	1.01
2035 Planning Horizon (w/o Annexation Trips)	C	33	1.01	E	77	**1.19**
2035 Planning Horizon (w/ Annexation Trips)	D	41	1.05	F	> 80	**1.23**

BOLDED results exceed Oregon City operational standards.

Table 5 - Capacity Analysis Summary (Intersections 14 - 16)

	Morning Peak Hour			Evening Peak Hour		
	LOS	**Delay (s)**	**v/c**	**LOS**	**Delay (s)**	**v/c**
14. Beavercreek Rd at OR-213						
2017 Existing Conditions	D	39	0.79	D	49	0.92
2035 Planning Horizon (w/o Annexation Trips)	E	61	1.01	E	64	1.04
2035 Planning Horizon (w/ Annexation Trips)	E	62	1.01	E	64	1.04
15. Holly Ln at S Holcomb Blvd (Future)						
2035 Planning Horizon (w/o Annexation Trips)	B	11	0.07	B	12	0.16
2035 Planning Horizon (w/ Annexation Trips)	B	13	0.09	B	14	0.20
16. Holly Ln at S Redland Rd*						
2017 Existing Conditions	B	14	0.05	B	13	0.02
2035 Planning Horizon (w/o Annexation Trips)	C	21	0.07	C	22	0.03
2035 Planning Horizon (w/ Annexation Trips)	F	> 80	0.07	F	> 80	0.17

***** Intersection converted from three-legged to four-legged under year 2035 conditions.

BOLDED results exceed Oregon City operational standards.

Based on the capacity analysis, there are six study intersections that are not projected to meet the minimum Oregon City intersection performance standards:

- I-205 southbound ramps at OR-99E;
- I-205 northbound ramps at OR-99E;
- 14th Street at OR-99E;
- 14th Street at Washington Street;
- Redland Road at OR-213; and
- Beavercreek Road at OR-213.

Additionally, the intersection of Abernethy Road/S Holcomb Boulevard at Redland Road is projected to operate within Oregon City standards but with a v/c ratio in excess of 1.00.

Further inspection and potential mitigations at the intersections listed above are discussed within the *Mitigation Analysis* section of this report.

All other study intersections are currently and projected to operate acceptably per Oregon City standards and with v/c ratios of 1.00 or less through the 2035 planning horizon. No operational mitigation is necessary or recommended for these intersections.

Queuing Analysis

The I-205 southbound ramps intersection at OR-213 reports high delays and v/c ratios during both the morning and evening peak hours under the 2035 planning horizon conditions either with or without the addition of site trips from the proposed annexation and zone change. To determined whether eastbound left-turn queues may exceed the available lane storage and impede eastbound right-turning traffic flowing off the -205 freeway, an analysis of projected queuing was conducted for the intersection. The queue length for the eastbound left-turn lane was projected based on the results of a Synchro/SimTraffic simulation, with the reported values based on the 95th-percentile queue length for the year 2035 background plus zone change conditions. This means that 95 percent of the time, the queue lengths will be less than or equal to the reported values.

The projected 95th percentile queue lengths reported by the Synchro/SimTraffic simulation are presented in Table 6 below for the morning and evening peak hours. Available lane storage was measured and rounded to the nearest five feet. Detailed queuing analysis worksheets are included in the technical appendix.

Table 6 – 95th-Percentile Queuing Analysis Summary

	Available Storage (Feet)	95th Percentile Queue 2035 w/ Annexation	
		AM	PM
10. I-205 SB Ramps at OR-213			
EB LT Lane	125	109	26

Based on the results of the queuing analysis, the eastbound left-turn lane of the I-205 southbound ramps intersection at OR-213 is projected to have adequate vehicle storage space to accommodate the projected queues. Accordingly, no operational or queuing-related mitigation is necessary or recommended for this intersection.

Mitigation Analysis

As determined within the *Capacity Analysis* section, there are six study intersections that are not projected to meet Oregon City standards and one additional intersection that is projected to operate with a v/c ratio in excess of 1.00. The following narrative discusses potential mitigative measures, some of which are described within the city's TSP, that may improve operation of these intersections to acceptable levels. Further analyses of other study intersections that may be significantly impacted by mitigations was also conducted.

Additionally, the two study intersections on Holly Lane were analyzed as roundabouts in accordance with planned projects included within the TSP.

I-205 Southbound Ramps at OR-99E

The I-205 southbound ramps intersection at OR-99E is projected to operate with v/c ratios in excess of 1.10 under the 2035 planning horizon during both the morning and evening peak hours. Per Oregon City's TSP, project number D75, dual left-turn lanes on the southbound approach of OR-99E are planned for installation in the long-term (Phase 3). Upon implementation of mitigative measures, the study intersection is projected to operate with v/c ratios of 0.94 or less during both the morning and evening peak hours under the 2035 planning year.

I-205 Northbound Ramps at OR-99E

The I-205 northbound ramps intersection at OR-99E is projected to operate with v/c ratios in excess of 1.10 under the 2035 planning horizon during both the morning and evening peak hours. Per Oregon City's TSP, project number D76, dual left-turn lanes on the westbound off-ramp approach are planned for installation in the long-term (Phase 3). Additionally, dual right-turn lanes on the northbound OR-99E approach are also necessary to reduce the intersection v/c ratio to acceptable levels per city standards. Upon implementation of these mitigative measures, the study intersection is projected to operate with v/c ratios of 0.88 or less during both the morning and evening peak hours under the 2035 planning year.

15th Street at OR-99E

The intersection of 15th Street at OR-99E is projected to operate acceptably per Oregon City capacity standards; however, the intersection is affected by mitigations proposed at other study intersections, where project numbers D7 and D8 of the city's TSP are planned for implementation in the short-term. Project number D8 includes converting 15th Street to be one-way westbound travel between Washington Street and OR-99E. This segment of roadway will be restriped to include two travel lanes.

Limited information regarding the future design of the intersection is available; therefore, it is assumed the intersection will be converted to provide both northwest-bound left-turn and right-turn movements. In order to meet acceptable operational standards, it is recommended that a traffic signal be installed and the northwest-bound approach be restriped to have one left-turn lane and two right-turn lanes. Upon implementation of these mitigative measures, the study intersection is projected to operate with v/c ratios of 0.96 or less during both the morning and evening peak hours under the 2035 planning year.

14th Street at OR-99E

The intersection of 14th Street at OR-99E is projected to operate with a v/c ratio in excess of 1.10 during the morning peak hour. Per Oregon City's TSP, project number D7, 14th Street may be converted to one-way eastbound travel between OR-99E and John Adams Street. From OR-99E to Main Street, the roadway will be restriped to include two travel lanes. It is recommended that the traffic signal remain at the intersection to reduce forming extended southwest-bound queues. Upon implementation of these mitigative measures, the

study intersection is projected to operate with v/c ratios of 0.96 or less during both the morning and evening peak hours under the 2035 planning year.

Abernethy Road/S Holcomb Boulevard at Redland Road

The intersection of Abernethy Road/S Holcomb Boulevard at Redland Road is projected to operate acceptably per Oregon City standards; however, the intersection is projected to operate over capacity with a v/c ratio of 1.08 during the evening peak hour. No planned project is currently included within the city's TSP, however, a potential mitigative measure to reduce the v/c ratio may include restriping the intersection. Currently, the western intersection leg has two receiving lanes; however, it does not have more than one travel lane from any approach feeding into it. It is recommended that the western intersection leg be restriped to have one eastbound left-turn, one eastbound through, one eastbound right-turn, and one westbound receiving lane. Upon implementation of mitigative measures, the intersection is projected to operate with v/c ratios of 0.93 or less during both the morning and evening peak hours under the 2035 planning year.

15th Street at Washington Street

The intersection of 15th Street at Washington Street is projected to operate acceptably per Oregon City capacity standards; however, the intersection is affected by mitigations proposed at other study intersections, TSP projects D7 and D8. Project D8 proposes the restriping of 15th Street to be one-way westbound travel Washington Street and OR-99E. This segment of roadway will be restriped to include two westbound travel lanes. Upon implementation of mitigative measures, the study intersection is projected to operate with v/c ratios of 0.88 or less during both the morning and evening peak hours under the 2035 planning year.

14th Street at Washington Street

The intersection of 14th Street at Washington Street is projected to operate with v/c ratios in excess of 1.10 during both the morning and evening peak hours. Per Oregon City's TSP, project number D7, 14th Street may be converted to one-way eastbound travel between OR-99E and John Adams Street. From Main Street to Washington Street the roadway will be restriped to include two travel lanes, while from Washington Street to John Adams Street the roadway will be restriped to include one travel lane. Upon implementation of mitigative measures, the intersection is projected to operate with v/c ratios of 0.85 or less during both the morning and evening peak hours under the 2035 planning year.

14th Street at Main Street

For safety concerns rather than operational issues, the intersection of 14th Street at Main Street is proposed for conversion to all-way stop control, per TSP project number D13, to be consistent with traffic controls of surrounding intersections. In addition, project number D7 includes restriping 14th Street to be one-way eastbound travel with two travel lanes between OR-99E and Washington Street. Upon implementation of these mitigative measures, the study intersection is projected to operate with v/c ratios of 0.56 or less during both the morning and evening peak hours under the 2035 planning year.

Redland Road at OR-213

The intersection of Redland Road at OR-213 is projected to operate with a v/c ratio in excess of 1.10 during the evening peak hour. Per Oregon City's TSP, project number D79 (currently unfunded), an additional northbound through lane and an additional southbound through lane are planned for installation in the long-term (Phase 4). Upon implementation of these mitigative measures, the study intersection is projected to operate with v/c ratios of 0.96 or less during both the morning and evening peak hours under the 2035 planning year.

Holly Lane at S Holcomb Boulevard

The intersection of Holly Lane at S Holcomb Boulevard is projected to operate well within capacity of Oregon City standards where no mitigation is recommended. However, project number D43 of the city's TSP includes the construction of a single-lane roundabout in lieu of a one-way stop-controlled intersection, which is planned for installation in the long-term in conjunction with the Holly Lane extension. If constructed, the intersection is projected to operate at LOS A with v/c ratios of 0.33 or less during both the morning and evening peak hours under the 2035 planning year.

Holly Lane at S Redland Road

The intersection of Holly Lane at S Redland Road is also projected to operate with v/c ratios well within Oregon City standards, however, high delays are projected on the Holly Lane minor-street approaches. Although mitigation is not necessary per city standards, project number D36 of the city's TSP includes the construction of a single-lane roundabout in lieu of a two-way stop-controlled intersection, which is planned for installation in the long-term (Phase 4). Based on preliminary analyses of a single-lane roundabout, if project number D36 is implemented it is recommended that an additional right-turn lane be constructed on the eastbound approach to maintain adequate lane capacities within the intersection. If constructed, the intersection is projected to operate with v/c ratios of 0.92 or less.

The v/c, delay, and LOS results of the mitigation analysis are shown in Table 7 and Table 8 for the morning and evening peak hours. Detailed calculations as well as tables showing the relationship between delay and LOS are included in the appendix to this report.

Table 7 - Mitigative Capacity Analysis Summary (Intersections 1 – 9)

	LOS	Delay (s)	v/c	LOS	Delay (s)	v/c
1. I-205 SB Ramps at OR-99E						
2035 Planning Horizon (w/ Annexation Trips)	F	> 80	**1.21**	E	71	**1.13**
Mitigated Conditions (2 SB LT Lanes)	C	29	0.92	D	41	0.94
2. I-205 NB Ramps at OR-99E						
2035 Planning Horizon (w/ Annexation Trips)	F	> 80	**1.33**	E	57	**1.17**
Mitigated Conditions (2 WB LT & 2 NB RT Lanes)	C	22	0.82	C	23	0.88
3. 15th St at OR-99E						
2035 Planning Horizon (w/ Annexation Trips)	F	67	0.92	E	50	0.78
Mitigated Conditions (One-way Street w/ 2 travel lanes & Signal)	C	27	0.95	C	30	0.96
4. 14th St at OR-99E						
2035 Planning Horizon (w/ Annexation Trips)	E	60	**1.14**	C	31	0.96
Mitigated Conditions (One-way Street & Signal)	B	11	0.93	A	9	0.96
5. Abernethy Rd/S Holcomb Blvd at Redland Rd						
2035 Planning Horizon (w/ Annexation Trips)	D	40	0.88	E	71	1.08
Mitigated Conditions (1 WB LT, Th, & RT Lanes)	D	40	0.88	D	48	0.93
7. 15th St at Washington St						
2035 Planning Horizon (w/ Annexation Trips)	C	23	0.87	C	21	0.77
Mitigated Conditions (One-way Street)	B	20	0.80	C	22	0.88
8. 14th St at Washington St						
2035 Planning Horizon (w/ Annexation Trips)	E	65	**1.12**	F	> 80	**1.26**
Mitigated Conditions (One-way Street)	B	16	0.79	C	23	0.85
9. 14th St at Main St						
2035 Planning Horizon (w/ Annexation Trips)	F	> 80	0.26	F	128	0.37
Mitigated Conditions (One-way Street & All-way)	B	11	0.37	B	15	0.56

BOLDED results exceed Oregon City operational standards.

Intersection 6. Abernethy Road at Washington Street was excluded from mitigative analyses since no mitigation or changes in traffic conditions would occur at the intersection.

Table 8 - Mitigative Capacity Analysis Summary (Intersections 13 – 16)

	Morning Peak Hour			Evening Peak Hour		
	LOS	**Delay (s)**	**v/c**	**LOS**	**Delay (s)**	**v/c**
13. Redland Rd at OR-213						
2035 Planning Horizon (w/ Annexation Trips)	D	41	1.05	F	82	**1.23**
Mitigated Conditions (Add 1 NB & SB Th Lane)	C	24	0.81	C	28	0.96
15. Holly Ln at S Holcomb Blvd						
2035 Planning Horizon (w/ Annexation Trips)	B	13	0.09	B	14	0.20
Mitigated Conditions (Single Lane Roundabout)	A	6	0.27	A	6	0.33
16. Holly Ln at S Redland Rd						
2035 Planning Horizon (w/ Annexation Trips)	F	> 80	0.07	F	> 80	0.17
Mitigated Conditions (Single Lane Roundabout except w/ EB LT/Th & RT Lanes)	C	22	0.88	C	21	0.92

BOLDED results exceed Oregon City operational standards.

Intersection 14. Beavercreek Road at OR-213 was excluded from mitigative analyses since no reasonable mitigation is currently available and no significant changes in traffic conditions would occur at the intersection.

Although specific mitigation was identified sufficient to offset the impacts of future development following the proposed annexation and zone change on the subject property, it should be noted that there may be other mitigations that would equally or better serve the needs of the development, Oregon City, and ODOT.

The applicant is not currently proposing to make any physical improvements at any area intersections in conjunction with the proposed zone change. Rather, the improvements listed were included as suggestions of possible mitigation. Actual intersection configurations including lane configurations, traffic control devices and signal phasing as applicable for the intersections of Holly Lane at S Holcomb Boulevard and Holly Lane at S Redland Road should appropriately be determined based on the nature of actual development proposed within the subject property and adjacent properties in order to ensure that appropriate warrants are met, safety is preserved and maximized, and mitigations are both appropriate for and proportionate to the impacts of actual development. Accordingly, the currently-proposed mitigation for the requested annexation and zone change consists of conditions of approval pursuant to OAR 660-012-0060(2)(d), as described in the *Transportation Planning Rule Analysis* section of this report.

Transportation Planning Rule Analysis

The Transportation Planning Rule (TPR) is in place to ensure that the transportation system is capable of supporting the potential increase in traffic intensity that could result from changes to adopted plans and land use regulations. The applicable portions of the TPR are quoted in italics below, with responses directly following.

660-012-0060

(1) If an amendment to a functional plan, an acknowledged comprehensive plan, or a land use regulation (including a zoning map) would significantly affect an existing or planned transportation facility, then the local government must put in place measures as provided in section (2) of this rule, unless the amendment is allowed under section (3), (9) or (10) of this rule. A plan or land use regulation amendment significantly affects a transportation facility if it would:

(a) Change the functional classification of an existing or planned transportation facility (exclusive of correction of map errors in an adopted plan);

The proposed zone change will not necessitate changes to the functional classification of existing or planned transportation facilities. Accordingly, this section is not triggered.

(b) Change standards implementing a functional classification system; or

The proposed zone change will not change any standards implementing the functional classification system. Accordingly, this section is also not triggered.

(c) Result in any of the effects listed in paragraphs (A) through (C) of this subsection based on projected conditions measured at the end of the planning period identified in the adopted TSP. As part of evaluating projected conditions, the amount of traffic projected to be generated within the area of the amendment may be reduced if the amendment includes an enforceable, ongoing requirement that would demonstrably limit traffic generation, including, but not limited to, transportation demand management. This reduction may diminish or completely eliminate the significant effect of the amendment.

(A) Types or levels of travel or access that are inconsistent with the functional classification of an existing or planned transportation facility;

(B) Degrade the performance of an existing or planned transportation facility such that it would not meet the performance standards identified in the TSP or comprehensive plan; or

(C) Degrade the performance of an existing or planned transportation facility that is otherwise projected to not meet the performance standards identified in the TSP or comprehensive plan.

In this instance, the proposed zone change would be expected to degrade the performance of several study area intersections that are otherwise not projected to meet the relevant performance standards of Oregon City and ODOT.

Having determined that the proposed annexation and zone change may result in a significant effect on operation of several study area intersections, the TPR also includes the following language:

(9) Notwithstanding section (1) of this rule, a local government may find that an amendment to a zoning map does not significantly affect an existing or planned transportation facility if all of the following requirements are met.

(a) The proposed zoning is consistent with the existing comprehensive plan map designation and the amendment does not change the comprehensive plan map;

(b) The local government has an acknowledged TSP and the proposed zoning is consistent with the TSP; and

(c) The area subject to the zoning map amendment was not exempted from this rule at the time of an urban growth boundary amendment as permitted in OAR 660-024-0020(1)(d), or the area was exempted from this rule but the local government has a subsequently acknowledged TSP amendment that accounted for urbanization of the area.

In this instance, the proposed zoning is consistent with the Comprehensive Plan map designation, Oregon City has an acknowledged TSP that accounted for future development under the proposed zoning, and the area was not exempted from the rule at the time of the urban growth boundary amendment. Accordingly, the city may find that the proposed annexation and zone change is consistent with the city's adopted plans and does not significantly effect an existing or planned transportation facility.

Alternatively, if it is determined that mitigation may be required for the proposed annexation and zone change, the requirements of the TPR are as follows:

(2) If a local government determines that there would be a significant effect, then the local government must ensure that allowed land uses are consistent with the identified function, capacity, and performance standards of the facility measured at the end of the planning period identified in the adopted TSP through one or a combination of the remedies listed in (a) through (e) below, unless the amendment meets the balancing test in subsection (2)(e) of this section or qualifies for partial mitigation in section (11) of this rule. A local government using subsection (2)(e), section (3), section (10) or section (11) to approve an amendment recognizes that additional motor vehicle traffic congestion may result and that other facility providers would not be expected to provide additional capacity for motor vehicles in response to this congestion.

(a) Adopting measures that demonstrate allowed land uses are consistent with the planned function, capacity, and performance standards of the transportation facility.

(b) Amending the TSP or comprehensive plan to provide transportation facilities, improvements or services adequate to support the proposed land uses consistent with the requirements of this division; such amendments shall include a funding plan or mechanism consistent with section (4) or include an amendment to the transportation finance plan so that the facility, improvement, or service will be provided by the end of the planning period.

(c) Amending the TSP to modify the planned function, capacity or performance standards of the transportation facility.

(d) Providing other measures as a condition of development or through a development agreement or similar funding method, including, but not limited to, transportation system management measures or minor transportation improvements. Local governments shall, as part of the amendment, specify when measures or improvements provided pursuant to this subsection will be provided.

(e) Providing improvements that would benefit modes other than the significantly affected mode, improvements to facilities other than the significantly affected facility, or improvements at other locations, if:

(A) *The provider of the significantly affected facility provides a written statement that the system-wide benefits are sufficient to balance the significant effect, even though the improvements would not result in consistency for all performance standards;*

(B) *The providers of facilities being improved at other locations provide written statements of approval; and*

(C) *The local jurisdictions where facilities are being improved provide written statements of approval.*

In this instance, option (d) would allow conditions of development or a development agreement to be adopted for the subject property to mitigate any potential traffic impacts. Appropriate conditions of approval could consist either of requirements to construct mitigation sufficient to offset traffic impacts at the study intersections or to delay development until the city's TSP is amended to specifically address operation of these intersections.

Since site development is not currently proposed and it is anticipated that refinement plans will be developed by Oregon City in conjunction with ODOT, a condition of approval is proposed which will limit development within the subject property to levels permissible under the existing zoning until appropriate refinement plans are prepared to address future capacity concerns.

Subject to further discussion with City and ODOT staff and refinement of the proposed condition, the applicant tentatively proposes the following condition of approval:

In accordance with City, County and State Transportation requirements, no development, except that permitted under the County's Future Urban FU-10 zoning designation, in effect as of the date of this application's submittal, shall be allowed until the following occurs and the Applicant demonstrates compliance with these requirements:

a. *Highway 213 at Redland Road intersection (an Oregon Highway intersection) is forecasted to fall below adopted performance standards prior to year 2035. As a result, a new Refinement Plan, shall be adopted and acknowledged.*

b. *Redland Road at Holcomb Boulevard/Abernethy Road (a non-Oregon Highway intersection) is forecasted to fall below adopted performance standards prior to year 2035. As a result, the City must do one of the following:*

   i. *Adopt amendments to the City's Transportation System Plan and OCMC Chapter 12.04 to include projects that satisfy the then-applicable performance standards and these standards must be acknowledged; or*

   ii. *Condition of approval of a land division application that satisfies then-applicable OCMC Chapter 12.04 Page 5 of 7 by including proportional mitigation of the application's impacts on that intersection, or such other mitigation measure(s) as may be approved which assure(s) that the intersection will either meet, or perform no words than, the then-applicable performance standards.*

Safety Analysis

Crash Data Analysis

Using data obtained from the ODOT's Crash Analysis and Reporting Unit, a review of the most recent available five years of crash history (from January 2011 to December 2015) at the study intersections was performed. The crash data was evaluated based on the number of crashes, the type of collisions, the severity of the collisions, and the resulting crash rate for the intersection. Crash rates provide the ability to compare safety risks at different intersections by accounting for both the number of crashes that have occurred during the study period and the number of vehicles that typically travel through the intersection. Crash rates were calculated using the common assumption that traffic counted during the evening peak period represents 10 percent of average daily traffic (ADT) at the intersection. Crash rates in excess of one to two crashes per million entering vehicles (CMEV) may be indicative of design deficiencies and therefore require a need for further investigation and possible mitigation.

I-205 Southbound Ramps Intersection at OR-99E

The I-205 southbound ramps intersection at OR-99E had 47 reported crashes during the analysis period. The crashes consisted of 25 rear-end collisions, 19 turning-movement collisions, one fixed-object collision, one collision involving a pedestrian, and one collision involving a bicyclist. Of the crashes reported, 20 were classified as "Property Damage Only" (*PDO*), 20 were classified as "Possible Injury – Complaint of Pain" (*Injury C*), six were classified as "Non-Incapacitating Injury" (*Injury B*), and one was classified as "Incapacitating Injury – Bleeding, Broken Bones" (*Injury A*). The crash rate at the intersection was calculated to be 0.55 CMEV.

Three of the reported crashes at the intersection involved a pedestrian or bicyclist, or resulted in an incapacitating injury. The crash involving a pedestrian occurred when the driver of a westbound right-turning passenger car failed to yield right-of-way to a non-motorist in an intersection crosswalk. The driver of the vehicle had turned right after coming to a stop at the intersection. The pedestrian sustained injuries consistent with *Injury B* classification while the driver of the vehicle was uninjured. The crash involving a bicyclist occurred when the driver of a westbound right-turning passenger car struck a southbound bicyclist who was traveling on the roadway shoulder against the flow of traffic. The bicyclist had disregarded the traffic signal and had entered the intersection illegally. The bicyclist sustained injuries consistent with *Injury B* classification while the driver of the vehicle was uninjured. The crash which resulted in incapacitating injuries occurred when the driver of a northbound passenger car disregarded the traffic signal and collided with a westbound left-turning passenger car. The driver of the northbound vehicle sustained injuries while the other driver was uninjured.

I-205 Northbound Ramps Intersection at OR-99E

The I-205 northbound ramps intersection at OR-99E had 42 reported crashes during the analysis period. The crashes consisted of 28 rear-end collisions and 14 turning-movement collisions. Of the crashes reported, 23

were classified as *PDO*, 17 were classified as *Injury C*, one was classified as *Injury B*, and one was classified as *Injury A*. The crash rate at the intersection was calculated to be 0.48 CMEV.

One of the reported crashes at intersection was classified as an *Injury A* collision. The crash occurred when the driver of a westbound right-turning vehicle was following too close and rear-ended another passenger car that had stopped at the intersection. The driver of the vehicle that was rear-ended sustained incapacitating injuries while the other driver was uninjured.

15th Street at OR-99E

The intersection of 15th Street at OR-99E had 20 reported crashes during the analysis period. The crashes consisted of 14 rear-end collisions, five turning-movement collisions, and one collision involving a bicyclist. Of the crashes reported, six were classified as *PDO*, 12 were classified as *Injury C*, one was classified as *Injury B*, and one was classified as *Injury A*. The crash rate at the intersection was calculated to be 0.27 CMEV.

One of the reported crashes at the intersection was classified as an *Injury A* collision. The crash occurred when the driver of a northwest-bound right-turning passenger car failed to yield right-of-way to a bicyclist crossing through the intersection. The driver of the passenger car had proceeded through the intersection after stopping, however had their vision obscured by some roadside obstruction. The bicyclist sustained injuries while the driver of the vehicle was uninjured.

14th Street at OR-99E

The intersection of 14th Street at OR-99E had 49 reported crashes during the analysis period. The crashes consisted of 24 turning-movement collisions, 23 rear-end collisions, and two collisions involving bicyclists. Of the crashes reported, 15 were classified as *PDO*, 25 were classified as *Injury C*, and nine were classified as *Injury B*. The crash rate at the intersection was calculated to be 0.68 CMEV.

Two of the reported crashes at the intersection involved a bicyclist. One of the bicycle-related crashes occurred when the driver of a southwest-bound left-turning passenger car was struck by a bicyclist who disregarded the traffic signal and had entered the intersection illegally. The driver of the vehicle was uninjured while the bicyclist sustained injuries consistent with *Injury B* classification. The second bicycle related crash occurred when the driver of a northeast-bound right-turning passenger car failed to yield right-of-way to a bicyclist. The driver of the vehicle was uninjured while the bicyclist sustained injuries consistent with *Injury B* classification.

Abernethy Road/S Holcomb Boulevard at Redland Road

The intersection of Abernethy Road/S Holcomb Boulevard at Redland Road had 15 reported crashes during the analysis period. The crashes consisted of 9 rear-end collisions, 5 turning-movement collisions, and 1 angle-type collision. Of the crashes reported, 9 were classified as *PDO*, 4 were classified as *Injury C*, and 2 were classified as *Injury B*. the crash rate at the intersection was calculated to be 0.43 CMEV.

Abernethy Road at Washington Street

The intersection of Abernethy Road at Washington Street had no reported crashes during the analysis period.

15th Street at Washington Street

The intersection of 15th Street at Washington Street had 20 reported crashes during the analysis period. The crashes consisted of ten turning-movement collisions, six angle-type collisions, three rear-end collisions, and one collision involving a bicyclist. Of the crashes reported, nine were classified as *PDO*, nine were classified as *Injury C*, and two were classified as *Injury B*. The crash rate at the intersection was calculated to be 0.80 CMEV.

One of the reported crashes at the intersection involved a bicyclist. The crash occurred when the driver of a southeast-bound left-turning passenger car failed to yield right-of-way to a bicyclist. The driver of the passenger car had their vision obscured by some roadside obstruction. The bicyclist sustained injuries consistent with *Injury C* classification while the driver of the vehicle was uninjured.

14th Street at Washington Street

The intersection of 14th at Washington Street had nine reported crashes during the analysis period. The crashes consisted of four turning-movement collisions, three rear-end collisions, one fixed-object collision, and one angle-type collision. Of the crashes reported, four were classified as *PDO* and five were classified as *Injury C*. The crash rate at the intersection was calculated to be 0.32 CMEV.

14th Street at Main Street

The intersection of 14th Street at Main Street had 30 reported crashes during the analysis period. The crashes consisted of 21 angle-type collisions, six turning-movement collisions, two collisions involving bicyclists, and one collision involving a pedestrian. Of the crashes reported, 15 were classified as *PDO*, 11 were classified as *Injury C*, and four were classified as *Injury B*. The crash rate at the intersection was calculated to be 1.46 CMEV.

Based on the calculated crash rate being in excess of one crash per million entering vehicles, additional investigation regarding the safety of the intersection is appropriate. It was noted that Oregon City's TSP includes a recommendation to convert this intersection to all-way stop control and potentially convert 14th Street to one-way travel as mitigation for the high incidence of crashes at the intersection. The intersection crash history shows five or more crashes per year that are susceptible to correction by installation of all-way stop control for each of the three most recent years analyzed (2013, 2014 and 2015). Accordingly, all-way stop control is both warranted and recommended based on the crash history. No other specific safety mitigations are recommended based on the crash history.

I-205 Southbound Ramps at OR-213

The I-205 southbound ramps intersection at OR-213 had no reported crashes during the analysis period.

I-205 Northbound Ramps at OR-213

The I-205 northbound ramps intersection at OR-213 had no reported crashes during the analysis period.

Prairie Schooner Way/Clackamas River Drive at OR-213

The intersection of Prairie Schooner Way/Clackamas River Drive at OR-213 was recently reconstructed near the end of year 2012. Prior to reconstruction, the intersection allowed full turning-movements for all approaches. Currently, the intersection allows only right-in/right-out movements for the minor-street approaches while bi-directional traffic along the major-street is separated by a raised median.

Since significant changes to traffic controls had occurred at the intersection, it's reasonable to assume that crash patterns have also significantly changed. Prior to reconstruction of the intersection, over a duration of two years (between 2011 and 2012) a total of 19 crashes were reported at the intersection. After construction was completed, over a duration of three years (between 2013 and 2015) a total of 15 crashes were reported. Based on this information, on average 9.5 crashes per year had occurred at the intersection prior to reconstruction while 5.0 crashes per year had occurred after construction had ended. In order to more accurately assess safety at the intersection, only the most recent three years of crash data (between years 2013 and 2015) was reviewed.

Based on the three years of crash history, the intersection had 15 reported crashes during the analysis period. The crashes consisted of eight rear-end collisions, two turning-movement collisions, two overturning collisions, one angle-type collision, one fixed-object collision, and one sideswipe collision. Of the crashes reported, four were classified as *PDO*, eight were classified as *Injury C*, and three were classified as *Injury B*. The crash rate at the intersection was calculated to be 0.22 CMEV.

Redland Road at OR-213

The intersection of Redland Road at OR-213 had 36 reported crashes during the analysis period. The crashes consisted of 28 rear-end collisions, 7 turning-movements, and 1 sideswipe collision. Of the crashes reported, 10 were classified as *PDO*, 24 were classified as *Injury C*, 1 was classified as *Injury B*, and 1 was classified as *Injury A*. The crash rate at the intersection was calculated to be 0.35 CMEV.

One of the crashes at the intersection was classified as *Injury A*. The crash occurred when the driver of a southbound through passenger car disregarded the traffic signal and collided with a northbound left-turning passenger car. During the collision, the southbound vehicle overturned and struck a third passenger car after the initial collision. The driver of the southbound vehicle sustained injuries consistent with *Injury A* classification, while the driver of the northbound left-turning vehicle sustained injuries consistent with *Injury C* classification. The driver of the third vehicle was uninjured.

Beavercreek Road at OR-213

The intersection of Beavercreek Road at OR-213 had 143 reported crashes during the analysis period. The crashes consisted of 124 rear-end collisions, 9 turning-movement collisions, 5 angle-type collisions, 5 sideswipe collisions, 1 fixed-object collision, and 1 collision involving a pedestrian. Of the crashes reported,

66 were classified as *PDO*, 64 were classified as *Injury C*, 11 were classified as *Injury B*, 1 was classified as *Injury A*, and 1 resulted in a fatality. The crash rate at the intersection was calculated to be 1.30 CMEV.

Two of the crashes at the intersection either involved a pedestrian or was classified as an *Injury A* collision. The crash that involved a pedestrian occurred when an east/west traveling pedestrian disregarded the traffic signal, entered the intersection illegally, and was struck by a southbound passenger car. The pedestrian sustained injuries consistent with *Injury B* classification while the driver of the passenger car was uninjured. The crash that was classified as *Injury A* occurred when the driver of a northbound passenger car disregarded the traffic signal and collided with a southbound left-turning passenger car. The passenger in the left-turning vehicle sustained injuries consistent with *Injury A* classification while the vehicle's driver sustained injuries consistent with *Injury C* classification. The driver of the northbound vehicle sustained no injuries.

Over the five-year analysis period, one of the crashes at the intersection resulted in a fatality. The crash was classified as an angle-type collision which occurred at 1:00 AM on Sunday, September 18th, 2011. Driving conditions were during night hours with streetlight, rain, and wet roadways present. The crash occurred when the driver of an eastbound passenger car disregarded the traffic signal and collided with southbound passenger car. The driver of the eastbound vehicle sustained fatal injuries while the passenger of the vehicle sustained injuries consistent with *Injury B* classification. The driver of the southbound vehicle sustained injuries consistent with *Injury C* classification. Although not reported within the crash data, Oregon State police had indicated alcohol was a contributing factor in the collision.

Based on the detailed review of crash history at the intersection, the number of crashes occurring at the intersection is higher than would be expected for a typical intersection with similar characteristics. The vast majority of the reported crashes (86.7 percent of total intersection crashes) were rear-end collisions. However, the rear-end collisions were distributed somewhat evenly among each of the intersection approaches, with 31 on the northbound approach, 29 on the southbound approach, 14 on the eastbound approach, 48 on the westbound approach. The two remaining rear-end collisions were noted as "unknown" with respect to travel direction. Since the rear-end collisions are occurring with relatively similar frequency on each of the approaches, it is unlikely that the crashes result from any specific design deficiency.

It is recommended that consideration be given to installing flashing warning signs that alert drivers to the potential for stopped queues ahead. These warning signs are most appropriate for the high-speed approaches on OR-213, and particularly the southbound approach since the nearest traffic signal to the north is approximately 2.5 miles away at Redland Road. It should be noted that such a system is included in the city's TSP (project D14), which will install a queue warning system for southbound drivers on OR-213 which includes a variable message sign. The project is within the "Likely To Be Funded" list and is designated for near-tern implementation.

Holly Lane at S Redland Road

The intersection of Holly Lane at S Redland Road had no reported crashes during the analysis period.

Based on the detailed crash data for the study intersections, it is recommended that the intersection of 14th Street at Main Street be converted to all-way stop control and 14th Street be converted to one-way travel. Additionally, for the intersection of Beavercreek Road at OR-213, it is recommended that consideration be

given to installing flashing warning signs that alert drivers to the potential for stopped queues ahead. No other specific mitigations are recommended for the study area intersections based on the crash history.

Warrant Analysis

Left-turn lane and traffic signal warrants were examined for the study intersections where such treatments would be applicable.

A left-turn refuge lane is primarily a safety consideration for the major street, removing left-turning vehicles from the through traffic stream. The left-turn lane warrants used were developed from the National Cooperative Highway Research Project's (NCHRP) Report 457. Turn lane warrants were evaluated based on the number of advancing and opposing vehicles as well as the number of turning vehicles, the travel speed, and the number of through lanes.

Left-turn lane warrants are projected to be met for the following three intersection approaches:

- Northwest-bound approach at the intersection of 14th Street at Main Street under existing conditions during the morning and evening peak hours;
- Eastbound approach at the intersection of Holly Lane at S Redland Road under the 2035 planning horizon year with the proposed annexation, during the morning and evening peak hours; and
- Westbound approach at the intersection of Holly Lane at S Redland Road under existing conditions during the morning peak hour.

The intersection of 14th Street at Main Street is included within Oregon City's TSP and is planned for conversion to all-way stop control in the short-term. Typically, conversion of an intersection to all-way stop control means that the left-turn lane warrants are no longer applicable; however, based on a capacity analysis of the intersection operating under all-way stop control, it is recommended that a northwest-bound left-turn lane be provided at the intersection regardless in order to ensure all approaches will continue to operate within capacity. Additionally, 14th Street may be converted to one-way southeast-bound travel in conjunction with the intersection converting to all-way stop-control. Implementation of a one-way street conversion would eliminate the need for the left-turn lane.

Traffic signal warrants were examined for the unsignalized study intersections to determine whether the installation of any new traffic signal will be warranted at the intersections upon completion of the proposed development. Traffic signal warrants are triggered at the intersection of Holly Lane at S Redland Road under the 2035 planning year with site trips per Condition B – *Interruption of Continuous Traffic*, and a *Combination Warrant*. Traffic signal warrants are not projected to be met for any of the other unsignalized intersections under any of the analysis scenarios. Alternatively, installation of a roundabout in conformance with the city's TSP may be appropriate in lieu of signalization of this intersection.

Conclusions

Based on the operational analysis, several study intersections are not projected to meet the relevant operational standards of Oregon City and ODOT under year 2035 traffic conditions either with or without the addition of site trips from the proposed annexation and zone change. Although the intersection of Beavercreek Road at OR-213 is not projected to experience a significant change in operation as a result of the proposed annexation and zone change, several other study intersections are projected to experience further degradation in performance upon development within the subject property.

Based on the Transportation Planning Rule analysis, the city may find that the proposed annexation and zone change will not significantly effect an existing or planned transportation facility since the city's acknowledged Transportation System Plan already accounted for development under the proposed zoning. Alternatively, conditions of development or a development agreement may be implemented to ensure that no development can occur except as permitted under the existing zoning until appropriate refinement plans are prepared to address future capacity concerns, or proportionate mitigation is provided concurrent with development to offset the actual traffic impacts of the development.

Based on the detailed review of crash history at the study area intersections, the intersection of Beavercreek Road at OR-213 was found to be among the top ten percent of high-crash intersections in the State of Oregon, with the vast majority of the reported crashes being rear-end collisions. One potential safety mitigation would be installing flashing warning signs that alert drivers to the potential for stopped queues ahead. These warning signs are most appropriate for the high-speed approaches on OR-213, and particularly the southbound approach which has uninterrupted flow for 2.5 miles. This project is already included as a "likely to be funded" project for near-term implementation in the city's Transportation System Plan.

The intersection of 14th Street at Main Street was also identified as having a high crash rate. Per Oregon City's Transportation System Plan, project D13, the intersection could be converted to all-way stop control to be consistent with the traffic countrols at surrouding intersections along Main Street. Additionally, by implementing project D7 and restriping 14th Street to allow one-way eastbound travel, it is expected that the potential for crashes at the intersection will be reduced. Both projects are listed as "likely to be funded" in the city's TSP.

All other study intersections are currently operating acceptably with respect to safety.

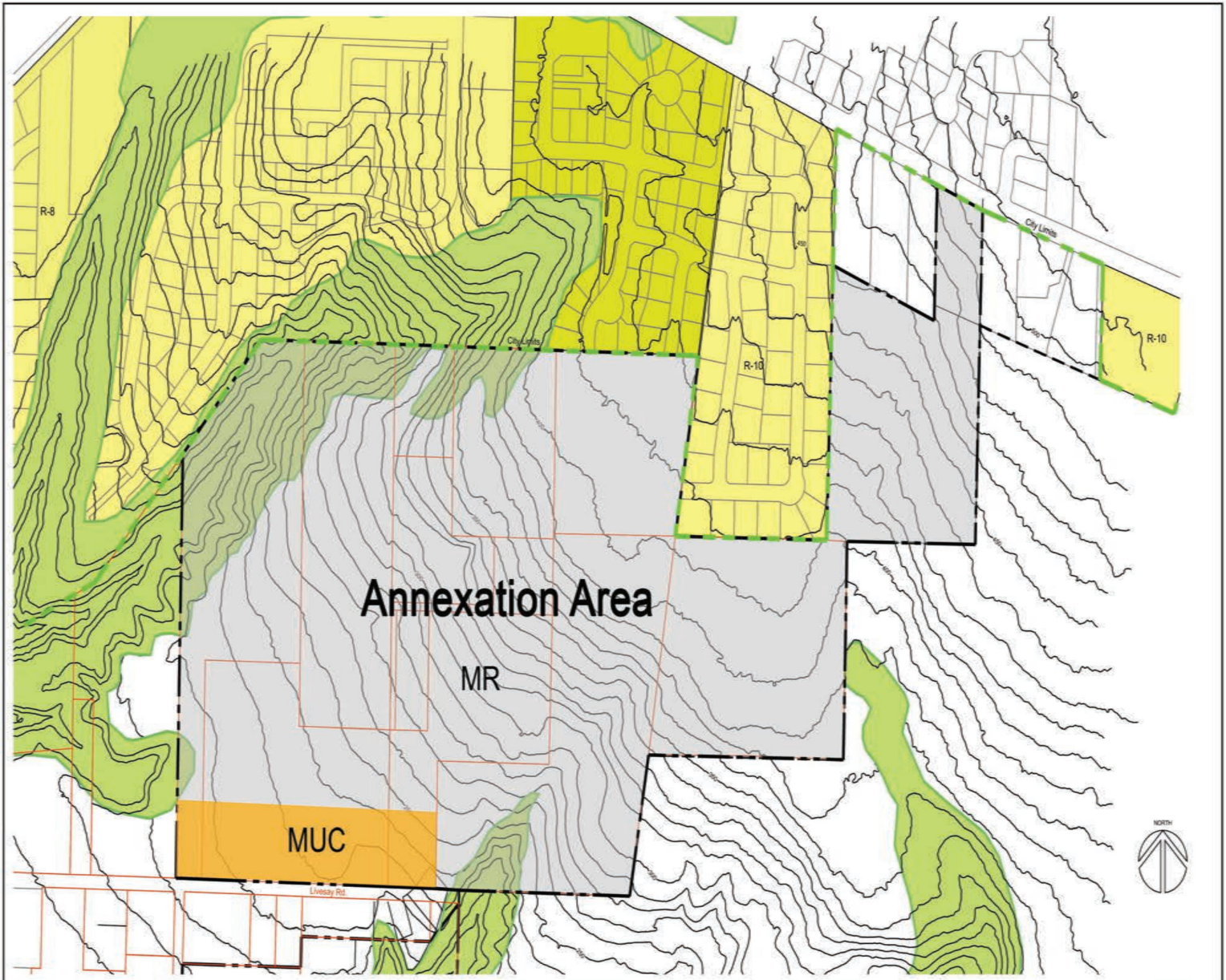
Left-turn lane warrants are projected to be met for the following three intersection approaches:

- Northwest-bound approach at the intersection of 14th Street at Main Street under existing conditions during the morning and evening peak hours;
- Eastbound approach at the intersection of Holly Lane at S Redland Road under the 2035 planning horizon year, with the proposed annexation, during the morning and evening peak hours; and
- Westbound approach at the intersection of Holly Lane at S Redland Road under existing conditions during the morning peak hour.

14th Street may be planned for conversion to one-way eastbound travel in the near-term. If the one-way street conversion is implemented, the left-turn lane warrants will no longer be applicable.

Traffic signal warrants are triggered at the intersection of Holly Lane at S Redland Road under the 2035 planning year with site trips from the proposed annexation per Condition B – *Interruption of Continuous Traffic*, and a *Combination Warrant*. Traffic signal warrants are not projected to be met for any of the other unsignalized intersections under any of the analysis scenarios.

Appendix



DESIGNED:	R.E.G.			
DRAWN:	R.E.G.			
SCALE:	1" = 300'			
DATE:	Sept. 2016			
FILE:	15-ION-106	DATE	NO.	REVISION

Richard E. Givens, Planning Consultant
18680 Sunblaze Dr.
Oregon City, OR 97045
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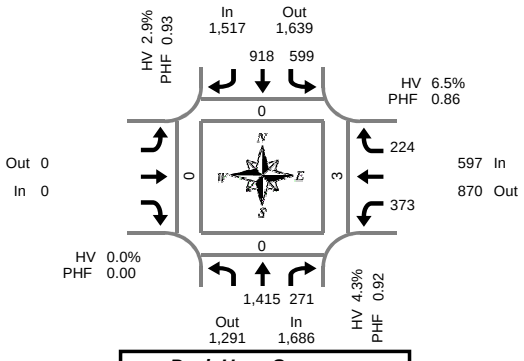
APPLICANT: Hidden Falls Development, LLC
1980 Willamette Falls Drive, Suite 200
West Linn, OR 97068
PH: (503) 657-0406

Park Place Annexation
Site Plan

SHEET: 1/1

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
7:10 AM to 8:10 AM

Hwy 99 & I-205 SB Ramp

Thursday, January 26, 2017
7:00 AM to 9:00 AM

5-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound I-205 SB Ramp				Westbound I-205 SB Ramp				Interval Total	Pedestrians Crosswalk			
	T	R	Bikes		L	T		Bikes				Bikes	L		R	Bikes		North	South	East	West
7:00 AM	101	36	0		47	56		0				0	37		18	0	295	0	0	2	0
7:05 AM	95	33	0		44	81		0				0	19		19	0	291	0	0	0	0
7:10 AM	89	24	0		55	67		1				0	23		13	0	271	0	0	0	0
7:15 AM	106	28	0		46	63		0				0	37		12	0	292	0	0	1	0
7:20 AM	107	20	0		51	67		0				0	30		21	0	296	0	0	0	0
7:25 AM	92	21	0		61	61		0				0	29		9	0	273	0	0	0	0
7:30 AM	128	27	0		45	66		0				0	34		9	0	309	0	0	0	0
7:35 AM	145	15	0		50	73		0				0	26		23	0	332	0	0	2	0
7:40 AM	112	17	0		56	85		0				0	30		18	0	318	0	0	0	0
7:45 AM	136	25	0		44	86		0				0	43		22	0	356	0	0	0	0
7:50 AM	145	21	0		52	86		0				0	20		25	0	349	0	0	0	0
7:55 AM	115	17	0		48	92		0				0	30		27	0	329	0	0	0	0
8:00 AM	128	27	0		42	87		0				0	47		22	0	353	0	0	0	0
8:05 AM	112	29	0		49	85		0				0	24		23	0	322	0	0	0	0
8:10 AM	88	22	0		46	69		0				0	23		21	0	269	0	0	1	0
8:15 AM	102	18	0		32	74		0				0	33		32	0	291	0	0	0	0
8:20 AM	87	20	0		31	85		0				0	22		27	0	272	0	0	0	0
8:25 AM	76	17	0		35	79		0				0	21		17	0	245	0	0	1	0
8:30 AM	97	17	0		44	81		0				0	45		23	0	307	0	0	0	0
8:35 AM	77	13	0		48	81		0				0	33		30	0	282	0	0	0	0
8:40 AM	79	16	0		44	73		0				0	31		30	0	273	0	0	0	0
8:45 AM	105	22	0		41	74		0				0	46		26	0	314	0	0	0	0
8:50 AM	97	18	0		35	80		0				0	31		31	0	292	0	0	1	0
8:55 AM	79	14	0		36	55		0				0	25		22	0	231	0	0	0	0
Total Survey	2,498	517	0		1,082	1,806		1				0	739		520	0	7,162	0	0	8	0

15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound I-205 SB Ramp				Westbound I-205 SB Ramp				Interval Total	Pedestrians Crosswalk			
	T	R	Bikes		L	T		Bikes				Bikes	L		R	Bikes		North	South	East	West
7:00 AM	285	93	0		146	204		1				0	79		50	0	857	0	0	2	0
7:15 AM	305	69	0		158	191		0				0	96		42	0	861	0	0	1	0
7:30 AM	385	59	0		151	224		0				0	90		50	0	959	0	0	2	0
7:45 AM	396	63	0		144	264		0				0	93		74	0	1,034	0	0	0	0
8:00 AM	328	78	0		137	241		0				0	94		66	0	944	0	0	1	0
8:15 AM	265	55	0		98	238		0				0	76		76	0	808	0	0	1	0
8:30 AM	253	46	0		136	235		0				0	109		83	0	862	0	0	0	0
8:45 AM	281	54	0		112	209		0				0	102		79	0	837	0	0	1	0
Total Survey	2,498	517	0		1,082	1,806		1				0	739		520	0	7,162	0	0	8	0

Peak Hour Summary
7:10 AM to 8:10 AM

By Approach	Northbound Hwy 99				Southbound Hwy 99				Eastbound I-205 SB Ramp				Westbound I-205 SB Ramp				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	1,686	1,291	2,977	0	1,517	1,639	3,156	1	0	0	0	0	597	870	1,467	0	3,800	0	0	3	0
%HV	4.3%				2.9%				0.0%				6.5%				4.1%				
PHF	0.92				0.93				0.00				0.86				0.92				

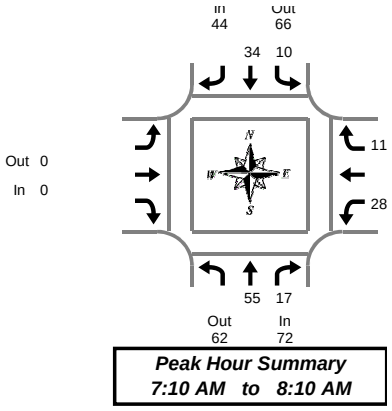
By Movement	Northbound Hwy 99				Southbound Hwy 99				Eastbound I-205 SB Ramp				Westbound I-205 SB Ramp				Total
		T	R	Total	L	T		Total				Total	L		R	Total	
Volume		1,415	271	1,686	599	918		1,517				0	373		224	597	3,800
%HV	NA	3.9%	6.3%	4.3%	1.7%	3.7%	NA	2.9%	NA	NA	NA	0.0%	7.5%	NA	4.9%	6.5%	4.1%
PHF		0.89	0.93	0.92	0.95	0.87		0.93				0.00	0.92		0.76	0.86	0.92

Rolling Hour Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound I-205 SB Ramp				Westbound I-205 SB Ramp				Interval Total	Pedestrians Crosswalk			
	T	R	Bikes		L	T		Bikes				Bikes	L		R	Bikes		North	South	East	West
7:00 AM	1,371	284	0		599	883		1				0	358		216	0	3,711	0	0	5	0
7:15 AM	1,414	269	0		590	920		0				0	373		232	0	3,798	0	0	4	0
7:30 AM	1,374	255	0		530	967		0				0	353		266	0	3,745	0	0	4	0
7:45 AM	1,242	242	0		515	978		0				0	372		299	0	3,648	0	0	2	0
8:00 AM	1,127	233	0		483	923		0				0	381		304	0	3,451	0	0	3	0

Heavy Vehicle Summary

Clay Carney
(503) 833-2740



Hwy 99 & I-205 SB Ramp

Thursday, January 26, 2017
7:00 AM to 9:00 AM

Peak Hour Summary
7:10 AM to 8:10 AM

Heavy Vehicle 5-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound I-205 SB Ramp				Westbound I-205 SB Ramp				Interval Total
		T	R	Total	L	T		Total				Total	L		R	Total	
7:00 AM		3	2	5	0	3		3				0	2		3	5	13
7:05 AM		1	1	2	2	3		5				0	1		0	1	8
7:10 AM		1	2	3	1	2		3				0	1		1	2	8
7:15 AM		6	0	6	0	3		3				0	1		2	3	12
7:20 AM		4	2	6	0	6		6				0	2		0	2	14
7:25 AM		4	1	5	1	2		3				0	2		0	2	10
7:30 AM		5	4	9	1	2		3				0	3		0	3	15
7:35 AM		5	1	6	1	1		2				0	1		3	4	12
7:40 AM		5	0	5	1	3		4				0	2		1	3	12
7:45 AM		4	1	5	0	3		3				0	2		2	4	12
7:50 AM		6	2	8	1	2		3				0	2		0	2	13
7:55 AM		5	0	5	2	3		5				0	6		1	7	17
8:00 AM		6	0	6	0	2		2				0	3		0	3	11
8:05 AM		4	4	8	2	5		7				0	3		1	4	19
8:10 AM		6	3	9	0	7		7				0	1		1	2	18
8:15 AM		9	2	11	0	4		4				0	3		3	6	21
8:20 AM		6	2	8	2	5		7				0	3		3	6	21
8:25 AM		5	0	5	3	7		10				0	3		0	3	18
8:30 AM		5	2	7	0	5		5				0	3		1	4	16
8:35 AM		3	0	3	1	1		2				0	3		1	4	9
8:40 AM		3	0	3	2	5		7				0	5		3	8	18
8:45 AM		5	2	7	4	4		8				0	3		2	5	20
8:50 AM		1	2	3	1	7		8				0	2		0	2	13
8:55 AM		4	0	4	2	3		5				0	1		1	2	11
Total Survey		106	33	139	27	88		115				0	58		29	87	341

Heavy Vehicle 15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound I-205 SB Ramp				Westbound I-205 SB Ramp				Interval Total
		T	R	Total	L	T		Total				Total	L		R	Total	
7:00 AM		5	5	10	3	8		11				0	4		4	8	29
7:15 AM		14	3	17	1	11		12				0	5		2	7	36
7:30 AM		15	5	20	3	6		9				0	6		4	10	39
7:45 AM		15	3	18	3	8		11				0	10		3	13	42
8:00 AM		16	7	23	2	14		16				0	7		2	9	48
8:15 AM		20	4	24	5	16		21				0	9		6	15	60
8:30 AM		11	2	13	3	11		14				0	11		5	16	43
8:45 AM		10	4	14	7	14		21				0	6		3	9	44
Total Survey		106	33	139	27	88		115				0	58		29	87	341

Heavy Vehicle Peak Hour Summary
7:10 AM to 8:10 AM

By Approach	Northbound Hwy 99			Southbound Hwy 99			Eastbound I-205 SB Ramp			Westbound I-205 SB Ramp			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	72	62	134	44	66	110	0	0	0	39	27	66	155
PHF	0.90			0.79			0.00			0.70			0.82

By Movement	Northbound Hwy 99				Southbound Hwy 99				Eastbound I-205 SB Ramp				Westbound I-205 SB Ramp				Total
		T	R	Total	L	T		Total				Total	L		R	Total	
Volume		55	17	72	10	34		44				0	28		11	39	155
PHF		0.81	0.61	0.90	0.63	0.77		0.79				0.00	0.58		0.46	0.70	0.82

Heavy Vehicle Rolling Hour Summary
7:00 AM to 9:00 AM

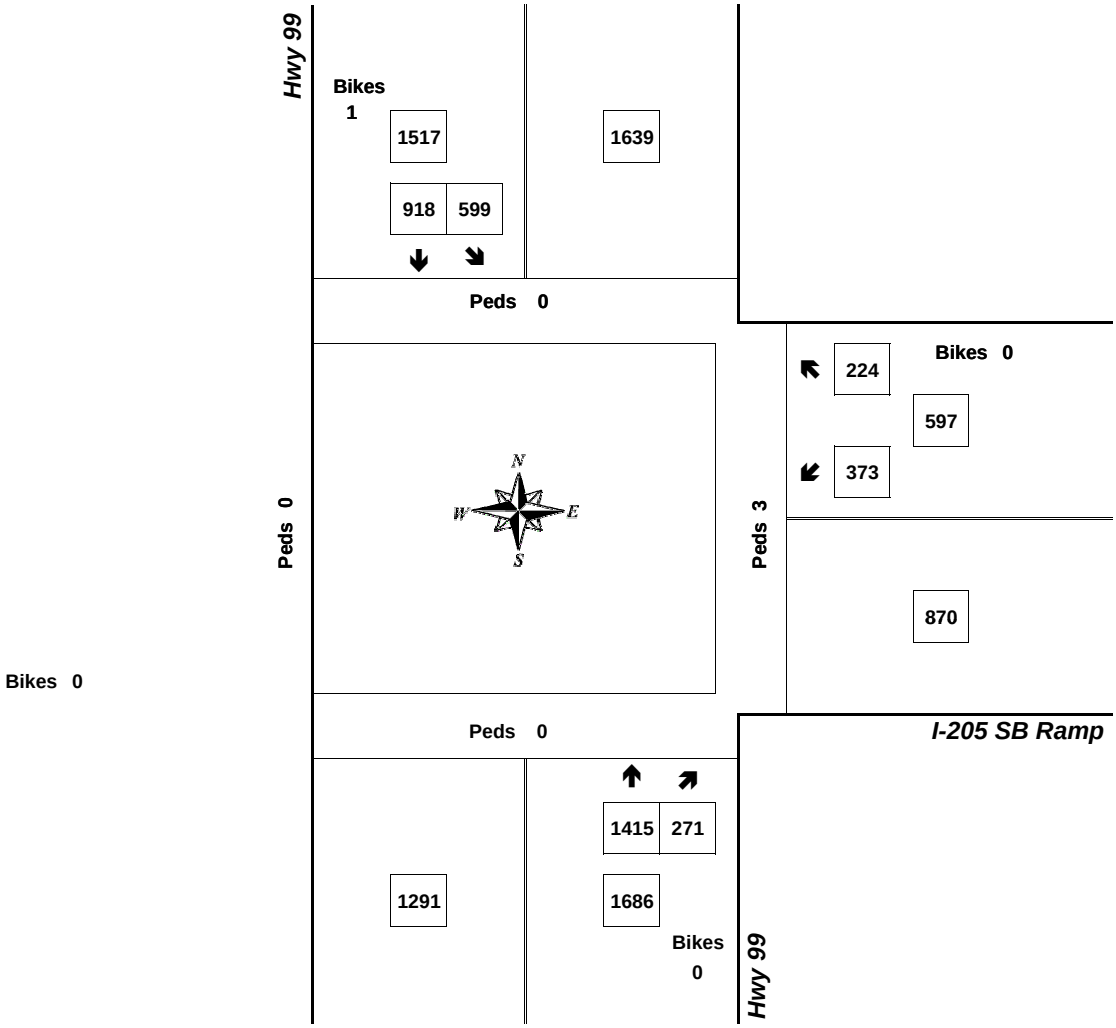
Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound I-205 SB Ramp				Westbound I-205 SB Ramp				Interval Total
		T	R	Total	L	T		Total				Total	L		R	Total	
7:00 AM		49	16	65	10	33		43				0	25		13	38	146
7:15 AM		60	18	78	9	39		48				0	28		11	39	165
7:30 AM		66	19	85	13	44		57				0	32		15	47	189
7:45 AM		62	16	78	13	49		62				0	37		16	53	193
8:00 AM		57	17	74	17	55		72				0	33		16	49	195

Peak Hour Summary

Clay Carney
(503) 833-2740

Hwy 99 & I-205 SB Ramp

7:10 AM to 8:10 AM
Thursday, January 26, 2017

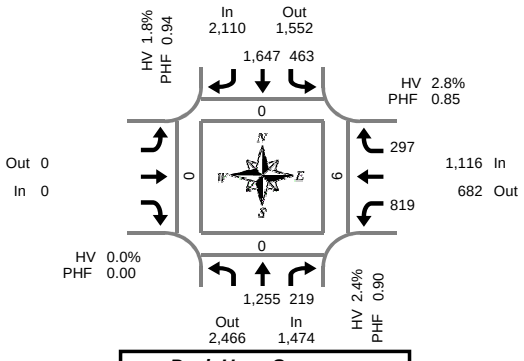


Approach	PHF	HV%	Volume
EB	0.00	0.0%	0
WB	0.86	6.5%	597
NB	0.92	4.3%	1,686
SB	0.93	2.9%	1,517
Intersection	0.92	4.1%	3,800

Count Period: 7:00 AM to 9:00 AM

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
4:25 PM to 5:25 PM

Hwy 99 & I-205 SB Ramp

Wednesday, January 25, 2017
4:00 PM to 6:00 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound I-205 SB Ramp				Westbound I-205 SB Ramp				Interval Total	Pedestrians Crosswalk			
	T	R	Bikes		L	T		Bikes				Bikes	L		R	Bikes		North	South	East	West
4:00 PM	74	20	0		46	123		0				0	74		33	0	370	0	0	0	0
4:05 PM	117	17	0		39	137		0				0	47		27	0	384	0	0	1	0
4:10 PM	117	16	0		40	137		0				0	82		21	0	413	0	0	1	0
4:15 PM	95	19	0		44	117		0				0	86		16	0	377	0	0	0	0
4:20 PM	85	15	0		38	119		0				0	73		28	0	358	0	0	0	0
4:25 PM	110	17	0		42	162		0				0	76		32	0	439	0	0	1	0
4:30 PM	97	22	0		37	135		0				0	74		23	0	388	0	0	0	0
4:35 PM	76	19	0		41	123		0				0	88		36	0	383	0	0	0	0
4:40 PM	110	17	0		38	169		0				0	53		22	0	409	0	0	0	0
4:45 PM	101	18	0		44	147		0				0	60		21	0	391	0	0	0	0
4:50 PM	107	16	0		23	121		0				0	71		16	0	354	0	0	0	0
4:55 PM	82	8	1		38	112		0				0	81		24	0	345	0	0	0	0
5:00 PM	122	16	0		45	141		0				0	54		26	0	404	0	0	1	0
5:05 PM	109	16	0		35	142		0				0	73		25	0	400	0	0	0	0
5:10 PM	113	26	0		35	116		0				0	66		22	0	378	0	0	1	0
5:15 PM	101	21	0		44	140		0				0	69		25	0	400	0	0	1	0
5:20 PM	127	23	0		41	139		0				0	54		25	0	409	0	0	2	0
5:25 PM	113	25	0		29	121		0				0	61		20	0	369	0	0	1	0
5:30 PM	73	23	0		42	98		0				0	81		26	0	343	0	0	0	0
5:35 PM	108	16	0		48	147		0				0	52		19	0	390	0	0	0	0
5:40 PM	104	15	0		30	133		0				0	63		18	0	363	0	0	0	0
5:45 PM	105	20	0		35	112		0				0	77		23	0	372	0	0	1	0
5:50 PM	87	13	0		46	102		0				0	70		24	0	342	0	0	0	0
5:55 PM	106	10	0		39	117		0				0	64		18	0	354	0	0	1	0
Total Survey	2,439	428	1		939	3,110		0				0	1,649		570	0	9,135	0	0	11	0

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound I-205 SB Ramp				Westbound I-205 SB Ramp				Interval Total	Pedestrians Crosswalk			
	T	R	Bikes		L	T		Bikes				Bikes	L		R	Bikes		North	South	East	West
4:00 PM	308	53	0		125	397		0				0	203		81	0	1,167	0	0	2	0
4:15 PM	290	51	0		124	398		0				0	235		76	0	1,174	0	0	1	0
4:30 PM	283	58	0		116	427		0				0	215		81	0	1,180	0	0	0	0
4:45 PM	290	42	1		105	380		0				0	212		61	0	1,090	0	0	0	0
5:00 PM	344	58	0		115	399		0				0	193		73	0	1,182	0	0	2	0
5:15 PM	341	69	0		114	400		0				0	184		70	0	1,178	0	0	4	0
5:30 PM	285	54	0		120	378		0				0	196		63	0	1,096	0	0	0	0
5:45 PM	298	43	0		120	331		0				0	211		65	0	1,068	0	0	2	0
Total Survey	2,439	428	1		939	3,110		0				0	1,649		570	0	9,135	0	0	11	0

Peak Hour Summary
4:25 PM to 5:25 PM

By Approach	Northbound Hwy 99				Southbound Hwy 99				Eastbound I-205 SB Ramp				Westbound I-205 SB Ramp				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	1,474	2,466	3,940	1	2,110	1,552	3,662	0	0	0	0	0	1,116	682	1,798	0	4,700	0	0	6	0
%HV	2.4%				1.8%				0.0%				2.8%				2.3%				
PHF	0.90				0.94				0.00				0.85				0.97				

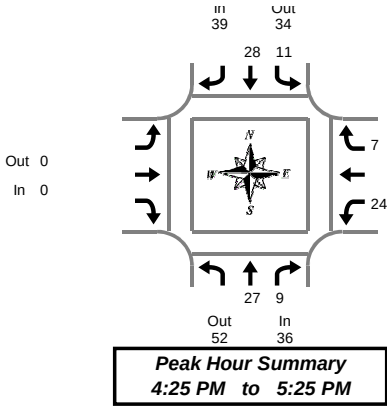
By Movement	Northbound Hwy 99				Southbound Hwy 99				Eastbound I-205 SB Ramp				Westbound I-205 SB Ramp				Total
	T	R	Total		L	T		Total				Total	L		R	Total	
Volume	1,255	219	1,474		463	1,647		2,110				0	819		297	1,116	4,700
%HV	NA	2.2%	4.1%	2.4%	2.4%	1.7%	NA	1.8%	NA	NA	NA	0.0%	2.9%	NA	2.4%	2.8%	2.3%
PHF		0.91	0.78	0.90	0.94	0.94		0.94				0.00	0.86		0.82	0.85	0.97

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound I-205 SB Ramp				Westbound I-205 SB Ramp				Interval Total	Pedestrians Crosswalk			
	T	R	Bikes		L	T		Bikes				Bikes	L		R	Bikes		North	South	East	West
4:00 PM	1,171	204	1		470	1,602		0				0	865		299	0	4,611	0	0	3	0
4:15 PM	1,207	209	1		460	1,604		0				0	855		291	0	4,626	0	0	3	0
4:30 PM	1,258	227	1		450	1,606		0				0	804		285	0	4,630	0	0	6	0
4:45 PM	1,260	223	1		454	1,557		0				0	785		267	0	4,546	0	0	6	0
5:00 PM	1,268	224	0		469	1,508		0				0	784		271	0	4,524	0	0	8	0

Heavy Vehicle Summary

Clay Carney
(503) 833-2740



Peak Hour Summary
4:25 PM to 5:25 PM

Hwy 99 & I-205 SB Ramp

Wednesday, January 25, 2017
4:00 PM to 6:00 PM

Heavy Vehicle 5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound I-205 SB Ramp				Westbound I-205 SB Ramp				Interval Total
		T	R	Total	L	T		Total				Total	L		R	Total	
4:00 PM		1	0	1	0	3		3				0	4		1	5	9
4:05 PM		2	1	3	2	4		6				0	3		0	3	12
4:10 PM		2	2	4	3	4		7				0	0		0	0	11
4:15 PM		4	2	6	0	2		2				0	1		2	3	11
4:20 PM		0	2	2	1	4		5				0	3		1	4	11
4:25 PM		6	1	7	3	2		5				0	2		1	3	15
4:30 PM		5	1	6	1	4		5				0	1		1	2	13
4:35 PM		1	0	1	2	1		3				0	3		0	3	7
4:40 PM		2	0	2	2	1		3				0	2		1	3	8
4:45 PM		1	2	3	0	2		2				0	3		1	4	9
4:50 PM		1	0	1	0	3		3				0	1		0	1	5
4:55 PM		1	0	1	1	3		4				0	0		0	0	5
5:00 PM		1	1	2	1	3		4				0	1		0	1	7
5:05 PM		1	0	1	0	4		4				0	2		0	2	7
5:10 PM		2	0	2	0	1		1				0	4		0	4	7
5:15 PM		3	1	4	0	1		1				0	3		3	6	11
5:20 PM		3	3	6	1	3		4				0	2		0	2	12
5:25 PM		3	0	3	0	3		3				0	3		0	3	9
5:30 PM		1	1	2	0	2		2				0	1		0	1	5
5:35 PM		1	0	1	0	3		3				0	1		1	2	6
5:40 PM		3	0	3	1	2		3				0	1		0	1	7
5:45 PM		2	0	2	0	2		2				0	1		1	2	6
5:50 PM		0	1	1	1	0		1				0	2		1	3	5
5:55 PM		2	0	2	2	2		4				0	0		0	0	6
Total Survey		48	18	66	21	59		80				0	44		14	58	204

Heavy Vehicle 15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound I-205 SB Ramp				Westbound I-205 SB Ramp				Interval Total
		T	R	Total	L	T		Total				Total	L		R	Total	
4:00 PM		5	3	8	5	11		16				0	7		1	8	32
4:15 PM		10	5	15	4	8		12				0	6		4	10	37
4:30 PM		8	1	9	5	6		11				0	6		2	8	28
4:45 PM		3	2	5	1	8		9				0	4		1	5	19
5:00 PM		4	1	5	1	8		9				0	7		0	7	21
5:15 PM		9	4	13	1	7		8				0	8		3	11	32
5:30 PM		5	1	6	1	7		8				0	3		1	4	18
5:45 PM		4	1	5	3	4		7				0	3		2	5	17
Total Survey		48	18	66	21	59		80				0	44		14	58	204

Heavy Vehicle Peak Hour Summary
4:25 PM to 5:25 PM

By Approach	Northbound Hwy 99			Southbound Hwy 99			Eastbound I-205 SB Ramp			Westbound I-205 SB Ramp			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	36	52	88	39	34	73	0	0	0	31	20	51	106
PHF	0.64			0.75			0.00			0.65			0.76

By Movement	Northbound Hwy 99				Southbound Hwy 99				Eastbound I-205 SB Ramp				Westbound I-205 SB Ramp				Total
		T	R	Total	L	T		Total				Total	L		R	Total	
Volume		27	9	36	11	28		39				0	24		7	31	106
PHF		0.56	0.56	0.64	0.46	0.70		0.75				0.00	0.67		0.58	0.65	0.76

Heavy Vehicle Rolling Hour Summary
4:00 PM to 6:00 PM

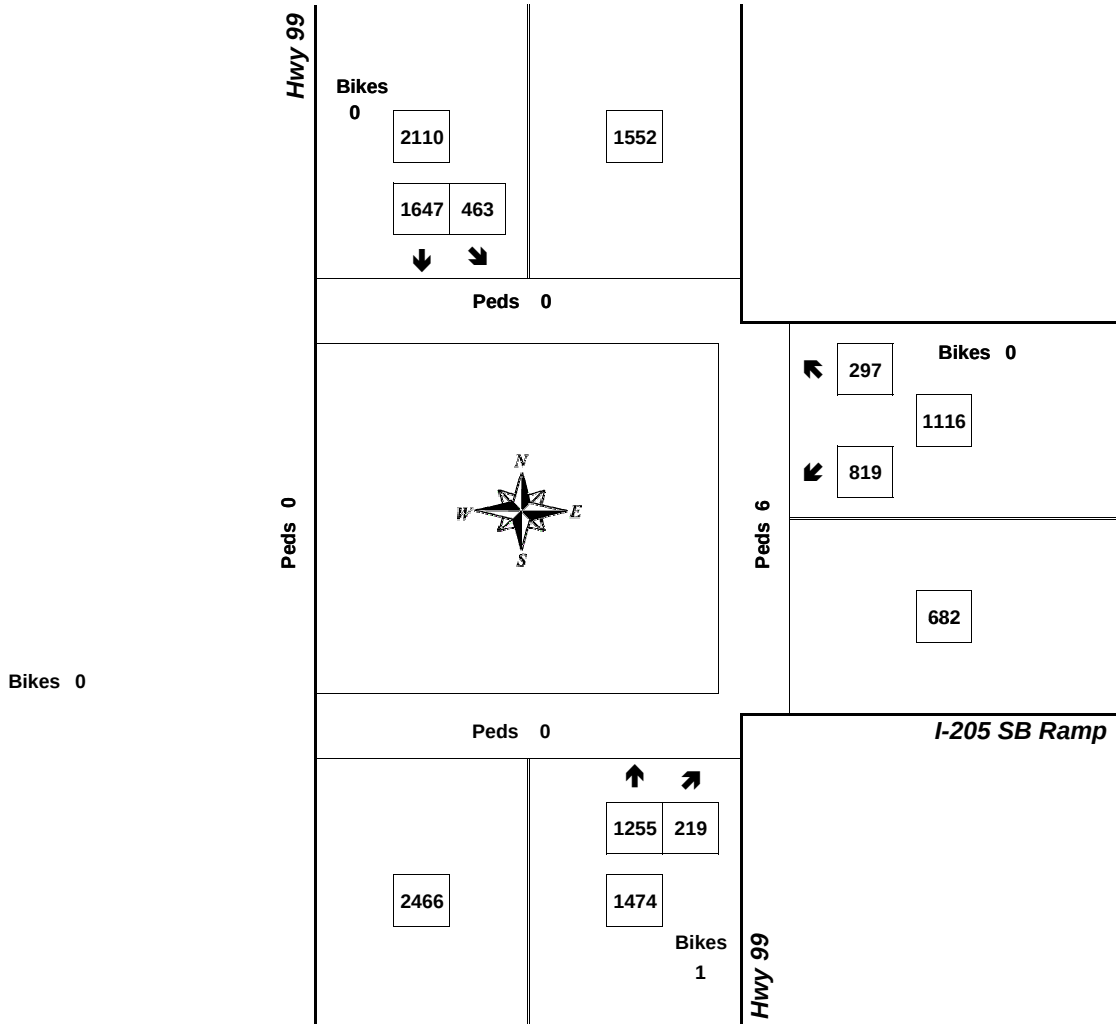
Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound I-205 SB Ramp				Westbound I-205 SB Ramp				Interval Total
		T	R	Total	L	T		Total				Total	L		R	Total	
4:00 PM		26	11	37	15	33		48				0	23		8	31	116
4:15 PM		25	9	34	11	30		41				0	23		7	30	105
4:30 PM		24	8	32	8	29		37				0	25		6	31	100
4:45 PM		21	8	29	4	30		34				0	22		5	27	90
5:00 PM		22	7	29	6	26		32				0	21		6	27	88

Peak Hour Summary

Clay Carney
(503) 833-2740

Hwy 99 & I-205 SB Ramp

4:25 PM to 5:25 PM
Wednesday, January 25, 2017

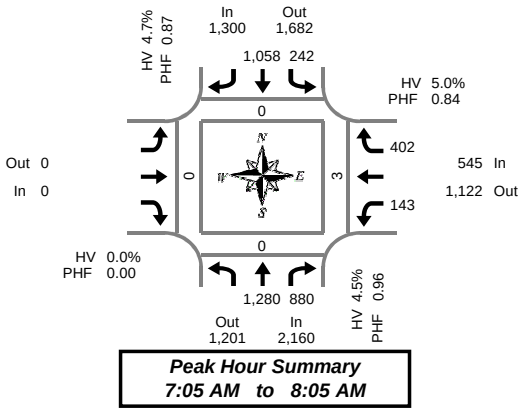


Approach	PHF	HV%	Volume
EB	0.00	0.0%	0
WB	0.85	2.8%	1,116
NB	0.90	2.4%	1,474
SB	0.94	1.8%	2,110
Intersection	0.97	2.3%	4,700

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
7:05 AM to 8:05 AM

Hwy 99 & I-205 NB Ramp

Thursday, January 26, 2017
7:00 AM to 9:00 AM

5-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound I-205 NB Ramp				Westbound I-205 NB Ramp				Interval Total	Pedestrians Crosswalk			
	T	R	Bikes		L	T		Bikes				Bikes	L		R	Bikes		North	South	East	West
7:00 AM	105	69	0		15	61		0				0	9		27	0	286	0	0	0	0
7:05 AM	103	87	0		26	70		0				0	8		26	0	320	0	0	0	0
7:10 AM	92	73	0		31	83		0				0	4		24	0	307	0	0	1	0
7:15 AM	102	77	0		13	80		1				0	11		25	0	308	0	0	0	0
7:20 AM	102	78	0		18	76		0				0	7		32	0	313	0	0	0	0
7:25 AM	92	81	0		17	88		0				0	11		32	0	321	0	0	0	0
7:30 AM	113	72	0		18	72		0				0	11		42	0	328	0	0	0	0
7:35 AM	121	81	0		15	80		0				0	11		42	0	350	0	0	0	0
7:40 AM	104	69	0		22	97		0				0	13		38	0	343	0	0	2	0
7:45 AM	128	56	0		16	103		0				0	19		39	0	361	0	0	0	0
7:50 AM	117	68	0		25	85		0				0	20		31	0	346	0	0	0	0
7:55 AM	104	71	0		18	115		0				0	13		31	0	352	0	0	0	0
8:00 AM	102	67	0		23	109		0				0	15		40	0	356	0	0	0	0
8:05 AM	101	60	0		15	100		0				0	12		31	0	319	0	0	0	0
8:10 AM	88	62	0		25	80		0				0	18		28	0	301	0	0	0	0
8:15 AM	90	56	0		13	93		0				0	5		31	0	288	0	0	0	0
8:20 AM	78	76	0		19	77		0				0	12		38	0	300	0	0	0	0
8:25 AM	66	51	0		23	98		0				0	22		37	0	297	0	0	0	0
8:30 AM	73	66	0		23	98		0				0	13		27	0	300	0	0	1	0
8:35 AM	66	53	0		15	100		0				0	9		30	0	273	0	0	0	0
8:40 AM	63	36	0		20	78		0				0	10		40	0	247	0	0	0	0
8:45 AM	87	53	0		31	91		0				0	23		31	0	316	0	0	0	0
8:50 AM	77	54	0		20	93		0				0	12		35	0	291	0	0	1	0
8:55 AM	60	46	0		16	75		0				0	12		39	0	248	0	0	0	0
Total Survey	2,234	1,562	0		477	2,102		1				0	300		796	0	7,471	0	0	5	0

15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound I-205 NB Ramp				Westbound I-205 NB Ramp				Interval Total	Pedestrians Crosswalk			
	T	R	Bikes		L	T		Bikes				Bikes	L		R	Bikes		North	South	East	West
7:00 AM	300	229	0		72	214		0				0	21		77	0	913	0	0	1	0
7:15 AM	296	236	0		48	244		1				0	29		89	0	942	0	0	0	0
7:30 AM	338	222	0		55	249		0				0	35		122	0	1,021	0	0	2	0
7:45 AM	349	195	0		59	303		0				0	52		101	0	1,059	0	0	0	0
8:00 AM	291	189	0		63	289		0				0	45		99	0	976	0	0	0	0
8:15 AM	234	183	0		55	268		0				0	39		106	0	885	0	0	0	0
8:30 AM	202	155	0		58	276		0				0	32		97	0	820	0	0	1	0
8:45 AM	224	153	0		67	259		0				0	47		105	0	855	0	0	1	0
Total Survey	2,234	1,562	0		477	2,102		1				0	300		796	0	7,471	0	0	5	0

Peak Hour Summary
7:05 AM to 8:05 AM

By Approach	Northbound Hwy 99				Southbound Hwy 99				Eastbound I-205 NB Ramp				Westbound I-205 NB Ramp				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	2,160	1,201	3,361	0	1,300	1,682	2,982	1	0	0	0	0	545	1,122	1,667	0	4,005	0	0	3	0
%HV	4.5%				4.7%				0.0%				5.0%				4.6%				
PHF	0.96				0.87				0.00				0.84				0.95				

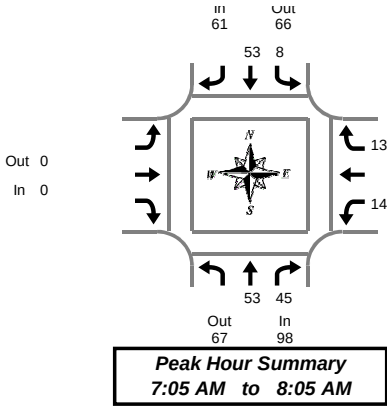
By Movement	Northbound Hwy 99				Southbound Hwy 99				Eastbound I-205 NB Ramp				Westbound I-205 NB Ramp				Total
	T	R	Total		L	T		Total				Total	L		R	Total	
Volume	1,280	880	2,160		242	1,058		1,300				0	143		402	545	4,005
%HV	NA	4.1%	5.1%	4.5%	3.3%	5.0%	NA	4.7%	NA	NA	NA	0.0%	9.8%	NA	3.2%	5.0%	4.6%
PHF		0.91	0.93	0.96	0.86	0.86		0.87				0.00	0.69		0.82	0.84	0.95

Rolling Hour Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound I-205 NB Ramp				Westbound I-205 NB Ramp				Interval Total	Pedestrians Crosswalk			
	T	R	Bikes		L	T		Bikes				Bikes	L		R	Bikes		North	South	East	West
7:00 AM	1,283	882	0		234	1,010		1				0	137		389	0	3,935	0	0	3	0
7:15 AM	1,274	842	0		225	1,085		1				0	161		411	0	3,998	0	0	2	0
7:30 AM	1,212	789	0		232	1,109		0				0	171		428	0	3,941	0	0	2	0
7:45 AM	1,076	722	0		235	1,136		0				0	168		403	0	3,740	0	0	1	0
8:00 AM	951	680	0		243	1,092		0				0	163		407	0	3,536	0	0	2	0

Heavy Vehicle Summary

Clay Carney
(503) 833-2740



Hwy 99 & I-205 NB Ramp

Thursday, January 26, 2017
7:00 AM to 9:00 AM

Peak Hour Summary
7:05 AM to 8:05 AM

Heavy Vehicle 5-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound I-205 NB Ramp				Westbound I-205 NB Ramp				Interval Total
		T	R	Total	L	T		Total				Total	L		R	Total	
7:00 AM		3	3	6	1	3		4				0	0		1	1	11
7:05 AM		2	1	3	1	3		4				0	1		1	2	9
7:10 AM		3	1	4	0	4		4				0	0		0	0	8
7:15 AM		3	5	8	1	3		4				0	2		1	3	15
7:20 AM		6	3	9	0	10		10				0	0		1	1	20
7:25 AM		1	4	5	1	3		4				0	1		3	4	13
7:30 AM		9	1	10	0	4		4				0	1		0	1	15
7:35 AM		5	3	8	0	2		2				0	1		1	2	12
7:40 AM		4	5	9	2	3		5				0	1		2	3	17
7:45 AM		4	3	7	0	3		3				0	3		0	3	13
7:50 AM		7	4	11	2	2		4				0	1		2	3	18
7:55 AM		3	8	11	1	10		11				0	2		0	2	24
8:00 AM		6	7	13	0	6		6				0	1		2	3	22
8:05 AM		7	8	15	3	3		6				0	2		1	3	24
8:10 AM		7	1	8	3	7		10				0	2		3	5	23
8:15 AM		8	3	11	0	7		7				0	0		3	3	21
8:20 AM		5	4	9	1	4		5				0	1		4	5	19
8:25 AM		2	5	7	1	9		10				0	3		5	8	25
8:30 AM		3	5	8	1	7		8				0	1		1	2	18
8:35 AM		2	5	7	1	5		6				0	2		1	3	16
8:40 AM		1	2	3	0	8		8				0	0		2	2	13
8:45 AM		5	4	9	0	5		5				0	3		1	4	18
8:50 AM		3	6	9	0	9		9				0	1		1	2	20
8:55 AM		2	6	8	1	4		5				0	1		2	3	16
Total Survey		101	97	198	20	124		144				0	30		38	68	410

Heavy Vehicle 15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound I-205 NB Ramp				Westbound I-205 NB Ramp				Interval Total
		T	R	Total	L	T		Total				Total	L		R	Total	
7:00 AM		8	5	13	2	10		12				0	1		2	3	28
7:15 AM		10	12	22	2	16		18				0	3		5	8	48
7:30 AM		18	9	27	2	9		11				0	3		3	6	44
7:45 AM		14	15	29	3	15		18				0	6		2	8	55
8:00 AM		20	16	36	6	16		22				0	5		6	11	69
8:15 AM		15	12	27	2	20		22				0	4		12	16	65
8:30 AM		6	12	18	2	20		22				0	3		4	7	47
8:45 AM		10	16	26	1	18		19				0	5		4	9	54
Total Survey		101	97	198	20	124		144				0	30		38	68	410

Heavy Vehicle Peak Hour Summary
7:05 AM to 8:05 AM

By Approach	Northbound Hwy 99			Southbound Hwy 99			Eastbound I-205 NB Ramp			Westbound I-205 NB Ramp			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	98	67	165	61	66	127	0	0	0	27	53	80	186
PHF	0.70			0.73			0.00			0.75			0.73

By Movement	Northbound Hwy 99				Southbound Hwy 99				Eastbound I-205 NB Ramp				Westbound I-205 NB Ramp				Total
		T	R	Total	L	T		Total				Total	L		R	Total	
Volume		53	45	98	8	53		61				0	14		13	27	186
PHF		0.74	0.59	0.70	0.50	0.74		0.73				0.00	0.58		0.65	0.75	0.73

Heavy Vehicle Rolling Hour Summary
7:00 AM to 9:00 AM

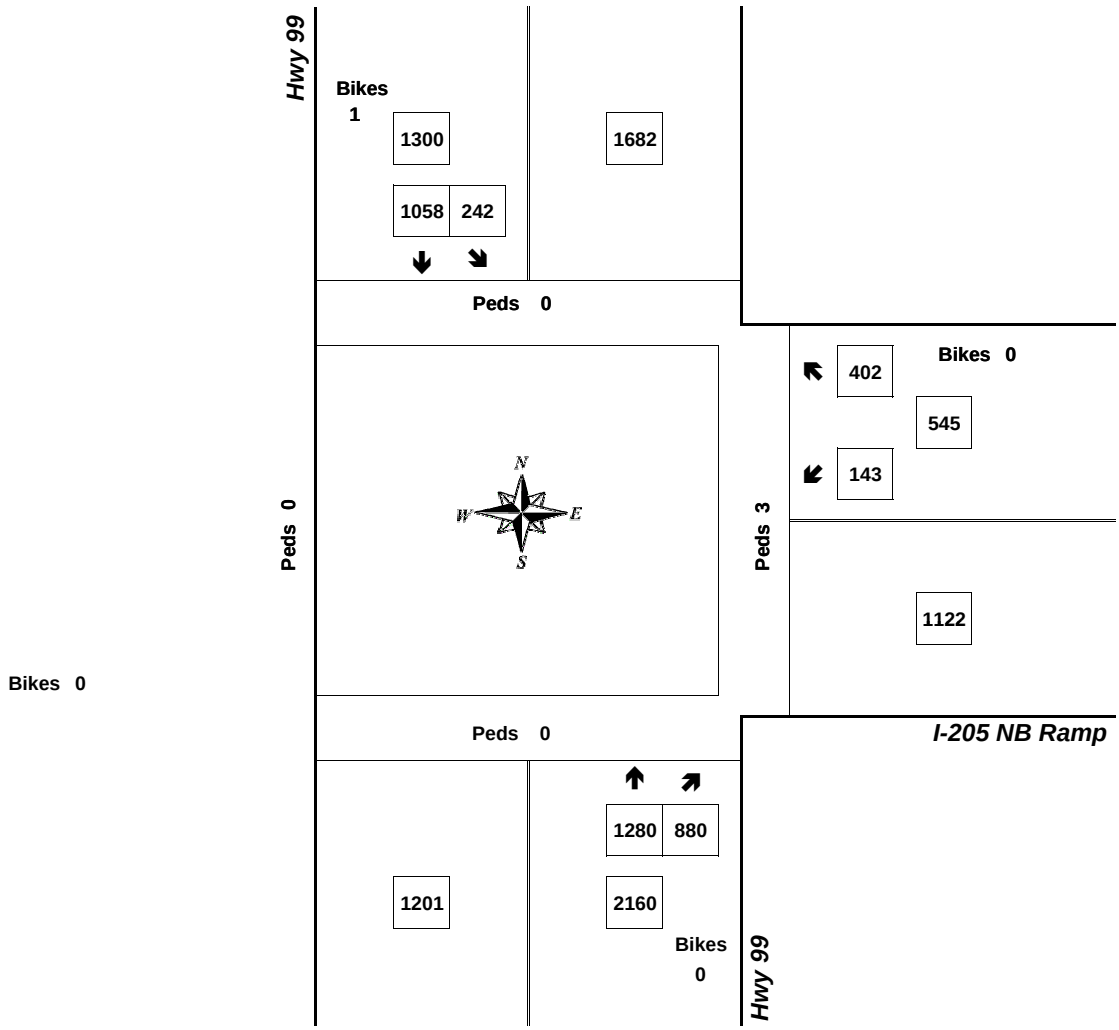
Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound I-205 NB Ramp				Westbound I-205 NB Ramp				Interval Total
		T	R	Total	L	T		Total				Total	L		R	Total	
7:00 AM		50	41	91	9	50		59				0	13		12	25	175
7:15 AM		62	52	114	13	56		69				0	17		16	33	216
7:30 AM		67	52	119	13	60		73				0	18		23	41	233
7:45 AM		55	55	110	13	71		84				0	18		24	42	236
8:00 AM		51	56	107	11	74		85				0	17		26	43	235

Peak Hour Summary

Clay Carney
(503) 833-2740

Hwy 99 & I-205 NB Ramp

7:05 AM to 8:05 AM
Thursday, January 26, 2017

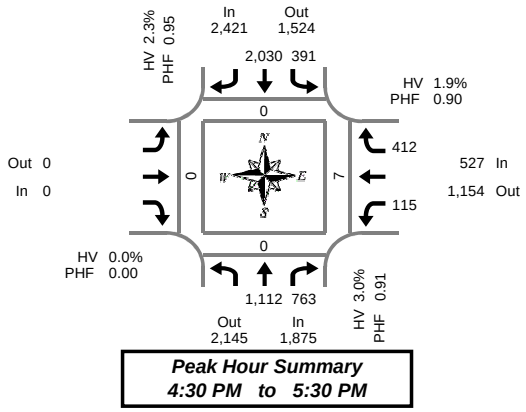


Approach	PHF	HV%	Volume
EB	0.00	0.0%	0
WB	0.84	5.0%	545
NB	0.96	4.5%	2,160
SB	0.87	4.7%	1,300
Intersection	0.95	4.6%	4,005

Count Period: 7:00 AM to 9:00 AM

Total Vehicle Summary

Clay Carney
(503) 833-2740



Peak Hour Summary
4:30 PM to 5:30 PM

Hwy 99 & I-205 NB Ramp

Wednesday, January 25, 2017
4:00 PM to 6:00 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound I-205 NB Ramp				Westbound I-205 NB Ramp				Interval Total	Pedestrians Crosswalk			
	T	R	Bikes		L	T		Bikes				Bikes	L		R	Bikes		North	South	East	West
4:00 PM	73	59	0		33	175		0				0	12		38	0	390	0	0	1	0
4:05 PM	89	64	0		30	150		0				0	9		47	0	389	0	0	1	0
4:10 PM	89	67	0		21	171		0				0	6		36	0	390	0	0	0	0
4:15 PM	97	56	0		57	168		0				0	8		35	0	421	0	0	0	0
4:20 PM	60	75	0		31	175		0				0	15		44	0	400	0	0	0	0
4:25 PM	89	61	0		28	185		0				0	6		36	0	405	0	0	1	0
4:30 PM	106	60	0		25	163		0				0	15		31	0	400	0	0	0	0
4:35 PM	87	68	0		42	172		0				0	9		35	0	413	0	0	0	0
4:40 PM	85	57	0		48	185		0				0	6		39	0	420	0	0	0	0
4:45 PM	78	69	0		28	153		0				0	15		40	0	383	0	0	1	0
4:50 PM	96	53	0		21	155		0				0	10		29	0	364	0	0	0	0
4:55 PM	62	62	0		47	167		0				0	16		35	0	389	0	0	1	0
5:00 PM	97	57	0		33	181		0				0	11		45	0	424	0	0	0	0
5:05 PM	94	76	0		20	161		0				0	10		28	0	389	0	0	1	0
5:10 PM	98	57	0		38	164		0				0	6		45	0	408	0	0	1	0
5:15 PM	94	59	0		35	182		0				0	10		30	0	410	0	0	0	0
5:20 PM	108	76	0		23	177		0				0	2		27	0	413	0	0	0	0
5:25 PM	107	69	0		31	170		0				0	5		28	0	410	0	0	3	0
5:30 PM	80	61	0		35	162		0				0	4		39	0	381	0	0	0	0
5:35 PM	81	68	0		32	175		0				0	8		30	0	394	0	0	0	0
5:40 PM	95	70	0		16	174		0				0	4		36	0	395	0	0	1	0
5:45 PM	86	47	0		45	155		0				0	10		28	0	371	0	0	0	0
5:50 PM	67	48	0		45	156		0				0	8		33	0	357	0	0	0	0
5:55 PM	70	50	0		32	159		0				0	2		32	0	345	0	0	0	0
Total Survey	2,088	1,489	0		796	4,035		0				0	207		846	0	9,461	0	0	11	0

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound I-205 NB Ramp				Westbound I-205 NB Ramp				Interval Total	Pedestrians Crosswalk			
	T	R	Bikes		L	T		Bikes				Bikes	L		R	Bikes		North	South	East	West
4:00 PM	251	190	0		84	496		0				0	27		121	0	1,169	0	0	2	0
4:15 PM	246	192	0		116	528		0				0	29		115	0	1,226	0	0	1	0
4:30 PM	278	185	0		115	520		0				0	30		105	0	1,233	0	0	0	0
4:45 PM	236	184	0		96	475		0				0	41		104	0	1,136	0	0	2	0
5:00 PM	289	190	0		91	506		0				0	27		118	0	1,221	0	0	2	0
5:15 PM	309	204	0		89	529		0				0	17		85	0	1,233	0	0	3	0
5:30 PM	256	199	0		83	511		0				0	16		105	0	1,170	0	0	1	0
5:45 PM	223	145	0		122	470		0				0	20		93	0	1,073	0	0	0	0
Total Survey	2,088	1,489	0		796	4,035		0				0	207		846	0	9,461	0	0	11	0

Peak Hour Summary
4:30 PM to 5:30 PM

By Approach	Northbound Hwy 99				Southbound Hwy 99				Eastbound I-205 NB Ramp				Westbound I-205 NB Ramp				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	1,875	2,145	4,020	0	2,421	1,524	3,945	0	0	0	0	0	527	1,154	1,681	0	4,823	0	0	7	0
%HV	3.0%				2.3%				0.0%				1.9%				2.6%				
PHF	0.91				0.95				0.00				0.90				0.98				

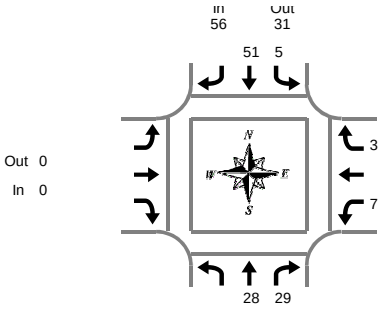
By Movement	Northbound Hwy 99				Southbound Hwy 99				Eastbound I-205 NB Ramp				Westbound I-205 NB Ramp				Total
	T	R	Total		L	T		Total				Total	L		R	Total	
Volume	1,112	763	1,875		391	2,030		2,421				0	115		412	527	4,823
%HV	NA	2.5%	3.8%	3.0%	1.3%	2.5%	NA	2.3%	NA	NA	NA	0.0%	6.1%	NA	0.7%	1.9%	2.6%
PHF		0.90	0.94	0.91	0.83	0.96		0.95				0.00	0.70		0.87	0.90	0.98

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound I-205 NB Ramp				Westbound I-205 NB Ramp				Interval Total	Pedestrians Crosswalk			
	T	R	Bikes		L	T		Bikes				Bikes	L		R	Bikes		North	South	East	West
4:00 PM	1,011	751	0		411	2,019		0				0	127		445	0	4,764	0	0	5	0
4:15 PM	1,049	751	0		418	2,029		0				0	127		442	0	4,816	0	0	5	0
4:30 PM	1,112	763	0		391	2,030		0				0	115		412	0	4,823	0	0	7	0
4:45 PM	1,090	777	0		359	2,021		0				0	101		412	0	4,760	0	0	8	0
5:00 PM	1,077	738	0		385	2,016		0				0	80		401	0	4,697	0	0	6	0

Heavy Vehicle Summary

Clay Carney
(503) 833-2740



Hwy 99 & I-205 NB Ramp

Wednesday, January 25, 2017
4:00 PM to 6:00 PM

Peak Hour Summary
4:30 PM to 5:30 PM

Heavy Vehicle 5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound I-205 NB Ramp				Westbound I-205 NB Ramp				Interval Total
		T	R	Total	L	T		Total				Total	L		R	Total	
4:00 PM		1	3	4	1	7		8				0	2		0	2	14
4:05 PM		3	4	7	2	7		9				0	1		0	1	17
4:10 PM		4	2	6	1	1		2				0	0		0	0	8
4:15 PM		4	3	7	1	4		5				0	1		0	1	13
4:20 PM		2	2	4	0	5		5				0	2		1	3	12
4:25 PM		5	4	9	2	5		7				0	0		1	1	17
4:30 PM		4	1	5	0	4		4				0	2		1	3	12
4:35 PM		3	5	8	1	5		6				0	1		0	1	15
4:40 PM		1	2	3	1	2		3				0	0		0	0	6
4:45 PM		3	1	4	0	4		4				0	1		0	1	9
4:50 PM		1	1	2	0	3		3				0	0		0	0	5
4:55 PM		1	4	5	1	4		5				0	1		0	1	11
5:00 PM		1	3	4	0	5		5				0	0		0	0	9
5:05 PM		2	2	4	0	6		6				0	0		0	0	10
5:10 PM		1	1	2	0	4		4				0	0		1	1	7
5:15 PM		4	3	7	0	2		2				0	1		0	1	10
5:20 PM		5	3	8	1	5		6				0	1		0	1	15
5:25 PM		2	3	5	1	7		8				0	0		1	1	14
5:30 PM		2	2	4	0	3		3				0	0		0	0	7
5:35 PM		1	2	3	0	4		4				0	0		0	0	7
5:40 PM		4	1	5	0	3		3				0	0		0	0	8
5:45 PM		1	2	3	0	2		2				0	2		0	2	7
5:50 PM		2	2	4	0	3		3				0	0		1	1	8
5:55 PM		0	1	1	0	3		3				0	0		0	0	4
Total Survey		57	57	114	12	98		110				0	15		6	21	245

Heavy Vehicle 15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound I-205 NB Ramp				Westbound I-205 NB Ramp				Interval Total
		T	R	Total	L	T		Total				Total	L		R	Total	
4:00 PM		8	9	17	4	15		19				0	3		0	3	39
4:15 PM		11	9	20	3	14		17				0	3		2	5	42
4:30 PM		8	8	16	2	11		13				0	3		1	4	33
4:45 PM		5	6	11	1	11		12				0	2		0	2	25
5:00 PM		4	6	10	0	15		15				0	0		1	1	26
5:15 PM		11	9	20	2	14		16				0	2		1	3	39
5:30 PM		7	5	12	0	10		10				0	0		0	0	22
5:45 PM		3	5	8	0	8		8				0	2		1	3	19
Total Survey		57	57	114	12	98		110				0	15		6	21	245

Heavy Vehicle Peak Hour Summary
4:30 PM to 5:30 PM

By Approach	Northbound Hwy 99			Southbound Hwy 99			Eastbound I-205 NB Ramp			Westbound I-205 NB Ramp			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	57	58	115	56	31	87	0	0	0	10	34	44	123
PHF	0.71			0.88			0.00			0.63			0.79

By Movement	Northbound Hwy 99				Southbound Hwy 99				Eastbound I-205 NB Ramp				Westbound I-205 NB Ramp				Total
		T	R	Total	L	T		Total				Total	L		R	Total	
Volume		28	29	57	5	51		56				0	7		3	10	123
PHF		0.64	0.81	0.71	0.63	0.85		0.88				0.00	0.58		0.75	0.63	0.79

Heavy Vehicle Rolling Hour Summary
4:00 PM to 6:00 PM

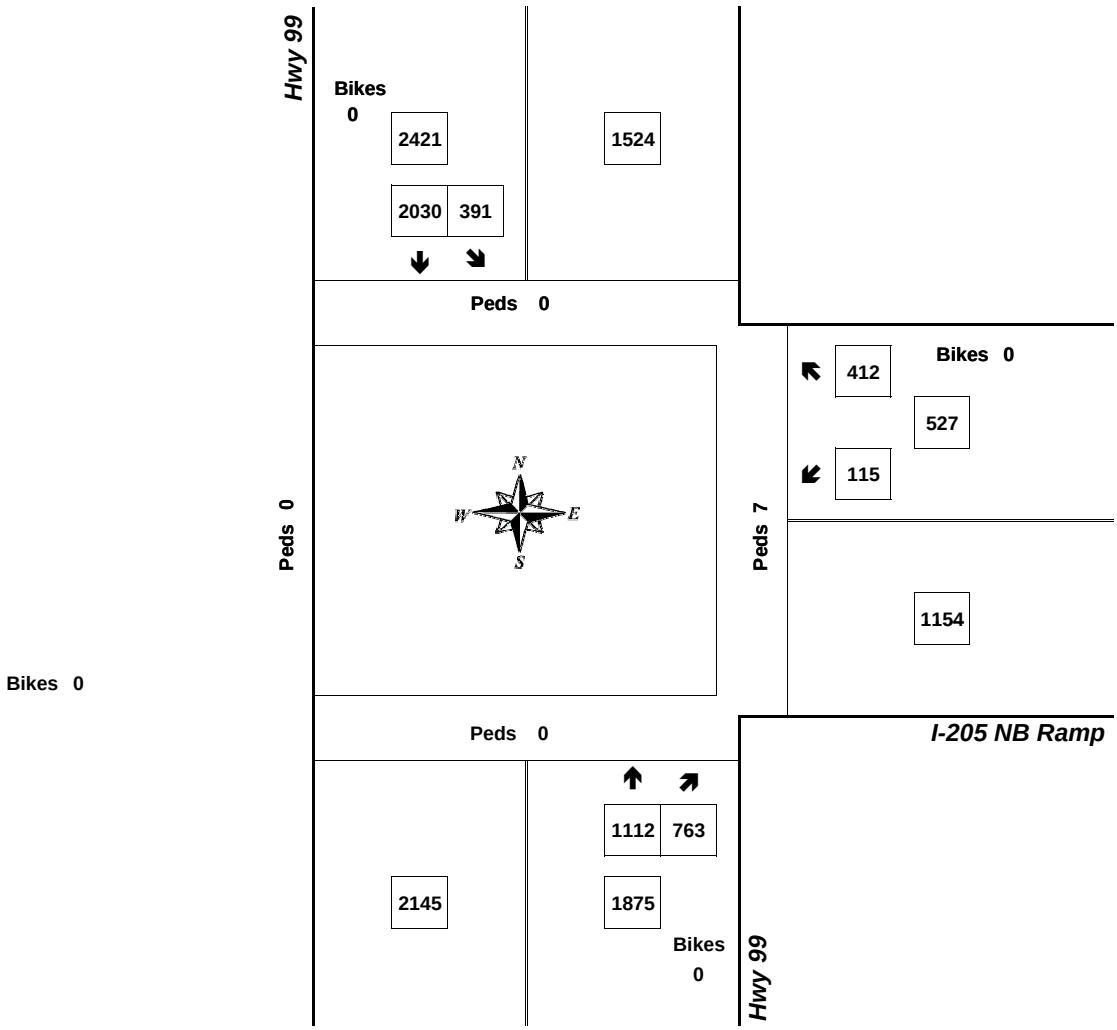
Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound I-205 NB Ramp				Westbound I-205 NB Ramp				Interval Total
		T	R	Total	L	T		Total				Total	L		R	Total	
4:00 PM		32	32	64	10	51		61				0	11		3	14	139
4:15 PM		28	29	57	6	51		57				0	8		4	12	126
4:30 PM		28	29	57	5	51		56				0	7		3	10	123
4:45 PM		27	26	53	3	50		53				0	4		2	6	112
5:00 PM		25	25	50	2	47		49				0	4		3	7	106

Peak Hour Summary

Clay Carney
(503) 833-2740

Hwy 99 & I-205 NB Ramp

4:30 PM to 5:30 PM
Wednesday, January 25, 2017

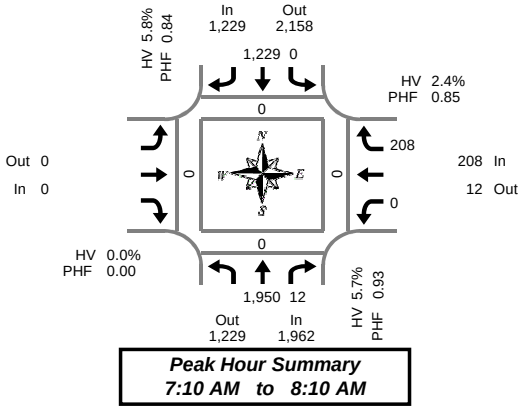


Approach	PHF	HV%	Volume
EB	0.00	0.0%	0
WB	0.90	1.9%	527
NB	0.91	3.0%	1,875
SB	0.95	2.3%	2,421
Intersection	0.98	2.6%	4,823

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary

Clay Carney
(503) 833-2740



Peak Hour Summary
7:10 AM to 8:10 AM

Hwy 99 & 15th St

Thursday, January 26, 2017
7:00 AM to 9:00 AM

5-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound				Westbound 15th St				Interval Total	Pedestrians Crosswalk			
	T	R	Bikes		L	T	Bikes				Bikes		L	R	Bikes			North	South	East	West
7:00 AM	153	1	0		0	69	0				0		0	17	0		240	0	0	0	0
7:05 AM	165	0	0		0	80	0				0		0	18	0		263	0	0	0	0
7:10 AM	149	1	0		0	89	0				0		0	22	0		261	0	0	0	0
7:15 AM	166	2	0		0	91	1				0		0	14	0		273	0	0	0	0
7:20 AM	161	1	0		0	81	0				0		0	12	0		255	0	0	0	0
7:25 AM	164	2	0		0	99	0				0		0	13	0		278	0	0	0	0
7:30 AM	173	1	0		0	82	0				0		0	14	0		270	0	0	0	0
7:35 AM	185	0	0		0	89	0				0		0	14	0		288	0	0	0	0
7:40 AM	159	0	0		0	110	0				0		0	23	0		292	0	0	0	0
7:45 AM	164	1	0		0	118	0				0		0	20	0		303	0	0	0	0
7:50 AM	165	1	0		0	103	0				0		0	18	0		287	0	0	0	0
7:55 AM	162	2	0		0	134	0				0		0	21	0		319	0	0	0	0
8:00 AM	160	0	0		0	120	0				0		0	20	0		300	0	0	0	0
8:05 AM	142	1	0		0	113	0				0		0	17	0		273	0	0	0	0
8:10 AM	131	1	0		0	99	0				0		0	21	0		252	0	0	0	0
8:15 AM	124	1	0		0	100	0				0		0	20	0		245	0	0	0	0
8:20 AM	127	0	0		0	89	0				0		0	20	0		236	0	0	0	0
8:25 AM	97	3	0		0	121	0				0		0	27	0		248	0	0	0	0
8:30 AM	122	0	0		0	115	0				0		0	21	0		258	0	0	0	0
8:35 AM	96	2	0		0	105	0				0		0	17	0		220	0	0	0	0
8:40 AM	75	2	0		0	92	0				0		0	25	0		194	0	0	0	0
8:45 AM	135	2	0		0	113	0				0		0	19	0		269	0	0	0	0
8:50 AM	97	1	0		0	104	0				0		0	22	0		224	0	0	0	0
8:55 AM	93	2	0		0	90	0				0		0	19	0		204	0	0	0	0
Total Survey	3,365	27	0		0	2,406	1				0		0	454	0		6,252	0	0	0	0

15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound				Westbound 15th St				Interval Total	Pedestrians Crosswalk			
	T	R	Bikes		L	T	Bikes				Bikes		L	R	Bikes			North	South	East	West
7:00 AM	467	2	0		0	238	0				0		0	57	0		764	0	0	0	0
7:15 AM	491	5	0		0	271	1				0		0	39	0		806	0	0	0	0
7:30 AM	517	1	0		0	281	0				0		0	51	0		850	0	0	0	0
7:45 AM	491	4	0		0	355	0				0		0	59	0		909	0	0	0	0
8:00 AM	433	2	0		0	332	0				0		0	58	0		825	0	0	0	0
8:15 AM	348	4	0		0	310	0				0		0	67	0		729	0	0	0	0
8:30 AM	293	4	0		0	312	0				0		0	63	0		672	0	0	0	0
8:45 AM	325	5	0		0	307	0				0		0	60	0		697	0	0	0	0
Total Survey	3,365	27	0		0	2,406	1				0		0	454	0		6,252	0	0	0	0

Peak Hour Summary
7:10 AM to 8:10 AM

By Approach	Northbound Hwy 99				Southbound Hwy 99				Eastbound				Westbound 15th St				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	1,962	1,229	3,191	0	1,229	2,158	3,387	1	0	0	0	0	208	12	220	0	3,399	0	0	0	0
%HV	5.7%				5.8%				0.0%				2.4%				5.5%				
PHF	0.93				0.84				0.00				0.85				0.93				

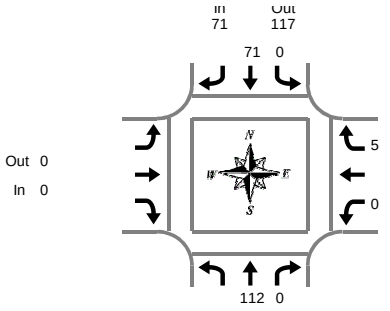
By Movement	Northbound Hwy 99				Southbound Hwy 99				Eastbound				Westbound 15th St				Total
	T	R	Total		L	T		Total				Total	L		R	Total	
Volume	1,950	12	1,962		0	1,229		1,229				0	0		208	208	3,399
%HV	NA	5.7%	0.0%	5.7%	0.0%	5.8%	NA	5.8%	NA	NA	NA	0.0%	0.0%	NA	2.4%	2.4%	5.5%
PHF		0.93	0.60	0.93	0.00	0.84		0.84				0.00	0.00		0.85	0.85	0.93

Rolling Hour Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound				Westbound 15th St				Interval Total	Pedestrians Crosswalk			
	T	R	Bikes		L	T	Bikes				Bikes		L	R	Bikes			North	South	East	West
7:00 AM	1,966	12	0		0	1,145	1				0		0	206	0		3,329	0	0	0	0
7:15 AM	1,932	12	0		0	1,239	1				0		0	207	0		3,390	0	0	0	0
7:30 AM	1,789	11	0		0	1,278	0				0		0	235	0		3,313	0	0	0	0
7:45 AM	1,565	14	0		0	1,309	0				0		0	247	0		3,135	0	0	0	0
8:00 AM	1,399	15	0		0	1,261	0				0		0	248	0		2,923	0	0	0	0

Heavy Vehicle Summary

Clay Carney
(503) 833-2740



Hwy 99 & 15th St

Thursday, January 26, 2017
7:00 AM to 9:00 AM

Peak Hour Summary
7:10 AM to 8:10 AM

Heavy Vehicle 5-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound				Westbound 15th St				Interval Total
		T	R	Total	L	T		Total				Total	L		R	Total	
7:00 AM		6	0	6	0	3		3				0	0		1	1	10
7:05 AM		4	0	4	0	5		5				0	0		0	0	9
7:10 AM		3	0	3	0	3		3				0	0		0	0	6
7:15 AM		8	0	8	0	5		5				0	0		1	1	14
7:20 AM		10	0	10	0	9		9				0	0		0	0	19
7:25 AM		5	0	5	0	5		5				0	0		0	0	10
7:30 AM		10	0	10	0	6		6				0	0		1	1	17
7:35 AM		9	0	9	0	3		3				0	0		0	0	12
7:40 AM		8	0	8	0	5		5				0	0		1	1	14
7:45 AM		8	0	8	0	6		6				0	0		0	0	14
7:50 AM		15	0	15	0	3		3				0	0		0	0	18
7:55 AM		9	0	9	0	14		14				0	0		0	0	23
8:00 AM		13	0	13	0	7		7				0	0		1	1	21
8:05 AM		14	0	14	0	5		5				0	0		1	1	20
8:10 AM		8	0	8	0	9		9				0	0		0	0	17
8:15 AM		7	0	7	0	7		7				0	0		3	3	17
8:20 AM		6	0	6	0	4		4				0	0		3	3	13
8:25 AM		5	1	6	0	14		14				0	0		0	0	20
8:30 AM		8	0	8	0	8		8				0	0		0	0	16
8:35 AM		7	0	7	0	7		7				0	0		0	0	14
8:40 AM		1	0	1	0	8		8				0	0		2	2	11
8:45 AM		8	0	8	0	8		8				0	0		1	1	17
8:50 AM		6	0	6	0	10		10				0	0		3	3	19
8:55 AM		7	0	7	0	4		4				0	0		0	0	11
Total Survey		185	1	186	0	158		158				0	0		18	18	362

Heavy Vehicle 15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound				Westbound 15th St				Interval Total
		T	R	Total	L	T		Total				Total	L		R	Total	
7:00 AM		13	0	13	0	11		11				0	0		1	1	25
7:15 AM		23	0	23	0	19		19				0	0		1	1	43
7:30 AM		27	0	27	0	14		14				0	0		2	2	43
7:45 AM		32	0	32	0	23		23				0	0		0	0	55
8:00 AM		35	0	35	0	21		21				0	0		2	2	58
8:15 AM		18	1	19	0	25		25				0	0		6	6	50
8:30 AM		16	0	16	0	23		23				0	0		2	2	41
8:45 AM		21	0	21	0	22		22				0	0		4	4	47
Total Survey		185	1	186	0	158		158				0	0		18	18	362

Heavy Vehicle Peak Hour Summary
7:10 AM to 8:10 AM

By Approach	Northbound Hwy 99			Southbound Hwy 99			Eastbound			Westbound 15th St			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	112	71	183	71	117	188	0	0	0	5	0	5	188
PHF	0.76			0.68			0.00			0.63			0.73

By Movement	Northbound Hwy 99				Southbound Hwy 99				Eastbound				Westbound 15th St				Total
		T	R	Total	L	T		Total				Total	L		R	Total	
Volume		112	0	112	0	71		71				0	0		5	5	188
PHF		0.76	0.00	0.76	0.00	0.68		0.68				0.00	0.00		0.63	0.63	0.73

Heavy Vehicle Rolling Hour Summary
7:00 AM to 9:00 AM

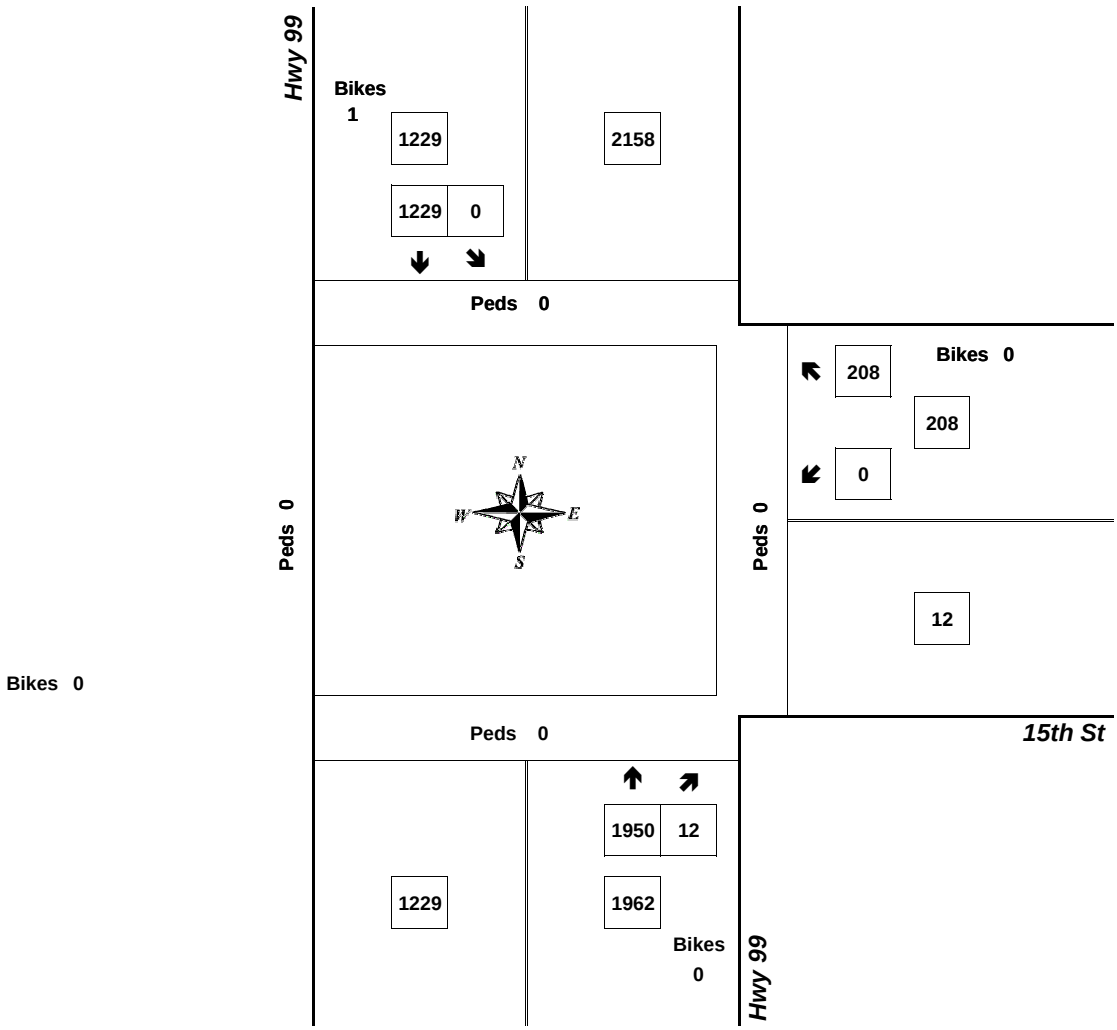
Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound				Westbound 15th St				Interval Total
		T	R	Total	L	T		Total				Total	L		R	Total	
7:00 AM		95	0	95	0	67		67				0	0		4	4	166
7:15 AM		117	0	117	0	77		77				0	0		5	5	199
7:30 AM		112	1	113	0	83		83				0	0		10	10	206
7:45 AM		101	1	102	0	92		92				0	0		10	10	204
8:00 AM		90	1	91	0	91		91				0	0		14	14	196

Peak Hour Summary

Clay Carney
(503) 833-2740

Hwy 99 & 15th St

7:10 AM to 8:10 AM
Thursday, January 26, 2017

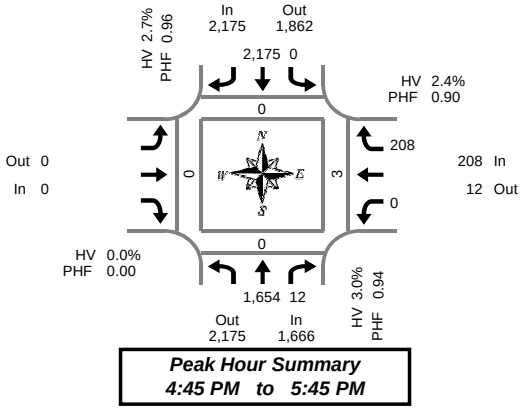


Approach	PHF	HV%	Volume
EB	0.00	0.0%	0
WB	0.85	2.4%	208
NB	0.93	5.7%	1,962
SB	0.84	5.8%	1,229
Intersection	0.93	5.5%	3,399

Count Period: 7:00 AM to 9:00 AM

Total Vehicle Summary

Clay Carney
(503) 833-2740



Hwy 99 & 15th St

Wednesday, January 25, 2017
4:00 PM to 6:00 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound				Westbound 15th St				Interval Total	Pedestrians Crosswalk			
		T	R	Bikes	L	T		Bikes				Bikes	L		R	Bikes		North	South	East	West
4:00 PM		121	2	0	0	188		0				0	0		18	0	329	0	0	0	0
4:05 PM		122	2	0	0	154		0				0	0		21	0	299	0	0	1	0
4:10 PM		133	3	0	0	166		0				0	0		15	0	317	0	0	0	0
4:15 PM		143	0	0	0	173		0				0	0		20	0	336	0	0	0	0
4:20 PM		134	2	0	0	186		0				0	0		15	0	337	0	0	0	0
4:25 PM		116	2	0	0	188		0				0	0		21	0	327	0	0	1	0
4:30 PM		144	0	0	0	172		0				0	0		16	0	332	0	0	0	0
4:35 PM		140	0	0	0	185		0				0	0		18	0	343	0	0	0	0
4:40 PM		116	0	0	0	186		0				0	0		27	0	329	0	0	1	0
4:45 PM		125	0	0	0	168		0				0	0		18	0	311	0	0	0	0
4:50 PM		127	1	0	0	146		0				0	0		21	0	295	0	0	1	0
4:55 PM		125	1	0	0	182		0				0	0		19	0	327	0	0	0	0
5:00 PM		136	2	0	0	191		0				0	0		16	0	345	0	0	0	0
5:05 PM		153	1	0	0	180		0				0	0		15	0	349	0	0	1	0
5:10 PM		132	0	0	0	180		0				0	0		18	0	330	0	0	0	0
5:15 PM		133	2	0	0	197		0				0	0		17	0	349	0	0	0	0
5:20 PM		165	0	0	0	189		0				0	0		12	0	366	0	0	0	0
5:25 PM		143	1	0	0	180		0				0	0		21	0	345	0	0	0	0
5:30 PM		133	1	0	0	186		0				0	0		18	0	338	0	0	0	0
5:35 PM		134	2	0	0	188		0				0	0		19	0	343	0	0	0	0
5:40 PM		148	1	0	0	188		0				0	0		14	0	351	0	0	1	0
5:45 PM		117	1	0	0	165		0				0	0		13	0	296	0	0	0	0
5:50 PM		109	1	0	0	182		0				0	0		15	0	307	0	0	0	0
5:55 PM		90	4	0	0	165		0				0	0		15	0	274	0	0	0	0
Total Survey		3,139	29	0	0	4,285		0				0	0		422	0	7,875	0	0	6	0

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound				Westbound 15th St				Interval Total	Pedestrians Crosswalk			
		T	R	Bikes	L	T		Bikes				Bikes	L		R	Bikes		North	South	East	West
4:00 PM		376	7	0	0	508		0				0	0		54	0	945	0	0	1	0
4:15 PM		393	4	0	0	547		0				0	0		56	0	1,000	0	0	1	0
4:30 PM		400	0	0	0	543		0				0	0		61	0	1,004	0	0	1	0
4:45 PM		377	2	0	0	496		0				0	0		58	0	933	0	0	1	0
5:00 PM		421	3	0	0	551		0				0	0		49	0	1,024	0	0	1	0
5:15 PM		441	3	0	0	566		0				0	0		50	0	1,060	0	0	0	0
5:30 PM		415	4	0	0	562		0				0	0		51	0	1,032	0	0	1	0
5:45 PM		316	6	0	0	512		0				0	0		43	0	877	0	0	0	0
Total Survey		3,139	29	0	0	4,285		0				0	0		422	0	7,875	0	0	6	0

Peak Hour Summary
4:45 PM to 5:45 PM

By Approach	Northbound Hwy 99				Southbound Hwy 99				Eastbound				Westbound 15th St				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	1,666	2,175	3,841	0	2,175	1,862	4,037	0	0	0	0	0	208	12	220	0	4,049	0	0	3	0
%HV		3.0%				2.7%				0.0%				2.4%			2.8%				
PHF		0.94				0.96				0.00				0.90			0.95				

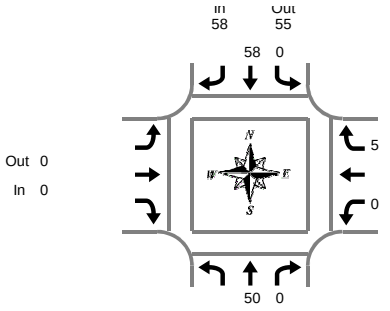
By Movement	Northbound Hwy 99				Southbound Hwy 99				Eastbound				Westbound 15th St				Total
		T	R	Total	L	T		Total				Total	L		R	Total	
Volume		1,654	12	1,666	0	2,175		2,175				0	0		208	208	4,049
%HV	NA	3.0%	0.0%	3.0%	0.0%	2.7%	NA	2.7%	NA	NA	NA	0.0%	0.0%	NA	2.4%	2.4%	2.8%
PHF		0.94	0.75	0.94	0.00	0.96		0.96				0.00	0.00		0.90	0.90	0.95

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound				Westbound 15th St				Interval Total	Pedestrians Crosswalk			
		T	R	Bikes	L	T		Bikes				Bikes	L		R	Bikes		North	South	East	West
4:00 PM		1,546	13	0	0	2,094		0				0	0		229	0	3,882	0	0	4	0
4:15 PM		1,591	9	0	0	2,137		0				0	0		224	0	3,961	0	0	4	0
4:30 PM		1,639	8	0	0	2,156		0				0	0		218	0	4,021	0	0	3	0
4:45 PM		1,654	12	0	0	2,175		0				0	0		208	0	4,049	0	0	3	0
5:00 PM		1,593	16	0	0	2,191		0				0	0		193	0	3,993	0	0	2	0

Heavy Vehicle Summary

Clay Carney
(503) 833-2740



Peak Hour Summary
4:45 PM to 5:45 PM

Hwy 99 & 15th St

Wednesday, January 25, 2017
4:00 PM to 6:00 PM

Heavy Vehicle 5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound				Westbound 15th St				Interval Total
		T	R	Total	L	T		Total				Total	L		R	Total	
4:00 PM		4	0	4	0	10		10				0	0		0	0	14
4:05 PM		7	1	8	0	8		8				0	0		0	0	16
4:10 PM		6	0	6	0	1		1				0	0		0	0	7
4:15 PM		8	0	8	0	4		4				0	0		1	1	13
4:20 PM		3	0	3	0	7		7				0	0		2	2	12
4:25 PM		8	0	8	0	5		5				0	0		1	1	14
4:30 PM		5	0	5	0	6		6				0	0		0	0	11
4:35 PM		7	0	7	0	6		6				0	0		1	1	14
4:40 PM		3	0	3	0	2		2				0	0		0	0	5
4:45 PM		3	0	3	0	7		7				0	0		1	1	11
4:50 PM		2	0	2	0	3		3				0	0		1	1	6
4:55 PM		4	0	4	0	6		6				0	0		1	1	11
5:00 PM		3	0	3	0	5		5				0	0		0	0	8
5:05 PM		5	0	5	0	5		5				0	0		0	0	10
5:10 PM		2	0	2	0	4		4				0	0		0	0	6
5:15 PM		6	0	6	0	3		3				0	0		0	0	9
5:20 PM		9	0	9	0	6		6				0	0		1	1	16
5:25 PM		5	0	5	0	7		7				0	0		0	0	12
5:30 PM		5	0	5	0	4		4				0	0		0	0	9
5:35 PM		2	0	2	0	5		5				0	0		0	0	7
5:40 PM		4	0	4	0	3		3				0	0		1	1	8
5:45 PM		3	0	3	0	4		4				0	0		0	0	7
5:50 PM		4	0	4	0	2		2				0	0		0	0	6
5:55 PM		1	0	1	0	2		2				0	0		0	0	3
Total Survey		109	1	110	0	115		115				0	0		10	10	235

Heavy Vehicle 15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound				Westbound 15th St				Interval Total
		T	R	Total	L	T		Total				Total	L		R	Total	
4:00 PM		17	1	18	0	19		19				0	0		0	0	37
4:15 PM		19	0	19	0	16		16				0	0		4	4	39
4:30 PM		15	0	15	0	14		14				0	0		1	1	30
4:45 PM		9	0	9	0	16		16				0	0		3	3	28
5:00 PM		10	0	10	0	14		14				0	0		0	0	24
5:15 PM		20	0	20	0	16		16				0	0		1	1	37
5:30 PM		11	0	11	0	12		12				0	0		1	1	24
5:45 PM		8	0	8	0	8		8				0	0		0	0	16
Total Survey		109	1	110	0	115		115				0	0		10	10	235

Heavy Vehicle Peak Hour Summary
4:45 PM to 5:45 PM

By Approach	Northbound Hwy 99			Southbound Hwy 99			Eastbound			Westbound 15th St			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	50	58	108	58	55	113	0	0	0	5	0	5	113
PHF	0.63			0.85			0.00			0.42			0.76

By Movement	Northbound Hwy 99				Southbound Hwy 99				Eastbound				Westbound 15th St				Total
		T	R	Total	L	T		Total				Total	L		R	Total	
Volume		50	0	50	0	58		58				0	0		5	5	113
PHF		0.63	0.00	0.63	0.00	0.85		0.85				0.00	0.00		0.42	0.42	0.76

Heavy Vehicle Rolling Hour Summary
4:00 PM to 6:00 PM

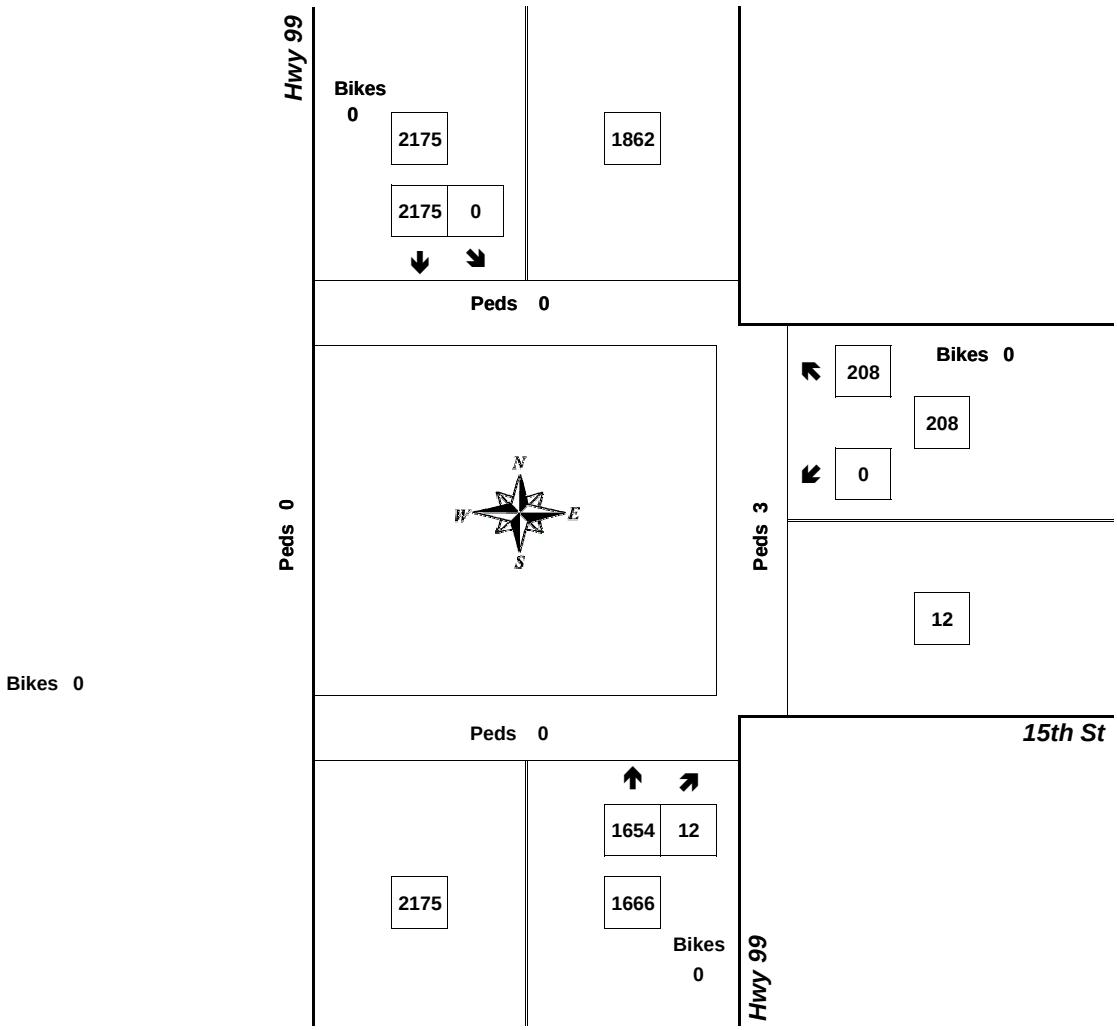
Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound				Westbound 15th St				Interval Total
		T	R	Total	L	T		Total				Total	L		R	Total	
4:00 PM		60	1	61	0	65		65				0	0		8	8	134
4:15 PM		53	0	53	0	60		60				0	0		8	8	121
4:30 PM		54	0	54	0	60		60				0	0		5	5	119
4:45 PM		50	0	50	0	58		58				0	0		5	5	113
5:00 PM		49	0	49	0	50		50				0	0		2	2	101

Peak Hour Summary

Clay Carney
(503) 833-2740

Hwy 99 & 15th St

4:45 PM to 5:45 PM
Wednesday, January 25, 2017

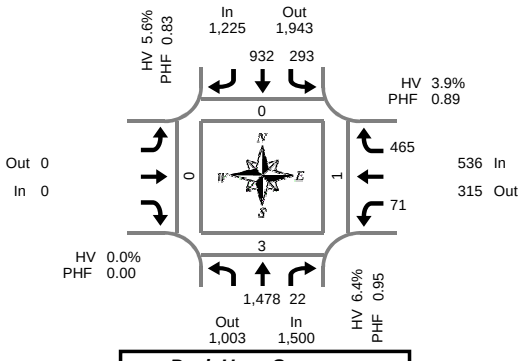


Approach	PHF	HV%	Volume
EB	0.00	0.0%	0
WB	0.90	2.4%	208
NB	0.94	3.0%	1,666
SB	0.96	2.7%	2,175
Intersection	0.95	2.8%	4,049

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Hwy 99 & 14th St

Thursday, January 26, 2017
7:00 AM to 9:00 AM

Peak Hour Summary
7:10 AM to 8:10 AM

5-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound 14th St				Westbound 14th St				Interval Total	Pedestrians Crosswalk			
	T	R	Bikes		L	T		Bikes				Bikes	L		R	Bikes		North	South	East	West
7:00 AM	121	5	0		17	55		0				0	5		37	0	240	0	0	0	0
7:05 AM	141	1	0		19	58		0				0	2		25	0	246	0	0	0	0
7:10 AM	115	0	0		23	58		0				0	10		33	0	239	0	0	0	0
7:15 AM	123	3	0		19	79		0				0	6		39	0	269	0	0	0	0
7:20 AM	126	6	0		24	58		0				0	2		38	0	254	0	0	0	0
7:25 AM	116	1	0		25	72		0				0	8		50	0	272	0	0	0	0
7:30 AM	128	2	0		14	70		0				0	6		41	0	261	0	0	0	0
7:35 AM	146	1	0		21	67		0				0	3		41	0	279	0	0	0	0
7:40 AM	111	2	0		27	73		0				0	11		49	0	273	0	0	0	0
7:45 AM	127	1	0		29	95		0				0	6		38	0	296	0	2	0	0
7:50 AM	130	0	0		22	81		0				0	6		31	0	270	0	0	0	0
7:55 AM	115	2	0		42	93		0				0	5		44	0	301	0	0	0	0
8:00 AM	133	4	0		20	106		0				0	5		27	0	295	0	0	0	0
8:05 AM	108	0	0		27	80		0				0	3		34	0	252	0	1	1	0
8:10 AM	103	2	0		34	67		0				0	2		31	0	239	0	0	0	0
8:15 AM	96	9	0		25	74		0				0	5		25	0	234	0	1	0	0
8:20 AM	110	5	0		26	63		0				0	6		18	0	228	0	0	0	0
8:25 AM	73	1	0		38	87		0				0	6		26	0	231	0	0	0	0
8:30 AM	97	7	0		25	85		0				0	3		20	0	237	0	0	0	0
8:35 AM	83	4	0		27	78		0				0	7		18	0	217	0	0	0	0
8:40 AM	65	3	0		32	68		0				0	10		14	0	192	0	0	0	0
8:45 AM	111	7	0		24	94		0				0	4		26	0	266	0	0	0	0
8:50 AM	82	5	0		26	71		0				0	1		21	0	206	0	0	0	0
8:55 AM	73	3	0		34	64		0				0	6		21	0	201	0	0	0	0
Total Survey	2,633	74	0		620	1,796		0				0	128		747	0	5,998	0	4	1	0

15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 99				Southbound Hwy 99			Eastbound 14th St				Westbound 14th St				Interval Total	Pedestrians Crosswalk			
	T	R	Bikes		L	T	Bikes				Bikes	L		R	Bikes		North	South	East	West
7:00 AM	377	6	0		59	171	0				0	17		95	0	725	0	0	0	0
7:15 AM	365	10	0		68	209	0				0	16		127	0	795	0	0	0	0
7:30 AM	385	5	0		62	210	0				0	20		131	0	813	0	0	0	0
7:45 AM	372	3	0		93	269	0				0	17		113	0	867	0	2	0	0
8:00 AM	344	6	0		81	253	0				0	10		92	0	786	0	1	1	0
8:15 AM	279	15	0		89	224	0				0	17		69	0	693	0	1	0	0
8:30 AM	245	14	0		84	231	0				0	20		52	0	646	0	0	0	0
8:45 AM	266	15	0		84	229	0				0	11		68	0	673	0	0	0	0
Total Survey	2,633	74	0		620	1,796	0				0	128		747	0	5,998	0	4	1	0

Peak Hour Summary
7:10 AM to 8:10 AM

By Approach	Northbound Hwy 99				Southbound Hwy 99				Eastbound 14th St				Westbound 14th St				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	1,500	1,003	2,503	0	1,225	1,943	3,168	0	0	0	0	0	536	315	851	0	3,261	0	3	1	0
%HV	6.4%				5.6%				0.0%				3.9%				5.7%				
PHF	0.95				0.83				0.00				0.89				0.94				

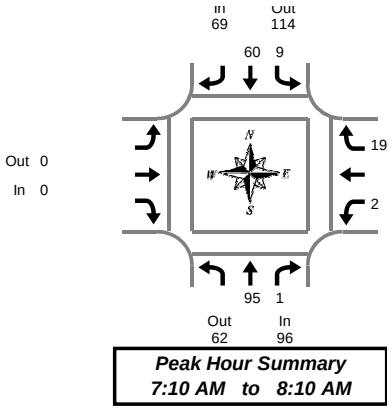
By Movement	Northbound Hwy 99				Southbound Hwy 99				Eastbound 14th St				Westbound 14th St				Total
		T	R	Total	L	T		Total				Total	L		R	Total	
Volume		1,478	22	1,500	293	932		1,225				0	71		465	536	3,261
%HV	NA	6.4%	4.5%	6.4%	3.1%	6.4%	NA	5.6%	NA	NA	NA	0.0%	2.8%	NA	4.1%	3.9%	5.7%
PHF		0.95	0.55	0.95	0.79	0.83		0.83				0.00	0.77		0.88	0.89	0.94

Rolling Hour Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound 14th St				Westbound 14th St				Interval Total	Pedestrians Crosswalk			
	T	R	Bikes		L	T		Bikes				Bikes	L		R	Bikes		North	South	East	West
7:00 AM	1,499	24	0		282	859		0				0	70		466	0	3,200	0	2	0	0
7:15 AM	1,466	24	0		304	941		0				0	63		463	0	3,261	0	3	1	0
7:30 AM	1,380	29	0		325	956		0				0	64		405	0	3,159	0	4	1	0
7:45 AM	1,240	38	0		347	977		0				0	64		326	0	2,992	0	4	1	0
8:00 AM	1,134	50	0		338	937		0				0	58		281	0	2,798	0	2	1	0

Heavy Vehicle Summary

Clay Carney
(503) 833-2740



Peak Hour Summary
7:10 AM to 8:10 AM

Hwy 99 & 14th St

Thursday, January 26, 2017
7:00 AM to 9:00 AM

Heavy Vehicle 5-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound 14th St				Westbound 14th St				Interval Total
		T	R	Total	L	T		Total				Total	L		R	Total	
7:00 AM		7	2	9	1	4		5				0	0		0	0	14
7:05 AM		3	0	3	0	5		5				0	0		0	0	8
7:10 AM		2	0	2	0	2		2				0	0		1	1	5
7:15 AM		8	0	8	0	6		6				0	0		0	0	14
7:20 AM		8	1	9	3	5		8				0	0		2	2	19
7:25 AM		2	0	2	1	5		6				0	1		3	4	12
7:30 AM		9	0	9	0	5		5				0	0		2	2	16
7:35 AM		6	0	6	0	3		3				0	0		2	2	11
7:40 AM		8	0	8	0	3		3				0	0		2	2	13
7:45 AM		7	0	7	2	6		8				0	0		1	1	16
7:50 AM		13	0	13	1	2		3				0	0		2	2	18
7:55 AM		10	0	10	0	12		12				0	1		1	2	24
8:00 AM		10	0	10	2	5		7				0	0		1	1	18
8:05 AM		12	0	12	0	6		6				0	0		2	2	20
8:10 AM		7	0	7	4	5		9				0	0		1	1	17
8:15 AM		7	0	7	1	4		5				0	0		0	0	12
8:20 AM		4	2	6	3	3		6				0	0		0	0	12
8:25 AM		6	0	6	3	10		13				0	0		0	0	19
8:30 AM		5	0	5	3	6		9				0	0		1	1	15
8:35 AM		6	0	6	0	6		6				0	1		1	2	14
8:40 AM		1	0	1	3	6		9				0	0		0	0	10
8:45 AM		4	0	4	1	7		8				0	0		3	3	15
8:50 AM		7	0	7	1	8		9				0	0		1	1	17
8:55 AM		6	0	6	2	4		6				0	1		0	1	13
Total Survey		158	5	163	31	128		159				0	4		26	30	352

Heavy Vehicle 15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound 14th St				Westbound 14th St				Interval Total
		T	R	Total	L	T		Total				Total	L		R	Total	
7:00 AM		12	2	14	1	11		12				0	0		1	1	27
7:15 AM		18	1	19	4	16		20				0	1		5	6	45
7:30 AM		23	0	23	0	11		11				0	0		6	6	40
7:45 AM		30	0	30	3	20		23				0	1		4	5	58
8:00 AM		29	0	29	6	16		22				0	0		4	4	55
8:15 AM		17	2	19	7	17		24				0	0		0	0	43
8:30 AM		12	0	12	6	18		24				0	1		2	3	39
8:45 AM		17	0	17	4	19		23				0	1		4	5	45
Total Survey		158	5	163	31	128		159				0	4		26	30	352

Heavy Vehicle Peak Hour Summary
7:10 AM to 8:10 AM

By Approach	Northbound Hwy 99			Southbound Hwy 99			Eastbound 14th St			Westbound 14th St			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	96	62	158	69	114	183	0	0	0	21	10	31	186
PHF	0.73			0.69			0.00			0.66			0.75

By Movement	Northbound Hwy 99				Southbound Hwy 99				Eastbound 14th St				Westbound 14th St				Total
		T	R	Total	L	T		Total				Total	L		R	Total	
Volume		95	1	96	9	60		69				0	2		19	21	186
PHF		0.72	0.25	0.73	0.56	0.65		0.69				0.00	0.50		0.68	0.66	0.75

Heavy Vehicle Rolling Hour Summary
7:00 AM to 9:00 AM

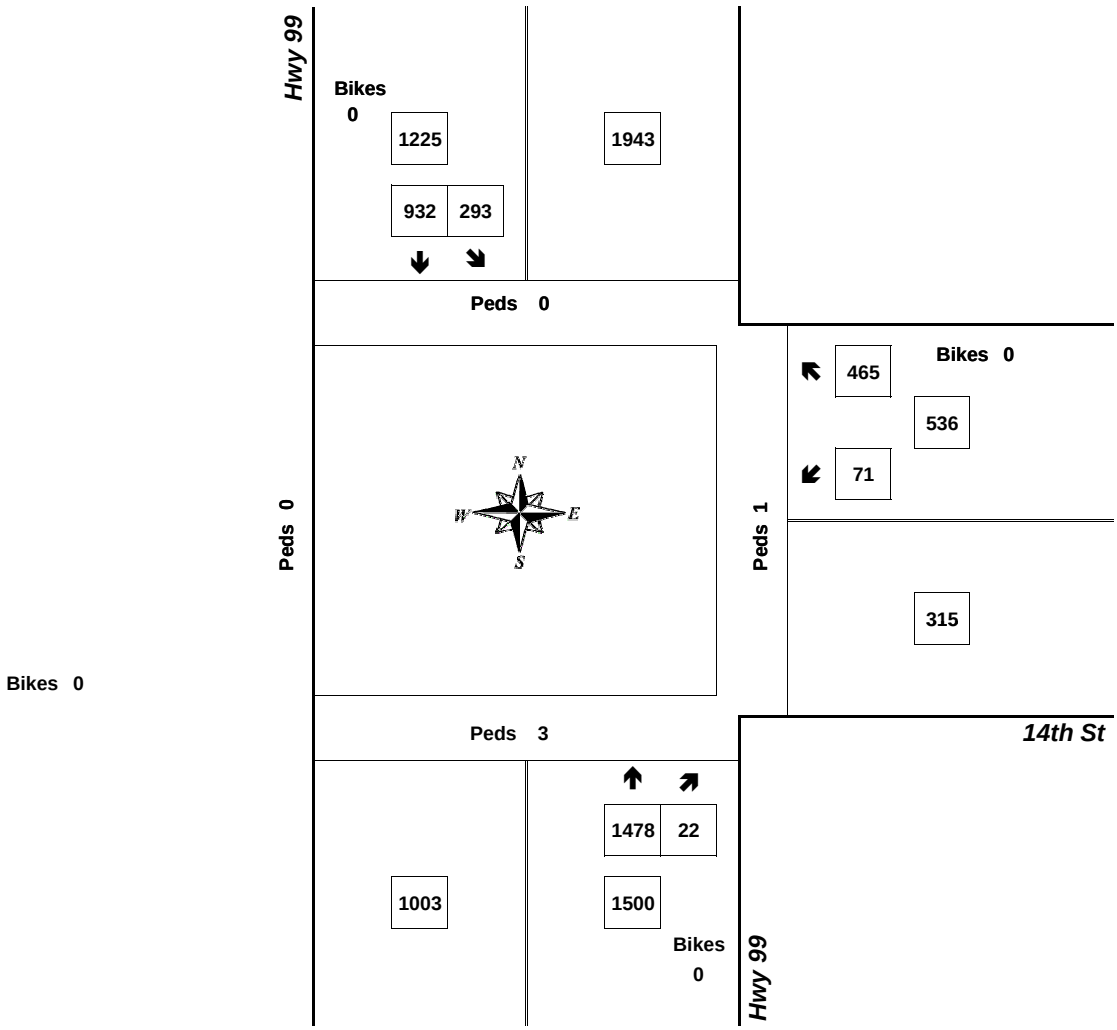
Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound 14th St				Westbound 14th St				Interval Total
		T	R	Total	L	T		Total				Total	L		R	Total	
7:00 AM		83	3	86	8	58		66				0	2		16	18	170
7:15 AM		100	1	101	13	63		76				0	2		19	21	198
7:30 AM		99	2	101	16	64		80				0	1		14	15	196
7:45 AM		88	2	90	22	71		93				0	2		10	12	195
8:00 AM		75	2	77	23	70		93				0	2		10	12	182

Peak Hour Summary

Clay Carney
(503) 833-2740

Hwy 99 & 14th St

7:10 AM to 8:10 AM
Thursday, January 26, 2017

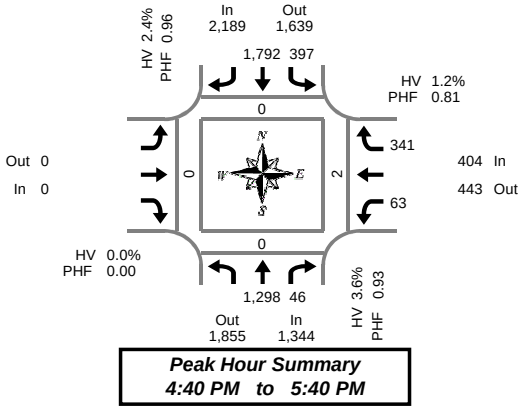


Approach	PHF	HV%	Volume
EB	0.00	0.0%	0
WB	0.89	3.9%	536
NB	0.95	6.4%	1,500
SB	0.83	5.6%	1,225
Intersection	0.94	5.7%	3,261

Count Period: 7:00 AM to 9:00 AM

Total Vehicle Summary

Clay Carney
(503) 833-2740



Hwy 99 & 14th St

Wednesday, January 25, 2017
4:00 PM to 6:00 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound 14th St				Westbound 14th St				Interval Total	Pedestrians Crosswalk			
	T	R	Bikes		L	T		Bikes				Bikes	L		R	Bikes		North	South	East	West
4:00 PM	95	2	0		40	156		0				0	4		25	0	322	0	0	0	0
4:05 PM	95	4	0		34	131		0				0	5		33	0	302	0	0	1	0
4:10 PM	117	5	0		21	128		0				0	7		21	0	299	1	0	0	0
4:15 PM	106	3	0		35	154		0				0	7		32	0	337	0	0	0	0
4:20 PM	111	5	0		39	164		0				0	3		26	0	348	0	0	0	0
4:25 PM	103	3	0		32	143		0				0	5		17	0	303	0	0	0	0
4:30 PM	118	4	0		31	149		0				0	5		27	0	334	0	0	0	0
4:35 PM	99	1	0		36	153		0				0	5		37	0	331	0	0	0	0
4:40 PM	92	7	0		39	153		0				0	7		26	0	324	0	0	0	0
4:45 PM	104	2	0		32	144		0				0	5		23	0	310	0	0	0	0
4:50 PM	109	6	0		25	130		0				0	3		17	0	290	0	0	1	0
4:55 PM	96	5	0		38	154		0				0	8		31	0	332	0	0	0	0
5:00 PM	105	4	0		33	155		0				0	1		33	0	331	0	0	0	0
5:05 PM	126	5	0		22	149		0				0	6		31	0	339	0	0	1	0
5:10 PM	90	3	0		37	154		0				0	3		38	0	325	0	0	0	0
5:15 PM	107	3	0		30	160		0				0	7		32	0	339	0	0	0	0
5:20 PM	120	2	0		29	135		0				0	5		39	0	330	0	0	0	0
5:25 PM	120	4	0		33	153		0				0	2		27	0	339	0	0	0	0
5:30 PM	113	4	0		40	147		0				0	9		19	0	332	0	0	0	0
5:35 PM	116	1	0		39	158		0				0	7		25	0	346	0	0	0	0
5:40 PM	126	5	0		27	137		0				0	5		21	0	321	0	0	1	0
5:45 PM	98	3	0		38	139		0				0	2		21	0	301	0	0	0	0
5:50 PM	92	2	0		33	135		0				0	5		21	0	288	0	0	0	0
5:55 PM	75	6	0		37	125		0				0	5		16	0	264	0	0	0	0
Total Survey	2,533	89	0		800	3,506		0				0	121		638	0	7,687	1	0	4	0

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound 14th St				Westbound 14th St				Interval Total	Pedestrians Crosswalk			
	T	R	Bikes		L	T		Bikes				Bikes	L		R	Bikes		North	South	East	West
4:00 PM	307	11	0		95	415		0				0	16		79	0	923	1	0	1	0
4:15 PM	320	11	0		106	461		0				0	15		75	0	988	0	0	0	0
4:30 PM	309	12	0		106	455		0				0	17		90	0	989	0	0	0	0
4:45 PM	309	13	0		95	428		0				0	16		71	0	932	0	0	1	0
5:00 PM	321	12	0		92	458		0				0	10		102	0	995	0	0	1	0
5:15 PM	347	9	0		92	448		0				0	14		98	0	1,008	0	0	0	0
5:30 PM	355	10	0		106	442		0				0	21		65	0	999	0	0	1	0
5:45 PM	265	11	0		108	399		0				0	12		58	0	853	0	0	0	0
Total Survey	2,533	89	0		800	3,506		0				0	121		638	0	7,687	1	0	4	0

Peak Hour Summary
4:40 PM to 5:40 PM

By Approach	Northbound Hwy 99				Southbound Hwy 99				Eastbound 14th St				Westbound 14th St				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	1,344	1,855	3,199	0	2,189	1,639	3,828	0	0	0	0	0	404	443	847	0	3,937	0	0	2	0
%HV		3.6%				2.4%				0.0%				1.2%			2.7%				
PHF		0.93				0.96				0.00				0.81			0.97				

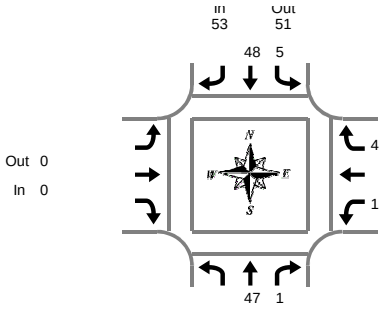
By Movement	Northbound Hwy 99				Southbound Hwy 99				Eastbound 14th St				Westbound 14th St				Total
	T	R	Total		L	T		Total				Total	L		R	Total	
Volume	1,298	46	1,344		397	1,792		2,189				0	63		341	404	3,937
%HV	NA	3.6%	2.2%	3.6%	1.3%	2.7%	NA	2.4%	NA	NA	NA	0.0%	1.6%	NA	1.2%	1.2%	2.7%
PHF		0.92	0.77	0.93	0.89	0.97		0.96				0.00	0.88		0.78	0.81	0.97

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound 14th St				Westbound 14th St				Interval Total	Pedestrians Crosswalk			
	T	R	Bikes		L	T		Bikes				Bikes	L		R	Bikes		North	South	East	West
4:00 PM	1,245	47	0		402	1,759		0				0	64		315	0	3,832	1	0	2	0
4:15 PM	1,259	48	0		399	1,802		0				0	58		338	0	3,904	0	0	2	0
4:30 PM	1,286	46	0		385	1,789		0				0	57		361	0	3,924	0	0	2	0
4:45 PM	1,332	44	0		385	1,776		0				0	61		336	0	3,934	0	0	3	0
5:00 PM	1,288	42	0		398	1,747		0				0	57		323	0	3,855	0	0	2	0

Heavy Vehicle Summary

Clay Carney
(503) 833-2740



Hwy 99 & 14th St

Wednesday, January 25, 2017
4:00 PM to 6:00 PM

Peak Hour Summary
4:40 PM to 5:40 PM

Heavy Vehicle 5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound 14th St				Westbound 14th St				Interval Total
		T	R	Total	L	T		Total				Total	L		R	Total	
4:00 PM		4	0	4	1	8		9				0	0		0	0	13
4:05 PM		8	0	8	0	8		8				0	1		0	1	17
4:10 PM		6	0	6	0	3		3				0	1		0	1	10
4:15 PM		7	0	7	3	2		5				0	0		0	0	12
4:20 PM		3	0	3	0	6		6				0	0		0	0	9
4:25 PM		7	0	7	1	3		4				0	0		1	1	12
4:30 PM		3	0	3	1	7		8				0	0		2	2	13
4:35 PM		7	0	7	1	6		7				0	0		0	0	14
4:40 PM		3	0	3	0	2		2				0	0		0	0	5
4:45 PM		4	0	4	0	4		4				0	0		0	0	8
4:50 PM		2	0	2	1	4		5				0	0		0	0	7
4:55 PM		3	1	4	1	3		4				0	1		0	1	9
5:00 PM		4	0	4	1	5		6				0	0		0	0	10
5:05 PM		4	0	4	0	5		5				0	0		0	0	9
5:10 PM		2	0	2	0	4		4				0	0		0	0	6
5:15 PM		7	0	7	0	3		3				0	0		0	0	10
5:20 PM		5	0	5	1	4		5				0	0		4	4	14
5:25 PM		5	0	5	1	4		5				0	0		0	0	10
5:30 PM		5	0	5	0	5		5				0	0		0	0	10
5:35 PM		3	0	3	0	5		5				0	0		0	0	8
5:40 PM		4	0	4	1	2		3				0	0		0	0	7
5:45 PM		3	0	3	0	4		4				0	0		0	0	7
5:50 PM		3	0	3	0	2		2				0	0		1	1	6
5:55 PM		1	0	1	0	1		1				0	1		0	1	3
Total Survey		103	1	104	13	100		113				0	4		8	12	229

Heavy Vehicle 15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound 14th St				Westbound 14th St				Interval Total
		T	R	Total	L	T		Total				Total	L		R	Total	
4:00 PM		18	0	18	1	19		20				0	2		0	2	40
4:15 PM		17	0	17	4	11		15				0	0		1	1	33
4:30 PM		13	0	13	2	15		17				0	0		2	2	32
4:45 PM		9	1	10	2	11		13				0	1		0	1	24
5:00 PM		10	0	10	1	14		15				0	0		0	0	25
5:15 PM		17	0	17	2	11		13				0	0		4	4	34
5:30 PM		12	0	12	1	12		13				0	0		0	0	25
5:45 PM		7	0	7	0	7		7				0	1		1	2	16
Total Survey		103	1	104	13	100		113				0	4		8	12	229

Heavy Vehicle Peak Hour Summary
4:40 PM to 5:40 PM

By Approach	Northbound Hwy 99			Southbound Hwy 99			Eastbound 14th St			Westbound 14th St			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	48	49	97	53	51	104	0	0	0	5	6	11	106
PHF	0.71			0.88			0.00			0.31			0.78

By Movement	Northbound Hwy 99				Southbound Hwy 99				Eastbound 14th St				Westbound 14th St				Total
		T	R	Total	L	T		Total				Total	L		R	Total	
Volume		47	1	48	5	48		53				0	1		4	5	106
PHF		0.69	0.25	0.71	0.42	0.86		0.88				0.00	0.25		0.25	0.31	0.78

Heavy Vehicle Rolling Hour Summary
4:00 PM to 6:00 PM

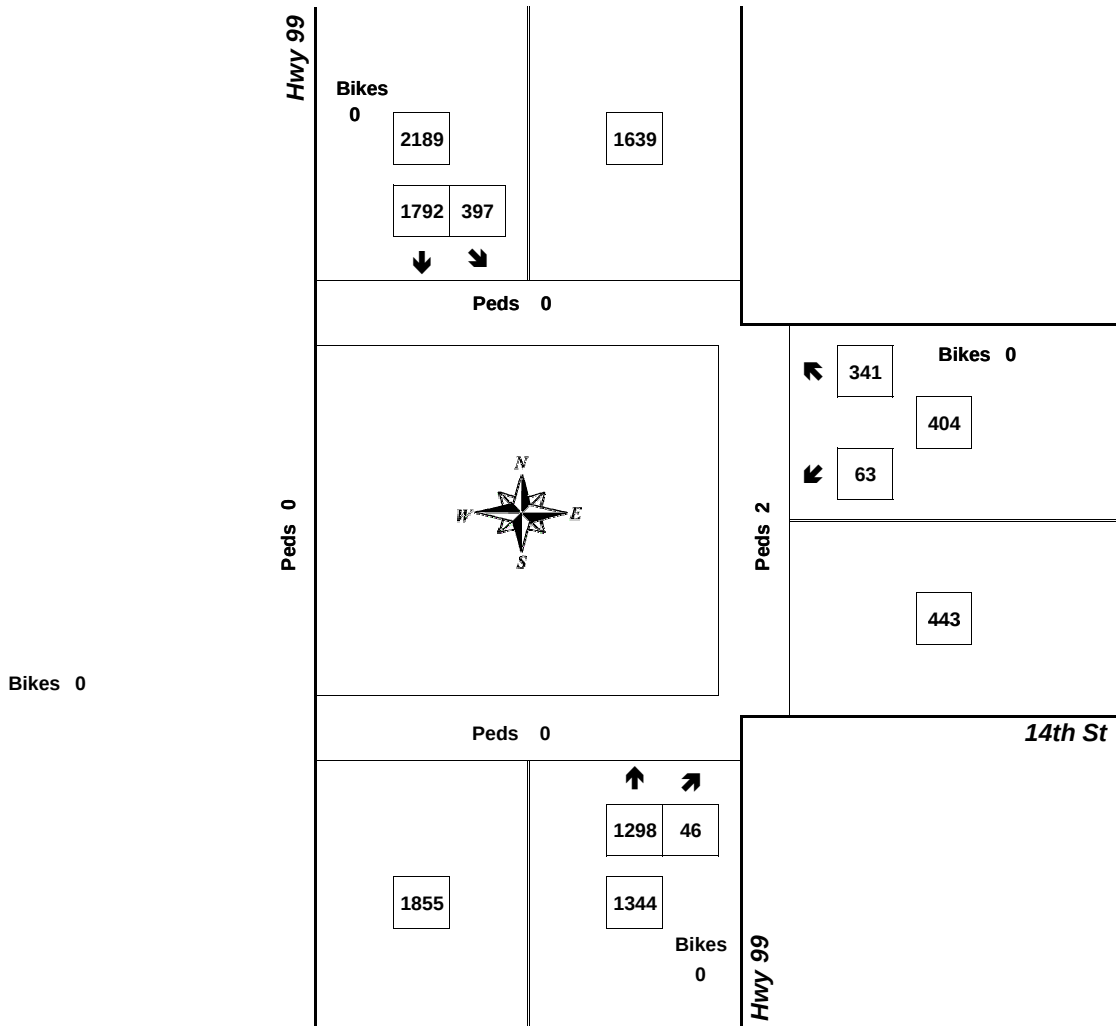
Interval Start Time	Northbound Hwy 99				Southbound Hwy 99				Eastbound 14th St				Westbound 14th St				Interval Total
		T	R	Total	L	T		Total				Total	L		R	Total	
4:00 PM		57	1	58	9	56		65				0	3		3	6	129
4:15 PM		49	1	50	9	51		60				0	1		3	4	114
4:30 PM		49	1	50	7	51		58				0	1		6	7	115
4:45 PM		48	1	49	6	48		54				0	1		4	5	108
5:00 PM		46	0	46	4	44		48				0	1		5	6	100

Peak Hour Summary

Clay Carney
(503) 833-2740

Hwy 99 & 14th St

4:40 PM to 5:40 PM
Wednesday, January 25, 2017



Approach	PHF	HV%	Volume
EB	0.00	0.0%	0
WB	0.81	1.2%	404
NB	0.93	3.6%	1,344
SB	0.96	2.4%	2,189
Intersection	0.97	2.7%	3,937

Count Period: 4:00 PM to 6:00 PM

Type of peak hour being reported: System Peak

Method for determining peak hour: Total Entering Volume

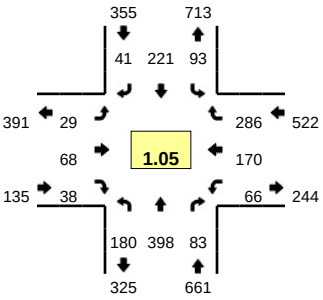
LOCATION: S Redland Rd -- S Holcomb Blvd/Abernethy Rd

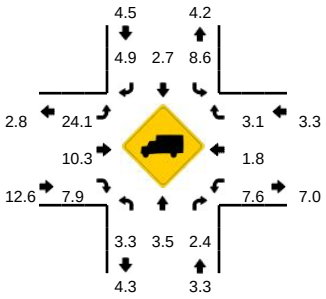
QC JOB #: 13332119

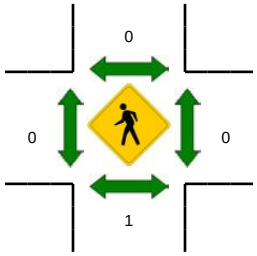
CITY/STATE: Oregon City, OR

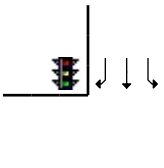
DATE: Tue, Mar 17 2015

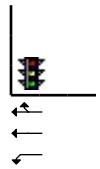
Peak-Hour: 7:05 AM -- 8:05 AM
Peak 15-Min: 7:15 AM -- 7:30 AM

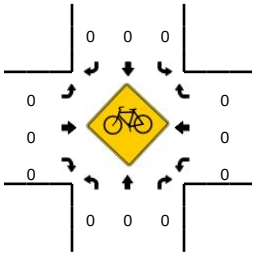


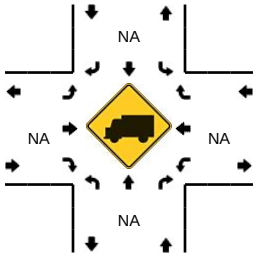


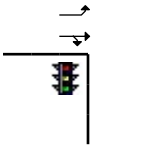


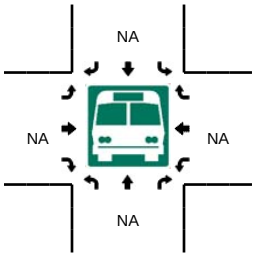












5-Min Count Period Beginning At	S Redland Rd (Northbound)				S Redland Rd (Southbound)				S Holcomb Blvd/Abernethy Rd (Eastbound)				S Holcomb Blvd/Abernethy Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	10	29	3	0	6	11	9	0	0	4	1	0	3	10	25	0	111	
7:05 AM	23	34	4	0	6	11	0	0	1	2	0	0	5	16	20	0	122	
7:10 AM	15	39	4	0	3	16	3	0	1	5	2	0	3	12	19	0	122	
7:15 AM	10	40	5	0	8	18	2	0	0	6	3	0	2	12	34	0	140	
7:20 AM	17	30	2	0	6	29	1	0	2	3	1	0	2	8	19	0	120	
7:25 AM	14	29	1	0	11	12	5	0	2	8	7	0	3	15	32	0	139	
7:30 AM	11	35	10	0	10	21	3	0	2	2	2	0	5	12	21	0	134	
7:35 AM	17	35	7	0	3	14	6	0	4	4	2	0	3	16	23	0	134	
7:40 AM	18	37	13	0	9	23	4	0	6	4	4	0	2	13	20	0	153	
7:45 AM	14	32	13	0	11	10	3	0	2	9	6	0	8	20	20	0	148	
7:50 AM	17	31	10	0	12	24	3	0	3	8	4	0	10	14	19	0	155	
7:55 AM	11	35	8	0	12	21	3	0	4	11	4	0	9	16	28	0	162	1640
8:00 AM	13	21	6	0	2	22	8	0	2	6	3	0	14	16	31	0	144	1673
8:05 AM	8	30	10	0	10	13	2	0	1	5	2	0	10	9	21	0	121	1672
8:10 AM	12	26	4	0	11	16	6	0	3	5	7	0	5	6	13	0	114	1664
8:15 AM	11	34	2	0	9	19	4	0	1	5	7	0	5	5	13	0	115	1639
8:20 AM	11	19	8	0	8	14	3	0	0	6	6	0	13	14	12	0	114	1633
8:25 AM	8	29	6	0	8	29	2	0	0	9	7	0	7	1	13	0	119	1613
8:30 AM	12	36	2	0	11	18	6	0	2	0	4	0	9	10	9	0	119	1598
8:35 AM	16	33	6	0	9	24	1	0	0	4	3	0	4	7	13	0	120	1584
8:40 AM	9	25	0	0	7	19	1	1	5	6	4	0	15	14	14	0	120	1551
8:45 AM	18	30	12	0	4	17	4	0	2	4	5	0	7	7	15	0	125	1528
8:50 AM	10	22	12	0	7	19	3	0	3	6	3	0	6	6	12	0	109	1482
8:55 AM	14	17	7	0	14	17	5	0	2	5	1	0	6	6	15	0	109	1429

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	164	396	32	0	100	236	32	0	16	68	44	0	28	140	340	0	1596
Heavy Trucks	4	20	4		8	8	0		4	4	4		0	0	4		60
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 3/25/2015 5:11 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: System Peak

Method for determining peak hour: Total Entering Volume

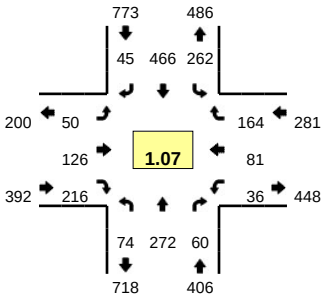
LOCATION: S Redland Rd -- S Holcomb Blvd/Abernethy Rd

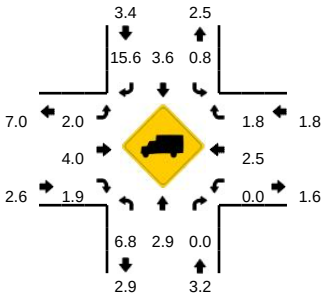
QC JOB #: 13332120

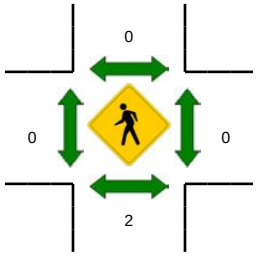
CITY/STATE: Oregon City, OR

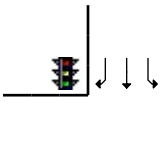
DATE: Tue, Mar 17 2015

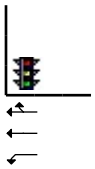
Peak-Hour: 4:40 PM -- 5:40 PM
Peak 15-Min: 5:10 PM -- 5:25 PM

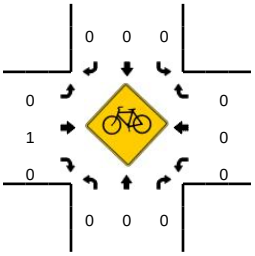


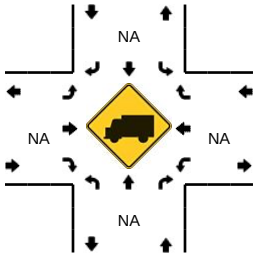


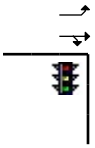


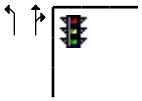


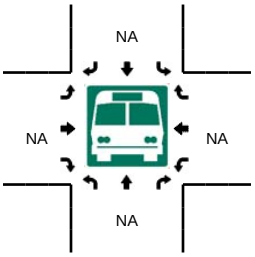












5-Min Count Period Beginning At	S Redland Rd (Northbound)				S Redland Rd (Southbound)				S Holcomb Blvd/Abernethy Rd (Eastbound)				S Holcomb Blvd/Abernethy Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	5	24	1	0	19	40	5	0	2	14	14	0	11	8	17	0	160	
4:05 PM	6	23	5	0	24	33	2	0	4	11	17	0	9	4	21	0	159	
4:10 PM	6	23	4	0	14	34	6	0	4	10	11	0	1	6	10	0	129	
4:15 PM	6	17	5	0	23	42	6	0	2	12	21	0	1	5	10	0	150	
4:20 PM	4	27	8	0	16	24	3	0	5	15	15	0	5	8	14	0	144	
4:25 PM	9	15	1	0	15	37	6	0	5	16	14	0	6	5	10	0	139	
4:30 PM	11	24	2	0	20	42	3	0	4	9	13	0	3	9	23	0	163	
4:35 PM	4	31	8	0	18	47	5	0	4	17	17	0	3	11	15	0	180	
4:40 PM	4	18	4	0	18	24	7	0	5	19	23	0	3	13	23	0	161	
4:45 PM	2	31	7	0	21	34	4	0	3	9	19	0	6	1	13	0	150	
4:50 PM	8	24	11	0	20	34	6	0	7	13	12	0	2	5	9	0	151	
4:55 PM	7	16	3	0	23	36	3	0	1	11	22	0	5	6	18	0	151	1837
5:00 PM	3	18	6	0	24	42	6	0	7	8	18	0	3	8	12	0	155	1832
5:05 PM	8	22	3	0	29	43	3	0	3	6	18	0	6	7	13	0	161	1834
5:10 PM	11	24	5	0	13	36	1	0	5	8	19	0	2	6	13	0	143	1848
5:15 PM	4	20	2	0	14	39	3	0	2	13	14	0	3	12	11	0	137	1835
5:20 PM	5	25	3	0	21	41	4	0	2	12	13	0	2	8	18	0	154	1845
5:25 PM	7	36	6	0	30	47	2	0	1	6	18	0	2	5	9	0	169	1875
5:30 PM	9	18	4	0	27	43	3	0	8	10	24	0	0	5	12	0	163	1875
5:35 PM	6	20	6	0	22	47	3	0	6	11	16	0	2	5	13	0	157	1852
5:40 PM	12	14	4	0	12	40	1	0	6	7	18	0	6	4	14	0	138	1829
5:45 PM	6	23	6	0	20	33	2	0	2	15	14	0	5	8	13	0	147	1826
5:50 PM	5	20	2	0	14	38	5	0	6	12	14	0	6	10	23	0	155	1830
5:55 PM	13	17	5	0	23	38	3	0	3	9	16	0	8	7	12	0	154	1833

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	80	276	40	0	192	464	32	0	36	132	184	0	28	104	168	0	1736
Heavy Trucks	0	12	0		4	12	12		0	0	4		0	0	4		48
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

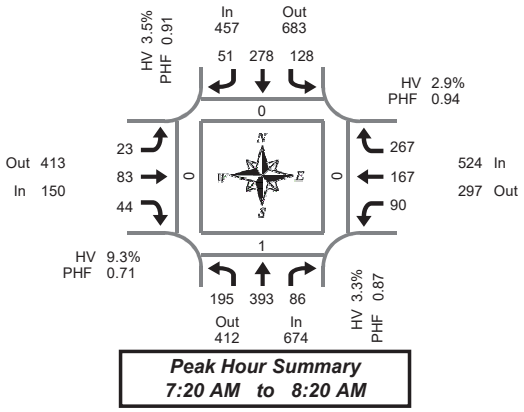
Comments:

Report generated on 3/25/2015 5:12 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Total Vehicle Summary

Clay Carney
(503) 833-2740



Redland Rd & Holcomb Blvd

Wednesday, January 25, 2017
7:00 AM to 9:00 AM

Peak Hour Summary
7:20 AM to 8:20 AM

5-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Redland Rd				Southbound Redland Rd				Eastbound Holcomb Blvd				Westbound Holcomb Blvd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	12	29	1	0	6	13	4	0	0	6	0	0	4	11	27	0	113	0	0	0	0
7:05 AM	15	37	3	0	8	15	4	0	0	2	2	0	4	5	20	0	115	0	0	0	0
7:10 AM	12	38	0	0	6	13	4	0	2	3	1	0	4	15	34	0	132	0	0	0	0
7:15 AM	16	29	1	0	14	17	3	0	2	3	7	0	1	10	30	0	133	0	0	0	0
7:20 AM	22	28	2	0	12	20	7	0	1	6	3	0	6	11	21	0	139	0	0	0	0
7:25 AM	16	37	6	0	6	28	3	0	1	7	5	0	8	16	26	0	159	0	0	0	0
7:30 AM	18	42	4	0	11	28	2	0	4	3	4	0	7	12	25	0	160	0	0	0	0
7:35 AM	22	35	10	0	11	24	5	0	0	9	2	0	2	14	23	0	157	0	0	0	0
7:40 AM	16	32	15	0	9	28	5	0	3	12	5	0	4	17	23	0	169	0	0	0	0
7:45 AM	9	30	13	0	9	25	9	0	7	7	4	0	10	17	19	0	159	0	0	0	0
7:50 AM	18	26	10	0	17	19	1	0	0	12	3	0	8	17	17	0	148	0	0	0	0
7:55 AM	12	27	7	0	8	28	2	0	0	10	2	0	8	17	22	0	143	0	0	0	0
8:00 AM	13	27	2	0	18	14	4	0	1	5	1	0	5	7	23	0	120	0	0	0	0
8:05 AM	12	28	5	0	12	22	4	0	1	5	5	0	7	17	25	0	143	0	0	0	0
8:10 AM	18	34	6	0	8	22	5	0	1	4	6	0	16	9	24	0	153	0	1	0	0
8:15 AM	19	47	6	0	7	20	4	0	4	3	4	0	9	13	19	0	155	0	0	0	0
8:20 AM	8	25	5	0	8	21	8	0	3	7	4	0	5	8	22	0	124	0	1	0	0
8:25 AM	21	22	8	0	10	24	1	0	4	4	3	0	7	4	15	0	123	0	0	0	0
8:30 AM	15	34	2	0	11	18	5	0	3	4	7	0	10	6	27	0	142	0	0	0	0
8:35 AM	14	27	1	0	8	22	3	0	1	8	3	0	6	6	13	0	112	0	0	0	0
8:40 AM	14	39	9	0	12	17	5	0	0	5	9	0	6	5	21	0	142	0	0	0	0
8:45 AM	14	37	6	0	17	14	3	0	0	8	3	0	3	12	20	0	137	0	0	0	0
8:50 AM	16	34	6	0	13	15	6	0	1	8	4	0	2	13	11	0	129	0	0	0	0
8:55 AM	5	27	4	0	7	12	10	0	3	9	8	0	8	8	25	0	126	0	0	0	0
Total Survey	357	771	132	0	248	479	107	0	42	150	95	0	150	270	532	0	3,333	0	2	0	0

15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Redland Rd				Southbound Redland Rd				Eastbound Holcomb Blvd				Westbound Holcomb Blvd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	39	104	4	0	20	41	12	0	2	11	3	0	12	31	81	0	360	0	0	0	0
7:15 AM	54	94	9	0	32	65	13	0	4	16	15	0	15	37	77	0	431	0	0	0	0
7:30 AM	56	109	29	0	31	80	12	0	7	24	11	0	13	43	71	0	486	0	0	0	0
7:45 AM	39	83	30	0	34	72	12	0	7	29	9	0	26	51	58	0	450	0	0	0	0
8:00 AM	43	89	13	0	38	58	13	0	3	14	12	0	28	33	72	0	416	0	1	0	0
8:15 AM	48	94	19	0	25	65	13	0	11	14	11	0	21	25	56	0	402	0	1	0	0
8:30 AM	43	100	12	0	31	57	13	0	4	17	19	0	22	17	61	0	396	0	0	0	0
8:45 AM	35	98	16	0	37	41	19	0	4	25	15	0	13	33	56	0	392	0	0	0	0
Total Survey	357	771	132	0	248	479	107	0	42	150	95	0	150	270	532	0	3,333	0	2	0	0

Peak Hour Summary
7:20 AM to 8:20 AM

By Approach	Northbound Redland Rd				Southbound Redland Rd				Eastbound Holcomb Blvd				Westbound Holcomb Blvd				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	674	412	1,086	0	457	683	1,140	0	150	413	563	0	524	297	821	0	1,805	0	1	0	0
%HV	3.3%				3.5%				9.3%				2.9%				3.7%				
PHF	0.87				0.91				0.71				0.94				0.93				

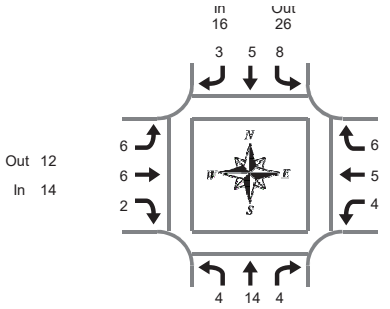
By Movement	Northbound Redland Rd				Southbound Redland Rd				Eastbound Holcomb Blvd				Westbound Holcomb Blvd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	195	393	86	674	128	278	51	457	23	83	44	150	90	167	267	524	1,805
%HV	2.1%	3.6%	4.7%	3.3%	6.3%	1.8%	5.9%	3.5%	26.1%	7.2%	4.5%	9.3%	4.4%	3.0%	2.2%	2.9%	3.7%
PHF	0.87	0.86	0.57	0.87	0.74	0.87	0.67	0.91	0.58	0.67	0.73	0.71	0.70	0.82	0.90	0.94	0.93

Rolling Hour Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Redland Rd				Southbound Redland Rd				Eastbound Holcomb Blvd				Westbound Holcomb Blvd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	188	390	72	0	117	258	49	0	20	80	38	0	66	162	287	0	1,727	0	0	0	0
7:15 AM	192	375	81	0	135	275	50	0	21	83	47	0	82	164	278	0	1,783	0	1	0	0
7:30 AM	186	375	91	0	128	275	50	0	28	81	43	0	88	152	257	0	1,754	0	2	0	0
7:45 AM	173	366	74	0	128	252	51	0	25	74	51	0	97	126	247	0	1,664	0	2	0	0
8:00 AM	169	381	60	0	131	221	58	0	22	70	57	0	84	108	245	0	1,606	0	2	0	0

Heavy Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Redland Rd & Holcomb Blvd

Wednesday, January 25, 2017
7:00 AM to 9:00 AM

Peak Hour Summary
7:20 AM to 8:20 AM

Heavy Vehicle 5-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Redland Rd				Southbound Redland Rd				Eastbound Holcomb Blvd				Westbound Holcomb Blvd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	0	1	0	1	1	0	0	1	0	0	0	0	0	0	0	0	2
7:05 AM	0	2	0	2	1	1	0	2	0	1	0	1	1	0	3	4	9
7:10 AM	0	2	0	2	1	0	0	1	1	0	0	1	1	1	1	3	7
7:15 AM	1	4	0	5	2	1	0	3	0	0	0	0	0	1	1	2	10
7:20 AM	0	2	0	2	0	0	2	2	0	0	0	0	0	0	0	0	4
7:25 AM	0	5	0	5	0	0	0	0	0	1	0	1	0	0	0	0	6
7:30 AM	0	0	0	0	0	0	0	0	2	1	0	3	0	0	1	1	4
7:35 AM	0	1	0	1	1	0	0	1	0	2	0	2	0	0	0	0	4
7:40 AM	0	2	1	3	1	0	0	1	0	0	0	0	0	0	0	0	4
7:45 AM	0	0	1	1	2	1	0	3	4	1	0	5	1	0	1	2	11
7:50 AM	2	1	0	3	1	0	0	1	0	0	0	0	0	0	0	0	4
7:55 AM	2	1	0	3	0	2	0	2	0	0	0	0	0	2	2	4	9
8:00 AM	0	1	0	1	2	0	0	2	0	1	0	1	0	1	1	2	6
8:05 AM	0	0	2	2	0	0	0	0	0	0	1	1	1	2	0	3	6
8:10 AM	0	1	0	1	0	2	0	2	0	0	1	1	2	0	0	2	6
8:15 AM	0	0	0	0	1	0	1	2	0	0	0	0	0	0	1	1	3
8:20 AM	0	1	0	1	2	0	0	2	2	0	1	3	1	0	1	2	8
8:25 AM	0	3	0	3	1	0	0	1	1	0	1	2	0	0	0	0	6
8:30 AM	0	3	1	4	2	2	0	4	0	0	2	2	1	0	2	3	13
8:35 AM	0	0	0	0	0	4	2	6	0	1	1	2	0	1	0	1	9
8:40 AM	0	0	0	0	0	1	0	1	0	1	1	2	0	2	1	3	6
8:45 AM	0	2	0	2	1	1	0	2	0	0	2	2	0	0	0	0	6
8:50 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	2	3
8:55 AM	0	1	0	1	0	2	2	4	0	0	2	2	0	1	0	1	8
Total Survey	5	33	5	43	19	18	7	44	10	9	12	31	8	13	15	36	154

Heavy Vehicle 15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Redland Rd				Southbound Redland Rd				Eastbound Holcomb Blvd				Westbound Holcomb Blvd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	0	5	0	5	3	1	0	4	1	1	0	2	2	1	4	7	18
7:15 AM	1	11	0	12	2	1	2	5	0	1	0	1	0	1	1	2	20
7:30 AM	0	3	1	4	2	0	0	2	2	3	0	5	0	0	1	1	12
7:45 AM	4	2	1	7	3	3	0	6	4	1	0	5	1	2	3	6	24
8:00 AM	0	2	2	4	2	2	0	4	0	1	2	3	3	3	1	7	18
8:15 AM	0	4	0	4	4	0	1	5	3	0	2	5	1	0	2	3	17
8:30 AM	0	3	1	4	2	7	2	11	0	2	4	6	1	3	3	7	28
8:45 AM	0	3	0	3	1	4	2	7	0	0	4	4	0	3	0	3	17
Total Survey	5	33	5	43	19	18	7	44	10	9	12	31	8	13	15	36	154

Heavy Vehicle Peak Hour Summary
7:20 AM to 8:20 AM

By Approach	Northbound Redland Rd			Southbound Redland Rd			Eastbound Holcomb Blvd			Westbound Holcomb Blvd			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	22	11	33	16	26	42	14	12	26	15	18	33	67
PHF	0.79			0.67			0.50			0.42			0.70

By Movement	Northbound Redland Rd				Southbound Redland Rd				Eastbound Holcomb Blvd				Westbound Holcomb Blvd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	4	14	4	22	8	5	3	16	6	6	2	14	4	5	6	15	67
PHF	0.25	0.50	0.50	0.79	0.50	0.42	0.38	0.67	0.38	0.38	0.25	0.50	0.33	0.25	0.50	0.42	0.70

Heavy Vehicle Rolling Hour Summary
7:00 AM to 9:00 AM

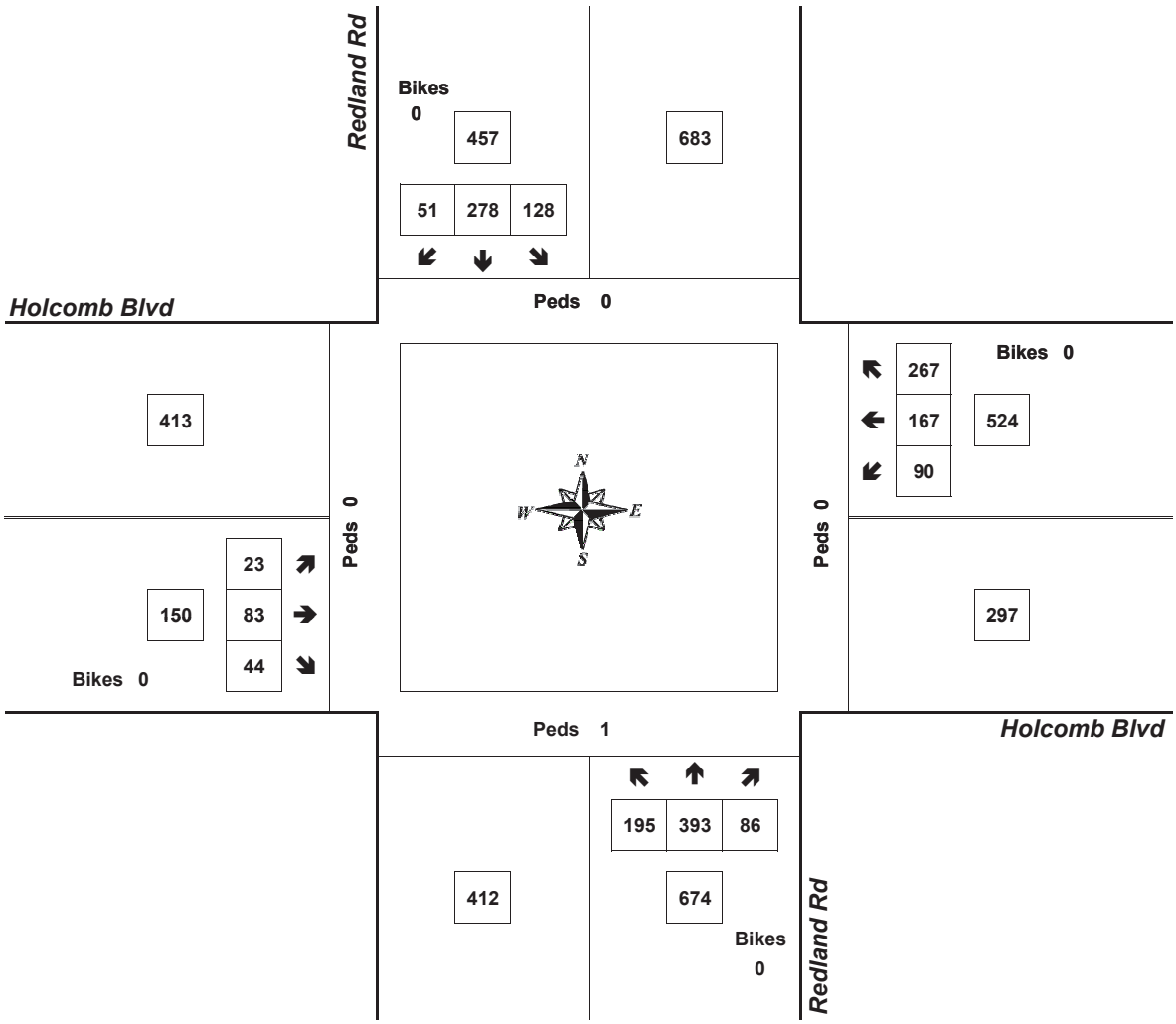
Interval Start Time	Northbound Redland Rd				Southbound Redland Rd				Eastbound Holcomb Blvd				Westbound Holcomb Blvd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	5	21	2	28	10	5	2	17	7	6	0	13	3	4	9	16	74
7:15 AM	5	18	4	27	9	6	2	17	6	6	2	14	4	6	6	16	74
7:30 AM	4	11	4	19	11	5	1	17	9	5	4	18	5	5	7	17	71
7:45 AM	4	11	4	19	11	12	3	26	7	4	8	19	6	8	9	23	87
8:00 AM	0	12	3	15	9	13	5	27	3	3	12	18	5	9	6	20	80

Peak Hour Summary

Clay Carney
(503) 833-2740

Redland Rd & Holcomb Blvd

7:20 AM to 8:20 AM
Wednesday, January 25, 2017

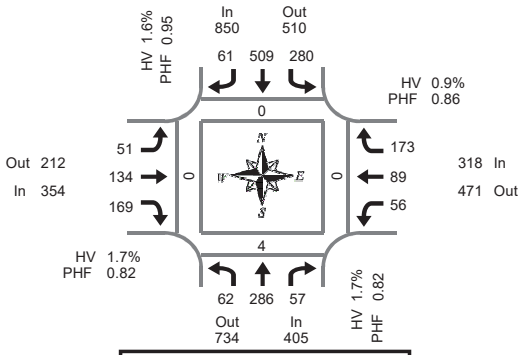


Approach	PHF	HV%	Volume
EB	0.71	9.3%	150
WB	0.94	2.9%	524
NB	0.87	3.3%	674
SB	0.91	3.5%	457
Intersection	0.93	3.7%	1,805

Count Period: 7:00 AM to 9:00 AM

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
4:40 PM to 5:40 PM

Redland Rd & Holcomb Blvd

Tuesday, January 24, 2017
4:00 PM to 6:00 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Redland Rd				Southbound Redland Rd				Eastbound Holcomb Blvd				Westbound Holcomb Blvd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	4	24	7	0	28	38	4	0	5	10	3	0	8	6	18	0	155	0	0	0	0
4:05 PM	4	20	7	0	23	34	3	0	5	13	9	0	1	9	17	0	145	0	0	0	0
4:10 PM	3	29	4	0	26	40	5	0	1	10	7	0	6	11	21	0	163	0	0	0	0
4:15 PM	6	19	2	0	27	43	7	0	2	14	10	0	0	10	18	0	158	0	0	0	0
4:20 PM	9	24	4	0	23	39	4	0	2	10	11	0	4	10	20	0	160	0	0	0	0
4:25 PM	8	25	2	0	28	40	6	0	0	7	9	0	0	11	11	0	147	0	0	0	0
4:30 PM	5	22	5	0	15	49	3	0	2	16	14	0	1	9	20	0	161	0	0	0	0
4:35 PM	4	25	4	0	26	43	7	0	3	11	4	0	5	6	21	0	159	0	0	0	0
4:40 PM	4	27	2	0	16	39	6	0	5	11	11	0	7	8	18	0	154	0	0	0	0
4:45 PM	8	27	5	0	30	47	4	0	3	7	11	0	1	5	15	0	163	0	1	0	0
4:50 PM	2	22	3	0	21	46	5	0	6	11	9	0	2	8	13	0	148	0	0	0	0
4:55 PM	8	21	4	0	18	45	6	0	1	9	14	0	8	7	18	0	159	0	0	0	0
5:00 PM	4	25	4	0	29	44	10	0	6	10	9	0	5	5	14	0	165	0	0	0	0
5:05 PM	9	32	5	0	23	43	0	0	8	12	8	0	4	9	22	0	175	0	1	0	0
5:10 PM	5	28	7	0	20	42	2	0	5	18	18	0	5	9	17	0	176	0	0	0	0
5:15 PM	6	26	5	0	22	34	8	0	2	9	21	0	5	9	7	0	154	0	0	0	0
5:20 PM	4	23	4	0	30	39	6	0	0	6	16	0	4	6	11	0	149	0	0	0	0
5:25 PM	3	19	8	0	20	44	2	0	3	11	21	0	3	9	9	0	152	0	0	0	0
5:30 PM	7	17	5	0	19	43	8	0	8	10	18	1	8	9	18	0	170	0	2	0	0
5:35 PM	2	19	5	0	32	43	4	0	4	20	13	0	4	5	11	0	162	0	0	0	0
5:40 PM	5	17	5	0	22	54	1	0	3	11	16	0	1	7	8	0	150	0	0	0	0
5:45 PM	5	25	3	0	27	34	3	0	3	14	18	0	3	5	8	0	148	0	0	0	0
5:50 PM	7	15	2	0	26	45	5	0	2	4	14	0	2	4	8	0	134	0	0	0	0
5:55 PM	5	18	2	0	21	32	1	0	2	18	16	0	2	8	10	0	135	0	0	0	0
Total Survey	127	549	104	0	572	1,000	110	0	81	272	300	1	89	185	353	0	3,742	0	4	0	0

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Redland Rd				Southbound Redland Rd				Eastbound Holcomb Blvd				Westbound Holcomb Blvd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	11	73	18	0	77	112	12	0	11	33	19	0	15	26	56	0	463	0	0	0	0
4:15 PM	23	68	8	0	78	122	17	0	4	31	30	0	4	31	49	0	465	0	0	0	0
4:30 PM	13	74	11	0	57	131	16	0	10	38	29	0	13	23	59	0	474	0	0	0	0
4:45 PM	18	70	12	0	69	138	15	0	10	27	34	0	11	20	46	0	470	0	1	0	0
5:00 PM	18	85	16	0	72	129	12	0	19	40	35	0	14	23	53	0	516	0	1	0	0
5:15 PM	13	68	17	0	72	117	16	0	5	26	58	0	12	24	27	0	455	0	0	0	0
5:30 PM	14	53	15	0	73	140	13	0	15	41	47	1	13	21	37	0	482	0	2	0	0
5:45 PM	17	58	7	0	74	111	9	0	7	36	48	0	7	17	26	0	417	0	0	0	0
Total Survey	127	549	104	0	572	1,000	110	0	81	272	300	1	89	185	353	0	3,742	0	4	0	0

Peak Hour Summary
4:40 PM to 5:40 PM

By Approach	Northbound Redland Rd				Southbound Redland Rd				Eastbound Holcomb Blvd				Westbound Holcomb Blvd				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	405	734	1,139	0	850	510	1,360	0	354	212	566	1	318	471	789	0	1,927	0	4	0	0
%HV	1.7%				1.6%				1.7%				0.9%				1.6%				
PHF	0.82				0.95				0.82				0.86				0.93				

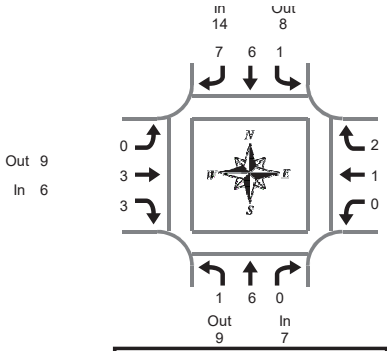
By Movement	Northbound Redland Rd				Southbound Redland Rd				Eastbound Holcomb Blvd				Westbound Holcomb Blvd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	62	286	57	405	280	509	61	850	51	134	169	354	56	89	173	318	1,927
%HV	1.6%	2.1%	0.0%	1.7%	0.4%	1.2%	11.5%	1.6%	0.0%	2.2%	1.8%	1.7%	0.0%	1.1%	1.2%	0.9%	1.6%
PHF	0.74	0.83	0.79	0.82	0.97	0.92	0.73	0.95	0.67	0.82	0.73	0.82	0.82	0.82	0.80	0.86	0.93

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Redland Rd				Southbound Redland Rd				Eastbound Holcomb Blvd				Westbound Holcomb Blvd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	65	285	49	0	281	503	60	0	35	129	112	0	43	100	210	0	1,872	0	1	0	0
4:15 PM	72	297	47	0	276	520	60	0	43	136	128	0	42	97	207	0	1,925	0	2	0	0
4:30 PM	62	297	56	0	270	515	59	0	44	131	156	0	50	90	185	0	1,915	0	2	0	0
4:45 PM	63	276	60	0	286	524	56	0	49	134	174	1	50	88	163	0	1,923	0	4	0	0
5:00 PM	62	264	55	0	291	497	50	0	46	143	188	1	46	85	143	0	1,870	0	3	0	0

Heavy Vehicle Summary

Clay Carney
(503) 833-2740



Redland Rd & Holcomb Blvd

Tuesday, January 24, 2017
4:00 PM to 6:00 PM

Peak Hour Summary
4:40 PM to 5:40 PM

Heavy Vehicle 5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Redland Rd				Southbound Redland Rd				Eastbound Holcomb Blvd				Westbound Holcomb Blvd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	1	0	1	0	2	0	2	0	0	0	0	1	1	1	3	6
4:05 PM	0	0	0	0	0	0	1	1	3	0	1	4	0	1	2	3	8
4:10 PM	1	1	0	2	1	0	0	1	0	0	0	0	1	0	1	2	5
4:15 PM	0	0	0	0	0	1	0	1	0	1	2	3	0	1	0	1	5
4:20 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
4:25 PM	0	1	0	1	2	1	0	3	0	0	1	1	0	0	0	0	5
4:30 PM	0	1	0	1	0	1	0	1	0	2	1	3	0	0	0	0	5
4:35 PM	0	1	0	1	0	1	0	1	0	0	0	0	1	0	1	2	4
4:40 PM	0	1	0	1	0	0	2	2	0	0	0	0	0	0	1	1	4
4:45 PM	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	2
4:50 PM	0	0	0	0	0	3	1	4	0	0	0	0	0	0	0	0	4
4:55 PM	0	0	0	0	0	0	1	1	0	1	1	2	0	0	0	0	3
5:00 PM	0	0	0	0	0	1	0	1	0	1	0	1	0	0	0	0	2
5:05 PM	1	1	0	2	0	0	0	0	0	1	0	1	0	1	1	2	5
5:10 PM	0	0	0	0	0	1	0	1	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
5:20 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
5:25 PM	0	1	0	1	0	0	1	1	0	0	0	0	0	0	0	0	2
5:30 PM	0	0	0	0	0	0	2	2	0	0	1	1	0	0	0	0	3
5:35 PM	0	1	0	1	1	0	0	1	0	0	1	1	0	0	0	0	3
5:40 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
5:45 PM	0	1	0	1	1	1	0	2	0	0	0	0	0	0	0	0	3
5:50 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2	2	3
5:55 PM	0	0	0	0	0	1	0	1	0	1	0	1	0	0	0	0	2
Total Survey	2	12	0	14	5	16	9	30	3	7	8	18	3	4	9	16	78

Heavy Vehicle 15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Redland Rd				Southbound Redland Rd				Eastbound Holcomb Blvd				Westbound Holcomb Blvd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	1	2	0	3	1	2	1	4	3	0	1	4	2	2	4	8	19
4:15 PM	0	1	0	1	2	3	0	5	0	1	3	4	0	1	0	1	11
4:30 PM	0	3	0	3	0	2	2	4	0	2	1	3	1	0	2	3	13
4:45 PM	0	1	0	1	0	4	2	6	0	1	1	2	0	0	0	0	9
5:00 PM	1	1	0	2	0	2	0	2	0	2	0	2	0	1	1	2	8
5:15 PM	0	2	0	2	0	0	1	1	0	0	0	0	0	0	0	0	3
5:30 PM	0	1	0	1	1	1	2	4	0	0	2	2	0	0	0	0	7
5:45 PM	0	1	0	1	1	2	1	4	0	1	0	1	0	0	2	2	8
Total Survey	2	12	0	14	5	16	9	30	3	7	8	18	3	4	9	16	78

Heavy Vehicle Peak Hour Summary
4:40 PM to 5:40 PM

By Approach	Northbound Redland Rd			Southbound Redland Rd			Eastbound Holcomb Blvd			Westbound Holcomb Blvd			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	7	9	16	14	8	22	6	9	15	3	4	7	30
PHF	0.88			0.50			0.38			0.38			0.75

By Movement	Northbound Redland Rd				Southbound Redland Rd				Eastbound Holcomb Blvd				Westbound Holcomb Blvd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	1	6	0	7	1	6	7	14	0	3	3	6	0	1	2	3	30
PHF	0.25	0.75	0.00	0.88	0.25	0.38	0.58	0.50	0.00	0.25	0.38	0.38	0.00	0.25	0.50	0.38	0.75

Heavy Vehicle Rolling Hour Summary
4:00 PM to 6:00 PM

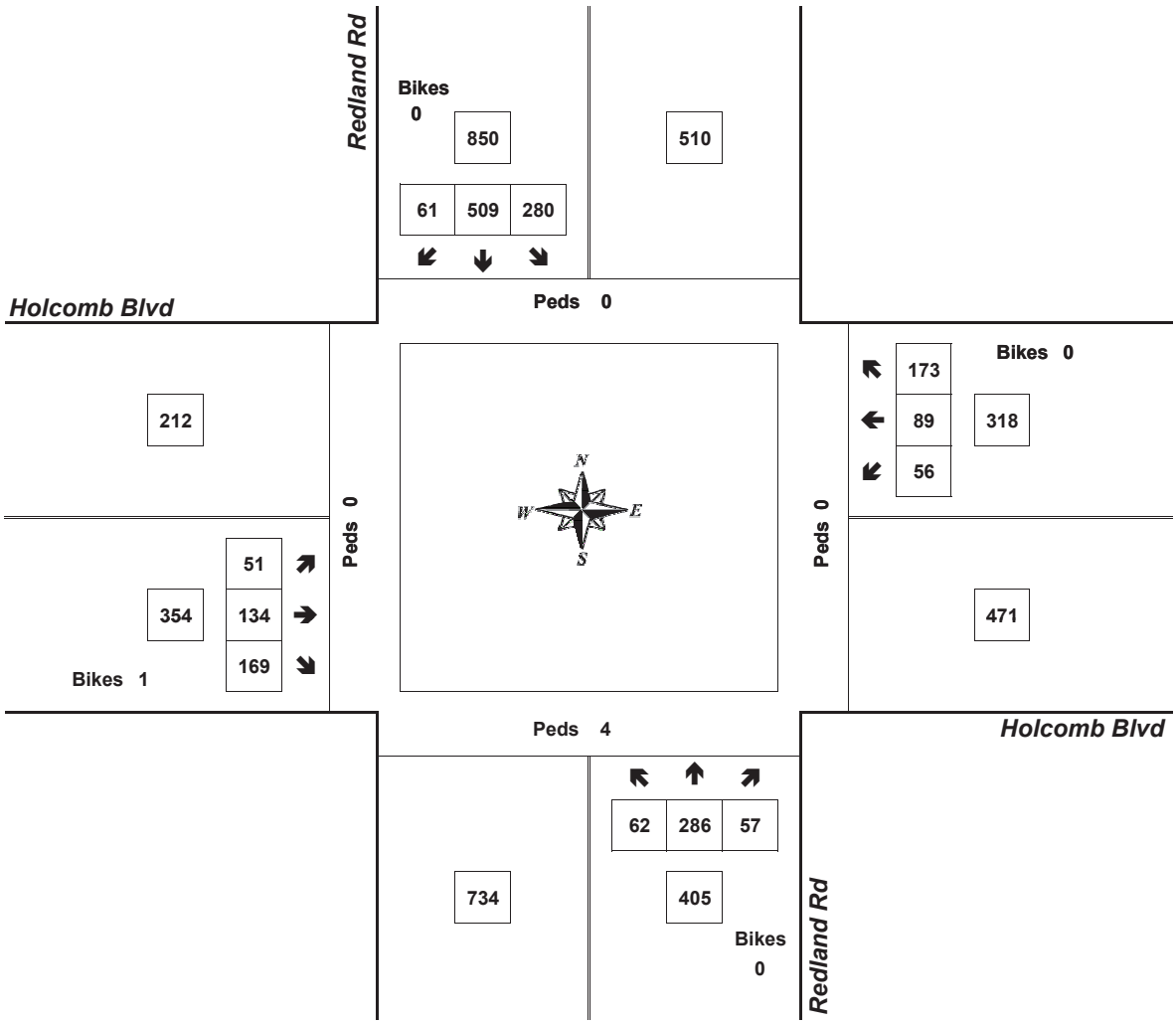
Interval Start Time	Northbound Redland Rd				Southbound Redland Rd				Eastbound Holcomb Blvd				Westbound Holcomb Blvd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	1	7	0	8	3	11	5	19	3	4	6	13	3	3	6	12	52
4:15 PM	1	6	0	7	2	11	4	17	0	6	5	11	1	2	3	6	41
4:30 PM	1	7	0	8	0	8	5	13	0	5	2	7	1	1	3	5	33
4:45 PM	1	5	0	6	1	7	5	13	0	3	3	6	0	1	1	2	27
5:00 PM	1	5	0	6	2	5	4	11	0	3	2	5	0	1	3	4	26

Peak Hour Summary

Clay Carney
(503) 833-2740

Redland Rd & Holcomb Blvd

4:40 PM to 5:40 PM
Tuesday, January 24, 2017

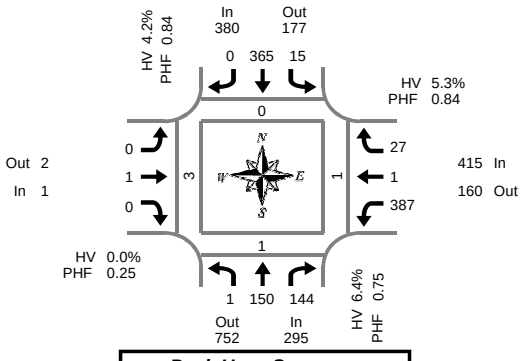


Approach	PHF	HV%	Volume
EB	0.82	1.7%	354
WB	0.86	0.9%	318
NB	0.82	1.7%	405
SB	0.95	1.6%	850
Intersection	0.93	1.6%	1,927

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
7:20 AM to 8:20 AM

Washington St & Abernathy Rd

Thursday, January 26, 2017
7:00 AM to 9:00 AM

5-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound Abernathy Rd				Westbound Abernathy Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	0	9	6	0	0	28	0	0	0	0	0	0	18	0	4	0	65	0	0	0	0
7:05 AM	0	8	6	0	1	19	0	0	0	0	0	0	37	0	4	0	75	0	0	0	0
7:10 AM	0	9	11	1	2	29	0	0	0	0	0	0	30	0	3	1	84	0	0	0	0
7:15 AM	0	9	10	0	1	26	0	0	0	0	0	0	28	0	1	0	75	0	0	0	0
7:20 AM	1	19	7	0	1	26	0	0	0	0	0	0	29	0	1	0	84	0	0	0	0
7:25 AM	0	6	14	0	2	28	0	0	0	0	0	0	30	0	2	0	82	0	0	0	2
7:30 AM	0	8	11	0	1	34	0	0	0	0	0	0	34	0	2	0	90	0	1	0	0
7:35 AM	0	12	9	0	2	26	0	0	0	0	0	0	32	0	0	0	81	0	0	0	0
7:40 AM	0	13	8	0	0	47	0	0	0	0	0	0	34	0	4	0	106	0	0	1	0
7:45 AM	0	16	13	0	2	36	0	0	0	0	0	0	35	0	2	0	104	0	0	0	1
7:50 AM	0	19	16	0	1	24	0	0	0	0	0	0	47	0	1	0	108	0	0	0	0
7:55 AM	0	17	17	0	2	30	0	0	0	0	0	0	33	0	5	0	104	0	0	0	0
8:00 AM	0	8	9	0	3	43	0	0	0	0	0	0	25	0	1	0	89	0	0	0	0
8:05 AM	0	11	13	0	0	23	0	0	0	0	0	0	27	0	2	0	76	0	0	0	0
8:10 AM	0	10	17	0	1	22	0	0	0	1	0	0	22	0	3	0	76	0	0	0	0
8:15 AM	0	11	10	0	0	26	0	0	0	0	0	0	39	1	4	0	91	0	0	0	0
8:20 AM	0	15	10	0	0	31	0	0	0	0	0	0	19	0	4	0	79	0	0	0	0
8:25 AM	0	12	11	0	3	29	0	1	0	0	0	0	25	1	5	0	86	0	1	0	0
8:30 AM	0	10	16	0	1	21	0	0	0	0	0	0	20	0	4	0	72	0	0	0	0
8:35 AM	0	10	11	0	2	33	0	0	0	0	0	0	24	0	2	0	82	0	0	0	0
8:40 AM	2	13	7	0	3	33	0	0	0	0	1	0	35	0	4	0	98	0	0	0	0
8:45 AM	1	20	9	0	0	30	0	0	0	0	0	0	19	0	1	0	80	0	0	0	0
8:50 AM	0	14	9	0	3	16	0	0	0	0	0	0	24	0	3	0	69	0	0	1	0
8:55 AM	0	12	8	0	3	34	0	0	0	0	0	0	23	0	3	0	83	0	0	0	0
Total Survey	4	291	258	1	34	694	0	1	0	1	1	0	689	2	65	1	2,039	0	2	2	3

15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound Abernathy Rd				Westbound Abernathy Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	0	26	23	1	3	76	0	0	0	0	0	0	85	0	11	1	224	0	0	0	0
7:15 AM	1	34	31	0	4	80	0	0	0	0	0	0	87	0	4	0	241	0	0	0	2
7:30 AM	0	33	28	0	3	107	0	0	0	0	0	0	100	0	6	0	277	0	1	1	0
7:45 AM	0	52	46	0	5	90	0	0	0	0	0	0	115	0	8	0	316	0	0	0	1
8:00 AM	0	29	39	0	4	88	0	0	0	1	0	0	74	0	6	0	241	0	0	0	0
8:15 AM	0	38	31	0	3	86	0	1	0	0	0	0	83	2	13	0	256	0	1	0	0
8:30 AM	2	33	34	0	6	87	0	0	0	0	1	0	79	0	10	0	252	0	0	0	0
8:45 AM	1	46	26	0	6	80	0	0	0	0	0	0	66	0	7	0	232	0	0	1	0
Total Survey	4	291	258	1	34	694	0	1	0	1	1	0	689	2	65	1	2,039	0	2	2	3

Peak Hour Summary
7:20 AM to 8:20 AM

By Approach	Northbound Washington St				Southbound Washington St				Eastbound Abernathy Rd				Westbound Abernathy Rd				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	295	752	1,047	0	380	177	557	0	1	2	3	0	415	160	575	0	1,091	0	1	1	3
%HV	6.4%				4.2%				0.0%				5.3%				5.2%				
PHF	0.75				0.84				0.25				0.84				0.86				

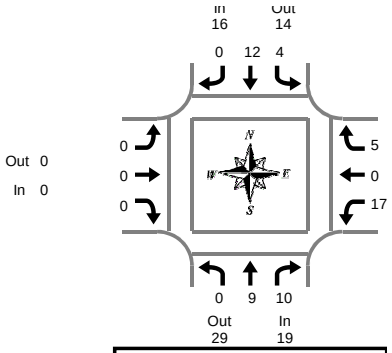
By Movement	Northbound Washington St				Southbound Washington St				Eastbound Abernathy Rd				Westbound Abernathy Rd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	1	150	144	295	15	365	0	380	0	1	0	1	387	1	27	415	1,091
%HV	0.0%	6.0%	6.9%	6.4%	26.7%	3.3%	0.0%	4.2%	0.0%	0.0%	0.0%	0.0%	4.4%	0.0%	18.5%	5.3%	5.2%
PHF	0.25	0.72	0.78	0.75	0.63	0.84	0.00	0.84	0.00	0.25	0.00	0.25	0.83	0.25	0.75	0.84	0.86

Rolling Hour Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound Abernathy Rd				Westbound Abernathy Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	1	145	128	1	15	353	0	0	0	0	0	0	387	0	29	1	1,058	0	1	1	3
7:15 AM	1	148	144	0	16	365	0	0	0	1	0	0	376	0	24	0	1,075	0	1	1	3
7:30 AM	0	152	144	0	15	371	0	1	0	1	0	0	372	2	33	0	1,090	0	2	1	1
7:45 AM	2	152	150	0	18	351	0	1	0	1	1	0	351	2	37	0	1,065	0	1	0	1
8:00 AM	3	146	130	0	19	341	0	1	0	1	1	0	302	2	36	0	981	0	1	1	0

Heavy Vehicle Summary

Clay Carney
(503) 833-2740



Washington St & Abernathy Rd

Thursday, January 26, 2017
7:00 AM to 9:00 AM

Peak Hour Summary
7:20 AM to 8:20 AM

Heavy Vehicle 5-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound Abernathy Rd				Westbound Abernathy Rd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	2
7:05 AM	0	0	1	1	0	0	0	0	0	0	0	0	1	0	2	3	4
7:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
7:15 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
7:20 AM	0	2	1	3	1	1	0	2	0	0	0	0	2	0	0	2	7
7:25 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	1	2
7:30 AM	0	0	3	3	1	2	0	3	0	0	0	0	0	0	1	1	7
7:35 AM	0	1	0	1	1	2	0	3	0	0	0	0	0	0	0	0	4
7:40 AM	0	0	1	1	0	0	0	0	0	0	0	0	3	0	0	3	4
7:45 AM	0	1	1	2	1	0	0	1	0	0	0	0	1	0	0	1	4
7:50 AM	0	0	1	1	0	2	0	2	0	0	0	0	0	0	0	0	3
7:55 AM	0	0	0	0	0	1	0	1	0	0	0	0	3	0	0	3	4
8:00 AM	0	1	0	1	0	1	0	1	0	0	0	0	3	0	0	3	5
8:05 AM	0	0	2	2	0	0	0	0	0	0	0	0	1	0	0	1	3
8:10 AM	0	2	1	3	0	2	0	2	0	0	0	0	3	0	2	5	10
8:15 AM	0	1	0	1	0	1	0	1	0	0	0	0	1	0	1	2	4
8:20 AM	0	0	3	3	0	2	0	2	0	0	0	0	0	0	0	0	5
8:25 AM	0	1	4	5	0	1	0	1	0	0	0	0	0	0	0	0	6
8:30 AM	0	1	2	3	0	2	0	2	0	0	0	0	0	0	0	0	5
8:35 AM	0	0	0	0	0	2	0	2	0	0	0	0	3	0	0	3	5
8:40 AM	0	1	1	2	0	2	0	2	0	0	0	0	1	0	0	1	5
8:45 AM	0	2	0	2	0	2	0	2	0	0	0	0	0	0	0	0	4
8:50 AM	0	2	0	2	0	1	0	1	0	0	0	0	1	0	0	1	4
8:55 AM	0	1	1	2	0	2	0	2	0	0	0	0	1	0	0	1	5
Total Survey	0	18	22	40	4	29	0	33	0	0	0	0	25	0	7	32	105

Heavy Vehicle 15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound Abernathy Rd				Westbound Abernathy Rd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	0	1	1	2	0	1	0	1	0	0	0	0	2	0	2	4	7
7:15 AM	0	3	1	4	1	3	0	4	0	0	0	0	2	0	1	3	11
7:30 AM	0	1	4	5	2	4	0	6	0	0	0	0	3	0	1	4	15
7:45 AM	0	1	2	3	1	3	0	4	0	0	0	0	4	0	0	4	11
8:00 AM	0	3	3	6	0	3	0	3	0	0	0	0	7	0	2	9	18
8:15 AM	0	2	7	9	0	4	0	4	0	0	0	0	1	0	1	2	15
8:30 AM	0	2	3	5	0	6	0	6	0	0	0	0	4	0	0	4	15
8:45 AM	0	5	1	6	0	5	0	5	0	0	0	0	2	0	0	2	13
Total Survey	0	18	22	40	4	29	0	33	0	0	0	0	25	0	7	32	105

Heavy Vehicle Peak Hour Summary
7:20 AM to 8:20 AM

By Approach	Northbound Washington St			Southbound Washington St			Eastbound Abernathy Rd			Westbound Abernathy Rd			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	19	29	48	16	14	30	0	0	0	22	14	36	57
PHF	0.68			0.67			0.00			0.61			0.79

By Movement	Northbound Washington St				Southbound Washington St				Eastbound Abernathy Rd				Westbound Abernathy Rd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	9	10	19	4	12	0	16	0	0	0	0	17	0	5	22	57
PHF	0.00	0.75	0.63	0.68	0.50	0.75	0.00	0.67	0.00	0.00	0.00	0.00	0.61	0.00	0.42	0.61	0.79

Heavy Vehicle Rolling Hour Summary
7:00 AM to 9:00 AM

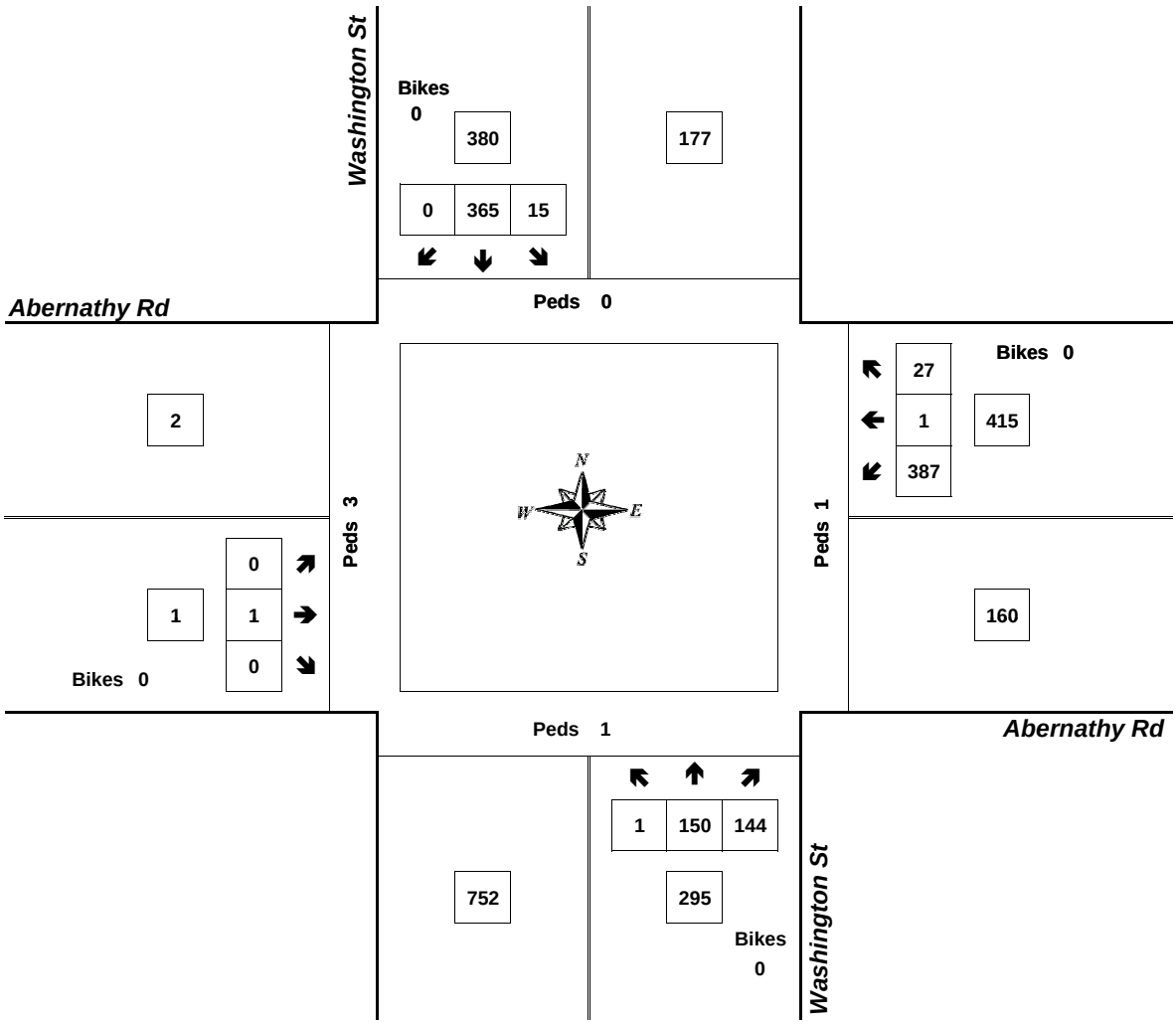
Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound Abernathy Rd				Westbound Abernathy Rd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	0	6	8	14	4	11	0	15	0	0	0	0	11	0	4	15	44
7:15 AM	0	8	10	18	4	13	0	17	0	0	0	0	16	0	4	20	55
7:30 AM	0	7	16	23	3	14	0	17	0	0	0	0	15	0	4	19	59
7:45 AM	0	8	15	23	1	16	0	17	0	0	0	0	16	0	3	19	59
8:00 AM	0	12	14	26	0	18	0	18	0	0	0	0	14	0	3	17	61

Peak Hour Summary

Clay Carney
(503) 833-2740

Washington St & Abernathy Rd

7:20 AM to 8:20 AM
Thursday, January 26, 2017

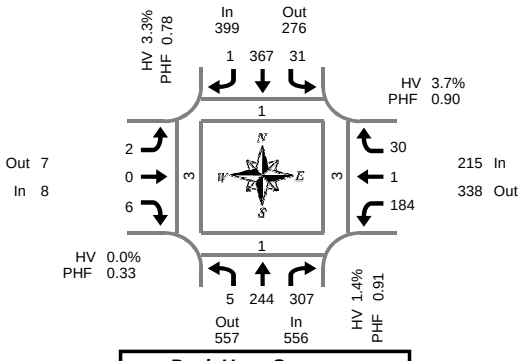


Approach	PHF	HV%	Volume
EB	0.25	0.0%	1
WB	0.84	5.3%	415
NB	0.75	6.4%	295
SB	0.84	4.2%	380
Intersection	0.86	5.2%	1,091

Count Period: 7:00 AM to 9:00 AM

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
4:05 PM to 5:05 PM

Washington St & Abernathy Rd

Wednesday, January 25, 2017
4:00 PM to 6:00 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound Abernathy Rd				Westbound Abernathy Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	0	19	20	0	6	27	0	0	0	0	0	0	20	0	0	0	92	0	0	1	0
4:05 PM	0	26	29	0	2	26	1	0	0	0	0	0	16	0	2	0	102	0	0	1	0
4:10 PM	0	15	16	0	2	40	0	0	0	0	0	0	14	0	1	0	88	0	0	0	0
4:15 PM	0	22	21	0	2	25	0	0	0	0	1	0	11	0	0	0	82	0	0	1	0
4:20 PM	2	18	40	0	2	16	0	0	0	0	0	0	17	0	3	0	98	0	0	0	0
4:25 PM	2	22	18	0	4	31	0	0	0	0	1	0	15	0	5	0	98	0	0	0	0
4:30 PM	0	25	26	0	1	39	0	0	0	0	2	0	11	1	1	0	106	1	0	0	1
4:35 PM	0	20	23	0	6	43	0	0	2	0	1	0	22	0	5	0	122	0	0	0	1
4:40 PM	0	17	21	0	6	33	0	0	0	0	1	0	14	0	3	0	95	0	0	0	0
4:45 PM	0	21	35	0	0	27	0	0	0	0	0	0	13	0	3	0	99	0	1	1	1
4:50 PM	0	15	28	0	1	35	0	0	0	0	0	0	17	0	2	0	98	0	0	0	0
4:55 PM	1	22	24	0	3	23	0	0	0	0	0	0	18	0	4	0	95	0	0	0	0
5:00 PM	0	21	26	0	2	29	0	0	0	0	0	0	16	0	1	0	95	0	0	0	0
5:05 PM	0	14	14	0	1	22	0	0	0	0	0	0	17	0	0	0	68	0	0	0	0
5:10 PM	0	21	30	0	3	36	0	0	0	0	0	0	16	0	2	0	108	0	0	0	0
5:15 PM	0	17	26	0	4	28	0	0	0	0	0	0	11	0	3	0	89	0	0	0	0
5:20 PM	0	8	26	0	2	20	0	0	0	0	0	0	14	0	4	0	74	0	0	0	1
5:25 PM	0	13	31	0	4	29	0	0	0	0	0	0	14	0	5	0	96	0	0	0	0
5:30 PM	0	14	31	0	3	30	0	0	0	0	0	0	19	0	1	0	98	0	0	0	1
5:35 PM	0	16	21	0	1	27	1	0	0	0	0	0	19	0	1	0	86	0	0	0	0
5:40 PM	0	11	23	0	3	18	0	0	0	0	0	0	19	0	4	0	78	0	0	0	0
5:45 PM	0	15	31	0	5	28	0	0	0	0	0	0	9	0	2	0	90	0	0	0	1
5:50 PM	0	17	30	0	2	30	0	0	0	0	0	0	20	0	0	0	99	0	1	0	1
5:55 PM	0	14	25	0	2	15	0	0	0	0	0	0	15	0	0	0	71	0	0	0	0
Total Survey	5	423	615	0	67	677	2	0	2	0	6	0	377	1	52	0	2,227	1	2	4	7

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound Abernathy Rd				Westbound Abernathy Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	0	60	65	0	10	93	1	0	0	0	0	0	50	0	3	0	282	0	0	2	0
4:15 PM	4	62	79	0	8	72	0	0	0	0	2	0	43	0	8	0	278	0	0	1	0
4:30 PM	0	62	70	0	13	115	0	0	2	0	4	0	47	1	9	0	323	1	0	0	2
4:45 PM	1	58	87	0	4	85	0	0	0	0	0	0	48	0	9	0	292	0	1	1	1
5:00 PM	0	56	70	0	6	87	0	0	0	0	0	0	49	0	3	0	271	0	0	0	0
5:15 PM	0	38	83	0	10	77	0	0	0	0	0	0	39	0	12	0	259	0	0	0	1
5:30 PM	0	41	75	0	7	75	1	0	0	0	0	0	57	0	6	0	262	0	0	0	1
5:45 PM	0	46	86	0	9	73	0	0	0	0	0	0	44	0	2	0	260	0	1	0	2
Total Survey	5	423	615	0	67	677	2	0	2	0	6	0	377	1	52	0	2,227	1	2	4	7

Peak Hour Summary
4:05 PM to 5:05 PM

By Approach	Northbound Washington St				Southbound Washington St				Eastbound Abernathy Rd				Westbound Abernathy Rd				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	556	557	1,113	0	399	276	675	0	8	7	15	0	215	338	553	0	1,178	1	1	3	3
%HV	1.4%				3.3%				0.0%				3.7%				2.5%				
PHF	0.91				0.78				0.33				0.90				0.90				

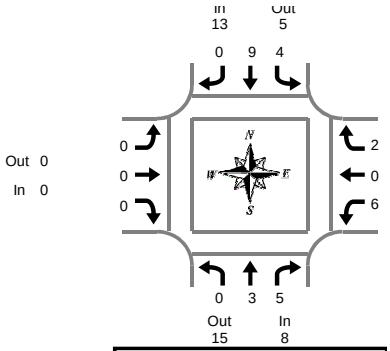
By Movement	Northbound Washington St				Southbound Washington St				Eastbound Abernathy Rd				Westbound Abernathy Rd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	5	244	307	556	31	367	1	399	2	0	6	8	184	1	30	215	1,178
%HV	0.0%	1.2%	1.6%	1.4%	12.9%	2.5%	0.0%	3.3%	0.0%	0.0%	0.0%	0.0%	3.3%	0.0%	6.7%	3.7%	2.5%
PHF	0.31	0.91	0.88	0.91	0.60	0.80	0.25	0.78	0.25	0.00	0.38	0.33	0.90	0.25	0.68	0.90	0.90

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound Abernathy Rd				Westbound Abernathy Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	5	242	301	0	35	365	1	0	2	0	6	0	188	1	29	0	1,175	1	1	4	3
4:15 PM	5	238	306	0	31	359	0	0	2	0	6	0	187	1	29	0	1,164	1	1	2	3
4:30 PM	1	214	310	0	33	364	0	0	2	0	4	0	183	1	33	0	1,145	1	1	1	4
4:45 PM	1	193	315	0	27	324	1	0	0	0	0	0	193	0	30	0	1,084	0	1	1	3
5:00 PM	0	181	314	0	32	312	1	0	0	0	0	0	189	0	23	0	1,052	0	1	0	4

Heavy Vehicle Summary

Clay Carney
(503) 833-2740



Washington St & Abernathy Rd

Wednesday, January 25, 2017
4:00 PM to 6:00 PM

Peak Hour Summary
4:05 PM to 5:05 PM

Heavy Vehicle 5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound Abernathy Rd				Westbound Abernathy Rd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	0	1	1	0	2	0	2	0	0	0	0	2	0	0	2	5
4:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	3	3
4:10 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
4:15 PM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
4:20 PM	0	0	1	1	1	0	0	1	0	0	0	0	0	0	0	0	2
4:25 PM	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	2
4:30 PM	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	1	2
4:35 PM	0	1	1	2	0	3	0	3	0	0	0	0	0	0	0	0	5
4:40 PM	0	0	0	0	1	1	0	2	0	0	0	0	2	0	0	2	4
4:45 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
4:50 PM	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	2
4:55 PM	0	1	1	2	1	0	0	1	0	0	0	0	0	0	1	1	4
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:05 PM	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	1	2
5:10 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
5:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
5:25 PM	0	0	2	2	1	1	0	2	0	0	0	0	0	0	0	0	4
5:30 PM	0	2	0	2	1	0	0	1	0	0	0	0	0	0	0	0	3
5:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2
5:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Total Survey	0	5	11	16	8	12	0	20	0	0	0	0	11	0	2	13	49

Heavy Vehicle 15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound Abernathy Rd				Westbound Abernathy Rd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	0	1	1	0	4	0	4	0	0	0	0	4	0	1	5	10
4:15 PM	0	0	2	2	2	0	0	2	0	0	0	0	1	0	0	1	5
4:30 PM	0	1	2	3	1	4	0	5	0	0	0	0	3	0	0	3	11
4:45 PM	0	2	1	3	1	3	0	4	0	0	0	0	0	0	1	1	8
5:00 PM	0	0	1	1	1	0	0	1	0	0	0	0	1	0	0	1	3
5:15 PM	0	0	2	2	2	1	0	3	0	0	0	0	1	0	0	1	6
5:30 PM	0	2	0	2	1	0	0	1	0	0	0	0	0	0	0	0	3
5:45 PM	0	0	2	2	0	0	0	0	0	0	0	0	1	0	0	1	3
Total Survey	0	5	11	16	8	12	0	20	0	0	0	0	11	0	2	13	49

Heavy Vehicle Peak Hour Summary
4:05 PM to 5:05 PM

By Approach	Northbound Washington St			Southbound Washington St			Eastbound Abernathy Rd			Westbound Abernathy Rd			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	8	15	23	13	5	18	0	0	0	8	9	17	29
PHF	0.67			0.46			0.00			0.67			0.66

By Movement	Northbound Washington St				Southbound Washington St				Eastbound Abernathy Rd				Westbound Abernathy Rd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	3	5	8	4	9	0	13	0	0	0	0	6	0	2	8	29
PHF	0.00	0.38	0.63	0.67	0.50	0.38	0.00	0.46	0.00	0.00	0.00	0.00	0.50	0.00	0.50	0.67	0.66

Heavy Vehicle Rolling Hour Summary
4:00 PM to 6:00 PM

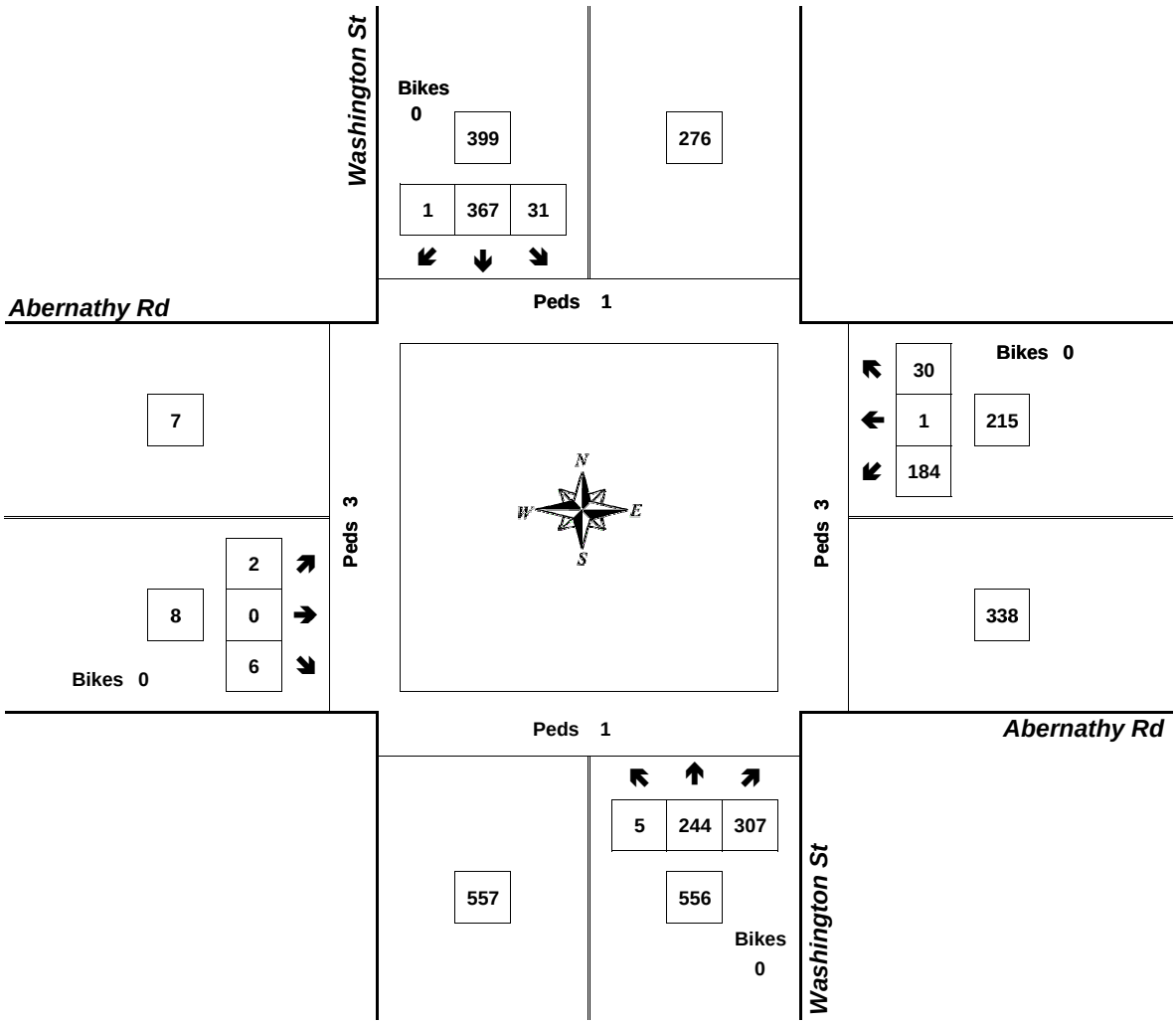
Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound Abernathy Rd				Westbound Abernathy Rd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	3	6	9	4	11	0	15	0	0	0	0	8	0	2	10	34
4:15 PM	0	3	6	9	5	7	0	12	0	0	0	0	5	0	1	6	27
4:30 PM	0	3	6	9	5	8	0	13	0	0	0	0	5	0	1	6	28
4:45 PM	0	4	4	8	5	4	0	9	0	0	0	0	2	0	1	3	20
5:00 PM	0	2	5	7	4	1	0	5	0	0	0	0	3	0	0	3	15

Peak Hour Summary

Clay Carney
(503) 833-2740

Washington St & Abernathy Rd

4:05 PM to 5:05 PM
Wednesday, January 25, 2017

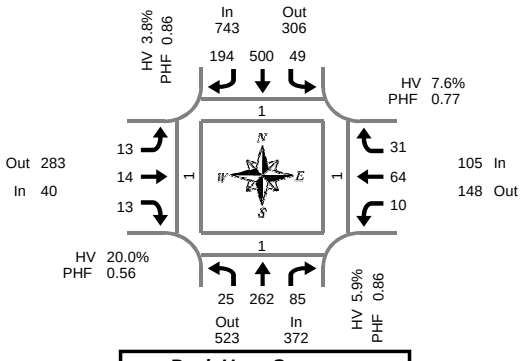


Approach	PHF	HV%	Volume
EB	0.33	0.0%	8
WB	0.90	3.7%	215
NB	0.91	1.4%	556
SB	0.78	3.3%	399
Intersection	0.90	2.5%	1,178

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
7:30 AM to 8:30 AM

Washington St & 15th St

Thursday, January 26, 2017
7:00 AM to 9:00 AM

5-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 15th St				Westbound 15th St				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	1	15	4	0	2	24	11	0	1	0	0	0	0	5	1	0	64	0	0	0	0
7:05 AM	5	15	2	0	4	28	18	0	0	0	0	0	0	6	0	0	78	0	0	1	1
7:10 AM	7	23	6	1	2	38	18	0	2	1	0	0	2	6	1	0	106	1	0	0	0
7:15 AM	4	22	4	0	2	39	9	0	1	1	1	1	1	6	0	0	90	0	0	0	0
7:20 AM	5	25	2	0	2	31	19	0	0	0	0	0	1	5	2	0	92	0	0	0	0
7:25 AM	4	20	3	0	1	43	7	0	1	2	3	0	3	11	0	0	98	0	0	0	0
7:30 AM	1	17	1	0	2	52	10	0	1	1	0	0	0	6	2	1	93	1	0	0	0
7:35 AM	2	17	8	0	6	42	15	0	1	1	1	0	1	7	2	0	103	0	1	0	1
7:40 AM	2	20	9	0	2	64	14	0	0	0	1	0	0	3	3	0	118	0	0	0	0
7:45 AM	1	19	6	0	3	50	19	0	2	2	1	0	0	2	7	0	112	0	0	0	0
7:50 AM	3	32	3	0	5	42	17	0	0	1	1	0	0	8	3	0	115	0	0	1	0
7:55 AM	2	32	10	0	6	43	20	0	1	2	2	0	3	4	3	0	128	0	0	0	0
8:00 AM	1	15	9	0	8	38	20	0	1	0	0	0	2	4	0	0	98	0	0	0	0
8:05 AM	4	22	5	0	5	33	8	0	0	0	1	0	2	7	4	0	91	0	0	0	0
8:10 AM	1	24	11	0	2	29	16	0	2	0	2	0	0	5	5	0	97	0	0	0	0
8:15 AM	1	22	9	0	2	42	16	0	1	2	2	0	1	9	1	0	108	0	0	0	0
8:20 AM	3	17	6	0	5	32	17	0	3	4	2	0	1	5	1	0	96	0	0	0	0
8:25 AM	4	25	8	0	3	33	22	0	1	1	0	0	0	4	0	0	101	0	0	0	0
8:30 AM	4	23	7	0	2	24	12	0	2	1	1	0	1	6	0	0	83	0	0	0	0
8:35 AM	1	19	6	0	4	34	17	0	0	2	1	0	2	5	3	0	94	0	0	0	0
8:40 AM	4	21	6	0	3	35	21	0	8	3	0	0	2	7	0	0	110	0	1	1	0
8:45 AM	2	27	13	0	5	37	19	0	1	3	2	0	1	4	1	0	115	2	0	0	0
8:50 AM	4	22	6	0	3	31	9	0	1	1	1	0	3	5	1	0	87	0	0	0	0
8:55 AM	2	20	8	0	5	34	19	0	1	2	0	0	1	9	1	0	102	2	0	1	0
Total Survey	68	514	152	1	84	898	373	0	31	30	22	1	27	139	41	1	2,379	6	2	4	2

15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 15th St				Westbound 15th St				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	13	53	12	1	8	90	47	0	3	1	0	0	2	17	2	0	248	1	0	1	1
7:15 AM	13	67	9	0	5	113	35	0	2	3	4	1	5	22	2	0	280	0	0	0	0
7:30 AM	5	54	18	0	10	158	39	0	2	2	2	0	1	16	7	1	314	1	1	0	1
7:45 AM	6	83	19	0	14	135	56	0	3	5	4	0	3	14	13	0	355	0	0	1	0
8:00 AM	6	61	25	0	15	100	44	0	3	0	3	0	4	16	9	0	286	0	0	0	0
8:15 AM	8	64	23	0	10	107	55	0	5	7	4	0	2	18	2	0	305	0	0	0	0
8:30 AM	9	63	19	0	9	93	50	0	10	6	2	0	5	18	3	0	287	0	1	1	0
8:45 AM	8	69	27	0	13	102	47	0	3	6	3	0	5	18	3	0	304	4	0	1	0
Total Survey	68	514	152	1	84	898	373	0	31	30	22	1	27	139	41	1	2,379	6	2	4	2

Peak Hour Summary
7:30 AM to 8:30 AM

By Approach	Northbound Washington St				Southbound Washington St				Eastbound 15th St				Westbound 15th St				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	372	523	895	0	743	306	1,049	0	40	283	323	0	105	148	253	1	1,260	1	1	1	1
%HV	5.9%				3.8%				20.0%				7.6%				5.2%				
PHF	0.86				0.86				0.56				0.77				0.89				

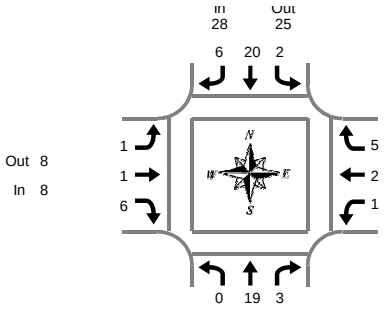
By Movement	Northbound Washington St				Southbound Washington St				Eastbound 15th St				Westbound 15th St				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	25	262	85	372	49	500	194	743	13	14	13	40	10	64	31	105	1,260
%HV	0.0%	7.3%	3.5%	5.9%	4.1%	4.0%	3.1%	3.8%	7.7%	7.1%	46.2%	20.0%	10.0%	3.1%	16.1%	7.6%	5.2%
PHF	0.78	0.79	0.82	0.86	0.64	0.79	0.85	0.86	0.54	0.50	0.54	0.56	0.36	0.76	0.60	0.77	0.89

Rolling Hour Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 15th St				Westbound 15th St				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	37	257	58	1	37	496	177	0	10	11	10	1	11	69	24	1	1,197	2	1	2	2
7:15 AM	30	265	71	0	44	506	174	0	10	10	13	1	13	68	31	1	1,235	1	1	1	1
7:30 AM	25	262	85	0	49	500	194	0	13	14	13	0	10	64	31	1	1,260	1	1	1	1
7:45 AM	29	271	86	0	48	435	205	0	21	18	13	0	14	66	27	0	1,233	0	1	2	0
8:00 AM	31	257	94	0	47	402	196	0	21	19	12	0	16	70	17	0	1,182	4	1	2	0

Heavy Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Washington St & 15th St

Thursday, January 26, 2017
7:00 AM to 9:00 AM

Peak Hour Summary
7:30 AM to 8:30 AM

Heavy Vehicle 5-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 15th St				Westbound 15th St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	0	2	0	2	0	0	1	1	0	0	0	0	0	0	0	0	3
7:05 AM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
7:10 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
7:20 AM	0	2	0	2	0	1	0	1	0	0	0	0	0	0	1	1	4
7:25 AM	0	2	0	2	0	0	1	1	0	0	2	2	0	0	0	0	5
7:30 AM	0	2	0	2	0	1	0	1	0	0	0	0	0	0	1	1	4
7:35 AM	0	2	0	2	0	1	2	3	0	0	1	1	0	0	0	0	6
7:40 AM	0	1	0	1	0	3	0	3	0	0	0	0	0	0	0	0	4
7:45 AM	0	1	0	1	0	1	0	1	0	0	0	0	0	0	1	1	3
7:50 AM	0	0	0	0	1	0	0	1	0	0	1	1	0	0	1	1	3
7:55 AM	0	1	0	1	0	3	1	4	0	0	1	1	0	0	0	0	6
8:00 AM	0	1	0	1	1	4	0	5	0	0	0	0	0	0	0	0	6
8:05 AM	0	1	0	1	0	0	0	0	0	0	0	0	1	0	1	2	3
8:10 AM	0	3	1	4	0	3	1	4	0	0	1	1	0	0	0	0	9
8:15 AM	0	0	0	0	0	3	0	3	1	0	1	2	0	1	0	1	6
8:20 AM	0	2	1	3	0	0	2	2	0	1	1	2	0	1	1	2	9
8:25 AM	0	5	1	6	0	1	0	1	0	0	0	0	0	0	0	0	7
8:30 AM	0	2	0	2	0	1	1	2	1	1	1	3	0	0	0	0	7
8:35 AM	0	0	0	0	0	4	1	5	0	0	0	0	0	0	0	0	5
8:40 AM	1	1	0	2	0	1	1	2	0	0	0	0	0	1	0	1	5
8:45 AM	0	2	1	3	0	3	0	3	0	0	0	0	0	0	0	0	6
8:50 AM	1	2	0	3	0	1	1	2	0	0	1	1	0	0	0	0	6
8:55 AM	0	2	0	2	0	2	0	2	0	0	0	0	0	0	0	0	4
Total Survey	2	34	4	40	3	35	12	50	2	2	10	14	1	4	6	11	115

Heavy Vehicle 15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 15th St				Westbound 15th St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	0	2	0	2	1	1	1	3	0	0	0	0	0	0	0	0	5
7:15 AM	0	4	0	4	0	2	1	3	0	0	2	2	0	1	1	2	11
7:30 AM	0	5	0	5	0	5	2	7	0	0	1	1	0	0	1	1	14
7:45 AM	0	2	0	2	1	4	1	6	0	0	2	2	0	0	2	2	12
8:00 AM	0	5	1	6	1	7	1	9	0	0	1	1	1	0	1	2	18
8:15 AM	0	7	2	9	0	4	2	6	1	1	2	4	0	2	1	3	22
8:30 AM	1	3	0	4	0	6	3	9	1	1	1	3	0	1	0	1	17
8:45 AM	1	6	1	8	0	6	1	7	0	0	1	1	0	0	0	0	16
Total Survey	2	34	4	40	3	35	12	50	2	2	10	14	1	4	6	11	115

Heavy Vehicle Peak Hour Summary
7:30 AM to 8:30 AM

By Approach	Northbound Washington St			Southbound Washington St			Eastbound 15th St			Westbound 15th St			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	22	27	49	28	25	53	8	8	16	8	6	14	66
PHF	0.61			0.70			0.40			0.67			0.69

By Movement	Northbound Washington St				Southbound Washington St				Eastbound 15th St				Westbound 15th St				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	19	3	22	2	20	6	28	1	1	6	8	1	2	5	8	66
PHF	0.00	0.68	0.38	0.61	0.25	0.71	0.50	0.70	0.25	0.25	0.50	0.40	0.25	0.25	0.63	0.67	0.69

Heavy Vehicle Rolling Hour Summary
7:00 AM to 9:00 AM

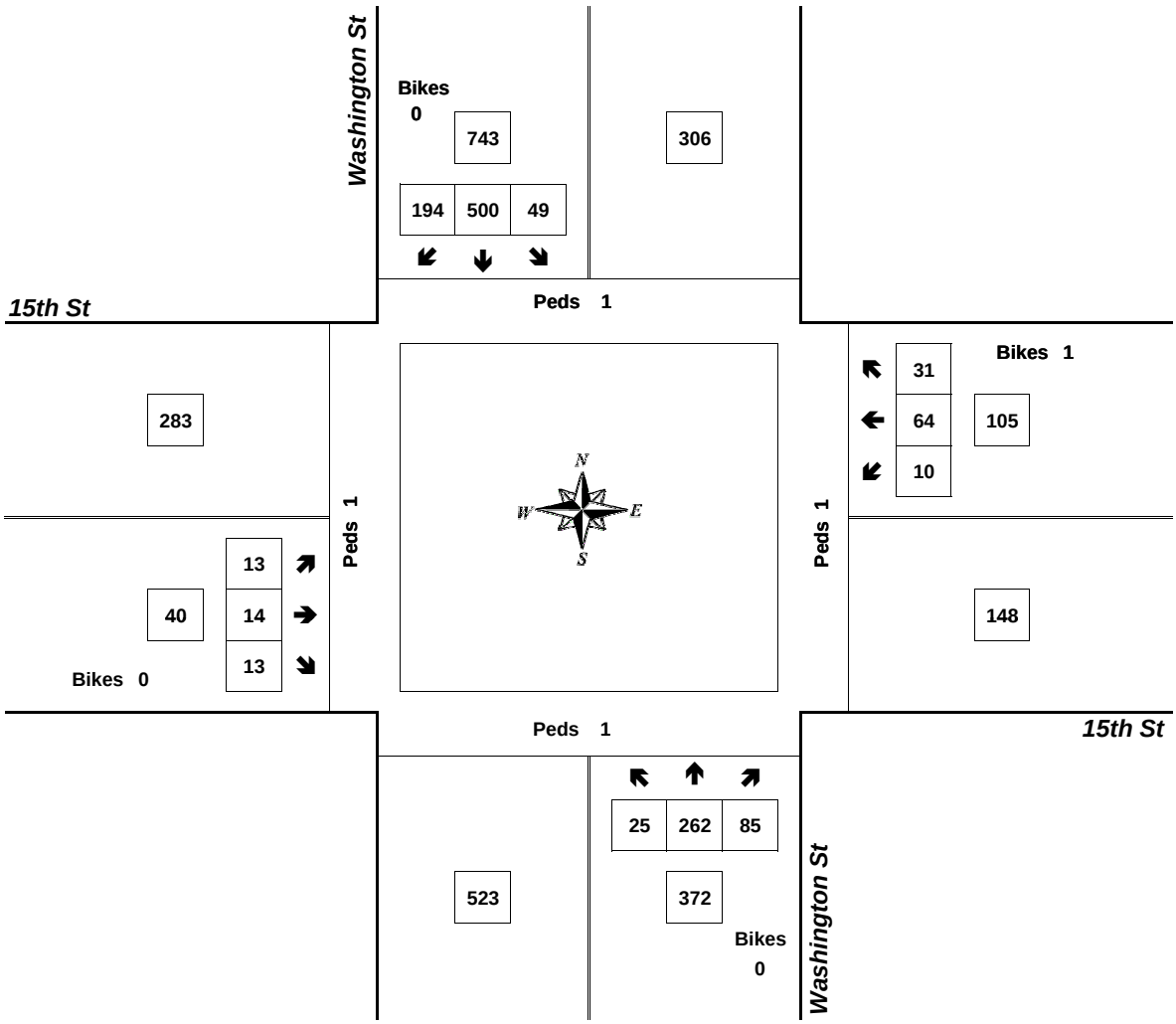
Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 15th St				Westbound 15th St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	0	13	0	13	2	12	5	19	0	0	5	5	0	1	4	5	42
7:15 AM	0	16	1	17	2	18	5	25	0	0	6	6	1	1	5	7	55
7:30 AM	0	19	3	22	2	20	6	28	1	1	6	8	1	2	5	8	66
7:45 AM	1	17	3	21	2	21	7	30	2	2	6	10	1	3	4	8	69
8:00 AM	2	21	4	27	1	23	7	31	2	2	5	9	1	3	2	6	73

Peak Hour Summary

Clay Carney
(503) 833-2740

Washington St & 15th St

7:30 AM to 8:30 AM
Thursday, January 26, 2017

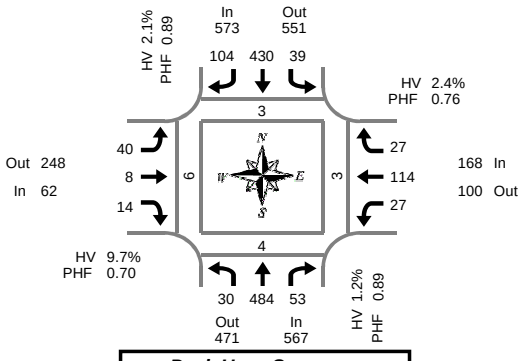


Approach	PHF	HV%	Volume
EB	0.56	20.0%	40
WB	0.77	7.6%	105
NB	0.86	5.9%	372
SB	0.86	3.8%	743
Intersection	0.89	5.2%	1,260

Count Period: 7:00 AM to 9:00 AM

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
4:20 PM to 5:20 PM

Washington St & 15th St

Wednesday, January 25, 2017
4:00 PM to 6:00 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 15th St				Westbound 15th St				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	3	32	4	0	3	34	8	0	4	2	5	0	3	8	5	0	111	0	0	1	1
4:05 PM	0	46	1	0	4	29	9	0	2	1	2	0	2	7	2	0	105	0	2	2	0
4:10 PM	2	26	5	0	5	40	4	0	3	3	1	0	1	12	2	0	104	1	0	0	0
4:15 PM	2	39	1	0	4	34	5	0	1	1	3	0	1	7	3	0	101	0	0	0	1
4:20 PM	1	51	5	0	2	23	8	0	6	1	1	0	2	7	1	0	108	0	0	0	0
4:25 PM	0	44	5	0	1	40	10	0	5	0	1	0	2	9	0	0	117	0	1	1	1
4:30 PM	5	43	6	0	6	37	6	0	2	0	1	0	1	8	5	0	120	0	1	0	1
4:35 PM	4	32	7	0	1	42	13	0	8	1	4	0	2	14	0	0	128	1	0	0	0
4:40 PM	6	37	3	0	3	44	8	0	4	1	1	0	1	7	1	0	116	0	0	0	0
4:45 PM	2	48	4	0	3	39	8	0	3	0	0	0	1	10	3	0	121	1	0	0	1
4:50 PM	2	38	1	0	5	35	8	0	2	1	1	0	2	10	0	0	105	0	0	1	0
4:55 PM	1	49	3	0	2	42	7	0	0	1	1	0	2	8	4	0	120	0	0	1	0
5:00 PM	3	36	6	0	3	33	9	0	4	1	0	0	1	12	3	0	111	0	0	0	1
5:05 PM	0	20	7	0	5	25	8	0	2	0	1	0	8	8	6	0	90	0	2	0	0
5:10 PM	1	51	1	0	5	37	10	0	0	0	1	0	2	11	4	0	123	1	0	0	1
5:15 PM	5	35	5	0	3	33	9	0	4	2	2	0	3	10	0	0	111	0	0	0	1
5:20 PM	2	27	1	0	2	29	2	0	2	1	1	0	6	8	5	0	86	0	1	0	0
5:25 PM	0	40	1	0	1	34	8	0	1	2	1	0	3	6	4	0	101	2	0	0	0
5:30 PM	7	36	7	0	1	42	9	0	1	1	1	0	1	9	2	0	117	0	0	0	1
5:35 PM	1	36	3	0	1	33	11	0	1	2	0	0	1	11	1	0	101	0	0	0	0
5:40 PM	0	35	4	0	4	24	11	0	2	1	0	0	2	4	3	0	90	0	0	0	0
5:45 PM	2	41	2	0	2	33	3	0	0	2	1	0	1	8	0	0	95	0	2	2	1
5:50 PM	4	43	5	0	2	39	8	0	4	1	1	0	0	8	2	0	117	0	0	0	0
5:55 PM	2	35	5	0	2	29	4	0	3	2	0	0	0	3	4	0	89	0	1	0	2
Total Survey	55	920	92	0	70	830	186	0	64	27	30	0	48	205	60	0	2,587	6	10	8	12

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 15th St				Westbound 15th St				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	5	104	10	0	12	103	21	0	9	6	8	0	6	27	9	0	320	1	2	3	1
4:15 PM	3	134	11	0	7	97	23	0	12	2	5	0	5	23	4	0	326	0	1	1	2
4:30 PM	15	112	16	0	10	123	27	0	14	2	6	0	4	29	6	0	364	1	1	0	1
4:45 PM	5	135	8	0	10	116	23	0	5	2	2	0	5	28	7	0	346	1	0	2	1
5:00 PM	4	107	14	0	13	95	27	0	6	1	2	0	11	31	13	0	324	1	2	0	2
5:15 PM	7	102	7	0	6	96	19	0	7	5	4	0	12	24	9	0	298	2	1	0	1
5:30 PM	8	107	14	0	6	99	31	0	4	4	1	0	4	24	6	0	308	0	0	0	1
5:45 PM	8	119	12	0	6	101	15	0	7	5	2	0	1	19	6	0	301	0	3	2	3
Total Survey	55	920	92	0	70	830	186	0	64	27	30	0	48	205	60	0	2,587	6	10	8	12

Peak Hour Summary
4:20 PM to 5:20 PM

By Approach	Northbound Washington St				Southbound Washington St				Eastbound 15th St				Westbound 15th St				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	567	471	1,038	0	573	551	1,124	0	62	248	310	0	168	100	268	0	1,370	3	4	3	6
%HV	1.2%				2.1%				9.7%				2.4%				2.1%				
PHF	0.89				0.89				0.70				0.76				0.94				

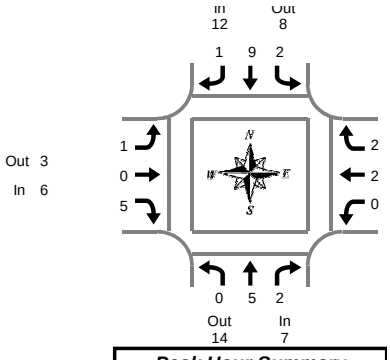
By Movement	Northbound Washington St				Southbound Washington St				Eastbound 15th St				Westbound 15th St				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	30	484	53	567	39	430	104	573	40	8	14	62	27	114	27	168	1,370
%HV	0.0%	1.0%	3.8%	1.2%	5.1%	2.1%	1.0%	2.1%	2.5%	0.0%	35.7%	9.7%	0.0%	1.8%	7.4%	2.4%	2.1%
PHF	0.50	0.88	0.74	0.89	0.75	0.86	0.90	0.89	0.67	0.67	0.58	0.70	0.52	0.92	0.52	0.76	0.94

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 15th St				Westbound 15th St				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	28	485	45	0	39	439	94	0	40	12	21	0	20	107	26	0	1,356	3	4	6	5
4:15 PM	27	488	49	0	40	431	100	0	37	7	15	0	25	111	30	0	1,360	3	4	3	6
4:30 PM	31	456	45	0	39	430	96	0	32	10	14	0	32	112	35	0	1,332	5	4	2	5
4:45 PM	24	451	43	0	35	406	100	0	22	12	9	0	32	107	35	0	1,276	4	3	2	5
5:00 PM	27	435	47	0	31	391	92	0	24	15	9	0	28	98	34	0	1,231	3	6	2	7

Heavy Vehicle Summary

Clay Carney
(503) 833-2740



Peak Hour Summary
4:20 PM to 5:20 PM

Washington St & 15th St

Wednesday, January 25, 2017
4:00 PM to 6:00 PM

Heavy Vehicle 5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 15th St				Westbound 15th St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	1	0	1	0	3	0	3	0	0	1	1	0	0	0	0	5
4:05 PM	0	0	0	0	0	1	0	1	1	0	0	1	0	0	0	0	2
4:10 PM	0	0	0	0	0	2	1	3	0	0	0	0	0	0	0	0	3
4:15 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
4:20 PM	0	0	1	1	0	0	0	0	0	0	0	0	0	1	1	2	3
4:25 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
4:35 PM	0	1	1	2	0	2	1	3	0	0	2	2	0	0	0	0	7
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	5	0	5	1	0	0	1	0	0	0	0	6
4:50 PM	0	1	0	1	2	0	0	2	0	0	1	1	0	0	0	0	4
4:55 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	1	2
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:05 PM	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	2
5:10 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	2
5:20 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
5:25 PM	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
5:30 PM	0	2	0	2	0	1	0	1	0	0	1	1	0	0	0	0	4
5:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:40 PM	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
5:45 PM	0	1	0	1	0	0	0	0	0	0	1	1	0	0	0	0	2
5:50 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
5:55 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
Total Survey	0	14	2	16	2	18	2	22	2	0	9	11	0	2	2	4	53

Heavy Vehicle 15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 15th St				Westbound 15th St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	1	0	1	0	6	1	7	1	0	1	2	0	0	0	0	10
4:15 PM	0	2	1	3	0	0	0	0	0	0	0	0	0	1	1	2	5
4:30 PM	0	1	1	2	0	3	1	4	0	0	2	2	0	0	0	0	8
4:45 PM	0	2	0	2	2	5	0	7	1	0	1	2	0	0	1	1	12
5:00 PM	0	1	0	1	0	1	0	1	0	0	1	1	0	0	0	0	3
5:15 PM	0	2	0	2	0	1	0	1	0	0	1	1	0	1	0	1	5
5:30 PM	0	4	0	4	0	1	0	1	0	0	1	1	0	0	0	0	6
5:45 PM	0	1	0	1	0	1	0	1	0	0	2	2	0	0	0	0	4
Total Survey	0	14	2	16	2	18	2	22	2	0	9	11	0	2	2	4	53

Heavy Vehicle Peak Hour Summary
4:20 PM to 5:20 PM

By Approach	Northbound Washington St			Southbound Washington St			Eastbound 15th St			Westbound 15th St			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	7	14	21	12	8	20	6	3	9	4	4	8	29
PHF	0.58			0.38			0.50			0.50			0.56

By Movement	Northbound Washington St				Southbound Washington St				Eastbound 15th St				Westbound 15th St				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	5	2	7	2	9	1	12	1	0	5	6	0	2	2	4	29
PHF	0.00	0.63	0.50	0.58	0.25	0.32	0.25	0.38	0.25	0.00	0.63	0.50	0.00	0.50	0.50	0.50	0.56

Heavy Vehicle Rolling Hour Summary
4:00 PM to 6:00 PM

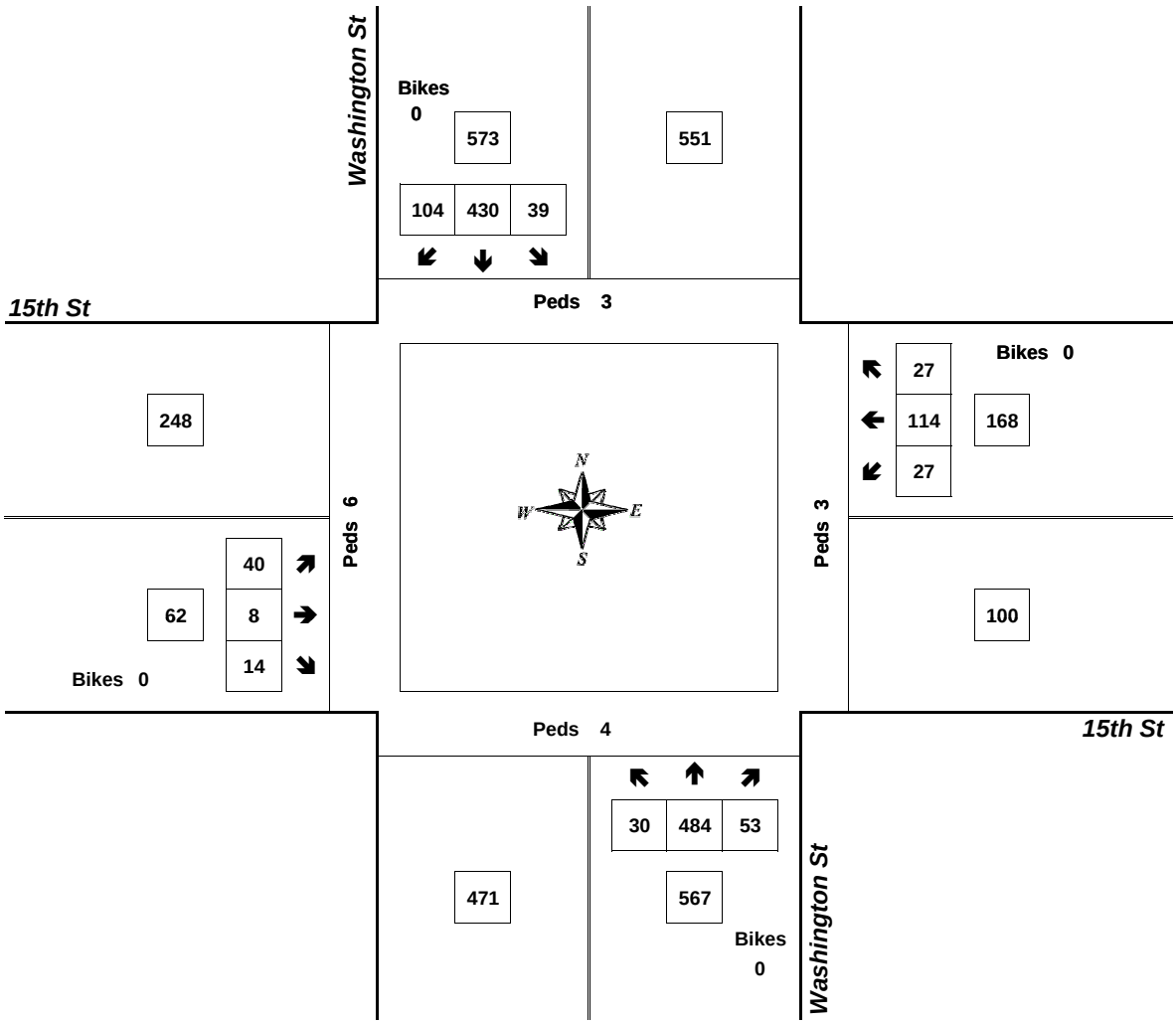
Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 15th St				Westbound 15th St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	6	2	8	2	14	2	18	2	0	4	6	0	1	2	3	35
4:15 PM	0	6	2	8	2	9	1	12	1	0	4	5	0	1	2	3	28
4:30 PM	0	6	1	7	2	10	1	13	1	0	5	6	0	1	1	2	28
4:45 PM	0	9	0	9	2	8	0	10	1	0	4	5	0	1	1	2	26
5:00 PM	0	8	0	8	0	4	0	4	0	0	5	5	0	1	0	1	18

Peak Hour Summary

Clay Carney
(503) 833-2740

Washington St & 15th St

4:20 PM to 5:20 PM
Wednesday, January 25, 2017

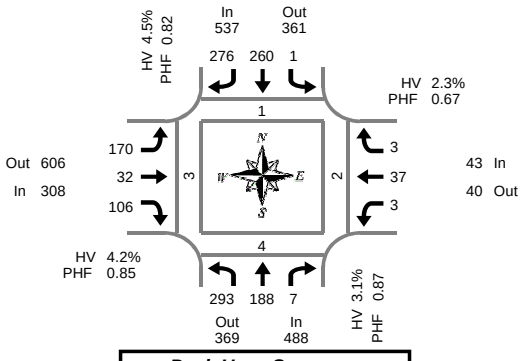


Approach	PHF	HV%	Volume
EB	0.70	9.7%	62
WB	0.76	2.4%	168
NB	0.89	1.2%	567
SB	0.89	2.1%	573
Intersection	0.94	2.1%	1,370

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
7:15 AM to 8:15 AM

Washington St & 14th St

Thursday, January 26, 2017
7:00 AM to 9:00 AM

5-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 14th St				Westbound 14th St				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	23	6	0	0	0	12	25	0	12	4	9	0	0	5	0	0	96	0	0	0	0
7:05 AM	20	7	0	0	0	8	15	0	10	0	6	0	0	1	0	0	67	0	0	0	0
7:10 AM	16	21	1	1	1	8	25	0	16	1	6	0	0	3	0	0	98	0	0	1	0
7:15 AM	28	11	0	0	0	14	28	1	15	1	4	0	0	5	0	0	106	1	0	1	0
7:20 AM	24	15	0	0	0	17	20	0	17	3	7	0	0	5	1	0	109	0	0	0	0
7:25 AM	35	18	0	0	0	12	25	0	15	3	9	0	0	2	0	0	119	0	0	0	0
7:30 AM	27	5	0	0	0	29	26	0	9	4	10	0	1	6	1	0	118	0	0	0	0
7:35 AM	27	19	0	0	0	15	28	0	14	0	9	0	0	2	0	0	114	0	1	0	0
7:40 AM	25	14	0	0	1	31	27	0	5	5	5	0	1	4	0	0	118	0	2	0	1
7:45 AM	20	14	2	0	0	32	24	0	18	2	11	0	0	3	0	0	126	0	0	0	0
7:50 AM	21	32	1	0	0	25	24	0	9	1	12	0	1	4	0	0	130	0	0	1	1
7:55 AM	25	24	2	0	0	23	21	0	19	5	14	0	0	1	0	0	134	0	0	0	0
8:00 AM	20	8	0	0	0	20	17	0	16	2	10	0	0	3	0	0	96	0	0	0	0
8:05 AM	22	15	0	0	0	20	21	0	11	4	7	0	0	1	1	0	102	0	1	0	1
8:10 AM	19	13	2	0	0	22	15	0	22	2	8	0	0	1	0	0	104	0	0	0	0
8:15 AM	20	11	1	0	0	20	18	0	21	1	11	0	0	1	0	0	104	0	0	0	0
8:20 AM	15	10	2	0	0	19	20	0	19	2	8	0	0	1	1	0	97	0	1	0	0
8:25 AM	18	18	0	0	0	18	18	0	15	3	9	0	0	0	0	0	99	0	0	0	0
8:30 AM	22	17	0	0	0	8	11	0	23	2	11	0	0	0	0	0	94	0	0	0	0
8:35 AM	13	9	0	0	0	24	16	0	14	3	7	0	1	3	1	0	91	0	0	0	0
8:40 AM	10	10	0	0	0	20	20	0	12	4	8	0	1	1	0	0	86	0	0	0	0
8:45 AM	15	22	2	0	0	20	17	0	24	4	8	0	1	1	1	0	115	0	0	0	0
8:50 AM	17	14	3	0	0	22	11	0	20	4	8	0	0	0	0	0	99	0	1	1	1
8:55 AM	16	11	4	0	0	20	14	0	18	4	9	0	1	3	0	0	100	0	0	1	0
Total Survey	498	344	20	1	2	459	486	1	374	64	206	0	7	56	6	0	2,522	1	6	5	4

15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 14th St				Westbound 14th St				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	59	34	1	1	1	28	65	0	38	5	21	0	0	9	0	0	261	0	0	1	0
7:15 AM	87	44	0	0	0	43	73	1	47	7	20	0	0	12	1	0	334	1	0	1	0
7:30 AM	79	38	0	0	1	75	81	0	28	9	24	0	2	12	1	0	350	0	3	0	1
7:45 AM	66	70	5	0	0	80	69	0	46	8	37	0	1	8	0	0	390	0	0	1	1
8:00 AM	61	36	2	0	0	62	53	0	49	8	25	0	0	5	1	0	302	0	1	0	1
8:15 AM	53	39	3	0	0	57	56	0	55	6	28	0	0	2	1	0	300	0	1	0	0
8:30 AM	45	36	0	0	0	52	47	0	49	9	26	0	2	4	1	0	271	0	0	0	0
8:45 AM	48	47	9	0	0	62	42	0	62	12	25	0	2	4	1	0	314	0	1	2	1
Total Survey	498	344	20	1	2	459	486	1	374	64	206	0	7	56	6	0	2,522	1	6	5	4

Peak Hour Summary
7:15 AM to 8:15 AM

By Approach	Northbound Washington St				Southbound Washington St				Eastbound 14th St				Westbound 14th St				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	488	369	857	0	537	361	898	1	308	606	914	0	43	40	83	0	1,376	1	4	2	3
%HV	3.1%				4.5%				4.2%				2.3%				3.9%				
PHF	0.87				0.82				0.85				0.67				0.88				

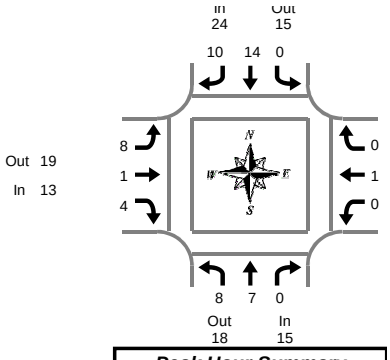
By Movement	Northbound Washington St				Southbound Washington St				Eastbound 14th St				Westbound 14th St				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	293	188	7	488	1	260	276	537	170	32	106	308	3	37	3	43	1,376
%HV	2.7%	3.7%	0.0%	3.1%	0.0%	5.4%	3.6%	4.5%	4.7%	3.1%	3.8%	4.2%	0.0%	2.7%	0.0%	2.3%	3.9%
PHF	0.82	0.67	0.35	0.87	0.25	0.74	0.85	0.82	0.87	0.73	0.72	0.85	0.38	0.71	0.38	0.67	0.88

Rolling Hour Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 14th St				Westbound 14th St				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	291	186	6	1	2	226	288	1	159	29	102	0	3	41	2	0	1,335	1	3	3	2
7:15 AM	293	188	7	0	1	260	276	1	170	32	106	0	3	37	3	0	1,376	1	4	2	3
7:30 AM	259	183	10	0	1	274	259	0	178	31	114	0	3	27	3	0	1,342	0	5	1	3
7:45 AM	225	181	10	0	0	251	225	0	199	31	116	0	3	19	3	0	1,263	0	2	1	2
8:00 AM	207	158	14	0	0	233	198	0	215	35	104	0	4	15	4	0	1,187	0	3	2	2

Heavy Vehicle Summary

Clay Carney
(503) 833-2740



Washington St & 14th St

Thursday, January 26, 2017
7:00 AM to 9:00 AM

Peak Hour Summary
7:15 AM to 8:15 AM

Heavy Vehicle 5-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 14th St				Westbound 14th St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	0	2
7:05 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
7:10 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
7:20 AM	1	0	0	1	0	1	1	2	2	0	0	2	0	0	0	0	5
7:25 AM	2	0	0	2	0	1	0	1	1	0	2	3	0	0	0	0	6
7:30 AM	2	1	0	3	0	1	1	2	2	0	0	2	0	0	0	0	7
7:35 AM	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	2
7:40 AM	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	1	2
7:45 AM	1	1	0	2	0	2	1	3	1	0	0	1	0	0	0	0	6
7:50 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
7:55 AM	0	1	0	1	0	1	2	3	0	0	0	0	0	0	0	0	4
8:00 AM	1	0	0	1	0	3	1	4	1	0	0	1	0	0	0	0	6
8:05 AM	1	1	0	2	0	3	0	3	0	1	0	1	0	0	0	0	6
8:10 AM	0	3	0	3	0	2	0	2	1	0	1	2	0	0	0	0	7
8:15 AM	0	0	0	0	0	3	2	5	1	0	1	2	0	0	0	0	7
8:20 AM	0	0	0	0	0	1	0	1	3	0	2	5	0	0	0	0	6
8:25 AM	0	3	0	3	0	2	1	3	1	0	1	2	0	0	0	0	8
8:30 AM	1	3	0	4	0	0	0	0	2	0	2	4	0	0	0	0	8
8:35 AM	1	0	0	1	0	2	2	4	0	0	0	0	0	0	0	0	5
8:40 AM	0	1	0	1	0	3	0	3	0	1	0	1	0	0	0	0	5
8:45 AM	1	2	1	4	0	2	0	2	2	0	0	2	1	0	0	1	9
8:50 AM	3	3	0	6	0	0	1	1	0	0	0	0	0	0	0	0	7
8:55 AM	0	0	0	0	0	3	1	4	2	0	0	2	0	0	0	0	6
Total Survey	14	19	1	34	0	31	17	48	21	2	11	34	1	1	0	2	118

Heavy Vehicle 15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 14th St				Westbound 14th St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	0	0	0	0	0	1	0	1	2	0	1	3	0	0	0	0	4
7:15 AM	3	0	0	3	0	2	2	4	3	0	2	5	0	0	0	0	12
7:30 AM	2	1	0	3	0	1	4	5	2	0	0	2	0	1	0	1	11
7:45 AM	1	2	0	3	0	3	3	6	1	0	1	2	0	0	0	0	11
8:00 AM	2	4	0	6	0	8	1	9	2	1	1	4	0	0	0	0	19
8:15 AM	0	3	0	3	0	6	3	9	5	0	4	9	0	0	0	0	21
8:30 AM	2	4	0	6	0	5	2	7	2	1	2	5	0	0	0	0	18
8:45 AM	4	5	1	10	0	5	2	7	4	0	0	4	1	0	0	1	22
Total Survey	14	19	1	34	0	31	17	48	21	2	11	34	1	1	0	2	118

Heavy Vehicle Peak Hour Summary
7:15 AM to 8:15 AM

By Approach	Northbound Washington St			Southbound Washington St			Eastbound 14th St			Westbound 14th St			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	15	18	33	24	15	39	13	19	32	1	1	2	53
PHF	0.63			0.60			0.46			0.25			0.70

By Movement	Northbound Washington St				Southbound Washington St				Eastbound 14th St				Westbound 14th St				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	8	7	0	15	0	14	10	24	8	1	4	13	0	1	0	1	53
PHF	0.40	0.44	0.00	0.63	0.00	0.44	0.63	0.60	0.40	0.25	0.50	0.46	0.00	0.25	0.00	0.25	0.70

Heavy Vehicle Rolling Hour Summary
7:00 AM to 9:00 AM

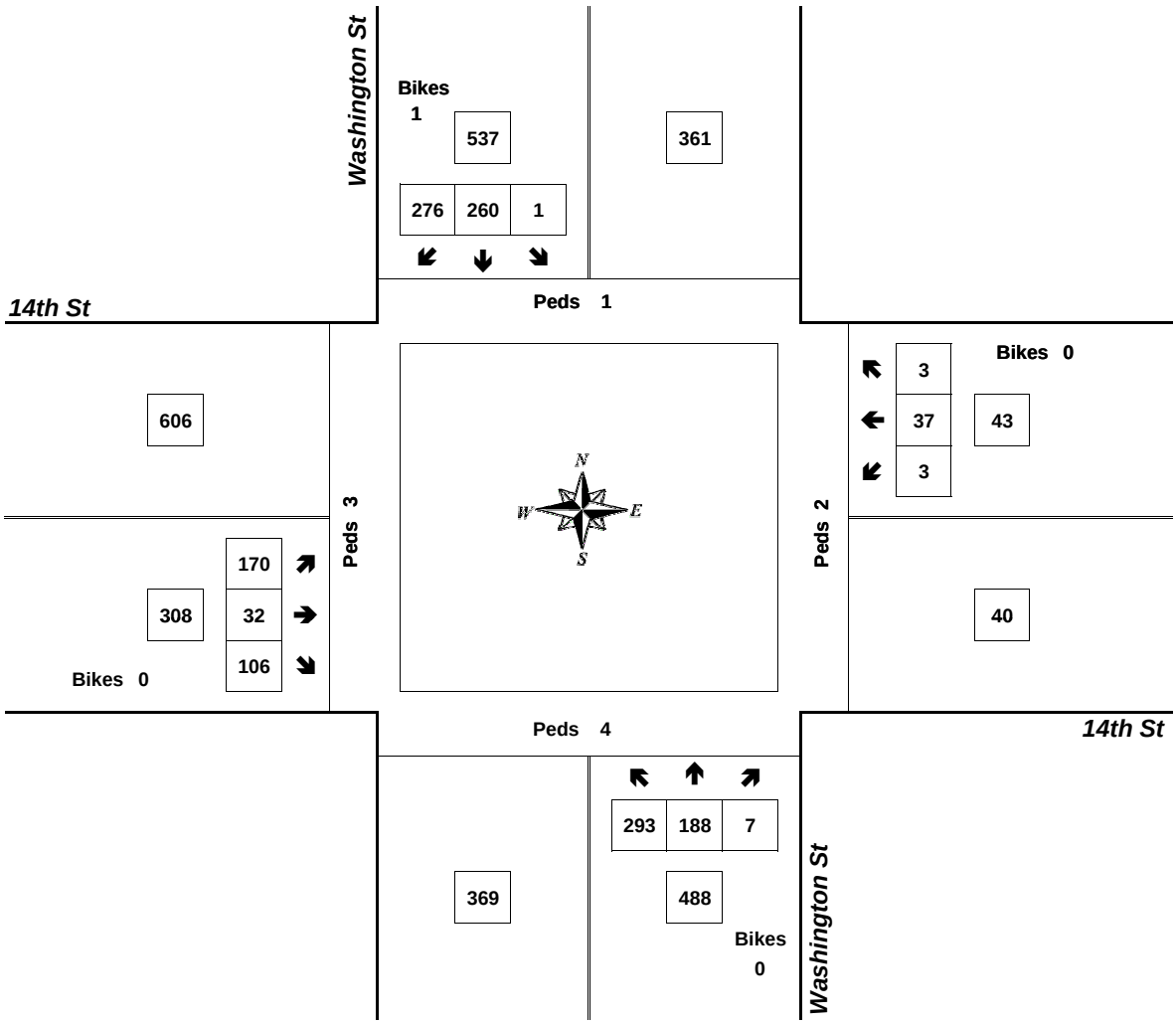
Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 14th St				Westbound 14th St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	6	3	0	9	0	7	9	16	8	0	4	12	0	1	0	1	38
7:15 AM	8	7	0	15	0	14	10	24	8	1	4	13	0	1	0	1	53
7:30 AM	5	10	0	15	0	18	11	29	10	1	6	17	0	1	0	1	62
7:45 AM	5	13	0	18	0	22	9	31	10	2	8	20	0	0	0	0	69
8:00 AM	8	16	1	25	0	24	8	32	13	2	7	22	1	0	0	1	80

Peak Hour Summary

Clay Carney
(503) 833-2740

Washington St & 14th St

7:15 AM to 8:15 AM
Thursday, January 26, 2017

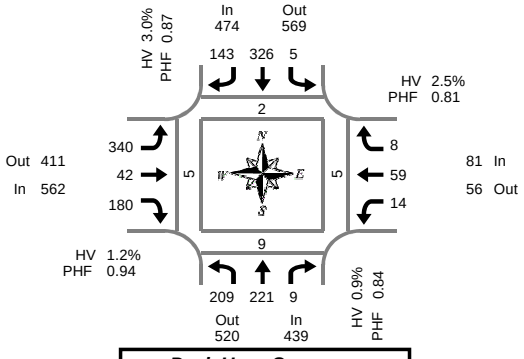


Approach	PHF	HV%	Volume
EB	0.85	4.2%	308
WB	0.67	2.3%	43
NB	0.87	3.1%	488
SB	0.82	4.5%	537
Intersection	0.88	3.9%	1,376

Count Period: 7:00 AM to 9:00 AM

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
4:20 PM to 5:20 PM

Washington St & 14th St

Wednesday, January 25, 2017
4:00 PM to 6:00 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 14th St				Westbound 14th St				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	11	18	0	0	1	22	13	0	19	2	19	0	0	3	1	0	109	0	0	0	0
4:05 PM	19	18	2	0	0	31	12	0	35	5	14	0	0	4	2	0	142	0	0	0	0
4:10 PM	24	14	0	0	0	30	10	0	19	5	19	0	0	1	0	0	122	0	0	0	1
4:15 PM	19	19	0	0	0	26	13	0	19	5	11	0	0	3	1	0	116	0	0	0	0
4:20 PM	11	19	0	0	2	23	6	0	33	6	16	0	3	2	3	0	124	0	0	0	1
4:25 PM	13	18	2	0	0	29	6	0	29	1	15	0	0	2	0	0	115	0	0	0	0
4:30 PM	26	17	4	0	0	18	16	0	31	3	16	0	2	3	1	0	137	2	1	1	0
4:35 PM	17	21	0	0	0	34	10	0	28	5	15	0	1	6	2	0	139	0	1	3	0
4:40 PM	24	22	0	0	1	38	13	0	27	1	14	0	2	3	0	0	145	0	0	0	0
4:45 PM	13	22	1	0	1	26	13	0	30	4	19	0	0	7	0	0	136	0	2	0	0
4:50 PM	12	17	0	0	0	31	6	0	33	6	12	0	1	4	0	0	122	0	2	0	0
4:55 PM	18	18	1	0	1	27	21	0	21	3	14	0	2	3	0	0	129	0	0	1	0
5:00 PM	18	13	0	0	0	31	8	0	28	2	13	0	2	6	1	0	122	0	0	0	0
5:05 PM	22	13	1	0	0	22	11	0	30	4	8	0	0	6	0	0	117	0	1	0	0
5:10 PM	20	17	0	0	0	20	18	0	33	4	17	0	0	6	1	0	136	0	1	0	3
5:15 PM	15	24	0	0	0	27	15	0	17	3	21	0	1	11	0	0	134	0	1	0	1
5:20 PM	21	8	0	0	0	23	11	0	31	4	11	0	0	4	1	0	114	0	0	0	0
5:25 PM	17	17	0	0	0	30	7	0	19	1	15	0	0	3	0	0	109	0	0	0	0
5:30 PM	9	17	0	0	1	30	13	0	28	3	20	0	1	6	2	0	130	0	0	0	0
5:35 PM	14	16	0	0	0	22	13	0	31	4	21	0	0	2	0	0	123	0	3	0	1
5:40 PM	19	11	0	0	0	22	8	0	23	3	13	0	3	2	1	0	105	0	0	0	0
5:45 PM	18	14	1	0	2	18	12	0	32	1	15	0	0	2	1	0	116	0	1	0	0
5:50 PM	10	15	2	0	0	23	12	0	37	1	18	0	0	4	0	0	122	0	1	0	0
5:55 PM	13	20	1	0	0	27	14	0	21	2	11	0	0	2	0	0	111	0	0	0	2
Total Survey	403	408	15	0	9	630	281	0	654	78	367	0	18	95	17	0	2,975	2	14	5	9

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 14th St				Westbound 14th St				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	54	50	2	0	1	83	35	0	73	12	52	0	0	8	3	0	373	0	0	0	1
4:15 PM	43	56	2	0	2	78	25	0	81	12	42	0	3	7	4	0	355	0	0	0	1
4:30 PM	67	60	4	0	1	90	39	0	86	9	45	0	5	12	3	0	421	2	2	4	0
4:45 PM	43	57	2	0	2	84	40	0	84	13	45	0	3	14	0	0	387	0	4	1	0
5:00 PM	60	43	1	0	0	73	37	0	91	10	38	0	2	18	2	0	375	0	2	0	3
5:15 PM	53	49	0	0	0	80	33	0	67	8	47	0	1	18	1	0	357	0	1	0	1
5:30 PM	42	44	0	0	1	74	34	0	82	10	54	0	4	10	3	0	358	0	3	0	1
5:45 PM	41	49	4	0	2	68	38	0	90	4	44	0	0	8	1	0	349	0	2	0	2
Total Survey	403	408	15	0	9	630	281	0	654	78	367	0	18	95	17	0	2,975	2	14	5	9

Peak Hour Summary
4:20 PM to 5:20 PM

By Approach	Northbound Washington St				Southbound Washington St				Eastbound 14th St				Westbound 14th St				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	439	520	959	0	474	569	1,043	0	562	411	973	0	81	56	137	0	1,556	2	9	5	5
%HV	0.9%				3.0%				1.2%				2.5%				1.7%				
PHF	0.84				0.87				0.94				0.81				0.92				

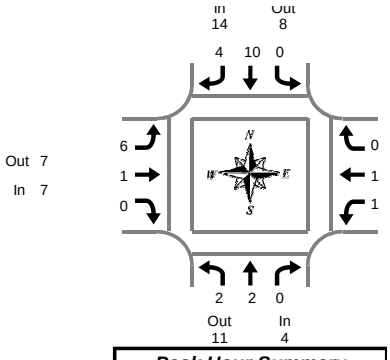
By Movement	Northbound Washington St				Southbound Washington St				Eastbound 14th St				Westbound 14th St				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	209	221	9	439	5	326	143	474	340	42	180	562	14	59	8	81	1,556
%HV	1.0%	0.9%	0.0%	0.9%	0.0%	3.1%	2.8%	3.0%	1.8%	2.4%	0.0%	1.2%	7.1%	1.7%	0.0%	2.5%	1.7%
PHF	0.78	0.85	0.38	0.84	0.63	0.83	0.81	0.87	0.91	0.81	0.94	0.94	0.70	0.64	0.50	0.81	0.92

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 14th St				Westbound 14th St				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	207	223	10	0	6	335	139	0	324	46	184	0	11	41	10	0	1,536	2	6	5	2
4:15 PM	213	216	9	0	5	325	141	0	342	44	170	0	13	51	9	0	1,538	2	8	5	4
4:30 PM	223	209	7	0	3	327	149	0	328	40	175	0	11	62	6	0	1,540	2	9	5	4
4:45 PM	198	193	3	0	3	311	144	0	324	41	184	0	10	60	6	0	1,477	0	10	1	5
5:00 PM	196	185	5	0	3	295	142	0	330	32	183	0	7	54	7	0	1,439	0	8	0	7

Heavy Vehicle Summary

Clay Carney
(503) 833-2740



Washington St & 14th St

Wednesday, January 25, 2017
4:00 PM to 6:00 PM

Peak Hour Summary
4:20 PM to 5:20 PM

Heavy Vehicle 5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 14th St				Westbound 14th St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	0	0	0	0	0	2	2	1	0	0	1	0	0	0	0	3
4:05 PM	0	0	0	0	0	2	1	3	0	0	0	0	0	0	0	0	3
4:10 PM	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	2
4:15 PM	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	0	2
4:20 PM	0	0	0	0	0	0	0	0	1	1	0	2	1	0	0	1	3
4:25 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
4:30 PM	1	0	0	1	0	0	1	1	1	0	0	1	0	0	0	0	3
4:35 PM	0	0	0	0	0	2	1	3	2	0	0	2	0	1	0	1	6
4:40 PM	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	2
4:45 PM	0	0	0	0	0	4	1	5	0	0	0	0	0	0	0	0	5
4:50 PM	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	2
4:55 PM	0	0	0	0	0	0	0	0	1	0	0	1	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
5:05 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
5:10 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
5:20 PM	2	0	0	2	0	1	1	2	0	0	0	0	0	0	0	0	4
5:25 PM	1	2	0	3	0	0	0	0	0	0	1	1	0	0	0	0	4
5:30 PM	0	1	0	1	0	2	0	2	1	0	0	1	0	0	0	0	4
5:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
5:50 PM	1	0	0	1	0	2	0	2	1	0	0	1	0	0	0	0	4
5:55 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
Total Survey	6	5	0	11	0	18	10	28	11	1	2	14	1	1	0	2	55

Heavy Vehicle 15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 14th St				Westbound 14th St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	0	0	0	0	3	4	7	1	0	0	1	0	0	0	0	8
4:15 PM	1	0	0	1	0	0	0	0	2	1	1	4	1	0	0	1	6
4:30 PM	1	1	0	2	0	3	2	5	3	0	0	3	0	1	0	1	11
4:45 PM	0	1	0	1	0	5	1	6	1	0	0	1	0	0	0	0	8
5:00 PM	0	0	0	0	0	0	1	1	1	0	0	1	0	0	0	0	2
5:15 PM	3	2	0	5	0	3	1	4	0	0	1	1	0	0	0	0	10
5:30 PM	0	1	0	1	0	2	0	2	1	0	0	1	0	0	0	0	4
5:45 PM	1	0	0	1	0	2	1	3	2	0	0	2	0	0	0	0	6
Total Survey	6	5	0	11	0	18	10	28	11	1	2	14	1	1	0	2	55

Heavy Vehicle Peak Hour Summary
4:20 PM to 5:20 PM

By Approach	Northbound Washington St			Southbound Washington St			Eastbound 14th St			Westbound 14th St			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	4	11	15	14	8	22	7	7	14	2	1	3	27
PHF	0.50			0.39			0.58			0.50			0.52

By Movement	Northbound Washington St				Southbound Washington St				Eastbound 14th St				Westbound 14th St				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	2	2	0	4	0	10	4	14	6	1	0	7	1	1	0	2	27
PHF	0.25	0.25	0.00	0.50	0.00	0.36	0.50	0.39	0.50	0.25	0.00	0.58	0.25	0.25	0.00	0.50	0.52

Heavy Vehicle Rolling Hour Summary
4:00 PM to 6:00 PM

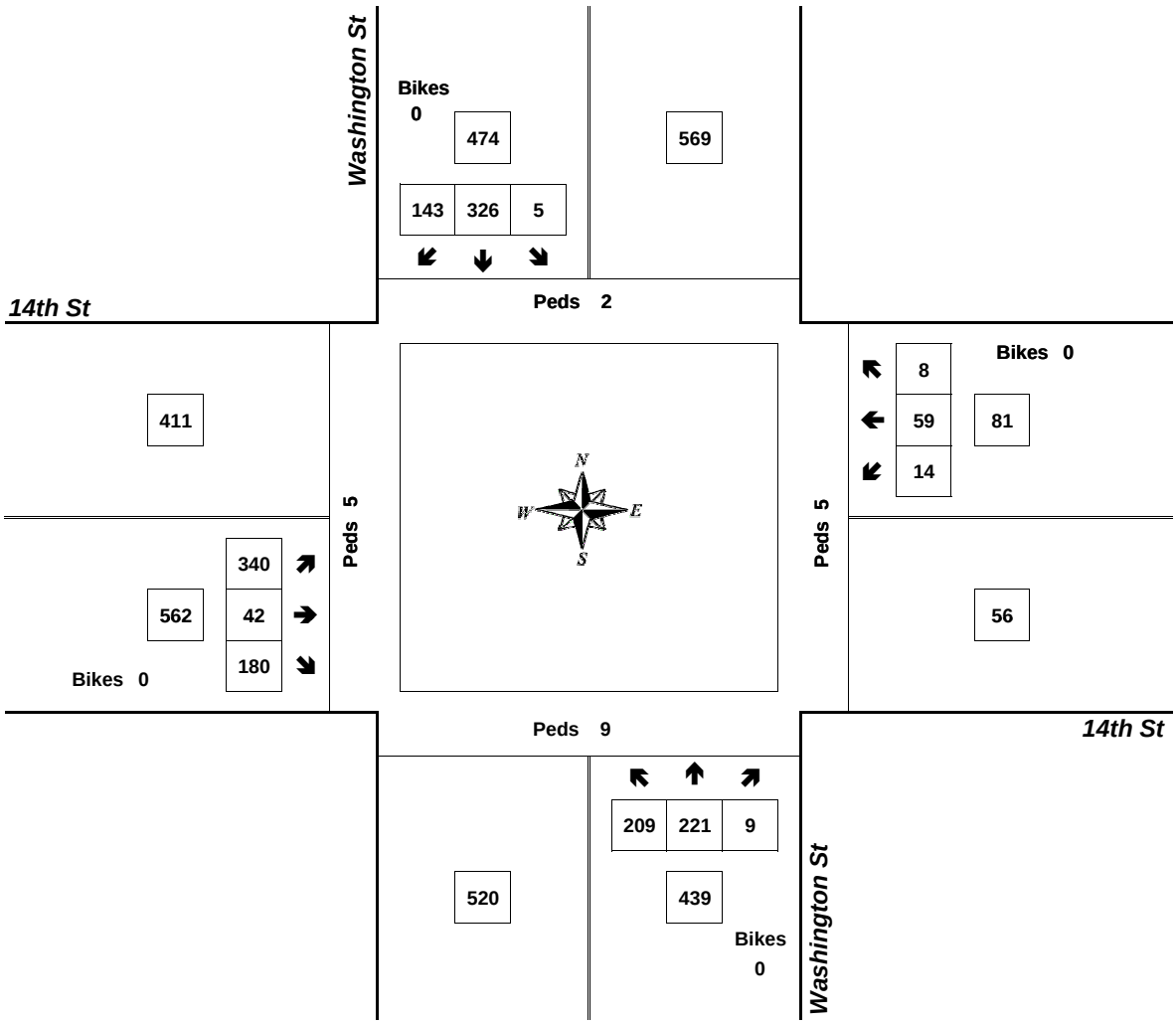
Interval Start Time	Northbound Washington St				Southbound Washington St				Eastbound 14th St				Westbound 14th St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	2	2	0	4	0	11	7	18	7	1	1	9	1	1	0	2	33
4:15 PM	2	2	0	4	0	8	4	12	7	1	1	9	1	1	0	2	27
4:30 PM	4	4	0	8	0	11	5	16	5	0	1	6	0	1	0	1	31
4:45 PM	3	4	0	7	0	10	3	13	3	0	1	4	0	0	0	0	24
5:00 PM	4	3	0	7	0	7	3	10	4	0	1	5	0	0	0	0	22

Peak Hour Summary

Clay Carney
(503) 833-2740

Washington St & 14th St

4:20 PM to 5:20 PM
Wednesday, January 25, 2017

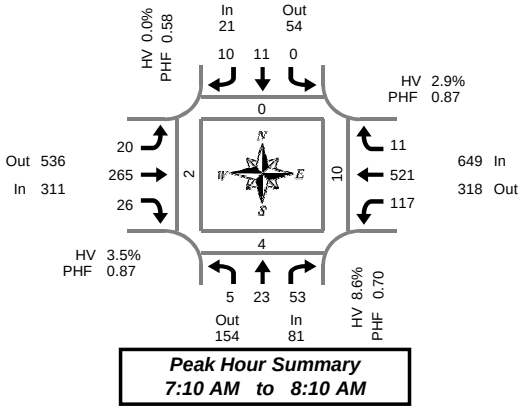


Approach	PHF	HV%	Volume
EB	0.94	1.2%	562
WB	0.81	2.5%	81
NB	0.84	0.9%	439
SB	0.87	3.0%	474
Intersection	0.92	1.7%	1,556

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
7:10 AM to 8:10 AM

Main St & 14th St

Thursday, January 26, 2017
7:00 AM to 9:00 AM

5-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound 14th St				Westbound 14th St				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	0	1	4	0	0	0	2	0	0	19	3	0	9	42	0	0	80	0	1	1	0
7:05 AM	1	0	4	0	0	1	0	0	3	17	0	0	9	29	1	0	65	0	1	1	0
7:10 AM	2	4	6	0	0	1	0	0	3	17	4	0	6	40	0	1	83	0	1	1	1
7:15 AM	0	0	2	0	0	1	0	0	1	21	1	0	14	44	0	0	84	0	0	0	0
7:20 AM	0	1	4	0	0	0	0	0	1	26	2	0	5	43	0	0	82	0	0	1	0
7:25 AM	0	3	2	0	0	1	1	0	2	20	2	0	11	57	1	0	100	0	0	0	0
7:30 AM	0	1	5	0	0	0	0	0	1	18	1	0	11	47	2	0	86	0	0	0	0
7:35 AM	0	0	3	0	0	1	1	0	1	21	0	0	12	44	1	0	84	0	2	1	0
7:40 AM	0	4	2	0	0	1	0	0	3	24	2	0	7	54	0	0	97	0	0	2	1
7:45 AM	0	1	7	0	0	2	1	0	1	23	6	0	6	42	1	0	90	0	0	0	0
7:50 AM	1	3	6	0	0	2	1	0	3	17	1	0	9	42	0	0	85	0	0	2	0
7:55 AM	0	4	7	0	0	1	2	0	1	32	5	0	11	43	3	0	109	0	0	1	0
8:00 AM	0	2	6	0	0	1	2	0	3	22	0	0	10	33	1	0	80	0	1	2	0
8:05 AM	2	0	3	0	0	0	2	0	0	24	2	0	15	32	2	0	82	0	0	0	0
8:10 AM	2	1	8	0	0	4	0	0	5	27	4	0	6	24	1	0	82	0	1	2	0
8:15 AM	0	0	2	0	0	0	1	0	3	30	2	0	6	33	0	0	77	0	1	1	0
8:20 AM	0	3	2	0	0	1	1	0	3	27	1	0	11	22	1	0	72	0	0	0	0
8:25 AM	1	1	3	0	0	2	0	1	9	29	1	0	6	30	1	0	83	0	0	0	0
8:30 AM	0	4	5	0	0	5	1	0	2	26	2	0	9	26	2	0	82	0	0	0	0
8:35 AM	1	3	5	0	0	3	1	0	5	21	4	0	9	22	2	0	76	0	0	0	1
8:40 AM	0	1	4	0	0	2	2	0	4	25	2	0	7	19	2	0	68	0	0	0	0
8:45 AM	4	1	7	0	1	1	0	0	0	28	3	0	13	28	3	0	89	1	0	1	1
8:50 AM	0	1	6	0	0	1	2	0	0	28	2	0	5	21	0	0	66	0	1	1	0
8:55 AM	0	1	3	0	0	1	2	1	7	26	5	0	9	25	0	0	79	2	0	0	0
Total Survey	14	40	106	0	1	32	22	2	61	568	55	0	216	842	24	1	1,981	3	9	17	4

15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound 14th St				Westbound 14th St				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	3	5	14	0	0	2	2	0	6	53	7	0	24	111	1	1	228	0	3	3	1
7:15 AM	0	4	8	0	0	2	1	0	4	67	5	0	30	144	1	0	266	0	0	1	0
7:30 AM	0	5	10	0	0	2	1	0	5	63	3	0	30	145	3	0	267	0	2	3	1
7:45 AM	1	8	20	0	0	5	4	0	5	72	12	0	26	127	4	0	284	0	0	3	0
8:00 AM	4	3	17	0	0	5	4	0	8	73	6	0	31	89	4	0	244	0	2	4	0
8:15 AM	1	4	7	0	0	3	2	1	15	86	4	0	23	85	2	0	232	0	1	1	0
8:30 AM	1	8	14	0	0	10	4	0	11	72	8	0	25	67	6	0	226	0	0	0	1
8:45 AM	4	3	16	0	1	3	4	1	7	82	10	0	27	74	3	0	234	3	1	2	1
Total Survey	14	40	106	0	1	32	22	2	61	568	55	0	216	842	24	1	1,981	3	9	17	4

Peak Hour Summary
7:10 AM to 8:10 AM

By Approach	Northbound Main St				Southbound Main St				Eastbound 14th St				Westbound 14th St				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	81	154	235	0	21	54	75	0	311	536	847	0	649	318	967	1	1,062	0	4	10	2
%HV	8.6%				0.0%				3.5%				2.9%				3.5%				
PHF	0.70				0.58				0.87				0.87				0.93				

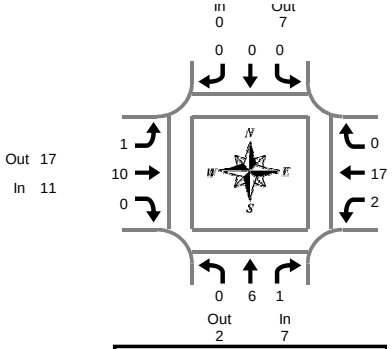
By Movement	Northbound Main St				Southbound Main St				Eastbound 14th St				Westbound 14th St				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	5	23	53	81	0	11	10	21	20	265	26	311	117	521	11	649	1,062
%HV	0.0%	26.1%	1.9%	8.6%	0.0%	0.0%	0.0%	0.0%	5.0%	3.8%	0.0%	3.5%	1.7%	3.3%	0.0%	2.9%	3.5%
PHF	0.63	0.64	0.66	0.70	0.00	0.55	0.42	0.58	0.71	0.85	0.54	0.87	0.81	0.88	0.46	0.87	0.93

Rolling Hour Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound 14th St				Westbound 14th St				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	4	22	52	0	0	11	8	0	20	255	27	0	110	527	9	1	1,045	0	5	10	2
7:15 AM	5	20	55	0	0	14	10	0	22	275	26	0	117	505	12	0	1,061	0	4	11	1
7:30 AM	6	20	54	0	0	15	11	1	33	294	25	0	110	446	13	0	1,027	0	5	11	1
7:45 AM	7	23	58	0	0	23	14	1	39	303	30	0	105	368	16	0	986	0	3	8	1
8:00 AM	10	18	54	0	1	21	14	2	41	313	28	0	106	315	15	0	936	3	4	7	2

Heavy Vehicle Summary

Clay Carney
(503) 833-2740



Main St & 14th St

Thursday, January 26, 2017
7:00 AM to 9:00 AM

Peak Hour Summary
7:10 AM to 8:10 AM

Heavy Vehicle 5-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound 14th St				Westbound 14th St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
7:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
7:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
7:20 AM	0	1	0	1	0	0	0	0	0	4	0	4	0	2	0	2	7
7:25 AM	0	1	0	1	0	0	0	0	0	1	0	1	0	1	0	1	3
7:30 AM	0	0	1	1	0	0	0	0	0	1	0	1	1	2	0	3	5
7:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
7:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
7:45 AM	0	0	0	0	0	0	0	0	0	2	0	2	0	1	0	1	3
7:50 AM	0	2	0	2	0	0	0	0	1	0	0	1	0	2	0	2	5
7:55 AM	0	1	0	1	0	0	0	0	0	0	0	0	1	1	0	2	3
8:00 AM	0	1	0	1	0	0	0	0	0	2	0	2	0	1	0	1	4
8:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
8:10 AM	0	1	1	2	0	0	0	0	1	3	0	4	0	1	0	1	7
8:15 AM	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	1	2
8:20 AM	0	1	0	1	0	0	0	0	1	5	0	6	0	0	0	0	7
8:25 AM	0	0	0	0	0	0	0	0	1	2	0	3	0	1	0	1	4
8:30 AM	0	1	1	2	0	0	0	0	1	1	0	2	0	1	0	1	5
8:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	3	3
8:40 AM	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	2
8:45 AM	0	0	0	0	0	0	0	0	0	2	0	2	1	3	0	4	6
8:50 AM	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	4
8:55 AM	0	0	0	0	0	0	1	1	0	1	1	2	1	0	0	1	4
Total Survey	0	10	3	13	0	1	1	2	6	29	1	36	6	27	0	33	84

Heavy Vehicle 15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound 14th St				Westbound 14th St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	2	0	2	0	2	0	2	4
7:15 AM	0	2	0	2	0	0	0	0	0	5	0	5	0	4	0	4	11
7:30 AM	0	0	1	1	0	0	0	0	0	1	0	1	1	6	0	7	9
7:45 AM	0	3	0	3	0	0	0	0	1	2	0	3	1	4	0	5	11
8:00 AM	0	2	1	3	0	0	0	0	1	5	0	6	0	3	0	3	12
8:15 AM	0	1	0	1	0	0	0	0	2	8	0	10	1	1	0	2	13
8:30 AM	0	1	1	2	0	0	0	0	2	2	0	4	1	3	0	4	10
8:45 AM	0	1	0	1	0	1	1	2	0	4	1	5	2	4	0	6	14
Total Survey	0	10	3	13	0	1	1	2	6	29	1	36	6	27	0	33	84

Heavy Vehicle Peak Hour Summary
7:10 AM to 8:10 AM

By Approach	Northbound Main St			Southbound Main St			Eastbound 14th St			Westbound 14th St			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	7	2	9	0	7	7	11	17	28	19	11	30	37
PHF	0.44			0.00			0.46			0.68			0.62

By Movement	Northbound Main St				Southbound Main St				Eastbound 14th St				Westbound 14th St				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	6	1	7	0	0	0	0	1	10	0	11	2	17	0	19	37
PHF	0.00	0.38	0.25	0.44	0.00	0.00	0.00	0.00	0.25	0.42	0.00	0.46	0.50	0.71	0.00	0.68	0.62

Heavy Vehicle Rolling Hour Summary
7:00 AM to 9:00 AM

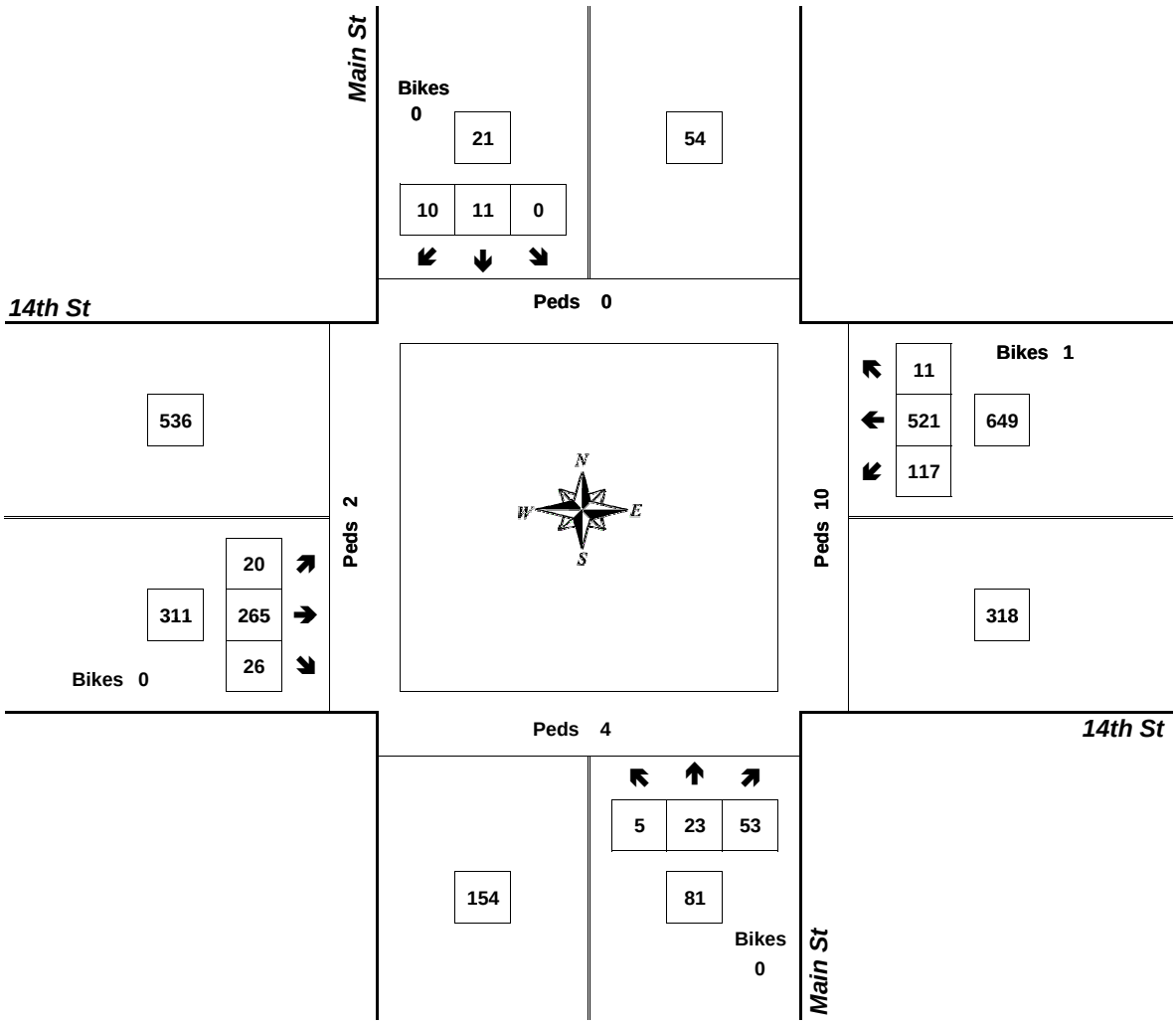
Interval Start Time	Northbound Main St				Southbound Main St				Eastbound 14th St				Westbound 14th St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	0	5	1	6	0	0	0	0	1	10	0	11	2	16	0	18	35
7:15 AM	0	7	2	9	0	0	0	0	2	13	0	15	2	17	0	19	43
7:30 AM	0	6	2	8	0	0	0	0	4	16	0	20	3	14	0	17	45
7:45 AM	0	7	2	9	0	0	0	0	6	17	0	23	3	11	0	14	46
8:00 AM	0	5	2	7	0	1	1	2	5	19	1	25	4	11	0	15	49

Peak Hour Summary

Clay Carney
(503) 833-2740

Main St & 14th St

7:10 AM to 8:10 AM
Thursday, January 26, 2017

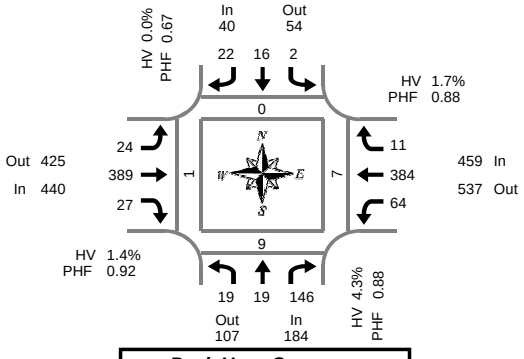


Approach	PHF	HV%	Volume
EB	0.87	3.5%	311
WB	0.87	2.9%	649
NB	0.70	8.6%	81
SB	0.58	0.0%	21
Intersection	0.93	3.5%	1,062

Count Period: 7:00 AM to 9:00 AM

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
4:35 PM to 5:35 PM

Main St & 14th St

Wednesday, January 25, 2017
4:00 PM to 6:00 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound 14th St				Westbound 14th St				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	5	2	8	0	1	3	1	0	1	37	3	0	8	23	4	0	96	0	0	1	1
4:05 PM	2	2	13	0	0	4	2	0	3	35	0	0	7	32	3	0	103	0	0	0	0
4:10 PM	2	1	10	0	0	1	1	0	2	25	0	0	4	28	2	0	76	0	1	1	1
4:15 PM	2	3	10	0	0	0	2	0	4	34	0	0	4	36	0	0	95	0	1	2	0
4:20 PM	4	1	9	0	1	1	1	0	3	40	2	0	1	19	3	0	85	0	0	2	0
4:25 PM	1	2	16	0	0	3	3	0	2	32	0	0	3	17	0	0	79	0	0	0	2
4:30 PM	0	3	18	0	0	1	3	0	2	28	2	0	5	34	0	0	96	1	0	1	0
4:35 PM	1	3	10	0	0	1	2	0	1	36	2	0	5	36	2	0	99	0	0	0	0
4:40 PM	0	0	10	0	0	2	2	0	1	42	3	0	4	30	3	0	97	0	1	2	0
4:45 PM	2	2	14	0	2	1	0	0	5	28	1	0	5	26	1	0	87	0	2	1	0
4:50 PM	2	3	9	0	0	3	1	0	1	26	2	0	4	24	1	1	76	0	1	0	0
4:55 PM	2	0	11	0	0	0	0	0	3	39	1	0	9	32	2	0	99	0	0	0	0
5:00 PM	2	1	14	0	0	1	0	0	2	30	6	2	2	35	0	0	93	0	0	0	0
5:05 PM	2	1	12	0	0	1	4	0	1	24	2	0	7	33	1	0	88	0	3	0	0
5:10 PM	3	2	15	0	0	2	3	0	0	36	3	0	6	36	1	0	107	0	2	2	1
5:15 PM	1	1	13	0	0	4	1	0	1	30	1	0	6	39	0	0	97	0	0	0	0
5:20 PM	1	2	13	0	0	1	4	0	3	26	1	0	7	36	0	0	94	0	0	0	0
5:25 PM	2	1	10	0	0	0	5	0	4	32	2	0	4	26	0	0	86	0	0	2	0
5:30 PM	1	3	15	0	0	0	0	0	2	40	3	0	5	31	0	0	100	0	0	0	0
5:35 PM	0	1	9	0	1	3	4	0	3	35	2	0	2	22	0	0	82	0	0	0	1
5:40 PM	2	1	9	0	0	2	2	0	1	30	1	0	6	20	0	0	74	0	0	0	0
5:45 PM	1	1	11	0	1	2	1	0	2	39	0	0	8	23	0	0	89	0	0	0	0
5:50 PM	1	2	16	0	0	2	0	0	3	35	2	0	9	24	1	0	95	0	0	1	1
5:55 PM	1	1	8	0	0	0	0	0	3	35	2	0	7	17	0	0	74	0	1	1	3
Total Survey	40	39	283	0	6	38	42	0	53	794	41	2	128	679	24	1	2,167	1	12	16	10

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound 14th St				Westbound 14th St				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	9	5	31	0	1	8	4	0	6	97	3	0	19	83	9	0	275	0	1	2	2
4:15 PM	7	6	35	0	1	4	6	0	9	106	2	0	8	72	3	0	259	0	1	4	2
4:30 PM	1	6	38	0	0	4	7	0	4	106	7	0	14	100	5	0	292	1	1	3	0
4:45 PM	6	5	34	0	2	4	1	0	9	93	4	0	18	82	4	1	262	0	3	1	0
5:00 PM	7	4	41	0	0	4	7	0	3	90	11	2	15	104	2	0	288	0	5	2	1
5:15 PM	4	4	36	0	0	5	10	0	8	88	4	0	17	101	0	0	277	0	0	2	0
5:30 PM	3	5	33	0	1	5	6	0	6	105	6	0	13	73	0	0	256	0	0	0	1
5:45 PM	3	4	35	0	1	4	1	0	8	109	4	0	24	64	1	0	258	0	1	2	4
Total Survey	40	39	283	0	6	38	42	0	53	794	41	2	128	679	24	1	2,167	1	12	16	10

Peak Hour Summary
4:35 PM to 5:35 PM

By Approach	Northbound Main St				Southbound Main St				Eastbound 14th St				Westbound 14th St				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	184	107	291	0	40	54	94	0	440	425	865	2	459	537	996	1	1,123	0	9	7	1
%HV	4.3%				0.0%				1.4%				1.7%				2.0%				
PHF	0.88				0.67				0.92				0.88				0.94				

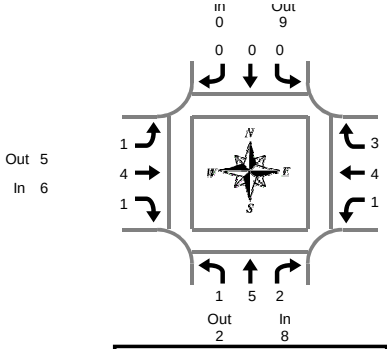
By Movement	Northbound Main St				Southbound Main St				Eastbound 14th St				Westbound 14th St				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	19	19	146	184	2	16	22	40	24	389	27	440	64	384	11	459	1,123
%HV	5.3%	26.3%	1.4%	4.3%	0.0%	0.0%	0.0%	0.0%	4.2%	1.0%	3.7%	1.4%	1.6%	1.0%	27.3%	1.7%	2.0%
PHF	0.68	0.79	0.89	0.88	0.25	0.57	0.55	0.67	0.67	0.92	0.61	0.92	0.84	0.86	0.46	0.88	0.94

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound 14th St				Westbound 14th St				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	23	22	138	0	4	20	18	0	28	402	16	0	59	337	21	1	1,088	1	6	10	4
4:15 PM	21	21	148	0	3	16	21	0	25	395	24	2	55	358	14	1	1,101	1	10	10	3
4:30 PM	18	19	149	0	2	17	25	0	24	377	26	2	64	387	11	1	1,119	1	9	8	1
4:45 PM	20	18	144	0	3	18	24	0	26	376	25	2	63	360	6	1	1,083	0	8	5	2
5:00 PM	17	17	145	0	2	18	24	0	25	392	25	2	69	342	3	0	1,079	0	6	6	6

Heavy Vehicle Summary

Clay Carney
(503) 833-2740



Peak Hour Summary
4:35 PM to 5:35 PM

Main St & 14th St

Wednesday, January 25, 2017
4:00 PM to 6:00 PM

Heavy Vehicle 5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound 14th St				Westbound 14th St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	1	1	2	0	0	0	0	0	1	0	1	2	0	0	2	5
4:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
4:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
4:15 PM	0	0	1	1	0	0	0	0	1	2	0	3	0	0	0	0	4
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	1	0	1	0	1	0	1	2
4:30 PM	0	2	0	2	0	0	0	0	1	0	0	1	0	2	0	2	5
4:35 PM	0	0	1	1	0	0	0	0	0	1	0	1	0	0	2	2	4
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	1	1	1
4:50 PM	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
4:55 PM	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	2
5:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
5:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
5:10 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	2
5:20 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	3	0	3	4
5:25 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
5:30 PM	0	2	1	3	0	0	0	0	0	0	0	0	0	0	0	0	3
5:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:40 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
5:45 PM	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	2
5:50 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	2
5:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Total Survey	1	10	5	16	0	0	0	0	3	9	1	13	3	11	3	17	46

Heavy Vehicle 15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound 14th St				Westbound 14th St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	1	1	2	0	0	0	0	0	1	0	1	2	2	0	4	7
4:15 PM	0	0	1	1	0	0	0	0	1	3	0	4	0	1	0	1	6
4:30 PM	0	2	1	3	0	0	0	0	1	1	0	2	0	2	2	4	9
4:45 PM	1	1	0	2	0	0	0	0	1	1	0	2	0	0	1	1	5
5:00 PM	0	1	0	1	0	0	0	0	0	1	0	1	1	0	0	1	3
5:15 PM	0	1	0	1	0	0	0	0	0	1	1	2	0	4	0	4	7
5:30 PM	0	2	1	3	0	0	0	0	0	1	0	1	0	0	0	0	4
5:45 PM	0	2	1	3	0	0	0	0	0	0	0	0	0	2	0	2	5
Total Survey	1	10	5	16	0	0	0	0	3	9	1	13	3	11	3	17	46

Heavy Vehicle Peak Hour Summary
4:35 PM to 5:35 PM

By Approach	Northbound Main St			Southbound Main St			Eastbound 14th St			Westbound 14th St			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	8	2	10	0	9	9	6	5	11	8	6	14	22
PHF	0.67			0.00			0.50			0.50			0.69

By Movement	Northbound Main St				Southbound Main St				Eastbound 14th St				Westbound 14th St				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	1	5	2	8	0	0	0	0	1	4	1	6	1	4	3	8	22
PHF	0.25	0.63	0.50	0.67	0.00	0.00	0.00	0.00	0.25	0.50	0.25	0.50	0.25	0.25	0.25	0.50	0.69

Heavy Vehicle Rolling Hour Summary
4:00 PM to 6:00 PM

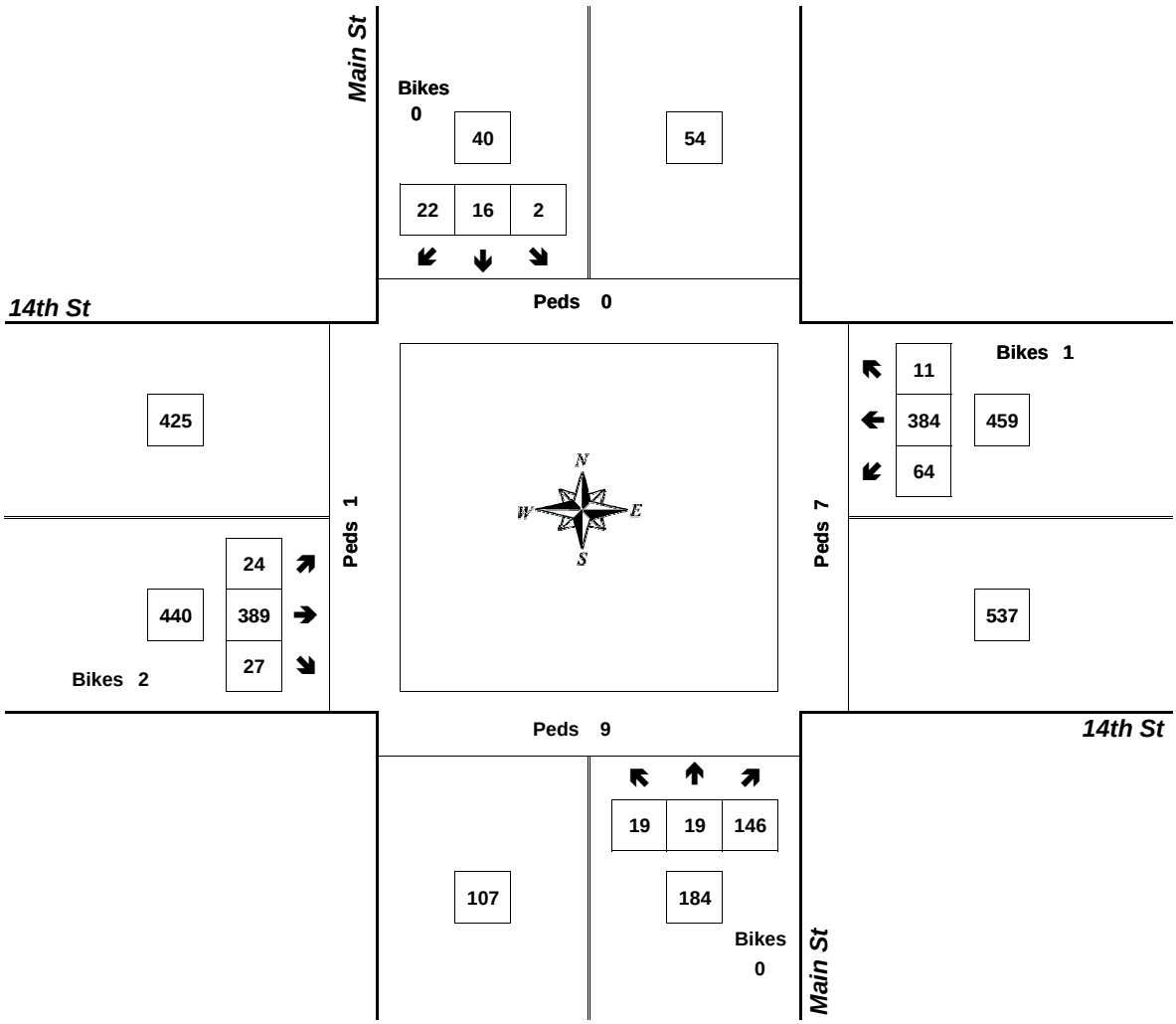
Interval Start Time	Northbound Main St				Southbound Main St				Eastbound 14th St				Westbound 14th St				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	1	4	3	8	0	0	0	0	3	6	0	9	2	5	3	10	27
4:15 PM	1	4	2	7	0	0	0	0	3	6	0	9	1	3	3	7	23
4:30 PM	1	5	1	7	0	0	0	0	2	4	1	7	1	6	3	10	24
4:45 PM	1	5	1	7	0	0	0	0	1	4	1	6	1	4	1	6	19
5:00 PM	0	6	2	8	0	0	0	0	0	3	1	4	1	6	0	7	19

Peak Hour Summary

Clay Carney
(503) 833-2740

Main St & 14th St

4:35 PM to 5:35 PM
Wednesday, January 25, 2017

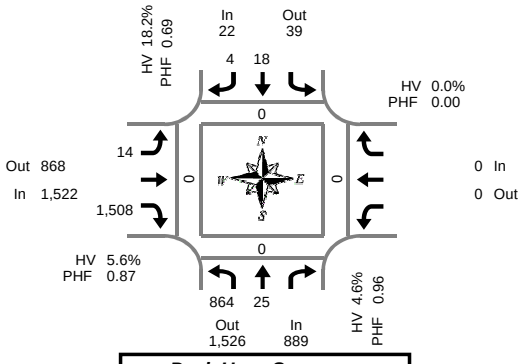


Approach	PHF	HV%	Volume
EB	0.92	1.4%	440
WB	0.88	1.7%	459
NB	0.88	4.3%	184
SB	0.67	0.0%	40
Intersection	0.94	2.0%	1,123

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Hwy 213 & I-205 SB Ramp

Wednesday, May 03, 2017
7:00 AM to 9:00 AM

Peak Hour Summary
7:20 AM to 8:20 AM

5-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound I-205 SB Ramp				Westbound I-205 SB Ramp				Interval Total	Pedestrians Crosswalk			
	L	T		Bikes	T	R		Bikes	L	R		Bikes				Bikes		North	South	East	West
7:00 AM	75	1		0	2	0		0	0	93		0				0	171	0	0	0	0
7:05 AM	58	3		0	2	0		0	0	117		0				0	180	0	0	0	0
7:10 AM	77	0		1	0	0		0	0	110		0				0	187	0	0	0	0
7:15 AM	58	2		1	2	0		0	1	99		0				0	162	0	0	0	0
7:20 AM	68	0		0	2	0		0	2	102		0				0	174	0	0	0	0
7:25 AM	75	2		0	1	0		0	0	116		0				0	194	0	0	0	0
7:30 AM	73	0		2	0	2		0	0	121		0				0	196	0	0	0	0
7:35 AM	73	3		0	1	1		0	1	106		0				0	185	0	0	0	0
7:40 AM	64	0		0	0	1		0	0	120		0				0	185	0	0	0	0
7:45 AM	71	2		0	2	0		0	1	146		0				0	222	0	0	0	0
7:50 AM	77	1		0	2	0		0	0	134		0				0	214	0	0	0	0
7:55 AM	69	2		0	1	0		0	2	142		0				0	216	0	0	0	0
8:00 AM	73	5		0	1	0		0	0	158		0				0	237	0	0	0	0
8:05 AM	72	1		1	2	0		0	4	109		0				0	188	0	0	0	0
8:10 AM	69	6		0	3	0		0	3	134		0				0	215	0	0	0	0
8:15 AM	80	3		0	3	0		0	1	120		0				0	207	0	0	0	0
8:20 AM	55	2		0	3	1		1	4	103		0				0	168	0	0	0	0
8:25 AM	40	3		0	1	0		0	0	115		0				0	159	0	0	0	0
8:30 AM	65	2		0	2	0		0	2	145		0				0	216	0	0	0	0
8:35 AM	54	5		0	4	0		0	3	118		0				0	184	0	0	0	0
8:40 AM	57	0		0	2	0		0	1	108		0				0	168	0	0	0	0
8:45 AM	55	2		0	0	0		0	1	144		0				0	202	0	0	0	0
8:50 AM	54	3		0	1	0		0	0	127		0				0	185	0	0	0	0
8:55 AM	59	6		0	4	1		0	1	128		0				0	199	0	0	0	0
Total Survey	1,571	54		5	41	6		1	27	2,915		0				0	4,614	0	0	0	0

15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound I-205 SB Ramp				Westbound I-205 SB Ramp				Interval Total	Pedestrians Crosswalk			
	L	T		Bikes	T	R		Bikes	L	R		Bikes				Bikes		North	South	East	West
7:00 AM	210	4		1	4	0		0	0	320		0				0	538	0	0	0	0
7:15 AM	201	4		1	5	0		0	3	317		0				0	530	0	0	0	0
7:30 AM	210	3		2	1	4		0	1	347		0				0	566	0	0	0	0
7:45 AM	217	5		0	5	0		0	3	422		0				0	652	0	0	0	0
8:00 AM	214	12		1	6	0		0	7	401		0				0	640	0	0	0	0
8:15 AM	175	8		0	7	1		1	5	338		0				0	534	0	0	0	0
8:30 AM	176	7		0	8	0		0	6	371		0				0	568	0	0	0	0
8:45 AM	168	11		0	5	1		0	2	399		0				0	586	0	0	0	0
Total Survey	1,571	54		5	41	6		1	27	2,915		0				0	4,614	0	0	0	0

Peak Hour Summary
7:20 AM to 8:20 AM

By Approach	Northbound Hwy 213				Southbound Hwy 213				Eastbound I-205 SB Ramp				Westbound I-205 SB Ramp				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	889	1,526	2,415	3	22	39	61	0	1,522	868	2,390	0	0	0	0	0	2,433	0	0	0	0
%HV	4.6%				18.2%				5.6%				0.0%				5.3%				
PHF	0.96				0.69				0.87				0.00				0.91				

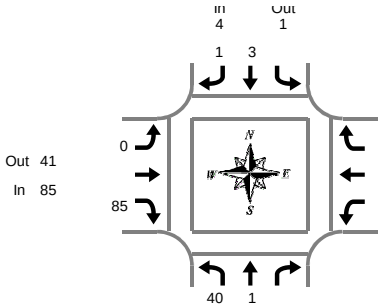
By Movement	Northbound Hwy 213				Southbound Hwy 213				Eastbound I-205 SB Ramp				Westbound I-205 SB Ramp				Total
	L	T		Total	T	R		Total	L	R		Total				Total	
Volume	864	25		889	18	4		22	14	1,508		1,522				0	2,433
%HV	4.6%	4.0%	NA	4.6%	16.7%	25.0%		18.2%	0.0%	5.6%		5.6%	NA	NA	NA	0.0%	5.3%
PHF	0.98	0.52		0.96	0.56	0.25		0.69	0.44	0.87		0.87				0.00	0.91

Rolling Hour Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound I-205 SB Ramp				Westbound I-205 SB Ramp				Interval Total	Pedestrians Crosswalk			
	L	T		Bikes	T	R		Bikes	L	R		Bikes				Bikes		North	South	East	West
7:00 AM	838	16		4	15	4		0	7	1,406		0				0	2,286	0	0	0	0
7:15 AM	842	24		4	17	4		0	14	1,487		0				0	2,388	0	0	0	0
7:30 AM	816	28		3	19	5		1	16	1,508		0				0	2,392	0	0	0	0
7:45 AM	782	32		1	26	1		1	21	1,532		0				0	2,394	0	0	0	0
8:00 AM	733	38		1	26	2		1	20	1,509		0				0	2,328	0	0	0	0

Heavy Vehicle Summary

Clay Carney
(503) 833-2740



Hwy 213 & I-205 SB Ramp

Wednesday, May 03, 2017
7:00 AM to 9:00 AM

Peak Hour Summary
7:20 AM to 8:20 AM

Heavy Vehicle 5-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound I-205 SB Ramp				Westbound I-205 SB Ramp				Interval Total
	L	T		Total	T	R	Total		L		R	Total				Total	
7:00 AM	2	0		2	1	0	1		0		5	5				0	8
7:05 AM	2	1		3	0	0	0		0		9	9				0	12
7:10 AM	8	0		8	0	0	0		0		5	5				0	13
7:15 AM	3	0		3	0	0	0		0		6	6				0	9
7:20 AM	7	0		7	2	0	2		0		4	4				0	13
7:25 AM	3	0		3	0	0	0		0		3	3				0	6
7:30 AM	2	0		2	0	0	0		0		6	6				0	8
7:35 AM	2	1		3	0	0	0		0		2	2				0	5
7:40 AM	5	0		5	0	1	1		0		1	1				0	7
7:45 AM	3	0		3	0	0	0		0		8	8				0	11
7:50 AM	1	0		1	1	0	1		0		10	10				0	12
7:55 AM	5	0		5	0	0	0		0		12	12				0	17
8:00 AM	4	0		4	0	0	0		0		3	3				0	7
8:05 AM	4	0		4	0	0	0		0		12	12				0	16
8:10 AM	2	0		2	0	0	0		0		12	12				0	14
8:15 AM	2	0		2	0	0	0		0		12	12				0	14
8:20 AM	6	0		6	0	0	0		0		9	9				0	15
8:25 AM	2	0		2	0	0	0		0		9	9				0	11
8:30 AM	3	0		3	0	0	0		1		14	15				0	18
8:35 AM	2	0		2	0	0	0		0		10	10				0	12
8:40 AM	5	0		5	0	0	0		0		10	10				0	15
8:45 AM	4	0		4	0	0	0		0		9	9				0	13
8:50 AM	4	0		4	0	0	0		0		11	11				0	15
8:55 AM	4	0		4	0	0	0		0		11	11				0	15
Total Survey	85	2		87	4	1	5		1		193	194				0	286

Heavy Vehicle 15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound I-205 SB Ramp				Westbound I-205 SB Ramp				Interval Total
	L	T		Total	T	R	Total		L		R	Total				Total	
7:00 AM	12	1		13	1	0	1		0		19	19				0	33
7:15 AM	13	0		13	2	0	2		0		13	13				0	28
7:30 AM	9	1		10	0	1	1		0		9	9				0	20
7:45 AM	9	0		9	1	0	1		0		30	30				0	40
8:00 AM	10	0		10	0	0	0		0		27	27				0	37
8:15 AM	10	0		10	0	0	0		0		30	30				0	40
8:30 AM	10	0		10	0	0	0		1		34	35				0	45
8:45 AM	12	0		12	0	0	0		0		31	31				0	43
Total Survey	85	2		87	4	1	5		1		193	194				0	286

Heavy Vehicle Peak Hour Summary
7:20 AM to 8:20 AM

By Approach	Northbound Hwy 213			Southbound Hwy 213			Eastbound I-205 SB Ramp			Westbound I-205 SB Ramp			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	41	88	129	4	1	5	85	41	126	0	0	0	130
PHF	0.79			0.50			0.59			0.00			0.74

By Movement	Northbound Hwy 213				Southbound Hwy 213				Eastbound I-205 SB Ramp				Westbound I-205 SB Ramp				Total
	L	T		Total	T	R	Total		L		R	Total				Total	
Volume	40	1		41	3	1	4		0		85	85				0	130
PHF	0.77	0.25		0.79	0.38	0.25	0.50		0.00		0.59	0.59				0.00	0.74

Heavy Vehicle Rolling Hour Summary
7:00 AM to 9:00 AM

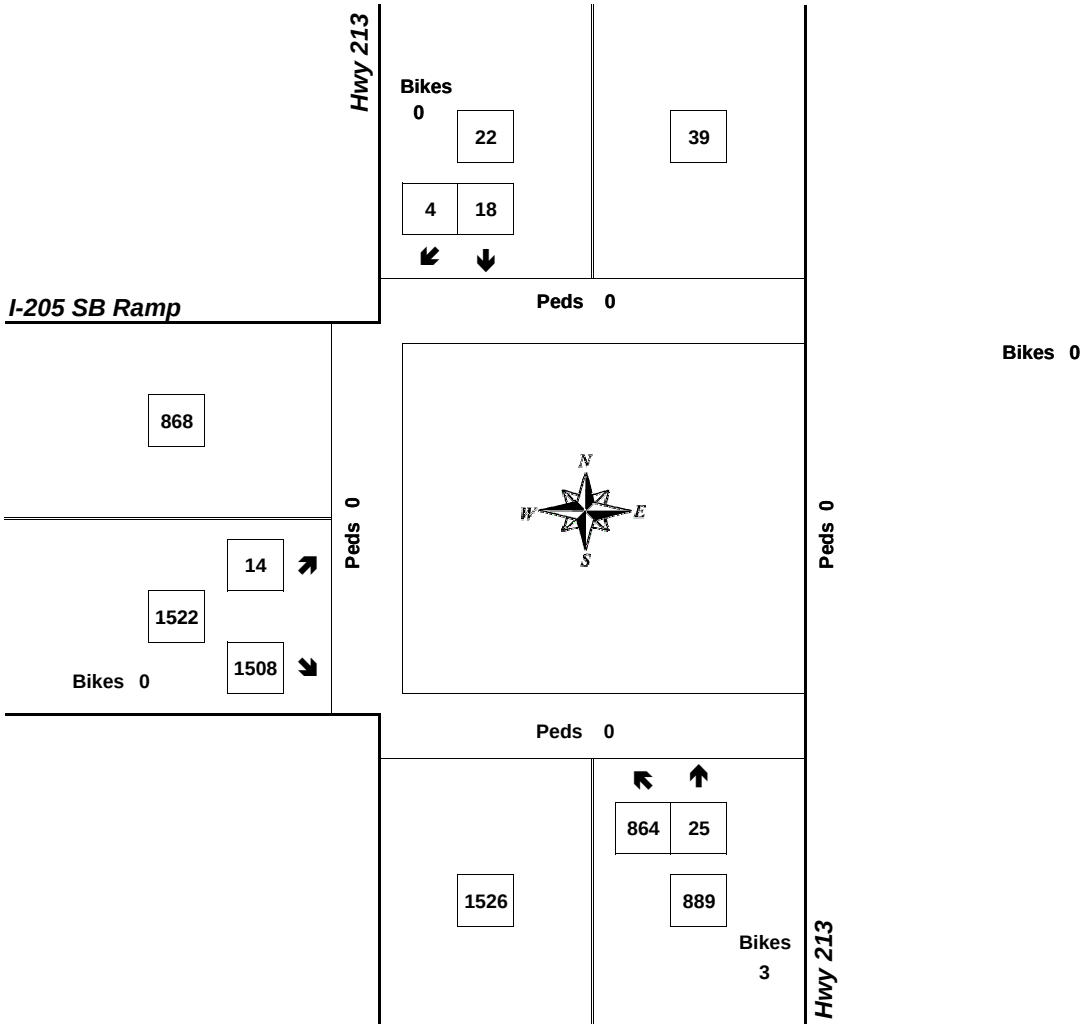
Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound I-205 SB Ramp				Westbound I-205 SB Ramp				Interval Total
	L	T		Total	T	R	Total		L		R	Total				Total	
7:00 AM	43	2		45	4	1	5		0		71	71				0	121
7:15 AM	41	1		42	3	1	4		0		79	79				0	125
7:30 AM	38	1		39	1	1	2		0		96	96				0	137
7:45 AM	39	0		39	1	0	1		1		121	122				0	162
8:00 AM	42	0		42	0	0	0		1		122	123				0	165

Peak Hour Summary

Clay Carney
(503) 833-2740

Hwy 213 & I-205 SB Ramp

7:20 AM to 8:20 AM
Wednesday, May 03, 2017

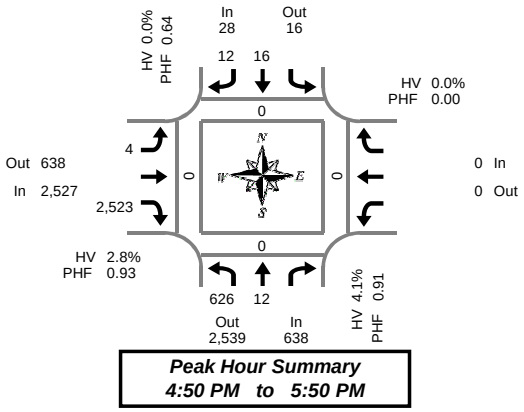


Approach	PHF	HV%	Volume
EB	0.87	5.6%	1,522
WB	0.00	0.0%	0
NB	0.96	4.6%	889
SB	0.69	18.2%	22
Intersection	0.91	5.3%	2,433

Count Period: 7:00 AM to 9:00 AM

Total Vehicle Summary

Clay Carney
(503) 833-2740



Hwy 213 & I-205 SB Ramp

Tuesday, May 02, 2017
4:00 PM to 6:00 PM

Peak Hour Summary
4:50 PM to 5:50 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound I-205 SB Ramp				Westbound I-205 SB Ramp				Interval Total	Pedestrians Crosswalk			
	L	T		Bikes	T	R	Bikes		L	R	Bikes					Bikes		North	South	East	West
4:00 PM	58	1		0	1	1	0		0	180	0					0	241	0	0	0	0
4:05 PM	63	0		0	2	1	0		1	197	0					0	264	0	0	0	0
4:10 PM	58	1		0	0	1	0		0	191	0					0	251	0	0	0	0
4:15 PM	52	1		0	1	0	0		0	178	0					0	232	0	0	0	0
4:20 PM	51	4		0	4	3	0		0	165	0					0	227	0	0	0	0
4:25 PM	55	0		0	2	4	0		1	171	0					0	233	0	0	0	0
4:30 PM	43	0		0	2	1	0		0	173	0					0	219	0	0	0	0
4:35 PM	60	0		0	2	1	0		0	183	0					0	246	0	0	0	0
4:40 PM	52	1		0	2	0	0		0	201	0					0	256	0	0	0	0
4:45 PM	49	3		0	1	0	0		2	172	0					0	227	0	0	0	0
4:50 PM	50	1		0	1	3	0		0	183	0					0	238	0	0	0	0
4:55 PM	62	1		0	1	1	0		0	202	0					0	267	0	0	0	0
5:00 PM	61	1		0	2	3	0		1	208	0					0	276	0	0	0	0
5:05 PM	50	1		0	2	0	0		1	228	0					0	282	0	0	0	0
5:10 PM	58	3		0	3	0	0		0	225	0					0	289	0	0	0	0
5:15 PM	51	2		0	2	1	0		0	216	0					0	272	0	0	0	0
5:20 PM	57	1		0	3	1	0		0	235	0					0	297	0	0	0	0
5:25 PM	51	0		0	1	0	0		0	197	0					0	249	0	0	0	0
5:30 PM	48	1		0	0	1	0		2	206	0					0	258	0	0	0	0
5:35 PM	39	1		0	1	1	0		0	215	0					0	257	0	0	0	0
5:40 PM	48	0		0	0	1	0		0	214	0					0	263	0	0	0	0
5:45 PM	51	0		0	0	0	0		0	194	0					0	245	0	0	0	0
5:50 PM	42	0		0	1	1	0		0	183	0					0	227	0	0	0	0
5:55 PM	39	2		0	2	0	0		0	181	0					0	224	0	0	0	0
Total Survey	1,248	25		0	36	25	0		8	4,698	0					0	6,040	0	0	0	0

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound I-205 SB Ramp				Westbound I-205 SB Ramp				Interval Total	Pedestrians Crosswalk			
	L	T		Bikes	T	R	Bikes		L	R	Bikes					Bikes		North	South	East	West
4:00 PM	179	2		0	3	3	0		1	568	0					0	756	0	0	0	0
4:15 PM	158	5		0	7	7	0		1	514	0					0	692	0	0	0	0
4:30 PM	155	1		0	6	2	0		0	557	0					0	721	0	0	0	0
4:45 PM	161	5		0	3	4	0		2	557	0					0	732	0	0	0	0
5:00 PM	169	5		0	7	3	0		2	661	0					0	847	0	0	0	0
5:15 PM	159	3		0	6	2	0		0	648	0					0	818	0	0	0	0
5:30 PM	135	2		0	1	3	0		2	635	0					0	778	0	0	0	0
5:45 PM	132	2		0	3	1	0		0	558	0					0	696	0	0	0	0
Total Survey	1,248	25		0	36	25	0		8	4,698	0					0	6,040	0	0	0	0

Peak Hour Summary
4:50 PM to 5:50 PM

By Approach	Northbound Hwy 213				Southbound Hwy 213				Eastbound I-205 SB Ramp				Westbound I-205 SB Ramp				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	638	2,539	3,177	0	28	16	44	0	2,527	638	3,165	0	0	0	0	0	3,193	0	0	0	0
%HV	4.1%				0.0%				2.8%				0.0%				3.0%				
PHF	0.91				0.64				0.93				0.00				0.93				

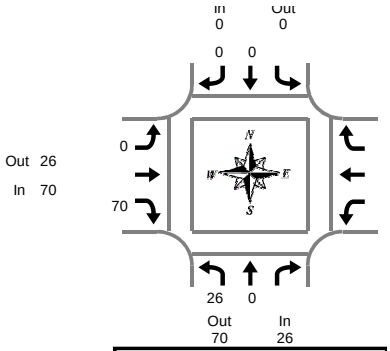
By Movement	Northbound Hwy 213				Southbound Hwy 213				Eastbound I-205 SB Ramp				Westbound I-205 SB Ramp				Total
	L	T		Total	T	R	Total		L	R	Total					Total	
Volume	626	12		638	16	12	28		4	2,523	2,527					0	3,193
%HV	4.2%	0.0%	NA	4.1%	0.0%	0.0%	0.0%		0.0%	2.8%	2.8%		NA	NA	NA	0.0%	3.0%
PHF	0.90	0.50		0.91	0.50	0.43	0.64		0.50	0.93	0.93					0.00	0.93

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound I-205 SB Ramp				Westbound I-205 SB Ramp				Interval Total	Pedestrians Crosswalk			
	L	T		Bikes	T	R	Bikes		L	R	Bikes					Bikes		North	South	East	West
4:00 PM	653	13		0	19	16	0		4	2,196	0					0	2,901	0	0	0	0
4:15 PM	643	16		0	23	16	0		5	2,289	0					0	2,992	0	0	0	0
4:30 PM	644	14		0	22	11	0		4	2,423	0					0	3,118	0	0	0	0
4:45 PM	624	15		0	17	12	0		6	2,501	0					0	3,175	0	0	0	0
5:00 PM	595	12		0	17	9	0		4	2,502	0					0	3,139	0	0	0	0

Heavy Vehicle Summary

Clay Carney
(503) 833-2740



Hwy 213 & I-205 SB Ramp

Tuesday, May 02, 2017
4:00 PM to 6:00 PM

Peak Hour Summary
4:50 PM to 5:50 PM

Heavy Vehicle 5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound I-205 SB Ramp				Westbound I-205 SB Ramp				Interval Total
	L	T		Total	T	R	Total		L		R	Total				Total	
4:00 PM	2	0		2	0	0	0		0		6	6				0	8
4:05 PM	1	0		1	0	0	0		0		7	7				0	8
4:10 PM	1	0		1	0	0	0		0		6	6				0	7
4:15 PM	1	0		1	0	0	0		0		7	7				0	8
4:20 PM	1	1		2	0	0	0		0		1	1				0	3
4:25 PM	2	0		2	1	0	1		0		2	2				0	5
4:30 PM	0	0		0	0	0	0		0		7	7				0	7
4:35 PM	2	0		2	0	0	0		0		6	6				0	8
4:40 PM	2	0		2	0	0	0		0		3	3				0	5
4:45 PM	0	0		0	0	0	0		0		3	3				0	3
4:50 PM	2	0		2	0	0	0		0		5	5				0	7
4:55 PM	3	0		3	0	0	0		0		2	2				0	5
5:00 PM	2	0		2	0	0	0		0		7	7				0	9
5:05 PM	1	0		1	0	0	0		0		5	5				0	6
5:10 PM	2	0		2	0	0	0		0		8	8				0	10
5:15 PM	4	0		4	0	0	0		0		8	8				0	12
5:20 PM	0	0		0	0	0	0		0		7	7				0	7
5:25 PM	2	0		2	0	0	0		0		8	8				0	10
5:30 PM	5	0		5	0	0	0		0		5	5				0	10
5:35 PM	0	0		0	0	0	0		0		4	4				0	4
5:40 PM	2	0		2	0	0	0		0		4	4				0	6
5:45 PM	3	0		3	0	0	0		0		7	7				0	10
5:50 PM	1	0		1	0	0	0		0		6	6				0	7
5:55 PM	0	0		0	0	0	0		0		5	5				0	5
Total Survey	39	1		40	1	0	1		0		129	129				0	170

Heavy Vehicle 15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound I-205 SB Ramp				Westbound I-205 SB Ramp				Interval Total
	L	T		Total	T	R	Total		L		R	Total				Total	
4:00 PM	4	0		4	0	0	0		0		19	19				0	23
4:15 PM	4	1		5	1	0	1		0		10	10				0	16
4:30 PM	4	0		4	0	0	0		0		16	16				0	20
4:45 PM	5	0		5	0	0	0		0		10	10				0	15
5:00 PM	5	0		5	0	0	0		0		20	20				0	25
5:15 PM	6	0		6	0	0	0		0		23	23				0	29
5:30 PM	7	0		7	0	0	0		0		13	13				0	20
5:45 PM	4	0		4	0	0	0		0		18	18				0	22
Total Survey	39	1		40	1	0	1		0		129	129				0	170

Heavy Vehicle Peak Hour Summary
4:50 PM to 5:50 PM

By Approach	Northbound Hwy 213			Southbound Hwy 213			Eastbound I-205 SB Ramp			Westbound I-205 SB Ramp			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	26	70	96	0	0	0	70	26	96	0	0	0	96
PHF	0.93			0.00			0.76			0.00			0.83

By Movement	Northbound Hwy 213				Southbound Hwy 213				Eastbound I-205 SB Ramp				Westbound I-205 SB Ramp				Total
	L	T		Total	T	R	Total		L		R	Total				Total	
Volume	26	0		26	0	0	0		0		70	70				0	96
PHF	0.93	0.00		0.93	0.00	0.00	0.00		0.00		0.76	0.76				0.00	0.83

Heavy Vehicle Rolling Hour Summary
4:00 PM to 6:00 PM

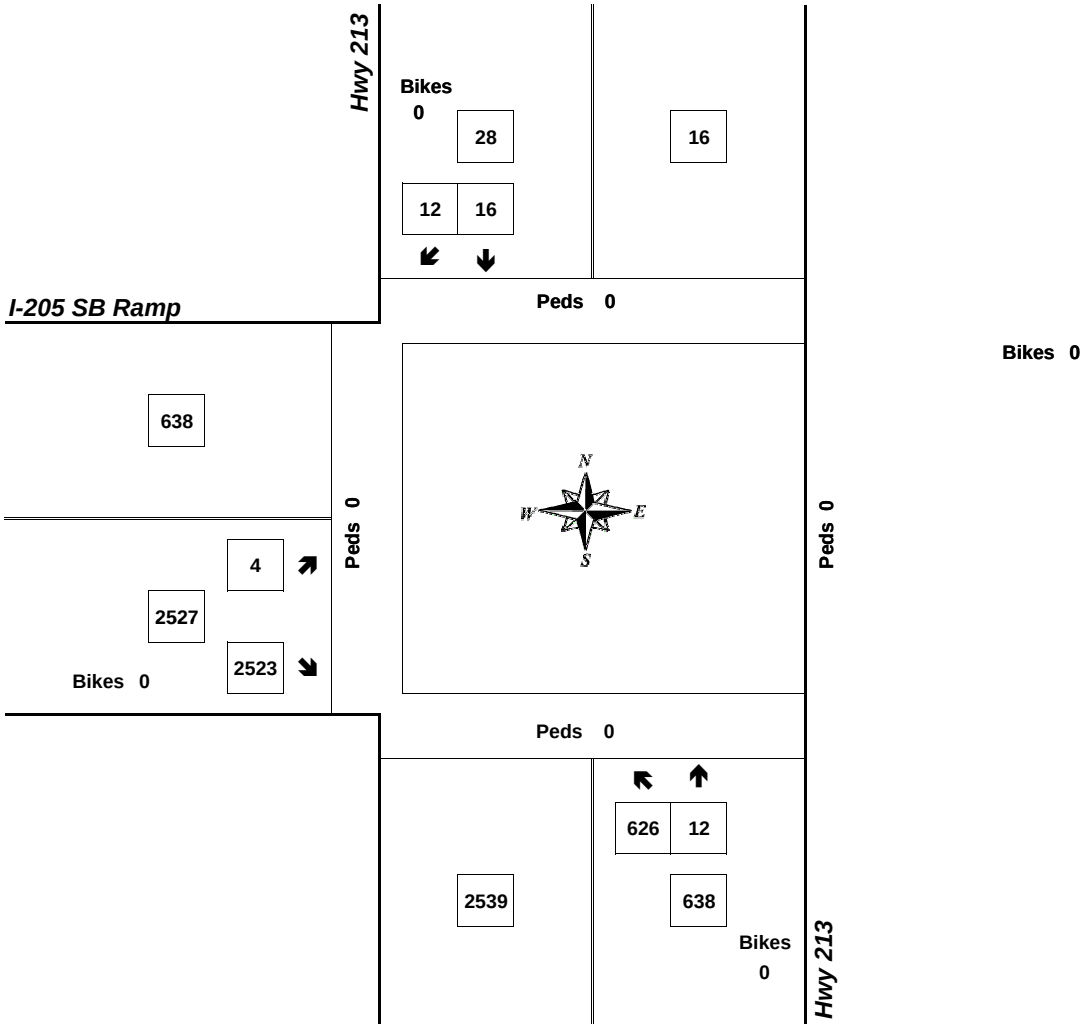
Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound I-205 SB Ramp				Westbound I-205 SB Ramp				Interval Total
	L	T		Total	T	R	Total		L		R	Total				Total	
4:00 PM	17	1		18	1	0	1		0		55	55				0	74
4:15 PM	18	1		19	1	0	1		0		56	56				0	76
4:30 PM	20	0		20	0	0	0		0		69	69				0	89
4:45 PM	23	0		23	0	0	0		0		66	66				0	89
5:00 PM	22	0		22	0	0	0		0		74	74				0	96

Peak Hour Summary

Clay Carney
(503) 833-2740

Hwy 213 & I-205 SB Ramp

4:50 PM to 5:50 PM
Tuesday, May 02, 2017

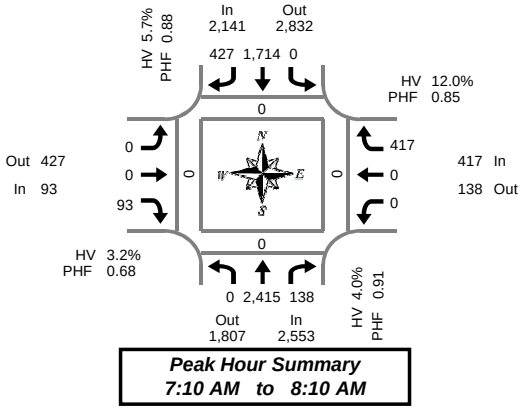


Approach	PHF	HV%	Volume
EB	0.93	2.8%	2,527
WB	0.00	0.0%	0
NB	0.91	4.1%	638
SB	0.64	0.0%	28
Intersection	0.93	3.0%	3,193

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
7:10 AM to 8:10 AM

Hwy 213 & Clackamas River Dr

Thursday, January 26, 2017
7:00 AM to 9:00 AM

5-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Clackamas River Dr				Westbound Clackamas River Dr				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	0	215	7	0	0	103	17	0	0	0	5	0	0	0	31	0	378	0	0	0	0
7:05 AM	0	237	8	0	0	95	24	0	0	0	4	0	0	0	33	0	401	0	0	0	0
7:10 AM	0	199	8	0	0	134	21	0	0	0	7	0	0	0	34	0	403	0	0	0	0
7:15 AM	0	239	7	0	0	118	39	0	0	0	6	0	0	0	31	0	440	0	0	0	0
7:20 AM	0	231	12	0	0	147	37	0	0	0	6	0	0	0	36	0	469	0	0	0	0
7:25 AM	0	201	8	1	0	117	40	0	0	0	9	0	0	0	52	0	427	0	0	0	0
7:30 AM	0	220	12	0	0	128	38	0	0	0	9	0	0	0	34	0	441	0	0	0	0
7:35 AM	0	188	13	0	0	146	30	0	0	0	3	0	0	0	32	0	412	0	0	0	0
7:40 AM	0	176	6	0	0	126	35	0	0	0	7	0	0	0	34	0	384	0	0	0	0
7:45 AM	0	158	12	0	0	173	40	0	0	0	10	0	0	0	44	0	437	0	0	0	0
7:50 AM	0	210	12	0	0	159	39	0	0	0	2	0	0	0	22	0	444	0	0	0	0
7:55 AM	0	188	13	0	0	162	38	0	0	0	8	0	0	0	36	0	445	0	0	0	0
8:00 AM	0	195	14	0	0	142	36	0	0	0	14	0	0	0	37	0	438	0	0	0	0
8:05 AM	0	210	21	0	0	162	34	0	0	0	12	0	0	0	25	0	464	0	0	0	0
8:10 AM	0	174	16	0	0	95	26	0	0	0	7	0	0	0	36	0	354	0	0	0	0
8:15 AM	0	150	12	0	0	108	36	1	0	0	11	0	0	0	54	0	371	0	0	0	0
8:20 AM	0	205	11	0	0	126	29	0	0	0	3	0	0	0	27	0	401	0	0	0	0
8:25 AM	0	178	16	0	0	132	37	0	0	0	6	0	0	0	37	0	406	0	0	0	0
8:30 AM	0	152	9	0	0	134	40	0	0	0	12	0	0	0	38	0	385	0	0	0	0
8:35 AM	0	155	13	0	0	173	40	0	0	0	14	0	0	0	37	0	432	0	0	0	0
8:40 AM	0	168	14	0	0	148	34	0	0	0	8	0	0	0	25	0	397	0	0	0	0
8:45 AM	0	145	18	0	0	153	47	0	0	0	3	0	0	0	33	0	399	0	0	1	0
8:50 AM	0	142	13	0	0	138	43	0	0	0	16	0	0	0	45	0	397	0	0	0	0
8:55 AM	0	183	17	0	0	110	37	0	0	0	9	0	0	0	36	0	392	0	0	0	0
Total Survey	0	4,519	292	1	0	3,229	837	1	0	0	191	0	0	0	849	0	9,917	0	0	1	0

15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Clackamas River Dr				Westbound Clackamas River Dr				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	0	651	23	0	0	332	62	0	0	0	16	0	0	0	98	0	1,182	0	0	0	0
7:15 AM	0	671	27	1	0	382	116	0	0	0	21	0	0	0	119	0	1,336	0	0	0	0
7:30 AM	0	584	31	0	0	400	103	0	0	0	19	0	0	0	100	0	1,237	0	0	0	0
7:45 AM	0	556	37	0	0	494	117	0	0	0	20	0	0	0	102	0	1,326	0	0	0	0
8:00 AM	0	579	51	0	0	399	96	0	0	0	33	0	0	0	98	0	1,256	0	0	0	0
8:15 AM	0	533	39	0	0	366	102	1	0	0	20	0	0	0	118	0	1,178	0	0	0	0
8:30 AM	0	475	36	0	0	455	114	0	0	0	34	0	0	0	100	0	1,214	0	0	0	0
8:45 AM	0	470	48	0	0	401	127	0	0	0	28	0	0	0	114	0	1,188	0	0	1	0
Total Survey	0	4,519	292	1	0	3,229	837	1	0	0	191	0	0	0	849	0	9,917	0	0	1	0

Peak Hour Summary
7:10 AM to 8:10 AM

By Approach	Northbound Hwy 213				Southbound Hwy 213				Eastbound Clackamas River Dr				Westbound Clackamas River Dr				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	2,553	1,807	4,360	1	2,141	2,832	4,973	0	93	427	520	0	417	138	555	0	5,204	0	0	0	0
%HV	4.0%				5.7%				3.2%				12.0%				5.3%				
PHF	0.91				0.88				0.68				0.85				0.97				

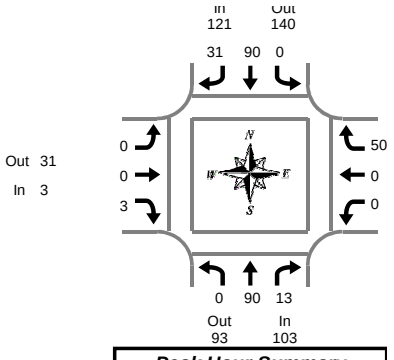
By Movement	Northbound Hwy 213				Southbound Hwy 213				Eastbound Clackamas River Dr				Westbound Clackamas River Dr				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	2,415	138	2,553	0	1,714	427	2,141	0	0	93	93	0	0	417	417	5,204
%HV	0.0%	3.7%	9.4%	4.0%	0.0%	5.3%	7.3%	5.7%	0.0%	0.0%	3.2%	3.2%	0.0%	0.0%	12.0%	12.0%	5.3%
PHF	0.00	0.90	0.72	0.91	0.00	0.87	0.91	0.88	0.00	0.00	0.68	0.68	0.00	0.00	0.85	0.85	0.97

Rolling Hour Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Clackamas River Dr				Westbound Clackamas River Dr				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	0	2,462	118	1	0	1,608	398	0	0	0	76	0	0	0	419	0	5,081	0	0	0	0
7:15 AM	0	2,390	146	1	0	1,675	432	0	0	0	93	0	0	0	419	0	5,155	0	0	0	0
7:30 AM	0	2,252	158	0	0	1,659	418	1	0	0	92	0	0	0	418	0	4,997	0	0	0	0
7:45 AM	0	2,143	163	0	0	1,714	429	1	0	0	107	0	0	0	418	0	4,974	0	0	0	0
8:00 AM	0	2,057	174	0	0	1,621	439	1	0	0	115	0	0	0	430	0	4,836	0	0	1	0

Heavy Vehicle Summary

Clay Carney
(503) 833-2740



Hwy 213 & Clackamas River Dr

Thursday, January 26, 2017
7:00 AM to 9:00 AM

Peak Hour Summary
7:10 AM to 8:10 AM

Heavy Vehicle 5-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Clackamas River Dr				Westbound Clackamas River Dr				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	0	7	0	7	0	6	2	8	0	0	0	0	0	0	1	1	16
7:05 AM	0	4	1	5	0	7	2	9	0	0	0	0	0	0	3	3	17
7:10 AM	0	5	1	6	0	6	1	7	0	0	0	0	0	0	3	3	16
7:15 AM	0	8	0	8	0	11	4	15	0	0	0	0	0	0	7	7	30
7:20 AM	0	8	3	11	0	7	2	9	0	0	0	0	0	0	4	4	24
7:25 AM	0	13	0	13	0	5	3	8	0	0	1	1	0	0	5	5	27
7:30 AM	0	2	2	4	0	6	4	10	0	0	0	0	0	0	2	2	16
7:35 AM	0	7	0	7	0	4	1	5	0	0	0	0	0	0	6	6	18
7:40 AM	0	5	0	5	0	6	3	9	0	0	0	0	0	0	2	2	16
7:45 AM	0	2	0	2	0	14	6	20	0	0	0	0	0	0	7	7	29
7:50 AM	0	5	1	6	0	2	2	4	0	0	0	0	0	0	2	2	12
7:55 AM	0	8	1	9	0	12	1	13	0	0	1	1	0	0	4	4	27
8:00 AM	0	14	2	16	0	9	1	10	0	0	1	1	0	0	4	4	31
8:05 AM	0	13	3	16	0	8	3	11	0	0	0	0	0	0	4	4	31
8:10 AM	0	9	0	9	0	8	3	11	0	0	0	0	0	0	5	5	25
8:15 AM	0	16	2	18	0	10	7	17	0	0	1	1	0	0	2	2	38
8:20 AM	0	12	1	13	0	7	3	10	0	0	0	0	0	0	4	4	27
8:25 AM	0	14	2	16	0	8	6	14	0	0	2	2	0	0	6	6	38
8:30 AM	0	10	1	11	0	11	5	16	0	0	0	0	0	0	6	6	33
8:35 AM	0	5	2	7	0	7	3	10	0	0	0	0	0	0	7	7	24
8:40 AM	0	6	4	10	0	11	4	15	0	0	0	0	0	0	3	3	28
8:45 AM	0	6	5	11	0	8	6	14	0	0	1	1	0	0	4	4	30
8:50 AM	0	10	0	10	0	13	3	16	0	0	1	1	0	0	8	8	35
8:55 AM	0	17	1	18	0	6	6	12	0	0	1	1	0	0	6	6	37
Total Survey	0	206	32	238	0	192	81	273	0	0	9	9	0	0	105	105	625

Heavy Vehicle 15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Clackamas River Dr				Westbound Clackamas River Dr				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	0	16	2	18	0	19	5	24	0	0	0	0	0	0	7	7	49
7:15 AM	0	29	3	32	0	23	9	32	0	0	1	1	0	0	16	16	81
7:30 AM	0	14	2	16	0	16	8	24	0	0	0	0	0	0	10	10	50
7:45 AM	0	15	2	17	0	28	9	37	0	0	1	1	0	0	13	13	68
8:00 AM	0	36	5	41	0	25	7	32	0	0	1	1	0	0	13	13	87
8:15 AM	0	42	5	47	0	25	16	41	0	0	3	3	0	0	12	12	103
8:30 AM	0	21	7	28	0	29	12	41	0	0	0	0	0	0	16	16	85
8:45 AM	0	33	6	39	0	27	15	42	0	0	3	3	0	0	18	18	102
Total Survey	0	206	32	238	0	192	81	273	0	0	9	9	0	0	105	105	625

Heavy Vehicle Peak Hour Summary
7:10 AM to 8:10 AM

By Approach	Northbound Hwy 213			Southbound Hwy 213			Eastbound Clackamas River Dr			Westbound Clackamas River Dr			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	103	93	196	121	140	261	3	31	34	50	13	63	277
PHF	0.63			0.82			0.38			0.78			0.78

By Movement	Northbound Hwy 213				Southbound Hwy 213				Eastbound Clackamas River Dr				Westbound Clackamas River Dr				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	90	13	103	0	90	31	121	0	0	3	3	0	0	50	50	277
PHF	0.00	0.64	0.54	0.63	0.00	0.78	0.70	0.82	0.00	0.00	0.38	0.38	0.00	0.00	0.78	0.78	0.78

Heavy Vehicle Rolling Hour Summary
7:00 AM to 9:00 AM

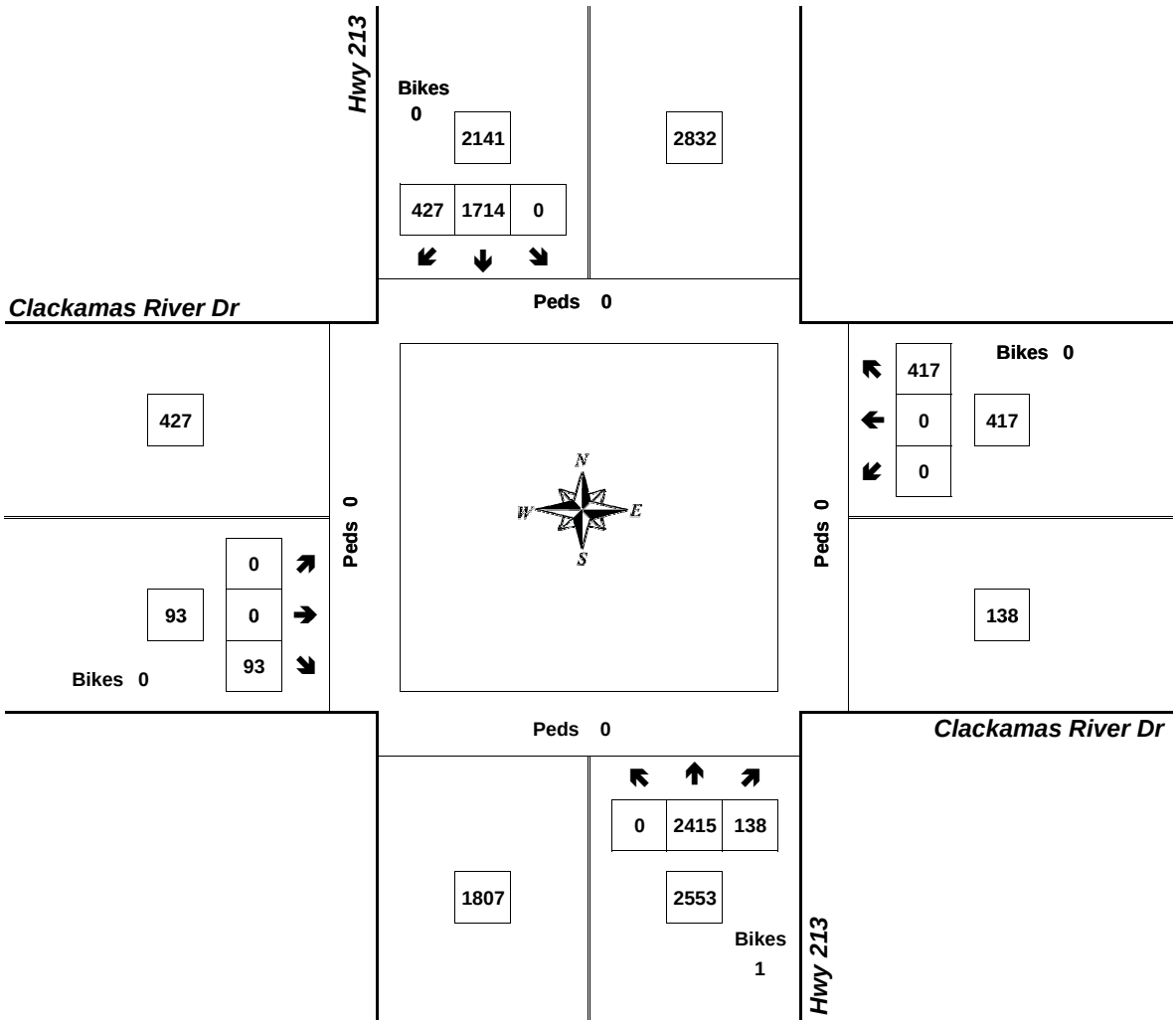
Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Clackamas River Dr				Westbound Clackamas River Dr				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	0	74	9	83	0	86	31	117	0	0	2	2	0	0	46	46	248
7:15 AM	0	94	12	106	0	92	33	125	0	0	3	3	0	0	52	52	286
7:30 AM	0	107	14	121	0	94	40	134	0	0	5	5	0	0	48	48	308
7:45 AM	0	114	19	133	0	107	44	151	0	0	5	5	0	0	54	54	343
8:00 AM	0	132	23	155	0	106	50	156	0	0	7	7	0	0	59	59	377

Peak Hour Summary

Clay Carney
(503) 833-2740

Hwy 213 & Clackamas River Dr

7:10 AM to 8:10 AM
Thursday, January 26, 2017

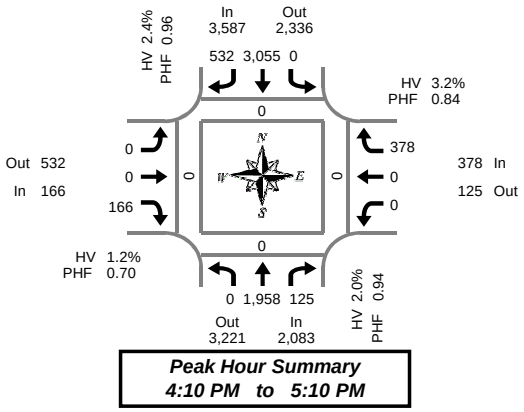


Approach	PHF	HV%	Volume
EB	0.68	3.2%	93
WB	0.85	12.0%	417
NB	0.91	4.0%	2,553
SB	0.88	5.7%	2,141
Intersection	0.97	5.3%	5,204

Count Period: 7:00 AM to 9:00 AM

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
4:10 PM to 5:10 PM

Hwy 213 & Clackamas River Dr

Wednesday, January 25, 2017
4:00 PM to 6:00 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Clackamas River Dr				Westbound Clackamas River Dr				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	0	156	13	0	0	249	49	0	0	0	14	0	0	0	24	0	505	0	0	0	0
4:05 PM	0	145	16	0	0	224	54	0	0	0	11	0	0	0	39	0	489	0	0	0	0
4:10 PM	0	194	11	0	0	264	49	0	0	0	11	0	0	0	35	0	564	0	0	0	0
4:15 PM	0	170	14	0	0	283	41	0	0	0	13	0	0	0	24	0	545	0	0	0	0
4:20 PM	0	155	10	0	0	250	46	0	0	0	14	0	0	0	24	0	499	0	0	0	0
4:25 PM	0	141	10	0	0	254	46	0	0	0	11	0	0	0	43	0	505	0	0	0	0
4:30 PM	0	170	12	0	0	241	52	0	0	0	11	0	0	0	35	0	521	0	0	0	0
4:35 PM	0	168	8	0	0	246	52	0	0	0	12	0	0	0	34	0	520	0	0	0	0
4:40 PM	0	139	12	0	0	225	42	0	0	0	34	0	0	0	29	0	481	0	0	0	0
4:45 PM	0	190	7	0	0	277	47	0	0	0	13	0	0	0	33	0	567	0	0	0	0
4:50 PM	0	162	11	0	0	270	36	0	0	0	11	0	0	0	27	0	517	0	0	0	0
4:55 PM	0	128	7	0	0	217	44	0	0	0	21	0	0	0	27	0	444	0	0	0	0
5:00 PM	0	169	9	0	0	271	37	0	0	0	10	0	0	0	31	0	527	0	0	0	0
5:05 PM	0	172	14	0	0	257	40	0	0	0	5	0	0	0	36	0	524	0	0	0	0
5:10 PM	0	172	11	0	0	235	41	0	0	0	16	0	0	0	40	0	515	0	0	0	0
5:15 PM	0	163	14	0	0	261	45	0	0	0	19	0	0	0	33	0	535	0	0	0	0
5:20 PM	0	190	14	0	0	248	37	0	0	0	12	0	0	0	20	0	521	0	0	0	0
5:25 PM	0	148	17	0	0	261	30	0	0	0	8	0	0	0	29	0	493	0	0	0	0
5:30 PM	0	115	10	0	0	238	39	0	0	0	13	0	0	0	27	0	442	0	0	0	0
5:35 PM	0	154	5	0	0	249	36	0	0	0	9	0	0	0	32	0	485	0	0	0	0
5:40 PM	0	167	15	0	0	215	36	0	0	0	10	0	0	0	17	0	460	0	0	0	0
5:45 PM	0	154	9	0	0	214	33	0	0	0	9	0	0	0	21	0	440	0	0	0	0
5:50 PM	0	165	8	0	0	252	36	0	0	0	5	0	0	0	22	0	488	0	0	0	0
5:55 PM	0	114	12	0	0	219	41	0	0	0	14	0	0	0	18	0	418	0	0	0	0
Total Survey	0	3,801	269	0	0	5,920	1,009	0	0	0	306	0	0	0	700	0	12,005	0	0	0	0

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Clackamas River Dr				Westbound Clackamas River Dr				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	0	495	40	0	0	737	152	0	0	0	36	0	0	0	98	0	1,558	0	0	0	0
4:15 PM	0	466	34	0	0	787	133	0	0	0	38	0	0	0	91	0	1,549	0	0	0	0
4:30 PM	0	477	32	0	0	712	146	0	0	0	57	0	0	0	98	0	1,522	0	0	0	0
4:45 PM	0	480	25	0	0	764	127	0	0	0	45	0	0	0	87	0	1,528	0	0	0	0
5:00 PM	0	513	34	0	0	763	118	0	0	0	31	0	0	0	107	0	1,566	0	0	0	0
5:15 PM	0	501	45	0	0	770	112	0	0	0	39	0	0	0	82	0	1,549	0	0	0	0
5:30 PM	0	436	30	0	0	702	111	0	0	0	32	0	0	0	76	0	1,387	0	0	0	0
5:45 PM	0	433	29	0	0	685	110	0	0	0	28	0	0	0	61	0	1,346	0	0	0	0
Total Survey	0	3,801	269	0	0	5,920	1,009	0	0	0	306	0	0	0	700	0	12,005	0	0	0	0

Peak Hour Summary
4:10 PM to 5:10 PM

By Approach	Northbound Hwy 213				Southbound Hwy 213				Eastbound Clackamas River Dr				Westbound Clackamas River Dr				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	2,083	3,221	5,304	0	3,587	2,336	5,923	0	166	532	698	0	378	125	503	0	6,214	0	0	0	0
%HV	2.0%				2.4%				1.2%				3.2%				2.3%				
PHF	0.94				0.96				0.70				0.84				0.97				

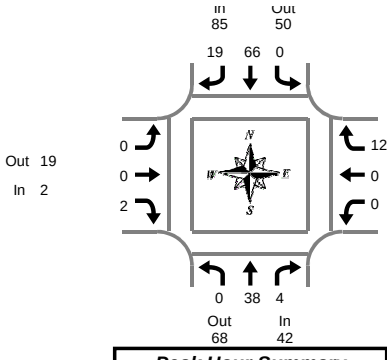
By Movement	Northbound Hwy 213				Southbound Hwy 213				Eastbound Clackamas River Dr				Westbound Clackamas River Dr				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	1,958	125	2,083	0	3,055	532	3,587	0	0	166	166	0	0	378	378	6,214
%HV	0.0%	1.9%	3.2%	2.0%	0.0%	2.2%	3.6%	2.4%	0.0%	0.0%	1.2%	1.2%	0.0%	0.0%	3.2%	3.2%	2.3%
PHF	0.00	0.94	0.89	0.94	0.00	0.96	0.89	0.96	0.00	0.00	0.70	0.70	0.00	0.00	0.84	0.84	0.97

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Clackamas River Dr				Westbound Clackamas River Dr				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	0	1,918	131	0	0	3,000	558	0	0	0	176	0	0	0	374	0	6,157	0	0	0	0
4:15 PM	0	1,936	125	0	0	3,026	524	0	0	0	171	0	0	0	383	0	6,165	0	0	0	0
4:30 PM	0	1,971	136	0	0	3,009	503	0	0	0	172	0	0	0	374	0	6,165	0	0	0	0
4:45 PM	0	1,930	134	0	0	2,999	468	0	0	0	147	0	0	0	352	0	6,030	0	0	0	0
5:00 PM	0	1,883	138	0	0	2,920	451	0	0	0	130	0	0	0	326	0	5,848	0	0	0	0

Heavy Vehicle Summary

Clay Carney
(503) 833-2740



Hwy 213 & Clackamas River Dr

Wednesday, January 25, 2017
4:00 PM to 6:00 PM

Peak Hour Summary
4:10 PM to 5:10 PM

Heavy Vehicle 5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Clackamas River Dr				Westbound Clackamas River Dr				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	6	1	7	0	4	2	6	0	0	0	0	0	0	1	1	14
4:05 PM	0	6	1	7	0	9	1	10	0	0	0	0	0	0	5	5	22
4:10 PM	0	7	0	7	0	10	4	14	0	0	1	1	0	0	1	1	23
4:15 PM	0	5	0	5	0	7	1	8	0	0	1	1	0	0	0	0	14
4:20 PM	0	3	0	3	0	5	4	9	0	0	0	0	0	0	1	1	13
4:25 PM	0	1	0	1	0	7	2	9	0	0	0	0	0	0	2	2	12
4:30 PM	0	4	0	4	0	5	1	6	0	0	0	0	0	0	0	0	10
4:35 PM	0	3	0	3	0	7	1	8	0	0	0	0	0	0	1	1	12
4:40 PM	0	3	1	4	0	3	2	5	0	0	0	0	0	0	1	1	10
4:45 PM	0	2	1	3	0	2	1	3	0	0	0	0	0	0	3	3	9
4:50 PM	0	4	1	5	0	3	1	4	0	0	0	0	0	0	0	0	9
4:55 PM	0	1	0	1	0	7	1	8	0	0	0	0	0	0	1	1	10
5:00 PM	0	3	0	3	0	5	0	5	0	0	0	0	0	0	2	2	10
5:05 PM	0	2	1	3	0	5	1	6	0	0	0	0	0	0	0	0	9
5:10 PM	0	5	2	7	0	6	3	9	0	0	0	0	0	0	1	1	17
5:15 PM	0	4	0	4	0	5	1	6	0	0	0	0	0	0	1	1	11
5:20 PM	0	2	0	2	0	8	1	9	0	0	1	1	0	0	0	0	12
5:25 PM	0	2	0	2	0	5	1	6	0	0	0	0	0	0	2	2	10
5:30 PM	0	3	0	3	0	3	1	4	0	0	0	0	0	0	0	0	7
5:35 PM	0	5	0	5	0	4	1	5	0	0	0	0	0	0	1	1	11
5:40 PM	0	1	0	1	0	3	0	3	0	0	0	0	0	0	0	0	4
5:45 PM	0	2	1	3	0	2	2	4	0	0	0	0	0	0	0	0	7
5:50 PM	0	3	0	3	0	5	0	5	0	0	2	2	0	0	1	1	11
5:55 PM	0	1	0	1	0	1	2	3	0	0	1	1	0	0	0	0	5
Total Survey	0	78	9	87	0	121	34	155	0	0	6	6	0	0	24	24	272

Heavy Vehicle 15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Clackamas River Dr				Westbound Clackamas River Dr				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	19	2	21	0	23	7	30	0	0	1	1	0	0	7	7	59
4:15 PM	0	9	0	9	0	19	7	26	0	0	1	1	0	0	3	3	39
4:30 PM	0	10	1	11	0	15	4	19	0	0	0	0	0	0	2	2	32
4:45 PM	0	7	2	9	0	12	3	15	0	0	0	0	0	0	4	4	28
5:00 PM	0	10	3	13	0	16	4	20	0	0	0	0	0	0	3	3	36
5:15 PM	0	8	0	8	0	18	3	21	0	0	1	1	0	0	3	3	33
5:30 PM	0	9	0	9	0	10	2	12	0	0	0	0	0	0	1	1	22
5:45 PM	0	6	1	7	0	8	4	12	0	0	3	3	0	0	1	1	23
Total Survey	0	78	9	87	0	121	34	155	0	0	6	6	0	0	24	24	272

Heavy Vehicle Peak Hour Summary
4:10 PM to 5:10 PM

By Approach	Northbound Hwy 213			Southbound Hwy 213			Eastbound Clackamas River Dr			Westbound Clackamas River Dr			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	42	68	110	85	50	135	2	19	21	12	4	16	141
PHF	0.70			0.69			0.25			0.60			0.71

By Movement	Northbound Hwy 213				Southbound Hwy 213				Eastbound Clackamas River Dr				Westbound Clackamas River Dr				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	38	4	42	0	66	19	85	0	0	2	2	0	0	12	12	141
PHF	0.00	0.63	0.33	0.70	0.00	0.75	0.53	0.69	0.00	0.00	0.25	0.25	0.00	0.00	0.60	0.60	0.71

Heavy Vehicle Rolling Hour Summary
4:00 PM to 6:00 PM

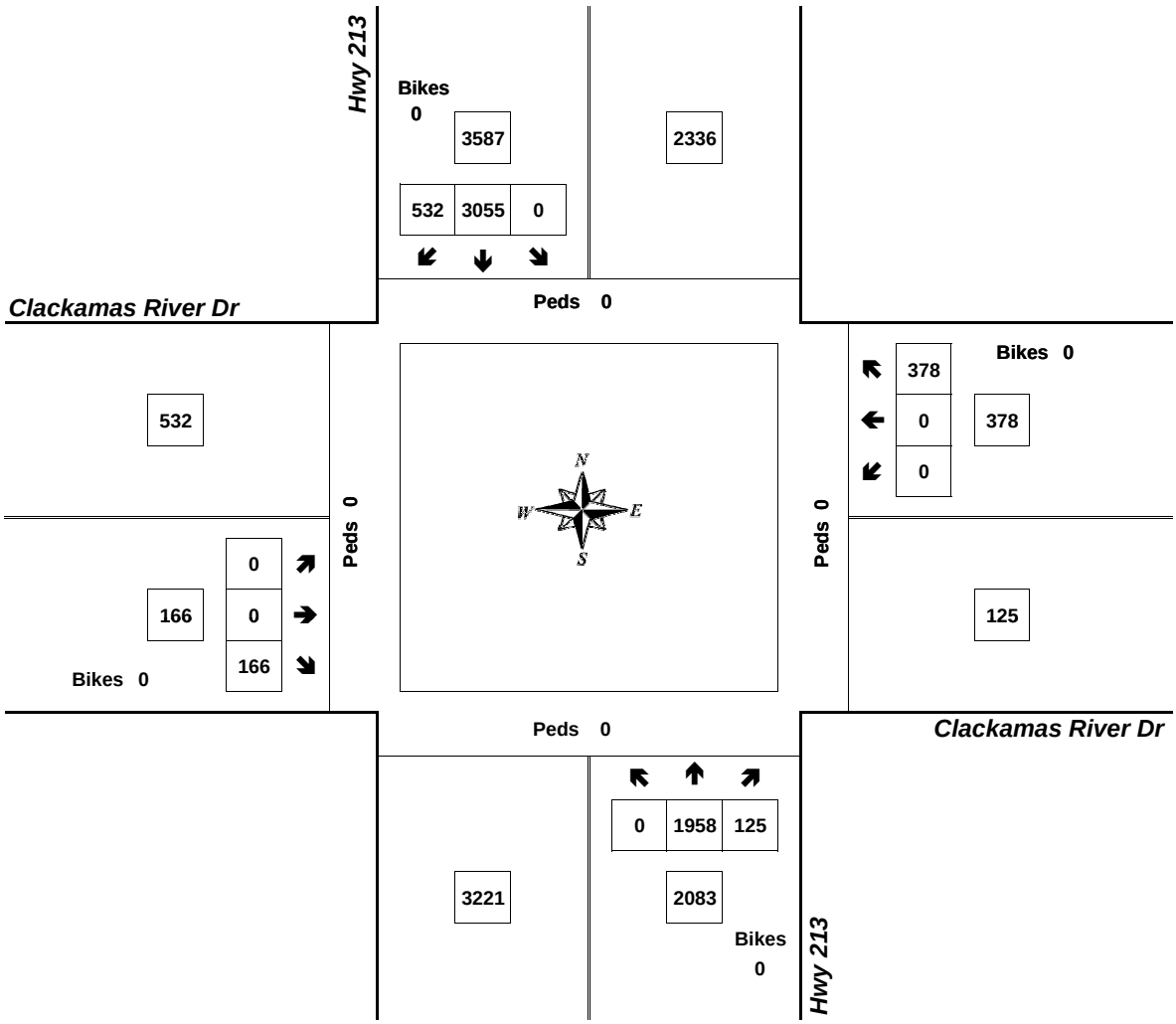
Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Clackamas River Dr				Westbound Clackamas River Dr				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	45	5	50	0	69	21	90	0	0	2	2	0	0	16	16	158
4:15 PM	0	36	6	42	0	62	18	80	0	0	1	1	0	0	12	12	135
4:30 PM	0	35	6	41	0	61	14	75	0	0	1	1	0	0	12	12	129
4:45 PM	0	34	5	39	0	56	12	68	0	0	1	1	0	0	11	11	119
5:00 PM	0	33	4	37	0	52	13	65	0	0	4	4	0	0	8	8	114

Peak Hour Summary

Clay Carney
(503) 833-2740

Hwy 213 & Clackamas River Dr

4:10 PM to 5:10 PM
Wednesday, January 25, 2017

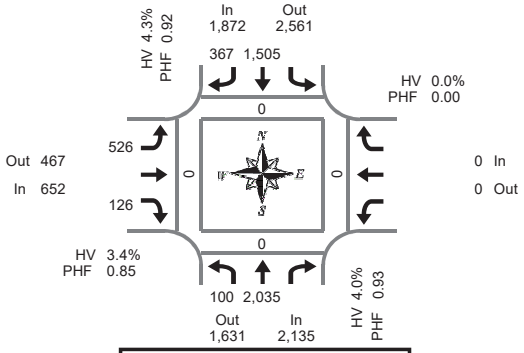


Approach	PHF	HV%	Volume
EB	0.70	1.2%	166
WB	0.84	3.2%	378
NB	0.94	2.0%	2,083
SB	0.96	2.4%	3,587
Intersection	0.97	2.3%	6,214

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary

Clay Carney
(503) 833-2740



Peak Hour Summary
7:20 AM to 8:20 AM

Hwy 213 & Redland Rd

Wednesday, January 25, 2017
7:00 AM to 9:00 AM

5-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213			Eastbound Redland Rd			Westbound Redland Rd			Interval Total	Pedestrians Crosswalk			
	L	T		Bikes	T	R	Bikes	L	R	Bikes			Bikes		North	South	East	West
7:00 AM	8	139		0	75	17	0	55	18	0			0	312	0	0	0	0
7:05 AM	7	183		0	100	24	0	49	6	0			0	369	0	0	0	0
7:10 AM	0	164		0	93	16	0	43	17	0			0	333	0	0	0	0
7:15 AM	7	154		0	105	26	0	67	15	0			0	374	0	0	0	0
7:20 AM	10	197		0	125	40	0	34	12	0			0	418	0	0	0	0
7:25 AM	4	189		0	116	35	0	40	18	0			0	402	0	0	0	0
7:30 AM	4	172		0	109	29	0	58	16	0			0	388	0	0	0	0
7:35 AM	14	179		0	112	31	0	48	12	0			0	396	0	0	0	0
7:40 AM	10	178		0	168	35	0	33	9	0			0	433	0	0	0	0
7:45 AM	7	169		0	116	32	0	50	10	0			0	384	0	0	0	0
7:50 AM	13	149		0	132	26	0	45	13	0			0	378	0	0	0	0
7:55 AM	8	160		0	149	25	0	32	4	0			0	378	0	0	0	0
8:00 AM	6	148		0	121	30	0	35	9	0			0	349	0	0	0	0
8:05 AM	7	154		0	90	31	0	62	10	0			0	354	0	0	0	0
8:10 AM	8	181		0	119	31	0	41	4	0			0	384	0	0	0	0
8:15 AM	9	159		0	148	22	0	48	9	0			0	395	0	0	0	0
8:20 AM	6	132		0	89	41	0	58	13	0			0	339	0	0	0	0
8:25 AM	3	137		0	112	25	0	32	4	0			0	313	0	0	0	0
8:30 AM	6	141		0	148	33	0	40	14	0			0	382	0	0	0	0
8:35 AM	5	142		0	106	15	0	40	8	0			0	316	0	0	0	0
8:40 AM	11	154		0	128	33	0	53	9	0			0	388	0	0	0	0
8:45 AM	9	129		0	147	21	0	41	8	0			0	355	0	0	0	0
8:50 AM	4	143		0	118	26	0	43	4	0			0	338	0	0	0	0
8:55 AM	12	123		0	124	18	0	49	11	0			0	337	0	0	0	0
Total Survey	178	3,776		0	2,850	662	0	1,096	253	0			0	8,815	0	0	0	0

15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213			Eastbound Redland Rd			Westbound Redland Rd			Interval Total	Pedestrians Crosswalk			
	L	T		Bikes	T	R	Bikes	L	R	Bikes			Bikes		North	South	East	West
7:00 AM	15	486		0	268	57	0	147	41	0			0	1,014	0	0	0	0
7:15 AM	21	540		0	346	101	0	141	45	0			0	1,194	0	0	0	0
7:30 AM	28	529		0	389	95	0	139	37	0			0	1,217	0	0	0	0
7:45 AM	28	478		0	397	83	0	127	27	0			0	1,140	0	0	0	0
8:00 AM	21	483		0	330	92	0	138	23	0			0	1,087	0	0	0	0
8:15 AM	18	428		0	349	88	0	138	26	0			0	1,047	0	0	0	0
8:30 AM	22	437		0	382	81	0	133	31	0			0	1,086	0	0	0	0
8:45 AM	25	395		0	389	65	0	133	23	0			0	1,030	0	0	0	0
Total Survey	178	3,776		0	2,850	662	0	1,096	253	0			0	8,815	0	0	0	0

Peak Hour Summary
7:20 AM to 8:20 AM

By Approach	Northbound Hwy 213				Southbound Hwy 213				Eastbound Redland Rd				Westbound Redland Rd				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	2,135	1,631	3,766	0	1,872	2,561	4,433	0	652	467	1,119	0	0	0	0	0	4,659	0	0	0	0
%HV	4.0%				4.3%				3.4%				0.0%				4.1%				
PHF	0.93				0.92				0.85				0.00				0.96				

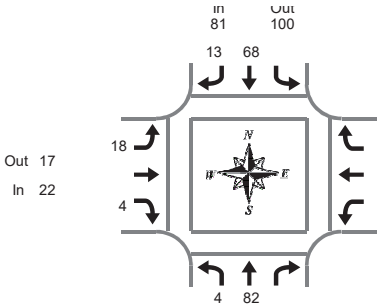
By Movement	Northbound Hwy 213				Southbound Hwy 213			Eastbound Redland Rd			Westbound Redland Rd			Total
	L	T		Total	T	R	Total	L	R	Total				Total
Volume	100	2,035		2,135	1,505	367	1,872	526	126	652				0	4,659
%HV	4.0%	4.0%	NA	4.0%	NA	4.5%	3.5%	4.3%	3.4%	NA	3.2%	3.4%	NA	NA	NA	0.0%	4.1%
PHF	0.81	0.91		0.93		0.90	0.88	0.92	0.87		0.68	0.85				0.00	0.96

Rolling Hour Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213			Eastbound Redland Rd			Westbound Redland Rd			Interval Total	Pedestrians Crosswalk			
	L	T		Bikes	T	R	Bikes	L	R	Bikes			Bikes		North	South	East	West
7:00 AM	92	2,033		0	1,400	336	0	554	150	0			0	4,565	0	0	0	0
7:15 AM	98	2,030		0	1,462	371	0	545	132	0			0	4,638	0	0	0	0
7:30 AM	95	1,918		0	1,465	358	0	542	113	0			0	4,491	0	0	0	0
7:45 AM	89	1,826		0	1,458	344	0	536	107	0			0	4,360	0	0	0	0
8:00 AM	86	1,743		0	1,450	326	0	542	103	0			0	4,250	0	0	0	0

Heavy Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Hwy 213 & Redland Rd

Wednesday, January 25, 2017
7:00 AM to 9:00 AM

Peak Hour Summary
7:20 AM to 8:20 AM

Heavy Vehicle 5-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Redland Rd				Westbound Redland Rd				Interval Total
	L	T		Total	T	R	Total		L		R	Total				Total	
7:00 AM	1	5		6	9	2	11		1		1	2				0	19
7:05 AM	1	5		6	1	0	1		3		2	5				0	12
7:10 AM	0	10		10	3	0	3		4		0	4				0	17
7:15 AM	2	7		9	8	2	10		4		1	5				0	24
7:20 AM	1	6		7	4	0	4		1		0	1				0	12
7:25 AM	0	8		8	10	0	10		3		0	3				0	21
7:30 AM	0	3		3	5	0	5		1		1	2				0	10
7:35 AM	0	5		5	0	2	2		2		0	2				0	9
7:40 AM	0	2		2	8	0	8		2		0	2				0	12
7:45 AM	1	12		13	7	2	9		4		0	4				0	26
7:50 AM	0	9		9	4	2	6		1		0	1				0	16
7:55 AM	0	11		11	3	2	5		1		1	2				0	18
8:00 AM	1	10		11	4	1	5		0		2	2				0	18
8:05 AM	0	3		3	6	0	6		1		0	1				0	10
8:10 AM	0	6		6	8	4	12		1		0	1				0	19
8:15 AM	1	7		8	9	0	9		1		0	1				0	18
8:20 AM	0	5		5	8	2	10		2		2	4				0	19
8:25 AM	0	5		5	12	3	15		5		0	5				0	25
8:30 AM	0	7		7	3	4	7		3		1	4				0	18
8:35 AM	1	13		14	4	4	8		2		0	2				0	24
8:40 AM	0	8		8	9	0	9		2		0	2				0	19
8:45 AM	0	6		6	4	1	5		1		1	2				0	13
8:50 AM	0	7		7	15	2	17		0		0	0				0	24
8:55 AM	0	5		5	9	3	12		1		0	1				0	18
Total Survey	9	165		174	153	36	189		46		12	58				0	421

Heavy Vehicle 15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Redland Rd				Westbound Redland Rd				Interval Total
	L	T		Total	T	R	Total		L		R	Total				Total	
7:00 AM	2	20		22	13	2	15		8		3	11				0	48
7:15 AM	3	21		24	22	2	24		8		1	9				0	57
7:30 AM	0	10		10	13	2	15		5		1	6				0	31
7:45 AM	1	32		33	14	6	20		6		1	7				0	60
8:00 AM	1	19		20	18	5	23		2		2	4				0	47
8:15 AM	1	17		18	29	5	34		8		2	10				0	62
8:30 AM	1	28		29	16	8	24		7		1	8				0	61
8:45 AM	0	18		18	28	6	34		2		1	3				0	55
Total Survey	9	165		174	153	36	189		46		12	58				0	421

Heavy Vehicle Peak Hour Summary
7:20 AM to 8:20 AM

By Approach	Northbound Hwy 213			Southbound Hwy 213			Eastbound Redland Rd			Westbound Redland Rd			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	86	72	158	81	100	181	22	17	39	0	0	0	189
PHF	0.65			0.75			0.69			0.00			0.79

By Movement	Northbound Hwy 213				Southbound Hwy 213				Eastbound Redland Rd				Westbound Redland Rd				Total
	L	T		Total	T	R	Total		L		R	Total				Total	
Volume	4	82		86	68	13	81		18		4	22				0	189
PHF	1.00	0.64		0.65	0.74	0.54	0.75		0.56		0.33	0.69				0.00	0.79

Heavy Vehicle Rolling Hour Summary
7:00 AM to 9:00 AM

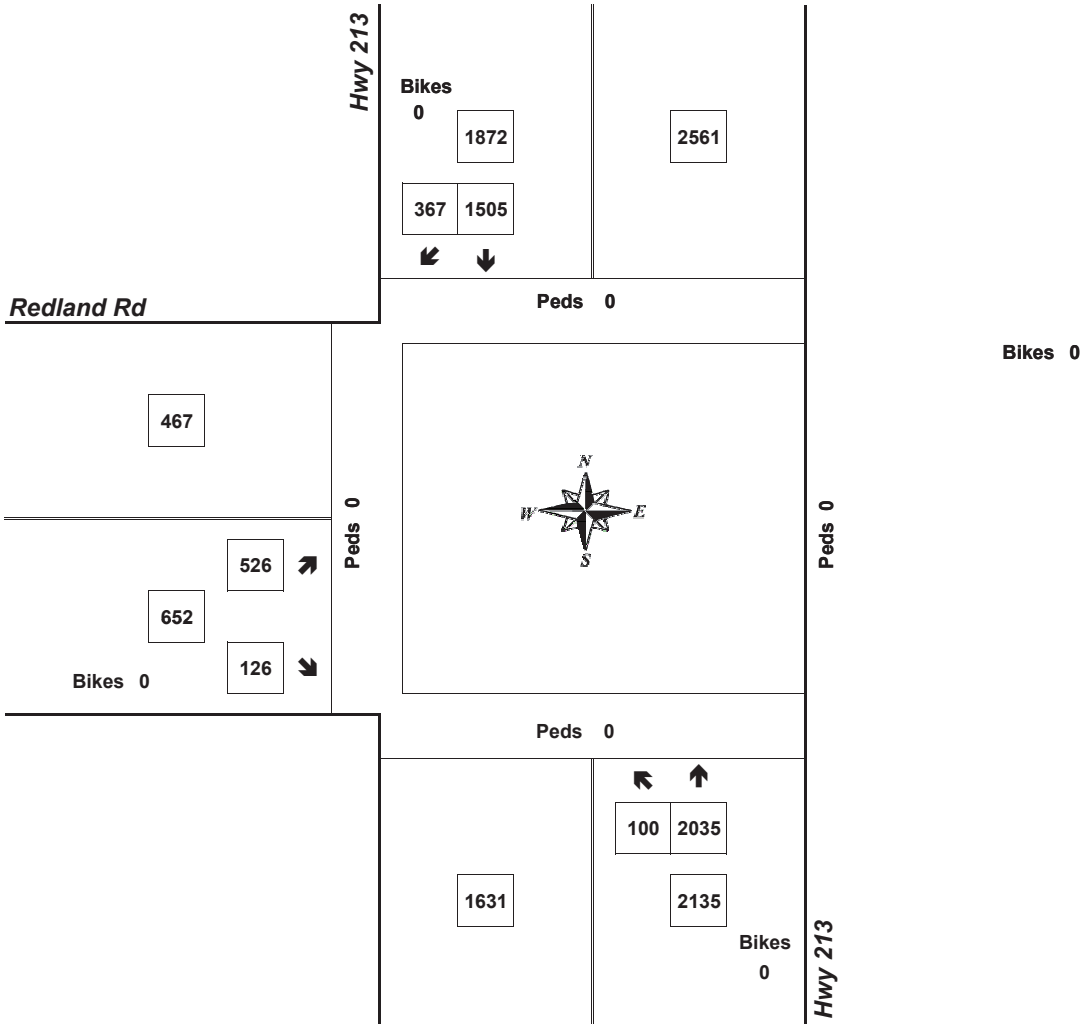
Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Redland Rd				Westbound Redland Rd				Interval Total
	L	T		Total	T	R	Total		L		R	Total				Total	
7:00 AM	6	83		89	62	12	74		27		6	33				0	196
7:15 AM	5	82		87	67	15	82		21		5	26				0	195
7:30 AM	3	78		81	74	18	92		21		6	27				0	200
7:45 AM	4	96		100	77	24	101		23		6	29				0	230
8:00 AM	3	82		85	91	24	115		19		6	25				0	225

Peak Hour Summary

Clay Carney
(503) 833-2740

Hwy 213 & Redland Rd

7:20 AM to 8:20 AM
Wednesday, January 25, 2017

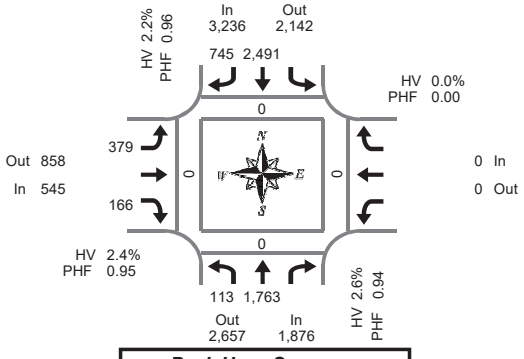


Approach	PHF	HV%	Volume
EB	0.85	3.4%	652
WB	0.00	0.0%	0
NB	0.93	4.0%	2,135
SB	0.92	4.3%	1,872
Intersection	0.96	4.1%	4,659

Count Period: 7:00 AM to 9:00 AM

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Hwy 213 & Redland Rd

Tuesday, January 24, 2017
4:00 PM to 6:00 PM

Peak Hour Summary
4:10 PM to 5:10 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Redland Rd				Westbound Redland Rd				Interval Total	Pedestrians Crosswalk			
	L	T		Bikes	T	R		Bikes	L		R	Bikes				Bikes		North	South	East	West
4:00 PM	11	148		0	204	67		0	26		6	0				0	462	0	0	0	0
4:05 PM	7	140		0	216	54		0	28		12	0				0	457	0	0	0	0
4:10 PM	9	160		0	187	58		0	42		15	0				0	471	0	0	0	0
4:15 PM	14	153		0	202	63		0	26		12	0				0	470	0	0	0	0
4:20 PM	11	151		0	207	65		0	32		13	0				0	479	0	0	0	0
4:25 PM	6	113		0	216	57		0	34		10	0				0	436	0	0	0	0
4:30 PM	14	128		0	194	60		0	34		15	0				0	445	0	0	0	0
4:35 PM	8	140		0	232	74		0	29		15	0				0	498	0	0	0	0
4:40 PM	3	157		0	228	51		0	30		9	0				0	478	0	0	0	0
4:45 PM	12	147		1	181	61		0	42		18	0				0	461	0	0	0	0
4:50 PM	8	144		0	221	71		0	24		10	0				0	478	0	0	0	0
4:55 PM	8	169		0	223	68		0	30		10	0				0	508	0	0	0	0
5:00 PM	15	148		0	178	54		0	31		20	0				0	446	0	0	0	0
5:05 PM	5	153		0	222	63		0	25		19	0				0	487	0	0	0	0
5:10 PM	11	144		0	226	46		0	32		11	0				0	470	0	0	0	0
5:15 PM	11	130		0	198	56		0	44		8	0				0	447	0	0	0	0
5:20 PM	17	148		0	194	44		0	28		4	0				0	435	0	0	0	0
5:25 PM	6	127		0	229	69		0	26		6	0				0	463	0	0	0	0
5:30 PM	6	114		0	205	58		0	25		17	0				0	425	0	0	0	0
5:35 PM	14	137		0	177	58		0	32		9	0				0	427	0	0	0	0
5:40 PM	8	134		0	217	63		0	21		4	0				0	447	0	0	0	0
5:45 PM	7	148		0	220	60		0	18		8	0				0	461	0	0	0	0
5:50 PM	8	129		0	177	62		0	32		6	0				0	414	0	0	0	0
5:55 PM	9	115		0	197	40		0	19		9	0				0	389	0	0	0	0
Total Survey	228	3,377		1	4,951	1,422		0	710		266	0				0	10,954	0	0	0	0

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Redland Rd				Westbound Redland Rd				Interval Total	Pedestrians Crosswalk			
	L	T		Bikes	T	R		Bikes	L		R	Bikes				Bikes		North	South	East	West
4:00 PM	27	448		0	607	179		0	96		33	0				0	1,390	0	0	0	0
4:15 PM	31	417		0	625	185		0	92		35	0				0	1,385	0	0	0	0
4:30 PM	25	425		0	654	185		0	93		39	0				0	1,421	0	0	0	0
4:45 PM	28	460		1	625	200		0	96		38	0				0	1,447	0	0	0	0
5:00 PM	31	445		0	626	163		0	88		50	0				0	1,403	0	0	0	0
5:15 PM	34	405		0	621	169		0	98		18	0				0	1,345	0	0	0	0
5:30 PM	28	385		0	599	179		0	78		30	0				0	1,299	0	0	0	0
5:45 PM	24	392		0	594	162		0	69		23	0				0	1,264	0	0	0	0
Total Survey	228	3,377		1	4,951	1,422		0	710		266	0				0	10,954	0	0	0	0

Peak Hour Summary
4:10 PM to 5:10 PM

By Approach	Northbound Hwy 213				Southbound Hwy 213				Eastbound Redland Rd				Westbound Redland Rd				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	1,876	2,657	4,533	1	3,236	2,142	5,378	0	545	858	1,403	0	0	0	0	0	5,657	0	0	0	0
%HV	2.6%				2.2%				2.4%				0.0%				2.4%				
PHF	0.94				0.96				0.95				0.00				0.98				

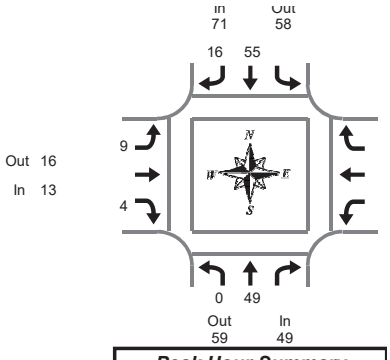
By Movement	Northbound Hwy 213				Southbound Hwy 213				Eastbound Redland Rd				Westbound Redland Rd				Total
	L	T		Total	T	R	Total		L		R	Total				Total	
Volume	113	1,763		1,876	2,491	745	3,236		379		166	545				0	5,657
%HV	0.0%	2.8%	NA	2.6%	2.2%	2.1%	2.2%		2.4%	NA	2.4%	2.4%	NA	NA	NA	0.0%	2.4%
PHF	0.83	0.94		0.94	0.95	0.93	0.96		0.94		0.85	0.95				0.00	0.98

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Redland Rd				Westbound Redland Rd				Interval Total	Pedestrians Crosswalk			
	L	T		Bikes	T	R		Bikes	L		R	Bikes				Bikes		North	South	East	West
4:00 PM	111	1,750		1	2,511	749		0	377		145	0				0	5,643	0	0	0	0
4:15 PM	115	1,747		1	2,530	733		0	369		162	0				0	5,656	0	0	0	0
4:30 PM	118	1,735		1	2,526	717		0	375		145	0				0	5,616	0	0	0	0
4:45 PM	121	1,695		1	2,471	711		0	360		136	0				0	5,494	0	0	0	0
5:00 PM	117	1,627		0	2,440	673		0	333		121	0				0	5,311	0	0	0	0

Heavy Vehicle Summary

Clay Carney
(503) 833-2740



Hwy 213 & Redland Rd

Tuesday, January 24, 2017
4:00 PM to 6:00 PM

Peak Hour Summary
4:10 PM to 5:10 PM

Heavy Vehicle 5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213			Eastbound Redland Rd			Westbound Redland Rd				Interval Total
	L	T		Total	T	R	Total	L		R	Total			Total	
4:00 PM	0	4		4	4	3	7	1		0	1			0	12
4:05 PM	1	8		9	8	0	8	1		3	4			0	21
4:10 PM	0	7		7	5	0	5	1		1	2			0	14
4:15 PM	0	4		4	9	1	10	1		0	1			0	15
4:20 PM	0	5		5	8	1	9	0		0	0			0	14
4:25 PM	0	4		4	4	3	7	0		0	0			0	11
4:30 PM	0	4		4	2	1	3	2		0	2			0	9
4:35 PM	0	3		3	11	2	13	2		0	2			0	18
4:40 PM	0	6		6	0	1	1	0		1	1			0	8
4:45 PM	0	3		3	4	1	5	0		1	1			0	9
4:50 PM	0	2		2	4	4	8	0		0	0			0	10
4:55 PM	0	3		3	4	1	5	1		0	1			0	9
5:00 PM	0	4		4	2	1	3	1		0	1			0	8
5:05 PM	0	4		4	2	0	2	1		1	2			0	8
5:10 PM	0	4		4	4	1	5	0		0	0			0	9
5:15 PM	0	1		1	6	0	6	1		0	1			0	8
5:20 PM	1	3		4	3	0	3	1		0	1			0	8
5:25 PM	0	2		2	3	1	4	0		1	1			0	7
5:30 PM	0	2		2	3	2	5	1		0	1			0	8
5:35 PM	0	3		3	5	0	5	1		0	1			0	9
5:40 PM	0	3		3	2	1	3	0		0	0			0	6
5:45 PM	0	3		3	6	0	6	0		1	1			0	10
5:50 PM	0	1		1	5	1	6	2		0	2			0	9
5:55 PM	0	2		2	1	2	3	0		0	0			0	5
Total Survey	2	85		87	105	27	132	17		9	26			0	245

Heavy Vehicle 15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213			Eastbound Redland Rd			Westbound Redland Rd				Interval Total
	L	T		Total	T	R	Total	L		R	Total			Total	
4:00 PM	1	19		20	17	3	20	3		4	7			0	47
4:15 PM	0	13		13	21	5	26	1		0	1			0	40
4:30 PM	0	13		13	13	4	17	4		1	5			0	35
4:45 PM	0	8		8	12	6	18	1		1	2			0	28
5:00 PM	0	12		12	8	2	10	2		1	3			0	25
5:15 PM	1	6		7	12	1	13	2		1	3			0	23
5:30 PM	0	8		8	10	3	13	2		0	2			0	23
5:45 PM	0	6		6	12	3	15	2		1	3			0	24
Total Survey	2	85		87	105	27	132	17		9	26			0	245

Heavy Vehicle Peak Hour Summary
4:10 PM to 5:10 PM

By Approach	Northbound Hwy 213			Southbound Hwy 213			Eastbound Redland Rd			Westbound Redland Rd			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	49	59	108	71	58	129	13	16	29	0	0	0	133
PHF	0.77			0.68			0.65			0.00			0.77

By Movement	Northbound Hwy 213				Southbound Hwy 213			Eastbound Redland Rd				Westbound Redland Rd				Total
	L	T		Total	T	R	Total	L		R	Total				Total	
Volume	0	49		49	55	16	71	9		4	13				0	133
PHF	0.00	0.77		0.77	0.63	0.67	0.68	0.56		0.50	0.65				0.00	0.77

Heavy Vehicle Rolling Hour Summary
4:00 PM to 6:00 PM

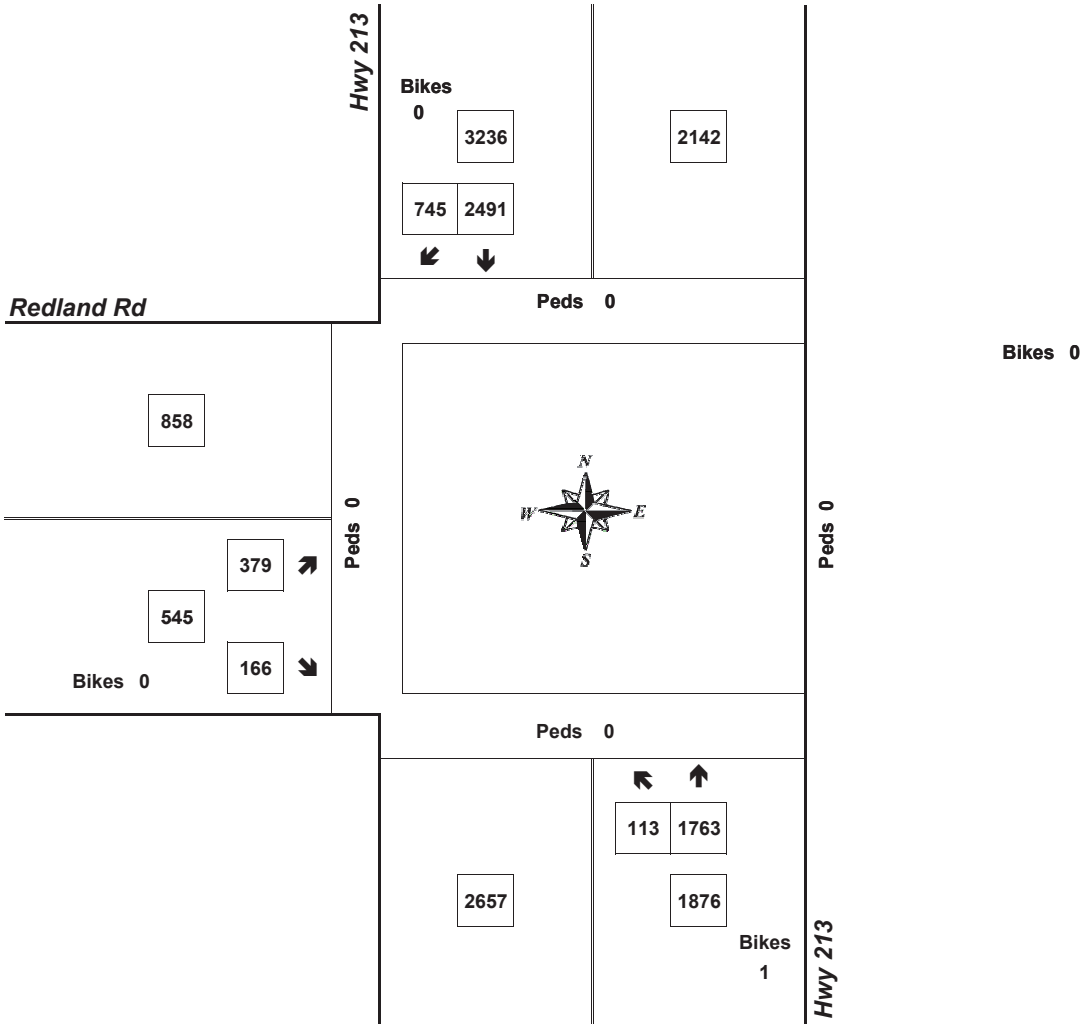
Interval Start Time	Northbound Hwy 213				Southbound Hwy 213			Eastbound Redland Rd				Westbound Redland Rd				Interval Total
	L	T		Total	T	R	Total	L		R	Total				Total	
4:00 PM	1	53		54	63	18	81	9		6	15				0	150
4:15 PM	0	46		46	54	17	71	8		3	11				0	128
4:30 PM	1	39		40	45	13	58	9		4	13				0	111
4:45 PM	1	34		35	42	12	54	7		3	10				0	99
5:00 PM	1	32		33	42	9	51	8		3	11				0	95

Peak Hour Summary

Clay Carney
(503) 833-2740

Hwy 213 & Redland Rd

4:10 PM to 5:10 PM
Tuesday, January 24, 2017

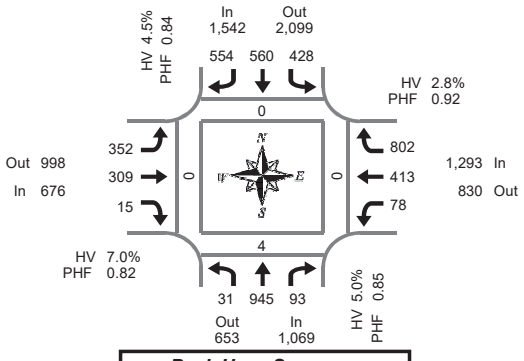


Approach	PHF	HV%	Volume
EB	0.95	2.4%	545
WB	0.00	0.0%	0
NB	0.94	2.6%	1,876
SB	0.96	2.2%	3,236
Intersection	0.98	2.4%	5,657

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
7:00 AM to 8:00 AM

Hwy 213 & Beavercreek Rd

Wednesday, January 25, 2017
7:00 AM to 9:00 AM

5-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Beavercreek Rd				Westbound Beavercreek Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	4	71	11	0	27	28	50	0	26	20	2	0	6	25	67	0	337	0	0	0	0
7:05 AM	2	64	7	0	28	34	46	0	32	27	2	0	3	35	58	0	338	0	0	0	0
7:10 AM	1	80	9	0	33	32	35	0	29	33	2	0	9	32	66	0	361	0	1	0	0
7:15 AM	3	93	10	0	34	32	36	0	24	35	1	0	5	31	73	0	377	0	0	0	0
7:20 AM	4	91	10	0	44	48	54	0	36	31	1	0	10	37	65	0	431	0	0	0	0
7:25 AM	5	90	8	0	38	49	40	0	25	53	1	0	5	39	71	0	424	0	0	0	0
7:30 AM	1	78	8	0	32	49	39	0	31	28	0	0	10	34	69	0	379	0	0	0	0
7:35 AM	2	81	4	0	31	56	53	0	30	23	2	0	6	44	72	0	404	0	1	0	0
7:40 AM	1	83	8	0	37	57	41	0	32	18	2	0	5	28	71	0	383	0	1	0	0
7:45 AM	3	64	6	0	54	64	51	0	26	13	2	0	7	32	68	0	390	0	0	0	0
7:50 AM	3	71	5	0	38	50	52	0	27	12	0	0	8	32	60	0	358	0	1	0	0
7:55 AM	2	79	7	0	32	61	57	0	34	16	0	0	4	44	62	0	398	0	0	0	0
8:00 AM	4	69	7	0	21	45	55	0	24	13	2	0	11	21	54	0	326	0	0	0	0
8:05 AM	4	75	6	0	34	49	63	0	18	15	0	0	9	18	57	0	348	0	0	0	0
8:10 AM	6	73	7	0	15	38	42	0	25	14	5	0	6	24	66	0	321	0	0	0	0
8:15 AM	3	65	14	0	23	38	47	0	38	19	2	0	7	32	38	0	326	1	0	0	0
8:20 AM	4	54	14	0	40	53	66	0	27	18	0	0	3	27	43	0	349	0	2	0	2
8:25 AM	6	75	10	0	23	45	42	0	25	11	2	0	9	20	30	0	298	0	1	0	0
8:30 AM	2	48	3	0	34	51	53	0	27	13	3	0	6	33	65	0	338	0	0	0	0
8:35 AM	3	70	5	0	25	47	48	0	27	20	2	0	6	27	44	0	324	0	0	0	0
8:40 AM	2	51	8	0	39	72	33	0	34	18	4	0	7	27	44	0	339	0	1	0	0
8:45 AM	1	84	6	0	30	58	40	0	23	10	6	0	14	48	45	0	365	0	0	0	0
8:50 AM	3	60	7	0	40	48	51	0	37	32	1	0	4	36	38	0	357	0	0	0	0
8:55 AM	9	56	7	0	33	57	46	0	14	16	1	0	4	31	39	0	313	0	0	0	0
Total Survey	78	1,725	187	0	785	1,161	1,140	0	671	508	43	0	164	757	1,365	0	8,584	1	8	0	2

15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Beavercreek Rd				Westbound Beavercreek Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	7	215	27	0	88	94	131	0	87	80	6	0	18	92	191	0	1,036	0	1	0	0
7:15 AM	12	274	28	0	116	129	130	0	85	119	3	0	20	107	209	0	1,232	0	0	0	0
7:30 AM	4	242	20	0	100	162	133	0	93	69	4	0	21	106	212	0	1,166	0	2	0	0
7:45 AM	8	214	18	0	124	175	160	0	87	41	2	0	19	108	190	0	1,146	0	1	0	0
8:00 AM	14	217	20	0	70	132	160	0	67	42	7	0	26	63	177	0	995	0	0	0	0
8:15 AM	13	194	38	0	86	136	155	0	90	48	4	0	19	79	111	0	973	1	3	0	2
8:30 AM	7	169	16	0	98	170	134	0	88	51	9	0	19	87	153	0	1,001	0	1	0	0
8:45 AM	13	200	20	0	103	163	137	0	74	58	8	0	22	115	122	0	1,035	0	0	0	0
Total Survey	78	1,725	187	0	785	1,161	1,140	0	671	508	43	0	164	757	1,365	0	8,584	1	8	0	2

Peak Hour Summary
7:00 AM to 8:00 AM

By Approach	Northbound Hwy 213				Southbound Hwy 213				Eastbound Beavercreek Rd				Westbound Beavercreek Rd				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	1,069	653	1,722	0	1,542	2,099	3,641	0	676	998	1,674	0	1,293	830	2,123	0	4,580	0	4	0	0
%HV	5.0%				4.5%				7.0%				2.8%				4.5%				
PHF	0.85				0.84				0.82				0.92				0.93				

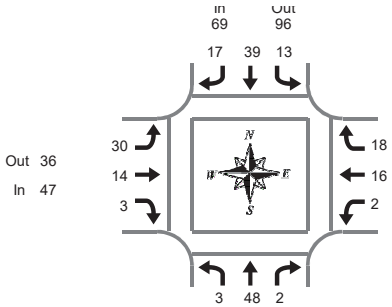
By Movement	Northbound Hwy 213				Southbound Hwy 213				Eastbound Beavercreek Rd				Westbound Beavercreek Rd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	31	945	93	1,069	428	560	554	1,542	352	309	15	676	78	413	802	1,293	4,580
%HV	9.7%	5.1%	2.2%	5.0%	3.0%	7.0%	3.1%	4.5%	8.5%	4.5%	20.0%	7.0%	2.6%	3.9%	2.2%	2.8%	4.5%
PHF	0.65	0.86	0.80	0.85	0.83	0.79	0.87	0.84	0.95	0.65	0.63	0.82	0.78	0.88	0.95	0.92	0.93

Rolling Hour Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Beavercreek Rd				Westbound Beavercreek Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	31	945	93	0	428	560	554	0	352	309	15	0	78	413	802	0	4,580	0	4	0	0
7:15 AM	38	947	86	0	410	598	583	0	332	271	16	0	86	384	788	0	4,539	0	3	0	0
7:30 AM	39	867	96	0	380	605	608	0	337	200	17	0	85	356	690	0	4,280	1	6	0	2
7:45 AM	42	794	92	0	378	613	609	0	332	182	22	0	83	337	631	0	4,115	1	5	0	2
8:00 AM	47	780	94	0	357	601	586	0	319	199	28	0	86	344	563	0	4,004	1	4	0	2

Heavy Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Hwy 213 & Beavercreek Rd

Wednesday, January 25, 2017
7:00 AM to 9:00 AM

Peak Hour Summary
7:00 AM to 8:00 AM

Heavy Vehicle 5-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Beavercreek Rd				Westbound Beavercreek Rd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	1	1	1	3	2	1	0	3	0	4	0	4	0	1	1	2	12
7:05 AM	0	5	0	5	2	3	4	9	2	2	0	4	0	5	2	7	25
7:10 AM	0	10	0	10	0	2	0	2	3	1	1	5	1	3	2	6	23
7:15 AM	0	3	0	3	0	4	1	5	2	2	0	4	0	2	0	2	14
7:20 AM	1	2	0	3	1	5	4	10	4	0	1	5	1	4	1	6	24
7:25 AM	0	4	0	4	0	6	1	7	1	2	0	3	0	1	2	3	17
7:30 AM	0	5	1	6	3	2	1	6	0	1	0	1	0	0	0	0	13
7:35 AM	1	1	0	2	0	3	2	5	2	0	0	2	0	0	0	0	9
7:40 AM	0	5	0	5	0	2	0	2	4	0	1	5	0	0	2	2	14
7:45 AM	0	3	0	3	2	4	1	7	6	1	0	7	0	0	2	2	19
7:50 AM	0	5	0	5	3	3	3	9	3	1	0	4	0	0	1	1	19
7:55 AM	0	4	0	4	0	4	0	4	3	0	0	3	0	0	5	5	16
8:00 AM	0	1	1	2	0	2	2	4	1	0	0	1	0	0	2	2	9
8:05 AM	1	6	1	8	2	3	1	6	1	1	0	2	0	1	0	1	17
8:10 AM	0	5	2	7	2	4	1	7	2	0	1	3	2	0	3	5	22
8:15 AM	0	4	0	4	1	6	1	8	1	1	0	2	1	1	0	2	16
8:20 AM	0	3	1	4	1	3	5	9	5	0	0	5	1	1	0	2	20
8:25 AM	0	2	1	3	2	8	1	11	1	0	0	1	0	2	0	2	17
8:30 AM	0	8	0	8	2	7	2	11	3	0	1	4	1	1	4	6	29
8:35 AM	1	8	0	9	0	2	0	2	2	1	0	3	0	0	0	0	14
8:40 AM	0	5	0	5	0	6	3	9	1	2	1	4	0	0	1	1	19
8:45 AM	0	4	0	4	0	4	2	6	0	0	0	0	0	0	2	2	12
8:50 AM	0	3	0	3	0	2	3	5	2	0	0	2	0	2	2	4	14
8:55 AM	0	1	0	1	1	13	3	17	0	0	0	0	0	0	0	0	18
Total Survey	5	98	8	111	24	99	41	164	49	19	6	74	7	24	32	63	412

Heavy Vehicle 15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Beavercreek Rd				Westbound Beavercreek Rd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	1	16	1	18	4	6	4	14	5	7	1	13	1	9	5	15	60
7:15 AM	1	9	0	10	1	15	6	22	7	4	1	12	1	7	3	11	55
7:30 AM	1	11	1	13	3	7	3	13	6	1	1	8	0	0	2	2	36
7:45 AM	0	12	0	12	5	11	4	20	12	2	0	14	0	0	8	8	54
8:00 AM	1	12	4	17	4	9	4	17	4	1	1	6	2	1	5	8	48
8:15 AM	0	9	2	11	4	17	7	28	7	1	0	8	2	4	0	6	53
8:30 AM	1	21	0	22	2	15	5	22	6	3	2	11	1	1	5	7	62
8:45 AM	0	8	0	8	1	19	8	28	2	0	0	2	0	2	4	6	44
Total Survey	5	98	8	111	24	99	41	164	49	19	6	74	7	24	32	63	412

Heavy Vehicle Peak Hour Summary
7:00 AM to 8:00 AM

By Approach	Northbound Hwy 213			Southbound Hwy 213			Eastbound Beavercreek Rd			Westbound Beavercreek Rd			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	53	44	97	69	96	165	47	36	83	36	29	65	205
PHF	0.74			0.75			0.73			0.60			0.83

By Movement	Northbound Hwy 213				Southbound Hwy 213				Eastbound Beavercreek Rd				Westbound Beavercreek Rd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	3	48	2	53	13	39	17	69	30	14	3	47	2	16	18	36	205
PHF	0.75	0.67	0.50	0.74	0.65	0.65	0.71	0.75	0.58	0.50	0.38	0.73	0.25	0.40	0.56	0.60	0.83

Heavy Vehicle Rolling Hour Summary
7:00 AM to 9:00 AM

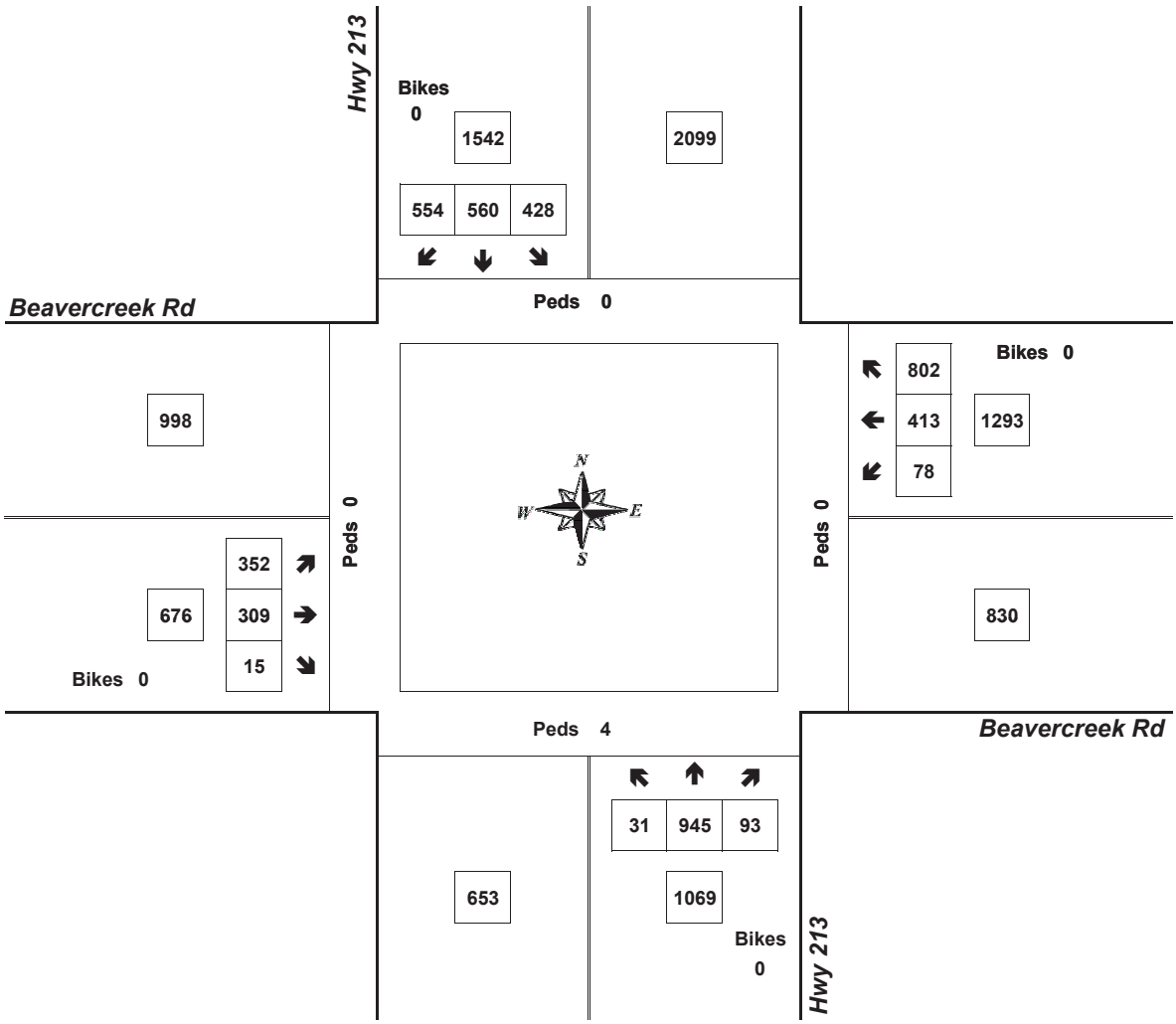
Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Beavercreek Rd				Westbound Beavercreek Rd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	3	48	2	53	13	39	17	69	30	14	3	47	2	16	18	36	205
7:15 AM	3	44	5	52	13	42	17	72	29	8	3	40	3	8	18	29	193
7:30 AM	2	44	7	53	16	44	18	78	29	5	2	36	4	5	15	24	191
7:45 AM	2	54	6	62	15	52	20	87	29	7	3	39	5	6	18	29	217
8:00 AM	2	50	6	58	11	60	24	95	19	5	3	27	5	8	14	27	207

Peak Hour Summary

Clay Carney
(503) 833-2740

Hwy 213 & Beavercreek Rd

7:00 AM to 8:00 AM
Wednesday, January 25, 2017

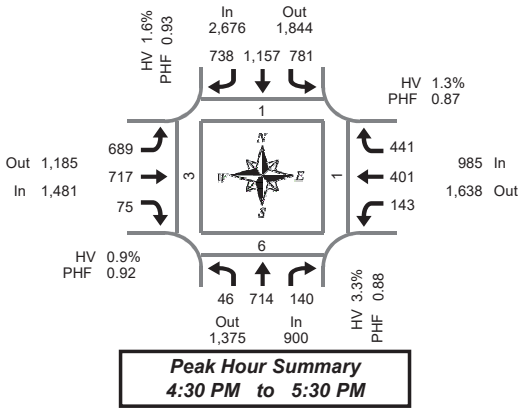


Approach	PHF	HV%	Volume
EB	0.82	7.0%	676
WB	0.92	2.8%	1,293
NB	0.85	5.0%	1,069
SB	0.84	4.5%	1,542
Intersection	0.93	4.5%	4,580

Count Period: 7:00 AM to 9:00 AM

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
4:30 PM to 5:30 PM

Hwy 213 & Beavercreek Rd

Tuesday, January 24, 2017
4:00 PM to 6:00 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Beavercreek Rd				Westbound Beavercreek Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	6	48	10	0	76	94	49	0	57	69	4	0	9	33	29	0	484	0	0	0	0
4:05 PM	2	69	15	0	56	88	54	0	62	54	4	0	11	37	35	0	487	0	0	0	0
4:10 PM	8	67	7	0	47	90	82	0	55	58	8	0	10	39	38	0	509	0	0	0	0
4:15 PM	4	67	8	0	40	91	78	0	48	36	3	0	7	42	45	0	469	0	0	0	0
4:20 PM	0	46	7	0	61	69	66	0	59	62	4	0	9	36	36	0	455	0	2	0	0
4:25 PM	1	51	21	0	53	91	56	0	26	59	8	0	13	45	29	0	453	3	1	0	2
4:30 PM	5	69	9	0	63	115	66	0	59	39	2	0	15	33	29	0	504	0	0	0	0
4:35 PM	2	68	12	0	60	105	72	0	65	67	4	0	6	20	33	0	514	0	0	0	0
4:40 PM	4	45	10	1	72	101	64	0	63	63	7	0	15	42	39	0	525	1	1	1	0
4:45 PM	3	56	10	0	74	102	58	0	61	60	6	0	17	37	40	0	524	0	0	0	2
4:50 PM	2	53	15	0	46	74	56	0	66	65	12	0	8	38	46	0	481	0	1	0	0
4:55 PM	3	75	18	0	46	86	64	0	59	62	5	0	12	36	42	0	508	0	0	0	0
5:00 PM	6	70	9	0	75	94	64	0	51	47	6	0	14	36	39	0	511	0	1	0	0
5:05 PM	5	61	8	0	59	107	61	0	41	55	7	0	19	33	45	0	501	0	1	0	1
5:10 PM	4	66	14	0	74	103	80	0	56	52	9	0	10	20	33	0	521	0	0	0	0
5:15 PM	2	59	10	0	78	97	47	0	66	68	5	0	8	32	29	0	501	0	1	0	0
5:20 PM	5	38	13	0	70	84	60	0	61	72	5	0	8	41	34	0	491	0	0	0	0
5:25 PM	5	54	12	0	64	89	46	0	41	67	7	0	11	33	32	0	461	0	1	0	0
5:30 PM	1	32	12	0	60	88	55	0	71	58	6	0	10	34	35	0	462	0	0	0	0
5:35 PM	7	48	15	0	78	100	58	0	57	66	4	0	10	29	32	0	504	0	0	0	0
5:40 PM	1	63	10	0	54	64	45	0	64	63	7	0	8	37	33	0	449	0	1	0	0
5:45 PM	0	43	16	0	76	101	46	0	66	54	5	0	9	36	32	0	484	0	2	0	1
5:50 PM	4	48	11	0	93	83	55	0	33	61	8	0	6	32	37	0	471	0	0	0	0
5:55 PM	4	52	6	0	53	78	52	0	47	65	4	0	16	36	35	0	448	0	0	0	0
Total Survey	84	1,348	278	1	1,528	2,194	1,434	0	1,334	1,422	140	0	261	837	857	0	11,717	4	12	1	6

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Beavercreek Rd				Westbound Beavercreek Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	16	184	32	0	179	272	185	0	174	181	16	0	30	109	102	0	1,480	0	0	0	0
4:15 PM	5	164	36	0	154	251	200	0	133	157	15	0	29	123	110	0	1,377	3	3	0	2
4:30 PM	11	182	31	1	195	321	202	0	187	169	13	0	36	95	101	0	1,543	1	1	1	0
4:45 PM	8	184	43	0	166	262	178	0	186	187	23	0	37	111	128	0	1,513	0	1	0	2
5:00 PM	15	197	31	0	208	304	205	0	148	154	22	0	43	89	117	0	1,533	0	2	0	1
5:15 PM	12	151	35	0	212	270	153	0	168	207	17	0	27	106	95	0	1,453	0	2	0	0
5:30 PM	9	143	37	0	192	252	158	0	192	187	17	0	28	100	100	0	1,415	0	1	0	0
5:45 PM	8	143	33	0	222	262	153	0	146	180	17	0	31	104	104	0	1,403	0	2	0	1
Total Survey	84	1,348	278	1	1,528	2,194	1,434	0	1,334	1,422	140	0	261	837	857	0	11,717	4	12	1	6

Peak Hour Summary
4:30 PM to 5:30 PM

By Approach	Northbound Hwy 213				Southbound Hwy 213				Eastbound Beavercreek Rd				Westbound Beavercreek Rd				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	900	1,375	2,275	1	2,676	1,844	4,520	0	1,481	1,185	2,666	0	985	1,638	2,623	0	6,042	1	6	1	3
%HV	3.3%				1.6%				0.9%				1.3%				1.7%				
PHF	0.88				0.93				0.92				0.87				0.97				

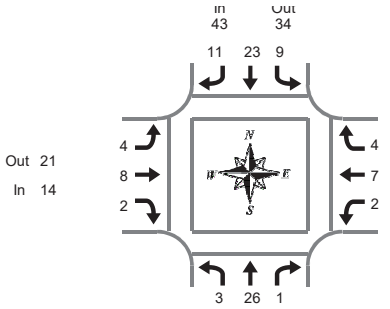
By Movement	Northbound Hwy 213				Southbound Hwy 213				Eastbound Beavercreek Rd				Westbound Beavercreek Rd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	46	714	140	900	781	1,157	738	2,676	689	717	75	1,481	143	401	441	985	6,042
%HV	6.5%	3.6%	0.7%	3.3%	1.2%	2.0%	1.5%	1.6%	0.6%	1.1%	2.7%	0.9%	1.4%	1.7%	0.9%	1.3%	1.7%
PHF	0.77	0.87	0.81	0.88	0.88	0.90	0.90	0.93	0.91	0.87	0.75	0.92	0.79	0.86	0.86	0.87	0.97

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Beavercreek Rd				Westbound Beavercreek Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	40	714	142	1	694	1,106	765	0	680	694	67	0	132	438	441	0	5,913	4	5	1	4
4:15 PM	39	727	141	1	723	1,138	785	0	654	667	73	0	145	418	456	0	5,966	4	7	1	5
4:30 PM	46	714	140	1	781	1,157	738	0	689	717	75	0	143	401	441	0	6,042	1	6	1	3
4:45 PM	44	675	146	0	778	1,088	694	0	694	735	79	0	135	406	440	0	5,914	0	6	0	3
5:00 PM	44	634	136	0	834	1,088	669	0	654	728	73	0	129	399	416	0	5,804	0	7	0	2

Heavy Vehicle Summary

Clay Carney
(503) 833-2740



Peak Hour Summary
4:30 PM to 5:30 PM

Hwy 213 & Beavercreek Rd

Tuesday, January 24, 2017
4:00 PM to 6:00 PM

Heavy Vehicle 5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Beavercreek Rd				Westbound Beavercreek Rd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	1	6	0	7	3	6	0	9	3	0	0	3	0	1	0	1	20
4:05 PM	0	4	0	4	1	2	3	6	0	2	1	3	0	1	1	2	15
4:10 PM	0	1	0	1	3	2	5	10	2	2	0	4	0	0	0	0	15
4:15 PM	1	2	0	3	3	2	1	6	1	1	0	2	0	0	1	1	12
4:20 PM	0	3	0	3	1	4	1	6	3	0	0	3	0	1	1	2	14
4:25 PM	0	1	1	2	3	2	1	6	2	2	2	6	0	0	0	0	14
4:30 PM	0	1	0	1	0	0	2	2	0	0	0	0	0	1	1	2	5
4:35 PM	0	6	0	6	1	3	3	7	1	1	0	2	0	0	0	0	15
4:40 PM	0	0	0	0	3	3	0	6	0	0	0	0	0	0	0	0	6
4:45 PM	1	2	0	3	1	2	0	3	2	0	0	2	0	1	0	1	9
4:50 PM	0	2	0	2	1	1	1	3	0	1	1	2	0	1	0	1	8
4:55 PM	0	3	0	3	0	3	0	3	0	0	1	1	0	1	0	1	8
5:00 PM	0	2	0	2	0	3	0	3	0	1	0	1	0	1	1	2	8
5:05 PM	1	3	0	4	2	1	0	3	0	1	0	1	0	0	1	1	9
5:10 PM	0	1	1	2	0	1	0	1	0	0	0	0	0	0	0	0	3
5:15 PM	0	2	0	2	0	1	2	3	0	1	0	1	1	0	0	1	7
5:20 PM	0	3	0	3	1	3	2	6	1	2	0	3	0	1	1	2	14
5:25 PM	1	1	0	2	0	2	1	3	0	1	0	1	1	1	0	2	8
5:30 PM	0	1	0	1	1	1	0	2	0	0	0	0	0	0	1	1	4
5:35 PM	0	0	0	0	1	3	1	5	1	0	1	2	0	0	0	0	7
5:40 PM	0	2	0	2	1	0	0	1	2	0	0	2	0	0	1	1	6
5:45 PM	0	1	0	1	1	2	1	4	1	0	0	1	0	0	0	0	6
5:50 PM	0	0	0	0	3	0	2	5	0	0	0	0	0	1	1	2	7
5:55 PM	1	2	0	3	1	2	1	4	0	0	0	0	0	0	0	0	7
Total Survey	6	49	2	57	31	49	27	107	19	15	6	40	2	11	10	23	227

Heavy Vehicle 15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Beavercreek Rd				Westbound Beavercreek Rd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	1	11	0	12	7	10	8	25	5	4	1	10	0	2	1	3	50
4:15 PM	1	6	1	8	7	8	3	18	6	3	2	11	0	1	2	3	40
4:30 PM	0	7	0	7	4	6	5	15	1	1	0	2	0	1	1	2	26
4:45 PM	1	7	0	8	2	6	1	9	2	1	2	5	0	3	0	3	25
5:00 PM	1	6	1	8	2	5	0	7	0	2	0	2	0	1	2	3	20
5:15 PM	1	6	0	7	1	6	5	12	1	4	0	5	2	2	1	5	29
5:30 PM	0	3	0	3	3	4	1	8	3	0	1	4	0	0	2	2	17
5:45 PM	1	3	0	4	5	4	4	13	1	0	0	1	0	1	1	2	20
Total Survey	6	49	2	57	31	49	27	107	19	15	6	40	2	11	10	23	227

Heavy Vehicle Peak Hour Summary
4:30 PM to 5:30 PM

By Approach	Northbound Hwy 213			Southbound Hwy 213			Eastbound Beavercreek Rd			Westbound Beavercreek Rd			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	30	27	57	43	34	77	14	21	35	13	18	31	100
PHF	0.83			0.67			0.70			0.65			0.83

By Movement	Northbound Hwy 213				Southbound Hwy 213				Eastbound Beavercreek Rd				Westbound Beavercreek Rd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	3	26	1	30	9	23	11	43	4	8	2	14	2	7	4	13	100
PHF	0.75	0.81	0.25	0.83	0.45	0.72	0.55	0.67	0.33	0.50	0.25	0.70	0.25	0.58	0.50	0.65	0.83

Heavy Vehicle Rolling Hour Summary
4:00 PM to 6:00 PM

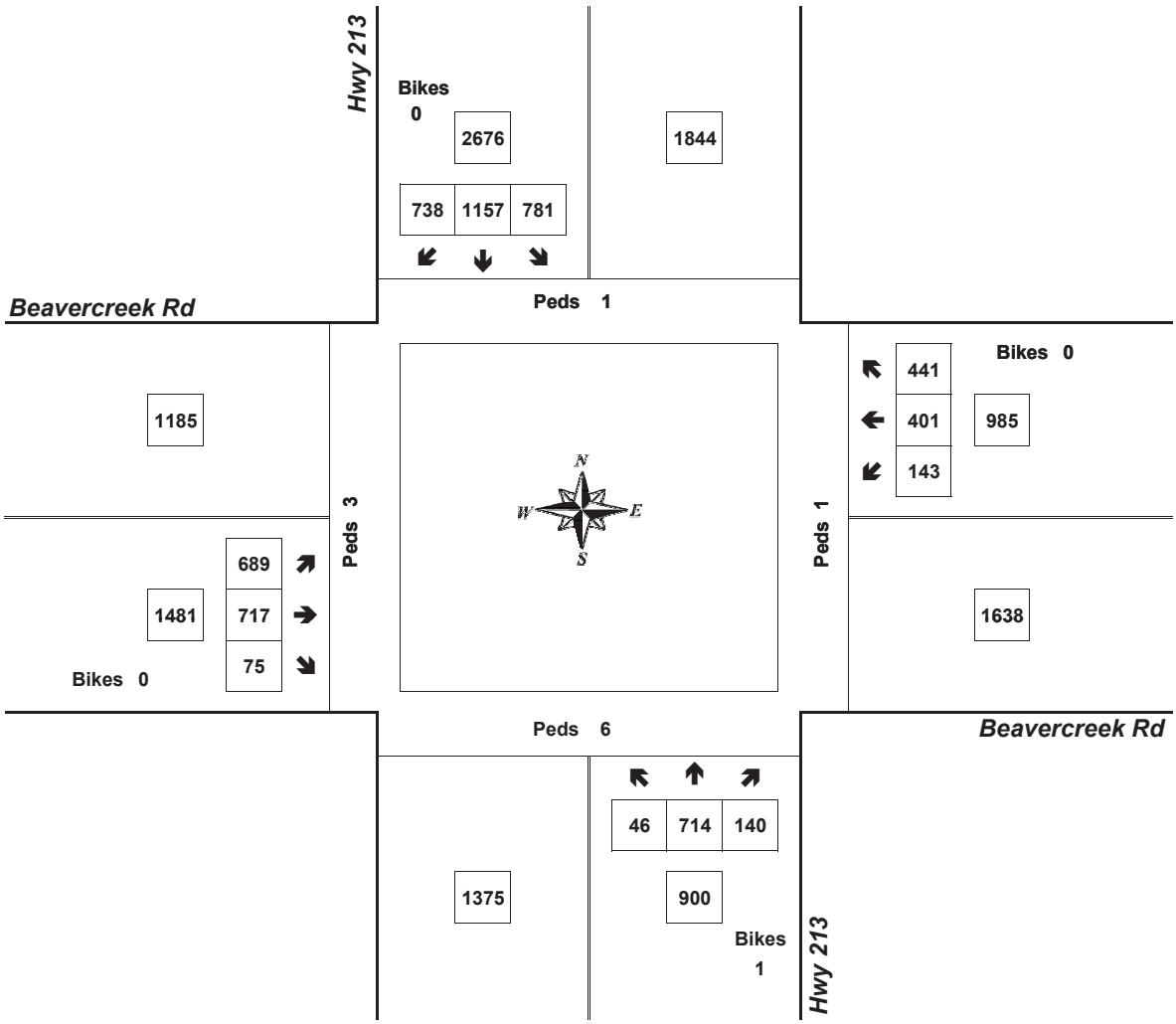
Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Beavercreek Rd				Westbound Beavercreek Rd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	3	31	1	35	20	30	17	67	14	9	5	28	0	7	4	11	141
4:15 PM	3	26	2	31	15	25	9	49	9	7	4	20	0	6	5	11	111
4:30 PM	3	26	1	30	9	23	11	43	4	8	2	14	2	7	4	13	100
4:45 PM	3	22	1	26	8	21	7	36	6	7	3	16	2	6	5	13	91
5:00 PM	3	18	1	22	11	19	10	40	5	6	1	12	2	4	6	12	86

Peak Hour Summary

Clay Carney
(503) 833-2740

Hwy 213 & Beavercreek Rd

4:30 PM to 5:30 PM
Tuesday, January 24, 2017

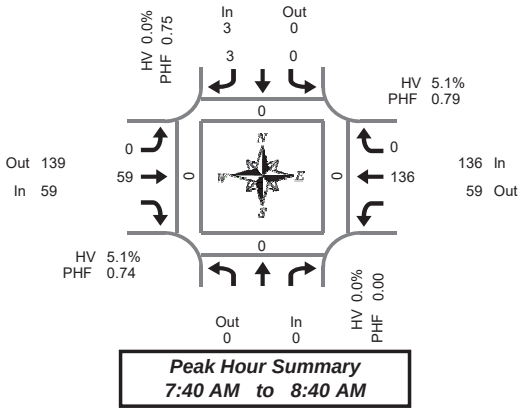


Approach	PHF	HV%	Volume
EB	0.92	0.9%	1,481
WB	0.87	1.3%	985
NB	0.88	3.3%	900
SB	0.93	1.6%	2,676
Intersection	0.97	1.7%	6,042

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Jada Way & Holcomb Blvd

Tuesday, June 21, 2016
7:00 AM to 9:00 AM

Peak Hour Summary
7:40 AM to 8:40 AM

5-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Jada Way				Southbound Jada Way				Eastbound Holcomb Blvd				Westbound Holcomb Blvd				Interval Total	Pedestrians Crosswalk			
				Bikes	L		R	Bikes	L	T		Bikes		T	R	Bikes		North	South	East	West
7:00 AM				0	0		0	0	0	3		0		12	0	0	15	0	0	0	0
7:05 AM				0	0		0	0	0	2		0		11	0	0	13	0	0	0	0
7:10 AM				0	0		0	0	0	2		0		11	0	0	13	0	0	0	0
7:15 AM				0	0		0	0	0	5		0		9	0	0	14	0	0	0	0
7:20 AM				0	0		0	0	0	4		0		14	1	0	19	0	0	0	0
7:25 AM				0	0		1	0	0	4		0		8	0	0	13	0	0	0	0
7:30 AM				0	0		0	0	0	5		0		10	0	0	15	0	0	0	0
7:35 AM				0	0		0	0	0	3		0		7	0	0	10	0	0	0	0
7:40 AM				0	0		0	0	0	6		0		19	0	0	25	0	0	0	0
7:45 AM				0	0		0	0	0	4		0		16	0	0	20	0	0	0	0
7:50 AM				0	0		1	0	0	6		0		8	0	0	15	0	0	0	0
7:55 AM				0	0		0	0	0	6		0		9	0	0	15	0	0	0	0
8:00 AM				0	0		0	0	0	4		0		10	0	0	14	0	0	0	0
8:05 AM				0	0		0	0	0	5		0		14	0	0	19	0	0	0	0
8:10 AM				0	0		1	0	0	2		0		6	0	0	9	0	0	0	0
8:15 AM				0	0		0	0	0	3		0		14	0	0	17	0	0	0	0
8:20 AM				0	0		0	0	0	3		0		10	0	0	13	0	0	0	0
8:25 AM				0	0		0	0	0	7		0		9	0	0	16	0	0	0	0
8:30 AM				0	0		0	0	0	9		0		12	0	0	21	0	0	0	0
8:35 AM				0	0		1	0	0	4		0		9	0	0	14	0	0	0	0
8:40 AM				0	0		0	0	0	6		0		9	0	0	15	0	0	0	0
8:45 AM				0	0		0	0	0	6		0		17	0	0	23	0	0	0	0
8:50 AM				0	0		0	0	0	7		0		4	0	0	11	0	0	0	0
8:55 AM				0	0		0	0	0	4		0		9	0	0	13	0	0	0	0
Total Survey				0	0		4	0	0	110		0		257	1	0	372	0	0	0	0

15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Jada Way				Southbound Jada Way				Eastbound Holcomb Blvd				Westbound Holcomb Blvd				Interval Total	Pedestrians Crosswalk			
				Bikes	L		R	Bikes	L	T		Bikes		T	R	Bikes		North	South	East	West
7:00 AM				0	0		0	0	0	7		0		34	0	0	41	0	0	0	0
7:15 AM				0	0		1	0	0	13		0		31	1	0	46	0	0	0	0
7:30 AM				0	0		0	0	0	14		0		36	0	0	50	0	0	0	0
7:45 AM				0	0		1	0	0	16		0		33	0	0	50	0	0	0	0
8:00 AM				0	0		1	0	0	11		0		30	0	0	42	0	0	0	0
8:15 AM				0	0		0	0	0	13		0		33	0	0	46	0	0	0	0
8:30 AM				0	0		1	0	0	19		0		30	0	0	50	0	0	0	0
8:45 AM				0	0		0	0	0	17		0		30	0	0	47	0	0	0	0
Total Survey				0	0		4	0	0	110		0		257	1	0	372	0	0	0	0

Peak Hour Summary
7:40 AM to 8:40 AM

By Approach	Northbound Jada Way				Southbound Jada Way				Eastbound Holcomb Blvd				Westbound Holcomb Blvd				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	0	0	0	0	3	0	3	0	59	139	198	0	136	59	195	0	198	0	0	0	0
%HV	0.0%				0.0%				5.1%				5.1%				5.1%				
PHF	0.00				0.75				0.74				0.79				0.83				

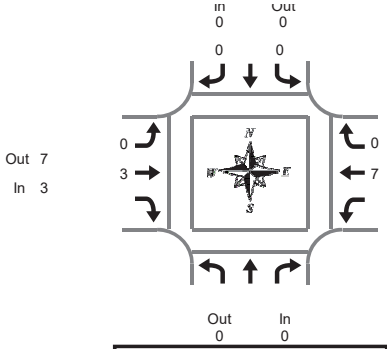
By Movement	Northbound Jada Way				Southbound Jada Way				Eastbound Holcomb Blvd				Westbound Holcomb Blvd				Total
				Total	L		R	Total	L	T		Total		T	R	Total	
Volume				0	0		3	3	0	59		59		136	0	136	198
%HV	NA	NA	NA	0.0%	0.0%	NA	0.0%	0.0%	0.0%	5.1%	NA	5.1%	NA	5.1%	0.0%	5.1%	5.1%
PHF				0.00	0.00		0.75	0.75	0.00	0.74		0.74		0.79	0.00	0.79	0.83

Rolling Hour Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Jada Way				Southbound Jada Way				Eastbound Holcomb Blvd				Westbound Holcomb Blvd				Interval Total	Pedestrians Crosswalk			
				Bikes	L		R	Bikes	L	T		Bikes		T	R	Bikes		North	South	East	West
7:00 AM				0	0		2	0	0	50		0		134	1	0	187	0	0	0	0
7:15 AM				0	0		3	0	0	54		0		130	1	0	188	0	0	0	0
7:30 AM				0	0		2	0	0	54		0		132	0	0	188	0	0	0	0
7:45 AM				0	0		3	0	0	59		0		126	0	0	188	0	0	0	0
8:00 AM				0	0		2	0	0	60		0		123	0	0	185	0	0	0	0

Heavy Vehicle Summary

Clay Carney
(503) 833-2740



Jada Way & Holcomb Blvd

Tuesday, June 21, 2016
7:00 AM to 9:00 AM

Peak Hour Summary
7:40 AM to 8:40 AM

Heavy Vehicle 5-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Jada Way				Southbound Jada Way				Eastbound Holcomb Blvd				Westbound Holcomb Blvd				Interval Total
				Total	L		R	Total	L	T		Total		T	R	Total	
7:00 AM				0	0		0	0	0	2		2		1	0	1	3
7:05 AM				0	0		0	0	0	0		0		1	0	1	1
7:10 AM				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
7:20 AM				0	0		0	0	0	0		0		0	1	1	1
7:25 AM				0	0		1	1	0	0		0		0	0	0	1
7:30 AM				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
7:40 AM				0	0		0	0	0	0		0		1	0	1	1
7:45 AM				0	0		0	0	0	0		0		1	0	1	1
7:50 AM				0	0		0	0	0	0		0		0	0	0	0
7:55 AM				0	0		0	0	0	0		0		1	0	1	1
8:00 AM				0	0		0	0	0	0		0		0	0	0	0
8:05 AM				0	0		0	0	0	0		0		1	0	1	1
8:10 AM				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
8:20 AM				0	0		0	0	0	0		0		0	0	0	0
8:25 AM				0	0		0	0	0	1		1		2	0	2	3
8:30 AM				0	0		0	0	0	1		1		0	0	0	1
8:35 AM				0	0		0	0	0	1		1		1	0	1	2
8:40 AM				0	0		0	0	0	1		1		0	0	0	1
8:45 AM				0	0		0	0	0	1		1		1	0	1	2
8:50 AM				0	0		0	0	0	0		0		1	0	1	1
8:55 AM				0	0		0	0	0	0		0		2	0	2	2
Total Survey				0	0		1	1	0	7		7		13	1	14	22

Heavy Vehicle 15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Jada Way				Southbound Jada Way				Eastbound Holcomb Blvd				Westbound Holcomb Blvd				Interval Total
				Total	L		R	Total	L	T		Total		T	R	Total	
7:00 AM				0	0		0	0	0	2		2		2	0	2	4
7:15 AM				0	0		1	1	0	0		0		0	1	1	2
7:30 AM				0	0		0	0	0	0		0		1	0	1	1
7:45 AM				0	0		0	0	0	0		0		2	0	2	2
8:00 AM				0	0		0	0	0	0		0		1	0	1	1
8:15 AM				0	0		0	0	0	1		1		2	0	2	3
8:30 AM				0	0		0	0	0	3		3		1	0	1	4
8:45 AM				0	0		0	0	0	1		1		4	0	4	5
Total Survey				0	0		1	1	0	7		7		13	1	14	22

Heavy Vehicle Peak Hour Summary
7:40 AM to 8:40 AM

By Approach	Northbound Jada Way			Southbound Jada Way			Eastbound Holcomb Blvd			Westbound Holcomb Blvd			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	0	0	0	0	0	0	3	7	10	7	3	10	10
PHF	0.00			0.00			0.25			0.58			0.42

By Movement	Northbound Jada Way				Southbound Jada Way				Eastbound Holcomb Blvd				Westbound Holcomb Blvd				Total
				Total	L		R	Total	L	T		Total		T	R	Total	
Volume				0	0		0	0	0	3		3		7	0	7	10
PHF				0.00	0.00		0.00	0.00	0.00	0.25		0.25		0.58	0.00	0.58	0.42

Heavy Vehicle Rolling Hour Summary
7:00 AM to 9:00 AM

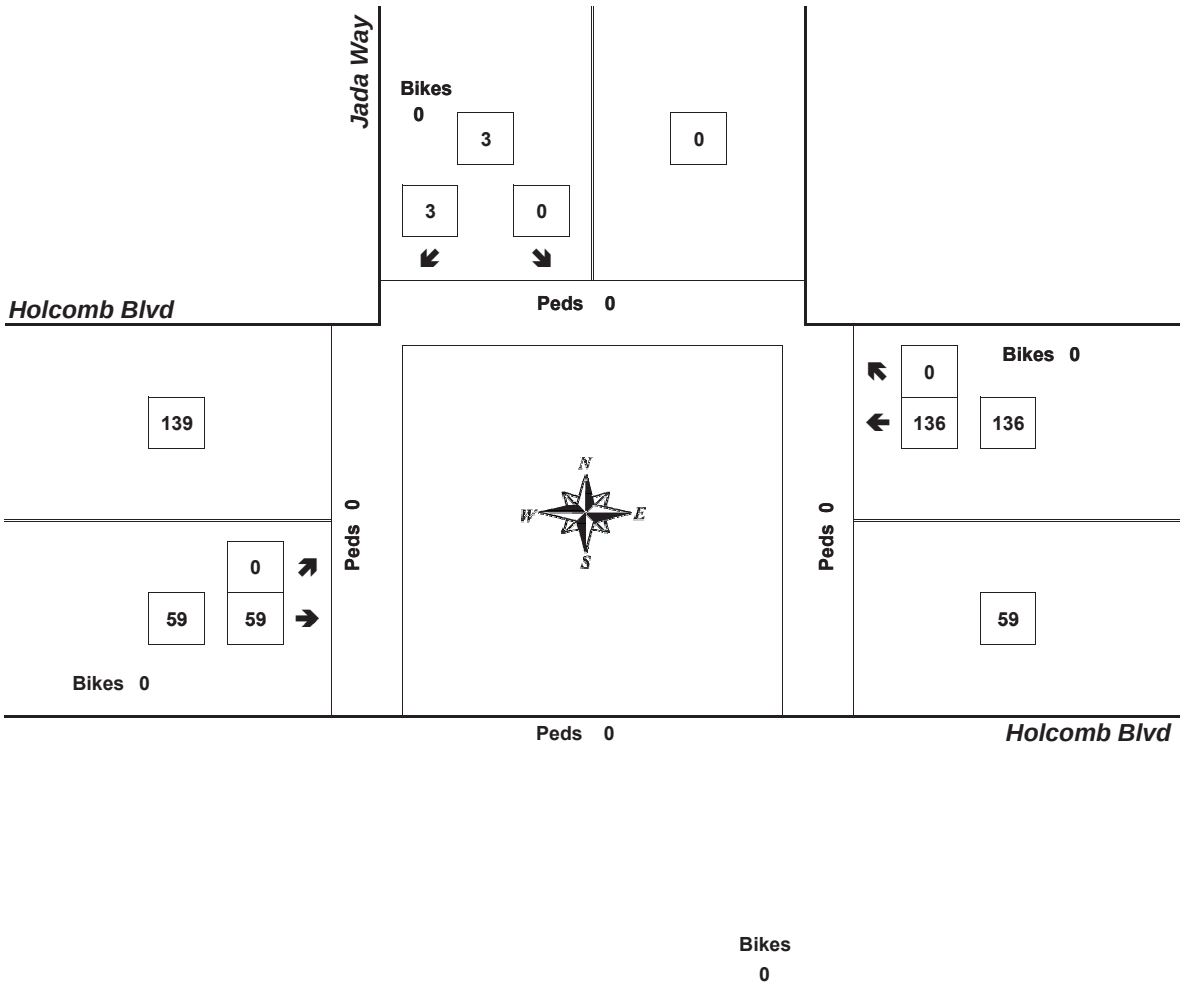
Interval Start Time	Northbound Jada Way				Southbound Jada Way				Eastbound Holcomb Blvd				Westbound Holcomb Blvd				Interval Total
				Total	L		R	Total	L	T		Total		T	R	Total	
7:00 AM				0	0		1	1	0	2		2		5	1	6	9
7:15 AM				0	0		1	1	0	0		0		4	1	5	6
7:30 AM				0	0		0	0	0	1		1		6	0	6	7
7:45 AM				0	0		0	0	0	4		4		6	0	6	10
8:00 AM				0	0		0	0	0	5		5		8	0	8	13

Peak Hour Summary

Clay Carney
(503) 833-2740

Jada Way & Holcomb Blvd

7:40 AM to 8:40 AM
Tuesday, June 21, 2016

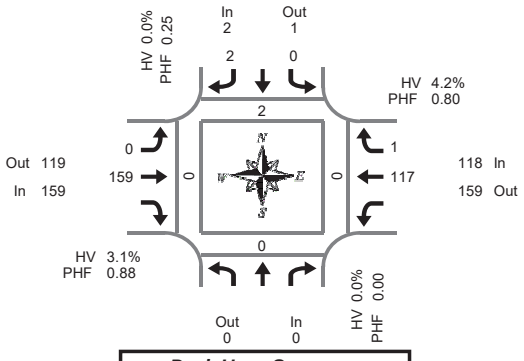


Approach	PHF	HV%	Volume
EB	0.74	5.1%	59
WB	0.79	5.1%	136
NB	0.00	0.0%	0
SB	0.75	0.0%	3
Intersection	0.83	5.1%	198

Count Period: 7:00 AM to 9:00 AM

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Jada Way & Holcomb Blvd

Tuesday, June 21, 2016
4:00 PM to 6:00 PM

Peak Hour Summary
4:35 PM to 5:35 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Jada Way				Southbound Jada Way				Eastbound Holcomb Blvd				Westbound Holcomb Blvd				Interval Total	Pedestrians Crosswalk			
				Bikes	L		R	Bikes	L	T		Bikes		T	R	Bikes		North	South	East	West
4:00 PM				0	0		0	0	0	15		0		4	0	0	19	0	0	0	0
4:05 PM				0	0		0	0	2	5		0		7	0	0	14	0	0	0	0
4:10 PM				0	0		0	0	0	16		0		8	0	0	24	0	0	0	0
4:15 PM				0	0		0	0	0	18		0		2	0	0	20	0	0	0	0
4:20 PM				0	0		0	0	0	11		0		7	0	0	18	0	0	0	0
4:25 PM				0	0		0	0	0	8		0		14	0	0	22	0	0	0	0
4:30 PM				0	0		1	0	0	11		0		4	0	0	16	0	0	0	0
4:35 PM				0	0		0	0	0	21		0		17	0	0	38	0	0	0	0
4:40 PM				0	0		0	0	0	11		0		7	0	0	18	0	0	0	0
4:45 PM				0	0		0	0	0	9		0		13	0	0	22	0	0	0	0
4:50 PM				0	0		0	0	0	15		0		3	0	0	18	0	0	0	0
4:55 PM				0	0		0	0	0	8		0		14	0	0	22	0	0	0	0
5:00 PM				0	0		0	0	0	8		0		4	0	0	12	0	0	0	0
5:05 PM				0	0		0	0	0	11		0		13	0	0	24	0	0	0	0
5:10 PM				0	0		0	0	0	19		0		11	0	0	30	0	0	0	0
5:15 PM				0	0		2	0	0	12		0		5	1	0	20	2	0	0	0
5:20 PM				0	0		0	0	0	13		0		9	0	0	22	0	0	0	0
5:25 PM				0	0		0	0	0	14		0		8	0	0	22	0	0	0	0
5:30 PM				0	0		0	0	0	18		0		13	0	0	31	0	0	0	0
5:35 PM				0	0		0	0	0	11		0		6	0	0	17	0	0	0	0
5:40 PM				0	0		0	0	1	15		0		5	0	0	21	0	0	0	0
5:45 PM				0	0		0	0	1	11		0		7	0	0	19	0	0	0	0
5:50 PM				0	0		0	0	0	10		0		10	0	0	20	0	0	0	0
5:55 PM				0	0		0	0	0	9		0		7	0	0	16	0	0	1	0
Total Survey				0	0		3	0	4	299		0		198	1	0	505	2	0	1	0

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Jada Way				Southbound Jada Way				Eastbound Holcomb Blvd				Westbound Holcomb Blvd				Interval Total	Pedestrians Crosswalk			
				Bikes	L		R	Bikes	L	T		Bikes		T	R	Bikes		North	South	East	West
4:00 PM				0	0		0	0	2	36		0		19	0	0	57	0	0	0	0
4:15 PM				0	0		0	0	0	37		0		23	0	0	60	0	0	0	0
4:30 PM				0	0		1	0	0	43		0		28	0	0	72	0	0	0	0
4:45 PM				0	0		0	0	0	32		0		30	0	0	62	0	0	0	0
5:00 PM				0	0		0	0	0	38		0		28	0	0	66	0	0	0	0
5:15 PM				0	0		2	0	0	39		0		22	1	0	64	2	0	0	0
5:30 PM				0	0		0	0	1	44		0		24	0	0	69	0	0	0	0
5:45 PM				0	0		0	0	1	30		0		24	0	0	55	0	0	1	0
Total Survey				0	0		3	0	4	299		0		198	1	0	505	2	0	1	0

Peak Hour Summary
4:35 PM to 5:35 PM

By Approach	Northbound Jada Way				Southbound Jada Way				Eastbound Holcomb Blvd				Westbound Holcomb Blvd				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	0	0	0	0	2	1	3	0	159	119	278	0	118	159	277	0	279	2	0	0	0
%HV	0.0%				0.0%				3.1%				4.2%				3.6%				
PHF	0.00				0.25				0.88				0.80				0.89				

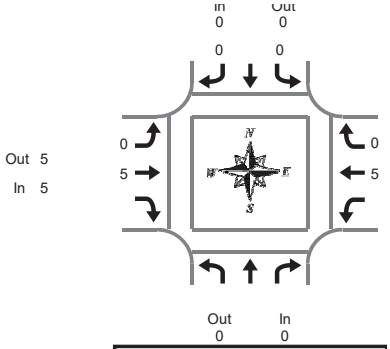
By Movement	Northbound Jada Way				Southbound Jada Way				Eastbound Holcomb Blvd				Westbound Holcomb Blvd				Total
				Total	L		R	Total	L	T		Total		T	R	Total	
Volume				0	0		2	2	0	159		159		117	1	118	279
%HV	NA	NA	NA	0.0%	0.0%	NA	0.0%	0.0%	0.0%	3.1%	NA	3.1%	NA	4.3%	0.0%	4.2%	3.6%
PHF				0.00	0.00		0.25	0.25	0.00	0.88		0.88		0.79	0.25	0.80	0.89

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Jada Way				Southbound Jada Way				Eastbound Holcomb Blvd				Westbound Holcomb Blvd				Interval Total	Pedestrians Crosswalk			
				Bikes	L		R	Bikes	L	T		Bikes		T	R	Bikes		North	South	East	West
4:00 PM				0	0		1	0	2	148		0		100	0	0	251	0	0	0	0
4:15 PM				0	0		1	0	0	150		0		109	0	0	260	0	0	0	0
4:30 PM				0	0		3	0	0	152		0		108	1	0	264	2	0	0	0
4:45 PM				0	0		2	0	1	153		0		104	1	0	261	2	0	0	0
5:00 PM				0	0		2	0	2	151		0		98	1	0	254	2	0	1	0

Heavy Vehicle Summary

Clay Carney
(503) 833-2740



Jada Way & Holcomb Blvd

Tuesday, June 21, 2016
4:00 PM to 6:00 PM

Peak Hour Summary
4:35 PM to 5:35 PM

Heavy Vehicle 5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Jada Way				Southbound Jada Way				Eastbound Holcomb Blvd				Westbound Holcomb Blvd				Interval Total
				Total	L		R	Total	L	T		Total		T	R	Total	
4:00 PM				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
4:10 PM				0	0		0	0	0	1		1		0	0	0	1
4:15 PM				0	0		0	0	0	1		1		0	0	0	1
4:20 PM				0	0		0	0	0	1		1		1	0	1	2
4:25 PM				0	0		0	0	0	1		1		0	0	0	1
4:30 PM				0	0		0	0	0	0		0		0	0	0	0
4:35 PM				0	0		0	0	0	0		0		1	0	1	1
4:40 PM				0	0		0	0	0	0		0		0	0	0	0
4:45 PM				0	0		0	0	0	1		1		1	0	1	2
4:50 PM				0	0		0	0	0	2		2		0	0	0	2
4:55 PM				0	0		0	0	0	0		0		0	0	0	0
5:00 PM				0	0		0	0	0	1		1		0	0	0	1
5:05 PM				0	0		0	0	0	0		0		0	0	0	0
5:10 PM				0	0		0	0	0	0		0		0	0	0	0
5:15 PM				0	0		0	0	0	0		0		0	0	0	0
5:20 PM				0	0		0	0	0	0		0		0	0	0	0
5:25 PM				0	0		0	0	0	0		0		1	0	1	1
5:30 PM				0	0		0	0	0	1		1		2	0	2	3
5:35 PM				0	0		0	0	0	0		0		0	0	0	0
5:40 PM				0	0		0	0	0	1		1		0	0	0	1
5:45 PM				0	0		0	0	0	0		0		0	0	0	0
5:50 PM				0	0		0	0	0	0		0		1	0	1	1
5:55 PM				0	0		0	0	0	0		0		1	0	1	1
Total Survey				0	0		0	0	0	10		10		8	0	8	18

Heavy Vehicle 15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Jada Way				Southbound Jada Way				Eastbound Holcomb Blvd				Westbound Holcomb Blvd				Interval Total
				Total	L		R	Total	L	T		Total		T	R	Total	
4:00 PM				0	0		0	0	0	1		1		0	0	0	1
4:15 PM				0	0		0	0	0	3		3		1	0	1	4
4:30 PM				0	0		0	0	0	0		0		1	0	1	1
4:45 PM				0	0		0	0	0	3		3		1	0	1	4
5:00 PM				0	0		0	0	0	1		1		0	0	0	1
5:15 PM				0	0		0	0	0	0		0		1	0	1	1
5:30 PM				0	0		0	0	0	2		2		2	0	2	4
5:45 PM				0	0		0	0	0	0		0		2	0	2	2
Total Survey				0	0		0	0	0	10		10		8	0	8	18

Heavy Vehicle Peak Hour Summary
4:35 PM to 5:35 PM

By Approach	Northbound Jada Way			Southbound Jada Way			Eastbound Holcomb Blvd			Westbound Holcomb Blvd			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	0	0	0	0	0	0	5	5	10	5	5	10	10
PHF	0.00			0.00			0.42			0.42			0.63

By Movement	Northbound Jada Way				Southbound Jada Way				Eastbound Holcomb Blvd				Westbound Holcomb Blvd				Total
				Total	L		R	Total	L	T		Total		T	R	Total	
Volume				0	0		0	0	0	5		5		5	0	5	10
PHF				0.00	0.00		0.00	0.00	0.00	0.42		0.42		0.42	0.00	0.42	0.63

Heavy Vehicle Rolling Hour Summary
4:00 PM to 6:00 PM

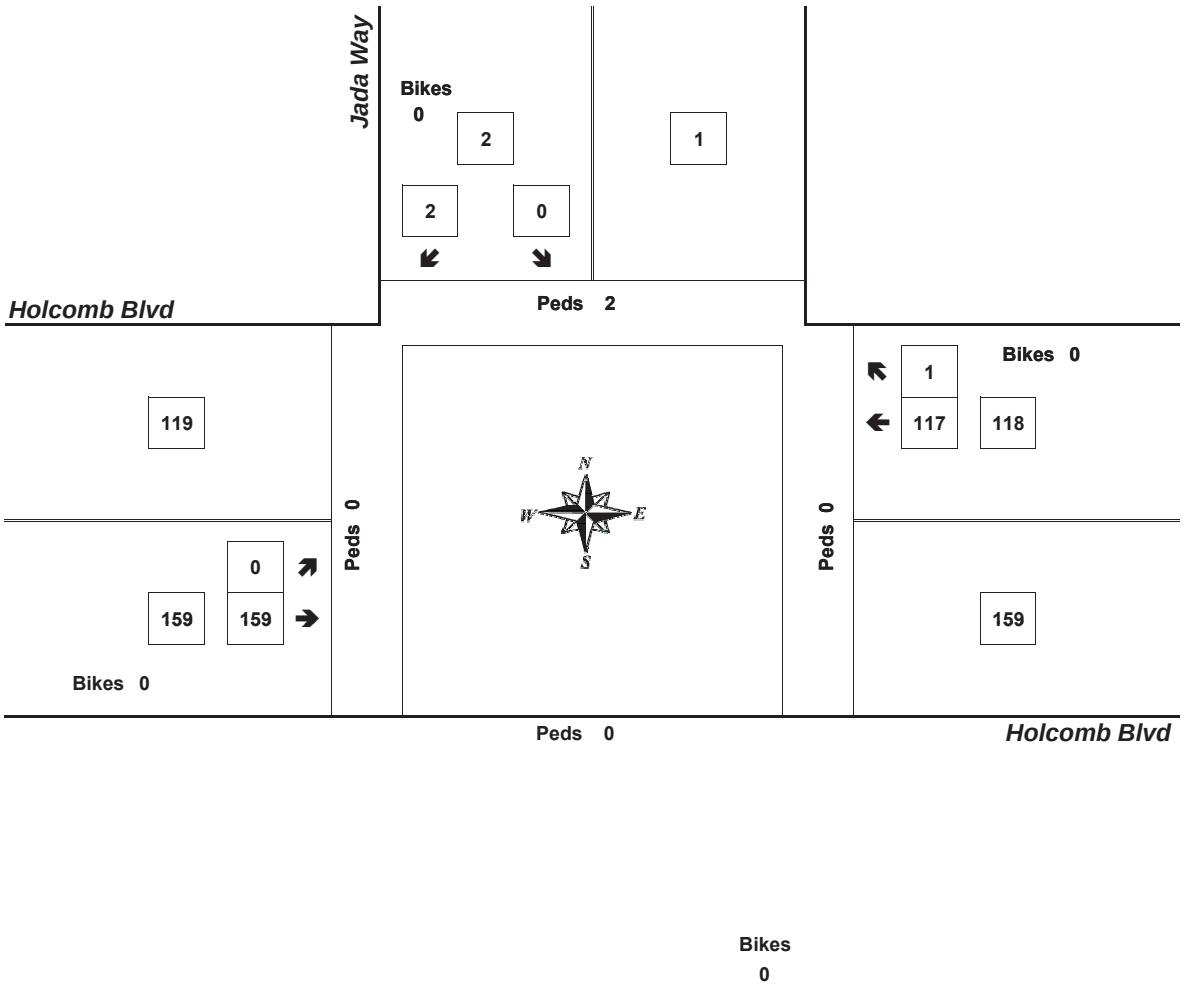
Interval Start Time	Northbound Jada Way				Southbound Jada Way				Eastbound Holcomb Blvd				Westbound Holcomb Blvd				Interval Total
				Total	L		R	Total	L	T		Total		T	R	Total	
4:00 PM				0	0		0	0	0	7		7		3	0	3	10
4:15 PM				0	0		0	0	0	7		7		3	0	3	10
4:30 PM				0	0		0	0	0	4		4		3	0	3	7
4:45 PM				0	0		0	0	0	6		6		4	0	4	10
5:00 PM				0	0		0	0	0	3		3		5	0	5	8

Peak Hour Summary

Clay Carney
(503) 833-2740

Jada Way & Holcomb Blvd

4:35 PM to 5:35 PM
Tuesday, June 21, 2016



Approach	PHF	HV%	Volume
EB	0.88	3.1%	159
WB	0.80	4.2%	118
NB	0.00	0.0%	0
SB	0.25	0.0%	2
Intersection	0.89	3.6%	279

Count Period: 4:00 PM to 6:00 PM

Type of peak hour being reported: System Peak

Method for determining peak hour: Total Entering Volume

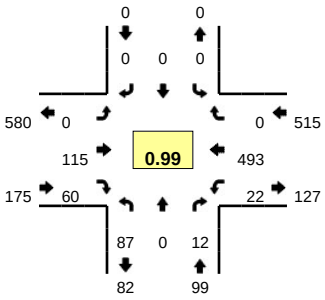
LOCATION: S Holly Ln -- S Redland Rd

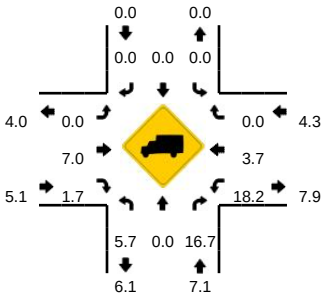
QC JOB #: 13332115

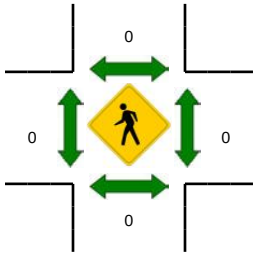
CITY/STATE: Oregon City, OR

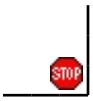
DATE: Tue, Mar 17 2015

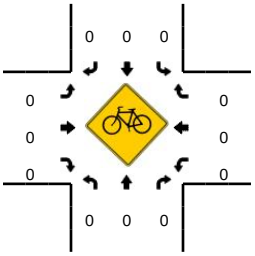
Peak-Hour: 7:05 AM -- 8:05 AM
Peak 15-Min: 7:15 AM -- 7:30 AM

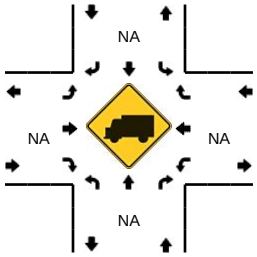


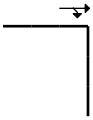


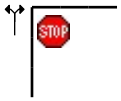


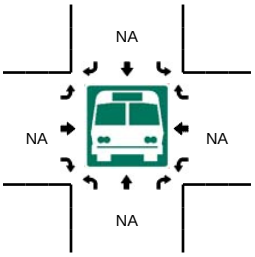












5-Min Count Period Beginning At	S Holly Ln (Northbound)				S Holly Ln (Southbound)				S Redland Rd (Eastbound)				S Redland Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	9	0	0	0	0	0	0	0	0	8	2	0	2	42	0	0	63	
7:05 AM	9	0	0	0	0	0	0	0	0	9	0	0	0	40	0	0	58	
7:10 AM	12	0	2	0	0	0	0	0	0	6	3	0	2	40	0	0	65	
7:15 AM	7	0	1	0	0	0	0	0	0	9	3	0	1	40	0	0	61	
7:20 AM	9	0	0	0	0	0	0	0	0	14	9	0	2	40	0	0	74	
7:25 AM	5	0	1	0	0	0	0	0	0	7	6	0	3	43	0	0	65	
7:30 AM	4	0	1	0	0	0	0	0	0	10	6	0	2	39	0	0	62	
7:35 AM	7	0	3	0	0	0	0	0	0	7	6	0	1	50	0	0	74	
7:40 AM	10	0	1	0	0	0	0	0	0	10	6	0	1	43	0	0	71	
7:45 AM	9	0	0	0	0	0	0	0	0	12	4	0	0	48	0	0	73	
7:50 AM	7	0	1	0	0	0	0	0	0	14	7	0	2	39	0	0	70	
7:55 AM	5	0	1	0	0	0	0	0	0	5	6	0	5	39	0	0	61	797
8:00 AM	3	0	1	0	0	0	0	0	0	12	4	0	3	32	0	0	55	789
8:05 AM	11	0	1	0	0	0	0	0	0	8	4	0	1	37	0	0	62	793
8:10 AM	5	0	1	0	0	0	0	0	0	12	7	0	0	30	0	0	55	783
8:15 AM	3	0	0	0	0	0	0	0	0	12	6	0	2	33	0	0	56	778
8:20 AM	9	0	3	0	0	0	0	0	0	10	11	0	8	33	0	0	74	778
8:25 AM	12	0	0	0	0	0	0	0	0	16	6	0	9	26	0	0	69	782
8:30 AM	11	0	7	0	0	0	0	0	0	13	13	0	5	36	0	0	85	805
8:35 AM	12	0	2	0	0	0	0	0	0	9	13	0	8	27	0	0	71	802
8:40 AM	17	0	5	0	0	0	0	0	0	13	12	0	8	25	0	0	80	811
8:45 AM	23	0	5	0	0	0	0	0	0	11	7	0	4	26	0	0	76	814
8:50 AM	7	0	2	0	0	0	0	0	0	15	5	0	1	30	0	0	60	804
8:55 AM	6	0	0	0	0	0	0	0	0	6	3	0	1	17	0	0	33	776

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	84	0	8	0	0	0	0	0	0	120	72	0	24	492	0	0	800
Heavy Trucks	12	0	4		0	0	0		0	12	0		0	12	0		40
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 3/25/2015 5:11 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: System Peak

Method for determining peak hour: Total Entering Volume

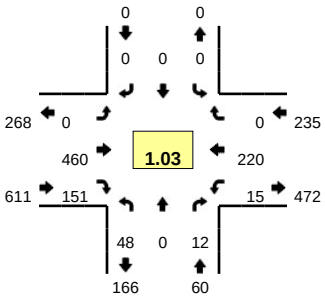
LOCATION: S Holly Ln -- S Redland Rd

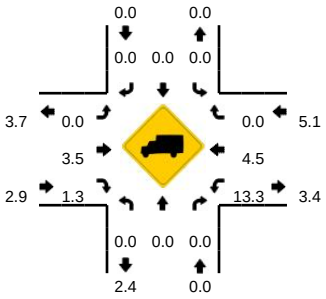
QC JOB #: 13332116

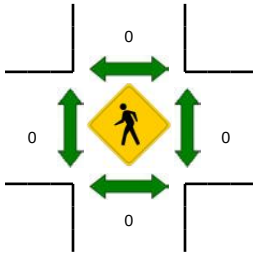
CITY/STATE: Oregon City, OR

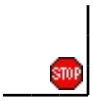
DATE: Tue, Mar 17 2015

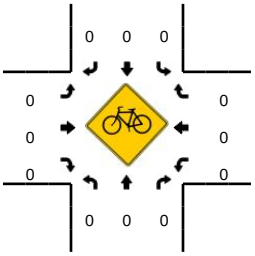
Peak-Hour: 4:40 PM -- 5:40 PM
Peak 15-Min: 5:10 PM -- 5:25 PM

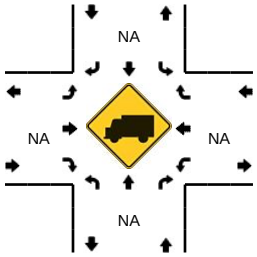


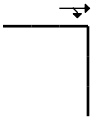


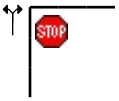


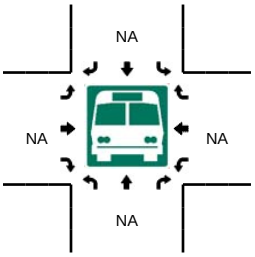












5-Min Count Period Beginning At	S Holly Ln (Northbound)				S Holly Ln (Southbound)				S Redland Rd (Eastbound)				S Redland Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	6	0	2	0	0	0	0	0	0	40	12	0	5	13	0	0	78	
4:05 PM	9	0	1	0	0	0	0	0	0	32	12	0	7	9	0	0	70	
4:10 PM	2	0	2	0	0	0	0	0	0	47	10	0	3	25	0	0	89	
4:15 PM	6	0	1	0	0	0	0	0	0	37	8	0	3	14	0	0	69	
4:20 PM	2	0	2	0	0	0	0	0	0	25	16	0	3	16	0	0	64	
4:25 PM	4	0	2	0	0	0	0	0	0	39	9	0	1	23	0	0	78	
4:30 PM	7	0	2	0	0	0	0	0	0	33	9	0	1	20	0	0	72	
4:35 PM	7	0	1	0	0	0	0	0	0	47	15	0	2	21	0	0	93	
4:40 PM	6	0	1	0	0	0	0	0	0	34	8	0	1	16	0	0	66	
4:45 PM	5	0	3	0	0	0	0	0	0	42	11	0	0	23	0	0	84	
4:50 PM	1	0	2	0	0	0	0	0	0	38	11	0	2	17	0	0	71	
4:55 PM	1	0	1	0	0	0	0	0	0	35	11	0	0	16	0	0	64	898
5:00 PM	2	0	2	0	0	0	0	0	0	37	16	0	1	17	0	0	75	895
5:05 PM	7	0	0	0	0	0	0	0	0	45	13	0	2	17	0	0	84	909
5:10 PM	3	0	1	0	0	0	0	0	0	41	18	0	0	26	0	0	89	909
5:15 PM	2	0	1	0	0	0	0	0	0	30	14	0	1	14	0	0	62	902
5:20 PM	4	0	0	0	0	0	0	0	0	32	9	0	3	20	0	0	68	906
5:25 PM	2	0	0	0	0	0	0	0	0	40	17	0	1	17	0	0	77	905
5:30 PM	8	0	0	0	0	0	0	0	0	40	12	0	2	23	0	0	85	918
5:35 PM	7	0	1	0	0	0	0	0	0	46	11	0	2	14	0	0	81	906
5:40 PM	5	0	0	0	0	0	0	0	0	41	11	0	0	16	0	0	73	913
5:45 PM	1	0	0	0	0	0	0	0	0	39	13	0	0	21	0	0	74	903
5:50 PM	5	0	0	0	0	0	0	0	0	29	13	0	1	24	0	0	72	904
5:55 PM	2	0	2	0	0	0	0	0	0	48	15	0	1	19	0	0	87	927

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	36	0	8	0	0	0	0	0	0	412	164	0	16	240	0	0	876
Heavy Trucks	0	0	0		0	0	0		0	12	0		0	8	0		20
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 3/25/2015 5:12 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

TRIP GENERATION CALCULATIONS

Land Use: Single-Family Detached Housing
Land Use Code: 210
Variable: Dwelling Units
Variable Value: 533

AM PEAK HOUR

Trip Equation: T = 0.70(X) + 9.74

	Enter	Exit	Total
Directional Distribution	25%	75%	
Trip Ends	**96**	**287**	**383**

PM PEAK HOUR

Trip Equation: Ln(T)=0.90Ln(X)+0.51

	Enter	Exit	Total
Directional Distribution	63%	37%	
Trip Ends	**299**	**175**	**474**

WEEKDAY

Trip Equation: Ln(T)=0.92Ln(X)+2.72

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	**2,448**	**2,448**	**4,896**

SATURDAY

Trip Equation: Ln(T)=0.93Ln(X)+2.64

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	**2,406**	**2,406**	**4,812**

Source: TRIP GENERATION, Ninth Edition

TRIP GENERATION CALCULATIONS

Land Use: Shopping Center
Land Use Code: 820
Variable: 1,000 Sq Ft Gross Leasable Area
Variable Value: 49.0

AM PEAK HOUR

Trip Rate: 0.96

	Enter	Exit	Total
Directional Distribution	62%	38%	
Trip Ends	**29**	**18**	**47**

PM PEAK HOUR

Trip Rate: 3.71

	Enter	Exit	Total
Directional Distribution	48%	52%	
Trip Ends	**87**	**95**	**182**

WEEKDAY

Trip Rate: 42.7

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	**1,046**	**1,046**	**2,092**

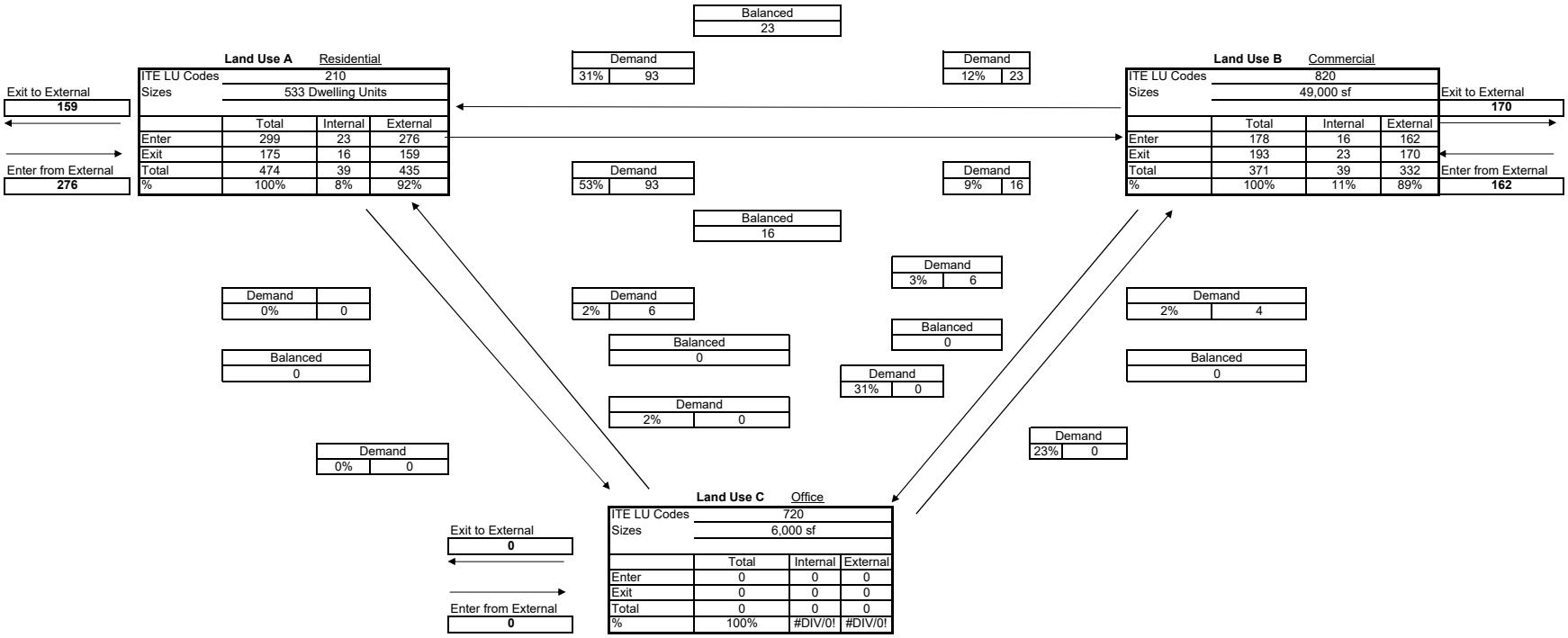
SATURDAY

Trip Rate: 49.97

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	**1,224**	**1,224**	**2,448**

Source: TRIP GENERATION, Ninth Edition

Internalization



Net External Trips for Mulit-Use Development					
	Land Use A	Land Use B	Land Use C	Total	
Enter	276	162	0	438	
Exit	159	170	0	329	
Total	435	332	0	767	*INTERNAL CAPTURE*
Single-Use Trip Gen. Est.	474	371	0	845	9%

TRIP GENERATION CALCULATIONS

Land Use: Single-Family Detached Housing
Land Use Code: 210
Variable: Dwelling Units
Variable Value: 11

AM PEAK HOUR

Trip Rate: 0.75

	Enter	Exit	Total
Directional Distribution	25%	75%	
Trip Ends	**2**	**6**	**8**

PM PEAK HOUR

Trip Rate: 1.00

	Enter	Exit	Total
Directional Distribution	63%	37%	
Trip Ends	**7**	**4**	**11**

WEEKDAY

Trip Rate: 9.52

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	**52**	**52**	**104**

SATURDAY

Trip Rate: 9.91

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	**55**	**55**	**110**

Source: TRIP GENERATION, Ninth Edition

LEVEL OF SERVICE

Level of service is used to describe the quality of traffic flow. Levels of service A to C are considered good, and rural roads are usually designed for level of service C. Urban streets and signalized intersections are typically designed for level of service D. Level of service E is considered to be the limit of acceptable delay. For unsignalized intersections, level of service E is generally considered acceptable. Here is a more complete description of levels of service:

Level of service A: Very low delay at intersections, with all traffic signal cycles clearing and no vehicles waiting through more than one signal cycle. On highways, low volume and high speeds, with speeds not restricted by other vehicles.

Level of service B: Operating speeds beginning to be affected by other traffic; short traffic delays at intersections. Higher average intersection delay than for level of service A resulting from more vehicles stopping.

Level of service C: Operating speeds and maneuverability closely controlled by other traffic; higher delays at intersections than for level of service B due to a significant number of vehicles stopping. Not all signal cycles clear the waiting vehicles. This is the recommended design standard for rural highways.

Level of service D: Tolerable operating speeds; long traffic delays occur at intersections. The influence of congestion is noticeable. At traffic signals many vehicles stop, and the proportion of vehicles not stopping declines. The number of signal cycle failures, for which vehicles must wait through more than one signal cycle, are noticeable. This is typically the design level for urban signalized intersections.

Level of service E: Restricted speeds, very long traffic delays at traffic signals, and traffic volumes near capacity. Flow is unstable so that any interruption, no matter how minor, will cause queues to form and service to deteriorate to level of service F. Traffic signal cycle failures are frequent occurrences. For unsignalized intersections, level of service E or better is generally considered acceptable.

Level of service F: Extreme delays, resulting in long queues which may interfere with other traffic movements. There may be stoppages of long duration, and speeds may drop to zero. There may be frequent signal cycle failures. Level of service F will typically result when vehicle arrival rates are greater than capacity. It is considered unacceptable by most drivers.

LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS

LEVEL OF SERVICE	CONTROL DELAY PER VEHICLE (Seconds)
A	<10
B	10-20
C	20-35
D	35-55
E	55-80
F	>80

LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS

LEVEL OF SERVICE	CONTROL DELAY PER VEHICLE (Seconds)
A	<10
B	10-15
C	15-25
D	25-35
E	35-50
F	>50

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	373	224	1415	271	599	918
Future Volume (vph)	373	224	1415	271	599	918
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	1.00	0.91	1.00	1.00	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3273	1509	4988	1510	1752	5036
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3273	1509	4988	1510	1752	5036
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	405	243	1538	295	651	998
RTOR Reduction (vph)	0	0	0	207	0	0
Lane Group Flow (vph)	405	243	1538	89	651	998
Confl. Peds. (#/hr)				3	3	
Heavy Vehicles (%)	7%	7%	4%	4%	3%	3%
Turn Type	Prot	pm+ov	NA	Perm	Prot	NA
Protected Phases	8	1	2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	15.7	49.5	27.0	27.0	33.8	65.3
Effective Green, g (s)	15.7	49.5	27.0	27.0	33.8	65.3
Actuated g/C Ratio	0.17	0.55	0.30	0.30	0.38	0.73
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	570	905	1496	453	657	3653
v/s Ratio Prot	c0.12	0.10	c0.31		c0.37	0.20
v/s Ratio Perm		0.06		0.06		
v/c Ratio	0.71	0.27	1.03	0.20	0.99	0.27
Uniform Delay, d1	35.0	10.7	31.5	23.4	27.9	4.2
Progression Factor	1.00	1.00	0.93	2.14	1.00	1.00
Incremental Delay, d2	4.2	0.2	28.7	0.8	32.7	0.2
Delay (s)	39.2	10.8	57.9	50.9	60.6	4.4
Level of Service	D	B	E	D	E	A
Approach Delay (s)	28.5		56.8			26.6
Approach LOS	C		E			C

Intersection Summary			
HCM 2000 Control Delay	40.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	82.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	143	402	1280	880	242	1058
Future Volume (vph)	143	402	1280	880	242	1058
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	0.91	1.00	1.00	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1719	1538	4940	1496	1719	4940
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1719	1538	4940	1496	1719	4940
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	151	423	1347	926	255	1114
RTOR Reduction (vph)	0	259	0	319	0	0
Lane Group Flow (vph)	151	164	1347	607	255	1114
Confl. Peds. (#/hr)				3	3	
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	13.9	13.9	46.4	46.4	16.2	67.1
Effective Green, g (s)	13.9	13.9	46.4	46.4	16.2	67.1
Actuated g/C Ratio	0.15	0.15	0.52	0.52	0.18	0.75
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	265	237	2546	771	309	3683
v/s Ratio Prot	0.09		0.27		c0.15	0.23
v/s Ratio Perm		c0.11		c0.41		
v/c Ratio	0.57	0.69	0.53	0.79	0.83	0.30
Uniform Delay, d1	35.3	36.0	14.5	17.8	35.5	3.8
Progression Factor	1.00	1.00	1.00	1.00	0.81	1.38
Incremental Delay, d2	2.8	8.5	0.8	8.0	15.5	0.2
Delay (s)	38.1	44.5	15.3	25.7	44.3	5.4
Level of Service	D	D	B	C	D	A
Approach Delay (s)	42.8		19.6			12.6
Approach LOS	D		B			B

Intersection Summary			
HCM 2000 Control Delay	20.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	75.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Traffic Volume (veh/h)	1950	12	0	1229	0	208
Future Volume (Veh/h)	1950	12	0	1229	0	208
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	2097	13	0	1322	0	224
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	335			372		
pX, platoon unblocked			0.57		0.61	0.57
vC, conflicting volume			2110		2544	1055
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1448		1582	0
tC, single (s)			4.2		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			100		100	64
cM capacity (veh/h)			255		60	622

Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SB 3	NW 1
Volume Total	1398	712	441	441	441	224
Volume Left	0	0	0	0	0	0
Volume Right	0	13	0	0	0	224
cSH	1700	1700	1700	1700	1700	622
Volume to Capacity	0.82	0.42	0.26	0.26	0.26	0.36
Queue Length 95th (ft)	0	0	0	0	0	41
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	14.0
Lane LOS						B
Approach Delay (s)	0.0		0.0			14.0
Approach LOS						B

Intersection Summary				
Average Delay	0.9			
Intersection Capacity Utilization	73.8%	ICU Level of Service		D
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	1.5

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	1950	12	0	1229	0	208
Future Vol, veh/h	1950	12	0	1229	0	208
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	6	6	6	6	2	2
Mvmt Flow	2097	13	0	1322	0	224

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	1055
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	2
Pot Cap-1 Maneuver	-	-	0	-	0	410
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	410
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

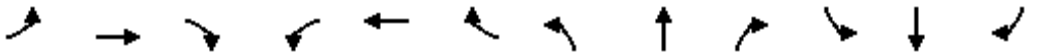
Approach	NB	SB	NW
HCM Control Delay, s	0	0	23.8
HCM LOS			C

Minor Lane/Major Mvmt	NBT	NBR	NWLn1	SBT
Capacity (veh/h)	-	-	410	-
HCM Lane V/C Ratio	-	-	0.546	-
HCM Control Delay (s)	-	-	23.8	-
HCM Lane LOS	-	-	C	-
HCM 95th %tile Q(veh)	-	-	3.2	-

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Traffic Volume (vph)	1478	22	293	932	71	465
Future Volume (vph)	1478	22	293	932	71	465
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	1.00		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3398		1703	3406	1736	1553
Flt Permitted	1.00		0.07	1.00	0.95	1.00
Satd. Flow (perm)	3398		125	3406	1736	1553
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	1572	23	312	991	76	495
RTOR Reduction (vph)	1	0	0	0	0	10
Lane Group Flow (vph)	1594	0	312	991	76	485
Confl. Peds. (#/hr)		1	1		3	
Heavy Vehicles (%)	6%	6%	6%	6%	4%	4%
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases			6			4
Actuated Green, G (s)	52.9		82.5	82.5	8.5	33.6
Effective Green, g (s)	52.9		82.5	82.5	8.5	33.6
Actuated g/C Ratio	0.53		0.82	0.82	0.08	0.34
Clearance Time (s)	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1797		499	2809	147	591
v/s Ratio Prot	c0.47		0.16	0.29	0.04	c0.21
v/s Ratio Perm			0.36			0.11
v/c Ratio	0.89		0.63	0.35	0.52	0.82
Uniform Delay, d1	20.9		25.2	2.2	43.8	30.4
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	6.9		2.4	0.1	3.1	8.9
Delay (s)	27.8		27.6	2.2	46.8	39.4
Level of Service	C		C	A	D	D
Approach Delay (s)	27.8			8.3	40.4	
Approach LOS	C			A	D	

Intersection Summary			
HCM 2000 Control Delay	22.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	77.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	83	44	90	167	267	195	393	86	128	278	51
Future Volume (vph)	23	83	44	90	167	267	195	393	86	128	278	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	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	1.00
Frt	1.00	0.95		1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1656	1640		1752	1845	1568	1752	1795		1736	1827	1553
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1656	1640		1752	1845	1568	1752	1795		1736	1827	1553
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)	25	89	47	97	180	287	210	423	92	138	299	55
RTOR Reduction (vph)	0	27	0	0	0	191	0	11	0	0	0	37
Lane Group Flow (vph)	25	109	0	97	180	96	210	504	0	138	299	18
Confl. Peds. (#/hr)			1	1								
Heavy Vehicles (%)	9%	9%	9%	3%	3%	3%	3%	3%	3%	4%	4%	4%
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases						8						6
Actuated Green, G (s)	2.9	12.2		4.1	13.4	21.2	11.3	21.4		7.8	17.9	20.8
Effective Green, g (s)	2.9	12.2		4.1	13.4	21.2	11.3	21.4		7.8	17.9	20.8
Actuated g/C Ratio	0.05	0.19		0.06	0.21	0.33	0.18	0.34		0.12	0.28	0.33
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
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)	75	315		113	389	634	311	604		213	515	618
v/s Ratio Prot	0.02	0.07		c0.06	c0.10	0.02	c0.12	c0.28		0.08	0.16	0.00
v/s Ratio Perm						0.04						0.01
v/c Ratio	0.33	0.35		0.86	0.46	0.15	0.68	0.84		0.65	0.58	0.03
Uniform Delay, d1	29.4	22.2		29.4	21.9	14.8	24.4	19.4		26.5	19.6	14.5
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.6	0.7		43.6	0.9	0.1	5.7	9.7		6.6	1.7	0.0
Delay (s)	32.0	22.9		73.0	22.8	14.9	30.1	29.1		33.2	21.2	14.5
Level of Service	C	C		E	C	B	C	C		C	C	B
Approach Delay (s)		24.3			27.4			29.4			23.8	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	27.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	63.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	61.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	0	1	0	387	1	27	1	150	144	15	365	0
Future Volume (vph)	0	1	0	387	1	27	1	150	144	15	365	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor		1.00		1.00	1.00		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	
Flpb, ped/bikes		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	1.00	
Flt Protected		1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1900		1717	1547		1700	1792	1491	1734	1827	
Flt Permitted		1.00		0.76	1.00		0.37	1.00	1.00	0.65	1.00	
Satd. Flow (perm)		1900		1369	1547		654	1792	1491	1181	1827	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	0	1	0	450	1	31	1	174	167	17	424	0
RTOR Reduction (vph)	0	0	0	0	17	0	0	0	109	0	0	0
Lane Group Flow (vph)	0	1	0	450	15	0	1	174	58	17	424	0
Confl. Peds. (#/hr)			1	1			3		1	1		3
Heavy Vehicles (%)	0%	0%	0%	5%	5%	5%	6%	6%	6%	4%	4%	4%
Turn Type		NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4		4	8		
Actuated Green, G (s)		20.0		20.0	20.0		15.3	15.3	15.3	15.3	15.3	
Effective Green, g (s)		20.0		20.0	20.0		15.3	15.3	15.3	15.3	15.3	
Actuated g/C Ratio		0.45		0.45	0.45		0.35	0.35	0.35	0.35	0.35	
Clearance Time (s)		4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		857		618	698		225	618	514	407	630	
v/s Ratio Prot		0.00			0.01			0.10			c0.23	
v/s Ratio Perm				c0.33			0.00		0.04	0.01		
v/c Ratio		0.00		0.73	0.02		0.00	0.28	0.11	0.04	0.67	
Uniform Delay, d1		6.7		9.9	6.7		9.5	10.5	9.9	9.6	12.4	
Progression Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.0		4.3	0.0		0.0	0.3	0.1	0.0	2.8	
Delay (s)		6.7		14.2	6.7		9.5	10.8	10.0	9.7	15.2	
Level of Service		A		B	A		A	B	A	A	B	
Approach Delay (s)		6.7			13.7			10.4			15.0	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	13.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	44.3	Sum of lost time (s)	9.0
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	13	14	13	10	64	31	25	262	85	49	500	194
Future Volume (vph)	13	14	13	10	64	31	25	262	85	49	500	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99			0.99		1.00	0.99		1.00	0.99	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.96			0.96		1.00	0.96		1.00	0.96	
Flt Protected		0.98			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1478			1669		1703	1717		1735	1740	
Flt Permitted		0.91			0.97		0.25	1.00		0.48	1.00	
Satd. Flow (perm)		1368			1621		442	1717		874	1740	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	15	16	15	11	72	35	28	294	96	55	562	218
RTOR Reduction (vph)	0	13	0	0	18	0	0	13	0	0	15	0
Lane Group Flow (vph)	0	33	0	0	100	0	28	377	0	55	765	0
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	20%	20%	20%	8%	8%	8%	6%	6%	6%	4%	4%	4%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		7.7			7.7		35.5	34.1		38.3	35.5	
Effective Green, g (s)		7.7			7.7		35.5	34.1		38.3	35.5	
Actuated g/C Ratio		0.13			0.13		0.61	0.59		0.66	0.61	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		181			214		300	1007		617	1063	
v/s Ratio Prot							0.00	0.22		c0.00	c0.44	
v/s Ratio Perm		0.02			c0.06		0.05			0.05		
v/c Ratio		0.18			0.47		0.09	0.37		0.09	0.72	
Uniform Delay, d1		22.4			23.3		5.6	6.4		3.6	7.8	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5			1.6		0.1	0.2		0.1	2.4	
Delay (s)		22.9			24.9		5.8	6.6		3.7	10.2	
Level of Service		C			C		A	A		A	B	
Approach Delay (s)		22.9			24.9			6.5			9.8	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	10.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	58.1	Sum of lost time (s)	13.5
Intersection Capacity Utilization	54.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	170	32	106	3	37	3	293	188	7	1	260	276
Future Volume (vph)	170	32	106	3	37	3	293	188	7	1	260	276
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	0.97		1.00		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	
Frt		1.00	0.85		0.99		1.00	0.99		1.00	0.92	
Flt Protected		0.96	1.00		1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1750	1508		1838		1752	1833		1716	1646	
Flt Permitted		0.73	1.00		0.98		0.17	1.00		0.62	1.00	
Satd. Flow (perm)		1324	1508		1810		309	1833		1119	1646	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	193	36	120	3	42	3	333	214	8	1	295	314
RTOR Reduction (vph)	0	0	94	0	2	0	0	1	0	0	43	0
Lane Group Flow (vph)	0	229	26	0	46	0	333	221	0	1	566	0
Confl. Peds. (#/hr)	1		4	4		1	3		2	2		3
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	3%	3%	3%	5%	5%	5%
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		17.2	17.2		17.2		54.3	48.9		35.0	34.1	
Effective Green, g (s)		17.2	17.2		17.2		54.3	48.9		35.0	34.1	
Actuated g/C Ratio		0.21	0.21		0.21		0.67	0.61		0.43	0.42	
Clearance Time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		282	322		386		489	1113		493	697	
v/s Ratio Prot							c0.13	0.12		0.00	c0.34	
v/s Ratio Perm		c0.17	0.02		0.03		0.33			0.00		
v/c Ratio		0.81	0.08		0.12		0.68	0.20		0.00	0.81	
Uniform Delay, d1		30.1	25.3		25.5		12.4	7.1		12.9	20.4	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		16.1	0.1		0.1		3.9	0.1		0.0	7.1	
Delay (s)		46.2	25.4		25.7		16.2	7.1		12.9	27.5	
Level of Service		D	C		C		B	A		B	C	
Approach Delay (s)		39.1			25.7			12.6			27.5	
Approach LOS		D			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	24.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	80.5	Sum of lost time (s)	13.5
Intersection Capacity Utilization	76.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	20	265	26	117	521	11	5	23	53	0	11	10
Future Volume (Veh/h)	20	265	26	117	521	11	5	23	53	0	11	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	22	285	28	126	560	12	5	25	57	0	12	11
Pedestrians		2			10			4				
Lane Width (ft)		12.0			12.0			12.0				
Walking Speed (ft/s)		3.5			3.5			3.5				
Percent Blockage		0			1			0				
Right turn flare (veh)									5			
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		187			537							
pX, platoon unblocked	0.93						0.93	0.93		0.93	0.93	0.93
vC, conflicting volume	572			317			1184	1171	313	1198	1179	568
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	502			317			1160	1146	313	1175	1155	498
tC, single (s)	4.1			4.1			7.2	6.6	6.3	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.6	4.1	3.4	3.5	4.0	3.3
p0 queue free %	98			90			96	84	92	100	93	98
cM capacity (veh/h)	978			1233			129	157	702	114	161	535

Direction, Lane #	SE 1	SE 2	NW 1	NE 1	SW 1
Volume Total	22	313	698	87	23
Volume Left	22	0	126	5	0
Volume Right	0	28	12	57	11
cSH	978	1700	1233	442	242
Volume to Capacity	0.02	0.18	0.10	0.20	0.09
Queue Length 95th (ft)	2	0	9	18	8
Control Delay (s)	8.8	0.0	2.5	18.8	21.4
Lane LOS	A		A	C	C
Approach Delay (s)	0.6		2.5	18.8	21.4
Approach LOS				C	C

Intersection Summary				
Average Delay	3.6			
Intersection Capacity Utilization	67.8%	ICU Level of Service	C	
Analysis Period (min)	15			

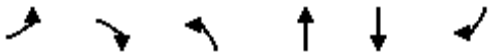
Intersection	
Int Delay, s/veh	3

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	20	265	26	117	521	11	5	23	53	0	11	10
Future Vol, veh/h	20	265	26	117	521	11	5	23	53	0	11	10
Conflicting Peds, #/hr	0	0	4	4	0	0	2	0	10	10	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	-	-	-	-	-	130	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	4	4	4	3	3	3	9	9	9	0	0	0
Mvmt Flow	22	285	28	126	560	12	5	25	57	0	12	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	572	0	0	317	0	0	1177	1170	313	1182	1178	568
Stage 1	-	-	-	-	-	-	346	346	-	818	818	-
Stage 2	-	-	-	-	-	-	831	824	-	364	360	-
Critical Hdwy	4.14	-	-	4.13	-	-	7.19	6.59	6.29	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.19	5.59	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.19	5.59	-	6.1	5.5	-
Follow-up Hdwy	2.236	-	-	2.227	-	-	3.581	4.081	3.381	3.5	4	3.3
Pot Cap-1 Maneuver	991	-	-	1237	-	-	163	187	711	168	192	526
Stage 1	-	-	-	-	-	-	655	623	-	373	393	-
Stage 2	-	-	-	-	-	-	354	378	-	659	630	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	989	-	-	1225	-	-	130	155	702	117	159	525
Mov Cap-2 Maneuver	-	-	-	-	-	-	130	155	-	117	159	-
Stage 1	-	-	-	-	-	-	638	607	-	365	334	-
Stage 2	-	-	-	-	-	-	283	321	-	563	614	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0.6	1.5	19	21.7
HCM LOS			C	C

Minor Lane/Major Mvmt	NELn1	NELn2	NWL	NWT	NWR	SEL	SET	SER	SWLn1
Capacity (veh/h)	150	702	1225	-	-	989	-	-	238
HCM Lane V/C Ratio	0.201	0.081	0.103	-	-	0.022	-	-	0.095
HCM Control Delay (s)	34.9	10.6	8.3	0	-	8.7	-	-	21.7
HCM Lane LOS	D	B	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	0.7	0.3	0.3	-	-	0.1	-	-	0.3



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	14	0	864	25	18	4
Future Volume (Veh/h)	14	0	864	25	18	4
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	15	0	949	27	20	4
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	1945	20	20			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1945	20	20			
tC, single (s)	*6.0	6.3	4.1			
tC, 2 stage (s)						
tF (s)	*2.0	3.4	2.2			
p0 queue free %	67	100	40			
cM capacity (veh/h)	46	1046	1577			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	15	949	27	20	4
Volume Left	15	949	0	0	0
Volume Right	0	0	0	0	4
cSH	46	1577	1700	1700	1700
Volume to Capacity	0.33	0.60	0.02	0.01	0.00
Queue Length 95th (ft)	28	107	0	0	0
Control Delay (s)	117.9	10.7	0.0	0.0	0.0
Lane LOS	F	B			
Approach Delay (s)	117.9	10.4		0.0	
Approach LOS	F				

Intersection Summary			
Average Delay	11.7		
Intersection Capacity Utilization	64.5%	ICU Level of Service	C
Analysis Period (min)	15		

* User Entered Value

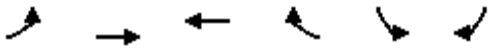
Intersection	
Int Delay, s/veh	11.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	0	864	25	18	4
Future Vol, veh/h	14	0	864	25	18	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	0	-	0	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	6	6	5	5	18	18
Mvmt Flow	15	0	949	27	20	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1946	-	20	0	-	0
Stage 1	20	-	-	-	-	-
Stage 2	1926	-	-	-	-	-
Critical Hdwy	6	-	4.15	-	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	2	-	2.245	-	-	-
Pot Cap-1 Maneuver	115	0	1577	-	-	0
Stage 1	1756	0	-	-	-	0
Stage 2	158	0	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	46	-	1577	-	-	-
Mov Cap-2 Maneuver	46	-	-	-	-	-
Stage 1	1756	-	-	-	-	-
Stage 2	63	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	118.5	10.4	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT
Capacity (veh/h)	1577	-	46	-
HCM Lane V/C Ratio	0.602	-	0.334	-
HCM Control Delay (s)	10.7	-	118.5	-
HCM Lane LOS	B	-	F	-
HCM 95th %tile Q(veh)	4.3	-	1.2	-



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1508	0	889	18	0
Future Volume (Veh/h)	0	1508	0	889	18	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	1657	0	977	20	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	977				828	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	977				828	0
tC, single (s)	4.2				7.2	7.3
tC, 2 stage (s)						
tF (s)	2.3				3.7	3.5
p0 queue free %	100				93	100
cM capacity (veh/h)	678				279	1034

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	828	828	488	488	20
Volume Left	0	0	0	0	20
Volume Right	0	0	488	488	0
cSH	1700	1700	1700	1700	279
Volume to Capacity	0.49	0.49	0.29	0.29	0.07
Queue Length 95th (ft)	0	0	0	0	6
Control Delay (s)	0.0	0.0	0.0	0.0	18.9
Lane LOS					C
Approach Delay (s)	0.0		0.0		18.9
Approach LOS					C

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		

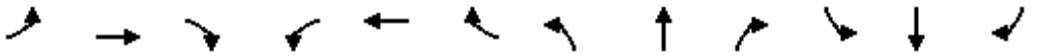
Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑		↑↑	↰	
Traffic Vol, veh/h	0	1508	0	889	18	0
Future Vol, veh/h	0	1508	0	889	18	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	0	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	6	6	5	5	18	18
Mvmt Flow	0	1657	0	977	20	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	-	829	-
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	829	-
Critical Hdwy	-	-	-	-	7.86	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	6.86	-
Follow-up Hdwy	-	-	-	-	3.68	-
Pot Cap-1 Maneuver	0	-	0	-	237	0
Stage 1	0	-	0	-	-	0
Stage 2	0	-	0	-	299	0
Platoon blocked, %		-		-		
Mov Cap-1 Maneuver	-	-	-	-	237	-
Mov Cap-2 Maneuver	-	-	-	-	237	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	299	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	21.6
HCM LOS			C

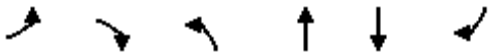
Minor Lane/Major Mvmt	EBT	WBR	SBLn1
Capacity (veh/h)	-	-	237
HCM Lane V/C Ratio	-	-	0.083
HCM Control Delay (s)	-	-	21.6
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	0.3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	93	0	0	417	0	2415	138	0	1714	427
Future Volume (vph)	0	0	93	0	0	417	0	2415	138	0	1714	427
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.5			4.5		4.5	4.5		4.5	4.5
Lane Util. Factor			0.88			0.88		0.91	1.00		0.91	1.00
Frpb, ped/bikes			1.00			1.00		1.00	0.98		1.00	1.00
Flpb, ped/bikes			1.00			1.00		1.00	1.00		1.00	1.00
Frt			0.85			0.85		1.00	0.85		1.00	0.85
Flt Protected			1.00			1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)			2760			2538		4988	1521		4893	1524
Flt Permitted			1.00			1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)			2760			2538		4988	1521		4893	1524
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	0	96	0	0	430	0	2490	142	0	1767	440
RTOR Reduction (vph)	0	0	24	0	0	20	0	0	57	0	0	114
Lane Group Flow (vph)	0	0	72	0	0	410	0	2490	85	0	1767	326
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	3%	3%	3%	12%	12%	12%	4%	4%	4%	6%	6%	6%
Turn Type			Perm			Perm		NA	Perm		NA	Perm
Protected Phases								2			6	
Permitted Phases			5			1			2			6
Actuated Green, G (s)			5.8			13.8		34.2	34.2		42.2	42.2
Effective Green, g (s)			5.8			13.8		34.2	34.2		42.2	42.2
Actuated g/C Ratio			0.10			0.24		0.60	0.60		0.74	0.74
Clearance Time (s)			4.5			4.5		4.5	4.5		4.5	4.5
Vehicle Extension (s)			3.0			3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)			280			614		2992	912		3622	1128
v/s Ratio Prot								c0.50			0.36	
v/s Ratio Perm			0.03			c0.16			0.06			0.21
v/c Ratio			0.26			0.67		0.83	0.09		0.49	0.29
Uniform Delay, d1			23.6			19.5		9.1	4.8		3.0	2.4
Progression Factor			1.00			1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2			0.5			2.7		2.1	0.0		0.1	0.1
Delay (s)			24.1			22.3		11.2	4.9		3.1	2.6
Level of Service			C			C		B	A		A	A
Approach Delay (s)		24.1			22.3			10.9			3.0	
Approach LOS		C			C			B			A	

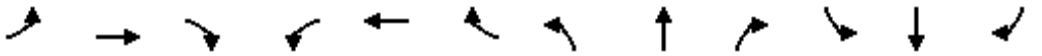
Intersection Summary			
HCM 2000 Control Delay	8.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	57.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	68.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	526	126	100	2035	1505	367
Future Volume (vph)	526	126	100	2035	1505	367
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3400	1568	1736	3471	3471	1553
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3400	1568	1736	3471	3471	1553
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	548	131	104	2120	1568	382
RTOR Reduction (vph)	0	18	0	0	0	61
Lane Group Flow (vph)	548	113	104	2120	1568	321
Heavy Vehicles (%)	3%	3%	4%	4%	4%	4%
Turn Type	Prot	pm+ov	Prot	NA	NA	pm+ov
Protected Phases	4	5	5	2	6	4
Permitted Phases		4				6
Actuated Green, G (s)	23.6	34.7	11.1	87.4	71.8	95.4
Effective Green, g (s)	23.6	34.7	11.1	87.4	71.8	95.4
Actuated g/C Ratio	0.20	0.29	0.09	0.73	0.60	0.80
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	668	512	160	2528	2076	1292
v/s Ratio Prot	c0.16	0.02	0.06	c0.61	0.45	0.05
v/s Ratio Perm		0.05				0.16
v/c Ratio	0.82	0.22	0.65	0.84	0.76	0.25
Uniform Delay, d1	46.2	32.4	52.6	11.4	17.7	3.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.0	0.2	9.1	3.5	2.6	0.1
Delay (s)	54.1	32.6	61.7	14.9	20.3	3.2
Level of Service	D	C	E	B	C	A
Approach Delay (s)	50.0			17.1	16.9	
Approach LOS	D			B	B	

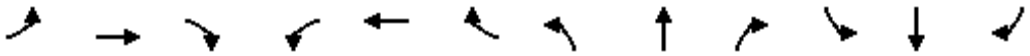
Intersection Summary			
HCM 2000 Control Delay	21.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	352	309	15	78	413	0	31	945	93	428	560	554
Future Volume (vph)	352	309	15	78	413	0	31	945	93	428	560	554
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.95		0.97	0.95		1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		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	1.00
Frt	1.00	0.99		1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3273	3348		3400	3505		1719	3438	1538	3335	3438	1538
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3273	3348		3400	3505		1719	3438	1538	3335	3438	1538
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)	378	332	16	84	444	0	33	1016	100	460	602	596
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	62	0	0	235
Lane Group Flow (vph)	378	345	0	84	444	0	33	1016	38	460	602	361
Confl. Peds. (#/hr)			4	4								
Heavy Vehicles (%)	7%	7%	7%	3%	3%	3%	5%	5%	5%	5%	5%	5%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	17.5	31.2		5.8	19.5		4.0	45.4	45.4	19.6	61.0	61.0
Effective Green, g (s)	17.5	31.2		5.8	19.5		4.0	45.4	45.4	19.6	61.0	61.0
Actuated g/C Ratio	0.15	0.26		0.05	0.16		0.03	0.38	0.38	0.16	0.51	0.51
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
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)	477	870		164	569		57	1300	581	544	1747	781
v/s Ratio Prot	c0.12	0.10		0.02	c0.13		0.02	c0.30		c0.14	0.18	
v/s Ratio Perm									0.02			0.24
v/c Ratio	0.79	0.40		0.51	0.78		0.58	0.78	0.07	0.85	0.34	0.46
Uniform Delay, d1	49.5	36.6		55.7	48.2		57.2	32.9	23.8	48.7	17.6	19.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.8	0.3		2.7	6.9		13.5	4.7	0.2	11.6	0.5	2.0
Delay (s)	58.3	36.9		58.4	55.0		70.6	37.6	24.0	60.3	18.1	20.9
Level of Service	E	D		E	E		E	D	C	E	B	C
Approach Delay (s)		48.0			55.6			37.4			30.8	
Approach LOS		D			E			D			C	

Intersection Summary			
HCM 2000 Control Delay	39.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	74.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	142	101	58	404	0	124	0	28	0	0	0
Future Volume (Veh/h)	0	142	101	58	404	0	124	0	28	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	0	165	117	67	470	0	144	0	33	0	0	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	470			282			828	828	224	860	886	470
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	470			282			828	828	224	860	886	470
tC, single (s)	4.2			4.2			*6.0	6.5	*6.0	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.3			*2.0	4.0	*2.0	3.5	4.0	3.3
p0 queue free %	100			95			73	100	97	100	100	100
cM capacity (veh/h)	1032			1252			542	288	1319	258	268	594

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	282	537	177	0
Volume Left	0	67	144	0
Volume Right	117	0	33	0
cSH	1032	1252	609	1700
Volume to Capacity	0.00	0.05	0.29	0.00
Queue Length 95th (ft)	0	4	30	0
Control Delay (s)	0.0	1.5	13.3	0.0
Lane LOS		A	B	A
Approach Delay (s)	0.0	1.5	13.3	0.0
Approach LOS			B	A

Intersection Summary				
Average Delay	3.2			
Intersection Capacity Utilization	56.7%	ICU Level of Service	B	
Analysis Period (min)	15			

* User Entered Value

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	142	101	58	404	0	124	0	28	0	0	0
Future Vol, veh/h	0	142	101	58	404	0	124	0	28	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	14	14	14	7	7	7	4	4	4	2	2	2
Mvmt Flow	0	165	117	67	470	0	144	0	33	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	470	0	0	283	0	0	829	829	224	845	888	470
Stage 1	-	-	-	-	-	-	224	224	-	605	605	-
Stage 2	-	-	-	-	-	-	605	605	-	240	283	-
Critical Hdwy	4.24	-	-	4.17	-	-	6	6	6	6	6	6
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.54	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.54	-	6.12	5.52	-
Follow-up Hdwy	2.326	-	-	2.263	-	-	2	2	2	2	2	2
Pot Cap-1 Maneuver	1032	-	-	1251	-	-	564	564	1318	552	519	934
Stage 1	-	-	-	-	-	-	1306	1356	-	758	838	-
Stage 2	-	-	-	-	-	-	755	835	-	1279	1260	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1032	-	-	1251	-	-	533	523	1318	509	482	934
Mov Cap-2 Maneuver	-	-	-	-	-	-	533	523	-	509	482	-
Stage 1	-	-	-	-	-	-	1306	1356	-	758	778	-
Stage 2	-	-	-	-	-	-	701	775	-	1247	1260	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1	13.5	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	599	1032	-	-	1251	-	-	-
HCM Lane V/C Ratio	0.295	-	-	-	0.054	-	-	-
HCM Control Delay (s)	13.5	0	-	-	8	0	-	0
HCM Lane LOS	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	1.2	0	-	-	0.2	-	-	-

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	819	297	1255	219	463	1647
Future Volume (vph)	819	297	1255	219	463	1647
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	1.00	0.91	1.00	1.00	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.96	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1568	5085	1526	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3400	1568	5085	1526	1770	5085
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	844	306	1294	226	477	1698
RTOR Reduction (vph)	0	1	0	159	0	0
Lane Group Flow (vph)	844	305	1294	67	477	1698
Confl. Peds. (#/hr)				6	6	
Confl. Bikes (#/hr)				1		
Heavy Vehicles (%)	3%	3%	2%	2%	2%	2%
Turn Type	Prot	pm+ov	NA	Perm	Prot	NA
Protected Phases	8	1	2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	24.1	50.0	26.5	26.5	25.9	56.9
Effective Green, g (s)	24.1	50.0	26.5	26.5	25.9	56.9
Actuated g/C Ratio	0.27	0.56	0.29	0.29	0.29	0.63
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	910	949	1497	449	509	3214
v/s Ratio Prot	c0.25	0.09	c0.25		c0.27	0.33
v/s Ratio Perm		0.10		0.04		
v/c Ratio	0.93	0.32	0.86	0.15	0.94	0.53
Uniform Delay, d1	32.1	10.8	30.0	23.4	31.3	9.1
Progression Factor	1.00	1.00	0.84	1.85	1.00	1.00
Incremental Delay, d2	15.1	0.2	6.0	0.6	24.9	0.6
Delay (s)	47.2	11.0	31.1	44.0	56.2	9.8
Level of Service	D	B	C	D	E	A
Approach Delay (s)	37.6		33.0			19.9
Approach LOS	D		C			B

Intersection Summary			
HCM 2000 Control Delay	28.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	84.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	115	412	1112	763	391	2030
Future Volume (vph)	115	412	1112	763	391	2030
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	0.91	1.00	1.00	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.96	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	5036	1510	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	5036	1510	1770	5085
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	117	420	1135	779	399	2071
RTOR Reduction (vph)	0	365	0	305	0	0
Lane Group Flow (vph)	117	55	1135	474	399	2071
Confl. Peds. (#/hr)				7	7	
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	11.7	11.7	40.6	40.6	24.2	69.3
Effective Green, g (s)	11.7	11.7	40.6	40.6	24.2	69.3
Actuated g/C Ratio	0.13	0.13	0.45	0.45	0.27	0.77
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	230	205	2271	681	475	3915
v/s Ratio Prot	c0.07		0.23		c0.23	0.41
v/s Ratio Perm		0.03		c0.31		
v/c Ratio	0.51	0.27	0.50	0.70	0.84	0.53
Uniform Delay, d1	36.5	35.3	17.5	19.8	31.1	4.0
Progression Factor	1.00	1.00	1.00	1.00	1.01	0.72
Incremental Delay, d2	1.8	0.7	0.8	5.8	9.6	0.4
Delay (s)	38.2	36.0	18.3	25.6	40.9	3.3
Level of Service	D	D	B	C	D	A
Approach Delay (s)	36.5		21.3			9.4
Approach LOS	D		C			A

Intersection Summary			
HCM 2000 Control Delay	16.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	77.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Traffic Volume (veh/h)	1654	12	0	2175	0	208
Future Volume (Veh/h)	1654	12	0	2175	0	208
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	1741	13	0	2289	0	219
Pedestrians					3	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	335			372		
pX, platoon unblocked			0.69		0.77	0.69
vC, conflicting volume			1757		2514	880
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1204		1096	0
tC, single (s)			4.2		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	71
cM capacity (veh/h)			393		160	748

Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SB 3	NW 1
Volume Total	1161	593	763	763	763	219
Volume Left	0	0	0	0	0	0
Volume Right	0	13	0	0	0	219
cSH	1700	1700	1700	1700	1700	748
Volume to Capacity	0.68	0.35	0.45	0.45	0.45	0.29
Queue Length 95th (ft)	0	0	0	0	0	30
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	11.8
Lane LOS						B
Approach Delay (s)	0.0		0.0			11.8
Approach LOS						B

Intersection Summary				
Average Delay	0.6			
Intersection Capacity Utilization	65.7%	ICU Level of Service		C
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	1.1

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	1654	12	0	2175	0	208
Future Vol, veh/h	1654	12	0	2175	0	208
Conflicting Peds, #/hr	0	3	3	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	3	2	2
Mvmt Flow	1741	13	0	2289	0	219

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	880
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	2.5
Pot Cap-1 Maneuver	-	-	0	-	0	444
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	443
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

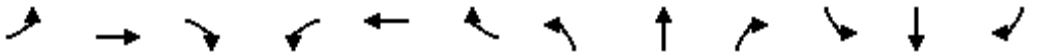
Approach	NB	SB	NW
HCM Control Delay, s	0	0	20.8
HCM LOS			C

Minor Lane/Major Mvmt	NBT	NBR	NWLn1	SBT
Capacity (veh/h)	-	-	443	-
HCM Lane V/C Ratio	-	-	0.494	-
HCM Control Delay (s)	-	-	20.8	-
HCM Lane LOS	-	-	C	-
HCM 95th %tile Q(veh)	-	-	2.7	-

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Traffic Volume (vph)	1298	46	397	1792	63	341
Future Volume (vph)	1298	46	397	1792	63	341
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3452		1770	3539	1787	1599
Flt Permitted	1.00		0.09	1.00	0.95	1.00
Satd. Flow (perm)	3452		173	3539	1787	1599
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1338	47	409	1847	65	352
RTOR Reduction (vph)	2	0	0	0	0	14
Lane Group Flow (vph)	1383	0	409	1847	65	338
Confl. Peds. (#/hr)		2	2			
Heavy Vehicles (%)	4%	4%	2%	2%	1%	1%
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases			6			4
Actuated Green, G (s)	54.6		83.1	83.1	7.9	31.9
Effective Green, g (s)	54.6		83.1	83.1	7.9	31.9
Actuated g/C Ratio	0.55		0.83	0.83	0.08	0.32
Clearance Time (s)	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1884		527	2940	141	582
v/s Ratio Prot	0.40		c0.19	0.52	0.04	c0.14
v/s Ratio Perm			c0.46			0.07
v/c Ratio	0.73		0.78	0.63	0.46	0.58
Uniform Delay, d1	17.2		25.0	3.0	44.0	28.5
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	2.6		7.1	0.4	2.4	1.5
Delay (s)	19.8		32.1	3.4	46.4	30.0
Level of Service	B		C	A	D	C
Approach Delay (s)	19.8			8.6	32.5	
Approach LOS	B			A	C	

Intersection Summary			
HCM 2000 Control Delay	14.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	74.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	134	169	56	89	173	62	286	57	280	509	61
Future Volume (vph)	51	134	169	56	89	173	62	286	57	280	509	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.98		1.00	1.00	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	1.00
Frt	1.00	0.92		1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1679		1787	1881	1599	1770	1817		1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1679		1787	1881	1599	1770	1817		1770	1863	1583
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)	55	144	182	60	96	186	67	308	61	301	547	66
RTOR Reduction (vph)	0	62	0	0	0	109	0	10	0	0	0	35
Lane Group Flow (vph)	55	264	0	60	96	77	67	359	0	301	547	31
Confl. Peds. (#/hr)			4	4								
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	2%	2%	2%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases						8						6
Actuated Green, G (s)	3.7	15.3		2.6	14.2	28.3	3.8	18.1		14.1	28.4	32.1
Effective Green, g (s)	3.7	15.3		2.6	14.2	28.3	3.8	18.1		14.1	28.4	32.1
Actuated g/C Ratio	0.05	0.22		0.04	0.21	0.42	0.06	0.27		0.21	0.42	0.47
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
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)	96	377		68	392	770	98	482		366	776	850
v/s Ratio Prot	0.03	c0.16		c0.03	0.05	0.02	0.04	0.20		c0.17	c0.29	0.00
v/s Ratio Perm						0.03						0.02
v/c Ratio	0.57	0.70		0.88	0.24	0.10	0.68	0.75		0.82	0.70	0.04
Uniform Delay, d1	31.4	24.3		32.6	22.5	12.1	31.6	22.9		25.8	16.4	9.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	8.0	5.8		69.4	0.3	0.1	17.9	6.2		13.8	2.9	0.0
Delay (s)	39.4	30.1		102.0	22.8	12.2	49.5	29.1		39.6	19.3	9.7
Level of Service	D	C		F	C	B	D	C		D	B	A
Approach Delay (s)		31.4			30.9			32.2			25.3	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	28.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	68.1	Sum of lost time (s)	18.0
Intersection Capacity Utilization	70.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	2	0	6	184	1	30	5	244	307	31	367	1
Future Volume (vph)	2	0	6	184	1	30	5	244	307	31	367	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes		0.98		1.00	0.98		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt		0.90		1.00	0.85		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.99		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1654		1734	1529		1784	1881	1562	1749	1844	
Flt Permitted		0.95		0.75	1.00		0.50	1.00	1.00	0.59	1.00	
Satd. Flow (perm)		1591		1372	1529		936	1881	1562	1091	1844	
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)	2	0	7	204	1	33	6	271	341	34	408	1
RTOR Reduction (vph)	0	7	0	0	25	0	0	0	170	0	0	0
Lane Group Flow (vph)	0	2	0	204	9	0	6	271	171	34	409	0
Confl. Peds. (#/hr)	1		1	1		1	3		3	3		3
Heavy Vehicles (%)	0%	0%	0%	4%	4%	4%	1%	1%	1%	3%	3%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4		4	8		
Actuated Green, G (s)		9.1		9.1	9.1		18.2	18.2	18.2	18.2	18.2	
Effective Green, g (s)		9.1		9.1	9.1		18.2	18.2	18.2	18.2	18.2	
Actuated g/C Ratio		0.25		0.25	0.25		0.50	0.50	0.50	0.50	0.50	
Clearance Time (s)		4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		398		343	383		469	943	783	547	924	
v/s Ratio Prot					0.01			0.14			c0.22	
v/s Ratio Perm		0.00		c0.15			0.01		0.11	0.03		
v/c Ratio		0.01		0.59	0.02		0.01	0.29	0.22	0.06	0.44	
Uniform Delay, d1		10.2		12.0	10.3		4.5	5.3	5.1	4.7	5.8	
Progression Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.0		2.8	0.0		0.0	0.2	0.1	0.0	0.3	
Delay (s)		10.2		14.7	10.3		4.6	5.4	5.2	4.7	6.1	
Level of Service		B		B	B		A	A	A	A	A	
Approach Delay (s)		10.2			14.1			5.3			6.0	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	36.3	Sum of lost time (s)	9.0
Intersection Capacity Utilization	50.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	40	8	14	27	114	27	30	484	53	39	430	104
Future Volume (vph)	40	8	14	27	114	27	30	484	53	39	430	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.97			0.98		1.00	0.99		1.00	0.97	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1611			1799		1786	1849		1769	1798	
Flt Permitted		0.74			0.93		0.33	1.00		0.33	1.00	
Satd. Flow (perm)		1223			1695		619	1849		608	1798	
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)	43	9	15	29	121	29	32	515	56	41	457	111
RTOR Reduction (vph)	0	12	0	0	12	0	0	6	0	0	12	0
Lane Group Flow (vph)	0	55	0	0	167	0	32	565	0	41	556	0
Confl. Peds. (#/hr)	3		4	4		3	6		3	3		6
Heavy Vehicles (%)	10%	10%	10%	2%	2%	2%	1%	1%	1%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		8.4			8.4		24.8	23.3		24.8	23.3	
Effective Green, g (s)		8.4			8.4		24.8	23.3		24.8	23.3	
Actuated g/C Ratio		0.18			0.18		0.53	0.50		0.53	0.50	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		219			304		366	922		360	897	
v/s Ratio Prot							0.00	0.31		c0.00	c0.31	
v/s Ratio Perm		0.04			c0.10		0.04			0.06		
v/c Ratio		0.25			0.55		0.09	0.61		0.11	0.62	
Uniform Delay, d1		16.4			17.4		5.7	8.4		5.7	8.5	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.6			2.0		0.1	1.2		0.1	1.3	
Delay (s)		17.0			19.4		5.8	9.7		5.9	9.8	
Level of Service		B			B		A	A		A	A	
Approach Delay (s)		17.0			19.4			9.5			9.5	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	11.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	46.7	Sum of lost time (s)	13.5
Intersection Capacity Utilization	51.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	340	42	180	14	59	8	209	221	9	5	326	143
Future Volume (vph)	340	42	180	14	59	8	209	221	9	5	326	143
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	0.96		1.00		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	
Frt		1.00	0.85		0.99		1.00	0.99		1.00	0.95	
Flt Protected		0.96	1.00		0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1795	1537		1797		1787	1868		1745	1744	
Flt Permitted		0.73	1.00		0.92		0.20	1.00		0.60	1.00	
Satd. Flow (perm)		1371	1537		1663		375	1868		1109	1744	
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)	370	46	196	15	64	9	227	240	10	5	354	155
RTOR Reduction (vph)	0	0	130	0	5	0	0	2	0	0	20	0
Lane Group Flow (vph)	0	416	66	0	83	0	227	248	0	5	489	0
Confl. Peds. (#/hr)	2		9	9		2	5		5	5		5
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	1%	1%	1%	3%	3%	3%
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		25.6	25.6		25.6		41.1	35.7		28.8	27.9	
Effective Green, g (s)		25.6	25.6		25.6		41.1	35.7		28.8	27.9	
Actuated g/C Ratio		0.34	0.34		0.34		0.54	0.47		0.38	0.37	
Clearance Time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		463	519		562		365	880		429	642	
v/s Ratio Prot							c0.07	0.13		0.00	c0.28	
v/s Ratio Perm		c0.30	0.04		0.05		0.27			0.00		
v/c Ratio		0.90	0.13		0.15		0.62	0.28		0.01	0.76	
Uniform Delay, d1		23.8	17.3		17.4		12.2	12.2		14.6	21.0	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		19.8	0.1		0.1		3.3	0.2		0.0	5.3	
Delay (s)		43.6	17.4		17.6		15.5	12.4		14.6	26.3	
Level of Service		D	B		B		B	B		B	C	
Approach Delay (s)		35.2			17.6			13.8			26.2	
Approach LOS		D			B			B			C	

Intersection Summary			
HCM 2000 Control Delay	25.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	75.7	Sum of lost time (s)	13.5
Intersection Capacity Utilization	76.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	24	389	27	64	384	11	19	19	146	2	16	22
Future Volume (Veh/h)	24	389	27	64	384	11	19	19	146	2	16	22
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	26	414	29	68	409	12	20	20	155	2	17	23
Pedestrians		1			7			9				
Lane Width (ft)		12.0			12.0			12.0				
Walking Speed (ft/s)		3.5			3.5			3.5				
Percent Blockage		0			1			1				
Right turn flare (veh)									5			
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		187			537							
pX, platoon unblocked	0.95						0.95	0.95		0.95	0.95	0.95
vC, conflicting volume	421			452			1073	1046	444	1112	1055	416
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	370			452			1053	1025	444	1093	1034	365
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			94			88	90	74	98	92	96
cM capacity (veh/h)	1140			1099			161	202	600	117	203	653

Direction, Lane #	SE 1	SE 2	NW 1	NE 1	SW 1
Volume Total	26	443	489	195	42
Volume Left	26	0	68	20	2
Volume Right	0	29	12	155	23
cSH	1140	1700	1099	755	309
Volume to Capacity	0.02	0.26	0.06	0.26	0.14
Queue Length 95th (ft)	2	0	5	26	12
Control Delay (s)	8.2	0.0	1.8	16.6	18.5
Lane LOS	A		A	C	C
Approach Delay (s)	0.5		1.8	16.6	18.5
Approach LOS				C	C

Intersection Summary				
Average Delay	4.3			
Intersection Capacity Utilization	66.3%	ICU Level of Service		C
Analysis Period (min)	15			

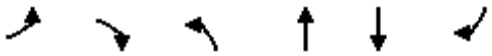
Intersection	
Int Delay, s/veh	4

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	24	389	27	64	384	11	19	19	146	2	16	22
Future Vol, veh/h	24	389	27	64	384	11	19	19	146	2	16	22
Conflicting Peds, #/hr	0	0	9	9	0	0	1	0	7	7	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	-	-	-	-	-	130	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	1	1	1	2	2	2	4	4	4	0	0	0
Mvmt Flow	26	414	29	68	409	12	20	20	155	2	17	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	420	0	0	452	0	0	1060	1044	444	1047	1054	415
Stage 1	-	-	-	-	-	-	488	488	-	551	551	-
Stage 2	-	-	-	-	-	-	572	556	-	496	503	-
Critical Hdwy	4.11	-	-	4.12	-	-	7.14	6.54	6.24	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.54	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.54	-	6.1	5.5	-
Follow-up Hdwy	2.209	-	-	2.218	-	-	3.536	4.036	3.336	3.5	4	3.3
Pot Cap-1 Maneuver	1145	-	-	1109	-	-	200	227	610	208	228	642
Stage 1	-	-	-	-	-	-	558	547	-	522	519	-
Stage 2	-	-	-	-	-	-	502	509	-	559	545	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1144	-	-	1102	-	-	165	202	601	131	203	641
Mov Cap-2 Maneuver	-	-	-	-	-	-	165	202	-	131	203	-
Stage 1	-	-	-	-	-	-	541	530	-	510	477	-
Stage 2	-	-	-	-	-	-	428	468	-	387	528	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0.4	1.2	16.7	18.4
HCM LOS			C	C

Minor Lane/Major Mvmt	NELn1	NELn2	NWL	NWT	NWR	SEL	SET	SER	SWLn1
Capacity (veh/h)	182	601	1102	-	-	1144	-	-	312
HCM Lane V/C Ratio	0.222	0.258	0.062	-	-	0.022	-	-	0.136
HCM Control Delay (s)	30.3	13.1	8.5	0	-	8.2	-	-	18.4
HCM Lane LOS	D	B	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	0.8	1	0.2	-	-	0.1	-	-	0.5



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	4	0	626	12	16	12
Future Volume (Veh/h)	4	0	626	12	16	12
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	4	0	673	13	17	13
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	1376	17	17			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1376	17	17			
tC, single (s)	*6.0	6.2	4.1			
tC, 2 stage (s)						
tF (s)	*2.0	3.3	2.2			
p0 queue free %	97	100	58			
cM capacity (veh/h)	150	1059	1587			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	4	673	13	17	13
Volume Left	4	673	0	0	0
Volume Right	0	0	0	0	13
cSH	150	1587	1700	1700	1700
Volume to Capacity	0.03	0.42	0.01	0.01	0.01
Queue Length 95th (ft)	2	54	0	0	0
Control Delay (s)	29.7	8.9	0.0	0.0	0.0
Lane LOS	D	A			
Approach Delay (s)	29.7	8.8		0.0	
Approach LOS	D				

Intersection Summary			
Average Delay	8.5		
Intersection Capacity Utilization	51.3%	ICU Level of Service	A
Analysis Period (min)	15		

* User Entered Value

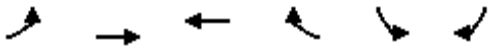
Intersection	
Int Delay, s/veh	8.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	0	626	12	16	12
Future Vol, veh/h	4	0	626	12	16	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	0	-	0	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	3	3	4	4	0	0
Mvmt Flow	4	0	673	13	17	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1376	-	17	0	-	0
Stage 1	17	-	-	-	-	-
Stage 2	1359	-	-	-	-	-
Critical Hdwy	6	-	4.14	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	2	-	2.236	-	-	-
Pot Cap-1 Maneuver	260	0	1587	-	-	0
Stage 1	1763	0	-	-	-	0
Stage 2	330	0	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	150	-	1587	-	-	-
Mov Cap-2 Maneuver	150	-	-	-	-	-
Stage 1	1763	-	-	-	-	-
Stage 2	190	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	29.7	8.8	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT
Capacity (veh/h)	1587	-	150	-
HCM Lane V/C Ratio	0.424	-	0.029	-
HCM Control Delay (s)	8.9	-	29.7	-
HCM Lane LOS	A	-	D	-
HCM 95th %tile Q(veh)	2.2	-	0.1	-



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	2523	0	638	16	0
Future Volume (Veh/h)	0	2523	0	638	16	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	0	2713	0	686	17	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	686				1356	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	686				1356	0
tC, single (s)	4.2				*6.5	6.9
tC, 2 stage (s)						
tF (s)	2.2				*2.5	3.3
p0 queue free %	100				91	100
cM capacity (veh/h)	897				192	1091

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	1356	1356	343	343	17
Volume Left	0	0	0	0	17
Volume Right	0	0	343	343	0
cSH	1700	1700	1700	1700	192
Volume to Capacity	0.80	0.80	0.20	0.20	0.09
Queue Length 95th (ft)	0	0	0	0	7
Control Delay (s)	0.0	0.0	0.0	0.0	25.6
Lane LOS					D
Approach Delay (s)	0.0		0.0		25.6
Approach LOS					D

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	79.7%	ICU Level of Service	D
Analysis Period (min)	15		

* User Entered Value

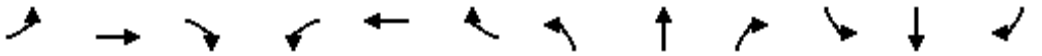
Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑		↑↑	↰	
Traffic Vol, veh/h	0	2523	0	638	16	0
Future Vol, veh/h	0	2523	0	638	16	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	0	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	3	3	4	4	0	0
Mvmt Flow	0	2713	0	686	17	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	-	1356	-
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	1356	-
Critical Hdwy	-	-	-	-	6.5	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	-	-	2.5	-
Pot Cap-1 Maneuver	0	-	0	-	192	0
Stage 1	0	-	0	-	-	0
Stage 2	0	-	0	-	250	0
Platoon blocked, %		-		-		
Mov Cap-1 Maneuver	-	-	-	-	192	-
Mov Cap-2 Maneuver	-	-	-	-	192	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	250	-

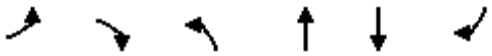
Approach	EB	WB	SB
HCM Control Delay, s	0	0	25.6
HCM LOS			D

Minor Lane/Major Mvmt	EBT	WBR	SBLn1
Capacity (veh/h)	-	-	192
HCM Lane V/C Ratio	-	-	0.09
HCM Control Delay (s)	-	-	25.6
HCM Lane LOS	-	-	D
HCM 95th %tile Q(veh)	-	-	0.3



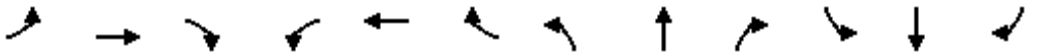
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	166	0	0	378	0	1958	125	0	3055	532
Future Volume (vph)	0	0	166	0	0	378	0	1958	125	0	3055	532
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.5			4.5		4.5	4.5		4.5	4.5
Lane Util. Factor			0.88			0.88		0.91	1.00		0.91	1.00
Frt			0.85			0.85		1.00	0.85		1.00	0.85
Flt Protected			1.00			1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)			2814			2760		5085	1583		5085	1583
Flt Permitted			1.00			1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)			2814			2760		5085	1583		5085	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	0	171	0	0	390	0	2019	129	0	3149	548
RTOR Reduction (vph)	0	0	17	0	0	24	0	0	41	0	0	138
Lane Group Flow (vph)	0	0	154	0	0	366	0	2019	88	0	3149	410
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	2%	2%	2%	2%	2%	2%
Turn Type			Perm			Perm		NA	Perm		NA	Perm
Protected Phases								2			6	
Permitted Phases			5			1			2			6
Actuated Green, G (s)			9.3			14.2		49.5	49.5		54.4	54.4
Effective Green, g (s)			9.3			14.2		49.5	49.5		54.4	54.4
Actuated g/C Ratio			0.13			0.20		0.68	0.68		0.75	0.75
Clearance Time (s)			4.5			4.5		4.5	4.5		4.5	4.5
Vehicle Extension (s)			3.0			3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)			359			539		3462	1077		3805	1184
v/s Ratio Prot								0.40			c0.62	
v/s Ratio Perm			0.05			c0.13			0.06			0.26
v/c Ratio			0.43			0.68		0.58	0.08		0.83	0.35
Uniform Delay, d1			29.2			27.1		6.1	3.9		6.0	3.1
Progression Factor			1.00			1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2			0.8			3.4		0.3	0.0		1.6	0.2
Delay (s)			30.1			30.5		6.4	4.0		7.6	3.3
Level of Service			C			C		A	A		A	A
Approach Delay (s)		30.1			30.5			6.2			7.0	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	72.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



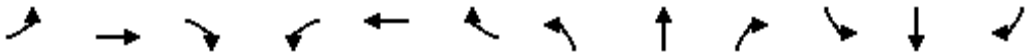
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	379	166	113	1763	2491	745
Future Volume (vph)	379	166	113	1763	2491	745
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1752	3505	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	1752	3505	3539	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	387	169	115	1799	2542	760
RTOR Reduction (vph)	0	4	0	0	0	21
Lane Group Flow (vph)	387	165	115	1799	2542	739
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%
Turn Type	Prot	pm+ov	Prot	NA	NA	pm+ov
Protected Phases	4	5	5	2	6	4
Permitted Phases		4				6
Actuated Green, G (s)	17.6	26.6	9.0	93.4	79.9	97.5
Effective Green, g (s)	17.6	26.6	9.0	93.4	79.9	97.5
Actuated g/C Ratio	0.15	0.22	0.08	0.78	0.67	0.81
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	503	410	131	2728	2356	1345
v/s Ratio Prot	c0.11	0.03	c0.07	0.51	c0.72	0.08
v/s Ratio Perm		0.07				0.39
v/c Ratio	0.77	0.40	0.88	0.66	1.08	0.55
Uniform Delay, d1	49.2	39.9	55.0	6.1	20.0	3.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.0	0.6	43.6	1.3	44.0	0.5
Delay (s)	56.2	40.6	98.6	7.3	64.0	4.3
Level of Service	E	D	F	A	E	A
Approach Delay (s)	51.5			12.8	50.3	
Approach LOS	D			B	D	

Intersection Summary			
HCM 2000 Control Delay	38.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	97.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	689	717	75	143	401	441	46	714	140	781	1157	738
Future Volume (vph)	689	717	75	143	401	441	46	714	140	781	1157	738
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99	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	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3467	3516		3467	3574	1577	1752	3505	1545	3433	3539	1555
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3467	3516		3467	3574	1577	1752	3505	1545	3433	3539	1555
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	710	739	77	147	413	455	47	736	144	805	1193	761
RTOR Reduction (vph)	0	6	0	0	0	319	0	0	109	0	0	308
Lane Group Flow (vph)	710	810	0	147	413	136	47	736	35	805	1193	453
Confl. Peds. (#/hr)	1		6	6		1	3		1	1		3
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	3%	3%	3%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	25.7	35.9		7.7	17.9	17.9	4.7	29.0	29.0	29.4	53.7	53.7
Effective Green, g (s)	25.7	35.9		7.7	17.9	17.9	4.7	29.0	29.0	29.4	53.7	53.7
Actuated g/C Ratio	0.21	0.30		0.06	0.15	0.15	0.04	0.24	0.24	0.24	0.45	0.45
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	742	1051		222	533	235	68	847	373	841	1583	695
v/s Ratio Prot	c0.20	c0.23		0.04	0.12		0.03	c0.21		c0.23	0.34	
v/s Ratio Perm						0.09			0.02			0.29
v/c Ratio	0.96	0.77		0.66	0.77	0.58	0.69	0.87	0.09	0.96	0.75	0.65
Uniform Delay, d1	46.6	38.3		54.9	49.1	47.5	56.9	43.7	35.3	44.7	27.6	25.9
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	22.8	3.5		7.2	6.9	3.4	26.1	11.7	0.5	21.0	3.4	4.7
Delay (s)	69.4	41.8		62.1	56.1	51.0	83.1	55.4	35.8	65.7	31.0	30.5
Level of Service	E	D		E	E	D	F	E	D	E	C	C
Approach Delay (s)		54.7			54.6			53.8			41.0	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	48.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	87.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	494	171	15	240	0	51	0	7	0	0	0
Future Volume (Veh/h)	0	494	171	15	240	0	51	0	7	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	0	531	184	16	258	0	55	0	8	0	0	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	258			715			913	913	623	921	1005	258
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	258			715			913	913	623	921	1005	258
tC, single (s)	4.1			4.1			*6.0	6.5	*6.0	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			*2.0	4.0	*2.0	3.5	4.0	3.3
p0 queue free %	100			98			89	100	99	100	100	100
cM capacity (veh/h)	1307			881			494	268	754	245	237	781

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	715	274	63	0
Volume Left	0	16	55	0
Volume Right	184	0	8	0
cSH	1307	881	517	1700
Volume to Capacity	0.00	0.02	0.12	0.00
Queue Length 95th (ft)	0	1	10	0
Control Delay (s)	0.0	0.7	12.9	0.0
Lane LOS		A	B	A
Approach Delay (s)	0.0	0.7	12.9	0.0
Approach LOS			B	A

Intersection Summary				
Average Delay	1.0			
Intersection Capacity Utilization	46.4%	ICU Level of Service	A	
Analysis Period (min)	15			

* User Entered Value

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	494	171	15	240	0	51	0	7	0	0	0
Future Vol, veh/h	0	494	171	15	240	0	51	0	7	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	3	3	3	2	2	2	2	2	2
Mvmt Flow	0	531	184	16	258	0	55	0	8	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	258	0	0	715	0	0	913	913	623	917	1005	258
Stage 1	-	-	-	-	-	-	623	623	-	290	290	-
Stage 2	-	-	-	-	-	-	290	290	-	627	715	-
Critical Hdwy	4.12	-	-	4.13	-	-	6	6	6	6	6	6
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.227	-	-	2	2	2	2	2	2
Pot Cap-1 Maneuver	1307	-	-	881	-	-	501	501	754	498	440	1257
Stage 1	-	-	-	-	-	-	738	819	-	1190	1249	-
Stage 2	-	-	-	-	-	-	1190	1249	-	734	729	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1307	-	-	881	-	-	493	490	754	485	431	1257
Mov Cap-2 Maneuver	-	-	-	-	-	-	493	490	-	485	431	-
Stage 1	-	-	-	-	-	-	738	819	-	1190	1223	-
Stage 2	-	-	-	-	-	-	1165	1223	-	727	729	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.5	13	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	514	1307	-	-	881	-	-	-
HCM Lane V/C Ratio	0.121	-	-	-	0.018	-	-	-
HCM Control Delay (s)	13	0	-	-	9.2	0	-	0
HCM Lane LOS	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.4	0	-	-	0.1	-	-	-

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	535	321	1599	388	859	1045
Future Volume (vph)	535	321	1599	388	859	1045
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	1.00	0.91	1.00	1.00	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3273	1509	4988	1510	1752	5036
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3273	1509	4988	1510	1752	5036
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	563	338	1683	408	904	1100
RTOR Reduction (vph)	0	0	0	290	0	0
Lane Group Flow (vph)	563	338	1683	118	904	1100
Confl. Peds. (#/hr)				3	3	
Heavy Vehicles (%)	7%	7%	4%	4%	3%	3%
Turn Type	Prot	pm+ov	NA	Perm	Prot	NA
Protected Phases	8	1	2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	17.6	50.5	26.0	26.0	32.9	63.4
Effective Green, g (s)	17.6	50.5	26.0	26.0	32.9	63.4
Actuated g/C Ratio	0.20	0.56	0.29	0.29	0.37	0.70
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	640	922	1440	436	640	3547
v/s Ratio Prot	c0.17	0.13	c0.34		c0.52	0.22
v/s Ratio Perm		0.09		0.08		
v/c Ratio	0.88	0.37	1.17	0.27	1.41	0.31
Uniform Delay, d1	35.2	10.9	32.0	24.7	28.6	5.0
Progression Factor	1.00	1.00	1.08	2.74	1.00	1.00
Incremental Delay, d2	13.1	0.2	80.9	0.9	194.8	0.2
Delay (s)	48.3	11.2	115.4	68.6	223.4	5.3
Level of Service	D	B	F	E	F	A
Approach Delay (s)	34.4		106.3			103.6
Approach LOS	C		F			F

Intersection Summary			
HCM 2000 Control Delay	92.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	105.0%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	205	576	1445	1261	347	1205
Future Volume (vph)	205	576	1445	1261	347	1205
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	0.91	1.00	1.00	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1719	1538	4940	1496	1719	4940
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1719	1538	4940	1496	1719	4940
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	216	606	1521	1327	365	1268
RTOR Reduction (vph)	0	226	0	328	0	0
Lane Group Flow (vph)	216	380	1521	999	365	1268
Confl. Peds. (#/hr)				3	3	
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	18.5	18.5	43.5	43.5	14.5	62.5
Effective Green, g (s)	18.5	18.5	43.5	43.5	14.5	62.5
Actuated g/C Ratio	0.21	0.21	0.48	0.48	0.16	0.69
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	353	316	2387	723	276	3430
v/s Ratio Prot	0.13		0.31		c0.21	0.26
v/s Ratio Perm		c0.25		c0.67		
v/c Ratio	0.61	1.20	0.64	1.38	1.32	0.37
Uniform Delay, d1	32.5	35.8	17.4	23.2	37.8	5.7
Progression Factor	1.00	1.00	1.00	1.00	0.80	1.84
Incremental Delay, d2	3.1	117.9	1.3	180.6	165.7	0.3
Delay (s)	35.6	153.6	18.7	203.9	195.9	10.7
Level of Service	D	F	B	F	F	B
Approach Delay (s)	122.6		105.0			52.1
Approach LOS	F		F			D

Intersection Summary			
HCM 2000 Control Delay	91.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.33		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	105.1%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Traffic Volume (veh/h)	2236	16	0	1401	0	275
Future Volume (Veh/h)	2236	16	0	1401	0	275
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	2354	17	0	1475	0	289
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	335			372		
pX, platoon unblocked			0.55		0.60	0.55
vC, conflicting volume			2371		2854	1186
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1848		1745	0
tC, single (s)			4.2		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			100		100	51
cM capacity (veh/h)			168		46	592

Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SB 3	NW 1
Volume Total	1569	802	492	492	492	289
Volume Left	0	0	0	0	0	0
Volume Right	0	17	0	0	0	289
cSH	1700	1700	1700	1700	1700	592
Volume to Capacity	0.92	0.47	0.29	0.29	0.29	0.49
Queue Length 95th (ft)	0	0	0	0	0	67
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	16.7
Lane LOS						C
Approach Delay (s)	0.0		0.0			16.7
Approach LOS						C

Intersection Summary				
Average Delay	1.2			
Intersection Capacity Utilization	86.0%	ICU Level of Service		E
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	3.8

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	2236	16	0	1401	0	275
Future Vol, veh/h	2236	16	0	1401	0	275
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	6	6	6	6	2	2
Mvmt Flow	2354	17	0	1475	0	289

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	1185
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	2
Pot Cap-1 Maneuver	-	-	0	-	0	341
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	341
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

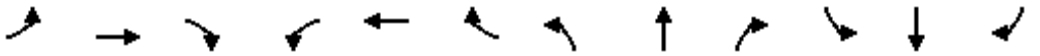
Approach	NB	SB	NW
HCM Control Delay, s	0	0	53.6
HCM LOS			F

Minor Lane/Major Mvmt	NBT	NBR	NWLn1	SBT
Capacity (veh/h)	-	-	341	-
HCM Lane V/C Ratio	-	-	0.849	-
HCM Control Delay (s)	-	-	53.6	-
HCM Lane LOS	-	-	F	-
HCM 95th %tile Q(veh)	-	-	7.7	-

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Traffic Volume (vph)	1694	32	412	1069	99	666
Future Volume (vph)	1694	32	412	1069	99	666
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	1.00		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3395		1703	3406	1736	1553
Flt Permitted	1.00		0.08	1.00	0.95	1.00
Satd. Flow (perm)	3395		142	3406	1736	1553
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1783	34	434	1125	104	701
RTOR Reduction (vph)	2	0	0	0	0	4
Lane Group Flow (vph)	1815	0	434	1125	104	697
Confl. Peds. (#/hr)		1	1		3	
Heavy Vehicles (%)	6%	6%	6%	6%	4%	4%
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases			6			4
Actuated Green, G (s)	46.1		81.1	81.1	9.9	40.4
Effective Green, g (s)	46.1		81.1	81.1	9.9	40.4
Actuated g/C Ratio	0.46		0.81	0.81	0.10	0.40
Clearance Time (s)	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1565		591	2762	171	697
v/s Ratio Prot	c0.53		0.22	0.33	0.06	c0.31
v/s Ratio Perm			0.37			0.14
v/c Ratio	1.16		0.73	0.41	0.61	1.00
Uniform Delay, d1	26.9		25.5	2.7	43.2	29.8
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	79.5		4.7	0.1	6.0	34.2
Delay (s)	106.5		30.2	2.8	49.2	64.0
Level of Service	F		C	A	D	E
Approach Delay (s)	106.5			10.4	62.1	
Approach LOS	F			B	E	

Intersection Summary			
HCM 2000 Control Delay	62.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	96.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	119	43	43	242	389	222	463	41	184	363	73
Future Volume (vph)	33	119	43	43	242	389	222	463	41	184	363	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	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	1.00
Frt	1.00	0.96		1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1656	1664		1752	1845	1568	1752	1822		1736	1827	1553
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1656	1664		1752	1845	1568	1752	1822		1736	1827	1553
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)	35	125	45	45	255	409	234	487	43	194	382	77
RTOR Reduction (vph)	0	18	0	0	0	143	0	4	0	0	0	50
Lane Group Flow (vph)	35	152	0	45	255	266	234	526	0	194	382	27
Confl. Peds. (#/hr)			1	1								
Heavy Vehicles (%)	9%	9%	9%	3%	3%	3%	3%	3%	3%	4%	4%	4%
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases						8						6
Actuated Green, G (s)	3.7	16.0		2.7	15.0	24.9	11.4	22.4		9.9	20.9	24.6
Effective Green, g (s)	3.7	16.0		2.7	15.0	24.9	11.4	22.4		9.9	20.9	24.6
Actuated g/C Ratio	0.05	0.23		0.04	0.22	0.36	0.17	0.32		0.14	0.30	0.36
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
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)	88	385		68	401	668	289	591		249	553	654
v/s Ratio Prot	0.02	0.09		c0.03	c0.14	0.06	c0.13	c0.29		0.11	0.21	0.00
v/s Ratio Perm						0.11						0.02
v/c Ratio	0.40	0.40		0.66	0.64	0.40	0.81	0.89		0.78	0.69	0.04
Uniform Delay, d1	31.6	22.4		32.7	24.5	16.5	27.8	22.1		28.5	21.2	14.5
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.9	0.7		21.6	3.3	0.4	15.3	15.2		14.2	3.7	0.0
Delay (s)	34.5	23.1		54.3	27.8	16.8	43.0	37.3		42.7	24.9	14.5
Level of Service	C	C		D	C	B	D	D		D	C	B
Approach Delay (s)		25.0			23.2			39.1			29.0	
Approach LOS		C			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	30.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	69.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	0	1	0	484	1	39	1	215	181	21	523	0
Future Volume (vph)	0	1	0	484	1	39	1	215	181	21	523	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor		1.00		1.00	1.00		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	
Flpb, ped/bikes		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	1.00	
Flt Protected		1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1900		1716	1544		1701	1792	1491	1734	1827	
Flt Permitted		1.00		0.76	1.00		0.20	1.00	1.00	0.59	1.00	
Satd. Flow (perm)		1900		1368	1544		354	1792	1491	1077	1827	
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)	0	1	0	538	1	43	1	239	201	23	581	0
RTOR Reduction (vph)	0	0	0	0	23	0	0	0	126	0	0	0
Lane Group Flow (vph)	0	1	0	538	21	0	1	239	75	23	581	0
Confl. Peds. (#/hr)			1	1			3		1	1		3
Heavy Vehicles (%)	0%	0%	0%	5%	5%	5%	6%	6%	6%	4%	4%	4%
Turn Type		NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4		4	8		
Actuated Green, G (s)		24.7		24.7	24.7		20.2	20.2	20.2	20.2	20.2	
Effective Green, g (s)		24.7		24.7	24.7		20.2	20.2	20.2	20.2	20.2	
Actuated g/C Ratio		0.46		0.46	0.46		0.37	0.37	0.37	0.37	0.37	
Clearance Time (s)		4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		870		626	707		132	671	558	403	684	
v/s Ratio Prot		0.00			0.01			0.13			c0.32	
v/s Ratio Perm				c0.39			0.00		0.05	0.02		
v/c Ratio		0.00		0.86	0.03		0.01	0.36	0.13	0.06	0.85	
Uniform Delay, d1		7.9		13.0	8.0		10.6	12.2	11.1	10.8	15.5	
Progression Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.0		11.3	0.0		0.0	0.3	0.1	0.1	9.7	
Delay (s)		7.9		24.4	8.0		10.6	12.5	11.2	10.8	25.1	
Level of Service		A		C	A		B	B	B	B	C	
Approach Delay (s)		7.9			23.1			11.9			24.6	
Approach LOS		A			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	20.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	53.9	Sum of lost time (s)	9.0
Intersection Capacity Utilization	68.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	18	20	19	14	92	44	36	352	122	70	669	255
Future Volume (vph)	18	20	19	14	92	44	36	352	122	70	669	255
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99			0.99		1.00	0.99		1.00	0.99	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.95			0.96		1.00	0.96		1.00	0.96	
Flt Protected		0.98			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1477			1669		1703	1713		1735	1741	
Flt Permitted		0.85			0.97		0.11	1.00		0.39	1.00	
Satd. Flow (perm)		1274			1624		200	1713		705	1741	
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)	20	22	21	16	102	49	40	391	136	78	743	283
RTOR Reduction (vph)	0	18	0	0	18	0	0	12	0	0	13	0
Lane Group Flow (vph)	0	45	0	0	149	0	40	515	0	78	1013	0
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	20%	20%	20%	8%	8%	8%	6%	6%	6%	4%	4%	4%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		12.5			12.5		54.8	52.0		57.6	53.4	
Effective Green, g (s)		12.5			12.5		54.8	52.0		57.6	53.4	
Actuated g/C Ratio		0.15			0.15		0.67	0.63		0.70	0.65	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		193			246		184	1083		546	1131	
v/s Ratio Prot							c0.01	0.30		0.01	c0.58	
v/s Ratio Perm		0.04			c0.09		0.14			0.09		
v/c Ratio		0.23			0.61		0.22	0.48		0.14	0.90	
Uniform Delay, d1		30.6			32.6		11.5	7.9		4.4	12.1	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.6			4.2		0.6	0.3		0.1	9.4	
Delay (s)		31.3			36.7		12.1	8.3		4.6	21.5	
Level of Service		C			D		B	A		A	C	
Approach Delay (s)		31.3			36.7			8.5			20.3	
Approach LOS		C			D			A			C	

Intersection Summary			
HCM 2000 Control Delay	18.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	82.2	Sum of lost time (s)	13.5
Intersection Capacity Utilization	74.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	233	46	152	4	53	4	420	256	10	1	336	385
Future Volume (vph)	233	46	152	4	53	4	420	256	10	1	336	385
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	0.97		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	
Frt		1.00	0.85		0.99		1.00	0.99		1.00	0.92	
Flt Protected		0.96	1.00		1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1750	1506		1838		1752	1832		1716	1639	
Flt Permitted		0.76	1.00		0.98		0.09	1.00		0.59	1.00	
Satd. Flow (perm)		1394	1506		1804		159	1832		1061	1639	
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)	245	48	160	4	56	4	442	269	11	1	354	405
RTOR Reduction (vph)	0	0	127	0	2	0	0	1	0	0	44	0
Lane Group Flow (vph)	0	293	33	0	62	0	442	279	0	1	715	0
Confl. Peds. (#/hr)	1		4	4		1	3		2	2		3
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	3%	3%	3%	5%	5%	5%
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		19.5	19.5		19.5		65.1	59.6		42.9	41.9	
Effective Green, g (s)		19.5	19.5		19.5		65.1	59.6		42.9	41.9	
Actuated g/C Ratio		0.21	0.21		0.21		0.70	0.64		0.46	0.45	
Clearance Time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		290	313		375		428	1166		493	733	
v/s Ratio Prot							c0.21	0.15		0.00	0.44	
v/s Ratio Perm		c0.21	0.02		0.03		c0.51			0.00		
v/c Ratio		1.01	0.11		0.16		1.03	0.24		0.00	0.98	
Uniform Delay, d1		37.0	30.0		30.4		29.7	7.3		13.7	25.3	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		55.5	0.2		0.2		52.2	0.1		0.0	26.9	
Delay (s)		92.6	30.1		30.6		81.8	7.4		13.7	52.3	
Level of Service		F	C		C		F	A		B	D	
Approach Delay (s)		70.5			30.6			53.0			52.2	
Approach LOS		E			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	55.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	93.6	Sum of lost time (s)	13.5
Intersection Capacity Utilization	97.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	29	372	37	160	744	16	7	33	73	0	16	14
Future Volume (Veh/h)	29	372	37	160	744	16	7	33	73	0	16	14
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	31	392	39	168	783	17	7	35	77	0	17	15
Pedestrians		2			10			4				
Lane Width (ft)		12.0			12.0			12.0				
Walking Speed (ft/s)		3.5			3.5			3.5				
Percent Blockage		0			1			0				
Right turn flare (veh)									5			
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		187			537							
pX, platoon unblocked	0.88						0.88	0.88		0.88	0.88	0.88
vC, conflicting volume	800			435			1630	1614	426	1648	1624	794
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	707			435			1648	1629	426	1667	1641	700
tC, single (s)	4.1			4.1			7.2	6.6	6.3	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.6	4.1	3.4	3.5	4.0	3.3
p0 queue free %	96			85			85	50	87	100	77	96
cM capacity (veh/h)	779			1115			45	70	606	31	73	390

Direction, Lane #	SE 1	SE 2	NW 1	NE 1	SW 1
Volume Total	31	431	968	119	32
Volume Left	31	0	168	7	0
Volume Right	0	39	17	77	15
cSH	779	1700	1115	188	117
Volume to Capacity	0.04	0.25	0.15	0.63	0.27
Queue Length 95th (ft)	3	0	13	91	26
Control Delay (s)	9.8	0.0	3.6	52.2	46.8
Lane LOS	A		A	F	E
Approach Delay (s)	0.7		3.6	52.2	46.8
Approach LOS				F	E

Intersection Summary				
Average Delay	7.3			
Intersection Capacity Utilization	90.2%	ICU Level of Service		E
Analysis Period (min)	15			

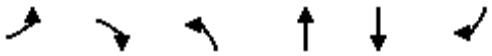
Intersection	
Int Delay, s/veh	6.1

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	29	372	37	160	744	16	7	33	73	0	16	14
Future Vol, veh/h	29	372	37	160	744	16	7	33	73	0	16	14
Conflicting Peds, #/hr	0	0	4	4	0	0	2	0	10	10	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	-	-	-	-	-	130	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	4	4	4	3	3	3	9	9	9	0	0	0
Mvmt Flow	31	392	39	168	783	17	7	35	77	0	17	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	800	0	0	435	0	0	1622	1613	425	1627	1624	794
Stage 1	-	-	-	-	-	-	476	476	-	1128	1128	-
Stage 2	-	-	-	-	-	-	1146	1137	-	499	496	-
Critical Hdwy	4.14	-	-	4.13	-	-	7.19	6.59	6.29	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.19	5.59	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.19	5.59	-	6.1	5.5	-
Follow-up Hdwy	2.236	-	-	2.227	-	-	3.581	4.081	3.381	3.5	4	3.3
Pot Cap-1 Maneuver	814	-	-	1119	-	-	79	100	615	83	104	391
Stage 1	-	-	-	-	-	-	557	545	-	250	282	-
Stage 2	-	-	-	-	-	-	235	269	-	557	549	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	812	-	-	1108	-	-	48	70	607	34	72	390
Mov Cap-2 Maneuver	-	-	-	-	-	-	48	70	-	34	72	-
Stage 1	-	-	-	-	-	-	534	522	-	240	205	-
Stage 2	-	-	-	-	-	-	150	195	-	433	526	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0.6	1.5	54	47.3
HCM LOS			F	E

Minor Lane/Major Mvmt	NELn1	NELn2	NWL	NWT	NWR	SEL	SET	SER	SWLn1
Capacity (veh/h)	65	607	1108	-	-	812	-	-	116
HCM Lane V/C Ratio	0.648	0.127	0.152	-	-	0.038	-	-	0.272
HCM Control Delay (s)	130.9	11.8	8.8	0	-	9.6	-	-	47.3
HCM Lane LOS	F	B	A	A	-	A	-	-	E
HCM 95th %tile Q(veh)	2.8	0.4	0.5	-	-	0.1	-	-	1



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	20	0	1006	36	26	6
Future Volume (Veh/h)	20	0	1006	36	26	6
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	21	0	1059	38	27	6
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	2183	27	27			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2183	27	27			
tC, single (s)	*6.0	6.3	4.1			
tC, 2 stage (s)						
tF (s)	*2.0	3.4	2.2			
p0 queue free %	21	100	32			
cM capacity (veh/h)	27	1037	1568			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	21	1059	38	27	6
Volume Left	21	1059	0	0	0
Volume Right	0	0	0	0	6
cSH	27	1568	1700	1700	1700
Volume to Capacity	0.79	0.68	0.02	0.02	0.00
Queue Length 95th (ft)	62	143	0	0	0
Control Delay (s)	319.1	11.9	0.0	0.0	0.0
Lane LOS	F	B			
Approach Delay (s)	319.1	11.5		0.0	
Approach LOS	F				

Intersection Summary			
Average Delay	16.8		
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		

* User Entered Value

Intersection	
Int Delay, s/veh	16.7

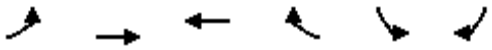
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	0	1006	36	26	6
Future Vol, veh/h	20	0	1006	36	26	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	0	-	0	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	6	6	5	5	18	18
Mvmt Flow	21	0	1059	38	27	6

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2183	-	27	0	-	0
Stage 1	27	-	-	-	-	-
Stage 2	2156	-	-	-	-	-
Critical Hdwy	6	-	4.15	-	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	2	-	2.245	-	-	-
Pot Cap-1 Maneuver	82	0	1568	-	-	0
Stage 1	1741	0	-	-	-	0
Stage 2	117	0	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	27	-	1568	-	-	-
Mov Cap-2 Maneuver	27	-	-	-	-	-
Stage 1	1741	-	-	-	-	-
Stage 2	38	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 310.7	11.5	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT
Capacity (veh/h)	1568	-	27	-
HCM Lane V/C Ratio	0.675	-	0.78	-
HCM Control Delay (s)	11.9	-	-$ 310.7	-
HCM Lane LOS	B	-	F	-
HCM 95th %tile Q(veh)	5.7	-	2.5	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1805	0	0	26	0
Future Volume (Veh/h)	0	1805	0	0	26	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	1900	0	0	27	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	0				950	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0				950	0
tC, single (s)	4.2				7.2	7.3
tC, 2 stage (s)						
tF (s)	2.3				3.7	3.5
p0 queue free %	100				88	100
cM capacity (veh/h)	1593				231	1034

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	950	950	0	0	27
Volume Left	0	0	0	0	27
Volume Right	0	0	0	0	0
cSH	1700	1700	1700	1700	231
Volume to Capacity	0.56	0.56	0.00	0.00	0.12
Queue Length 95th (ft)	0	0	0	0	10
Control Delay (s)	0.0	0.0	0.0	0.0	22.6
Lane LOS					C
Approach Delay (s)	0.0		0.0		22.6
Approach LOS					C

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	59.9%	ICU Level of Service	B
Analysis Period (min)	15		

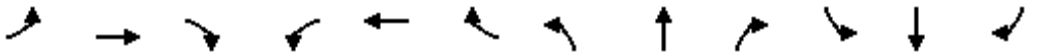
Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	1805	0	0	26	0
Future Vol, veh/h	0	1805	0	0	26	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	0	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	6	6	5	5	18	18
Mvmt Flow	0	1900	0	0	27	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	-	950	-
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	950	-
Critical Hdwy	-	-	-	-	7.16	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	6.16	-
Follow-up Hdwy	-	-	-	-	3.68	-
Pot Cap-1 Maneuver	0	-	0	-	231	0
Stage 1	0	-	0	-	-	0
Stage 2	0	-	0	-	301	0
Platoon blocked, %		-		-		
Mov Cap-1 Maneuver	-	-	-	-	231	-
Mov Cap-2 Maneuver	-	-	-	-	231	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	301	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	22.7
HCM LOS			C

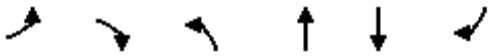
Minor Lane/Major Mvmt	EBT	WBR	SBLn1
Capacity (veh/h)	-	-	231
HCM Lane V/C Ratio	-	-	0.118
HCM Control Delay (s)	-	-	22.7
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	0.4



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	133	0	0	598	0	2618	198	0	1899	612
Future Volume (vph)	0	0	133	0	0	598	0	2618	198	0	1899	612
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.5			4.5		4.5	4.5		4.5	4.5
Lane Util. Factor			0.88			0.88		0.91	1.00		0.91	1.00
Frpb, ped/bikes			1.00			1.00		1.00	0.98		1.00	1.00
Flpb, ped/bikes			1.00			1.00		1.00	1.00		1.00	1.00
Frt			0.85			0.85		1.00	0.85		1.00	0.85
Flt Protected			1.00			1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)			2760			2538		4988	1521		4893	1524
Flt Permitted			1.00			1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)			2760			2538		4988	1521		4893	1524
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	0	137	0	0	616	0	2699	204	0	1958	631
RTOR Reduction (vph)	0	0	67	0	0	13	0	0	76	0	0	120
Lane Group Flow (vph)	0	0	70	0	0	603	0	2699	128	0	1958	511
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	3%	3%	3%	12%	12%	12%	4%	4%	4%	6%	6%	6%
Turn Type			Perm			Perm		NA	Perm		NA	Perm
Protected Phases								2			6	
Permitted Phases			5			1			2			6
Actuated Green, G (s)			7.7			23.8		54.8	54.8		70.9	70.9
Effective Green, g (s)			7.7			23.8		54.8	54.8		70.9	70.9
Actuated g/C Ratio			0.09			0.27		0.63	0.63		0.81	0.81
Clearance Time (s)			4.5			4.5		4.5	4.5		4.5	4.5
Vehicle Extension (s)			3.0			3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)			242			689		3120	951		3960	1233
v/s Ratio Prot								c0.54			0.40	
v/s Ratio Perm			0.03			c0.24			0.08			0.34
v/c Ratio			0.29			0.88		0.87	0.13		0.49	0.41
Uniform Delay, d1			37.4			30.5		13.4	6.7		2.7	2.4
Progression Factor			1.00			1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2			0.7			11.9		2.7	0.1		0.1	0.2
Delay (s)			38.1			42.4		16.1	6.8		2.8	2.6
Level of Service			D			D		B	A		A	A
Approach Delay (s)		38.1			42.4			15.5			2.7	
Approach LOS		D			D			B			A	

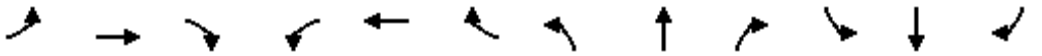
Intersection Summary			
HCM 2000 Control Delay	13.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	87.6	Sum of lost time (s)	9.0
Intersection Capacity Utilization	79.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	668	173	140	2303	1703	495
Future Volume (vph)	668	173	140	2303	1703	495
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3400	1568	1736	3471	3471	1553
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3400	1568	1736	3471	3471	1553
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	696	180	146	2399	1774	516
RTOR Reduction (vph)	0	12	0	0	0	30
Lane Group Flow (vph)	696	168	146	2399	1774	486
Heavy Vehicles (%)	3%	3%	4%	4%	4%	4%
Turn Type	Prot	pm+ov	Prot	NA	NA	pm+ov
Protected Phases	4	5	5	2	6	4
Permitted Phases		4				6
Actuated Green, G (s)	25.6	37.1	11.5	85.4	69.4	95.0
Effective Green, g (s)	25.6	37.1	11.5	85.4	69.4	95.0
Actuated g/C Ratio	0.21	0.31	0.10	0.71	0.58	0.79
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	725	543	166	2470	2007	1287
v/s Ratio Prot	c0.20	0.03	0.08	c0.69	0.51	0.08
v/s Ratio Perm		0.08				0.23
v/c Ratio	0.96	0.31	0.88	0.97	0.88	0.38
Uniform Delay, d1	46.7	31.7	53.6	16.2	21.8	3.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	23.7	0.3	37.2	12.5	6.1	0.2
Delay (s)	70.4	32.0	90.8	28.7	27.9	3.9
Level of Service	E	C	F	C	C	A
Approach Delay (s)	62.5			32.2	22.5	
Approach LOS	E			C	C	

Intersection Summary			
HCM 2000 Control Delay	33.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	90.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	504	443	21	112	592	0	44	1068	133	612	630	791
Future Volume (vph)	504	443	21	112	592	0	44	1068	133	612	630	791
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.95		0.97	0.95		1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		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	1.00
Frt	1.00	0.99		1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3273	3348		3400	3505		1719	3438	1538	3335	3438	1538
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3273	3348		3400	3505		1719	3438	1538	3335	3438	1538
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)	531	466	22	118	623	0	46	1124	140	644	663	833
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	93	0	0	220
Lane Group Flow (vph)	531	485	0	118	623	0	46	1124	47	644	663	613
Confl. Peds. (#/hr)			4	4								
Heavy Vehicles (%)	7%	7%	7%	3%	3%	3%	5%	5%	5%	5%	5%	5%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	18.8	31.1		8.2	20.5		4.2	40.2	40.2	22.5	58.5	58.5
Effective Green, g (s)	18.8	31.1		8.2	20.5		4.2	40.2	40.2	22.5	58.5	58.5
Actuated g/C Ratio	0.16	0.26		0.07	0.17		0.04	0.34	0.34	0.19	0.49	0.49
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
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)	512	867		232	598		60	1151	515	625	1676	749
v/s Ratio Prot	c0.16	0.14		0.03	c0.18		0.03	c0.33		c0.19	0.19	
v/s Ratio Perm									0.03			0.40
v/c Ratio	1.04	0.56		0.51	1.04		0.77	0.98	0.09	1.03	0.40	0.82
Uniform Delay, d1	50.6	38.5		54.0	49.8		57.4	39.4	27.4	48.8	19.5	26.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	49.7	0.8		1.8	48.1		43.5	21.5	0.3	44.0	0.7	9.7
Delay (s)	100.3	39.3		55.7	97.9		100.9	60.9	27.7	92.8	20.2	35.9
Level of Service	F	D		E	F		F	E	C	F	C	D
Approach Delay (s)		71.1			91.2			58.8			48.2	
Approach LOS		E			F			E			D	

Intersection Summary			
HCM 2000 Control Delay	61.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	92.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	53	54	43	165	45	41
Future Volume (Veh/h)	53	54	43	165	45	41
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	62	64	51	194	53	48
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			126		390	94
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			126		390	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 %			96		91	95
cM capacity (veh/h)			1442		592	963

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	126	245	101
Volume Left	0	51	53
Volume Right	64	0	48
cSH	1700	1442	725
Volume to Capacity	0.07	0.04	0.14
Queue Length 95th (ft)	0	3	12
Control Delay (s)	0.0	1.8	10.8
Lane LOS		A	B
Approach Delay (s)	0.0	1.8	10.8
Approach LOS			B

Intersection Summary			
Average Delay		3.2	
Intersection Capacity Utilization		29.4%	ICU Level of Service A
Analysis Period (min)		15	

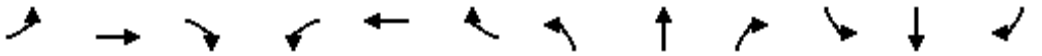
Intersection	
Int Delay, s/veh	3.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	53	54	43	165	45	41
Future Vol, veh/h	53	54	43	165	45	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	5	5	5	5	2	2
Mvmt Flow	62	64	51	194	53	48

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	126	0	389	94
Stage 1	-	-	-	-	94	-
Stage 2	-	-	-	-	295	-
Critical Hdwy	-	-	4.15	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.245	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1442	-	615	963
Stage 1	-	-	-	-	930	-
Stage 2	-	-	-	-	755	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1442	-	590	963
Mov Cap-2 Maneuver	-	-	-	-	590	-
Stage 1	-	-	-	-	930	-
Stage 2	-	-	-	-	725	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.6	10.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	724	-	-	1442	-
HCM Lane V/C Ratio	0.14	-	-	0.035	-
HCM Control Delay (s)	10.8	-	-	7.6	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0.1	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	149	114	83	526	56	149	30	40	62	28	0
Future Volume (Veh/h)	0	149	114	83	526	56	149	30	40	62	28	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	157	120	87	554	59	157	32	42	65	29	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	613			277			989	1004	217	1032	1034	584
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	613			277			989	1004	217	1032	1034	584
tC, single (s)	4.2			4.2			*6.0	*6.0	*6.0	*6.0	*6.0	*6.0
tC, 2 stage (s)												
tF (s)	2.3			2.3			*2.0	*2.0	*2.0	*2.0	*2.0	*2.0
p0 queue free %	100			93			61	92	97	82	93	100
cM capacity (veh/h)	911			1258			402	410	1331	365	393	797

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	277	700	231	94
Volume Left	0	87	157	65
Volume Right	120	59	42	0
cSH	911	1258	462	373
Volume to Capacity	0.00	0.07	0.50	0.25
Queue Length 95th (ft)	0	6	68	25
Control Delay (s)	0.0	1.8	20.3	17.9
Lane LOS		A	C	C
Approach Delay (s)	0.0	1.8	20.3	17.9
Approach LOS			C	C

Intersection Summary				
Average Delay	5.8			
Intersection Capacity Utilization	74.5%	ICU Level of Service	D	
Analysis Period (min)	15			

* User Entered Value

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	149	114	83	526	56	149	30	40	62	28	0
Future Vol, veh/h	0	149	114	83	526	56	149	30	40	62	28	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	14	14	14	7	7	7	4	4	4	2	2	2
Mvmt Flow	0	157	120	87	554	59	157	32	42	65	29	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	613	0	0	277	0	0	990	1004	217	1012	1035	583
Stage 1	-	-	-	-	-	-	217	217	-	758	758	-
Stage 2	-	-	-	-	-	-	773	787	-	254	277	-
Critical Hdwy	4.24	-	-	4.17	-	-	6	6	6	6	6	6
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.54	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.54	-	6.12	5.52	-
Follow-up Hdwy	2.326	-	-	2.263	-	-	2	2	2	2	2	2
Pot Cap-1 Maneuver	911	-	-	1258	-	-	449	441	1331	436	422	797
Stage 1	-	-	-	-	-	-	1320	1368	-	608	690	-
Stage 2	-	-	-	-	-	-	592	662	-	1253	1270	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	911	-	-	1258	-	-	388	394	1331	365	377	797
Mov Cap-2 Maneuver	-	-	-	-	-	-	388	394	-	365	377	-
Stage 1	-	-	-	-	-	-	1320	1368	-	608	617	-
Stage 2	-	-	-	-	-	-	504	592	-	1185	1270	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1	21.3	18.1
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	447	911	-	-	1258	-	-	369
HCM Lane V/C Ratio	0.516	-	-	-	0.069	-	-	0.257
HCM Control Delay (s)	21.3	0	-	-	8.1	0	-	18.1
HCM Lane LOS	C	A	-	-	A	A	-	C
HCM 95th %tile Q(veh)	2.9	0	-	-	0.2	-	-	1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1255	435	1233	535	560	1574
Future Volume (vph)	1255	435	1233	535	560	1574
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	1.00	0.91	1.00	1.00	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.96	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1568	5085	1526	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3400	1568	5085	1526	1770	5085
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1294	448	1271	552	577	1623
RTOR Reduction (vph)	0	0	0	414	0	0
Lane Group Flow (vph)	1294	448	1271	138	577	1623
Confl. Peds. (#/hr)				6	6	
Confl. Bikes (#/hr)				1		
Heavy Vehicles (%)	3%	3%	2%	2%	2%	2%
Turn Type	Prot	pm+ov	NA	Perm	Prot	NA
Protected Phases	8	1	2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	29.5	54.0	22.5	22.5	24.5	51.5
Effective Green, g (s)	29.5	54.0	22.5	22.5	24.5	51.5
Actuated g/C Ratio	0.33	0.60	0.25	0.25	0.27	0.57
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1114	1019	1271	381	481	2909
v/s Ratio Prot	c0.38	0.12	c0.25		c0.33	0.32
v/s Ratio Perm		0.17		0.09		
v/c Ratio	1.16	0.44	1.00	0.36	1.20	0.56
Uniform Delay, d1	30.2	9.8	33.8	27.8	32.8	12.1
Progression Factor	1.00	1.00	1.24	4.87	1.00	1.00
Incremental Delay, d2	82.9	0.3	19.4	1.6	108.4	0.8
Delay (s)	113.1	10.1	61.3	137.1	141.2	12.9
Level of Service	F	B	E	F	F	B
Approach Delay (s)	86.6		84.3			46.5
Approach LOS	F		F			D

Intersection Summary			
HCM 2000 Control Delay	70.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	101.9%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	615	520	1248	930	530	2299
Future Volume (vph)	615	520	1248	930	530	2299
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	0.91	1.00	1.00	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.96	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	5036	1510	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	5036	1510	1770	5085
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	628	531	1273	949	541	2346
RTOR Reduction (vph)	0	331	0	442	0	0
Lane Group Flow (vph)	628	200	1273	507	541	2346
Confl. Peds. (#/hr)				7	7	
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	27.5	27.5	26.5	26.5	22.5	53.5
Effective Green, g (s)	27.5	27.5	26.5	26.5	22.5	53.5
Actuated g/C Ratio	0.31	0.31	0.29	0.29	0.25	0.59
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	540	483	1482	444	442	3022
v/s Ratio Prot	c0.35		0.25		c0.31	0.46
v/s Ratio Perm		0.13		c0.34		
v/c Ratio	1.16	0.41	0.86	1.14	1.22	0.78
Uniform Delay, d1	31.2	24.8	30.0	31.8	33.8	13.7
Progression Factor	1.00	1.00	1.00	1.00	0.88	0.93
Incremental Delay, d2	92.2	0.6	6.7	87.3	111.6	1.1
Delay (s)	123.5	25.4	36.7	119.1	141.4	13.9
Level of Service	F	C	D	F	F	B
Approach Delay (s)	78.6		71.9			37.8
Approach LOS	E		E			D

Intersection Summary			
HCM 2000 Control Delay	57.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	98.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Traffic Volume (veh/h)	1897	14	0	2914	0	281
Future Volume (Veh/h)	1897	14	0	2914	0	281
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	1997	15	0	3067	0	296
Pedestrians					3	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	335			372		
pX, platoon unblocked			0.57		0.75	0.57
vC, conflicting volume			2015		3030	1009
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1265		152	0
tC, single (s)			4.2		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	52
cM capacity (veh/h)			306		615	614

Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SB 3	NW 1
Volume Total	1331	681	1022	1022	1022	296
Volume Left	0	0	0	0	0	0
Volume Right	0	15	0	0	0	296
cSH	1700	1700	1700	1700	1700	614
Volume to Capacity	0.78	0.40	0.60	0.60	0.60	0.48
Queue Length 95th (ft)	0	0	0	0	0	65
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	16.2
Lane LOS						C
Approach Delay (s)	0.0		0.0			16.2
Approach LOS						C

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	2.4

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	1897	14	0	2914	0	281
Future Vol, veh/h	1897	14	0	2914	0	281
Conflicting Peds, #/hr	0	3	3	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	3	2	2
Mvmt Flow	1997	15	0	3067	0	296

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	1009
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	2.5
Pot Cap-1 Maneuver	-	-	0	-	0	373
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	372
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

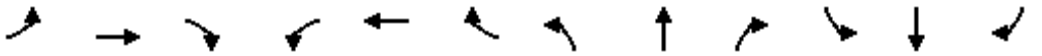
Approach	NB	SB	NW
HCM Control Delay, s	0	0	43.3
HCM LOS			E

Minor Lane/Major Mvmt	NBT	NBR	NWLn1	SBT
Capacity (veh/h)	-	-	372	-
HCM Lane V/C Ratio	-	-	0.795	-
HCM Control Delay (s)	-	-	43.3	-
HCM Lane LOS	-	-	E	-
HCM 95th %tile Q(veh)	-	-	6.8	-

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Traffic Volume (vph)	1422	66	543	2371	88	489
Future Volume (vph)	1422	66	543	2371	88	489
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3446		1770	3539	1787	1599
Flt Permitted	1.00		0.08	1.00	0.95	1.00
Satd. Flow (perm)	3446		154	3539	1787	1599
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1466	68	560	2444	91	504
RTOR Reduction (vph)	3	0	0	0	0	6
Lane Group Flow (vph)	1531	0	560	2444	91	498
Confl. Peds. (#/hr)		2	2			
Heavy Vehicles (%)	4%	4%	2%	2%	1%	1%
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases			6			4
Actuated Green, G (s)	44.0		81.9	81.9	9.1	42.5
Effective Green, g (s)	44.0		81.9	81.9	9.1	42.5
Actuated g/C Ratio	0.44		0.82	0.82	0.09	0.42
Clearance Time (s)	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1516		665	2898	162	751
v/s Ratio Prot	c0.44		0.28	c0.69	0.05	c0.22
v/s Ratio Perm			0.41			0.09
v/c Ratio	1.01		0.84	0.84	0.56	0.66
Uniform Delay, d1	28.0		26.1	5.3	43.5	23.0
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	25.5		9.5	2.4	4.4	2.2
Delay (s)	53.5		35.6	7.7	47.9	25.2
Level of Service	D		D	A	D	C
Approach Delay (s)	53.5			12.9	28.7	
Approach LOS	D			B	C	

Intersection Summary			
HCM 2000 Control Delay	26.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	87.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	73	176	177	73	118	230	47	336	70	373	617	87
Future Volume (vph)	73	176	177	73	118	230	47	336	70	373	617	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	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	1.00
Frt	1.00	0.92		1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1697		1787	1881	1599	1770	1814		1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1697		1787	1881	1599	1770	1814		1770	1863	1583
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)	77	185	186	77	124	242	49	354	74	393	649	92
RTOR Reduction (vph)	0	49	0	0	0	98	0	10	0	0	0	46
Lane Group Flow (vph)	77	322	0	77	124	144	49	418	0	393	649	46
Confl. Peds. (#/hr)			4	4								
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	2%	2%	2%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases						8						6
Actuated Green, G (s)	3.8	16.3		3.8	16.3	32.5	2.9	20.0		16.2	33.3	37.1
Effective Green, g (s)	3.8	16.3		3.8	16.3	32.5	2.9	20.0		16.2	33.3	37.1
Actuated g/C Ratio	0.05	0.22		0.05	0.22	0.44	0.04	0.27		0.22	0.45	0.50
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
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)	90	372		91	412	796	69	488		385	834	886
v/s Ratio Prot	c0.04	c0.19		0.04	0.07	0.04	0.03	0.23		c0.22	c0.35	0.00
v/s Ratio Perm						0.05						0.03
v/c Ratio	0.86	0.87		0.85	0.30	0.18	0.71	0.86		1.02	0.78	0.05
Uniform Delay, d1	35.0	27.9		35.0	24.2	12.8	35.3	25.8		29.1	17.4	9.6
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	50.6	18.5		47.9	0.4	0.1	29.0	13.9		51.3	4.6	0.0
Delay (s)	85.6	46.4		82.8	24.7	12.9	64.3	39.7		80.3	22.0	9.6
Level of Service	F	D		F	C	B	E	D		F	C	A
Approach Delay (s)		53.1			28.3			42.2			41.2	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	41.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	74.3	Sum of lost time (s)	18.0
Intersection Capacity Utilization	82.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	3	0	9	212	1	43	7	350	359	44	526	1
Future Volume (vph)	3	0	9	212	1	43	7	350	359	44	526	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes		0.98		1.00	0.98		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt		0.90		1.00	0.85		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.99		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1655		1733	1526		1785	1881	1561	1749	1844	
Flt Permitted		0.96		0.75	1.00		0.33	1.00	1.00	0.50	1.00	
Satd. Flow (perm)		1604		1367	1526		611	1881	1561	911	1844	
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)	3	0	10	236	1	48	8	389	399	49	584	1
RTOR Reduction (vph)	0	9	0	0	34	0	0	0	196	0	0	0
Lane Group Flow (vph)	0	4	0	236	15	0	8	389	203	49	585	0
Confl. Peds. (#/hr)	1		1	1		1	3		3	3		3
Heavy Vehicles (%)	0%	0%	0%	4%	4%	4%	1%	1%	1%	3%	3%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4		4	8		
Actuated Green, G (s)		13.1		13.1	13.1		23.0	23.0	23.0	23.0	23.0	
Effective Green, g (s)		13.1		13.1	13.1		23.0	23.0	23.0	23.0	23.0	
Actuated g/C Ratio		0.29		0.29	0.29		0.51	0.51	0.51	0.51	0.51	
Clearance Time (s)		4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		465		397	443		311	959	796	464	940	
v/s Ratio Prot					0.01			0.21			c0.32	
v/s Ratio Perm		0.00		c0.17			0.01		0.13	0.05		
v/c Ratio		0.01		0.59	0.03		0.03	0.41	0.26	0.11	0.62	
Uniform Delay, d1		11.4		13.7	11.5		5.5	6.8	6.2	5.7	7.9	
Progression Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.0		2.4	0.0		0.0	0.3	0.2	0.1	1.3	
Delay (s)		11.4		16.1	11.5		5.5	7.1	6.4	5.8	9.2	
Level of Service		B		B	B		A	A	A	A	A	
Approach Delay (s)		11.4			15.3			6.7			9.0	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	45.1	Sum of lost time (s)	9.0
Intersection Capacity Utilization	61.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	54	11	20	39	163	39	43	616	76	56	581	132
Future Volume (vph)	54	11	20	39	163	39	43	616	76	56	581	132
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.97			0.98		1.00	0.98		1.00	0.97	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1609			1799		1787	1845		1769	1801	
Flt Permitted		0.64			0.94		0.17	1.00		0.18	1.00	
Satd. Flow (perm)		1066			1697		312	1845		343	1801	
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)	57	12	21	41	172	41	45	648	80	59	612	139
RTOR Reduction (vph)	0	16	0	0	12	0	0	6	0	0	11	0
Lane Group Flow (vph)	0	74	0	0	242	0	45	722	0	59	740	0
Confl. Peds. (#/hr)	3		4	4		3	6		3	3		6
Heavy Vehicles (%)	10%	10%	10%	2%	2%	2%	1%	1%	1%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		12.9			12.9		31.9	29.1		31.9	29.1	
Effective Green, g (s)		12.9			12.9		31.9	29.1		31.9	29.1	
Actuated g/C Ratio		0.22			0.22		0.55	0.50		0.55	0.50	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		235			375		241	920		256	898	
v/s Ratio Prot							0.01	0.39		c0.01	c0.41	
v/s Ratio Perm		0.07			c0.14		0.09			0.12		
v/c Ratio		0.31			0.65		0.19	0.78		0.23	0.82	
Uniform Delay, d1		19.0			20.6		8.6	12.0		8.4	12.4	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.8			3.8		0.4	4.4		0.5	6.2	
Delay (s)		19.8			24.4		9.0	16.5		8.8	18.6	
Level of Service		B			C		A	B		A	B	
Approach Delay (s)		19.8			24.4			16.0			17.9	
Approach LOS		B			C			B			B	

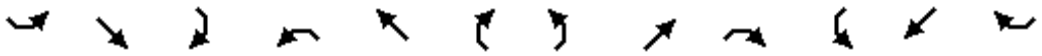
Intersection Summary			
HCM 2000 Control Delay	18.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	58.3	Sum of lost time (s)	13.5
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	451	60	258	20	85	11	300	275	13	7	440	197
Future Volume (vph)	451	60	258	20	85	11	300	275	13	7	440	197
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	0.96		1.00		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	
Frt		1.00	0.85		0.99		1.00	0.99		1.00	0.95	
Flt Protected		0.96	1.00		0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1796	1534		1800		1787	1865		1745	1742	
Flt Permitted		0.68	1.00		0.73		0.11	1.00		0.58	1.00	
Satd. Flow (perm)		1281	1534		1317		211	1865		1057	1742	
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)	475	63	272	21	89	12	316	289	14	7	463	207
RTOR Reduction (vph)	0	0	176	0	5	0	0	2	0	0	19	0
Lane Group Flow (vph)	0	538	96	0	117	0	316	301	0	7	651	0
Confl. Peds. (#/hr)	2		9	9		2	5		5	5		5
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	1%	1%	1%	3%	3%	3%
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		29.5	29.5		29.5		45.1	39.6		32.1	31.1	
Effective Green, g (s)		29.5	29.5		29.5		45.1	39.6		32.1	31.1	
Actuated g/C Ratio		0.35	0.35		0.35		0.54	0.47		0.38	0.37	
Clearance Time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		452	541		464		292	883		414	648	
v/s Ratio Prot							c0.12	0.16		0.00	0.37	
v/s Ratio Perm		c0.42	0.06		0.09		c0.46			0.01		
v/c Ratio		1.19	0.18		0.25		1.08	0.34		0.02	1.00	
Uniform Delay, d1		27.0	18.7		19.2		23.0	13.8		15.9	26.2	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		105.8	0.2		0.3		76.3	0.2		0.0	36.3	
Delay (s)		132.8	18.8		19.5		99.3	14.0		15.9	62.6	
Level of Service		F	B		B		F	B		B	E	
Approach Delay (s)		94.6			19.5			57.6			62.1	
Approach LOS		F			B			E			E	

Intersection Summary			
HCM 2000 Control Delay	70.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	83.6	Sum of lost time (s)	13.5
Intersection Capacity Utilization	98.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	34	532	39	86	548	16	27	27	199	3	23	32
Future Volume (Veh/h)	34	532	39	86	548	16	27	27	199	3	23	32
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	36	560	41	91	577	17	28	28	209	3	24	34
Pedestrians		1			7			9				
Lane Width (ft)		12.0			12.0			12.0				
Walking Speed (ft/s)		3.5			3.5			3.5				
Percent Blockage		0			1			1				
Right turn flare (veh)									5			
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		187			537							
pX, platoon unblocked	0.90						0.90	0.90		0.90	0.90	0.90
vC, conflicting volume	594			610			1476	1438	596	1525	1450	586
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	493			610			1473	1431	596	1528	1444	485
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			91			56	73	58	92	77	94
cM capacity (veh/h)	968			960			64	104	492	36	104	527

Direction, Lane #	SE 1	SE 2	NW 1	NE 1	SW 1
Volume Total	36	601	685	265	61
Volume Left	36	0	91	28	3
Volume Right	0	41	17	209	34
cSH	968	1700	960	396	160
Volume to Capacity	0.04	0.35	0.09	0.67	0.38
Queue Length 95th (ft)	3	0	8	118	41
Control Delay (s)	8.9	0.0	2.4	37.0	40.6
Lane LOS	A		A	E	E
Approach Delay (s)	0.5		2.4	37.0	40.6
Approach LOS				E	E

Intersection Summary				
Average Delay	8.6			
Intersection Capacity Utilization	85.4%	ICU Level of Service		E
Analysis Period (min)	15			

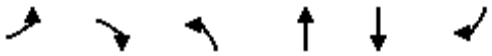
Intersection	
Int Delay, s/veh	8

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	34	532	39	86	548	16	27	27	199	3	23	32
Future Vol, veh/h	34	532	39	86	548	16	27	27	199	3	23	32
Conflicting Peds, #/hr	0	0	9	9	0	0	1	0	7	7	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	-	-	-	-	-	130	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	2	2	2	4	4	4	0	0	0
Mvmt Flow	36	560	41	91	577	17	28	28	209	3	24	34

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	594	0	0	610	0	0	1457	1436	597	1439	1448	586
Stage 1	-	-	-	-	-	-	661	661	-	766	766	-
Stage 2	-	-	-	-	-	-	796	775	-	673	682	-
Critical Hdwy	4.11	-	-	4.12	-	-	7.14	6.54	6.24	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.54	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.54	-	6.1	5.5	-
Follow-up Hdwy	2.209	-	-	2.218	-	-	3.536	4.036	3.336	3.5	4	3.3
Pot Cap-1 Maneuver	987	-	-	969	-	-	106	132	499	112	133	514
Stage 1	-	-	-	-	-	-	448	457	-	398	415	-
Stage 2	-	-	-	-	-	-	378	405	-	448	453	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	986	-	-	963	-	-	71	108	491	44	109	514
Mov Cap-2 Maneuver	-	-	-	-	-	-	71	108	-	44	109	-
Stage 1	-	-	-	-	-	-	428	437	-	383	356	-
Stage 2	-	-	-	-	-	-	283	348	-	230	433	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0.5	1.2	36.5	37.6
HCM LOS			E	E

Minor Lane/Major Mvmt	NELn1	NELn2	NWL	NWT	NWR	SEL	SET	SER	SWLn1
Capacity (veh/h)	86	491	963	-	-	986	-	-	170
HCM Lane V/C Ratio	0.661	0.427	0.094	-	-	0.036	-	-	0.359
HCM Control Delay (s)	105.7	17.7	9.1	0	-	8.8	-	-	37.6
HCM Lane LOS	F	C	A	A	-	A	-	-	E
HCM 95th %tile Q(veh)	3.1	2.1	0.3	-	-	0.1	-	-	1.5



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	6	0	728	17	23	17
Future Volume (Veh/h)	6	0	728	17	23	17
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	6	0	766	18	24	18
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	1574	24	24			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1574	24	24			
tC, single (s)	*6.0	6.2	4.1			
tC, 2 stage (s)						
tF (s)	*2.0	3.3	2.2			
p0 queue free %	94	100	51			
cM capacity (veh/h)	101	1050	1578			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	6	766	18	24	18
Volume Left	6	766	0	0	0
Volume Right	0	0	0	0	18
cSH	101	1578	1700	1700	1700
Volume to Capacity	0.06	0.49	0.01	0.01	0.01
Queue Length 95th (ft)	5	69	0	0	0
Control Delay (s)	43.0	9.4	0.0	0.0	0.0
Lane LOS	E	A			
Approach Delay (s)	43.0	9.2		0.0	
Approach LOS	E				

Intersection Summary				
Average Delay	9.0			
Intersection Capacity Utilization	57.0%	ICU Level of Service		B
Analysis Period (min)	15			

* User Entered Value

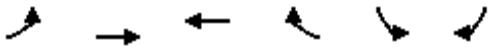
Intersection	
Int Delay, s/veh	9.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	0	728	17	23	17
Future Vol, veh/h	6	0	728	17	23	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	0	-	0	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	4	4	0	0
Mvmt Flow	6	0	766	18	24	18

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1575	-	24	0	-	0
Stage 1	24	-	-	-	-	-
Stage 2	1551	-	-	-	-	-
Critical Hdwy	6	-	4.14	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	2	-	2.236	-	-	-
Pot Cap-1 Maneuver	196	0	1578	-	-	0
Stage 1	1748	0	-	-	-	0
Stage 2	259	0	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	101	-	1578	-	-	-
Mov Cap-2 Maneuver	101	-	-	-	-	-
Stage 1	1748	-	-	-	-	-
Stage 2	133	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	43	9.2	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT
Capacity (veh/h)	1578	-	101	-
HCM Lane V/C Ratio	0.486	-	0.063	-
HCM Control Delay (s)	9.4	-	43	-
HCM Lane LOS	A	-	E	-
HCM 95th %tile Q(veh)	2.8	-	0.2	-



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	2982	0	0	23	0
Future Volume (Veh/h)	0	2982	0	0	23	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	3139	0	0	24	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	0				1570	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0				1570	0
tC, single (s)	4.2				*6.5	6.9
tC, 2 stage (s)						
tF (s)	2.2				*2.5	3.3
p0 queue free %	100				83	100
cM capacity (veh/h)	1614				139	1091

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	1570	1570	0	0	24
Volume Left	0	0	0	0	24
Volume Right	0	0	0	0	0
cSH	1700	1700	1700	1700	139
Volume to Capacity	0.92	0.92	0.00	0.00	0.17
Queue Length 95th (ft)	0	0	0	0	15
Control Delay (s)	0.0	0.0	0.0	0.0	36.2
Lane LOS					E
Approach Delay (s)	0.0		0.0		36.2
Approach LOS					E

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	92.4%	ICU Level of Service	F
Analysis Period (min)	15		

* User Entered Value

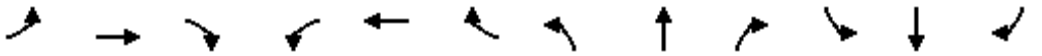
Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	2982	0	0	23	0
Future Vol, veh/h	0	2982	0	0	23	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	0	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	4	4	0	0
Mvmt Flow	0	3139	0	0	24	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	-	1569	-
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	1569	-
Critical Hdwy	-	-	-	-	6.5	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	-	-	2.5	-
Pot Cap-1 Maneuver	0	-	0	-	139	0
Stage 1	0	-	0	-	-	0
Stage 2	0	-	0	-	189	0
Platoon blocked, %		-		-		
Mov Cap-1 Maneuver	-	-	-	-	139	-
Mov Cap-2 Maneuver	-	-	-	-	139	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	189	-

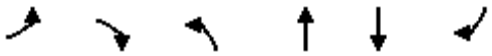
Approach	EB	WB	SB
HCM Control Delay, s	0	0	36.3
HCM LOS			E

Minor Lane/Major Mvmt	EBT	WBR	SBLn1
Capacity (veh/h)	-	-	139
HCM Lane V/C Ratio	-	-	0.174
HCM Control Delay (s)	-	-	36.3
HCM Lane LOS	-	-	E
HCM 95th %tile Q(veh)	-	-	0.6



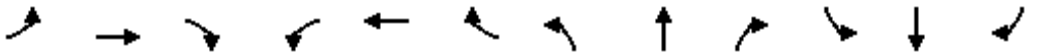
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	238	0	0	542	0	1878	179	0	3594	763
Future Volume (vph)	0	0	238	0	0	542	0	1878	179	0	3594	763
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.5			4.5		4.5	4.5		4.5	4.5
Lane Util. Factor			0.88			0.88		0.91	1.00		0.91	1.00
Frt			0.85			0.85		1.00	0.85		1.00	0.85
Flt Protected			1.00			1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)			2814			2760		5085	1583		5085	1583
Flt Permitted			1.00			1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)			2814			2760		5085	1583		5085	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	0	245	0	0	559	0	1936	185	0	3705	787
RTOR Reduction (vph)	0	0	53	0	0	24	0	0	59	0	0	161
Lane Group Flow (vph)	0	0	192	0	0	535	0	1936	126	0	3705	626
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	2%	2%	2%	2%	2%	2%
Turn Type			Perm			Perm		NA	Perm		NA	Perm
Protected Phases								2			6	
Permitted Phases			5			1			2			6
Actuated Green, G (s)			12.3			24.5		70.9	70.9		83.1	83.1
Effective Green, g (s)			12.3			24.5		70.9	70.9		83.1	83.1
Actuated g/C Ratio			0.12			0.23		0.68	0.68		0.80	0.80
Clearance Time (s)			4.5			4.5		4.5	4.5		4.5	4.5
Vehicle Extension (s)			3.0			3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)			331			647		3453	1075		4047	1260
v/s Ratio Prot								0.38			c0.73	
v/s Ratio Perm			0.07			c0.19			0.08			0.40
v/c Ratio			0.58			0.83		0.56	0.12		0.92	0.50
Uniform Delay, d1			43.6			37.9		8.7	5.8		8.0	3.6
Progression Factor			1.00			1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2			2.6			8.5		0.2	0.0		3.8	0.3
Delay (s)			46.2			46.4		8.9	5.9		11.8	3.9
Level of Service			D			D		A	A		B	A
Approach Delay (s)		46.2			46.4			8.6			10.4	
Approach LOS		D			D			A			B	

Intersection Summary			
HCM 2000 Control Delay	13.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	104.4	Sum of lost time (s)	9.0
Intersection Capacity Utilization	85.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	459	230	149	1598	2892	940
Future Volume (vph)	459	230	149	1598	2892	940
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1752	3505	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	1752	3505	3539	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	468	235	152	1631	2951	959
RTOR Reduction (vph)	0	2	0	0	0	11
Lane Group Flow (vph)	468	233	152	1631	2951	948
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%
Turn Type	Prot	pm+ov	Prot	NA	NA	pm+ov
Protected Phases	4	5	5	2	6	4
Permitted Phases		4				6
Actuated Green, G (s)	18.0	26.5	8.5	93.0	80.0	98.0
Effective Green, g (s)	18.0	26.5	8.5	93.0	80.0	98.0
Actuated g/C Ratio	0.15	0.22	0.07	0.78	0.67	0.82
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	514	408	124	2716	2359	1352
v/s Ratio Prot	c0.14	0.04	c0.09	0.47	c0.83	0.11
v/s Ratio Perm		0.11				0.49
v/c Ratio	0.91	0.57	1.23	0.60	1.25	0.70
Uniform Delay, d1	50.2	41.7	55.8	5.7	20.0	4.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	20.3	1.9	153.7	1.0	116.6	1.7
Delay (s)	70.5	43.6	209.5	6.7	136.6	6.4
Level of Service	E	D	F	A	F	A
Approach Delay (s)	61.5			24.0	104.7	
Approach LOS	E			C	F	

Intersection Summary			
HCM 2000 Control Delay	77.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	112.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	485	945	70	90	700	558	55	704	130	1044	1421	657
Future Volume (vph)	485	945	70	90	700	558	55	704	130	1044	1421	657
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99	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	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3467	3532		3467	3574	1577	1752	3505	1544	3433	3539	1555
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3467	3532		3467	3574	1577	1752	3505	1544	3433	3539	1555
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	500	974	72	93	722	575	57	726	134	1076	1465	677
RTOR Reduction (vph)	0	4	0	0	0	396	0	0	105	0	0	182
Lane Group Flow (vph)	500	1042	0	93	722	179	57	726	29	1076	1465	495
Confl. Peds. (#/hr)	1		6	6		1	3		1	1		3
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	3%	3%	3%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	16.8	35.0		5.3	23.5	23.5	4.0	26.2	26.2	35.5	57.7	57.7
Effective Green, g (s)	16.8	35.0		5.3	23.5	23.5	4.0	26.2	26.2	35.5	57.7	57.7
Actuated g/C Ratio	0.14	0.29		0.04	0.20	0.20	0.03	0.22	0.22	0.30	0.48	0.48
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	485	1030		153	699	308	58	765	337	1015	1701	747
v/s Ratio Prot	c0.14	c0.29		0.03	0.20		0.03	c0.21		c0.31	0.41	
v/s Ratio Perm						0.11			0.02			0.32
v/c Ratio	1.03	1.01		0.61	1.03	0.58	0.98	0.95	0.09	1.06	0.86	0.66
Uniform Delay, d1	51.6	42.5		56.3	48.2	43.8	58.0	46.2	37.4	42.2	27.6	23.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	49.0	30.9		6.7	42.8	2.8	111.4	22.2	0.5	45.6	6.0	4.6
Delay (s)	100.6	73.4		63.0	91.0	46.6	169.4	68.5	37.9	87.8	33.6	28.3
Level of Service	F	E		E	F	D	F	E	D	F	C	C
Approach Delay (s)		82.2			70.8			70.3			50.6	
Approach LOS		F			E			E			D	

Intersection Summary			
HCM 2000 Control Delay	64.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	97.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	212	34	26	159	39	28
Future Volume (Veh/h)	212	34	26	159	39	28
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	236	38	29	177	43	31
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			274		490	255
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			274		490	255
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		92	96
cM capacity (veh/h)			1278		525	784

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	274	206	74
Volume Left	0	29	43
Volume Right	38	0	31
cSH	1700	1278	609
Volume to Capacity	0.16	0.02	0.12
Queue Length 95th (ft)	0	2	10
Control Delay (s)	0.0	1.3	11.7
Lane LOS		A	B
Approach Delay (s)	0.0	1.3	11.7
Approach LOS			B

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	36.9%	ICU Level of Service	A
Analysis Period (min)	15		

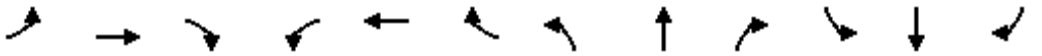
Intersection	
Int Delay, s/veh	2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	212	34	26	159	39	28
Future Vol, veh/h	212	34	26	159	39	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	4	4	2	2
Mvmt Flow	236	38	29	177	43	31

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	273	0	488	254
Stage 1	-	-	-	-	254	-
Stage 2	-	-	-	-	234	-
Critical Hdwy	-	-	4.14	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.236	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1279	-	539	785
Stage 1	-	-	-	-	788	-
Stage 2	-	-	-	-	805	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1279	-	526	785
Mov Cap-2 Maneuver	-	-	-	-	526	-
Stage 1	-	-	-	-	788	-
Stage 2	-	-	-	-	785	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	11.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	610	-	-	1279	-
HCM Lane V/C Ratio	0.122	-	-	0.023	-
HCM Control Delay (s)	11.7	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0.1	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	674	226	21	309	42	53	25	10	38	22	0
Future Volume (Veh/h)	0	674	226	21	309	42	53	25	10	38	22	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	709	238	22	325	44	56	26	11	40	23	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	369			947			1230	1241	828	1243	1338	347
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	369			947			1230	1241	828	1243	1338	347
tC, single (s)	4.1			4.1			*6.0	*6.0	*6.0	*6.0	*6.0	*6.0
tC, 2 stage (s)												
tF (s)	2.2			2.2			*2.0	*2.0	*2.0	*2.0	*2.0	*2.0
p0 queue free %	100			97			81	91	98	86	91	100
cM capacity (veh/h)	1190			721			292	305	565	281	266	1110

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	947	391	93	63
Volume Left	0	22	56	40
Volume Right	238	44	11	0
cSH	1190	721	313	275
Volume to Capacity	0.00	0.03	0.30	0.23
Queue Length 95th (ft)	0	2	30	22
Control Delay (s)	0.0	0.9	21.3	21.9
Lane LOS		A	C	C
Approach Delay (s)	0.0	0.9	21.3	21.9
Approach LOS			C	C

Intersection Summary				
Average Delay	2.5			
Intersection Capacity Utilization	61.5%	ICU Level of Service	B	
Analysis Period (min)	15			

* User Entered Value

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	674	226	21	309	42	53	25	10	38	22	0
Future Vol, veh/h	0	674	226	21	309	42	53	25	10	38	22	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	3	3	3	2	2	2	2	2	2
Mvmt Flow	0	709	238	22	325	44	56	26	11	40	23	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	369	0	0	947	0	0	1231	1242	828	1239	1339	347
Stage 1	-	-	-	-	-	-	828	828	-	392	392	-
Stage 2	-	-	-	-	-	-	403	414	-	847	947	-
Critical Hdwy	4.12	-	-	4.13	-	-	6	6	6	6	6	6
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.227	-	-	2	2	2	2	2	2
Pot Cap-1 Maneuver	1190	-	-	721	-	-	319	314	565	316	274	1110
Stage 1	-	-	-	-	-	-	550	631	-	1029	1098	-
Stage 2	-	-	-	-	-	-	1013	1068	-	535	542	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1190	-	-	721	-	-	289	302	565	281	263	1110
Mov Cap-2 Maneuver	-	-	-	-	-	-	289	302	-	281	263	-
Stage 1	-	-	-	-	-	-	550	631	-	1029	1055	-
Stage 2	-	-	-	-	-	-	952	1026	-	503	542	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.6	21.5	22
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	310	1190	-	-	721	-	-	274
HCM Lane V/C Ratio	0.299	-	-	-	0.031	-	-	0.231
HCM Control Delay (s)	21.5	0	-	-	10.2	0	-	22
HCM Lane LOS	C	A	-	-	B	A	-	C
HCM 95th %tile Q(veh)	1.2	0	-	-	0.1	-	-	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	535	321	1622	388	859	1053
Future Volume (vph)	535	321	1622	388	859	1053
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	1.00	0.91	1.00	1.00	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3273	1509	4988	1510	1752	5036
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3273	1509	4988	1510	1752	5036
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	563	338	1707	408	904	1108
RTOR Reduction (vph)	0	0	0	287	0	0
Lane Group Flow (vph)	563	338	1707	121	904	1108
Confl. Peds. (#/hr)				3	3	
Heavy Vehicles (%)	7%	7%	4%	4%	3%	3%
Turn Type	Prot	pm+ov	NA	Perm	Prot	NA
Protected Phases	8	1	2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	17.6	50.5	26.0	26.0	32.9	63.4
Effective Green, g (s)	17.6	50.5	26.0	26.0	32.9	63.4
Actuated g/C Ratio	0.20	0.56	0.29	0.29	0.37	0.70
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	640	922	1440	436	640	3547
v/s Ratio Prot	c0.17	0.13	c0.34		c0.52	0.22
v/s Ratio Perm		0.09		0.08		
v/c Ratio	0.88	0.37	1.19	0.28	1.41	0.31
Uniform Delay, d1	35.2	10.9	32.0	24.7	28.6	5.0
Progression Factor	1.00	1.00	1.09	2.71	1.00	1.00
Incremental Delay, d2	13.1	0.2	88.0	0.9	194.8	0.2
Delay (s)	48.3	11.2	122.8	67.9	223.4	5.3
Level of Service	D	B	F	E	F	A
Approach Delay (s)	34.4		112.2			103.3
Approach LOS	C		F			F

Intersection Summary			
HCM 2000 Control Delay	94.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	105.4%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	205	576	1468	1261	347	1213
Future Volume (vph)	205	576	1468	1261	347	1213
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	0.91	1.00	1.00	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1719	1538	4940	1496	1719	4940
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1719	1538	4940	1496	1719	4940
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	216	606	1545	1327	365	1277
RTOR Reduction (vph)	0	225	0	328	0	0
Lane Group Flow (vph)	216	381	1545	999	365	1277
Confl. Peds. (#/hr)				3	3	
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	18.5	18.5	43.5	43.5	14.5	62.5
Effective Green, g (s)	18.5	18.5	43.5	43.5	14.5	62.5
Actuated g/C Ratio	0.21	0.21	0.48	0.48	0.16	0.69
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	353	316	2387	723	276	3430
v/s Ratio Prot	0.13		0.31		c0.21	0.26
v/s Ratio Perm		c0.25		c0.67		
v/c Ratio	0.61	1.21	0.65	1.38	1.32	0.37
Uniform Delay, d1	32.5	35.8	17.5	23.2	37.8	5.7
Progression Factor	1.00	1.00	1.00	1.00	0.80	1.83
Incremental Delay, d2	3.1	118.8	1.4	180.6	165.7	0.3
Delay (s)	35.6	154.6	18.9	203.9	195.9	10.6
Level of Service	D	F	B	F	F	B
Approach Delay (s)	123.3		104.3			51.8
Approach LOS	F		F			D

Intersection Summary			
HCM 2000 Control Delay	91.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.33		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	105.1%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Traffic Volume (veh/h)	2236	17	0	1409	0	298
Future Volume (Veh/h)	2236	17	0	1409	0	298
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	2354	18	0	1483	0	314
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	335			372		
pX, platoon unblocked			0.54		0.59	0.54
vC, conflicting volume			2372		2857	1186
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1830		1721	0
tC, single (s)			4.2		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			100		100	46
cM capacity (veh/h)			168		47	582

Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SB 3	NW 1
Volume Total	1569	803	494	494	494	314
Volume Left	0	0	0	0	0	0
Volume Right	0	18	0	0	0	314
cSH	1700	1700	1700	1700	1700	582
Volume to Capacity	0.92	0.47	0.29	0.29	0.29	0.54
Queue Length 95th (ft)	0	0	0	0	0	80
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	18.2
Lane LOS						C
Approach Delay (s)	0.0		0.0			18.2
Approach LOS						C

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	87.5%	ICU Level of Service	E
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	5

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	2236	17	0	1409	0	298
Future Vol, veh/h	2236	17	0	1409	0	298
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	6	6	6	6	2	2
Mvmt Flow	2354	18	0	1483	0	314

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	1186
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	2
Pot Cap-1 Maneuver	-	-	0	-	0	340
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	340
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

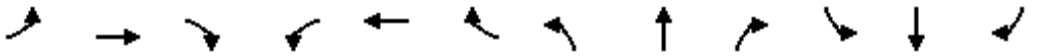
Approach	NB	SB	NW
HCM Control Delay, s	0	0	66.7
HCM LOS			F

Minor Lane/Major Mvmt	NBT	NBR	NWLn1	SBT
Capacity (veh/h)	-	-	340	-
HCM Lane V/C Ratio	-	-	0.923	-
HCM Control Delay (s)	-	-	66.7	-
HCM Lane LOS	-	-	F	-
HCM 95th %tile Q(veh)	-	-	9.3	-

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Traffic Volume (vph)	1695	32	420	1069	102	666
Future Volume (vph)	1695	32	420	1069	102	666
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	1.00		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3395		1703	3406	1736	1553
Flt Permitted	1.00		0.08	1.00	0.95	1.00
Satd. Flow (perm)	3395		139	3406	1736	1553
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1784	34	442	1125	107	701
RTOR Reduction (vph)	2	0	0	0	0	4
Lane Group Flow (vph)	1816	0	442	1125	107	697
Confl. Peds. (#/hr)		1	1		3	
Heavy Vehicles (%)	6%	6%	6%	6%	4%	4%
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases			6			4
Actuated Green, G (s)	47.0		79.5	79.5	11.5	39.5
Effective Green, g (s)	47.0		79.5	79.5	11.5	39.5
Actuated g/C Ratio	0.47		0.80	0.80	0.12	0.40
Clearance Time (s)	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1595		548	2707	199	683
v/s Ratio Prot	c0.53		0.23	0.33	0.06	c0.29
v/s Ratio Perm			0.41			0.16
v/c Ratio	1.14		0.81	0.42	0.54	1.02
Uniform Delay, d1	26.5		27.7	3.1	41.7	30.2
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	70.7		8.5	0.1	2.8	39.9
Delay (s)	97.2		36.2	3.2	44.5	70.1
Level of Service	F		D	A	D	E
Approach Delay (s)	97.2			12.5	66.7	
Approach LOS	F			B	E	

Intersection Summary			
HCM 2000 Control Delay	59.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	96.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	124	63	43	256	414	279	563	41	193	398	73
Future Volume (vph)	33	124	63	43	256	414	279	563	41	193	398	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	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	1.00
Frt	1.00	0.95		1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1656	1643		1752	1845	1568	1752	1826		1736	1827	1553
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1656	1643		1752	1845	1568	1752	1826		1736	1827	1553
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)	35	131	66	45	269	436	294	593	43	203	419	77
RTOR Reduction (vph)	0	25	0	0	0	124	0	3	0	0	0	51
Lane Group Flow (vph)	35	172	0	45	269	312	294	633	0	203	419	26
Confl. Peds. (#/hr)			1	1								
Heavy Vehicles (%)	9%	9%	9%	3%	3%	3%	3%	3%	3%	4%	4%	4%
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases						8						6
Actuated Green, G (s)	3.8	16.4		2.8	15.4	24.8	13.6	25.0		9.4	20.8	24.6
Effective Green, g (s)	3.8	16.4		2.8	15.4	24.8	13.6	25.0		9.4	20.8	24.6
Actuated g/C Ratio	0.05	0.23		0.04	0.22	0.35	0.19	0.35		0.13	0.29	0.34
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
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)	87	376		68	396	641	332	637		227	530	631
v/s Ratio Prot	0.02	0.10		c0.03	c0.15	0.06	c0.17	c0.35		0.12	0.23	0.00
v/s Ratio Perm						0.14						0.01
v/c Ratio	0.40	0.46		0.66	0.68	0.49	0.89	0.99		0.89	0.79	0.04
Uniform Delay, d1	32.8	23.8		33.9	25.8	18.4	28.2	23.2		30.6	23.4	15.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.0	0.9		21.6	4.6	0.6	23.3	33.8		32.7	7.9	0.0
Delay (s)	35.8	24.7		55.5	30.4	19.0	51.6	57.0		63.3	31.3	15.7
Level of Service	D	C		E	C	B	D	E		E	C	B
Approach Delay (s)		26.3			25.3			55.3			38.9	
Approach LOS		C			C			E			D	

Intersection Summary			
HCM 2000 Control Delay	39.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	71.6	Sum of lost time (s)	18.0
Intersection Capacity Utilization	75.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	0	1	0	555	1	39	1	215	206	21	523	0
Future Volume (vph)	0	1	0	555	1	39	1	215	206	21	523	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor		1.00		1.00	1.00		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	
Flpb, ped/bikes		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	1.00	
Flt Protected		1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1900		1716	1544		1701	1792	1491	1734	1827	
Flt Permitted		1.00		0.76	1.00		0.20	1.00	1.00	0.57	1.00	
Satd. Flow (perm)		1900		1368	1544		360	1792	1491	1045	1827	
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)	0	1	0	617	1	43	1	239	229	23	581	0
RTOR Reduction (vph)	0	0	0	0	22	0	0	0	149	0	0	0
Lane Group Flow (vph)	0	1	0	617	22	0	1	239	80	23	581	0
Confl. Peds. (#/hr)			1	1			3		1	1		3
Heavy Vehicles (%)	0%	0%	0%	5%	5%	5%	6%	6%	6%	4%	4%	4%
Turn Type		NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4		4	8		
Actuated Green, G (s)		28.4		28.4	28.4		19.9	19.9	19.9	19.9	19.9	
Effective Green, g (s)		28.4		28.4	28.4		19.9	19.9	19.9	19.9	19.9	
Actuated g/C Ratio		0.50		0.50	0.50		0.35	0.35	0.35	0.35	0.35	
Clearance Time (s)		4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		941		678	765		125	622	517	362	634	
v/s Ratio Prot		0.00			0.01			0.13			c0.32	
v/s Ratio Perm				c0.45			0.00		0.05	0.02		
v/c Ratio		0.00		0.91	0.03		0.01	0.38	0.15	0.06	0.92	
Uniform Delay, d1		7.3		13.3	7.4		12.2	14.1	12.9	12.5	17.9	
Progression Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.0		16.4	0.0		0.0	0.4	0.1	0.1	18.0	
Delay (s)		7.3		29.6	7.4		12.3	14.5	13.0	12.6	35.9	
Level of Service		A		C	A		B	B	B	B	D	
Approach Delay (s)		7.3			28.2			13.8			35.0	
Approach LOS		A			C			B			D	

Intersection Summary			
HCM 2000 Control Delay	26.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	57.3	Sum of lost time (s)	9.0
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	19	20	19	14	92	44	36	376	122	70	717	278
Future Volume (vph)	19	20	19	14	92	44	36	376	122	70	717	278
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99			0.99		1.00	0.99		1.00	0.99	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.96			0.96		1.00	0.96		1.00	0.96	
Flt Protected		0.98			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1477			1669		1703	1717		1735	1739	
Flt Permitted		0.82			0.97		0.07	1.00		0.37	1.00	
Satd. Flow (perm)		1236			1624		132	1717		681	1739	
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)	21	22	21	16	102	49	40	418	136	78	797	309
RTOR Reduction (vph)	0	18	0	0	18	0	0	11	0	0	13	0
Lane Group Flow (vph)	0	46	0	0	149	0	40	543	0	78	1093	0
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	20%	20%	20%	8%	8%	8%	6%	6%	6%	4%	4%	4%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		12.6			12.6		58.1	55.2		60.9	56.6	
Effective Green, g (s)		12.6			12.6		58.1	55.2		60.9	56.6	
Actuated g/C Ratio		0.15			0.15		0.68	0.64		0.71	0.66	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		181			239		142	1107		537	1149	
v/s Ratio Prot							c0.01	0.32		0.01	c0.63	
v/s Ratio Perm		0.04			c0.09		0.18			0.10		
v/c Ratio		0.25			0.62		0.28	0.49		0.15	0.95	
Uniform Delay, d1		32.3			34.3		14.9	7.9		4.4	13.2	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.7			5.0		1.1	0.3		0.1	16.2	
Delay (s)		33.1			39.3		16.0	8.2		4.6	29.4	
Level of Service		C			D		B	A		A	C	
Approach Delay (s)		33.1			39.3			8.8			27.8	
Approach LOS		C			D			A			C	

Intersection Summary			
HCM 2000 Control Delay	23.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	85.6	Sum of lost time (s)	13.5
Intersection Capacity Utilization	74.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	244	46	152	4	53	4	420	269	10	1	373	396
Future Volume (vph)	244	46	152	4	53	4	420	269	10	1	373	396
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	0.97		1.00		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	
Frt		1.00	0.85		0.99		1.00	0.99		1.00	0.92	
Flt Protected		0.96	1.00		1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1750	1506		1838		1752	1833		1716	1645	
Flt Permitted		0.76	1.00		0.98		0.08	1.00		0.58	1.00	
Satd. Flow (perm)		1393	1506		1803		154	1833		1048	1645	
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)	257	48	160	4	56	4	442	283	11	1	393	417
RTOR Reduction (vph)	0	0	127	0	2	0	0	1	0	0	41	0
Lane Group Flow (vph)	0	305	33	0	62	0	442	293	0	1	769	0
Confl. Peds. (#/hr)	1		4	4		1	3		2	2		3
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	3%	3%	3%	5%	5%	5%
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		19.1	19.1		19.1		65.5	60.0		44.4	43.4	
Effective Green, g (s)		19.1	19.1		19.1		65.5	60.0		44.4	43.4	
Actuated g/C Ratio		0.20	0.20		0.20		0.70	0.64		0.47	0.46	
Clearance Time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		284	307		367		408	1175		504	762	
v/s Ratio Prot							c0.20	0.16		0.00	0.47	
v/s Ratio Perm		c0.22	0.02		0.03		c0.55			0.00		
v/c Ratio		1.07	0.11		0.17		1.08	0.25		0.00	1.01	
Uniform Delay, d1		37.2	30.3		30.7		30.2	7.2		12.9	25.1	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		74.4	0.2		0.2		68.8	0.1		0.0	35.0	
Delay (s)		111.7	30.5		30.9		99.0	7.3		12.9	60.1	
Level of Service		F	C		C		F	A		B	E	
Approach Delay (s)		83.7			30.9			62.4			60.0	
Approach LOS		F			C			E			E	

Intersection Summary			
HCM 2000 Control Delay	65.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	93.6	Sum of lost time (s)	13.5
Intersection Capacity Utilization	101.1%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	29	380	37	168	747	16	7	33	76	0	16	14
Future Volume (Veh/h)	29	380	37	168	747	16	7	33	76	0	16	14
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	31	400	39	177	786	17	7	35	80	0	17	15
Pedestrians		2			10			4				
Lane Width (ft)		12.0			12.0			12.0				
Walking Speed (ft/s)		3.5			3.5			3.5				
Percent Blockage		0			1			0				
Right turn flare (veh)									5			
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		187			537							
pX, platoon unblocked	0.88						0.88	0.88		0.88	0.88	0.88
vC, conflicting volume	803			443			1660	1642	434	1678	1654	796
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	712			443			1680	1661	434	1701	1674	705
tC, single (s)	4.1			4.1			7.2	6.6	6.3	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.6	4.1	3.4	3.5	4.0	3.3
p0 queue free %	96			84			83	47	87	100	75	96
cM capacity (veh/h)	777			1108			42	67	600	28	69	388

Direction, Lane #	SE 1	SE 2	NW 1	NE 1	SW 1
Volume Total	31	439	980	122	32
Volume Left	31	0	177	7	0
Volume Right	0	39	17	80	15
cSH	777	1700	1108	182	112
Volume to Capacity	0.04	0.26	0.16	0.67	0.29
Queue Length 95th (ft)	3	0	14	100	27
Control Delay (s)	9.8	0.0	3.8	56.0	49.6
Lane LOS	A		A	F	E
Approach Delay (s)	0.6		3.8	56.0	49.6
Approach LOS				F	E

Intersection Summary				
Average Delay	7.8			
Intersection Capacity Utilization	91.2%	ICU Level of Service		F
Analysis Period (min)	15			

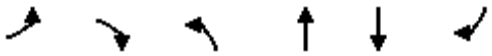
Intersection	
Int Delay, s/veh	6.7

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	29	380	37	168	747	16	7	33	76	0	16	14
Future Vol, veh/h	29	380	37	168	747	16	7	33	76	0	16	14
Conflicting Peds, #/hr	0	0	4	4	0	0	2	0	10	10	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	-	-	-	-	-	130	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	4	4	4	3	3	3	9	9	9	0	0	0
Mvmt Flow	31	400	39	177	786	17	7	35	80	0	17	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	803	0	0	443	0	0	1651	1642	433	1656	1652	797
Stage 1	-	-	-	-	-	-	485	485	-	1148	1148	-
Stage 2	-	-	-	-	-	-	1166	1157	-	508	504	-
Critical Hdwy	4.14	-	-	4.13	-	-	7.19	6.59	6.29	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.19	5.59	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.19	5.59	-	6.1	5.5	-
Follow-up Hdwy	2.236	-	-	2.227	-	-	3.581	4.081	3.381	3.5	4	3.3
Pot Cap-1 Maneuver	812	-	-	1112	-	-	76	96	608	79	100	390
Stage 1	-	-	-	-	-	-	550	540	-	244	276	-
Stage 2	-	-	-	-	-	-	229	263	-	551	544	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	810	-	-	1101	-	-	45	65	600	30	68	389
Mov Cap-2 Maneuver	-	-	-	-	-	-	45	65	-	30	68	-
Stage 1	-	-	-	-	-	-	527	517	-	235	196	-
Stage 2	-	-	-	-	-	-	143	186	-	424	521	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0.6	1.6	59.9	49.8
HCM LOS			F	E

Minor Lane/Major Mvmt	NELn1	NELn2	NWL	NWT	NWR	SEL	SET	SER	SWLn1
Capacity (veh/h)	60	600	1101	-	-	810	-	-	111
HCM Lane V/C Ratio	0.702	0.133	0.161	-	-	0.038	-	-	0.284
HCM Control Delay (s)	151	11.9	8.9	0	-	9.6	-	-	49.8
HCM Lane LOS	F	B	A	A	-	A	-	-	E
HCM 95th %tile Q(veh)	3	0.5	0.6	-	-	0.1	-	-	1.1



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	20	0	1049	36	26	6
Future Volume (Veh/h)	20	0	1049	36	26	6
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	21	0	1104	38	27	6
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	2273	27	27			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2273	27	27			
tC, single (s)	*6.0	6.3	4.1			
tC, 2 stage (s)						
tF (s)	*2.0	3.4	2.2			
p0 queue free %	1	100	30			
cM capacity (veh/h)	21	1037	1568			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	21	1104	38	27	6
Volume Left	21	1104	0	0	0
Volume Right	0	0	0	0	6
cSH	21	1568	1700	1700	1700
Volume to Capacity	0.99	0.70	0.02	0.02	0.00
Queue Length 95th (ft)	70	161	0	0	0
Control Delay (s)	447.4	12.6	0.0	0.0	0.0
Lane LOS	F	B			
Approach Delay (s)	447.4	12.1		0.0	
Approach LOS	F				

Intersection Summary			
Average Delay	19.4		
Intersection Capacity Utilization	74.8%	ICU Level of Service	D
Analysis Period (min)	15		

* User Entered Value

Intersection	
Int Delay, s/veh	19.7

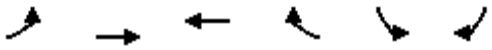
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	0	1049	36	26	6
Future Vol, veh/h	20	0	1049	36	26	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	0	-	0	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	6	6	5	5	18	18
Mvmt Flow	21	0	1104	38	27	6

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2273	-	27	0	-	0
Stage 1	27	-	-	-	-	-
Stage 2	2246	-	-	-	-	-
Critical Hdwy	6	-	4.15	-	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	2	-	2.245	-	-	-
Pot Cap-1 Maneuver	72	0	1568	-	-	0
Stage 1	1741	0	-	-	-	0
Stage 2	104	0	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	~ 21	-	1568	-	-	-
Mov Cap-2 Maneuver	~ 21	-	-	-	-	-
Stage 1	1741	-	-	-	-	-
Stage 2	31	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 455.1	12.1	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT
Capacity (veh/h)	1568	- 21	-
HCM Lane V/C Ratio	0.704	- 1.003	-
HCM Control Delay (s)	12.6	-$ 455.1	-
HCM Lane LOS	B	- F	-
HCM 95th %tile Q(veh)	6.4	- 2.8	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1830	0	1085	26	0
Future Volume (Veh/h)	0	1830	0	1085	26	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	1926	0	1142	27	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	1142				963	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1142				963	0
tC, single (s)	4.2				7.2	7.3
tC, 2 stage (s)						
tF (s)	2.3				3.7	3.5
p0 queue free %	100				88	100
cM capacity (veh/h)	585				226	1034

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	963	963	571	571	27
Volume Left	0	0	0	0	27
Volume Right	0	0	571	571	0
cSH	1700	1700	1700	1700	226
Volume to Capacity	0.57	0.57	0.34	0.34	0.12
Queue Length 95th (ft)	0	0	0	0	10
Control Delay (s)	0.0	0.0	0.0	0.0	23.0
Lane LOS					C
Approach Delay (s)	0.0		0.0		23.0
Approach LOS					C

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		

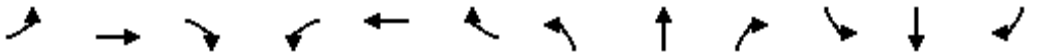
Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑		↑↑	↰	
Traffic Vol, veh/h	0	1830	0	1085	26	0
Future Vol, veh/h	0	1830	0	1085	26	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	0	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	6	6	5	5	18	18
Mvmt Flow	0	1926	0	1142	27	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	-	963	-
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	963	-
Critical Hdwy	-	-	-	-	7.86	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	6.86	-
Follow-up Hdwy	-	-	-	-	3.68	-
Pot Cap-1 Maneuver	0	-	0	-	188	0
Stage 1	0	-	0	-	-	0
Stage 2	0	-	0	-	245	0
Platoon blocked, %		-		-		
Mov Cap-1 Maneuver	-	-	-	-	188	-
Mov Cap-2 Maneuver	-	-	-	-	188	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	245	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	27.4
HCM LOS			D

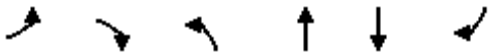
Minor Lane/Major Mvmt	EBT	WBR	SBLn1
Capacity (veh/h)	-	-	188
HCM Lane V/C Ratio	-	-	0.146
HCM Control Delay (s)	-	-	27.4
HCM Lane LOS	-	-	D
HCM 95th %tile Q(veh)	-	-	0.5



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	133	0	0	598	0	2732	198	0	1939	612
Future Volume (vph)	0	0	133	0	0	598	0	2732	198	0	1939	612
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.5			4.5		4.5	4.5		4.5	4.5
Lane Util. Factor			0.88			0.88		0.91	1.00		0.91	1.00
Frpb, ped/bikes			1.00			1.00		1.00	0.98		1.00	1.00
Flpb, ped/bikes			1.00			1.00		1.00	1.00		1.00	1.00
Frt			0.85			0.85		1.00	0.85		1.00	0.85
Flt Protected			1.00			1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)			2760			2538		4988	1521		4893	1524
Flt Permitted			1.00			1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)			2760			2538		4988	1521		4893	1524
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	0	137	0	0	616	0	2816	204	0	1999	631
RTOR Reduction (vph)	0	0	67	0	0	13	0	0	74	0	0	118
Lane Group Flow (vph)	0	0	70	0	0	603	0	2816	130	0	1999	513
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	3%	3%	3%	12%	12%	12%	4%	4%	4%	6%	6%	6%
Turn Type			Perm			Perm		NA	Perm		NA	Perm
Protected Phases								2			6	
Permitted Phases			5			1			2			6
Actuated Green, G (s)			7.7			23.5		56.5	56.5		72.3	72.3
Effective Green, g (s)			7.7			23.5		56.5	56.5		72.3	72.3
Actuated g/C Ratio			0.09			0.26		0.63	0.63		0.81	0.81
Clearance Time (s)			4.5			4.5		4.5	4.5		4.5	4.5
Vehicle Extension (s)			3.0			3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)			238			670		3166	965		3974	1238
v/s Ratio Prot								c0.56			0.41	
v/s Ratio Perm			0.03			c0.24			0.09			0.34
v/c Ratio			0.30			0.90		0.89	0.13		0.50	0.41
Uniform Delay, d1			38.1			31.6		13.6	6.5		2.6	2.4
Progression Factor			1.00			1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2			0.7			14.9		3.5	0.1		0.1	0.2
Delay (s)			38.8			46.5		17.1	6.6		2.8	2.6
Level of Service			D			D		B	A		A	A
Approach Delay (s)		38.8			46.5			16.4			2.7	
Approach LOS		D			D			B			A	

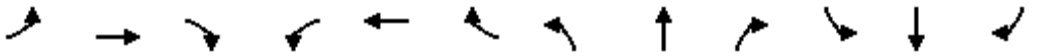
Intersection Summary			
HCM 2000 Control Delay	14.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	89.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	81.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	782	184	144	2303	1703	535
Future Volume (vph)	782	184	144	2303	1703	535
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3400	1568	1736	3471	3471	1553
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3400	1568	1736	3471	3471	1553
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	815	192	150	2399	1774	557
RTOR Reduction (vph)	0	9	0	0	0	28
Lane Group Flow (vph)	815	183	150	2399	1774	529
Heavy Vehicles (%)	3%	3%	4%	4%	4%	4%
Turn Type	Prot	pm+ov	Prot	NA	NA	pm+ov
Protected Phases	4	5	5	2	6	4
Permitted Phases		4				6
Actuated Green, G (s)	28.5	39.9	11.4	82.5	66.6	95.1
Effective Green, g (s)	28.5	39.9	11.4	82.5	66.6	95.1
Actuated g/C Ratio	0.24	0.33	0.10	0.69	0.55	0.79
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	807	580	164	2386	1926	1288
v/s Ratio Prot	c0.24	0.03	0.09	c0.69	0.51	0.10
v/s Ratio Perm		0.09				0.24
v/c Ratio	1.01	0.31	0.91	1.01	0.92	0.41
Uniform Delay, d1	45.8	29.9	53.8	18.8	24.3	3.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	34.1	0.3	45.9	19.7	8.8	0.2
Delay (s)	79.9	30.2	99.7	38.5	33.1	4.0
Level of Service	E	C	F	D	C	A
Approach Delay (s)	70.4			42.1	26.1	
Approach LOS	E			D	C	

Intersection Summary			
HCM 2000 Control Delay	40.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	93.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	505	443	21	112	592	0	44	1070	133	614	635	795
Future Volume (vph)	505	443	21	112	592	0	44	1070	133	614	635	795
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.95		0.97	0.95		1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		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	1.00
Frt	1.00	0.99		1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3273	3348		3400	3505		1719	3438	1538	3335	3438	1538
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3273	3348		3400	3505		1719	3438	1538	3335	3438	1538
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)	532	466	22	118	623	0	46	1126	140	646	668	837
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	93	0	0	218
Lane Group Flow (vph)	532	485	0	118	623	0	46	1126	47	646	668	619
Confl. Peds. (#/hr)			4	4								
Heavy Vehicles (%)	7%	7%	7%	3%	3%	3%	5%	5%	5%	5%	5%	5%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	18.6	30.9		8.2	20.5		4.2	40.4	40.4	22.5	58.7	58.7
Effective Green, g (s)	18.6	30.9		8.2	20.5		4.2	40.4	40.4	22.5	58.7	58.7
Actuated g/C Ratio	0.16	0.26		0.07	0.17		0.04	0.34	0.34	0.19	0.49	0.49
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
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)	507	862		232	598		60	1157	517	625	1681	752
v/s Ratio Prot	c0.16	0.14		0.03	c0.18		0.03	c0.33		c0.19	0.19	
v/s Ratio Perm									0.03			0.40
v/c Ratio	1.05	0.56		0.51	1.04		0.77	0.97	0.09	1.03	0.40	0.82
Uniform Delay, d1	50.7	38.7		54.0	49.8		57.4	39.3	27.2	48.8	19.4	26.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	53.5	0.8		1.8	48.1		43.5	20.8	0.3	44.9	0.7	9.9
Delay (s)	104.2	39.5		55.7	97.9		100.9	60.0	27.6	93.7	20.1	36.2
Level of Service	F	D		E	F		F	E	C	F	C	D
Approach Delay (s)		73.3			91.2			58.0			48.5	
Approach LOS		E			F			E			D	

Intersection Summary			
HCM 2000 Control Delay	61.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	92.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	53	73	52	165	98	67
Future Volume (Veh/h)	53	73	52	165	98	67
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	62	86	61	194	115	79
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			148		421	105
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			148		421	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 %			96		80	92
cM capacity (veh/h)			1415		564	949

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	148	255	194
Volume Left	0	61	115
Volume Right	86	0	79
cSH	1700	1415	676
Volume to Capacity	0.09	0.04	0.29
Queue Length 95th (ft)	0	3	30
Control Delay (s)	0.0	2.1	12.5
Lane LOS		A	B
Approach Delay (s)	0.0	2.1	12.5
Approach LOS			B

Intersection Summary			
Average Delay	5.0		
Intersection Capacity Utilization	38.4%	ICU Level of Service	A
Analysis Period (min)	15		

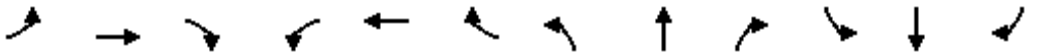
Intersection	
Int Delay, s/veh	4.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	53	73	52	165	98	67
Future Vol, veh/h	53	73	52	165	98	67
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	5	5	5	5	2	2
Mvmt Flow	62	86	61	194	115	79

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	148	0	421	105
Stage 1	-	-	-	-	105	-
Stage 2	-	-	-	-	316	-
Critical Hdwy	-	-	4.15	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.245	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1415	-	589	949
Stage 1	-	-	-	-	919	-
Stage 2	-	-	-	-	739	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1415	-	561	949
Mov Cap-2 Maneuver	-	-	-	-	561	-
Stage 1	-	-	-	-	919	-
Stage 2	-	-	-	-	704	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.8	12.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	673	-	-	1415	-
HCM Lane V/C Ratio	0.288	-	-	0.043	-
HCM Control Delay (s)	12.5	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	1.2	-	-	0.1	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	149	114	83	526	65	149	35	40	88	42	166
Future Volume (Veh/h)	58	149	114	83	526	65	149	35	40	88	42	166
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	61	157	120	87	554	68	157	37	42	93	44	175
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	622			277			1298	1135	217	1162	1161	588
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	622			277			1298	1135	217	1162	1161	588
tC, single (s)	4.2			4.2			*6.0	*6.0	*6.0	*6.0	*6.0	*6.0
tC, 2 stage (s)												
tF (s)	2.3			2.3			*2.0	*2.0	*2.0	*2.0	*2.0	*2.0
p0 queue free %	93			93			13	88	97	67	86	78
cM capacity (veh/h)	903			1258			181	318	1331	280	306	792

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	338	709	236	312
Volume Left	61	87	157	93
Volume Right	120	68	42	175
cSH	903	1258	233	448
Volume to Capacity	0.07	0.07	1.01	0.70
Queue Length 95th (ft)	5	6	240	132
Control Delay (s)	2.3	1.8	107.6	29.5
Lane LOS	A	A	F	D
Approach Delay (s)	2.3	1.8	107.6	29.5
Approach LOS			F	D

Intersection Summary			
Average Delay	23.0		
Intersection Capacity Utilization	76.0%	ICU Level of Service	D
Analysis Period (min)	15		

* User Entered Value

Intersection	
Int Delay, s/veh	20

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	58	149	114	83	526	65	149	35	40	88	42	166
Future Vol, veh/h	58	149	114	83	526	65	149	35	40	88	42	166
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	14	14	14	7	7	7	4	4	4	2	2	2
Mvmt Flow	61	157	120	87	554	68	157	37	42	93	44	175

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	622	0	0	277	0	0	1211	1136	217	1141	1162	588
Stage 1	-	-	-	-	-	-	339	339	-	763	763	-
Stage 2	-	-	-	-	-	-	872	797	-	378	399	-
Critical Hdwy	4.24	-	-	4.17	-	-	6	6	6	6	6	6
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.54	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.54	-	6.12	5.52	-
Follow-up Hdwy	2.326	-	-	2.263	-	-	2	2	2	2	2	2
Pot Cap-1 Maneuver	903	-	-	1258	-	-	329	365	1331	363	352	792
Stage 1	-	-	-	-	-	-	1108	1172	-	604	685	-
Stage 2	-	-	-	-	-	-	513	653	-	1050	1088	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	903	-	-	1258	-	-	196	300	1331	275	289	792
Mov Cap-2 Maneuver	-	-	-	-	-	-	196	300	-	275	289	-
Stage 1	-	-	-	-	-	-	1018	1077	-	555	612	-
Stage 2	-	-	-	-	-	-	331	583	-	902	1000	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.7	1	89.1	30.9
HCM LOS			F	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	247	903	-	-	1258	-	-	439
HCM Lane V/C Ratio	0.955	0.068	-	-	0.069	-	-	0.71
HCM Control Delay (s)	89.1	9.3	0	-	8.1	0	-	30.9
HCM Lane LOS	F	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	8.7	0.2	-	-	0.2	-	-	5.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1255	435	1250	535	560	1600
Future Volume (vph)	1255	435	1250	535	560	1600
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	1.00	0.91	1.00	1.00	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.96	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1568	5085	1526	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3400	1568	5085	1526	1770	5085
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1294	448	1289	552	577	1649
RTOR Reduction (vph)	0	0	0	414	0	0
Lane Group Flow (vph)	1294	448	1289	138	577	1649
Confl. Peds. (#/hr)				6	6	
Confl. Bikes (#/hr)				1		
Heavy Vehicles (%)	3%	3%	2%	2%	2%	2%
Turn Type	Prot	pm+ov	NA	Perm	Prot	NA
Protected Phases	8	1	2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	29.5	54.0	22.5	22.5	24.5	51.5
Effective Green, g (s)	29.5	54.0	22.5	22.5	24.5	51.5
Actuated g/C Ratio	0.33	0.60	0.25	0.25	0.27	0.57
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1114	1019	1271	381	481	2909
v/s Ratio Prot	c0.38	0.12	c0.25		c0.33	0.32
v/s Ratio Perm		0.17		0.09		
v/c Ratio	1.16	0.44	1.01	0.36	1.20	0.57
Uniform Delay, d1	30.2	9.8	33.8	27.8	32.8	12.2
Progression Factor	1.00	1.00	1.25	4.88	1.00	1.00
Incremental Delay, d2	82.9	0.3	22.7	1.5	108.4	0.8
Delay (s)	113.1	10.1	64.9	137.2	141.2	13.0
Level of Service	F	B	E	F	F	B
Approach Delay (s)	86.6		86.6			46.2
Approach LOS	F		F			D

Intersection Summary			
HCM 2000 Control Delay	71.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	102.2%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	615	520	1265	930	530	2325
Future Volume (vph)	615	520	1265	930	530	2325
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	0.91	1.00	1.00	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.96	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	5036	1510	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	5036	1510	1770	5085
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	628	531	1291	949	541	2372
RTOR Reduction (vph)	0	331	0	442	0	0
Lane Group Flow (vph)	628	200	1291	507	541	2372
Confl. Peds. (#/hr)				7	7	
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	27.5	27.5	26.5	26.5	22.5	53.5
Effective Green, g (s)	27.5	27.5	26.5	26.5	22.5	53.5
Actuated g/C Ratio	0.31	0.31	0.29	0.29	0.25	0.59
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	540	483	1482	444	442	3022
v/s Ratio Prot	c0.35		0.26		c0.31	0.47
v/s Ratio Perm		0.13		c0.34		
v/c Ratio	1.16	0.41	0.87	1.14	1.22	0.78
Uniform Delay, d1	31.2	24.8	30.1	31.8	33.8	13.9
Progression Factor	1.00	1.00	1.00	1.00	0.89	0.93
Incremental Delay, d2	92.2	0.6	7.3	87.3	111.5	1.1
Delay (s)	123.5	25.4	37.4	119.1	141.6	14.0
Level of Service	F	C	D	F	F	B
Approach Delay (s)	78.6		72.0			37.7
Approach LOS	E		E			D

Intersection Summary			
HCM 2000 Control Delay	57.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	99.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Traffic Volume (veh/h)	1897	17	0	2940	0	298
Future Volume (Veh/h)	1897	17	0	2940	0	298
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	1997	18	0	3095	0	314
Pedestrians					3	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	335			372		
pX, platoon unblocked			0.58		0.77	0.58
vC, conflicting volume			2018		3041	1010
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1316		176	0
tC, single (s)			4.2		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	50
cM capacity (veh/h)			300		610	631

Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SB 3	NW 1
Volume Total	1331	684	1032	1032	1032	314
Volume Left	0	0	0	0	0	0
Volume Right	0	18	0	0	0	314
cSH	1700	1700	1700	1700	1700	631
Volume to Capacity	0.78	0.40	0.61	0.61	0.61	0.50
Queue Length 95th (ft)	0	0	0	0	0	69
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	16.2
Lane LOS						C
Approach Delay (s)	0.0		0.0			16.2
Approach LOS						C

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	2.9

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	1897	17	0	2940	0	298
Future Vol, veh/h	1897	17	0	2940	0	298
Conflicting Peds, #/hr	0	3	3	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	3	2	2
Mvmt Flow	1997	18	0	3095	0	314

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	1010
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	2.5
Pot Cap-1 Maneuver	-	-	0	-	0	372
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	371
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

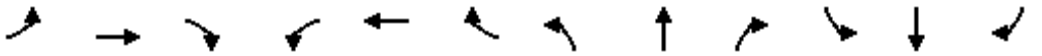
Approach	NB	SB	NW
HCM Control Delay, s	0	0	49.9
HCM LOS			E

Minor Lane/Major Mvmt	NBT	NBR	NWLn1	SBT
Capacity (veh/h)	-	-	371	-
HCM Lane V/C Ratio	-	-	0.846	-
HCM Control Delay (s)	-	-	49.9	-
HCM Lane LOS	-	-	E	-
HCM 95th %tile Q(veh)	-	-	7.8	-

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Traffic Volume (vph)	1425	66	569	2371	90	489
Future Volume (vph)	1425	66	569	2371	90	489
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3446		1770	3539	1787	1599
Flt Permitted	1.00		0.09	1.00	0.95	1.00
Satd. Flow (perm)	3446		159	3539	1787	1599
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1469	68	587	2444	93	504
RTOR Reduction (vph)	3	0	0	0	0	4
Lane Group Flow (vph)	1534	0	587	2444	93	500
Confl. Peds. (#/hr)		2	2			
Heavy Vehicles (%)	4%	4%	2%	2%	1%	1%
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases			6			4
Actuated Green, G (s)	42.3		81.8	81.8	9.2	44.2
Effective Green, g (s)	42.3		81.8	81.8	9.2	44.2
Actuated g/C Ratio	0.42		0.82	0.82	0.09	0.44
Clearance Time (s)	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1457		693	2894	164	778
v/s Ratio Prot	c0.45		0.30	c0.69	0.05	c0.22
v/s Ratio Perm			0.40			0.09
v/c Ratio	1.05		0.85	0.84	0.57	0.64
Uniform Delay, d1	28.9		25.4	5.4	43.5	21.7
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	38.7		9.4	2.4	4.4	1.8
Delay (s)	67.6		34.8	7.8	47.9	23.6
Level of Service	E		C	A	D	C
Approach Delay (s)	67.6			13.0	27.4	
Approach LOS	E			B	C	

Intersection Summary			
HCM 2000 Control Delay	30.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	89.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	73	192	242	73	128	248	89	410	70	401	730	87
Future Volume (vph)	73	192	242	73	128	248	89	410	70	401	730	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.98		1.00	1.00	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	1.00
Frt	1.00	0.92		1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1679		1787	1881	1599	1770	1822		1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1679		1787	1881	1599	1770	1822		1770	1863	1583
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)	77	202	255	77	135	261	94	432	74	422	768	92
RTOR Reduction (vph)	0	61	0	0	0	83	0	8	0	0	0	49
Lane Group Flow (vph)	77	396	0	77	135	178	94	498	0	422	768	43
Confl. Peds. (#/hr)			4	4								
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	2%	2%	2%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases						8						6
Actuated Green, G (s)	3.9	18.1		3.9	18.1	32.6	3.9	20.6		14.5	31.2	35.1
Effective Green, g (s)	3.9	18.1		3.9	18.1	32.6	3.9	20.6		14.5	31.2	35.1
Actuated g/C Ratio	0.05	0.24		0.05	0.24	0.43	0.05	0.27		0.19	0.42	0.47
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
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)	91	404		92	453	789	91	499		341	773	834
v/s Ratio Prot	c0.04	c0.24		0.04	0.07	0.04	0.05	0.27		c0.24	c0.41	0.00
v/s Ratio Perm						0.07						0.02
v/c Ratio	0.85	0.98		0.84	0.30	0.23	1.03	1.00		1.24	0.99	0.05
Uniform Delay, d1	35.3	28.3		35.3	23.3	13.3	35.6	27.2		30.3	21.8	10.9
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	47.9	39.5		45.2	0.4	0.1	103.6	39.5		129.6	30.6	0.0
Delay (s)	83.2	67.9		80.5	23.7	13.5	139.2	66.7		159.9	52.4	10.9
Level of Service	F	E		F	C	B	F	E		F	D	B
Approach Delay (s)		70.1			27.3			78.1			84.8	
Approach LOS		E			C			E			F	

Intersection Summary			
HCM 2000 Control Delay	71.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	75.1	Sum of lost time (s)	18.0
Intersection Capacity Utilization	92.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	3	0	9	264	1	43	7	350	440	44	526	1
Future Volume (vph)	3	0	9	264	1	43	7	350	440	44	526	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes		0.98		1.00	0.98		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt		0.90		1.00	0.85		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.99		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1655		1733	1526		1785	1881	1561	1749	1844	
Flt Permitted		0.96		0.75	1.00		0.30	1.00	1.00	0.48	1.00	
Satd. Flow (perm)		1611		1367	1526		565	1881	1561	884	1844	
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)	3	0	10	293	1	48	8	389	489	49	584	1
RTOR Reduction (vph)	0	9	0	0	32	0	0	0	256	0	0	0
Lane Group Flow (vph)	0	4	0	293	17	0	8	389	233	49	585	0
Confl. Peds. (#/hr)	1		1	1		1	3		3	3		3
Heavy Vehicles (%)	0%	0%	0%	4%	4%	4%	1%	1%	1%	3%	3%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4		4	8		
Actuated Green, G (s)		15.0		15.0	15.0		21.9	21.9	21.9	21.9	21.9	
Effective Green, g (s)		15.0		15.0	15.0		21.9	21.9	21.9	21.9	21.9	
Actuated g/C Ratio		0.33		0.33	0.33		0.48	0.48	0.48	0.48	0.48	
Clearance Time (s)		4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		526		446	498		269	897	744	421	879	
v/s Ratio Prot					0.01			0.21			c0.32	
v/s Ratio Perm		0.00		c0.21			0.01		0.15	0.06		
v/c Ratio		0.01		0.66	0.03		0.03	0.43	0.31	0.12	0.67	
Uniform Delay, d1		10.4		13.2	10.5		6.4	7.9	7.4	6.6	9.2	
Progression Factor		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.0		3.5	0.0		0.0	0.3	0.2	0.1	1.9	
Delay (s)		10.4		16.7	10.5		6.4	8.2	7.6	6.8	11.1	
Level of Service		B		B	B		A	A	A	A	B	
Approach Delay (s)		10.4			15.8			7.9			10.8	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	10.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	45.9	Sum of lost time (s)	9.0
Intersection Capacity Utilization	64.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	57	11	20	39	163	39	43	694	76	56	616	149
Future Volume (vph)	57	11	20	39	163	39	43	694	76	56	616	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.97			0.98		1.00	0.99		1.00	0.97	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1610			1799		1787	1849		1770	1798	
Flt Permitted		0.61			0.94		0.14	1.00		0.13	1.00	
Satd. Flow (perm)		1013			1696		258	1849		248	1798	
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)	60	12	21	41	172	41	45	731	80	59	648	157
RTOR Reduction (vph)	0	16	0	0	12	0	0	5	0	0	12	0
Lane Group Flow (vph)	0	77	0	0	242	0	45	806	0	59	793	0
Confl. Peds. (#/hr)	3		4	4		3	6		3	3		6
Heavy Vehicles (%)	10%	10%	10%	2%	2%	2%	1%	1%	1%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		13.0			13.0		34.0	31.1		34.0	31.1	
Effective Green, g (s)		13.0			13.0		34.0	31.1		34.0	31.1	
Actuated g/C Ratio		0.21			0.21		0.56	0.51		0.56	0.51	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		217			364		218	950		212	924	
v/s Ratio Prot							0.01	0.44		c0.01	c0.44	
v/s Ratio Perm		0.08			c0.14		0.11			0.14		
v/c Ratio		0.35			0.67		0.21	0.85		0.28	0.86	
Uniform Delay, d1		20.2			21.8		9.2	12.7		9.5	12.8	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.0			4.5		0.5	7.1		0.7	8.0	
Delay (s)		21.2			26.3		9.7	19.8		10.2	20.8	
Level of Service		C			C		A	B		B	C	
Approach Delay (s)		21.2			26.3			19.3			20.1	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	20.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	60.5	Sum of lost time (s)	13.5
Intersection Capacity Utilization	69.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	487	60	258	20	85	11	300	317	13	7	467	205
Future Volume (vph)	487	60	258	20	85	11	300	317	13	7	467	205
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00	0.96		1.00		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	
Frt		1.00	0.85		0.99		1.00	0.99		1.00	0.95	
Flt Protected		0.96	1.00		0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1795	1534		1800		1787	1867		1746	1743	
Flt Permitted		0.68	1.00		0.66		0.11	1.00		0.55	1.00	
Satd. Flow (perm)		1277	1534		1192		206	1867		1015	1743	
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)	513	63	272	21	89	12	316	334	14	7	492	216
RTOR Reduction (vph)	0	0	176	0	5	0	0	2	0	0	19	0
Lane Group Flow (vph)	0	576	96	0	117	0	316	346	0	7	689	0
Confl. Peds. (#/hr)	2		9	9		2	5		5	5		5
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	1%	1%	1%	3%	3%	3%
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		29.5	29.5		29.5		45.1	39.6		33.1	32.1	
Effective Green, g (s)		29.5	29.5		29.5		45.1	39.6		33.1	32.1	
Actuated g/C Ratio		0.35	0.35		0.35		0.54	0.47		0.40	0.38	
Clearance Time (s)		4.5	4.5		4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		450	541		420		271	884		410	669	
v/s Ratio Prot							c0.12	0.19		0.00	0.40	
v/s Ratio Perm		c0.45	0.06		0.10		c0.51			0.01		
v/c Ratio		1.28	0.18		0.28		1.17	0.39		0.02	1.03	
Uniform Delay, d1		27.0	18.7		19.4		22.7	14.2		15.3	25.7	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		142.2	0.2		0.4		107.2	0.3		0.0	42.6	
Delay (s)		169.3	18.8		19.8		129.9	14.5		15.3	68.4	
Level of Service		F	B		B		F	B		B	E	
Approach Delay (s)		121.0			19.8			69.4			67.9	
Approach LOS		F			B			E			E	

Intersection Summary			
HCM 2000 Control Delay	85.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.26		
Actuated Cycle Length (s)	83.6	Sum of lost time (s)	13.5
Intersection Capacity Utilization	101.9%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	34	558	39	92	550	16	27	27	209	3	23	32
Future Volume (Veh/h)	34	558	39	92	550	16	27	27	209	3	23	32
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	36	587	41	97	579	17	28	28	220	3	24	34
Pedestrians		1			7			9				
Lane Width (ft)		12.0			12.0			12.0				
Walking Speed (ft/s)		3.5			3.5			3.5				
Percent Blockage		0			1			1				
Right turn flare (veh)									5			
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		187			537							
pX, platoon unblocked	0.90						0.90	0.90		0.90	0.90	0.90
vC, conflicting volume	596			637			1517	1478	624	1572	1490	588
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	495			637			1519	1476	624	1579	1489	487
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			90			52	71	54	90	75	94
cM capacity (veh/h)	966			939			58	96	475	30	96	526

Direction, Lane #	SE 1	SE 2	NW 1	NE 1	SW 1
Volume Total	36	628	693	276	61
Volume Left	36	0	97	28	3
Volume Right	0	41	17	220	34
cSH	966	1700	939	380	147
Volume to Capacity	0.04	0.37	0.10	0.73	0.41
Queue Length 95th (ft)	3	0	9	139	45
Control Delay (s)	8.9	0.0	2.6	41.1	45.8
Lane LOS	A		A	E	E
Approach Delay (s)	0.5		2.6	41.1	45.8
Approach LOS				E	E

Intersection Summary				
Average Delay	9.6			
Intersection Capacity Utilization	87.2%	ICU Level of Service		E
Analysis Period (min)	15			

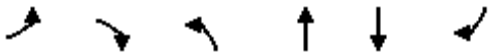
Intersection	
Int Delay, s/veh	9

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	34	558	39	92	550	16	27	27	209	3	23	32
Future Vol, veh/h	34	558	39	92	550	16	27	27	209	3	23	32
Conflicting Peds, #/hr	0	0	9	9	0	0	1	0	7	7	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	-	-	-	-	-	130	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	2	2	2	4	4	4	0	0	0
Mvmt Flow	36	587	41	97	579	17	28	28	220	3	24	34

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	596	0	0	637	0	0	1499	1477	624	1482	1490	588
Stage 1	-	-	-	-	-	-	688	688	-	781	781	-
Stage 2	-	-	-	-	-	-	811	789	-	701	709	-
Critical Hdwy	4.11	-	-	4.12	-	-	7.14	6.54	6.24	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.54	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.54	-	6.1	5.5	-
Follow-up Hdwy	2.209	-	-	2.218	-	-	3.536	4.036	3.336	3.5	4	3.3
Pot Cap-1 Maneuver	985	-	-	947	-	-	99	125	482	104	125	513
Stage 1	-	-	-	-	-	-	433	444	-	391	408	-
Stage 2	-	-	-	-	-	-	370	399	-	433	440	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	984	-	-	941	-	-	64	101	475	37	101	513
Mov Cap-2 Maneuver	-	-	-	-	-	-	64	101	-	37	101	-
Stage 1	-	-	-	-	-	-	414	424	-	377	345	-
Stage 2	-	-	-	-	-	-	271	337	-	208	420	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0.5	1.3	41.3	42.2
HCM LOS			E	E

Minor Lane/Major Mvmt	NELn1	NELn2	NWL	NWT	NWR	SEL	SET	SER	SWLn1
Capacity (veh/h)	78	475	941	-	-	984	-	-	156
HCM Lane V/C Ratio	0.729	0.463	0.103	-	-	0.036	-	-	0.391
HCM Control Delay (s)	127.5	19	9.3	0	-	8.8	-	-	42.2
HCM Lane LOS	F	C	A	A	-	A	-	-	E
HCM 95th %tile Q(veh)	3.5	2.4	0.3	-	-	0.1	-	-	1.7



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	6	0	760	17	23	17
Future Volume (Veh/h)	6	0	760	17	23	17
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	6	0	800	18	24	18
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	1642	24	24			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1642	24	24			
tC, single (s)	*6.0	6.2	4.1			
tC, 2 stage (s)						
tF (s)	*2.0	3.3	2.2			
p0 queue free %	93	100	49			
cM capacity (veh/h)	88	1050	1578			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	6	800	18	24	18
Volume Left	6	800	0	0	0
Volume Right	0	0	0	0	18
cSH	88	1578	1700	1700	1700
Volume to Capacity	0.07	0.51	0.01	0.01	0.01
Queue Length 95th (ft)	5	75	0	0	0
Control Delay (s)	49.1	9.6	0.0	0.0	0.0
Lane LOS	E	A			
Approach Delay (s)	49.1	9.4		0.0	
Approach LOS	E				

Intersection Summary				
Average Delay	9.2			
Intersection Capacity Utilization	58.8%	ICU Level of Service		B
Analysis Period (min)	15			

* User Entered Value

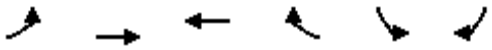
Intersection	
Int Delay, s/veh	9.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	0	760	17	23	17
Future Vol, veh/h	6	0	760	17	23	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	0	-	0	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	4	4	0	0
Mvmt Flow	6	0	800	18	24	18

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1642	-	24	0	-	0
Stage 1	24	-	-	-	-	-
Stage 2	1618	-	-	-	-	-
Critical Hdwy	6	-	4.14	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	2	-	2.236	-	-	-
Pot Cap-1 Maneuver	178	0	1578	-	-	0
Stage 1	1748	0	-	-	-	0
Stage 2	238	0	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	88	-	1578	-	-	-
Mov Cap-2 Maneuver	88	-	-	-	-	-
Stage 1	1748	-	-	-	-	-
Stage 2	117	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	49	9.4	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT
Capacity (veh/h)	1578	-	88	-
HCM Lane V/C Ratio	0.507	-	0.072	-
HCM Control Delay (s)	9.6	-	49	-
HCM Lane LOS	A	-	E	-
HCM 95th %tile Q(veh)	3	-	0.2	-



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	3062	0	777	23	0
Future Volume (Veh/h)	0	3062	0	777	23	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	3223	0	818	24	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	818				1612	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	818				1612	0
tC, single (s)	4.2				*6.5	6.9
tC, 2 stage (s)						
tF (s)	2.2				*2.5	3.3
p0 queue free %	100				82	100
cM capacity (veh/h)	800				130	1091

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	1612	1612	409	409	24
Volume Left	0	0	0	0	24
Volume Right	0	0	409	409	0
cSH	1700	1700	1700	1700	130
Volume to Capacity	0.95	0.95	0.24	0.24	0.18
Queue Length 95th (ft)	0	0	0	0	16
Control Delay (s)	0.0	0.0	0.0	0.0	38.7
Lane LOS					E
Approach Delay (s)	0.0		0.0		38.7
Approach LOS					E

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	94.6%	ICU Level of Service	F
Analysis Period (min)	15		

* User Entered Value

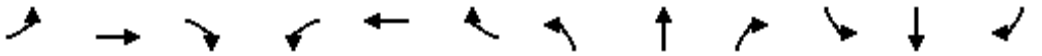
Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	3062	0	777	23	0
Future Vol, veh/h	0	3062	0	777	23	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	0	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	4	4	0	0
Mvmt Flow	0	3223	0	818	24	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	-	1612	-
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	1612	-
Critical Hdwy	-	-	-	-	6.5	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	-	-	2.5	-
Pot Cap-1 Maneuver	0	-	0	-	130	0
Stage 1	0	-	0	-	-	0
Stage 2	0	-	0	-	178	0
Platoon blocked, %		-		-		
Mov Cap-1 Maneuver	-	-	-	-	130	-
Mov Cap-2 Maneuver	-	-	-	-	130	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	178	-

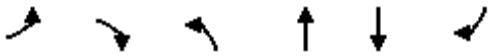
Approach	EB	WB	SB
HCM Control Delay, s	0	0	38.9
HCM LOS			E

Minor Lane/Major Mvmt	EBT	WBR	SBLn1
Capacity (veh/h)	-	-	130
HCM Lane V/C Ratio	-	-	0.186
HCM Control Delay (s)	-	-	38.9
HCM Lane LOS	-	-	E
HCM 95th %tile Q(veh)	-	-	0.7



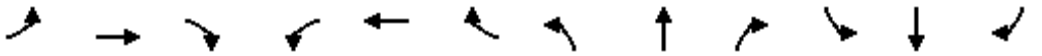
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	238	0	0	542	0	1962	179	0	3722	763
Future Volume (vph)	0	0	238	0	0	542	0	1962	179	0	3722	763
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.5			4.5		4.5	4.5		4.5	4.5
Lane Util. Factor			0.88			0.88		0.91	1.00		0.91	1.00
Frt			0.85			0.85		1.00	0.85		1.00	0.85
Flt Protected			1.00			1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)			2814			2760		5085	1583		5085	1583
Flt Permitted			1.00			1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)			2814			2760		5085	1583		5085	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	0	245	0	0	559	0	2023	185	0	3837	787
RTOR Reduction (vph)	0	0	53	0	0	20	0	0	60	0	0	160
Lane Group Flow (vph)	0	0	192	0	0	539	0	2023	125	0	3837	627
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	2%	2%	2%	2%	2%	2%
Turn Type			Perm			Perm		NA	Perm		NA	Perm
Protected Phases								2			6	
Permitted Phases			5			1			2			6
Actuated Green, G (s)			12.3			24.7		70.9	70.9		83.3	83.3
Effective Green, g (s)			12.3			24.7		70.9	70.9		83.3	83.3
Actuated g/C Ratio			0.12			0.24		0.68	0.68		0.80	0.80
Clearance Time (s)			4.5			4.5		4.5	4.5		4.5	4.5
Vehicle Extension (s)			3.0			3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)			330			651		3446	1072		4049	1260
v/s Ratio Prot								0.40			c0.75	
v/s Ratio Perm			0.07			c0.20			0.08			0.40
v/c Ratio			0.58			0.83		0.59	0.12		0.95	0.50
Uniform Delay, d1			43.7			37.9		9.0	5.9		8.8	3.6
Progression Factor			1.00			1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2			2.6			8.5		0.3	0.0		5.8	0.3
Delay (s)			46.3			46.5		9.3	5.9		14.7	3.9
Level of Service			D			D		A	A		B	A
Approach Delay (s)		46.3			46.5			9.0			12.8	
Approach LOS		D			D			A			B	

Intersection Summary			
HCM 2000 Control Delay	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	104.6	Sum of lost time (s)	9.0
Intersection Capacity Utilization	87.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	543	238	162	1598	2892	1068
Future Volume (vph)	543	238	162	1598	2892	1068
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1752	3505	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	1752	3505	3539	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	554	243	165	1631	2951	1090
RTOR Reduction (vph)	0	2	0	0	0	9
Lane Group Flow (vph)	554	241	165	1631	2951	1081
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%
Turn Type	Prot	pm+ov	Prot	NA	NA	pm+ov
Protected Phases	4	5	5	2	6	4
Permitted Phases		4				6
Actuated Green, G (s)	18.5	27.0	8.5	92.5	79.5	98.0
Effective Green, g (s)	18.5	27.0	8.5	92.5	79.5	98.0
Actuated g/C Ratio	0.15	0.22	0.07	0.77	0.66	0.82
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	529	415	124	2701	2344	1352
v/s Ratio Prot	c0.16	0.04	c0.09	0.47	c0.83	0.12
v/s Ratio Perm		0.11				0.56
v/c Ratio	1.05	0.58	1.33	0.60	1.26	0.80
Uniform Delay, d1	50.8	41.5	55.8	5.9	20.2	5.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	52.1	2.1	193.7	1.0	120.2	3.4
Delay (s)	102.8	43.5	249.4	6.9	140.4	9.2
Level of Service	F	D	F	A	F	A
Approach Delay (s)	84.7			29.2	105.0	
Approach LOS	F			C	F	

Intersection Summary			
HCM 2000 Control Delay	82.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.23		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	115.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	490	945	70	90	700	560	55	710	130	1045	1425	660
Future Volume (vph)	490	945	70	90	700	560	55	710	130	1045	1425	660
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99	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	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3467	3532		3467	3574	1577	1752	3505	1544	3433	3539	1555
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3467	3532		3467	3574	1577	1752	3505	1544	3433	3539	1555
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	505	974	72	93	722	577	57	732	134	1077	1469	680
RTOR Reduction (vph)	0	4	0	0	0	396	0	0	105	0	0	183
Lane Group Flow (vph)	505	1042	0	93	722	181	57	732	29	1077	1469	497
Confl. Peds. (#/hr)	1		6	6		1	3		1	1		3
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	3%	3%	3%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	16.7	35.1		5.1	23.5	23.5	4.0	26.3	26.3	35.5	57.8	57.8
Effective Green, g (s)	16.7	35.1		5.1	23.5	23.5	4.0	26.3	26.3	35.5	57.8	57.8
Actuated g/C Ratio	0.14	0.29		0.04	0.20	0.20	0.03	0.22	0.22	0.30	0.48	0.48
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	482	1033		147	699	308	58	768	338	1015	1704	748
v/s Ratio Prot	c0.15	c0.29		0.03	0.20		0.03	c0.21		c0.31	0.42	
v/s Ratio Perm						0.12			0.02			0.32
v/c Ratio	1.05	1.01		0.63	1.03	0.59	0.98	0.95	0.09	1.06	0.86	0.66
Uniform Delay, d1	51.6	42.5		56.5	48.2	43.9	58.0	46.2	37.3	42.2	27.6	23.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	54.0	30.1		8.6	42.8	2.9	111.4	22.9	0.5	45.9	6.0	4.6
Delay (s)	105.7	72.5		65.1	91.0	46.7	169.4	69.1	37.8	88.2	33.6	28.3
Level of Service	F	E		E	F	D	F	E	D	F	C	C
Approach Delay (s)		83.3			70.9			70.8			50.7	
Approach LOS		F			E			E			D	

Intersection Summary			
HCM 2000 Control Delay	64.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	97.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	212	94	55	159	77	47
Future Volume (Veh/h)	212	94	55	159	77	47
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	236	104	61	177	86	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)						
pX, platoon unblocked						
vC, conflicting volume			340		587	288
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			340		587	288
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		81	93
cM capacity (veh/h)			1208		448	751

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	340	238	138
Volume Left	0	61	86
Volume Right	104	0	52
cSH	1700	1208	529
Volume to Capacity	0.20	0.05	0.26
Queue Length 95th (ft)	0	4	26
Control Delay (s)	0.0	2.4	14.2
Lane LOS		A	B
Approach Delay (s)	0.0	2.4	14.2
Approach LOS			B

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	45.4%	ICU Level of Service	A
Analysis Period (min)	15		

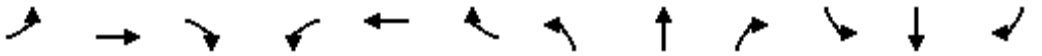
Intersection	
Int Delay, s/veh	3.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	212	94	55	159	77	47
Future Vol, veh/h	212	94	55	159	77	47
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	4	4	2	2
Mvmt Flow	236	104	61	177	86	52

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	340	0	587	288
Stage 1	-	-	-	-	288	-
Stage 2	-	-	-	-	299	-
Critical Hdwy	-	-	4.14	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.236	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1208	-	472	751
Stage 1	-	-	-	-	761	-
Stage 2	-	-	-	-	752	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1208	-	446	751
Mov Cap-2 Maneuver	-	-	-	-	446	-
Stage 1	-	-	-	-	761	-
Stage 2	-	-	-	-	710	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.1	14.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	527	-	-	1208	-
HCM Lane V/C Ratio	0.261	-	-	0.051	-
HCM Control Delay (s)	14.2	-	-	8.1	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	1	-	-	0.2	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	188	674	226	21	309	71	53	41	10	57	33	122
Future Volume (Veh/h)	188	674	226	21	309	71	53	41	10	57	33	122
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	198	709	238	22	325	75	56	43	11	60	35	128
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	400			947			1776	1668	828	1663	1750	362
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	400			947			1776	1668	828	1663	1750	362
tC, single (s)	4.1			4.1			*6.0	*6.0	*6.0	*6.0	*6.0	*6.0
tC, 2 stage (s)												
tF (s)	2.2			2.2			*2.0	*2.0	*2.0	*2.0	*2.0	*2.0
p0 queue free %	83			97			35	69	98	45	71	88
cM capacity (veh/h)	1159			721			86	138	565	110	123	1086

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	1145	422	110	223
Volume Left	198	22	56	60
Volume Right	238	75	11	128
cSH	1159	721	112	235
Volume to Capacity	0.17	0.03	0.98	0.95
Queue Length 95th (ft)	15	2	157	211
Control Delay (s)	4.3	0.9	151.7	90.7
Lane LOS	A	A	F	F
Approach Delay (s)	4.3	0.9	151.7	90.7
Approach LOS			F	F

Intersection Summary				
Average Delay	22.2			
Intersection Capacity Utilization	104.6%	ICU Level of Service	G	
Analysis Period (min)	15			

* User Entered Value

Intersection	
Int Delay, s/veh	40

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	188	674	226	21	309	71	53	41	10	57	33	122
Future Vol, veh/h	188	674	226	21	309	71	53	41	10	57	33	122
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	3	3	3	2	2	2	2	2	2
Mvmt Flow	198	709	238	22	325	75	56	43	11	60	35	128

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	400	0	0	947	0	0	1712	1668	828	1658	1750	363
Stage 1	-	-	-	-	-	-	1224	1224	-	407	407	-
Stage 2	-	-	-	-	-	-	488	444	-	1251	1343	-
Critical Hdwy	4.12	-	-	4.13	-	-	6	6	6	6	6	6
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.227	-	-	2	2	2	2	2	2
Pot Cap-1 Maneuver	1159	-	-	721	-	-	161	171	565	174	152	1085
Stage 1	-	-	-	-	-	-	310	380	-	1007	1078	-
Stage 2	-	-	-	-	-	-	896	1028	-	298	326	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1159	-	-	721	-	-	70	101	565	80	90	1085
Mov Cap-2 Maneuver	-	-	-	-	-	-	70	101	-	80	90	-
Stage 1	-	-	-	-	-	-	192	235	-	622	1035	-
Stage 2	-	-	-	-	-	-	733	987	-	148	201	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.5	0.5	261.8	203.4
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	88	1159	-	-	721	-	-	178
HCM Lane V/C Ratio	1.244	0.171	-	-	0.031	-	-	1.254
HCM Control Delay (s)	261.8	8.7	0	-	10.2	0	-	203.4
HCM Lane LOS	F	A	A	-	B	A	-	F
HCM 95th %tile Q(veh)	7.9	0.6	-	-	0.1	-	-	12.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	535	321	1622	388	859	1053
Future Volume (vph)	535	321	1622	388	859	1053
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	1.00	0.91	1.00	0.97	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3273	1509	4988	1527	3400	5036
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3273	1509	4988	1527	3400	5036
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	563	338	1707	408	904	1108
RTOR Reduction (vph)	0	1	0	257	0	0
Lane Group Flow (vph)	563	337	1707	151	904	1108
Confl. Peds. (#/hr)				3	3	
Heavy Vehicles (%)	7%	7%	4%	4%	3%	3%
Turn Type	Prot	pm+ov	NA	Perm	Prot	NA
Protected Phases	8	1	2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	17.6	43.1	33.4	33.4	25.5	63.4
Effective Green, g (s)	17.6	43.1	33.4	33.4	25.5	63.4
Actuated g/C Ratio	0.20	0.48	0.37	0.37	0.28	0.70
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	640	798	1851	566	963	3547
v/s Ratio Prot	c0.17	0.12	c0.34		c0.27	0.22
v/s Ratio Perm		0.10		0.10		
v/c Ratio	0.88	0.42	0.92	0.27	0.94	0.31
Uniform Delay, d1	35.2	15.3	27.1	19.8	31.5	5.0
Progression Factor	1.00	1.00	0.83	1.97	1.00	1.00
Incremental Delay, d2	13.1	0.4	5.5	0.6	16.1	0.2
Delay (s)	48.3	15.7	27.9	39.6	47.6	5.3
Level of Service	D	B	C	D	D	A
Approach Delay (s)	36.1		30.1			24.3
Approach LOS	D		C			C

Intersection Summary			
HCM 2000 Control Delay	28.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	82.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	205	576	1468	1261	347	1213
Future Volume (vph)	205	576	1468	1261	347	1213
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	1.00	0.91	0.88	1.00	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3335	1538	4940	2660	1719	4940
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3335	1538	4940	2660	1719	4940
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	216	606	1545	1327	365	1277
RTOR Reduction (vph)	0	339	0	99	0	0
Lane Group Flow (vph)	216	267	1545	1228	365	1277
Confl. Peds. (#/hr)				3	3	
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Turn Type	Prot	Perm	NA	pm+ov	Prot	NA
Protected Phases	8		2	8	1	6
Permitted Phases		8		2		
Actuated Green, G (s)	20.0	20.0	35.3	55.3	21.2	61.0
Effective Green, g (s)	20.0	20.0	35.3	55.3	21.2	61.0
Actuated g/C Ratio	0.22	0.22	0.39	0.61	0.24	0.68
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	741	341	1937	1767	404	3348
v/s Ratio Prot	0.06		c0.31	c0.15	c0.21	0.26
v/s Ratio Perm		0.17		0.31		
v/c Ratio	0.29	0.78	0.80	0.70	0.90	0.38
Uniform Delay, d1	29.1	33.0	24.2	11.7	33.4	6.3
Progression Factor	1.00	1.00	1.00	1.00	0.72	0.83
Incremental Delay, d2	0.2	11.1	3.5	1.2	20.8	0.3
Delay (s)	29.3	44.1	27.7	12.9	45.0	5.5
Level of Service	C	D	C	B	D	A
Approach Delay (s)	40.2		20.9			14.3
Approach LOS	D		C			B

Intersection Summary			
HCM 2000 Control Delay	21.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

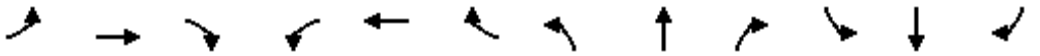
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Traffic Volume (vph)	1570	0	0	1409	102	964
Future Volume (vph)	1570	0	0	1409	102	964
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5			4.5	4.5	4.5
Lane Util. Factor	0.95			0.91	1.00	0.88
Frt	1.00			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	3406			4893	1770	2787
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	3406			4893	1770	2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1653	0	0	1483	107	1015
RTOR Reduction (vph)	0	0	0	0	0	16
Lane Group Flow (vph)	1653	0	0	1483	107	999
Heavy Vehicles (%)	6%	6%	6%	6%	2%	2%
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases						8
Actuated Green, G (s)	41.4			41.4	29.1	29.1
Effective Green, g (s)	41.4			41.4	29.1	29.1
Actuated g/C Ratio	0.52			0.52	0.37	0.37
Clearance Time (s)	4.5			4.5	4.5	4.5
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1773			2548	647	1020
v/s Ratio Prot	c0.49			0.30	0.06	
v/s Ratio Perm						c0.36
v/c Ratio	0.93			0.58	0.17	0.98
Uniform Delay, d1	17.7			13.1	17.0	24.9
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	9.5			0.3	0.1	22.9
Delay (s)	27.2			13.4	17.1	47.8
Level of Service	C			B	B	D
Approach Delay (s)	27.2			13.4	44.8	
Approach LOS	C			B	D	

Intersection Summary			
HCM 2000 Control Delay	27.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	79.5	Sum of lost time (s)	9.0
Intersection Capacity Utilization	84.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Traffic Volume (vph)	1678	49	420	1171	0	0
Future Volume (vph)	1678	49	420	1171	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5	4.5		
Lane Util. Factor	0.95		1.00	0.95		
Frpb, ped/bikes	1.00		1.00	1.00		
Flpb, ped/bikes	1.00		1.00	1.00		
Frt	1.00		1.00	1.00		
Flt Protected	1.00		0.95	1.00		
Satd. Flow (prot)	3390		1703	3406		
Flt Permitted	1.00		0.10	1.00		
Satd. Flow (perm)	3390		174	3406		
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1766	52	442	1233	0	0
RTOR Reduction (vph)	3	0	0	0	0	0
Lane Group Flow (vph)	1815	0	442	1233	0	0
Confl. Peds. (#/hr)		1	1		3	
Heavy Vehicles (%)	6%	6%	6%	6%	4%	4%
Turn Type	NA		pm+pt	NA		
Protected Phases	2		1	6		
Permitted Phases			6			
Actuated Green, G (s)	36.6		54.2	58.7		
Effective Green, g (s)	36.6		54.2	58.7		
Actuated g/C Ratio	0.62		0.92	1.00		
Clearance Time (s)	4.5		4.5	4.5		
Vehicle Extension (s)	3.0		3.0	3.0		
Lane Grp Cap (vph)	2113		501	3406		
v/s Ratio Prot	0.54		c0.20	0.36		
v/s Ratio Perm			c0.62			
v/c Ratio	0.86		0.88	0.36		
Uniform Delay, d1	9.0		16.8	0.0		
Progression Factor	1.00		1.00	1.00		
Incremental Delay, d2	4.8		16.6	0.1		
Delay (s)	13.8		33.4	0.1		
Level of Service	B		C	A		
Approach Delay (s)	13.8			8.9	0.0	
Approach LOS	B			A	A	

Intersection Summary			
HCM 2000 Control Delay	11.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	58.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	84.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	124	63	43	256	414	279	563	41	193	398	73
Future Volume (vph)	33	124	63	43	256	414	279	563	41	193	398	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	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	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	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1656	1743	1449	1752	1845	1568	1752	1826		1736	1827	1553
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1656	1743	1449	1752	1845	1568	1752	1826		1736	1827	1553
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)	35	131	66	45	269	436	294	593	43	203	419	77
RTOR Reduction (vph)	0	0	51	0	0	124	0	3	0	0	0	51
Lane Group Flow (vph)	35	131	15	45	269	312	294	633	0	203	419	26
Confl. Peds. (#/hr)			1	1								
Heavy Vehicles (%)	9%	9%	9%	3%	3%	3%	3%	3%	3%	4%	4%	4%
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases			4			8						6
Actuated Green, G (s)	3.8	16.4	16.4	2.8	15.4	24.8	13.6	25.0		9.4	20.8	24.6
Effective Green, g (s)	3.8	16.4	16.4	2.8	15.4	24.8	13.6	25.0		9.4	20.8	24.6
Actuated g/C Ratio	0.05	0.23	0.23	0.04	0.22	0.35	0.19	0.35		0.13	0.29	0.34
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	87	399	331	68	396	641	332	637		227	530	631
v/s Ratio Prot	0.02	0.08		c0.03	c0.15	0.06	c0.17	c0.35		0.12	0.23	0.00
v/s Ratio Perm			0.01			0.14						0.01
v/c Ratio	0.40	0.33	0.05	0.66	0.68	0.49	0.89	0.99		0.89	0.79	0.04
Uniform Delay, d1	32.8	23.0	21.5	33.9	25.8	18.4	28.2	23.2		30.6	23.4	15.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.0	0.5	0.1	21.6	4.6	0.6	23.3	33.8		32.7	7.9	0.0
Delay (s)	35.8	23.5	21.6	55.5	30.4	19.0	51.6	57.0		63.3	31.3	15.7
Level of Service	D	C	C	E	C	B	D	E		E	C	B
Approach Delay (s)		24.8			25.3			55.3			38.9	
Approach LOS		C			C			E			D	

Intersection Summary					
HCM 2000 Control Delay	39.6	HCM 2000 Level of Service	D		
HCM 2000 Volume to Capacity ratio	0.88				
Actuated Cycle Length (s)	71.6	Sum of lost time (s)	18.0		
Intersection Capacity Utilization	75.4%	ICU Level of Service	D		
Analysis Period (min)	15				

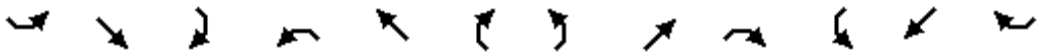
c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	0	0	0	18	145	48	456	391	142	70	321	674
Future Volume (vph)	0	0	0	18	145	48	456	391	142	70	321	674
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.5		4.5	4.5		4.5	4.5	4.5
Lane Util. Factor					1.00		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes					0.99		1.00	0.99		1.00	1.00	0.99
Flpb, ped/bikes					1.00		1.00	1.00		1.00	1.00	1.00
Frt					0.97		1.00	0.96		1.00	1.00	0.85
Flt Protected					1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)					1689		1702	1711		1735	1827	1532
Flt Permitted					1.00		0.40	1.00		0.44	1.00	1.00
Satd. Flow (perm)					1689		708	1711		805	1827	1532
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)	0	0	0	20	161	53	507	434	158	78	357	749
RTOR Reduction (vph)	0	0	0	0	12	0	0	14	0	0	0	174
Lane Group Flow (vph)	0	0	0	0	222	0	507	578	0	78	357	575
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	20%	20%	20%	8%	8%	8%	6%	6%	6%	4%	4%	4%
Turn Type				Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases					8		5	2		1	6	
Permitted Phases				8			2			6		6
Actuated Green, G (s)					14.6		56.9	48.6		39.3	35.5	35.5
Effective Green, g (s)					14.6		56.9	48.6		39.3	35.5	35.5
Actuated g/C Ratio					0.18		0.71	0.60		0.49	0.44	0.44
Clearance Time (s)					4.5		4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)					3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)					306		709	1032		436	805	675
v/s Ratio Prot							c0.15	0.34		0.01	0.20	
v/s Ratio Perm					0.13		0.36			0.08		c0.38
v/c Ratio					0.72		0.72	0.56		0.18	0.44	0.85
Uniform Delay, d1					31.1		6.5	9.5		11.0	15.6	20.1
Progression Factor					1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2					8.2		3.4	0.7		0.2	0.4	10.1
Delay (s)					39.3		10.0	10.2		11.2	16.0	30.3
Level of Service					D		A	B		B	B	C
Approach Delay (s)		0.0			39.3			10.1			24.7	
Approach LOS		A			D			B			C	

Intersection Summary			
HCM 2000 Control Delay	19.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	80.5	Sum of lost time (s)	13.5
Intersection Capacity Utilization	90.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	283	46	171	0	0	0	0	689	10	1	358	0
Future Volume (vph)	283	46	171	0	0	0	0	689	10	1	358	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5						4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00						1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98						1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00						1.00		1.00	1.00	
Frt	1.00	0.88						1.00		1.00	1.00	
Flt Protected	0.95	1.00						1.00		0.95	1.00	
Satd. Flow (prot)	1733	1578						1840		1719	1810	
Flt Permitted	0.95	1.00						1.00		0.14	1.00	
Satd. Flow (perm)	1733	1578						1840		249	1810	
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)	298	48	180	0	0	0	0	725	11	1	377	0
RTOR Reduction (vph)	0	134	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	298	94	0	0	0	0	0	735	0	1	377	0
Confl. Peds. (#/hr)	1		4	4		1	3		2	2		3
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	3%	3%	3%	5%	5%	5%
Turn Type	Perm	NA						NA		pm+pt	NA	
Protected Phases		4						2		1	6	
Permitted Phases	4									6		
Actuated Green, G (s)	14.0	14.0						25.9		31.2	31.2	
Effective Green, g (s)	14.0	14.0						25.9		31.2	31.2	
Actuated g/C Ratio	0.26	0.26						0.48		0.58	0.58	
Clearance Time (s)	4.5	4.5						4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)	447	407						879		165	1041	
v/s Ratio Prot		0.06						c0.40		0.00	c0.21	
v/s Ratio Perm	c0.17									0.00		
v/c Ratio	0.67	0.23						0.84		0.01	0.36	
Uniform Delay, d1	18.0	15.9						12.3		8.4	6.2	
Progression Factor	1.00	1.00						1.00		1.00	1.00	
Incremental Delay, d2	3.7	0.3						7.0		0.0	0.2	
Delay (s)	21.7	16.2						19.3		8.4	6.4	
Level of Service	C	B						B		A	A	
Approach Delay (s)		19.3			0.0			19.3			6.4	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	16.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	54.2	Sum of lost time (s)	13.5
Intersection Capacity Utilization	60.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	29	397	37	0	0	0	0	40	76	41	155	0
Future Volume (vph)	29	397	37	0	0	0	0	40	76	41	155	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	31	418	39	0	0	0	0	42	80	43	163	0

Direction, Lane #	SE 1	SE 2	NE 1	NE 2	SW 1
Volume Total (vph)	240	248	42	80	206
Volume Left (vph)	31	0	0	0	43
Volume Right (vph)	0	39	0	80	0
Hadj (s)	0.13	-0.04	0.15	-0.55	0.04
Departure Headway (s)	5.6	5.4	6.2	5.5	5.9
Degree Utilization, x	0.37	0.37	0.07	0.12	0.34
Capacity (veh/h)	621	645	542	607	580
Control Delay (s)	10.6	10.3	8.5	8.1	11.9
Approach Delay (s)	10.5		8.2		11.9
Approach LOS	B		A		B

Intersection Summary				
Delay	10.5			
Level of Service	B			
Intersection Capacity Utilization	41.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	11.2
Intersection LOS	B

Movement	SEU	SEL	SET	SER	NWU	NWL	NWT	NWR	NEU	NEL	NET	NER
Lane Configurations												
Traffic Vol, veh/h	0	29	397	37	0	0	0	0	0	0	40	76
Future Vol, veh/h	0	29	397	37	0	0	0	0	0	0	40	76
Peak Hour Factor	0.92	0.95	0.95	0.95	0.92	0.95	0.95	0.95	0.92	0.95	0.95	0.95
Heavy Vehicles, %	2	4	4	4	2	3	3	3	2	9	9	9
Mvmt Flow	0	31	418	39	0	0	0	0	0	0	42	80
Number of Lanes	0	0	2	0	0	0	0	0	0	0	1	1

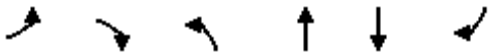
Approach	SE	NE
Opposing Approach		SW
Opposing Lanes	0	1
Conflicting Approach Left	SW	SE
Conflicting Lanes Left	1	2
Conflicting Approach Right	NE	
Conflicting Lanes Right	2	0
HCM Control Delay	11.4	9.1
HCM LOS	B	A

Lane	NELn1	NELn2	SELn1	SELn2	SWLn1
Vol Left, %	0%	0%	13%	0%	21%
Vol Thru, %	100%	0%	87%	84%	79%
Vol Right, %	0%	100%	0%	16%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	40	76	228	236	196
LT Vol	0	0	29	0	41
Through Vol	40	0	199	199	155
RT Vol	0	76	0	37	0
Lane Flow Rate	42	80	239	248	206
Geometry Grp	7	7	7	7	6
Degree of Util (X)	0.072	0.121	0.368	0.369	0.335
Departure Headway (Hd)	6.146	5.436	5.527	5.352	5.85
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	577	652	647	667	611
Service Time	3.945	3.235	3.303	3.129	3.932
HCM Lane V/C Ratio	0.073	0.123	0.369	0.372	0.337
HCM Control Delay	9.4	9	11.5	11.3	11.9
HCM Lane LOS	A	A	B	B	B
HCM 95th-tile Q	0.2	0.4	1.7	1.7	1.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SWU	SWL	SWT	SWR
Lane Configurations				
Traffic Vol, veh/h	0	41	155	0
Future Vol, veh/h	0	41	155	0
Peak Hour Factor	0.92	0.95	0.95	0.95
Heavy Vehicles, %	2	0	0	0
Mvmt Flow	0	43	163	0
Number of Lanes	0	0	1	0

Approach	SW
Opposing Approach	NE
Opposing Lanes	2
Conflicting Approach Left	
Conflicting Lanes Left	0
Conflicting Approach Right	SE
Conflicting Lanes Right	2
HCM Control Delay	11.9
HCM LOS	B



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	782	184	144	2303	1703	535
Future Volume (vph)	782	184	144	2303	1703	535
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3400	1568	1736	4988	4988	1553
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3400	1568	1736	4988	4988	1553
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	815	192	150	2399	1774	557
RTOR Reduction (vph)	0	2	0	0	0	67
Lane Group Flow (vph)	815	190	150	2399	1774	490
Heavy Vehicles (%)	3%	3%	4%	4%	4%	4%
Turn Type	Prot	pm+ov	Prot	NA	NA	pm+ov
Protected Phases	4	5	5	2	6	4
Permitted Phases		4				6
Actuated Green, G (s)	33.9	48.6	14.7	77.1	57.9	91.8
Effective Green, g (s)	33.9	48.6	14.7	77.1	57.9	91.8
Actuated g/C Ratio	0.28	0.41	0.12	0.64	0.48	0.76
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	960	693	212	3204	2406	1246
v/s Ratio Prot	c0.24	0.03	0.09	c0.48	0.36	0.11
v/s Ratio Perm		0.09				0.20
v/c Ratio	0.85	0.27	0.71	0.75	0.74	0.39
Uniform Delay, d1	40.6	23.9	50.6	14.8	24.9	4.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.1	0.2	10.3	1.7	2.1	0.2
Delay (s)	47.7	24.1	60.9	16.4	27.0	4.9
Level of Service	D	C	E	B	C	A
Approach Delay (s)	43.2			19.0	21.7	
Approach LOS	D			B	C	

Intersection Summary			
HCM 2000 Control Delay	24.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	74.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

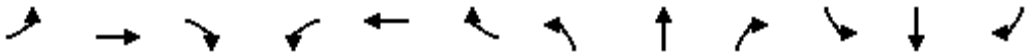
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Right Turn Channelized						
Traffic Volume (veh/h)	53	73	52	165	98	67
Future Volume (veh/h)	53	73	52	165	98	67
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	62	86	61	194	115	79
Approach Volume (veh/h)	148			255	194	
Crossing Volume (veh/h)	61			115	62	
High Capacity (veh/h)	1320			1266	1319	
High v/c (veh/h)	0.11			0.20	0.15	
Low Capacity (veh/h)	1103			1053	1102	
Low v/c (veh/h)	0.13			0.24	0.18	

Intersection Summary			
Maximum v/c High	0.20		
Maximum v/c Low	0.24		
Intersection Capacity Utilization	38.4%	ICU Level of Service	A

Intersection	
Intersection Delay, s/veh	5.7
Intersection LOS	A

Approach	EB	WB	NB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	148	255	194
Demand Flow Rate, veh/h	155	268	198
Vehicles Circulating, veh/h	64	117	65
Vehicles Exiting, veh/h	321	146	154
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	4.9	6.5	5.2
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	TR	LT	LR
Assumed Moves	TR	LT	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	155	268	198
Cap Entry Lane, veh/h	1060	1005	1059
Entry HV Adj Factor	0.954	0.953	0.980
Flow Entry, veh/h	148	255	194
Cap Entry, veh/h	1011	957	1037
V/C Ratio	0.146	0.267	0.187
Control Delay, s/veh	4.9	6.5	5.2
LOS	A	A	A
95th %tile Queue, veh	1	1	1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	58	149	114	83	526	65	149	35	40	88	42	166
Future Volume (veh/h)	58	149	114	83	526	65	149	35	40	88	42	166
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	61	157	120	87	554	68	157	37	42	93	44	175
Approach Volume (veh/h)		338			709			236			312	
Crossing Volume (veh/h)		224			255			311			798	
High Capacity (veh/h)		1162			1134			1085			734	
High v/c (veh/h)		0.29			0.63			0.22			0.42	
Low Capacity (veh/h)		959			934			890			579	
Low v/c (veh/h)		0.35			0.76			0.27			0.54	

Intersection Summary					
Maximum v/c High	0.63				
Maximum v/c Low	0.76				
Intersection Capacity Utilization	82.7%	ICU Level of Service		E	

Intersection	
Intersection Delay, s/veh	21.7
Intersection LOS	C

Approach	EB	WB	NB	SB
Entry Lanes	2	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	338	709	236	312
Demand Flow Rate, veh/h	386	759	245	318
Vehicles Circulating, veh/h	233	271	344	849
Vehicles Exiting, veh/h	934	318	275	181
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	7.2	32.0	8.3	24.3
Approach LOS	A	D	A	C

Lane	Left	Right	Left	Left	Left
Designated Moves	LT	R	LTR	LTR	LTR
Assumed Moves	LT	R	LTR	LTR	LTR
RT Channelized					
Lane Util	0.645	0.355	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193	5.193
Entry Flow, veh/h	249	137	759	245	318
Cap Entry Lane, veh/h	895	895	862	801	483
Entry HV Adj Factor	0.876	0.876	0.934	0.961	0.982
Flow Entry, veh/h	218	120	709	236	312
Cap Entry, veh/h	784	784	805	770	474
V/C Ratio	0.278	0.153	0.881	0.306	0.658
Control Delay, s/veh	7.7	6.2	32.0	8.3	24.3
LOS	A	A	D	A	C
95th %tile Queue, veh	1	1	11	1	5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1255	435	1250	535	560	1600
Future Volume (vph)	1255	435	1250	535	560	1600
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	1.00	0.91	1.00	0.97	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1568	5085	1549	3433	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3400	1568	5085	1549	3433	5085
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1294	448	1289	552	577	1649
RTOR Reduction (vph)	0	0	0	399	0	0
Lane Group Flow (vph)	1294	448	1289	153	577	1649
Confl. Peds. (#/hr)				6	6	
Confl. Bikes (#/hr)				1		
Heavy Vehicles (%)	3%	3%	2%	2%	2%	2%
Turn Type	Prot	pm+ov	NA	Perm	Prot	NA
Protected Phases	8	1	2		1	6
Permitted Phases		8		2		
Actuated Green, G (s)	35.5	51.6	24.9	24.9	16.1	45.5
Effective Green, g (s)	35.5	51.6	24.9	24.9	16.1	45.5
Actuated g/C Ratio	0.39	0.57	0.28	0.28	0.18	0.51
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1341	977	1406	428	614	2570
v/s Ratio Prot	c0.38	0.08	c0.25		c0.17	0.32
v/s Ratio Perm		0.20		0.10		
v/c Ratio	0.96	0.46	0.92	0.36	0.94	0.64
Uniform Delay, d1	26.6	11.1	31.5	26.1	36.5	16.3
Progression Factor	1.00	1.00	1.05	4.08	1.00	1.00
Incremental Delay, d2	16.8	0.3	7.1	1.4	22.3	1.2
Delay (s)	43.4	11.5	40.1	107.9	58.8	17.5
Level of Service	D	B	D	F	E	B
Approach Delay (s)	35.2		60.4			28.2
Approach LOS	D		E			C

Intersection Summary			
HCM 2000 Control Delay	40.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	87.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	615	520	1265	930	530	2325
Future Volume (vph)	615	520	1265	930	530	2325
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	1.00	0.91	0.88	1.00	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	5036	2699	1770	5085
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1583	5036	2699	1770	5085
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	628	531	1291	949	541	2372
RTOR Reduction (vph)	0	419	0	111	0	0
Lane Group Flow (vph)	628	112	1291	838	541	2372
Confl. Peds. (#/hr)				7	7	
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%
Turn Type	Prot	Perm	NA	pm+ov	Prot	NA
Protected Phases	8		2	8	1	6
Permitted Phases		8		2		
Actuated Green, G (s)	19.0	19.0	28.0	47.0	29.5	62.0
Effective Green, g (s)	19.0	19.0	28.0	47.0	29.5	62.0
Actuated g/C Ratio	0.21	0.21	0.31	0.52	0.33	0.69
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	724	334	1566	1544	580	3503
v/s Ratio Prot	c0.18		c0.26	0.11	c0.31	0.47
v/s Ratio Perm		0.07		0.20		
v/c Ratio	0.87	0.34	0.82	0.54	0.93	0.68
Uniform Delay, d1	34.3	30.1	28.7	14.3	29.3	8.2
Progression Factor	1.00	1.00	1.00	1.00	1.17	0.59
Incremental Delay, d2	10.7	0.6	5.1	0.4	15.2	0.6
Delay (s)	45.0	30.7	33.8	14.7	49.4	5.4
Level of Service	D	C	C	B	D	A
Approach Delay (s)	38.5		25.7			13.6
Approach LOS	D		C			B

Intersection Summary			
HCM 2000 Control Delay	22.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	82.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Traffic Volume (vph)	1408	0	0	2940	73	787
Future Volume (vph)	1408	0	0	2940	73	787
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5			4.5	4.5	4.5
Lane Util. Factor	0.95			0.91	1.00	0.88
Frpb, ped/bikes	1.00			1.00	1.00	1.00
Flpb, ped/bikes	1.00			1.00	1.00	1.00
Frt	1.00			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	3505			5036	1770	2787
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	3505			5036	1770	2787
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1482	0	0	3095	77	828
RTOR Reduction (vph)	0	0	0	0	0	63
Lane Group Flow (vph)	1482	0	0	3095	77	765
Confl. Peds. (#/hr)		3	3			
Heavy Vehicles (%)	3%	3%	3%	3%	2%	2%
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases						8
Actuated Green, G (s)	77.5			77.5	33.5	33.5
Effective Green, g (s)	77.5			77.5	33.5	33.5
Actuated g/C Ratio	0.65			0.65	0.28	0.28
Clearance Time (s)	4.5			4.5	4.5	4.5
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	2263			3252	494	778
v/s Ratio Prot	0.42			c0.61	0.04	
v/s Ratio Perm						c0.27
v/c Ratio	0.65			0.95	0.16	0.98
Uniform Delay, d1	13.0			19.5	32.6	43.0
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.7			7.5	0.1	28.0
Delay (s)	13.7			27.0	32.7	71.0
Level of Service	B			C	C	E
Approach Delay (s)	13.7			27.0	67.7	
Approach LOS	B			C	E	

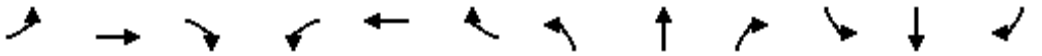
Intersection Summary			
HCM 2000 Control Delay	30.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	80.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Traffic Volume (vph)	1408	83	569	2444	0	0
Future Volume (vph)	1408	83	569	2444	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5	4.5		
Lane Util. Factor	0.95		1.00	0.95		
Frpb, ped/bikes	1.00		1.00	1.00		
Flpb, ped/bikes	1.00		1.00	1.00		
Frt	0.99		1.00	1.00		
Flt Protected	1.00		0.95	1.00		
Satd. Flow (prot)	3439		1770	3539		
Flt Permitted	1.00		0.11	1.00		
Satd. Flow (perm)	3439		201	3539		
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1452	86	587	2520	0	0
RTOR Reduction (vph)	7	0	0	0	0	0
Lane Group Flow (vph)	1531	0	587	2520	0	0
Confl. Peds. (#/hr)		2	2			
Heavy Vehicles (%)	4%	4%	2%	2%	1%	1%
Turn Type	NA		pm+pt	NA		
Protected Phases	2		1	6		
Permitted Phases			6			
Actuated Green, G (s)	32.6		54.2	58.7		
Effective Green, g (s)	32.6		54.2	58.7		
Actuated g/C Ratio	0.56		0.92	1.00		
Clearance Time (s)	4.5		4.5	4.5		
Vehicle Extension (s)	3.0		3.0	3.0		
Lane Grp Cap (vph)	1909		642	3539		
v/s Ratio Prot	0.45		c0.27	0.71		
v/s Ratio Perm			c0.58			
v/c Ratio	0.80		0.91	0.71		
Uniform Delay, d1	10.5		15.6	0.0		
Progression Factor	1.00		1.00	1.00		
Incremental Delay, d2	3.7		17.6	0.7		
Delay (s)	14.1		33.2	0.7		
Level of Service	B		C	A		
Approach Delay (s)	14.1			6.8	0.0	
Approach LOS	B			A	A	

Intersection Summary			
HCM 2000 Control Delay	9.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	58.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	80.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	73	192	242	73	128	248	89	410	70	401	730	87
Future Volume (vph)	73	192	242	73	128	248	89	410	70	401	730	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	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	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	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1536	1787	1881	1599	1770	1822		1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1536	1787	1881	1599	1770	1822		1770	1863	1583
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)	77	202	255	77	135	261	94	432	74	422	768	92
RTOR Reduction (vph)	0	0	203	0	0	89	0	8	0	0	0	45
Lane Group Flow (vph)	77	202	52	77	135	172	94	498	0	422	768	47
Confl. Peds. (#/hr)			4	4								
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	2%	2%	2%	2%	2%	2%
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases			4			8						6
Actuated Green, G (s)	3.8	12.7	12.7	3.8	12.7	27.4	3.8	20.8		14.7	31.7	35.5
Effective Green, g (s)	3.8	12.7	12.7	3.8	12.7	27.4	3.8	20.8		14.7	31.7	35.5
Actuated g/C Ratio	0.05	0.18	0.18	0.05	0.18	0.39	0.05	0.30		0.21	0.45	0.51
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	96	338	278	97	341	728	96	541		371	843	904
v/s Ratio Prot	c0.04	c0.11		0.04	0.07	0.05	0.05	0.27		c0.24	c0.41	0.00
v/s Ratio Perm			0.03			0.06						0.03
v/c Ratio	0.80	0.60	0.19	0.79	0.40	0.24	0.98	0.92		1.14	0.91	0.05
Uniform Delay, d1	32.7	26.3	24.3	32.7	25.3	14.3	33.1	23.8		27.6	17.8	8.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	36.6	2.8	0.3	34.6	0.8	0.2	84.1	21.2		89.6	13.9	0.0
Delay (s)	69.3	29.1	24.6	67.4	26.0	14.5	117.2	45.0		117.2	31.7	8.8
Level of Service	E	C	C	E	C	B	F	D		F	C	A
Approach Delay (s)		32.8			26.4			56.3			58.2	
Approach LOS		C			C			E			E	

Intersection Summary			
HCM 2000 Control Delay	47.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	0	0	0	59	248	50	343	740	87	56	411	354
Future Volume (vph)	0	0	0	59	248	50	343	740	87	56	411	354
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.5		4.5	4.5		4.5	4.5	4.5
Lane Util. Factor					1.00		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
Flpb, ped/bikes					1.00		1.00	1.00		1.00	1.00	1.00
Frt					0.98		1.00	0.98		1.00	1.00	0.85
Flt Protected					0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)					1803		1786	1846		1769	1863	1553
Flt Permitted					0.99		0.30	1.00		0.14	1.00	1.00
Satd. Flow (perm)					1803		564	1846		260	1863	1553
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)	0	0	0	62	261	53	361	779	92	59	433	373
RTOR Reduction (vph)	0	0	0	0	8	0	0	5	0	0	0	146
Lane Group Flow (vph)	0	0	0	0	368	0	361	866	0	59	433	227
Confl. Peds. (#/hr)	3		4	4		3	6		3	3		6
Heavy Vehicles (%)	10%	10%	10%	2%	2%	2%	1%	1%	1%	2%	2%	2%
Turn Type				Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases					8		5	2		1	6	
Permitted Phases				8			2			6		6
Actuated Green, G (s)					17.5		45.4	38.2		31.4	28.7	28.7
Effective Green, g (s)					17.5		45.4	38.2		31.4	28.7	28.7
Actuated g/C Ratio					0.24		0.63	0.53		0.44	0.40	0.40
Clearance Time (s)					4.5		4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)					3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)					438		563	980		170	743	619
v/s Ratio Prot							c0.11	c0.47		0.01	0.23	
v/s Ratio Perm					0.20		0.30			0.14		0.15
v/c Ratio					0.84		0.64	0.88		0.35	0.58	0.37
Uniform Delay, d1					25.9		8.2	14.9		14.2	16.9	15.2
Progression Factor					1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2					13.6		2.5	9.5		1.2	1.2	0.4
Delay (s)					39.5		10.7	24.4		15.4	18.1	15.6
Level of Service					D		B	C		B	B	B
Approach Delay (s)		0.0			39.5			20.4			16.8	
Approach LOS		A			D			C			B	

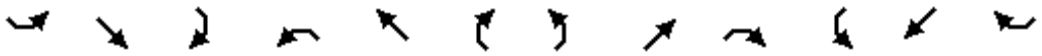
Intersection Summary			
HCM 2000 Control Delay	22.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	71.9	Sum of lost time (s)	13.5
Intersection Capacity Utilization	85.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	555	60	278	0	0	0	0	617	13	7	467	0
Future Volume (vph)	555	60	278	0	0	0	0	617	13	7	467	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5						4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00						1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.97						1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00						1.00		1.00	1.00	
Frt	1.00	0.88						1.00		1.00	1.00	
Flt Protected	0.95	1.00						1.00		0.95	1.00	
Satd. Flow (prot)	1780	1597						1875		1752	1845	
Flt Permitted	0.95	1.00						1.00		0.11	1.00	
Satd. Flow (perm)	1780	1597						1875		208	1845	
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)	584	63	293	0	0	0	0	649	14	7	492	0
RTOR Reduction (vph)	0	176	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	584	180	0	0	0	0	0	662	0	7	492	0
Confl. Peds. (#/hr)	2		9	9		2	5		5	5		5
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	1%	1%	1%	3%	3%	3%
Turn Type	Perm	NA						NA		pm+pt	NA	
Protected Phases		4						2		1	6	
Permitted Phases	4									6		
Actuated Green, G (s)	30.2	30.2						31.2		36.5	36.5	
Effective Green, g (s)	30.2	30.2						31.2		36.5	36.5	
Actuated g/C Ratio	0.40	0.40						0.41		0.48	0.48	
Clearance Time (s)	4.5	4.5						4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)	710	637						772		116	889	
v/s Ratio Prot		0.11						c0.35		0.00	c0.27	
v/s Ratio Perm	c0.33									0.03		
v/c Ratio	0.82	0.28						0.86		0.06	0.55	
Uniform Delay, d1	20.4	15.4						20.2		14.7	13.8	
Progression Factor	1.00	1.00						1.00		1.00	1.00	
Incremental Delay, d2	7.6	0.2						9.3		0.2	0.7	
Delay (s)	28.0	15.7						29.6		14.9	14.6	
Level of Service	C	B						C		B	B	
Approach Delay (s)		23.3			0.0			29.6			14.6	
Approach LOS		C			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	23.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	75.7	Sum of lost time (s)	13.5
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	34	575	39	0	0	0	0	54	209	74	117	0
Future Volume (vph)	34	575	39	0	0	0	0	54	209	74	117	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	36	605	41	0	0	0	0	57	220	78	123	0

Direction, Lane #	SE 1	SE 2	NE 1	NE 2	SW 1
Volume Total (vph)	339	344	57	220	201
Volume Left (vph)	36	0	0	0	78
Volume Right (vph)	0	41	0	220	0
Hadj (s)	0.07	-0.07	0.07	-0.63	0.08
Departure Headway (s)	6.0	5.9	6.7	6.0	6.7
Degree Utilization, x	0.56	0.56	0.11	0.37	0.37
Capacity (veh/h)	583	600	507	569	518
Control Delay (s)	15.3	14.9	9.3	11.3	13.5
Approach Delay (s)	15.1		10.9		13.5
Approach LOS	C		B		B

Intersection Summary				
Delay	13.8			
Level of Service	B			
Intersection Capacity Utilization	52.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	14.6
Intersection LOS	B

Movement	SEU	SEL	SET	SER	NWU	NWL	NWT	NWR	NEU	NEL	NET	NER
Lane Configurations												
Traffic Vol, veh/h	0	34	575	39	0	0	0	0	0	0	54	209
Future Vol, veh/h	0	34	575	39	0	0	0	0	0	0	54	209
Peak Hour Factor	0.92	0.95	0.95	0.95	0.92	0.95	0.95	0.95	0.92	0.95	0.95	0.95
Heavy Vehicles, %	2	1	1	1	2	2	2	2	2	4	4	4
Mvmt Flow	0	36	605	41	0	0	0	0	0	0	57	220
Number of Lanes	0	0	2	0	0	0	0	0	0	0	1	1

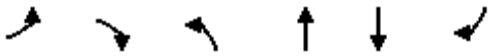
Approach	SE	NE
Opposing Approach		SW
Opposing Lanes	0	1
Conflicting Approach Left	SW	SE
Conflicting Lanes Left	1	2
Conflicting Approach Right	NE	
Conflicting Lanes Right	2	0
HCM Control Delay	16.1	11.8
HCM LOS	C	B

Lane	NELn1	NELn2	SELn1	SELn2	SWLn1
Vol Left, %	0%	0%	11%	0%	39%
Vol Thru, %	100%	0%	89%	88%	61%
Vol Right, %	0%	100%	0%	12%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	54	209	322	327	191
LT Vol	0	0	34	0	74
Through Vol	54	0	288	288	117
RT Vol	0	209	0	39	0
Lane Flow Rate	57	220	338	344	201
Geometry Grp	7	7	7	7	6
Degree of Util (X)	0.106	0.367	0.566	0.561	0.372
Departure Headway (Hd)	6.717	6.004	6.017	5.879	6.657
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	533	598	599	615	541
Service Time	4.464	3.751	3.751	3.613	4.698
HCM Lane V/C Ratio	0.107	0.368	0.564	0.559	0.372
HCM Control Delay	10.3	12.2	16.3	15.9	13.6
HCM Lane LOS	B	B	C	C	B
HCM 95th-tile Q	0.4	1.7	3.5	3.5	1.7

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SWU	SWL	SWT	SWR
Lane Configurations				
Traffic Vol, veh/h	0	74	117	0
Future Vol, veh/h	0	74	117	0
Peak Hour Factor	0.92	0.95	0.95	0.95
Heavy Vehicles, %	2	0	0	0
Mvmt Flow	0	78	123	0
Number of Lanes	0	0	1	0

Approach	SW
Opposing Approach	NE
Opposing Lanes	2
Conflicting Approach Left	
Conflicting Lanes Left	0
Conflicting Approach Right	SE
Conflicting Lanes Right	2
HCM Control Delay	13.6
HCM LOS	B



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	543	238	162	1598	2892	1068
Future Volume (vph)	543	238	162	1598	2892	1068
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	1.00	1.00	0.91	0.91	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1752	5036	5085	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	1752	5036	5085	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	554	243	165	1631	2951	1090
RTOR Reduction (vph)	0	1	0	0	0	26
Lane Group Flow (vph)	554	242	165	1631	2951	1064
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%
Turn Type	Prot	pm+ov	Prot	NA	NA	pm+ov
Protected Phases	4	5	5	2	6	4
Permitted Phases		4				6
Actuated Green, G (s)	23.3	35.7	12.4	87.7	70.8	94.1
Effective Green, g (s)	23.3	35.7	12.4	87.7	70.8	94.1
Actuated g/C Ratio	0.19	0.30	0.10	0.73	0.59	0.78
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	666	530	181	3680	3000	1300
v/s Ratio Prot	0.16	0.05	c0.09	0.32	c0.58	c0.16
v/s Ratio Perm		0.11				0.51
v/c Ratio	0.83	0.46	0.91	0.44	0.98	0.82
Uniform Delay, d1	46.5	34.3	53.3	6.4	24.0	7.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.7	0.6	42.5	0.4	13.0	4.1
Delay (s)	55.2	34.9	95.7	6.8	37.1	11.9
Level of Service	E	C	F	A	D	B
Approach Delay (s)	49.0			15.0	30.3	
Approach LOS	D			B	C	

Intersection Summary			
HCM 2000 Control Delay	28.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	91.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

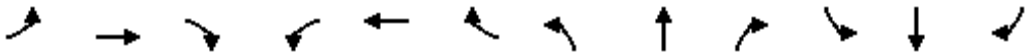
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Right Turn Channelized						
Traffic Volume (veh/h)	212	94	55	159	77	47
Future Volume (veh/h)	212	94	55	159	77	47
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	236	104	61	177	86	52
Approach Volume (veh/h)	340			238	138	
Crossing Volume (veh/h)	61			86	236	
High Capacity (veh/h)	1320			1295	1151	
High v/c (veh/h)	0.26			0.18	0.12	
Low Capacity (veh/h)	1103			1079	949	
Low v/c (veh/h)	0.31			0.22	0.15	

Intersection Summary			
Maximum v/c High	0.26		
Maximum v/c Low	0.31		
Intersection Capacity Utilization	45.4%	ICU Level of Service	A

Intersection	
Intersection Delay, s/veh	6.3
Intersection LOS	A

Approach	EB	WB	NB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	340	238	138
Demand Flow Rate, veh/h	350	247	141
Vehicles Circulating, veh/h	63	88	243
Vehicles Exiting, veh/h	272	296	170
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	6.9	5.9	5.7
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	TR	LT	LR
Assumed Moves	TR	LT	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	350	247	141
Cap Entry Lane, veh/h	1061	1035	886
Entry HV Adj Factor	0.971	0.963	0.979
Flow Entry, veh/h	340	238	138
Cap Entry, veh/h	1030	997	867
V/C Ratio	0.330	0.239	0.159
Control Delay, s/veh	6.9	5.9	5.7
LOS	A	A	A
95th %tile Queue, veh	1	1	1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	188	674	226	21	309	71	53	41	10	57	33	122
Future Volume (veh/h)	188	674	226	21	309	71	53	41	10	57	33	122
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	198	709	238	22	325	75	56	43	11	60	35	128
Approach Volume (veh/h)		1145			422			110			223	
Crossing Volume (veh/h)		117			297			967			403	
High Capacity (veh/h)		1264			1097			640			1008	
High v/c (veh/h)		0.91			0.38			0.17			0.22	
Low Capacity (veh/h)		1051			900			497			821	
Low v/c (veh/h)		1.09			0.47			0.22			0.27	

Intersection Summary				
Maximum v/c High	0.91			
Maximum v/c Low	1.09			
Intersection Capacity Utilization	90.8%	ICU Level of Service	E	

Intersection	
Intersection Delay, s/veh	21.2
Intersection LOS	C

Approach	EB	WB	NB	SB
Entry Lanes	2	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	1145	422	110	223
Demand Flow Rate, veh/h	1168	435	112	228
Vehicles Circulating, veh/h	120	303	986	415
Vehicles Exiting, veh/h	523	795	302	323
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	27.9	11.8	13.1	8.6
Approach LOS	D	B	B	A

Lane	Left	Right	Left	Left	Left
Designated Moves	LT	R	LTR	LTR	LTR
Assumed Moves	LT	R	LTR	LTR	LTR
RT Channelized					
Lane Util	0.792	0.208	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193	5.193
Entry Flow, veh/h	925	243	435	112	228
Cap Entry Lane, veh/h	1002	1002	835	422	746
Entry HV Adj Factor	0.980	0.979	0.971	0.983	0.979
Flow Entry, veh/h	907	238	422	110	223
Cap Entry, veh/h	982	982	810	415	731
V/C Ratio	0.923	0.242	0.521	0.266	0.306
Control Delay, s/veh	33.6	6.0	11.8	13.1	8.6
LOS	D	A	B	B	A
95th %tile Queue, veh	14	1	3	1	1

Intersection: 101: OR-213 & I-205 SB Ramps

Movement	EB	NB
Directions Served	L	L
Maximum Queue (ft)	136	157
Average Queue (ft)	38	47
95th Queue (ft)	109	125
Link Distance (ft)	227	219
Upstream Blk Time (%)		0
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 101: OR-213 & I-205 SB Ramps

Movement	EB	NB	SB
Directions Served	L	L	T
Maximum Queue (ft)	34	135	23
Average Queue (ft)	6	22	1
95th Queue (ft)	26	80	13
Link Distance (ft)	227	219	242
Upstream Blk Time (%)		0	
Queuing Penalty (veh)		0	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

CRASH SUMMARIES BY YEAR BY COLLISION TYPE

PACIFIC HY 99E at WB EX PAC HY 99E, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

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: 2015														
REAR-END	0	4	0	4	0	8	0	4	0	4	0	4	0	0
TURNING MOVEMENTS	0	2	1	3	0	2	0	2	1	3	0	3	0	0
YEAR 2015 TOTAL	**0**	**6**	**1**	**7**	**0**	**10**	**0**	**6**	**1**	**7**	**0**	**7**	**0**	**0**
YEAR: 2014														
REAR-END	0	2	0	2	0	3	0	2	0	1	1	2	0	0
TURNING MOVEMENTS	0	1	2	3	0	1	0	3	0	2	1	3	0	0
YEAR 2014 TOTAL	**0**	**3**	**2**	**5**	**0**	**4**	**0**	**5**	**0**	**3**	**2**	**5**	**0**	**0**
YEAR: 2013														
REAR-END	0	0	1	1	0	0	0	0	0	1	0	1	0	0
YEAR 2013 TOTAL	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**
YEAR: 2012														
PEDESTRIAN	0	1	0	1	0	1	0	0	1	1	0	1	0	0
REAR-END	0	2	2	4	0	2	0	2	2	2	2	4	0	0
TURNING MOVEMENTS	0	4	2	6	0	6	0	4	2	2	4	6	0	0
YEAR 2012 TOTAL	**0**	**7**	**4**	**11**	**0**	**9**	**0**	**6**	**5**	**5**	**6**	**11**	**0**	**0**
YEAR: 2011														
REAR-END	0	4	1	5	0	6	0	3	2	5	0	5	0	0

CRASH SUMMARIES BY YEAR BY COLLISION TYPE

PACIFIC HY 99E at WB EX PAC HY 99E, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

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
TURNING MOVEMENTS	0	0	1	1	0	0	0	0	1	1	0	1	0	0
YEAR 2011 TOTAL	**0**	**4**	**2**	**6**	**0**	**6**	**0**	**3**	**3**	**6**	**0**	**6**	**0**	**0**
FINAL TOTAL	**0**	**20**	**10**	**30**	**0**	**29**	**0**	**20**	**9**	**22**	**8**	**30**	**0**	**0**

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CITY OF OREGON CITY, CLACKAMAS COUNTY

PACIFIC HY 99E at WB EX PAC HY 99E, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 30

SER# / INVEST	SPEED	ALCHL	DRUGS	SCHL	WORK	DATE / DAY / TIME	CLASS / DIST FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF-CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES / EJECT	PED LOC	ERROR	ACT	EVENT	CAUSE
00210	N	N	N			01/18/2011	14	PACIFIC HY 99E	INTER	3-LEG	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT											07
NONE						TU		WB EX PAC HY 99E	N		TRF SIGNAL	N	WET	REAR		UNKN	N -S									000		00
						10A			06	1		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	M	UNK / UNK		026	000		07
															02	NONE 0	STOP											
																PRVTE	N -S									012		00
																PSNGR CAR		01	DRVR	NONE	45	M	OR-Y / OR<25		000	000		00
02676	N	N	N			07/27/2011	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NO RPT						WE		WB EX PAC HY 99E	N		TRF SIGNAL	N	DRY	REAR		PRVTE	N -S									000		00
						12P			06	1		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	28	M	OR-Y / OR<25		026	000		07
															02	NONE 0	STOP											
																PRVTE	N -S									011		00
																PSNGR CAR		01	DRVR	NONE	20	M	OR-Y / OR<25		000	000		00
															02	NONE 0	STOP											
																PRVTE	N -S									011		00
																PSNGR CAR		02	PSNG	INJC	55	M			000	000		00
03094	N	N	N			08/24/2011	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE						WE		WB EX PAC HY 99E	N		TRF SIGNAL	N	DRY	REAR		PRVTE	N -S									000		00
						9A			06	1		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	52	F	OR-Y / OR<25		026	000		07
															02	NONE 0	STOP											
																PRVTE	N -S									012		00
																PSNGR CAR		01	DRVR	INJC	38	F	OR-Y / OR<25		000	000		00
01210	Y	Y	N	N	N	03/31/2012	14	PACIFIC HY 99E	INTER	3-LEG	N	N	UNK	S-1STOP	01	NONE 0	STRGHT											01,07
STATE						SA		WB EX PAC HY 99E	N		L-TURN REF	N	WET	REAR		PRVTE	N -S									000		00
						1A			06	1		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	64	F	OR-Y / OR<25		026,047	000		01,07
															02	NONE 0	STOP											
																PRVTE	N -S									012		00
																PSNGR CAR		01	DRVR	INJC	48	F	OR-Y / OR<25		000	000		00
05299	N	N	N			12/30/2014	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										013,099	27,29
NO RPT						TU		WB EX PAC HY 99E	N		TRF SIGNAL	N	DRY	REAR		PRVTE	N -S									000		00
						6P			06	2		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	22	F	OR-Y / OR<25		016,026	038	099	27,29
															02	NONE 0	STOP											
																PRVTE	N -S									011	013	00
																PSNGR CAR		01	DRVR	INJC	26	M	OR-Y / OR<25		000	000		00
															03	NONE 0	STOP											
																PRVTE	N -S									022		00
																PSNGR CAR		01	DRVR	NONE	77	M	OR-Y / OR<25		000	000		00
01064	N	N	N			03/27/2015	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										013	29
NO RPT						FR		WB EX PAC HY 99E	N		TRF SIGNAL	N	DRY	REAR		UNKN	E -W									000		00
						11A			06	1		N	DAY	INJ		UNKNOWN		01	DRVR	NONE	00	Unk	UNK		026	000		29

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CITY OF OREGON CITY, CLACKAMAS COUNTY

PACIFIC HY 99E at WB EX PAC HY 99E, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 30

SER# / INVEST	S P E D	A L C	R U G	S C H	W O R K	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	TYPE	INJ / SVRTY	A G E	S E X	LICNS / RES / UNK	PED LOC	ERROR	ACT	EVENT	CAUSE
															02	NONE 0 PRVTE PSNGR CAR	STOP E -W	01	DRVR	NONE	34	M	OTH-Y N-RES		000	011 000	013	00 00
															03	NONE 0 PRVTE PSNGR CAR	STOP E -W	01	DRVR	INJC	58	F	OR-Y OR<25		000	022 000	013	00 00
															04	NONE 0 PRVTE PSNGR CAR	STOP E -W	01	DRVR	INJC	43	M	UNK UNK		000	022 000		00 00
															04	NONE 0 PRVTE PSNGR CAR	STOP E -W	02	PSNG	INJC	44	F			000	022 000		00 00
															04	NONE 0 PRVTE PSNGR CAR	STOP E -W	03	PSNG	INJC	15	M			000	022 000		00 00
02614 NO RPT	N	N	N			06/30/2015 TU 11A	14	PACIFIC HY 99E WB EX PAC HY 99E	INTER N 06	3-LEG 0	N TRF SIGNAL	N N N	CLR DRY DAY	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT N -S	01	DRVR	NONE	54	M	OR-Y UNK		026	000 000	013	29 00 29
															02	NONE 0 PRVTE PSNGR CAR	STOP N -S	01	DRVR	INJB	26	M	OTH-Y N-RES		000	011 000	013	00 00
															03	NONE 0 UNKN PSNGR CAR	STOP N -S	01	DRVR	NONE	56	M	OR-Y OR<25		000	022 000		00 00
04289 NONE	N	N	N			11/13/2011 SU 11A	14	PACIFIC HY 99E WB EX PAC HY 99E	INTER E 06	3-LEG 0	N TRF SIGNAL	N N N	RAIN WET DAY	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT E -W	01	DRVR	NONE	00	F	OR-Y OR<25		026	000 000		07 00 07
															02	NONE 0 PRVTE PSNGR CAR	STOP E -W	01	DRVR	INJC	17	F	OR-Y OR<25		000	011 000		00 00
01880 CITY	N	N	N			05/22/2012 TU 11A	11	PACIFIC HY 99E WB EX PAC HY 99E	INTER E 06	3-LEG 1	N TRF SIGNAL	N N N	RAIN WET DAY	PED PED INJ	01	NONE 0 PRVTE PSNGR CAR	TURN-R E -N	01	DRVR	NONE	47	M	OR-Y OR<25		029	016 000	083 083	02,19 00 02
																	- STRGHT N S	01	CONV	INJB	51	M		I XWLK	000	035		00,19
03460 NONE	N	N	N			09/17/2012 MO	11	PACIFIC HY 99E WB EX PAC HY 99E	INTER E	3-LEG	N TRF SIGNAL	N N	CLR DRY	S-1STOP REAR	01	NONE 0 PRVTE	STRGHT E -W									000			07 00

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CITY OF OREGON CITY, CLACKAMAS COUNTY

PACIFIC HY 99E at WB EX PAC HY 99E, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 30

SER# / INVEST	SPEED	ALCHL	DRUGS	SCHL	WORK	DATE / DAY / TIME	CLASS / DIST FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
						5P			06	1		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	M			UNK OR<25		026	000		07
															02	NONE 0	STOP													
																PRVTE	E -W												011		00
																PSNGR CAR		01	DRVR	NONE	38	F			OR-Y OR<25		000	000		00
04205		N	N	N		11/07/2012	11	PACIFIC HY 99E	INTER	3-LEG	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT														07
NONE						WE		WB EX PAC HY 99E	E		TRF SIGNAL	N	WET	REAR		PRVTE	E -W												000		00
						7A			06	0		N	DAWN	PDO		PSNGR CAR		01	DRVR	NONE	20	M			OR-Y OR<25		026	000		07
															02	NONE 0	STOP													
																PRVTE	E -W												011		00
																PSNGR CAR		01	DRVR	NONE	52	M			OR-Y OR<25		000	000		00
02304		N	N	N		06/28/2013	11	PACIFIC HY 99E	INTER	3-LEG	N	N	UNK	S-1STOP	01	NONE 0	STRGHT														27,07
NONE						FR		WB EX PAC HY 99E	E		TRF SIGNAL	N	UNK	REAR		PRVTE	E -W												000		00
						3P			06	1		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	43	M			OR-Y OR>25		016,026	000		27,07
															02	NONE 0	STOP													
																PRVTE	E -W												012		00
																PSNGR CAR		01	DRVR	NONE	00	M			UNK OR<25		000	000		00
03151		N	N	N		08/15/2014	11	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT													013	29
NONE						FR		WB EX PAC HY 99E	E		TRF SIGNAL	N	DRY	REAR		PRVTE	E -W												000		00
						3P			06	1		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	46	F			OTH-Y N-RES		026	000		29
															02	NONE 0	STOP													
																PRVTE	E -W												011	013	00
																PSNGR CAR		01	DRVR	NONE	46	F			OR-Y OR<25		000	000		00
															02	NONE 0	STOP													
																PRVTE	E -W												011	013	00
																PSNGR CAR		02	PSNG	INJC	24	F					000	000		00
															03	NONE 0	STOP													
																UNKN	E -W												022		00
																UNKNOWN		01	DRVR	NONE	00	Unk			UNK		000	000		00
00830		N	N	N		03/06/2015	11	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT														29
NONE						FR		WB EX PAC HY 99E	E		TRF SIGNAL	N	DRY	REAR		PRVTE	E -W												000		00
						3P			06	2		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	49	F			OR-Y OR<25		026	000		29
															02	NONE 0	STOP													
																PRVTE	E -W												011		00
																PSNGR CAR		01	DRVR	INJC	36	M			OR-Y OR<25		000	000		00
															02	NONE 0	STOP													
																PRVTE	E -W												011		00
																PSNGR CAR		02	PSNG	INJC	32	F					000	000		00
02481		N	N	N		06/22/2015	11	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT														29

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CITY OF OREGON CITY, CLACKAMAS COUNTY

PACIFIC HY 99E at WB EX PAC HY 99E, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 30

SER# / INVEST	S P E D	A L C	R S L	W C H	O R K	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
NONE						MO 3P		WB EX PAC HY 99E	E 06	 0	TRF SIGNAL	N N	DRY DAY	REAR INJ		PRVTE PSNGR CAR	E -W	01	DRVR	NONE	41	M	OR-Y OR<25		026	000 000	00 29
															02	NONE 0 PRVTE PSNGR CAR	STOP E -W	01	DRVR	INJC	68	M	OR-Y OR<25		000	011 000	00 00
02606 NONE	N	N	N			07/18/2012 WE 2P	14	PACIFIC HY 99E WB EX PAC HY 99E	INTER S 06	3-LEG 0	N TRF SIGNAL	N N	CLR DRY DAY	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT S -N	01	DRVR	NONE	17	M	OR-Y OR<25		026	000 000	07 07
															02	NONE 0 PRVTE PSNGR CAR	STOP S -N	01	DRVR	INJC	43	F	OR-Y OR<25		000	011 000	00 00
01678 NONE	N	N	N			05/07/2012 MO 8P	11	PACIFIC HY 99E WB EX PAC HY 99E	INTER SW 06	3-LEG 1	N TRF SIGNAL	N N	CLR DRY DLIT	BIKE TURN INJ	01	NONE 0 PRVTE PSNGR CAR	TURN-R E -N	01	DRVR	NONE	41	M	OR-Y OR<25		000	000 000	18,19,04 00 00
																	- STRGHT S N	01	BIKE	INJB	20	F		I	XWLK 020,060	035	18,04
00891 NONE	N	N	N			03/15/2011 TU 1P	14	PACIFIC HY 99E WB EX PAC HY 99E	INTER CN 03	3-LEG 1	N TRF SIGNAL	N N	RAIN WET DAY	ANGL-OTH TURN PDO	01	NONE 0 PRVTE PSNGR CAR	STRGHT N -S	01	DRVR	NONE	28	M	OR-Y OR<25		020	000 000	04 04
															02	NONE 0 PRVTE PSNGR CAR	TURN-L E -S	01	DRVR	NONE	21	F	OR-Y OR<25		000	000 000	00 00
															02	NONE 0 PRVTE PSNGR CAR	TURN-L E -S	02	PSNG	NO<5	01	M			000	000 000	00 00
00905 STATE	N	N	N	N	N	03/14/2011 MO 4P	14	PACIFIC HY 99E WB EX PAC HY 99E	INTER CN 04	3-LEG 1	N TRF SIGNAL	N N	CLD DRY DAY	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT S -N	01	DRVR	INJC	54	F	SUSP OR<25		026	000 000	07 07
															02	NONE 0 PRVTE PSNGR CAR	STOP S -N	01	DRVR	INJC	58	F	OR-Y OR<25		000	011 000	00 00
															02	NONE 0 PRVTE PSNGR CAR	STOP S -N	02	PSNG	INJC	33	M			000	011 000	00 00
01007 NONE	N	N	N			03/17/2012 SA 1P	14	PACIFIC HY 99E WB EX PAC HY 99E	INTER CN 01	3-LEG 1	N TRF SIGNAL	N N	RAIN WET DAY	ANGL-OTH TURN INJ	01	NONE 0 PRVTE PSNGR CAR	TURN-L E -S	01	DRVR	NONE	55	F	OR-Y OR<25		097	000 000	04 00

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URBAN NON-SYSTEM CRASH LISTING

CITY OF OREGON CITY, CLACKAMAS COUNTY

PACIFIC HY 99E at WB EX PAC HY 99E, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 30

SER# INVEST	S P E A U C O / D R S W / E L G H R / D C S L K	DATE DAY TIME	CLASS DIST FROM	CITY STREET FIRST STREET SECOND STREET	RD CHAR DIRECT LOCTN	INT-TYPE (MEDIAN) LEGS (#LANES)	INT-REL TRAF- CONTL	OFFRD RNDBT DRVWY	WTHR SURF LIGHT	CRASH COLL SVRTY	V# SPCL USE TRLR QTY OWNER TYPE	MOVE FROM TO	P# PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
											01 NONE 0	TURN-L									
											PRVTE	E -S								000	00
											PSNGR CAR		02 PSNG	INJC	43	F			000	000	00
											02 NONE 0	STRGHT									
											PRVTE	N -S								000	00
											PSNGR CAR		01 DRVR	NONE	52	M	OR-Y		000	000	00
																	OR<25				
01096	N N N	03/23/2012	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	ANGL-OTH	01 NONE 0	STRGHT									02
NONE		FR		WB EX PAC HY 99E	CN		TRF SIGNAL	N	DRY	TURN	PRVTE	S -N								000	00
		1P			02	1		N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	45	M	OR-Y		000	000	00
																	OR<25				
											02 NONE 0	TURN-R									
											PRVTE	E -N								015	00
											PSNGR CAR		01 DRVR	NONE	91	M	OR-Y		028	000	02
																	OR<25				
01120	N N N N N	03/24/2012	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLD	O-1 L-TURN	01 NONE 0	STRGHT									04
STATE		SA		WB EX PAC HY 99E	CN		L-GRN-SIG	N	DRY	TURN	PRVTE	S -N								000	00
		5A			04	1		N	DLIT	INJ	PSNGR CAR		01 DRVR	INJC	59	M	OR-Y		000	000	00
																	OR<25				
											02 NONE 0	TURN-L									
											PRVTE	N -E								000	00
											PSNGR CAR		01 DRVR	INJC	44	F	OR-Y		020	000	04
																	OR<25				
03764	N N N	10/10/2012	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	O-1 L-TURN	01 NONE 0	STRGHT									04
CITY		WE		WB EX PAC HY 99E	CN		TRF SIGNAL	N	DRY	TURN	PRVTE	S -N								000	00
		4A			04	1		N	DLIT	INJ	PSNGR CAR		01 DRVR	NONE	52	M	OR-Y		097	000	00
																	OR<25				
											01 NONE 0	STRGHT									
											PRVTE	S -N								000	00
											PSNGR CAR		02 PSNG	INJC	35	M			000	000	00
											02 NONE 0	TURN-L									
											PRVTE	N -E								000	00
											PSNGR CAR		01 DRVR	INJC	49	M	OR-Y		097	000	00
																	OR<25				
04671	N N N	12/04/2012	14	PACIFIC HY 99E	INTER	3-LEG	N	N	RAIN	ANGL-OTH	01 NONE 0	TURN-R									02
NONE		TU		WB EX PAC HY 99E	CN		TRF SIGNAL	N	WET	TURN	PRVTE	E -N								000	00
		5P			02	1		N	DLIT	PDO	PSNGR CAR		01 DRVR	NONE	67	M	OR-Y		028	000	02
																	OR<25				
											02 NONE 0	STRGHT									
											PRVTE	S -N								000	00
											PSNGR CAR		01 DRVR	NONE	42	F	OR-Y		000	000	00
																	OR<25				
01191	N N N	03/27/2014	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	ANGL-OTH	01 NONE 0	STRGHT									04
STATE		TH		WB EX PAC HY 99E	CN		TRF SIGNAL	N	DRY	TURN	PRVTE	N -S								000	00
		3P			03	1		N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	23	M	OTH-Y		020	000	04
																	N-RES				
											02 NONE 0	TURN-L									
											PRVTE	E -S								000	00
											PSNGR CAR		01 DRVR	NONE	66	F	OR-Y		000	000	00

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CITY OF OREGON CITY, CLACKAMAS COUNTY

PACIFIC HY 99E at WB EX PAC HY 99E, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 30

SER# / INVEST	S P E D	A L C	R S L	W C H	O R K	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
																							OR<25					
01560	N	N	N	N	N	04/23/2014	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLD	ANGL-OTH	01	NONE 0	TURN-L											04
NONE						WE		WB EX PAC HY 99E	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	E -S									000		00
						11A			01	2		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	21	F	OR-Y		000	000		00
																							OR<25					
															02	NONE 0	STRGHT											
																PRVTE	N -S									000		00
																PSNGR CAR		01	DRVR	NONE	52	F	OR-Y		020	000		04
																							OR<25					
															03	NONE 0	TURN-L											
																PRVTE	E -S									000		00
																PSNGR CAR		01	DRVR	NONE	30	F	OR-Y		000	000		00
																							OR<25					
04035	N	N	N			10/10/2014	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT										013	04
NO RPT						FR		WB EX PAC HY 99E	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	N -S									000		00
						9P			03	1		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	19	M	OR-Y		020	000		04
																							OR<25					
															02	NONE 0	TURN-L											
																PRVTE	E -S									000	031	00
																PSNGR CAR		01	DRVR	INJC	16	F	OR-Y		000	000		00
																							OR<25					
															03	NONE 0	TURN-L											
																PRVTE	E -S									022		00
																PSNGR CAR		01	DRVR	NONE	35	F	OR-Y		000	000		00
																							OR<25					
02482	N	N	N	N	N	06/22/2015	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											04
STATE						MO		WB EX PAC HY 99E	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	S -N									000		00
						7A			02	1		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	45	F	OR-Y		020	000		04
																							OR<25					
															02	NONE 0	TURN-L											
																PRVTE	E -S									000		00
																PSNGR CAR		01	DRVR	NONE	56	M	OR-Y		000	000		00
																							OR<25					
															02	NONE 0	TURN-L											
																PRVTE	E -S									000		00
																PSNGR CAR		02	PSNG	INJC	42	F			000	000		00
04797	N	N	N			11/14/2015	14	PACIFIC HY 99E	INTER	3-LEG	N	N	RAIN	ANGL-OTH	01	NONE 0	STRGHT											04
NO RPT						SA		WB EX PAC HY 99E	CN		TRF SIGNAL	N	WET	TURN		PRVTE	S -N									000		00
						2P			02	1		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	58	M	OTH-Y		000,097	000		00
																							N-RES					
															02	NONE 0	TURN-L											
																PRVTE	E -S									000		00
																PSNGR CAR		01	DRVR	NONE	82	M	OR-Y		000	000		00
																							OR>25					
															02	NONE 0	TURN-L											
																PRVTE	E -S									000		00
																PSNGR CAR		02	PSNG	INJB	82	F			000,097	000		00
00802	N	N	N	N	N	03/03/2015	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											04
STATE						TU		WB EX PAC HY 99E	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	N -S									000		00

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TRANSPORTATION DATA SECTION - CRASH ANAYLYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING

CITY OF OREGON CITY, CLACKAMAS COUNTY

PACIFIC HY 99E at WB EX PAC HY 99E, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 30

```
        S   D
        P   R S W                                                            INT-TYPE                                      SPCL USE
        E A U C O DATE      CLASS     CITY STREET          RD CHAR    (MEDIAN)  INT-REL     OFFRD  WTHR   CRASH        TRLR QTY      MOVE                         A  S
SER#    E L G H R DAY       DIST      FIRST STREET         DIRECT       LEGS    TRAF-       RNDBT  SURF   COLL         OWNER         FROM        PRTC   INJ       G  E LICNS  PED
INVEST  D C S L K TIME      FROM      SECOND STREET        LOCTN      (#LANES)  CONTL       DRVWY  LIGHT  SVRTY     V# TYPE          TO       P# TYPE   SVRTY     E  X RES    LOC     ERROR       ACT EVENT        CAUSE
                  12P                                  01         0                     N      DAY    PDO          PSNGR CAR              01 DRVR   NONE   25  F  OR-Y           020         000              04
                                                                                                                                                                   OR<25
                                                                                                                02 NONE   0      TURN-L
                                                                                                                   PRVTE         E -S                                                            000              00
                                                                                                                   PSNGR CAR              01 DRVR   NONE   77  F  OR-Y           000         000              00
                                                                                                                                                                   OR<25
```

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CRASH SUMMARIES BY YEAR BY COLLISION TYPE

PACIFIC HY 99E at NB EXTO I-205 WB, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

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: 2015														
REAR-END	0	2	2	4	0	2	0	2	1	3	1	4	0	0
TURNING MOVEMENTS	0	2	0	2	0	3	0	2	0	0	2	2	0	0
YEAR 2015 TOTAL	**0**	**4**	**2**	**6**	**0**	**5**	**0**	**4**	**1**	**3**	**3**	**6**	**0**	**0**
YEAR: 2014														
REAR-END	0	1	0	1	0	2	0	0	1	0	1	1	0	0
TURNING MOVEMENTS	0	0	2	2	0	0	0	2	0	0	2	2	0	0
YEAR 2014 TOTAL	**0**	**1**	**2**	**3**	**0**	**2**	**0**	**2**	**1**	**0**	**3**	**3**	**0**	**0**
YEAR: 2013														
FIXED / OTHER OBJECT	0	0	1	1	0	0	0	1	0	0	1	1	0	0
REAR-END	0	0	1	1	0	0	0	0	1	0	1	1	0	0
TURNING MOVEMENTS	0	1	0	1	0	1	0	1	0	0	1	1	0	0
YEAR 2013 TOTAL	**0**	**1**	**2**	**3**	**0**	**1**	**0**	**2**	**1**	**0**	**3**	**3**	**0**	**0**
YEAR: 2012														
REAR-END	0	0	1	1	0	0	0	0	1	1	0	1	0	0
YEAR 2012 TOTAL	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**1**	**0**	**0**
YEAR: 2011														
REAR-END	0	0	2	2	0	0	0	1	1	1	1	2	0	0

CRASH SUMMARIES BY YEAR BY COLLISION TYPE

PACIFIC HY 99E at NB EXTO I-205 WB, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

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
TURNING MOVEMENTS	0	1	1	2	0	1	0	1	1	1	1	2	0	0
YEAR 2011 TOTAL	**0**	**1**	**3**	**4**	**0**	**1**	**0**	**2**	**2**	**2**	**2**	**4**	**0**	**0**
FINAL TOTAL	**0**	**7**	**10**	**17**	**0**	**9**	**0**	**10**	**6**	**6**	**11**	**17**	**0**	**0**

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CITY OF OREGON CITY, CLACKAMAS COUNTY

PACIFIC HY 99E at NB EXTO I-205 WB, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 17

SER# / INVEST	S P E D	A L C	R U G S	S C H L	W O R K	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
02247	N	N	N			06/22/2012	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLD	S-1STOP	01	NONE 0	STRGHT										07
NONE						FR		NB EXTO I-205 WB	N		TRF SIGNAL	N	WET	REAR		PRVTE	N -S									000	00
						3P			06	1		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	55	M	OR-Y OR<25		026	000		07
															02	NONE 0	STOP										
																PRVTE	N -S									012	00
																PSNGR CAR		01	DRVR	NONE	55	M	OR-Y OR<25		000	000	00
00404	N	N	N			02/03/2013	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	OTH OBJ	01	NONE 0	TURN-R										044	08
NO RPT						SU		NB EXTO I-205 WB	N		TRF SIGNAL	N	DRY	FIX		PRVTE	E -N									000	044	00
						2A			05	1		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	56	F	OR-Y OR<25		001	000		08
01897	N	N	N			05/17/2014	14	PACIFIC HY 99E	INTER	3-LEG	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT											29
NO RPT						SA		NB EXTO I-205 WB	N		L-GRN-SIG	N	WET	REAR		PRVTE	N -S									000	00
						10P			06	0		N	DARK	INJ		PSNGR CAR		01	DRVR	NONE	37	M	OR-Y OR<25		026	000		29
															02	NONE 0	STOP										
																PRVTE	N -S									012	00
																PSNGR CAR		01	DRVR	INJC	34	F	OR-Y OR<25		000	000	00
															02	NONE 0	STOP										
																PRVTE	N -S									012	00
																PSNGR CAR		02	PSNG	INJC	47	F			000	000	00
01559	N	N	N			04/28/2015	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
NONE						TU		NB EXTO I-205 WB	N		TRF SIGNAL	N	DRY	REAR		PRVTE	N -S									000	00
						10A			06	1		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	64	M	OR-Y OR<25		026	000		29
															02	NONE 0	STOP										
																PRVTE	N -S									011	00
																PSNGR CAR		01	DRVR	INJC	65	F	OR-Y OR<25		000	000	00
04365	N	N	N			09/20/2015	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
NONE						SU		NB EXTO I-205 WB	N		TRF SIGNAL	N	DRY	REAR		UNKN	N -S									000	00
						UNK			06	1		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	00	M	UNK UNK		026	000		29
															02	NONE 0	STOP										
																PRVTE	N -S									012	00
																PSNGR CAR		01	DRVR	NONE	34	M	OR-Y OR<25		000	000	00
															02	NONE 0	STOP										
																PRVTE	N -S									012	00
																PSNGR CAR		02	PSNG	NO<5	01	M			000	000	00
															02	NONE 0	STOP										
																PRVTE	N -S									012	00
																PSNGR CAR		03	PSNG	INJC	29	F			000	000	00
05481	N	N	N			12/18/2015	14	PACIFIC HY 99E	INTER	3-LEG	N	N	UNK	S-1STOP	01	NONE 0	STRGHT											29
NONE						FR		NB EXTO I-205 WB	N		TRF SIGNAL	N	UNK	REAR		UNKN	N -S									000	00
						6A			06	1		N	DAWN	PDO		PSNGR CAR		01	DRVR	NONE	00	F	UNK		026	000		29

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CITY OF OREGON CITY, CLACKAMAS COUNTY

PACIFIC HY 99E at NB EXTO I-205 WB, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 17

SER# / INVEST	S P E D	A L C	R S L	W C H	O R K	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ / SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
																							UNK					
															02	NONE 0	STOP										
																PRVTE	N -S									012	00
																PSNGR CAR		01	DRVR	NONE	72	M	OR-Y		000	000	00
																							OR<25				
01852	N	N	N			05/27/2011	19	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	TURN-R										07
NONE						FR		NB EXTO I-205 WB	SE		YIELD	N	DRY	REAR		PRVTE	S -E									000	00
						7A			09	1		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	48	F	OR-Y		026	000	07
																							OR<25				
															02	NONE 0	STOP										
																PRVTE	S -E									011	00
																PSNGR CAR		01	DRVR	NONE	31	M	OR-Y		000	000	00
																							OR<25				
04141	N	N	N			11/04/2011	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLD	S-1STOP	01	NONE 0	STRGHT										07
NO RPT						FR		NB EXTO I-205 WB	S		TRF SIGNAL	N	WET	REAR		PRVTE	S -N									000	00
						9P			06	1		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	90	F	OR-Y		026	000	07
																							OR<25				
															02	NONE 0	STOP										
																PRVTE	S -N									011	00
																PSNGR CAR		01	DRVR	NONE	24	M	OR-Y		000	000	00
																							OR<25				
05083	Y	N	N	N	N	12/30/2013	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLD	S-1STOP	01	NONE 0	STRGHT										07,01
STATE						MO		NB EXTO I-205 WB	S		TRF SIGNAL	N	WET	REAR		PRVTE	S -N									000	00
						7P			06	0		N	DARK	PDO		PSNGR CAR		01	DRVR	NONE	51	F	OR-Y		043,026,047	000	07,01
																							OR<25				
															02	NONE 0	STOP										
																PRVTE	S -N									011	00
																PSNGR CAR		01	DRVR	NONE	50	M	OR-Y		000	000	00
																							OR<25				
00848	N	N	N			03/10/2011	14	PACIFIC HY 99E	INTER	3-LEG	N	N	RAIN	O-1 L-TURN	01	NONE 0	STRGHT										02
NONE						TH		NB EXTO I-205 WB	CN		TRF SIGNAL	N	WET	TURN		PRVTE	S -N									000	00
						8P			04	1		N	DUSK	PDO		PSNGR CAR		01	DRVR	NONE	00	M	UNK		000	000	00
																							OR<25				
															02	NONE 0	TURN-L										
																PRVTE	N -E									000	00
																PSNGR CAR		01	DRVR	NONE	57	F	OR-Y		028,004	000	02
																							OR<25				
03084	N	N	N	N	N	08/23/2011	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLD	O-1 L-TURN	01	NONE 0	TURN-L										04
STATE						TU		NB EXTO I-205 WB	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	N -E									000	00
						8A			04	1		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	54	F	OR-Y		000	000	00
																							OR<25				
															02	NONE 0	STRGHT										
																PRVTE	S -N									000	00
																PSNGR CAR		01	DRVR	INJA	52	F	OR-Y		020	028	04
																							OR<25				
03065	N	N	N	N	N	08/19/2013	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	O-1 L-TURN	01	NONE 0	STRGHT										27,04
STATE						MO		NB EXTO I-205 WB	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	S -N									000	00
						9P			04	1		N	DLIT	INJ		PSNGR CAR		01	DRVR	INJB	19	F	OR-Y		016,020	038	27,04
																							OR<25				
															02	NONE 0	TURN-L										
																PRVTE	N -E									000	00

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CITY OF OREGON CITY, CLACKAMAS COUNTY

PACIFIC HY 99E at NB EXTO I-205 WB, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 17

SER# / INVEST	SPEED	ALCHL	DRUGS	SCHL	WORK	DATE / DAY / TIME	CLASS / DIST FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF-CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES / EJECT	PED LOC	ERROR	ACT EVENT	CAUSE
																PSNGR CAR		01	DRVR	NONE	26	M	OR-Y OR<25		000	000	00
00203	N	N	N	N	N	01/16/2014	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLD	O-1 L-TURN	01	NONE 0	TURN-L										04
CITY						TH		NB EXTO I-205 WB	CN		L-GRN-SIG	N	DRY	TURN		UNKN	N -E									000	00
						11P			04	1		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	00	M	UNK UNK		003	000	04
															02	NONE 0	STRGHT										
																PRVTE	S -N									000	00
																PSNGR CAR		01	DRVR	NONE	45	M	OR-Y OR<25		000	000	00
04525	N	N	N	N	N	11/09/2014	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLD	O-1 L-TURN	01	NONE 0	TURN-L										04
STATE						SU		NB EXTO I-205 WB	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	N -E									000	00
						7A			04	2		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	28	F	OTH-Y N-RES		003	000	04
															02	NONE 0	STRGHT										
																PRVTE	S -N									000	00
																PSNGR CAR		01	DRVR	NONE	31	M	OR-Y OR<25		000	000	00
02021	N	N	N	N	N	05/28/2015	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	O-1 L-TURN	01	NONE 0	STRGHT										02
NONE						TH		NB EXTO I-205 WB	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	S -N									000	00
						9P			04	2		N	DLIT	INJ		PSNGR CAR		01	DRVR	INJB	29	M	OR-Y OR<25		000	000	00
															02	NONE 0	TURN-L										
																PRVTE	N -E									000	00
																PSNGR CAR		01	DRVR	NONE	19	F	OR-Y OR>25		028,004	000	02
04587	N	N	N			11/03/2015	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	O-1 L-TURN	01	NONE 0	STRGHT										27,04
NO RPT						TU		NB EXTO I-205 WB	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	S -N									000	00
						9P			04	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	INJC	25	F	OR-Y OR<25		016,020	000	27,04
															01	NONE 0	STRGHT										
																PRVTE	S -N									000	00
																PSNGR CAR		02	PSNG	INJC	05	F			000	000	00
															02	NONE 0	TURN-L										
																PRVTE	N -E									000	00
																PSNGR CAR		01	DRVR	NONE	57	M	OR-Y OR<25		000	000	00
05429	N	N	N			12/17/2015	14	PACIFIC HY 99E	INTER	3-LEG	N	N	RAIN	S-1STOP	01	NONE 0	TURN-L										29
NONE						TH		NB EXTO I-205 WB	CN		TRF SIGNAL	N	WET	REAR		PRVTE	N -E									000	00
						1P			01	1		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	25	F	OR-Y OR<25		026	000	29
															02	NONE 0	STOP										
																PRVTE	N -E									013	00
																PSNGR CAR		01	DRVR	NONE	64	M	OR-Y OR<25		000	000	00

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CRASH SUMMARIES BY YEAR BY COLLISION TYPE

PACIFIC HY 99E at EB EX PAC HY 99E, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

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: 2015														
REAR-END	0	1	0	1	0	1	0	0	1	0	1	1	0	0
TURNING MOVEMENTS	0	2	0	2	0	3	0	2	0	1	1	2	0	0
YEAR 2015 TOTAL	**0**	**3**	**0**	**3**	**0**	**4**	**0**	**2**	**1**	**1**	**2**	**3**	**0**	**0**
YEAR: 2014														
REAR-END	0	1	3	4	0	1	0	4	0	3	1	4	0	0
YEAR 2014 TOTAL	**0**	**1**	**3**	**4**	**0**	**1**	**0**	**4**	**0**	**3**	**1**	**4**	**0**	**0**
YEAR: 2013														
REAR-END	0	2	1	3	0	2	0	1	1	0	3	3	0	0
TURNING MOVEMENTS	0	0	1	1	0	0	0	1	0	0	1	1	0	0
YEAR 2013 TOTAL	**0**	**2**	**2**	**4**	**0**	**2**	**0**	**2**	**1**	**0**	**4**	**4**	**0**	**0**
YEAR: 2012														
REAR-END	0	0	5	5	0	0	0	4	1	5	0	5	0	0
TURNING MOVEMENTS	0	2	0	2	0	2	0	1	1	1	1	2	0	0
YEAR 2012 TOTAL	**0**	**2**	**5**	**7**	**0**	**2**	**0**	**5**	**2**	**6**	**1**	**7**	**0**	**0**
YEAR: 2011														
REAR-END	0	3	1	4	0	4	0	2	2	3	1	4	0	0
TURNING MOVEMENTS	0	0	1	1	0	0	0	0	1	0	1	1	0	0
YEAR 2011 TOTAL	**0**	**3**	**2**	**5**	**0**	**4**	**0**	**2**	**3**	**3**	**2**	**5**	**0**	**0**

PACIFIC HY 99E at EB EX PAC HY 99E, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

FINAL TOTAL	**0**	**11**	**12**	**23**	**0**	**13**	**0**	**15**	**7**	**13**	**10**	**23**	**0**	**0**

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OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANAYLYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CRASH LISTING

CITY OF OREGON CITY, CLACKAMAS COUNTY

PACIFIC HY 99E at EB EX PAC HY 99E, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 23

SER# / INVEST	SPEED	ALCHL	DRUGS	SCHL	WORK	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
04876	N	N	N			11/18/2015	14	PACIFIC HY 99E	INTER	3-LEG	N	N	UNK	S-1STOP	01	NONE 0	STRGHT										29
NONE						WE		EB EX PAC HY 99E	N		TRF SIGNAL	N	WET	REAR		PRVTE	N -S									000	00
						8A			06	1		N	DAWN	INJ		PSNGR CAR		01	DRVR	NONE	19	M	OR-Y OR<25		026	000	29
															02	NONE 0	STOP										
																PRVTE	N -S									011	00
																PSNGR CAR		01	DRVR	INJC	34	M	OR-Y OR<25		000	000	00
04362	N	N	N			11/17/2011	19	PACIFIC HY 99E	INTER	3-LEG	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT										07
NONE						TH		EB EX PAC HY 99E	NE		YIELD	N	WET	REAR		PRVTE	SE-NW									000	00
						8A			09	1		N	DAWN	INJ		PSNGR CAR		01	DRVR	NONE	19	M	UNK OR<25		026	000	07
															02	NONE 0	STOP										
																PRVTE	SE-NW									011	00
																PSNGR CAR		01	DRVR	INJA	31	F	OR-Y OR<25		000	000	00
01689	N	N	N			05/08/2012	14	PACIFIC HY 99E	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										07
NONE						TU		EB EX PAC HY 99E	NE		YIELD	N	DRY	REAR		PRVTE	SE-NW									000	00
						12P			09	1		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	77	M	OR-Y OR<25		026	000	07
															02	NONE 0	STOP										
																PRVTE	SE-NW									011	00
																PSNGR CAR		01	DRVR	NONE	62	M	OR-Y OR<25		000	000	00
01854	N	N	N	N	N	05/19/2012	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										27,07
STATE						SA		EB EX PAC HY 99E	NE		YIELD	N	DRY	REAR		PRVTE	SE-NW									000	00
						7P			09	1		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	57	F	OR-Y OR<25		016,026	000	27,07
															02	NONE 0	STOP										
																PRVTE	SE-NW									011	00
																PSNGR CAR		01	DRVR	NONE	24	F	OR-Y OR>25		000	000	00
01924	N	N	N			05/24/2012	11	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										07
NONE						TH		EB EX PAC HY 99E	NE		YIELD	N	DRY	REAR		PRVTE	SE-NW									000	00
						9A			09	1		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	F	OR-Y OR<25		026	000	07
															02	NONE 0	STOP										
																PRVTE	SE-NW									011	00
																PSNGR CAR		01	DRVR	NONE	64	M	OR-Y OR<25		000	000	00
02321	N	N	N			06/28/2012	11	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										07
NONE						TH		EB EX PAC HY 99E	NE		YIELD	N	DRY	REAR		PRVTE	SE-NW									000	00
						12P			09	1		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	24	M	OR-Y OR<25		026	000	07
															02	NONE 0	STOP										
																PRVTE	SE-NW									011	00
																PSNGR CAR		01	DRVR	NONE	71	M	OR-Y OR<25		000	000	00
03957	N	N	N			10/22/2012	11	PACIFIC HY 99E	INTER	3-LEG	N	N	UNK	S-1STOP	01	NONE 0	STRGHT										07
NONE						MO		EB EX PAC HY 99E	NE		YIELD	N	WET	REAR		PRVTE	SE-NW									000	00

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CITY OF OREGON CITY, CLACKAMAS COUNTY

PACIFIC HY 99E at EB EX PAC HY 99E, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 23

SER# / INVEST	S P E D	A L C	R U G S	S C H L	W O R K	DATE / DAY / TIME	CLASS / DIST FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
						2P			09	1		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	F	OTH-Y N-RES		026	000	07
															02	NONE 0 PRVTE PSNGR CAR	STOP SE-NW	01	DRVR	NONE	39	F	OR-Y OR<25		000	011 000	00 00
01366 NONE	N	N	N			04/22/2013 MO 7P	11	EB EX PAC HY 99E PACIFIC HY 99E	INTER NE 09	3-LEG 1	N YIELD	N N N	CLR DRY DUSK	S-1STOP REAR PDO	01	NONE 0 PRVTE PSNGR CAR	STRGHT SE-NW	01	DRVR	NONE	42	M	OR-Y OR<25		026	000	07
															02	NONE 0 PRVTE PSNGR CAR	STOP SE-NW	01	DRVR	NONE	20	M	OR-Y OR<25		000	011 000	00 00
82215 NONE	N	N	N			11/12/2013 TU 8A	11	PACIFIC HY 99E EB EX PAC HY 99E	INTER NE 09	3-LEG 1	N YIELD	N N N	RAIN WET DAWN	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT SE-NW	01	DRVR	NONE	00	M	UNK UNK		026	000	07
															02	NONE 0 PRVTE PSNGR CAR	STOP SE-NW	01	DRVR	INJC	65	F	OR-Y OR<25		000	011 000	00 00
00474 CITY	N	N	N	N	N	02/04/2014 TU 10A	14	PACIFIC HY 99E EB EX PAC HY 99E	INTER NE 09	3-LEG 1	N TRF SIGNAL	N N N	CLD DRY DAY	S-1STOP REAR PDO	01	NONE 0 PRVTE PSNGR CAR	STRGHT SE-NW	01	DRVR	NONE	35	M	OR-Y OR<25		026	038	27,07
															02	NONE 0 PRVTE PSNGR CAR	STOP SE-NW	01	DRVR	NONE	52	F	OR-Y OR<25		000	011 000	00 00
00923 NONE	N	N	N			03/04/2014 TU 8A	14	PACIFIC HY 99E EB EX PAC HY 99E	INTER NE 09	3-LEG 1	N YIELD	N N N	CLR DRY DLIT	S-1STOP REAR PDO	01	NONE 0 PRVTE PSNGR CAR	STRGHT SE-NW	01	DRVR	NONE	00	Unk	OR-Y OR<25		026	000	07
															02	NONE 0 PRVTE PSNGR CAR	STOP SE-NW	01	DRVR	NONE	52	F	OR-Y OR<25		000	011 000	00 00
02990 NONE	N	N	N			08/03/2014 SU UNK	11	PACIFIC HY 99E EB EX PAC HY 99E	INTER NE 09	3-LEG 1	N TRF SIGNAL	N N N	CLR DRY DAY	S-1STOP REAR PDO	01	NONE 0 PRVTE PSNGR CAR	STRGHT SE-NW	01	DRVR	NONE	60	F	OR-Y OR<25		026	000	29
															02	NONE 0 PRVTE PSNGR CAR	STOP SE-NW	01	DRVR	NONE	66	M	OR-Y OR<25		000	011 000	00 00
05025 NONE	N	N	N			12/12/2014 FR 2P	11	PACIFIC HY 99E EB EX PAC HY 99E	INTER NE 09	3-LEG 1	N YIELD	N N N	CLR DRY DAY	S-STRGHT REAR INJ	01	NONE 0 PRVTE PSNGR CAR	TURN-R E -N	01	DRVR	NONE	43	F	OR-Y OR>25		042	000	07
															02	NONE 0	TURN-R									

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CITY OF OREGON CITY, CLACKAMAS COUNTY

PACIFIC HY 99E at EB EX PAC HY 99E, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 23

SER# / INVEST	S P E D	A L C	R G S	S H L	W C K	O R	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
																	PRVTE	E -N									000		00
																	PSNGR CAR		01	DRVR	INJC	65	F	OR-Y OR<25		000	000		00
01260	Y	N	N				04/15/2011	19	PACIFIC HY 99E	INTER	3-LEG	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT											013	01
NONE							FR		EB EX PAC HY 99E	E		YIELD	N	WET	REAR		UNKN	E -W									000		00
							12P			06	1		N	DAY	INJ		UNKNOWN		01	DRVR	NONE	00	Unk	UNK UNK		047,026	000		01
																02	NONE 0	STOP											
																	PRVTE	E -W									011	013	00
																	PSNGR CAR		01	DRVR	NONE	24	F	OR-Y OR<25		000	000		00
																03	NONE 0	STOP											
																	PRVTE	E -W									022		00
																	PSNGR CAR		01	DRVR	INJC	41	M	OR-Y OR<25		000	000		00
																03	NONE 0	STOP											
																	PRVTE	E -W									022		00
																	PSNGR CAR		02	PSNG	INJC	15	F			000	000		00
03326	N	N	N				09/08/2011	19	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT												07
NO RPT							TH		EB EX PAC HY 99E	E		TRF SIGNAL	N	DRY	REAR		PRVTE	E -W									000		00
							11A			06	1		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	75	M	OR-Y OR<25		026	000		07
																02	NONE 0	STOP											
																	PRVTE	E -W									011		00
																	PSNGR CAR		01	DRVR	NONE	00	F	OR-Y OR<25		000	000		00
04032	N	N	N				10/29/2011	19	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT												07
NONE							SA		EB EX PAC HY 99E	E		TRF SIGNAL	N	DRY	REAR		UNKN	E -W									000		00
							10A			06	1		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	00	F	OR-Y UNK		026	000		07
																02	NONE 0	STOP											
																	PRVTE	E -W									012		00
																	PSNGR CAR		01	DRVR	INJC	53	F	OR-Y OR<25		000	000		00
04751	N	N	N				12/08/2013	11	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT												07
NONE							SU		EB EX PAC HY 99E	E		TRF SIGNAL	N	UNK	REAR		PRVTE	E -W									000		00
							5P			06	2		N	DUSK	INJ		PSNGR CAR		01	DRVR	NONE	00	M	OR-Y UNK		026	000		07
																02	NONE 0	STOP											
																	PRVTE	E -W									012		00
																	PSNGR CAR		01	DRVR	INJC	39	F	OR-Y OR<25		000	000		00
04167	N	N	N				11/05/2011	14	PACIFIC HY 99E	INTER	3-LEG	N	N	RAIN	ANGL-OTH	01	NONE 0	TURN-L												04
NONE							SA		EB EX PAC HY 99E	CN		TRF SIGNAL	N	WET	TURN		PRVTE	E -S									000		00
							7A			03	1		N	DAWN	PDO		PSNGR CAR		01	DRVR	NONE	61	F	OR-Y OR<25		097	000		00
																02	NONE 0	STRGHT											
																	PRVTE	N -S									000		00
																	PSNGR CAR		01	DRVR	NONE	64	F	OR-Y OR<25		097	000		00

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CITY OF OREGON CITY, CLACKAMAS COUNTY

PACIFIC HY 99E at EB EX PAC HY 99E, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 23

SER# / INVEST	S P E D	A L C	U G S	C H L	O R K	W	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
03521	N	N	N	N	N		09/22/2012	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT										04
STATE							SA		EB EX PAC HY 99E	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	S -N									000	00
							9A			02	1		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	34	M	OR-Y OR<25		020	000	04
																02	NONE 0	TURN-L										
																	PRVTE	E -S									000	00
																	PSNGR CAR		01	DRVR	INJC	64	F	OR-Y OR<25	000		000	00
04882	N	N	N	N	N		12/17/2012	14	PACIFIC HY 99E	INTER	3-LEG	N	N	RAIN	O-1 L-TURN	01	NONE 0	STRGHT										04
STATE							MO		EB EX PAC HY 99E	CN		L-GRN-SIG	N	WET	TURN		PRVTE	S -N									000	00
							9P			04	1		N	DLIT	INJ		PSNGR CAR		01	DRVR	INJB	53	F	OR-Y OR<25	000		000	00
																02	NONE 0	TURN-L										
																	PRVTE	N -E									000	00
																	PSNGR CAR		01	DRVR	NONE	57	M	OR-Y OR<25	003		000	04
00576	N	N	N				02/19/2013	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	O-1 L-TURN	01	NONE 0	TURN-L										02
NONE							TU		EB EX PAC HY 99E	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	N -E									000	00
							9P			04	1		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	00	F	OR-Y OR<25	028		000	02
																02	NONE 0	STRGHT										
																	PRVTE	S -N									000	00
																	PSNGR CAR		01	DRVR	NONE	57	M	OR-Y OR<25	000		000	00
01337	N	N	N				04/14/2015	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT										04
NONE							TU		EB EX PAC HY 99E	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	S -N									000	00
							3P			02	1		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	36	M	OR-Y OR<25	020		000	04
																01	NONE 0	STRGHT										
																	PRVTE	S -N									000	00
																	PSNGR CAR		02	PSNG	NO<5	04	M		000		000	00
																02	NONE 0	TURN-L										
																	PRVTE	E -S									000	00
																	PSNGR CAR		01	DRVR	INJC	37	F	OR-Y OR<25	000		000	00
05735	N	N	N				12/31/2015	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT										04
NO RPT							TH		EB EX PAC HY 99E	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	S -N									000	00
							7P			02	1		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	51	F	OR-Y OR<25	020		000	04
																02	NONE 0	TURN-L										
																	PRVTE	E -S									000	00
																	PSNGR CAR		01	DRVR	INJC	25	M	OR-Y OR<25	000		000	00
																02	NONE 0	TURN-L										
																	PRVTE	E -S									000	00
																	PSNGR CAR		02	PSNG	INJC	27	F		000		000	00

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CRASH SUMMARIES BY YEAR BY COLLISION TYPE

PACIFIC HY 99E at NB EXTO I-205 EB, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

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: 2015														
REAR-END	0	1	0	1	0	2	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	1	0	1	0	1	0	1	0	1	0	1	0	0
YEAR 2015 TOTAL	**0**	**2**	**0**	**2**	**0**	**3**	**0**	**2**	**0**	**2**	**0**	**2**	**0**	**0**
YEAR: 2014														
REAR-END	0	2	1	3	0	2	0	2	1	3	0	3	0	0
YEAR 2014 TOTAL	**0**	**2**	**1**	**3**	**0**	**2**	**0**	**2**	**1**	**3**	**0**	**3**	**0**	**0**
YEAR: 2013														
REAR-END	0	2	2	4	0	2	0	4	0	4	0	4	0	0
TURNING MOVEMENTS	0	1	0	1	0	3	0	1	0	0	1	1	0	0
YEAR 2013 TOTAL	**0**	**3**	**2**	**5**	**0**	**5**	**0**	**5**	**0**	**4**	**1**	**5**	**0**	**0**
YEAR: 2012														
REAR-END	0	0	2	2	0	0	0	2	0	2	0	2	0	0
TURNING MOVEMENTS	0	1	3	4	0	1	0	3	1	2	2	4	0	0
YEAR 2012 TOTAL	**0**	**1**	**5**	**6**	**0**	**1**	**0**	**5**	**1**	**4**	**2**	**6**	**0**	**0**
YEAR: 2011														
REAR-END	0	0	1	1	0	0	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	0	2	2	0	0	0	2	0	1	1	2	0	0
YEAR 2011 TOTAL	**0**	**0**	**3**	**3**	**0**	**0**	**0**	**3**	**0**	**2**	**1**	**3**	**0**	**0**

PACIFIC HY 99E at NB EXTO I-205 EB, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

FINAL TOTAL	**0**	**8**	**11**	**19**	**0**	**11**	**0**	**17**	**2**	**15**	**4**	**19**	**0**	**0**

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CITY OF OREGON CITY, CLACKAMAS COUNTY

PACIFIC HY 99E at NB EXTO I-205 EB, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 19

SER# / INVEST	S P E D	A L C	D R S L	S W C H	O R K	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
00828	N	N	N	N	N	01/09/2012	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT									07
CITY						MO		NB EXTO I-205 EB	N		TRF SIGNAL	N	DRY	REAR		PRVTE	N -S								000	00
						1P			06	1		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	40	M	SUSP OR<25		026	000	07
															01	NONE 0	STRGHT									
																PRVTE	N -S								000	00
																PSNGR CAR		02	PSNG	NONE	39	F			000	000	00
															01	NONE 0	STRGHT									
																PRVTE	N -S								000	00
																PSNGR CAR		03	PSNG	NO<5	01	F			000	000	00
															02	NONE 0	STOP									
																PRVTE	N -S								012	00
																PSNGR CAR		01	DRVR	NONE	32	F	OR-Y OR<25		000	000	00
01099	N	N	N			04/01/2013	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT									07
NONE						MO		NB EXTO I-205 EB	N		L-GRN-SIG	N	DRY	REAR		PRVTE	N -S								000	00
						1P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	66	M	OR-Y OR<25		026	000	07
															02	NONE 0	STOP									
																PRVTE	N -S								012	00
																PSNGR CAR		01	DRVR	INJC	47	F	OR-Y OR<25		000	000	00
00690	N	N	N			02/22/2015	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT									29
NO RPT						SU		NB EXTO I-205 EB	N		L-GRN-SIG	N	DRY	REAR		PRVTE	N -S								000	00
						11A			06	1		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	49	F	OR-Y UNK		026	000	29
															02	NONE 0	STOP									
																RENTL	N -S								012	00
																PSNGR CAR		01	DRVR	NONE	47	M	OR-Y OR<25		000	000	00
															02	NONE 0	STOP									
																RENTL	N -S								012	00
																PSNGR CAR		02	PSNG	INJC	38	F			000	000	00
															02	NONE 0	STOP									
																RENTL	N -S								012	00
																PSNGR CAR		03	PSNG	INJC	15	M			000	000	00
02254	N	N	N			06/25/2011	19	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	S-OTHER	01	NONE 0	TURN-R									08
NONE						SA		NB EXTO I-205 EB	NE		TRF SIGNAL	N	DRY	TURN		PRVTE	S -NE								000	00
						6P			05	1		N	DAY	PDO		MTRCYCLE		01	DRVR	NONE	00	Unk	UNK UNK		006	000	08
															02	NONE 0	TURN-R									
																PRVTE	S -NE								000	00
																PSNGR CAR		01	DRVR	NONE	49	F	OTH-Y N-RES		000	000	00
00395	N	N	N			01/30/2014	11	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT									07
NONE						TH		NB EXTO I-205 EB	NE		YIELD	N	DRY	REAR		PRVTE	SE-NW								000	00
						3P			09	1		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	59	M	OR-Y		026	000	07

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CITY OF OREGON CITY, CLACKAMAS COUNTY

PACIFIC HY 99E at NB EXTO I-205 EB, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 19

SER# / INVEST	S P E D	A L C	R G S	S H L	W C K	O R	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
																								OR<25				
																02	NONE 0	STOP										
																	PRVTE	SE-NW									011	00
																	PSNGR CAR		01	DRVR	INJC	25	F	OR-Y		000	000	00
																								OR<25				
04196	N	N	N				10/22/2014	11	PACIFIC HY 99E	INTER	3-LEG	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT										29
NONE							WE		NB EXTO I-205 EB	NE		YIELD	N	WET	REAR		PRVTE	SE-NW									000	00
							3P			09	1		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	00	M	UNK		026	000	29
																								OR<25				
																02	NONE 0	STOP										
																	PRVTE	SE-NW									011	00
																	PSNGR CAR		01	DRVR	INJC	59	F	OR-Y		000	000	00
																								OR<25				
03474	N	N	N				09/05/2014	11	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										29
NONE							FR		NB EXTO I-205 EB	E		TRF SIGNAL	N	DRY	REAR		UNKN	E -W									000	00
							11A			06	1		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	M	OR-Y		026	000	29
																								UNK				
																02	NONE 0	STOP										
																	PRVTE	E -W									011	00
																	PSNGR CAR		01	DRVR	NONE	40	F	OR-Y		000	000	00
																								UNK				
02378	N	N	N				07/06/2011	14	PACIFIC HY 99E	INTER		N	N	CLR	S-1STOP	01	NONE 0	STRGHT										07
NONE							WE		NB EXTO I-205 EB	S		TRF SIGNAL	N	DRY	REAR		PRVTE	S -N									000	00
							2P			06	1		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	F	OR-Y		026	000	07
																								UNK				
																02	NONE 0	STOP										
																	PRVTE	S -N									011	00
																	PSNGR CAR		01	DRVR	NONE	43	F	OR-Y		000	000	00
																								OR<25				
01838	N	N	N				05/18/2012	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	O-1 L-TURN	01	NONE 0	STRGHT										04
NO RPT							FR		NB EXTO I-205 EB	S		L-GRN-SIG	N	DRY	TURN		PRVTE	S -N									000	00
							4P			04	1		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	43	M	OR-Y		097	000	00
																								OR<25				
																02	NONE 0	TURN-L										
																	PRVTE	N -E									000	00
																	PSNGR CAR		01	DRVR	NONE	81	M	OTH-Y		097	000	00
																								N-RES				
03490	N	N	N	N	N		09/18/2013	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										07
NONE							WE		NB EXTO I-205 EB	S		TRF SIGNAL	N	DRY	REAR		PRVTE	S -N									000	00
							4P			06	1		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	25	F	NONE		026	000	07
																								OR<25				
																02	NONE 0	STOP										
																	PRVTE	S -N									011	00
																	PSNGR CAR		01	DRVR	NONE	24	F	OR-Y		000	000	00
																								OR<25				
04363	N	N	N	N	N		11/11/2013	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLD	S-1STOP	01	NONE 0	STRGHT										07
STATE							MO		NB EXTO I-205 EB	S		TRF SIGNAL	N	DRY	REAR		PRVTE	S -N									000	00
							1P			06	1		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	93	M	OR-Y		043,026	000	07
																								OR<25				
																02	NONE 0	STOP										
																	PRVTE	S -N									011	00

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CITY OF OREGON CITY, CLACKAMAS COUNTY

PACIFIC HY 99E at NB EXTO I-205 EB, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 19

SER# / INVEST	S P E D	A L C	R S L	S W O H K	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
															PSNGR CAR		01	DRVR	INJC	57	F	OR-Y OR>25		000	000	00
04886 NONE	N	N	N		12/17/2013 TU 3P	14	PACIFIC HY 99E NB EXTO I-205 EB	INTER S 06	3-LEG 1	N TRF SIGNAL	N N	CLR DRY DAY	S-1STOP REAR PDO	01	NONE 0 PRVTE PSNGR CAR	STRGHT S -N	01	DRVR	NONE	35	M	OR-Y OR<25		026	000	07
											N			02	NONE UNKN UNKNOWN	STOP S -N	01	DRVR	NONE	00	Unk	UNK UNK		000	011 000	00 00
03249 STATE	N	N	N		09/03/2011 SA 8P	14	PACIFIC HY 99E NB EXTO I-205 EB	INTER CN 04	3-LEG 1	N L-GRN-SIG	N N	FOG DRY DLIT	O-1 L-TURN TURN PDO	01	NONE 0 PRVTE PSNGR CAR	TURN-L N -E	01	DRVR	NONE	62	M	OTH-Y N-RES		000	000	04 00
														02	NONE 0 PRVTE PSNGR CAR	STRGHT S -N	01	DRVR	NONE	70	F	OR-Y OR>25		020	000 000	00 04
00563 CITY	N	N	N	N N	02/12/2012 SU 10P	14	PACIFIC HY 99E NB EXTO I-205 EB	INTER CN 02	3-LEG 1	N TRF SIGNAL	N N	RAIN WET DLIT	ANGL-OTH TURN PDO	01	NONE 0 PRVTE PSNGR CAR	STRGHT S -N	01	DRVR	NONE	24	F	OR-Y OR<25		021	000	04
														02	NONE 0 PRVTE PSNGR CAR	TURN-L E -S	01	DRVR	NONE	56	M	OR-Y OR<25		000	000 000	00 00
02698 NONE	N	N	N	N N	07/24/2012 TU 4P	14	PACIFIC HY 99E NB EXTO I-205 EB	INTER CN 04	3-LEG 0	N TRF SIGNAL	N N	CLR DRY DAY	S-1STOP REAR PDO	01	NONE 0 PRVTE PSNGR CAR	TURN-R S -E	01	DRVR	NONE	50	F	SUSP OR<25		006,052	000	08,32
														02	NONE 0 PRVTE PSNGR CAR	TURN-R S -E	01	DRVR	NONE	47	F	OR-Y OR<25		000	000 000	00 00
03080 NONE	N	N	N		08/19/2012 SU 3P	14	PACIFIC HY 99E NB EXTO I-205 EB	INTER CN 04	3-LEG 1	N TRF SIGNAL	N N	CLR DRY DAY	O-1 L-TURN TURN PDO	01	NONE 0 PRVTE PSNGR CAR	STRGHT S -N	01	DRVR	NONE	00	F	OR-Y UNK		020	000	04
														02	NONE 0 PRVTE PSNGR CAR	TURN-L N -E	01	DRVR	NONE	29	M	OR-Y OR<25		000	000 000	00 00
04535 STATE	N	N	N	N N	11/22/2012 TH 8P	14	PACIFIC HY 99E NB EXTO I-205 EB	INTER CN 04	3-LEG 1	N TRF SIGNAL	N N	CLR DRY DLIT	O-1 L-TURN TURN INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT S -N	01	DRVR	INJC	18	F	OR-Y OR<25		020	000	04
														01	NONE 0 PRVTE PSNGR CAR	STRGHT S -N	02	PSNG	NO<5	01	M			000	000 000	00 00
														02	NONE 0	TURN-L										

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CITY OF OREGON CITY, CLACKAMAS COUNTY

PACIFIC HY 99E at NB EXTO I-205 EB, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 19

SER# / INVEST	S P E D	A L C	R U S	S C L	W O R K	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
																PRVTE	N -E									00
																PSNGR CAR		01	DRVR	NONE	42	F	OR-Y OR<25		000	000	00
01632	N	N	N	N	N	05/11/2013	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	O-1 L-TURN	01	NONE 0	TURN-L										04
CITY						SA		NB EXTO I-205 EB	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	N -E									000	00
						10P			04	1		N	DLIT	INJ		PSNGR CAR		01	DRVR	INJC	63	M	OR-Y OR<25		000	000	00
															01	NONE 0	TURN-L										
																PRVTE	N -E									000	00
																PSNGR CAR		02	PSNG	INJC	58	F			000	000	00
															02	NONE 0	STRGHT										
																PRVTE	S -N									000	00
																PSNGR CAR		01	DRVR	INJC	17	F	OR-Y OR<25		020	000	04
01891	N	N	N	N	N	05/18/2015	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	O-1 L-TURN	01	NONE 0	STRGHT										04
STATE						MO		NB EXTO I-205 EB	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	S -N									000	00
						8A			04	2		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	41	F	OR-Y OR<25		020	000	04
															02	NONE 0	TURN-L										
																PRVTE	N -E									000	00
																PSNGR CAR		01	DRVR	INJC	67	F	OR-Y OR<25		000	000	00

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CRASH SUMMARIES BY YEAR BY COLLISION TYPE

PACIFIC HY 99E at 15TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

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: 2015														
REAR-END	0	1	1	2	0	1	0	2	0	1	1	2	0	0
YEAR 2015 TOTAL	**0**	**1**	**1**	**2**	**0**	**1**	**0**	**2**	**0**	**1**	**1**	**2**	**0**	**0**
YEAR: 2014														
REAR-END	0	6	0	6	0	7	0	6	0	6	0	6	0	0
TURNING MOVEMENTS	0	1	1	2	0	1	0	1	1	2	0	2	0	0
YEAR 2014 TOTAL	**0**	**7**	**1**	**8**	**0**	**8**	**0**	**7**	**1**	**8**	**0**	**8**	**0**	**0**
YEAR: 2013														
REAR-END	0	2	0	2	0	2	0	1	0	1	1	2	0	0
TURNING MOVEMENTS	0	0	2	2	0	0	0	1	1	2	0	2	0	0
YEAR 2013 TOTAL	**0**	**2**	**2**	**4**	**0**	**2**	**0**	**2**	**1**	**3**	**1**	**4**	**0**	**0**
YEAR: 2012														
REAR-END	0	1	0	1	0	5	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	1	1	2	0	1	0	1	1	2	0	2	0	0
YEAR 2012 TOTAL	**0**	**2**	**1**	**3**	**0**	**6**	**0**	**2**	**1**	**3**	**0**	**3**	**0**	**0**
YEAR: 2011														
REAR-END	0	2	1	3	0	2	0	3	0	2	1	3	0	0
YEAR 2011 TOTAL	**0**	**2**	**1**	**3**	**0**	**2**	**0**	**3**	**0**	**2**	**1**	**3**	**0**	**0**
FINAL TOTAL	**0**	**14**	**6**	**20**	**0**	**19**	**0**	**16**	**3**	**17**	**3**	**20**	**0**	**0**

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CITY OF OREGON CITY, CLACKAMAS COUNTY

PACIFIC HY 99E at 15TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 20

SER# / INVEST	S P E D	A L C	R U G S	S C H L	W O R K	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
02478	N	N	N			07/10/2012	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										013	07
NO RPT						TU		15TH ST	NE		TRF SIGNAL	N	DRY	REAR		PRVTE	SW-NE									000		00
						7A			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJB	54	M	OR-Y OR<25		026	000		07
															01	NONE 0	STRGHT											
																PRVTE	SW-NE									000		00
																PSNGR CAR		02	PSNG	INJB	48	M			000	000		00
															01	NONE 0	STRGHT											
																PRVTE	SW-NE									000		00
																PSNGR CAR		03	PSNG	INJC	45	M			000	000		00
															01	NONE 0	STRGHT											
																PRVTE	SW-NE									000		00
																PSNGR CAR		04	PSNG	INJC	24	M			000	000		00
															02	NONE 0	STOP											
																PRVTE	SW-NE									011	013	00
																PSNGR CAR		01	DRVR	NONE	18	F	OR-Y OR<25		000	000		00
															03	NONE 0	STOP											
																PRVTE	SW-NE									022	013	00
																PSNGR CAR		01	DRVR	INJC	34	F	OR-Y OR<25		000	000		00
															04	NONE 0	STOP											
																PRVTE	SW-NE									022		00
																PSNGR CAR		01	DRVR	NONE	32	M	OR-Y OR<25		000	000		00
02162	N	N	N			06/18/2011	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE						SA		15TH ST	SE		STOP SIGN	N	DRY	REAR		PRVTE	SE-NW									000		00
						10P			06	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	49	F	OR-Y OR<25		026	000		07
															02	NONE 0	STOP											
																PRVTE	SE-NW									011		00
																PSNGR CAR		01	DRVR	INJC	28	M	OR-Y OR<25		000	000		00
02450	N	N	N			07/11/2011	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE						MO		15TH ST	SE		TRF SIGNAL	N	DRY	REAR		PRVTE	SE-NW									000		00
						6P			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	20	M	OR-Y OR<25		026	000		07
															02	NONE 0	STOP											
																PRVTE	SE-NW									011		00
																PSNGR CAR		01	DRVR	NONE	69	M	OR-Y OR<25		000	000		00
04973	N	N	N	N	N	12/09/2014	14	PACIFIC HY 99E	INTER	3-LEG	N	N	RAIN	BIKE	01	NONE 0	TURN-R										084	02
NONE						TU		15TH ST	SE		STOP SIGN	N	WET	TURN		PRVTE	SE-NE									015		00
						12P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	44	M	OR-Y OR<25		027	000	084	02
																	- STRGHT	01	BIKE	INJA	54	F		I	XWLK	000	034		00

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CITY OF OREGON CITY, CLACKAMAS COUNTY

PACIFIC HY 99E at 15TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 20

SER# / INVEST	SPEED	ALCHL	DRUGS	SCHL	WORK	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO NE SW	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
00492	N	N	N	N	N	02/10/2011	19	PACIFIC HY 99E	INTER	3-LEG	N	N	CLD	S-1STOP	01	NONE 0	STRGHT											27,07
STATE						TH	0	15TH ST	SE		STOP SIGN	N	DRY	REAR		PRVTE	SE-NW										000		00
						9A			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	66	M	OR-Y OR<25		016,026	000		27,07
															02	NONE 0	STOP											
																PRVTE	SE-NW									011		00
																PSNGR CAR		01	DRVR	INJC	59	F	OR-Y OR<25		000	000		00
02221	N	N	N	N	N	06/22/2013	19	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
CITY						SA	0	15TH ST	SE		STOP SIGN	N	DRY	REAR		PRVTE	SE-NW										000		00
						10A			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	59	F	OR-Y OR<25		026	000		07
															02	NONE 0	STOP											
																PRVTE	SE-NW									011		00
																PSNGR CAR		01	DRVR	INJC	58	M	OR-Y OR<25		000	000		00
04877	N	N	N			12/17/2013	19	PACIFIC HY 99E	INTER	3-LEG	N	N	UNK	S-1STOP	01	NONE 0	STRGHT											07
NONE						TU	0	15TH ST	SE		STOP SIGN	N	UNK	REAR		PRVTE	SE-NW										000		00
						5P			06	0		N	DUSK	INJ		UNKNOWN		01	DRVR	NONE	33	F	OR-Y OR<25		026	000		07
															02	NONE 0	STOP											
																PRVTE	SE-NW									011		00
																PSNGR CAR		01	DRVR	INJC	48	F	OTH-Y OR<25		000	000		00
01124	N	N	N			03/21/2014	19	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										013	07
NONE						FR	0	15TH ST	SE		STOP SIGN	N	DRY	REAR		PRVTE	SE-NW										000		00
						1P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	32	F	OR-Y OR<25		026	000		07
															02	NONE 0	STOP											
																PRVTE	SE-NW									011	013	00
																PSNGR CAR		01	DRVR	INJC	32	F	OR-Y OR<25		000	000		00
															02	NONE 0	STOP											
																PRVTE	SE-NW									011	013	00
																PSNGR CAR		02	PSNG	NO<5	04	M			000	000		00
															03	NONE 0	STOP											
																UNKN	SE-NW									022		00
																UNKNOWN		01	DRVR	NONE	00	Unk	UNK UNK		000	000		00
01616	N	N	N			04/28/2014	19	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
NONE						MO	0	15TH ST	SE		STOP SIGN	N	DRY	REAR		PRVTE	SE-NW										000		00
						7A			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	53	M	OR-Y OR<25		026	000		29
															02	NONE 0	STOP											
																PRVTE	SE-NW									011		00
																PSNGR CAR		01	DRVR	INJC	50	M	OR-Y OR<25		000	000		00
01736	N	N	N	N	N	05/06/2014	19	PACIFIC HY 99E	INTER	3-LEG	N	N	CLD	S-1STOP	01	NONE 0	STRGHT											29
CITY						TU	0	15TH ST	SE		STOP SIGN	N	DRY	REAR		UNKN	SE-NW										000		00

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CITY OF OREGON CITY, CLACKAMAS COUNTY

PACIFIC HY 99E at 15TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 20

SER# / INVEST	S P E D / A L C	R S W U G L	C O H K	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC / TYPE	INJ / SVRTY	A G E	S E X	LICNS / RES	PED LOC	ERROR	ACT	EVENT	CAUSE
				4P			06	0		N	DAY	INJ		MTRCYCLE		01	DRVR	INJC	00	M	UNK UNK		026	000		29
													02	NONE 0 PRVTE	STOP SE-NW									011		00
														PSNGR CAR		01	DRVR	NONE	58	F	OR-Y OR<25		000	000		00
01975 NONE	N	N	N	05/23/2014 FR 6P	19 0	PACIFIC HY 99E 15TH ST	INTER SE 06	3-LEG 0	N STOP SIGN	N N N	CLR DRY DAY	S-1STOP REAR INJ	01	NONE 0 UNKN PSNGR CAR	STRGHT SE-NW	01	DRVR	NONE	00	M	UNK UNK		026	000 000		29 00 29
													02	NONE 0 PRVTE	STOP SE-NW									011		00
														PSNGR CAR		01	DRVR	INJC	55	F	OR-Y OR<25		000	000		00
													02	NONE 0 PRVTE	STOP SE-NW									011		00
														PSNGR CAR		02	PSNG	INJC	20	F			000	000		00
03302 NONE	N	N	N	08/25/2014 MO 1P	19 0	PACIFIC HY 99E 15TH ST	INTER SE 06	3-LEG 0	N STOP SIGN	N N N	CLR DRY DAY	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT SE-NW	01	DRVR	NONE	53	M	OR-Y OR<25		026	000 000		29 00 29
													02	NONE 0 PRVTE	STOP SE-NW									011		00
														PSNGR CAR		01	DRVR	INJC	45	F	OR-Y OR<25		000	000		00
03718 NO RPT	N	N	N	09/22/2014 MO 6A	19 0	PACIFIC HY 99E 15TH ST	INTER SE 06	3-LEG 0	N STOP SIGN	N N N	CLR DRY DAY	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT SE-NW	01	DRVR	NONE	57	M	OR-Y OR<25		026	000 000		29 00 29
													02	NONE 0 PRVTE	STOP SE-NW									011		00
														PSNGR CAR		01	DRVR	INJC	38	F	OR-Y OR<25		000	000		00
02082 NONE	N	N	N	06/01/2015 MO 4P	17 0	PACIFIC HY 99E 15TH ST	INTER SE 06	3-LEG 0	N STOP SIGN	N N N	CLD DRY DAY	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT SE-NW	01	DRVR	NONE	56	M	OR-Y OR<25		026	000 000		29 00 29
													02	NONE 0 PRVTE	STOP SE-NW									011		00
														PSNGR CAR		01	DRVR	INJC	55	F	OR-Y OR<25		000	000		00
00180 NONE	N	N	N	01/15/2015 TH 6P	17 0	PACIFIC HY 99E 15TH ST	INTER SE 06	3-LEG 0	N STOP SIGN	N N N	CLR DRY DLIT	S-1STOP REAR PDO	01	NONE 0 PRVTE PSNGR CAR	STRGHT SE-NW	01	DRVR	NONE	60	M	OR-Y OR<25		026	000 000		29 00 29
													02	NONE 0 PRVTE	STOP SE-NW									011		00
														PSNGR CAR		01	DRVR	NONE	51	F	OR-Y OR>25		000	000		00
00381	N	N	N	01/28/2012	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 0	TURN-R											02

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CITY OF OREGON CITY, CLACKAMAS COUNTY

PACIFIC HY 99E at 15TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 20

SER# / INVEST	S P E D	A L C	R U G	S C H	W O R K	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
NONE						SA 2P		15TH ST	CN 02	0	STOP SIGN	N N	DRY DAY	TURN PDO		PRVTE PSNGR CAR	SE-NE	01	DRVR	NONE	00	F	OR-Y UNK		028	000 000	00 02
															02	NONE 0 PRVTE PSNGR CAR	STRGHT SW-NE	01	DRVR	NONE	27	F	OR-Y OR<25		000	000 000	00 00
03991 NO RPT	N	N	N			10/24/2012 WE 5P	14	PACIFIC HY 99E 15TH ST	INTER CN 02	3-LEG 0	N STOP SIGN	N N N	RAIN WET DAY	ANGL-OTH TURN INJ	01	NONE 0 PRVTE PSNGR CAR	TURN-R SE-NE	01	DRVR	NONE	39	F	OR-Y OR<25		028	015 000	02 00 02
															02	NONE 0 PRVTE PSNGR CAR	STRGHT SW-NE	01	DRVR	INJC	26	F	OR-Y OR<25		000	000 000	00 00
02305 NONE	N	N	N			06/11/2013 TU 2P	14	PACIFIC HY 99E 15TH ST	INTER CN 02	3-LEG 0	N STOP SIGN	N N N	UNK WET DAY	ANGL-OTH TURN PDO	01	NONE 0 PRVTE PSNGR CAR	STRGHT SW-NE	01	DRVR	NONE	47	F	OR-Y OR<25		000	000 000	02 00 00
															02	NONE 0 PRVTE PSNGR CAR	TURN-R SE-NE	01	DRVR	NONE	00	F	UNK OR<25		028	015 000	00 02
04064 NONE	N	N	N			10/23/2013 WE 11A	14	PACIFIC HY 99E 15TH ST	INTER CN 02	3-LEG 0	N STOP SIGN	N N N	CLR DRY DAY	S-OTHER TURN PDO	01	NONE 0 PRVTE PSNGR CAR	TURN-R SE-NE	01	DRVR	NONE	72	M	OR-Y OR<25		042	000 000	07 00 07
															02	NONE 0 PRVTE PSNGR CAR	TURN-R SE-NE	01	DRVR	NONE	62	F	OR-Y OR<25		000	000 000	00 00
01496 NO RPT	N	N	N			04/18/2014 FR 4P	14	PACIFIC HY 99E 15TH ST	INTER CN 02	3-LEG 0	N STOP SIGN	N N N	CLR DRY DAY	ANGL-OTH TURN PDO	01	NONE 0 PRVTE PSNGR CAR	TURN-R SE-NE	01	DRVR	NONE	21	M	OR-Y OR<25		028	015 000	02 00 02
															02	NONE 0 PRVTE PSNGR CAR	STRGHT SW-NE	01	DRVR	NONE	29	F	OR-Y OR<25		000	000 000	00 00

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirement, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

CRASH SUMMARIES BY YEAR BY COLLISION TYPE

PACIFIC HY 99E at 14TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

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: 2015														
REAR-END	0	0	1	1	0	0	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	1	1	2	0	1	1	2	0	2	0	2	0	0
YEAR 2015 TOTAL	**0**	**1**	**2**	**3**	**0**	**1**	**1**	**3**	**0**	**3**	**0**	**3**	**0**	**0**
YEAR: 2014														
REAR-END	0	2	0	2	0	2	0	1	1	2	0	2	0	0
TURNING MOVEMENTS	0	3	2	5	0	3	0	4	1	5	0	5	0	0
YEAR 2014 TOTAL	**0**	**5**	**2**	**7**	**0**	**5**	**0**	**5**	**2**	**7**	**0**	**7**	**0**	**0**
YEAR: 2013														
REAR-END	0	0	1	1	0	0	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	5	4	9	0	12	0	9	0	5	4	9	0	0
YEAR 2013 TOTAL	**0**	**5**	**5**	**10**	**0**	**12**	**0**	**10**	**0**	**6**	**4**	**10**	**0**	**0**
YEAR: 2012														
REAR-END	0	7	0	7	0	9	0	4	3	4	3	7	0	0
TURNING MOVEMENTS	0	3	1	4	0	3	0	2	2	1	3	4	0	0
YEAR 2012 TOTAL	**0**	**10**	**1**	**11**	**0**	**12**	**0**	**6**	**5**	**5**	**6**	**11**	**0**	**0**
YEAR: 2011														
REAR-END	0	8	4	12	0	12	0	7	3	8	3	12	0	0

CRASH SUMMARIES BY YEAR BY COLLISION TYPE

PACIFIC HY 99E at 14TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

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
TURNING MOVEMENTS	0	5	1	6	0	10	0	4	2	3	3	6	0	0
YEAR 2011 TOTAL	**0**	**13**	**5**	**18**	**0**	**22**	**0**	**11**	**5**	**11**	**6**	**18**	**0**	**0**
FINAL TOTAL	**0**	**34**	**15**	**49**	**0**	**52**	**1**	**35**	**12**	**32**	**16**	**49**	**0**	**0**

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OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANAYLYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CRASH LISTING

CITY OF OREGON CITY, CLACKAMAS COUNTY

PACIFIC HY 99E at 14TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 49

SER# / INVEST	SPEED	ALC	DRUGS	SCHL	WORK	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
03520	N	N	N			09/24/2011	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										013	07
STATE						SA		14TH ST	NE		TRF SIGNAL	N	DRY	REAR		PRVTE	NE-SW									000		00
						12A			06	0		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	20	M	OR-Y OR<25		026	000		07
															02	NONE 0	STOP											
																PRVTE	NE-SW									011	013	00
																PSNGR CAR		01	DRVR	NONE	46	M	OR-Y OR<25		000	000		00
															03	NONE 0	STOP											
																PRVTE	NE-SW									022		00
																PSNGR CAR		01	DRVR	NONE	19	M	OR-Y OR<25		000	000		00
04057	N	N	N			10/31/2011	14	PACIFIC HY 99E	INTER	3-LEG	N	N	UNK	S-1STOP	01	NONE 0	STRGHT											07
NONE						MO		14TH ST	NE		TRF SIGNAL	N	WET	REAR		PRVTE	NE-SW									000		00
						6P			06	0		N	DUSK	INJ		PSNGR CAR		01	DRVR	NONE	00	M	OR-Y OR<25		026	000		07
															02	NONE 0	STOP											
																PRVTE	NE-SW									011		00
																PSNGR CAR		01	DRVR	INJC	70	M	OR-Y OR<25		000	000		00
04688	N	N	N	N	N	12/05/2011	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										013	07
STATE						MO		14TH ST	NE		TRF SIGNAL	N	DRY	REAR		PRVTE	NE-SW									000		00
						11A			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	24	F	OR-Y OR<25		026	000		07
															01	NONE 0	STRGHT											
																PRVTE	NE-SW									000		00
																PSNGR CAR		02	PSNG	INJC	23	F			000	000		00
															01	NONE 0	STRGHT											
																PRVTE	NE-SW									000		00
																PSNGR CAR		03	PSNG	NO<5	01	M			000	000		00
															02	NONE 0	STOP											
																PRVTE	NE-SW									011	013	00
																PSNGR CAR		01	DRVR	NONE	26	M	OR-Y OR<25		000	000		00
															03	NONE 0	STOP											
																PRVTE	NE-SW									022		00
																PSNGR CAR		01	DRVR	NONE	35	M	OR-Y OR<25		000	000		00
01222	N	N	N	N	N	04/02/2012	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
STATE						MO		14TH ST	NE		L-GRN-SIG	N	DRY	REAR		PRVTE	NE-SW									000		00
						10A			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	20	F	OR-Y OR<25		026	000		07
															02	NONE 0	STOP											
																PRVTE	NE-SW									012		00
																PSNGR CAR		01	DRVR	INJC	38	M	OR-Y OR<25		000	000		00
															02	NONE 0	STOP											
																PRVTE	NE-SW									012		00
																PSNGR CAR		02	PSNG	INJC	32	F			000	000		00

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CITY OF OREGON CITY, CLACKAMAS COUNTY

PACIFIC HY 99E at 14TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 49

SER# / INVEST	S P E D	A L C	D R S L	S W C K	O R	DATE / DAY / TIME	CLASS / DIST FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
04230	N	N	N	N N		11/10/2012	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLD	S-1STOP	01	NONE 0	STRGHT											07
STATE						SA		14TH ST	NE		L-GRN-SIG	N	DRY	REAR		PRVTE	NE-SW									000		00
						5P			06	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	81	M	OR-Y OR<25		026	000		07
															02	NONE 0	STOP											
																PRVTE	NE-SW									012		00
																PSNGR CAR		01	DRVR	INJC	38	M	OR-Y OR<25		000	000		00
04249	Y	Y	N	N N		11/11/2012	14	PACIFIC HY 99E	INTER	3-LEG	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT											01,07
CITY						SU		14TH ST	NE		L-GRN-SIG	N	WET	REAR		PRVTE	NE-SW									000		00
						5P			06	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	46	M	OR-Y OR<25		043,047,026	000		01,07
															02	NONE 0	STOP											
																PRVTE	NE-SW									011		00
																PSNGR CAR		01	DRVR	NONE	31	F	OR-Y OR<25		000	000		00
															02	NONE 0	STOP											
																PRVTE	NE-SW									011		00
																PSNGR CAR		02	PSNG	INJC	32	M			000	000		00
01353	N	N	N	N N		04/08/2014	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	BIKE			-										110		18,14
CITY						TU		14TH ST	NE		TRF SIGNAL	N	DRY	TURN			STRGHT SE NW	01	BIKE	INJB	50	M		I XWLK	020	035		18,14
						1P			06	0		N	DAY	INJ	01	NONE 0	TURN-L											
																PRVTE	NE-SE									000		00
																PSNGR CAR		01	DRVR	NONE	31	F	OR-Y OR>25		000	000		00
04183	N	N	N			10/21/2014	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLD	S-1STOP	01	NONE 0	STRGHT											26
NONE						TU		14TH ST	NE		L-GRN-SIG	N	WET	REAR		UNKN	NE-SW									000		00
						2P			06	0		N	DAY	INJ		UNKNOWN		01	DRVR	NONE	00	F	UNK UNK		026	000		29
															02	NONE 0	STOP											
																PRVTE	NE-SW									012		00
																PSNGR CAR		01	DRVR	NONE	21	M	OTH-Y N-RES		000	000		00
															02	NONE 0	STOP											
																PRVTE	NE-SW									012		00
																PSNGR CAR		02	PSNG	INJC	21	F			000	000		00
03503	N	N	N			08/28/2015	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
NONE						FR		14TH ST	SE		TRF SIGNAL	N	DRY	REAR		PRVTE	SE-NW									000		00
						2P			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	M	UNK OR<25		026	000		29
															02	NONE 0	STOP											
																PRVTE	SE-NW									011		00
																PSNGR CAR		01	DRVR	NONE	37	F	OR-Y OR<25		000	000		00
03968	N	N	N			10/23/2012	16	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE						TU	0	14TH ST	SE		TRF SIGNAL	N	DRY	REAR		PRVTE	SE-NW									000		00

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CITY OF OREGON CITY, CLACKAMAS COUNTY

PACIFIC HY 99E at 14TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 49

SER# / INVEST	S P E D	A L C	R U G S	S C H L	W O R K	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ / SVRTY	A G E	S E X	LICNS / RES	PED LOC	ERROR	ACT	EVENT	CAUSE
						2P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	35	F	OR-Y OR<25		026	000		07
															02	NONE 0	STOP											
																PRVTE	SE-NW									011		00
																PSNGR CAR		01	DRVR	INJC	61	M	OR-Y OR<25		000	000		00
02271	N	N	N			06/13/2014	16	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
NONE						FR	0	14TH ST	SE		TRF SIGNAL	N	DRY	REAR		PRVTE	SE-NW									000		00
						10A			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	46	M	OR-Y OR<25		026	000		29
															02	NONE 0	STOP											
																PRVTE	SE-NW									011		00
																PSNGR CAR		01	DRVR	INJC	23	M	OR-Y OR<25		000	000		00
00262	Y	N	N	N	N	01/21/2011	14	PACIFIC HY 99E	INTER	3-LEG	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT										013	01,07
STATE						FR		14TH ST	SW		TRF SIGNAL	N	WET	REAR		PRVTE	SW-NE								000		00
						5A			06	0		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	23	F	OR-Y OR<25		047,026	000		01,07
															02	NONE 0	STOP											
																PRVTE	SW-NE									011	013	00
																PSNGR CAR		01	DRVR	NONE	42	F	OR-Y OR<25		000	000		00
															03	NONE 0	STOP											
																PRVTE	SW-NE									022		00
																PSNGR CAR		01	DRVR	NONE	51	M	OR-Y OR<25		000	000		00
00344	N	N	N			01/28/2011	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLD	S-1STOP	01	NONE 0	STRGHT											27,07
CITY						FR		14TH ST	SW		TRF SIGNAL	N	DRY	REAR		PRVTE	SW-NE								000		00
						12P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	53	M	OR-Y OR<25		016,026	000		27,07
															02	NONE 0	STOP											
																PRVTE	SW-NE									011		00
																PSNGR CAR		01	DRVR	INJC	20	F	OR-Y OR<25		000	000		00
															02	NONE 0	STOP											
																PRVTE	SW-NE									011		00
																PSNGR CAR		02	PSNG	NO<5	03	F			000	000		00
01845	Y	N	N	N	N	05/27/2011	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLD	S-1STOP	01	NONE 0	STRGHT										013	32,01,07
STATE						FR		14TH ST	SW		UNKNOWN	N	WET	REAR		PRVTE	SW-NE								000		00
						6P			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	21	M	SUSP OR>25		052,047,043	000		32,01,07
															02	NONE 0	STOP											
																PRVTE	SW-NE									011	013	00
																PSNGR CAR		01	DRVR	NONE	39	M	OR-Y OR<25		000	000		00
															03	NONE 0	STOP											
																PRVTE	SW-NE									022		00
																PSNGR CAR		01	DRVR	NONE	54	M	OR-Y OR<25		000	000		00
01784	N	N	N			05/12/2011	14	PACIFIC HY 99E	INTER	3-LEG	N	N	UNK	S-1STOP	01	NONE 0	STRGHT											07

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CITY OF OREGON CITY, CLACKAMAS COUNTY

PACIFIC HY 99E at 14TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 49

SER# / INVEST	S P E D / A L C	R S W U C O H R K	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
NONE			TH		14TH ST	SW		TRF SIGNAL	N	UNK	REAR		PRVTE	SW-NE									000		00
			6P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	38	F	OR-Y		026	000		07
																					OR<25				
												02	NONE 0	STOP											
													PRVTE	SW-NE									011		00
													PSNGR CAR		01	DRVR	NONE	29	M	OR-Y		000	000		00
																					OR<25				
01971	N N N	N N	06/03/2011	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											27
STATE			FR		14TH ST	SW		TRF SIGNAL	N	DRY	REAR		PRVTE	SW-NE									000		00
			2P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	51	M	OR-Y		016,026	000		27
																					OR>25				
												02	NONE 0	STOP											
													PRVTE	SW-NE									011		00
													PSNGR CAR		01	DRVR	INJC	31	M	OR-Y		000	000		00
																					OR<25				
02437	N N N		07/01/2011	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE			FR		14TH ST	SW		TRF SIGNAL	N	DRY	REAR		PRVTE	SW-NE									000		00
			6P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	38	F	OR-Y		026	000		07
																					OR<25				
												01	NONE 0	STRGHT											
													PRVTE	SW-NE									000		00
													PSNGR CAR		02	PSNG	INJC	12	M			000	000		00
												02	NONE 0	STOP											
													PRVTE	SW-NE									011		00
													PSNGR CAR		01	DRVR	NONE	26	F	OR-Y		000	000		00
																					OR<25				
												02	NONE 0	STOP											
													PRVTE	SW-NE									011		00
													PSNGR CAR		02	PSNG	INJC	25	M			000	000		00
												02	NONE 0	STOP											
													PRVTE	SW-NE									011		00
													PSNGR CAR		03	PSNG	NO<5	01	M			000	000		00
03363	Y N N	N N	09/12/2011	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										013	32,01,07
STATE			MO		14TH ST	SW		TRF SIGNAL	N	DRY	REAR		PRVTE	SW-NE									000		00
			4P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	49	F	SUSP		052,047,026	000		32,01,07
																					OR<25				
												02	NONE 0	STOP											
													PRVTE	SW-NE									011	013	00
													PSNGR CAR		01	DRVR	INJC	40	F	OR-Y		000	000		00
																					OR<25				
												03	NONE 0	STOP											
													PRVTE	SW-NE									022		00
													PSNGR CAR		01	DRVR	INJB	25	M	OR-Y		000	000		00
																					N-RES				
81684	N N N		02/16/2012	14	PACIFIC HY 99E	INTER	3-LEG	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT											07
NONE			TH		14TH ST	SW		TRF SIGNAL	N	WET	REAR		PRVTE	SW-NE									000		00
			6P			06	0		N	DUSK	INJ		PSNGR CAR		01	DRVR	NONE	34	F	OR-Y		026	000		07
																					OR<25				

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CITY OF OREGON CITY, CLACKAMAS COUNTY

PACIFIC HY 99E at 14TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 49

SER# / INVEST	SPEED	ALCHL	DRUGS	SCHL	WORK	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
															02	NONE 0	STOP									
																PRVTE	SW-NE								011	00
																PSNGR CAR		01	DRVR	INJC	51	F	OR-Y OR>25		000	000 00
02893	N	N	N	N	N	08/06/2012	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT									07
STATE						MO		14TH ST	SW		TRF SIGNAL	N	DRY	REAR		PRVTE	SW-NE								000	00
						5P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	48	F	OR-Y OR<25		026	000 07
															02	NONE 0	STOP									
																PRVTE	SW-NE								011	00
																PSNGR CAR		01	DRVR	INJC	37	F	OR-Y OR<25		000	000 00
04802	N	N	N			12/12/2012	14	PACIFIC HY 99E	INTER	3-LEG	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT									07
NONE						WE		14TH ST	SW		TRF SIGNAL	N	WET	REAR		PRVTE	SW-NE								000	00
						3P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	31	M	OR-Y OR<25		026	000 07
															02	NONE 0	STOP									
																PRVTE	SW-NE								011	00
																PSNGR CAR		01	DRVR	INJC	55	F	OR-Y OR>25		000	000 00
04856	N	N	N			12/15/2013	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 1	STRGHT									07
NONE						SU		14TH ST	SW		TRF SIGNAL	N	DRY	REAR		PRVTE	SW-NE								000	00
						2P			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	26	F	OR-Y OR<25		026	000 07
															02	NONE 0	STOP									
																PRVTE	SW-NE								011	00
																PSNGR CAR		01	DRVR	NONE	00	F	UNK OR>25		000	000 00
00073	N	N	N			01/05/2011	14	PACIFIC HY 99E	INTER	3-LEG	N	N	RAIN	O-1 L-TURN	01	NONE 0	STRGHT									02
CITY						WE		14TH ST	CN		TRF SIGNAL	N	WET	TURN		PRVTE	SW-NE								000	00
						11A			03	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	32	F	OR-Y OR<25		000	000 00
															02	NONE 0	TURN-L									
																PRVTE	NE-SE								000	00
																PSNGR CAR		01	DRVR	INJC	85	F	OR-Y OR<25		028,004	000 02
															02	NONE 0	TURN-L									
																PRVTE	NE-SE								000	00
																PSNGR CAR		02	PSNG	INJC	17	M			000	000 00
00909	N	N	N	N	N	03/14/2011	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLD	O-1 L-TURN	01	NONE 0	STRGHT									02
STATE						MO		14TH ST	CN		TRF SIGNAL	N	WET	TURN		PRVTE	SW-NE								000	00
						8A			04	0		N	DAWN	INJ		PSNGR CAR		01	DRVR	INJC	21	F	OR-Y OR<25		000	000 00
															02	NONE 0	TURN-L									
																PRVTE	NE-SE								000	00
																PSNGR CAR		01	DRVR	INJB	27	F	OR-Y OR<25		028,004	000 02
02805	N	N	N			08/04/2011	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	S-STRGHT	01	NONE 0	STRGHT									07
NONE						TH		14TH ST	CN		TRF SIGNAL	N	DRY	REAR		UNKN	NE-SW								000	00
						3P			01	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	00	F	UNK		042	000 07

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CITY OF OREGON CITY, CLACKAMAS COUNTY

PACIFIC HY 99E at 14TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 49

SER# / INVEST	S P E D	A L C	R G S	S H L	W C O K	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES / UNK / OR-Y / OR>25 / OR<25 / N-RES	PED LOC	ERROR	ACT EVENT	CAUSE
															02	NONE 0 PRVTE PSNGR CAR	STRGHT NE-SW									000 000	00 00
03304 NO RPT	N	N	N			09/07/2011 WE 5P	14	PACIFIC HY 99E 14TH ST	INTER CN 04	3-LEG 0	N TRF SIGNAL	N N	CLR DRY DAY	O-1 L-TURN TURN INJ	01	NONE 0 PRVTE PSNGR CAR	TURN-L NE-SE	01	DRVR	NONE	38	F	OR-Y OR<25		004,028	000 000	02 02
															02	NONE 0 PRVTE PSNGR CAR	STRGHT SW-NE	01	DRVR	INJB	25	F	OR-Y OR<25		000	000 000	00 00
04004 CITY	N	N	N			09/20/2011 TU UNK	14	PACIFIC HY 99E 14TH ST 02	INTER CN 02	3-LEG 0	N TRF SIGNAL N	N N N	UNK UNK UNK	S-1TURN REAR PDO	01	NONE 0 PRVTE PSNGR CAR	TURN-L NE-SE	01	DRVR	NONE	20	F	OTH-Y N-RES		026	000 000	07 07
															02	NONE 0 PRVTE PSNGR CAR	STOP NE-SE	01	DRVR	NONE	89	F	OTH-Y OR<25		000	013 000	00 00
04527 CITY	N	N	N	N	N	11/26/2011 SA 6P	14	PACIFIC HY 99E 14TH ST 04	INTER CN 04	3-LEG 0	N TRF SIGNAL N	N N N	CLD DRY DLIT	O-1 L-TURN TURN INJ	01	NONE 0 PRVTE PSNGR CAR	TURN-L NE-SE	01	DRVR	INJC	59	M	OR-Y OR<25		004,028	000 000	02 02
															01	NONE 0 PRVTE PSNGR CAR	TURN-L NE-SE	02	PSNG	INJC	29	F			000	000 000	00 00
															02	NONE 0 PRVTE PSNGR CAR	STRGHT SW-NE	01	DRVR	INJC	49	M	OR-Y OR<25		000	000 000	00 00
04723 NO RPT	N	N	N			12/07/2011 WE 5P	14	PACIFIC HY 99E 14TH ST 04	INTER CN 04	3-LEG 0	N TRF SIGNAL N	N N N	CLR DRY DLIT	O-1 L-TURN TURN PDO	01	NONE 0 PRVTE PSNGR CAR	STRGHT SW-NE	01	DRVR	NONE	48	F	OR-Y OR<25		000	000 000	02,07 00 00
															02	NONE 0 PRVTE PSNGR CAR	TURN-L NE-SE	01	DRVR	NONE	33	M	OR-Y OR<25		028,004	001 013 000	00 02
															03	NONE 0 PRVTE PSNGR CAR	STRGHT NE-SW	01	DRVR	NONE	48	M	OR-Y OR<25		000	000 000	00 00
04879 CITY	N	N	N			12/19/2011 MO 10A	14	PACIFIC HY 99E 14TH ST 04	INTER CN 04	3-LEG 0	N TRF SIGNAL N	N N N	CLR DRY DAY	O-1 L-TURN TURN INJ	01	NONE 0 PRVTE PSNGR CAR	TURN-L NE-SE	01	DRVR	INJB	22	M	OR-Y OR<25		097	000 000	04 00
															02	NONE 0 PRVTE	STRGHT SW-NE									000	00

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CITY OF OREGON CITY, CLACKAMAS COUNTY

PACIFIC HY 99E at 14TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 49

SER# / INVEST	S P E D	A L C	R U G S	S C H L	W O R K	DATE / DAY / TIME	CLASS / DIST FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
																PSNGR CAR		01	DRVR	NONE	29	F	OR-Y OR<25		097	000	00
01218 STATE	N	N	N	N	N	03/31/2012 SA 9P	14	PACIFIC HY 99E 14TH ST	INTER CN 04	3-LEG 0	N TRF SIGNAL	N N	RAIN WET DLIT	O-1 L-TURN TURN INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT SW-NE	01	DRVR	NONE	45	M	OR-Y OR<25		020	000 000	04 00 04
															02	NONE 0 PRVTE PSNGR CAR	TURN-L NE-SE	01	DRVR	INJC	70	M	OR-Y OR<25		000	000 000	00 00 00
02254 CITY	N	N	N			06/23/2012 SA 6A	14	PACIFIC HY 99E 14TH ST	INTER CN 04	3-LEG 0	N TRF SIGNAL	N N	RAIN WET DAWN	O-1 L-TURN TURN INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT SW-NE	01	DRVR	NONE	40	M	OR-Y OR<25		000	000 000	02 00 00
															02	NONE 0 PRVTE PSNGR CAR	TURN-L NE-SE	01	DRVR	INJC	43	F	OTH-Y OR<25		028,004	000 000	00 02
02653 NONE	N	N	N			07/21/2012 SA 1P	14	PACIFIC HY 99E 14TH ST	INTER CN 03	3-LEG 0	N TRF SIGNAL	N N	CLR DRY DAY	O-1 L-TURN TURN PDO	01	NONE 0 PRVTE PSNGR CAR	STRGHT SW-NE	01	DRVR	NONE	50	F	OR-Y OR<25		000	000 000	02 00 00
															02	NONE 0 PRVTE PSNGR CAR	TURN-L NE-SE	01	DRVR	NONE	00	F	UNK UNK		028	000 000	00 02
03404 STATE	N	N	N	N	N	09/13/2012 TH 7P	14	PACIFIC HY 99E 14TH ST	INTER CN 04	3-LEG 0	N TRF SIGNAL	N N	CLR DRY DUSK	O-1 L-TURN TURN INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT SW-NE	01	DRVR	INJC	37	M	OR-Y OR<25		000	000 000	02 00 00
															02	NONE 0 PRVTE PSNGR CAR	TURN-L NE-SE	01	DRVR	NONE	53	F	OR-Y OR<25		028,004	000 000	00 02
00388 STATE	N	N	N	N	N	02/01/2013 FR 9P	14	PACIFIC HY 99E 14TH ST	INTER CN 03	3-LEG 0	N TRF SIGNAL	N N	CLR DRY DLIT	O-1 L-TURN TURN PDO	01	NONE 0 PRVTE PSNGR CAR	TURN-L NE-SE	01	DRVR	NONE	49	F	OR-Y OR<25		028,004	000 000	02 00 02
															02	NONE 0 PRVTE PSNGR CAR	STRGHT SW-NE	01	DRVR	NONE	23	M	OR-Y OR<25		000	000 000	00 00 00
															02	NONE 0 PRVTE PSNGR CAR	STRGHT SW-NE	02	PSNG	NO<5	01	M			000	000 000	00 00 00
00556 CITY	N	N	N			02/18/2013 MO 2P	14	PACIFIC HY 99E 14TH ST	INTER CN 02	3-LEG 0	N TRF SIGNAL	N N	CLD DRY DAY	ANGL-OTH TURN INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT SW-NE	01	DRVR	INJB	46	M	OR-Y OR<25		000	000 000	02 00 00
															02	NONE 0	TURN-R										

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CITY OF OREGON CITY, CLACKAMAS COUNTY

PACIFIC HY 99E at 14TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 49

SER# / INVEST	SPEED	ALCHL	DRUGS	SCHL	WORK	DAY OF WEEK / TIME	CLASS / DIST FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF-CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	TYPE	SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
																PRVTE	SE-NE									016	00
																PSNGR CAR		01	DRVR	NONE	32	M	OR-Y OR<25		028	000	02
															02	NONE 0	TURN-R										
																PRVTE	SE-NE									016	00
																PSNGR CAR		02	PSNG	INJC	36	F			000	000	00
00564	N	N	N	N	N	02/18/2013	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLD	O-1 L-TURN	01	NONE 0	STRGHT											02
CITY						MO		14TH ST	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	SW-NE									000	00
						10A			03	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	91	M	OR-Y OR<25		000	000	00
															02	NONE 0	TURN-L										
																PRVTE	NE-SE									000	00
																PSNGR CAR		01	DRVR	INJC	69	M	OR-Y OR<25		028,004	000	02
00701	N	N	N			02/28/2013	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	O-1 L-TURN	01	NONE 0	STRGHT											02
NONE						TH		14TH ST	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	SW-NE									000	00
						12P			04	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	58	M	OR-Y OR<25		000	000	00
															02	NONE 0	TURN-L										
																PRVTE	NE-SE									000	00
																PSNGR CAR		01	DRVR	NONE	64	M	OR-Y OR<25		028,004	000	02
01290	N	N	N	N	N	04/16/2013	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLD	O-1 L-TURN	01	NONE 0	STRGHT											04
NONE						TU		14TH ST	CN		L-GRN-SIG	N	DRY	TURN		PRVTE	SW-NE									000	00
						12P			04	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	37	F	OR-Y OR<25		000	000	00
															02	NONE 0	TURN-L										
																PRVTE	NE-SE									000	00
																PSNGR CAR		01	DRVR	INJC	63	F	OR-Y OR<25		003,004	000	04
															02	NONE 0	TURN-L										
																PRVTE	NE-SE									000	00
																PSNGR CAR		02	PSNG	INJB	20	F			000	000	00
															02	NONE 0	TURN-L										
																PRVTE	NE-SE									000	00
																PSNGR CAR		03	PSNG	NO<5	01	F			000	000	00
02592	N	N	N			07/19/2013	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	O-1 L-TURN	01	NONE 0	TURN-L											02
NONE						FR		14TH ST	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	NE-SE									000	00
						6P			04	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	23	F	OR-Y OR<25		028	000	02
															02	NONE 0	STRGHT										
																PRVTE	SW-NE									000	00
																PSNGR CAR		01	DRVR	NONE	00	M	OR-Y OR<25		000	000	00
03806	N	N	N			10/07/2013	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	O-1 L-TURN	01	NONE 0	STRGHT											04,02
CITY						MO		14TH ST	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	SW-NE									000	00
						9P			04	0		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	57	F	OR-Y OR<25		000	000	00

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CITY OF OREGON CITY, CLACKAMAS COUNTY

PACIFIC HY 99E at 14TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 49

SER# / INVEST	S P E D	A L C	R U S	S C L	W O R K	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
															02	NONE 0 PRVTE PSNGR CAR	TURN-L NE-SE	01	DRVR	NONE	48 M	OR-Y OR<25		003,028,004	000 000		00 04,02
04575 CITY	N	Y	N			11/25/2013 MO 7P	14	PACIFIC HY 99E 14TH ST	INTER CN 04	3-LEG 0	N TRF SIGNAL	N N	UNK DRY DLIT	O-1 L-TURN TURN INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT SW-NE	01	DRVR	NONE	34 M	OR-Y OR<25		000	000		02 00 00
															02	NONE 0 PRVTE PSNGR CAR	TURN-L NE-SE	01	DRVR	INJC	26 M	OR-Y OR<25		028,004	000		00 02
															02	NONE 0 PRVTE PSNGR CAR	TURN-L NE-SE	02	PSNG	INJC	42 F			000	000		00 00
04860 CITY	N	N	N			12/16/2013 MO 6P	14	PACIFIC HY 99E 14TH ST	INTER CN 04	3-LEG 0	N TRF SIGNAL	N N	UNK DRY DLIT	O-1 L-TURN TURN INJ	01	NONE 0 PRVTE PSNGR CAR	TURN-L NE-SE	01	DRVR	INJC	48 F	SUSP OR<25		028,004	013 000		02 00 02
															02	NONE 0 PRVTE PSNGR CAR	STRGHT SW-NE	01	DRVR	INJC	33 M	OR-Y OR<25		000	000	013	00 00
															03	NONE 0 PRVTE PSNGR CAR	STOP NE-SW	01	DRVR	INJC	36 F	OR-Y OR<25		000	022 000		00 00
															03	NONE 0 PRVTE PSNGR CAR	STOP NE-SW	02	PSNG	INJC	36 M			000	022 000		00 00
															03	NONE 0 PRVTE PSNGR CAR	STOP NE-SW	03	PSNG	NO<5	02 M			000	022 000		00 00
															03	NONE 0 PRVTE PSNGR CAR	STOP NE-SW	04	PSNG	INJC	01 M			000	022 000		00 00
00805 NONE	N	N	N			02/24/2014 MO 11A	14	PACIFIC HY 99E 14TH ST	INTER CN 02	3-LEG 0	N TRF SIGNAL	N N	RAIN WET DAY	ANGL-OTH TURN PDO	01	NONE 0 PRVTE PSNGR CAR	TURN-L SE-SW	01	DRVR	NONE	83 F	OR-Y OR<25		020	000		04 00 04
															02	NONE 0 PRVTE PSNGR CAR	TURN-L NE-SE	01	DRVR	NONE	46 M	OR-Y OR<25		000	000 000		00 00
01313 CITY	N	N	N			04/05/2014 SA 4P	14	PACIFIC HY 99E 14TH ST	INTER CN 04	3-LEG 0	N TRF SIGNAL	N N	CLD DRY DAY	O-1 L-TURN TURN INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT SW-NE	01	DRVR	NONE	35 F	N-VAL		040	000 000		04 00 04

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CITY OF OREGON CITY, CLACKAMAS COUNTY

PACIFIC HY 99E at 14TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 49

SER# / INVEST	SPE	DRS	WCO	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
																					OR<25					
													02	NONE 0	TURN-L											
														PRVTE	NE-SE									000		00
														PSNGR CAR		01	DRVR	INJC	32	F	OR-Y		040	000		04
																					OR<25					
02244	N	N	N	06/11/2014	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	BIKE	01	NONE 0	TURN-R											02
NONE				WE		14TH ST	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	SW-SE									000		00
				6P			04	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	59	M	OR-Y		027	000		02
																					OR<25					
															-											
															STRGHT	01	BIKE	INJB	48	M		I	INRD	000	000	00
															SW NE											
03729	N	N	N	09/22/2014	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	O-1 L-TURN	01	NONE 0	STRGHT											02
NONE				MO		14TH ST	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	SW-NE									000		00
				9A			04	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	42	F	OR-Y		000	000		00
																					OR<25					
													02	NONE 0	TURN-L											
														PRVTE	NE-SE									000		00
														PSNGR CAR		01	DRVR	NONE	00	M	UNK		028,004	000		02
																					UNK					
00042	N	N	N	01/05/2015	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	O-1 L-TURN	01	NONE 0	STRGHT											02
NO RPT				MO		14TH ST	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	SW-NE									000		00
				11A			04	0		N	DAY	INJ		TRUCK		01	DRVR	NONE	21	M	OR-Y		000	000		00
																					OR>25					
													02	NONE 0	TURN-L											
														PRVTE	NE-SE									000		00
														PSNGR CAR		01	DRVR	INJB	65	F	OR-Y		028,004	000		02
																					OR<25					
02305	N	N	N	06/13/2015	14	PACIFIC HY 99E	INTER	3-LEG	N	N	CLR	O-1 L-TURN	01	NONE 0	TURN-L											02
NO RPT				SA		14TH ST	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	NE-SE									000		00
				9A			03	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	17	F	OR-Y		028	000		02
																					OR<25					
													02	NONE 0	STRGHT											
														PRVTE	SW-NE									000		00
														PSNGR CAR		01	DRVR	NONE	32	M	OR-Y		000	000		00
																					OR<25					

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CRASH SUMMARIES BY YEAR BY COLLISION TYPE

ABERNATHY RD at REDLAND RD, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

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	1	0	1	0	1	0	0
YEAR 2014 TOTAL	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**1**	**0**	**0**
YEAR: 2011														
REAR-END	0	1	0	1	0	3	0	1	0	1	0	1	0	0
YEAR 2011 TOTAL	**0**	**1**	**0**	**1**	**0**	**3**	**0**	**1**	**0**	**1**	**0**	**1**	**0**	**0**
FINAL TOTAL	**0**	**1**	**1**	**2**	**0**	**3**	**0**	**2**	**0**	**2**	**0**	**2**	**0**	**0**

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OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANAYLYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CRASH LISTING

CITY OF OREGON CITY, CLACKAMAS COUNTY

ABERNATHY RD at REDLAND RD, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 2

SER# / INVEST	S P E D	A L C	R U G S	S C H L	W O R K	DATE / DAY / TIME	CLASS / DIST FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF-CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
02695	N	N	N	N	N	07/28/2011	16	ABERNATHY RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT									07
CITY						TH	0	REDLAND RD	NW		L-TURN REF	N	DRY	REAR		PRVTE	NW-SE								000	00
						1P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	55	F	OR-Y OR<25		026	000	07
															02	NONE 0	STOP									
																PRVTE	NW-SE								012	00
																PSNGR CAR		01	DRVR	INJC	16	F	OR-Y OR<25		000	00
															02	NONE 0	STOP									
																PRVTE	NW-SE								012	00
																PSNGR CAR		02	PSNG	INJC	13	F			000	00
															02	NONE 0	STOP									
																PRVTE	NW-SE								012	00
																PSNGR CAR		03	PSNG	INJC	08	F			000	00
00995	N	N	N			03/11/2014	16	ABERNATHY RD	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT									04
NONE						TU	0	REDLAND RD	CN		TRF SIGNAL	N	DRY	ANGL		PRVTE	SE-NW								000	00
						2P			03	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	62	F	OR-Y OR<25		020	000	04
															02	NONE 0	STRGHT									
																UNKN	SW-NE								000	00
																PSNGR CAR		01	DRVR	NONE	00	F	UNK UNK		000	00

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CRASH SUMMARIES BY YEAR BY COLLISION TYPE

REDLAND RD at HOLCOMB BLVD, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

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: 2015														
REAR-END	0	1	2	3	0	1	0	3	0	2	1	3	0	0
TURNING MOVEMENTS	0	1	1	2	0	1	0	1	1	1	1	2	0	0
YEAR 2015 TOTAL	**0**	**2**	**3**	**5**	**0**	**2**	**0**	**4**	**1**	**3**	**2**	**5**	**0**	**0**
YEAR: 2014														
REAR-END	0	1	0	1	0	1	0	1	0	0	1	1	0	0
TURNING MOVEMENTS	0	0	1	1	0	0	0	1	0	1	0	1	0	0
YEAR 2014 TOTAL	**0**	**1**	**1**	**2**	**0**	**1**	**0**	**2**	**0**	**1**	**1**	**2**	**0**	**0**
YEAR: 2013														
REAR-END	0	0	2	2	0	0	0	2	0	2	0	2	0	0
TURNING MOVEMENTS	0	1	0	1	0	1	0	0	1	0	1	1	0	0
YEAR 2013 TOTAL	**0**	**1**	**2**	**3**	**0**	**1**	**0**	**2**	**1**	**2**	**1**	**3**	**0**	**0**
YEAR: 2012														
REAR-END	0	0	1	1	0	0	0	0	1	1	0	1	0	0
YEAR 2012 TOTAL	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**1**	**0**	**0**
YEAR: 2011														
REAR-END	0	1	0	1	0	2	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	0	1	1	0	0	0	1	0	1	0	1	0	0
YEAR 2011 TOTAL	**0**	**1**	**1**	**2**	**0**	**2**	**0**	**2**	**0**	**2**	**0**	**2**	**0**	**0**

REDLAND RD at HOLCOMB BLVD, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

FINAL TOTAL	**0**	**5**	**8**	**13**	**0**	**6**	**0**	**10**	**3**	**9**	**4**	**13**	**0**	**0**

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CITY OF OREGON CITY, CLACKAMAS COUNTY

REDLAND RD at HOLCOMB BLVD, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 13

SER# / INVEST	SPE	ALC	DRS	SWK	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
04478	N	N	N		11/07/2011	16	HOLCOMB BLVD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE					MO	0	REDLAND RD	NE		TRF SIGNAL	N	DRY	REAR		PRVTE	NE-SW									000	00
					11A			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	00	M	OR-Y UNK		026	000	07
														02	NONE 0	STOP											
															PRVTE	NE-SW									011	00
															PSNGR CAR		01	DRVR	INJC	53	M	OR-Y OR<25		000	000	00
														02	NONE 0	STOP											
															PRVTE	NE-SW									011	00
															PSNGR CAR		02	PSNG	INJC	48	F			000	000	00
01882	N	N	N		05/22/2012	16	HOLCOMB BLVD	INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT											07
NONE					TU	0	REDLAND RD	NE		TRF SIGNAL	N	WET	REAR		PRVTE	NE-SW									000	00
					10A			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	27	F	OR-Y OR<25		026	000	07
														02	NONE 0	STOP											
															PRVTE	NE-SW									011	00
															PSNGR CAR		01	DRVR	NONE	24	M	OR-Y OR<25		000	000	00
03052	N	N	N		07/30/2013	16	HOLCOMB BLVD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE					TU	0	REDLAND RD	NE		TRF SIGNAL	N	DRY	REAR		PRVTE	NE-SW									000	00
					6A			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	F	OR-Y OR<25		026	000	07
														02	NONE 0	STOP											
															PRVTE	NE-SW									011	00
															PSNGR CAR		01	DRVR	NONE	42	F	OR-Y OR<25		000	000	00
00207	N	N	N		01/16/2014	16	HOLCOMB BLVD	INTER	CROSS	N	N	FOG	S-1STOP	01	NONE 0	STRGHT											07
NONE					TH	0	REDLAND RD	NE		TRF SIGNAL	N	DRY	REAR		PRVTE	NE-SW									000	00
					7A			06	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	16	M	OR-Y OR<25		026	000	07
														02	NONE 0	STOP											
															PRVTE	NE-SW									011	00
															PSNGR CAR		01	DRVR	INJC	41	F	OR-Y OR<25		000	000	00
03773	N	N	N	N	N 09/25/2014	16	HOLCOMB BLVD	INTER	CROSS	N	N	CLR	O-1 L-TURN	01	POLCE 0	STRGHT											02
COUNTY					TH	0	REDLAND RD	NE		TRF SIGNAL	N	DRY	TURN		PUBLC	NE-SW									000	00
					6P			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	37	M	OR-Y OR<25		000	000	00
														02	NONE 0	TURN-L											
															PRVTE	SW-NW									000	00
															PSNGR CAR		01	DRVR	NONE	16	M	OR-Y OR<25		028,004	000	02
03807	N	N	N		09/18/2015	16	HOLCOMB BLVD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
NONE					FR	0	REDLAND RD	NE		TRF SIGNAL	N	DRY	REAR		UNKN	NE-SW									000	00
					10P			06	0		N	DARK	PDO		PSNGR CAR		01	DRVR	NONE	00	M	UNK UNK		026	000	29
														02	NONE 0	STOP											
															PRVTE	NE-SW									011	00
															PSNGR CAR		01	DRVR	NONE	17	F	OR-Y		000	000	00

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CITY OF OREGON CITY, CLACKAMAS COUNTY

REDLAND RD at HOLCOMB BLVD, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 13

SER# / INVEST	S P E D	A L C	R U G S	S C H L	W O R K	DATE / DAY / TIME	CLASS / DIST FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
04246	N	N	N			10/14/2015	16	HOLCOMB BLVD	INTER	CROSS	N	N	CLR	O-OTHER	01	NONE 0	TURN-R						OR<25				
NONE						WE	0	REDLAND RD	NE		TRF SIGNAL	N	DRY	TURN		PRVTE	SE-NE									000	00
						9P			05	0		N	DARK	PDO		PSNGR CAR		01	DRVR	NONE	00	F	UNK		000	000	00
																							OR<25				
															02	NONE 0	TURN-L										
																PRVTE	NW-NE									000	00
																PSNGR CAR		01	DRVR	NONE	17	F	OR-Y		028	000	02
																							OR<25				
02001	N	N	N			05/27/2015	16	HOLCOMB BLVD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										29
NONE						WE	0	REDLAND RD	SE		TRF SIGNAL	N	DRY	REAR		PRVTE	SE-NW									000	00
						10A			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	45	F	OR-Y		026	000	29
																							OR<25				
															02	NONE 0	STOP										
																PRVTE	SE-NW									011	00
																PSNGR CAR		01	DRVR	INJB	65	F	OR-Y		000	000	00
																							OR<25				
01653	N	N	N			05/13/2013	16	HOLCOMB BLVD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										07
NONE						MO	0	REDLAND RD	NW		TRF SIGNAL	N	DRY	REAR		PRVTE	NW-SE									000	00
						3P			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	M	OR-Y		026	000	07
																							OR<25				
															02	NONE 0	STOP										
																PRVTE	NW-SE									011	00
																PSNGR CAR		01	DRVR	NONE	40	F	OR-Y		000	000	00
																							OR<25				
															02	NONE 0	STOP										
																PRVTE	NW-SE									011	00
																PSNGR CAR		02	PSNG	NO<5	03	F			000	000	00
02812	N	N	N			07/12/2015	16	HOLCOMB BLVD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										29
NONE						SU	0	REDLAND RD	NW		TRF SIGNAL	N	DRY	REAR		PRVTE	NW-SE									000	00
						5P			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	58	M	OTH-Y		026	000	29
																							N-RES				
															02	NONE 0	STOP										
																PRVTE	NW-SE									011	00
																PSNGR CAR		01	DRVR	NONE	58	M	OR-Y		000	000	00
																							OR<25				
01969	N	N	N	N	N	06/03/2011	16	HOLCOMB BLVD	INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 0	STRGHT										04
CITY						FR	0	REDLAND RD	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	NW-SE									000	00
						6A			03	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	59	M	OR-Y		020	000	04
																							OR>25				
															02	NONE 0	TURN-L										
																PRVTE	SE-SW									000	00
																PSNGR CAR		01	DRVR	NONE	70	F	OR-Y		000	000	00
																							OR<25				
03648	N	N	N	N	N	09/28/2013	16	HOLCOMB BLVD	INTER	CROSS	N	N	RAIN	O-1 L-TURN	01	NONE 0	STRGHT										04
STATE						SA	0	REDLAND RD	CN		L-GRN-SIG	N	WET	TURN		PRVTE	NW-SE									000	00
						8P			01	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	52	M	OR-Y		000	000	00
																							OR<25				
															01	NONE 0	STRGHT										
																PRVTE	NW-SE									000	00

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OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANAYLYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CRASH LISTING

CITY OF OREGON CITY, CLACKAMAS COUNTY

REDLAND RD at HOLCOMB BLVD, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 13

SER# / INVEST	S P E D	A	U	C	S	W O R K	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ / SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
																	PSNGR CAR		02	PSNG	INJB	19	M			000	000	00
																02	NONE 0 / PRVTE / PSNGR CAR	TURN-L / SE-SW									000	00
																			01	DRVR	NONE	18	F	OR-Y OR<25		028,004,003	000	04
05202 / NONE	N	N	N				12/07/2015 / MO / 7A	16 / 0	HOLCOMB BLVD / REDLAND RD	INTER / CN / 01	CROSS / 0	N / TRF SIGNAL	N / N / N	RAIN / WET / DAY	O-1 L-TURN / TURN / INJ	01	NONE 0 / PRVTE / PSNGR CAR	STRGHT / N -S	01	DRVR	NONE	35	M	OTH-Y OR<25		000	000	02 00 00
																02	NONE 0 / PRVTE / PSNGR CAR	TURN-L / S -W	01	DRVR	INJC	30	M	OR-Y OR<25		028,004	000	00 02

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CRASH SUMMARIES BY YEAR BY COLLISION TYPE

WASHINGTON ST at ABERNATHY RD, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

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
FINAL TOTAL														

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirements, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

CRASH SUMMARIES BY YEAR BY COLLISION TYPE

WASHINGTON ST at 17TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

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
FINAL TOTAL														

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirements, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

CRASH SUMMARIES BY YEAR BY COLLISION TYPE

WASHINGTON ST at 15TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

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: 2015														
ANGLE	0	1	0	1	0	1	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	1	1	2	0	1	0	1	1	1	1	2	0	0
YEAR 2015 TOTAL	**0**	**2**	**1**	**3**	**0**	**2**	**0**	**2**	**1**	**2**	**1**	**3**	**0**	**0**
YEAR: 2014														
ANGLE	0	0	1	1	0	0	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	1	2	3	0	1	0	2	1	2	1	3	0	0
YEAR 2014 TOTAL	**0**	**1**	**3**	**4**	**0**	**1**	**0**	**3**	**1**	**3**	**1**	**4**	**0**	**0**
YEAR: 2013														
ANGLE	0	1	0	1	0	1	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	1	0	1	0	1	0	1	0	1	0	1	0	0
YEAR 2013 TOTAL	**0**	**2**	**0**	**2**	**0**	**2**	**0**	**2**	**0**	**2**	**0**	**2**	**0**	**0**
YEAR: 2012														
ANGLE	0	1	1	2	0	2	0	1	1	1	1	2	0	0
REAR-END	0	1	0	1	0	1	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	1	2	3	0	1	0	3	0	3	0	3	0	0
YEAR 2012 TOTAL	**0**	**3**	**3**	**6**	**0**	**4**	**0**	**5**	**1**	**5**	**1**	**6**	**0**	**0**
YEAR: 2011														
ANGLE	0	0	1	1	0	0	0	1	0	1	0	1	0	0
REAR-END	0	2	0	2	0	2	0	2	0	2	0	2	0	0

CRASH SUMMARIES BY YEAR BY COLLISION TYPE

WASHINGTON ST at 15TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

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
TURNING MOVEMENTS	0	1	1	2	0	2	0	2	0	1	1	2	0	0
YEAR 2011 TOTAL	**0**	**3**	**2**	**5**	**0**	**4**	**0**	**5**	**0**	**4**	**1**	**5**	**0**	**0**
FINAL TOTAL	**0**	**11**	**9**	**20**	**0**	**13**	**0**	**17**	**3**	**16**	**4**	**20**	**0**	**0**

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OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANAYLYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CRASH LISTING

CITY OF OREGON CITY, CLACKAMAS COUNTY

WASHINGTON ST at 15TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 20

SER# / INVEST	SPEED	ALCHL	DRUGS	SCHL	WORK	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
01896	N	N	N			05/23/2012	16	WASHINGTON ST	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE						WE	0	15TH ST	NE		TRF SIGNAL	N	DRY	REAR		PRVTE	NE-SW									000		00
						5P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	35	M	OR-Y OR<25		026	000		07
															02	NONE 0	STOP											
																PRVTE	NE-SW									011		00
																PSNGR CAR		01	DRVR	INJC	48	M	OR-Y OR<25		000	000		00
00020	N	N	N			01/03/2011	16	WASHINGTON ST	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NO RPT						MO	0	15TH ST	NW		TRF SIGNAL	N	DRY	REAR		PRVTE	NW-SE									000		00
						10A			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK UNK		026	000		07
															02	NONE 0	STOP											
																PRVTE	NW-SE									011		00
																PSNGR CAR		01	DRVR	INJC	53	M	OR-Y OR<25		000	000		00
02978	N	N	N			08/12/2011	16	WASHINGTON ST	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										013	07
NONE						FR	0	15TH ST	NW		TRF SIGNAL	N	DRY	REAR		PRVTE	NW-SE									000		00
						3P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	00	M	UNK UNK		026	000		07
															02	NONE 0	STOP											
																PRVTE	NW-SE									011	013	00
																PSNGR CAR		01	DRVR	INJC	34	F	OR-Y OR<25		000	000		00
															03	UNKN 0	STOP											
																UNKN	NW-SE									022		00
																UNKNOWN		01	DRVR	NONE	00	Unk	UNK UNK		000	000		00
00548	Y	N	N			02/07/2014	16	WASHINGTON ST	INTER	CROSS	N	N	SNOW	ANGL-STP	01	NONE 0	TURN-R										124	01,08
NONE						FR	0	15TH ST	NW		TRF SIGNAL	N	SNO	TURN		PRVTE	NE-NW									000	124	00
						3P			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	M	UNK UNK		047,001	000		01,08
															02	NONE 0	STOP											
																PRVTE	NW-SE									011		00
																PSNGR CAR		01	DRVR	NONE	57	M	OR-Y OR<25		000	000		00
01851	N	N	N	N	N	05/27/2011	16	WASHINGTON ST	INTER	CROSS	N	N	CLD	O-1 L-TURN	01	NONE 0	STRGHT											02
CITY						FR	0	15TH ST	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	SE-NW									000		00
						10P			02	0		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	30	F	OTH-Y N-RES		000	000		00
															02	NONE 0	TURN-L											
																PRVTE	NW-NE									000		00
																PSNGR CAR		01	DRVR	NONE	16	M	OR-Y OR<25		004,028	000		02
02174	Y	N	N	N	N	06/19/2011	16	WASHINGTON ST	INTER	CROSS	N	N	CLR	ANGL-STP	01	NONE 0	TURN-R											32,01
CITY						SU	0	15TH ST	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	SE-NE									001		00
						12P			01	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	44	M	OR-Y OR<25		052,043	017		32,01
															02	NONE 0	STOP											
																PRVTE	NE-SW									012		00
																PSNGR CAR		01	DRVR	INJC	46	F	OR-Y		000	000		00

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CITY OF OREGON CITY, CLACKAMAS COUNTY

WASHINGTON ST at 15TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 20

SER# / INVEST	S P E D	A L C	R G S	S H L	W O R K	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
																							OR<25					
															02	NONE 0	STOP											
																PRVTE	NE-SW									012		00
																PSNGR CAR		02	PSNG	INJC	18	F			000	000		00
02178	N	N	N			06/19/2011		16	WASHINGTON ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											04
NO RPT						SU	0		15TH ST	CN		TRF SIGNAL	N	DRY	ANGL		PRVTE	SE-NW								000		00
						3P				02	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	70	F	OR-Y		097	000		00
																								OR>25					
															02	NONE 0	STRGHT											
																PRVTE	NE-SW									000		00
																PSNGR CAR		01	DRVR	NONE	48	M	OR-Y		097	000		00
																							OR<25					
01121	N	N	N			03/24/2012		17	WASHINGTON ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											02
NONE						SA	0		15TH ST	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	SW-NE								000		00
						2P				02	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	64	F	OR-Y		000	000		00
																								OR<25					
															02	NONE 0	TURN-R											
																PRVTE	SE-NE									016		00
																PSNGR CAR		01	DRVR	NONE	49	M	OR-Y		028	000		02
																							OR<25					
01703	N	N	N	N	N	05/12/2012		16	WASHINGTON ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											04
CITY						SA	0		15TH ST	CN		TRF SIGNAL	N	DRY	ANGL		PRVTE	SE-NW								000		00
						9A				02	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	52	M	OR-Y		000	000		00
																								OR<25					
															02	NONE 0	STRGHT											
																PRVTE	SW-NE									000		00
																PSNGR CAR		01	DRVR	NONE	62	M	OR-Y		020	000		04
																							OR<25					
															02	NONE 0	STRGHT											
																PRVTE	SW-NE									000		00
																PSNGR CAR		02	PSNG	INJC	60	F			000	000		00
01797	N	N	N			05/16/2012		17	WASHINGTON ST	INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 0	TURN-L										013	02
NONE						WE	0		15TH ST	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	NW-NE								000		00
						4P				02	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	46	F	OR-Y		028	000		02
																								OR<25					
															02	NONE 0	STRGHT											
																PRVTE	SE-NW									000	013	00
																PSNGR CAR		01	DRVR	NONE	30	F	OR-Y		000	000		00
																							OR<25					
															03	NONE 0	TURN-R											
																PRVTE	NE-NW									022		00
																PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																							UNK					
02541	N	N	N			07/13/2012		16	WASHINGTON ST	INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 0	STRGHT											02
NO RPT						FR	0		15TH ST	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	SE-NW								000		00
						2P				02	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJB	18	M	OR-Y		000	000		00
																								OR<25					
															02	NONE 0	TURN-L											
																PRVTE	NW-NE									000		00

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CITY OF OREGON CITY, CLACKAMAS COUNTY

WASHINGTON ST at 15TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 20

SER# / INVEST	S P E D	A L C	D R S L	S W C K	O R	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
																PSNGR CAR		01	DRVR	NONE	16	F	OR-Y OR<25		028,004	000		02
04903	N	N	N			12/16/2012	16	WASHINGTON ST	INTER	CROSS	N	N	RAIN	ANGL-OTH	01	NONE 0	STRGHT											04
NO RPT						SU	0	15TH ST	CN		TRF SIGNAL	N	WET	ANGL		PRVTE	SE-NW									000		00
						9P			01	0		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	32	M	OR-Y OR<25		020	000		04
															01	NONE 0	STRGHT											
																PRVTE	SE-NW									000		00
																PSNGR CAR		02	PSNG	NO<5	02	F			000	000		00
															02	NONE 0	STRGHT											
																PRVTE	NE-SW									000		00
																PSNGR CAR		01	DRVR	NONE	57	F	OR-Y OR<25		000	000		00
03443	N	N	N	N	N	09/16/2013	16	WASHINGTON ST	INTER	CROSS	N	N	CLD	BIKE	01	NONE 0	TURN-L										084	02
CITY						MO	0	15TH ST	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	NW-NE									000		00
						6P			02	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	39	M	OR-Y OR<25		027	000	084	02
																- STRGHT SE NW		01	BIKE	INJC	45	M		I INRD	000	035		00
03476	N	N	N	N	N	09/18/2013	16	WASHINGTON ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											04
CITY						WE	0	15TH ST	CN		TRF SIGNAL	N	DRY	ANGL		PRVTE	NE-SW									000		00
						12P			04	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	23	F	OR-Y OR<25		020	000		04
															02	NONE 0	STRGHT											
																PRVTE	NW-SE									000		00
																PSNGR CAR		01	DRVR	NONE	66	F	OR-Y OR<25		000	000		00
01340	N	N	N	N	N	04/07/2014	16	WASHINGTON ST	INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 0	STRGHT											02
NONE						MO	0	15TH ST	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	SE-NW									000		00
						9P			02	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	39	M	OR-Y OR<25		000	000		00
															02	NONE 0	TURN-L											
																PRVTE	NW-NE									000		00
																PSNGR CAR		01	DRVR	INJC	22	F	OR-Y OR>25		028,004	000		02
02043	N	N	N			05/28/2014	16	WASHINGTON ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											04
NONE						WE	0	15TH ST	CN		TRF SIGNAL	N	DRY	ANGL		PRVTE	NE-SW									000		00
						2P			01	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	25	F	OR-Y OR<25		020	000		04
															02	NONE 0	STRGHT											
																PRVTE	SE-NW									000		00
																PSNGR CAR		01	DRVR	NONE	62	M	OR-Y OR<25		000	000		00
02753	N	N	N			07/17/2014	16	WASHINGTON ST	INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 0	STRGHT											02
NO RPT						TH	0	15TH ST	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	SE-NW									000		00
						4P			02	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	59	F	OR-Y OR<25		000	000		00
															02	NONE 1	TURN-L											

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CITY OF OREGON CITY, CLACKAMAS COUNTY

WASHINGTON ST at 15TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 20

SER# / INVEST	S P E D	A L C	R U G S	S C H L	W O R K	DATE / DAY / TIME	CLASS / DIST FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
																PRVTE	NW-NE									000	00
																PSNGR CAR		01	DRVR	NONE	40	M	OR-Y OR<25		028,004	000	02
00711	N	N	N			02/23/2015	16	WASHINGTON ST	INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 0	STRGHT										02
NO RPT						MO	0	15TH ST	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	SE-NW									000	00
						8P			02	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	INJC	39	F	OR-Y OR<25		000	000	00
															02	NONE 0	TURN-L										
																PRVTE	NW-NE									000	00
																PSNGR CAR		01	DRVR	NONE	16	M	OR-Y OR<25		028,004	000	02
04626	N	N	N			11/06/2015	16	WASHINGTON ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT										04
NONE						FR	0	15TH ST	CN		TRF SIGNAL	N	DRY	ANGL		PRVTE	NE-SW									000	00
						9A			01	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJB	38	M	OTH-Y N-RES		000	000	00
															02	NONE 0	STRGHT										
																PRVTE	SE-NW									000	00
																PSNGR CAR		01	DRVR	NONE	20	F	OR-Y OR<25		020	000	04
03528	N	N	N			08/29/2015	16	WASHINGTON ST	INTER	CROSS	N	N	RAIN	O-1 L-TURN	01	NONE 0	STRGHT										02
NONE						SA	0	15TH ST	CN		TRF SIGNAL	N	WET	TURN		PRVTE	SE-NW									000	00
						9A			02	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	54	M	OR-Y OR<25		000	000	00
															02	NONE 0	TURN-L										
																PRVTE	NW-NE									000	00
																PSNGR CAR		01	DRVR	NONE	37	M	OR-Y OR<25		028,004	000	02

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CRASH SUMMARIES BY YEAR BY COLLISION TYPE

WASHINGTON ST at 14TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

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: 2015														
REAR-END	0	2	0	2	0	2	0	2	0	2	0	2	0	0
YEAR 2015 TOTAL	**0**	**2**	**0**	**2**	**0**	**2**	**0**	**2**	**0**	**2**	**0**	**2**	**0**	**0**
YEAR: 2014														
FIXED / OTHER OBJECT	0	0	1	1	0	0	1	1	0	0	1	1	0	1
REAR-END	0	1	0	1	0	1	0	1	0	1	0	1	0	0
YEAR 2014 TOTAL	**0**	**1**	**1**	**2**	**0**	**1**	**1**	**2**	**0**	**1**	**1**	**2**	**0**	**1**
YEAR: 2013														
TURNING MOVEMENTS	0	1	1	2	0	5	0	1	1	0	2	2	0	0
YEAR 2013 TOTAL	**0**	**1**	**1**	**2**	**0**	**5**	**0**	**1**	**1**	**0**	**2**	**2**	**0**	**0**
YEAR: 2012														
ANGLE	0	0	1	1	0	0	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	1	0	1	0	1	0	0	1	1	0	1	0	0
YEAR 2012 TOTAL	**0**	**1**	**1**	**2**	**0**	**1**	**0**	**1**	**1**	**2**	**0**	**2**	**0**	**0**
YEAR: 2011														
TURNING MOVEMENTS	0	0	1	1	0	0	0	1	0	1	0	1	0	0
YEAR 2011 TOTAL	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**1**	**0**	**0**
FINAL TOTAL	**0**	**5**	**4**	**9**	**0**	**9**	**1**	**7**	**2**	**6**	**3**	**9**	**0**	**1**

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OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANAYLYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CRASH LISTING

CITY OF OREGON CITY, CLACKAMAS COUNTY

WASHINGTON ST at 14TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 9

SER# / INVEST	SPEED	ALCHL	DRSWLK	DATE / DAY / TIME	CLASS / DIST FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF-CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
02018	N	N	N	05/28/2014	16	WASHINGTON ST	INTER	CROSS	N	N	CLD	S-STRGHT	01	NONE 0	STRGHT											07
CITY				WE	0	14TH ST	NE		TRF SIGNAL	N	DRY	REAR		PRVTE	NE-SW										000		00
				8A			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	40	F	OR-Y OR<25		043,026	000		07
													02	NONE 0	STRGHT											
														PRVTE	NE-SW									006		00
														PSNGR CAR		01	DRVR	INJC	47	M	OR-Y OR<25		000	000		00
00650	N	N	N N N	02/13/2014	16	WASHINGTON ST	INTER	CROSS	N	Y	CLD	FIX OBJ	01	NONE 1	TURN-R											055	08
CITY				TH	0	14TH ST	W		TRF SIGNAL	N	DRY	FIX		PRVTE	NW-SW										000	055	00
				6P			06	0		N	DARK	PDO		SEMI TOW		01	DRVR	NONE	22	M	OR-Y OR<25		002	000		08
02972	N	N	N	07/23/2015	16	WASHINGTON ST	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT												29
NONE				TH	0	14TH ST	NW		TRF SIGNAL	N	DRY	REAR		PRVTE	NW-SE										000		00
				4P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	39	F	OR-Y OR<25		026	000		29
													02	NONE 0	STOP											
														PRVTE	NW-SE									011		00
														PSNGR CAR		01	DRVR	INJC	57	F	OR-Y OR<25		000	000		00
04634	N	N	N	11/06/2015	16	WASHINGTON ST	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT												29
NONE				FR	0	14TH ST	NW		TRF SIGNAL	N	DRY	REAR		UNKN	NW-SE										000		00
				3P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	00	M	UNK UNK		026	000		29
													02	NONE 0	STOP											
														PRVTE	NW-SE									011		00
														PSNGR CAR		01	DRVR	INJC	58	F	OR-Y OR<25		000	000		00
03563	N	N	N	09/22/2011	16	WASHINGTON ST	INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 0	STRGHT												02
NONE				TH	0	14TH ST	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	NE-SW										000		00
				5P			01	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	53	F	OR-Y OR<25		000	000		00
													02	NONE 0	TURN-L											
														PRVTE	SW-NW									000		00
														PSNGR CAR		01	DRVR	NONE	26	F	OR-Y OR<25		004,028	000		02
00866	N	N	N	03/06/2012	16	WASHINGTON ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT												04
NONE				TU	0	14TH ST	CN		TRF SIGNAL	N	DRY	ANGL		PRVTE	SE-NW										000		00
				9A			02	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	84	M	OR-Y OR<25		000	000		00
													02	NONE 0	STRGHT											
														PRVTE	SW-NE									000		00
														PSNGR CAR		01	DRVR	NONE	44	F	OR-Y OR<25		020	000		04
00960	N	N	N N N	03/14/2012	17	WASHINGTON ST	INTER	CROSS	N	N	RAIN	ANGL-OTH	01	NONE 0	STRGHT												02
CITY				WE	0	14TH ST	CN		STOP SIGN	N	WET	TURN		PRVTE	NW-SE										015		00
				4P			03	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	39	F	OR-Y OR<25		028	000		02
													02	NONE 0	STRGHT											
														PRVTE	NE-SW									000		00

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CITY OF OREGON CITY, CLACKAMAS COUNTY

WASHINGTON ST at 14TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 9

SER# / INVEST	S P E D	A L C	R U S	S C L	W O R K	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
																PSNGR CAR		01	DRVR	NONE	38	M	OR-Y OR<25		000	000	00
00349	N	N	N	N	N	01/29/2013	16	WASHINGTON ST	INTER	CROSS	N	N	CLD	O-1 L-TURN	01	NONE 0	STRGHT										02,14
CITY						TU	0	14TH ST	CN		L-GRN-SIG	N	WET	TURN		PRVTE	NE-SW									000	00
						6P			01	0		N	DARK	INJ		OTH BUS		01	DRVR	NONE	52	M	OR-Y OR<25		000	000	00
															01	NONE 0	STRGHT										
																PRVTE	NE-SW									000	00
																OTH BUS		02	PSNG	INJC	59	F			000	000	00
															01	NONE 0	STRGHT										
																PRVTE	NE-SW									000	00
																OTH BUS		03	PSNG	INJC	44	F			000	000	00
															01	NONE 0	STRGHT										
																PRVTE	NE-SW									000	00
																OTH BUS		04	PSNG	INJC	19	F			000	000	00
															01	NONE 0	STRGHT										
																PRVTE	NE-SW									000	00
																OTH BUS		05	PSNG	INJC	33	M			000	000	00
															02	NONE 0	TURN-L										
																PRVTE	SW-NW									000	00
																PSNGR CAR		01	DRVR	INJB	24	F	OR-Y OR<25		028,004	000	02,14
04816	N	N	N	N	N	12/13/2013	16	WASHINGTON ST	INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 0	TURN-L										02
CITY						FR	0	14TH ST	CN		TRF SIGNAL	N	DRY	TURN		UNKN	SE-SW									000	00
						5P			03	0		N	DLIT	PDO		MTRCYCLE		01	DRVR	NONE	00	Unk	UNK UNK		028	000	02
															02	NONE 0	STRGHT										
																PRVTE	NW-SE									000	00
																PSNGR CAR		01	DRVR	NONE	31	F	OR-Y OR<25		000	000	00

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CRASH SUMMARIES BY YEAR BY COLLISION TYPE

MAIN ST at 14TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

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: 2015														
ANGLE	0	2	4	6	0	2	1	3	2	6	0	6	0	0
TURNING MOVEMENTS	0	2	1	3	0	2	0	3	0	3	0	3	0	0
YEAR 2015 TOTAL	**0**	**4**	**5**	**9**	**0**	**4**	**1**	**6**	**2**	**9**	**0**	**9**	**0**	**0**
YEAR: 2014														
ANGLE	0	2	4	6	0	3	0	6	0	4	2	6	0	0
TURNING MOVEMENTS	0	0	1	1	0	0	0	0	1	1	0	1	0	0
YEAR 2014 TOTAL	**0**	**2**	**5**	**7**	**0**	**3**	**0**	**6**	**1**	**5**	**2**	**7**	**0**	**0**
YEAR: 2013														
ANGLE	0	1	4	5	0	1	0	5	0	5	0	5	0	0
YEAR 2013 TOTAL	**0**	**1**	**4**	**5**	**0**	**1**	**0**	**5**	**0**	**5**	**0**	**5**	**0**	**0**
YEAR: 2012														
ANGLE	0	4	0	4	0	4	0	3	1	4	0	4	0	0
YEAR 2012 TOTAL	**0**	**4**	**0**	**4**	**0**	**4**	**0**	**3**	**1**	**4**	**0**	**4**	**0**	**0**
YEAR: 2011														
ANGLE	0	2	0	2	0	4	0	2	0	2	0	2	0	0
PEDESTRIAN	0	1	0	1	0	1	0	0	1	0	1	1	0	0
TURNING MOVEMENTS	0	1	1	2	0	1	0	1	0	2	0	2	0	0
YEAR 2011 TOTAL	**0**	**4**	**1**	**5**	**0**	**6**	**0**	**3**	**1**	**4**	**1**	**5**	**0**	**0**

MAIN ST at 14TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

FINAL TOTAL	**0**	**15**	**15**	**30**	**0**	**18**	**1**	**23**	**5**	**27**	**3**	**30**	**0**	**0**

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OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANAYLYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CRASH LISTING

CITY OF OREGON CITY, CLACKAMAS COUNTY

MAIN ST at 14TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 30

SER# / INVEST	S P E D	A L C	R S L	W C H	O R K	DATE / DAY / TIME	CLASS / DIST FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AG E	S E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
03788	N	N	N			10/10/2011	16	MAIN ST	INTER	CROSS	N	N	CLD	PED	01	NONE 0	STRGHT										02
CITY						MO	0	14TH ST	SW		FLASHBCN-A	N	WET	PED		PRVTE	SW-NE									000	00
						7P			06	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	71	M	OR-Y OR<25		029	000	02
																	- STRGHT	01	PED	INJC	53	M		I XWLK	000	035	00
																	SE NW										
02759	N	N	N	N	N	08/01/2011	16	MAIN ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT										03
CITY						MO	0	14TH ST	CN		STOP SIGN	N	DRY	ANGL		RENTL	NE-SW									000	00
						8A			01	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	61	M	OR-Y OR<25		021	026	03
															02	NONE 0	STRGHT										
																PRVTE	SE-NW									015	00
																MTRCYCLE		01	DRVR	INJB	25	F	OR-Y OR<25		000	000	00
03123	N	N	N	N	N	08/25/2011	17	MAIN ST	INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 0	STRGHT										02
CITY						TH	0	14TH ST	CN		UNKNOWN	N	DRY	TURN		PRVTE	NE-SW									000	00
						10A			01	0		N	DAY	INJ		MTRCYCLE		01	DRVR	INJB	63	M	OR-Y OR<25		000	000	00
															02	NONE 0	TURN-L										
																PRVTE	SW-NW									000	00
																PSNGR CAR		01	DRVR	NONE	44	M	OR-Y OR<25		028,004	000	02
03461	N	N	N			09/20/2011	16	MAIN ST	INTER	CROSS	N	N	UNK	S-OTHER	01	NONE 0	TURN-R										08
NONE						TU	0	14TH ST	CN		FLASHBCN-R	N	UNK	TURN		PRVTE	SW-SE									000	00
						6P			04	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	M	OTH-Y N-RES		006	000	08
															02	NONE 0	TURN-R										
																PRVTE	SW-SE									000	00
																PSNGR CAR		01	DRVR	NONE	47	M	OR-Y OR<25		000	000	00
04663	N	N	N			12/04/2011	16	MAIN ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT										03
NONE						SU	0	14TH ST	CN		FLASHBCN-R	N	DRY	ANGL		PRVTE	NW-SE									000	00
						3P			03	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	54	F	OR-Y OR>25		021	000	03
															01	NONE 0	STRGHT										
																PRVTE	NW-SE									000	00
																PSNGR CAR		02	PSNG	INJC	16	F			000	000	00
															01	NONE 0	STRGHT										
																PRVTE	NW-SE									000	00
																PSNGR CAR		03	PSNG	INJC	01	M			000	000	00
															02	NONE 0	STRGHT										
																PRVTE	NE-SW									000	00
																PSNGR CAR		01	DRVR	NONE	26	M	OR-Y OR<25		000	000	00
00830	N	N	N			03/05/2012	16	MAIN ST	INTER	CROSS	N	N	RAIN	ANGL-OTH	01	NONE 0	STRGHT										02
NO RPT						MO	0	14TH ST	CN		STOP SIGN	N	WET	ANGL		PRVTE	SW-NE									015	00
						9A			02	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	49	F	OR-Y		028	000	02

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OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANAYLYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CRASH LISTING

CITY OF OREGON CITY, CLACKAMAS COUNTY

MAIN ST at 14TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 30

SER# / INVEST	S P E D	A L C	R S L	W C H	O R K	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ / SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
																							OR<25					
															02	NONE 0	STRGHT											
																PRVTE	SE-NW									000		00
																PSNGR CAR		01	DRVR	NONE	88	F	OR-Y		000	000		00
																							OR<25					
02622	N	N	N			07/19/2012	16	MAIN ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											02
NONE						TH	0	14TH ST	CN		STOP SIGN	N	DRY	ANGL		PRVTE	SE-NW									000		00
						4P			02	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	30	F	OR-Y		000	000		00
																							OR<25					
															01	NONE 0	STRGHT											
																PRVTE	SE-NW									000		00
																PSNGR CAR		02	PSNG	NO<5	04	F			000	000		00
															02	NONE 0	STRGHT											
																PRVTE	SW-NE									015		00
																PSNGR CAR		01	DRVR	INJC	67	F	OR-Y		028	000		02
																							OR<25					
02833	N	N	N	N	N	08/02/2012	16	MAIN ST	INTER	CROSS	N	N	CLR	BIKE													110	05,03
CITY						TH	0	14TH ST	CN		FLASHBCN-R	N	DRY	ANGL			-											
						6P			01	0		N	DAY	INJ			STRGHT NE SW	01	BIKE	INJB	29	M		I	XWLK	039,021	000		05,03
															01	NONE 0	STRGHT											
																PRVTE	SE-NW									000	110	00
																PSNGR CAR		01	DRVR	NONE	58	M	OR-Y		000	000		00
																							OR<25					
03088	N	N	N			08/20/2012	16	MAIN ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											03
CITY						MO	0	14TH ST	CN		STOP SIGN	N	DRY	ANGL		PRVTE	NE-SW									000		00
						5P			01	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	17	M	OR-Y		021	000		03
																							OR<25					
															02	NONE 0	STRGHT											
																PRVTE	SE-NW									000		00
																PSNGR CAR		01	DRVR	INJC	63	F	OR-Y		000	000		00
																							OR<25					
00573	N	N	N			02/19/2013	16	MAIN ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											02
NONE						TU	0	14TH ST	CN		FLASHBCN-R	N	DRY	ANGL		PRVTE	NE-SW									000		00
						5P			03	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	60	F	OR-Y		000	000		00
																							OR<25					
															02	NONE 0	STRGHT											
																PRVTE	NW-SE									015		00
																PSNGR CAR		01	DRVR	NONE	41	M	OR-Y		028	000		02
																							OR<25					
00675	N	N	N			02/26/2013	16	MAIN ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											03
NONE						TU	0	14TH ST	CN		FLASHBCN-R	N	DRY	ANGL		PRVTE	NW-SE									000		00
						8A			01	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	20	M	OR-Y		021	000		03
																							OR<25					
															02	NONE 0	STRGHT											
																PRVTE	NE-SW									015		00
																PSNGR CAR		01	DRVR	NONE	56	F	OR-Y		000	000		00
																							OR<25					
01511	N	N	N	N	N	05/02/2013	16	MAIN ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											02
CITY						TH	0	14TH ST	CN		STOP SIGN	N	DRY	ANGL		PRVTE	NE-SW									015		00

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CITY OF OREGON CITY, CLACKAMAS COUNTY

MAIN ST at 14TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 30

SER# / INVEST	S P E D / A L C	R S W U C O H R K	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ / SVRTY	A G E	S E X	LICNS / RES	PED LOC	ERROR	ACT	EVENT	CAUSE
			10A			03	2		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	58	F	OR-Y OR<25		028	000		02
												02	NONE 0	STRGHT											
													PRVTE	NW-SE									000		00
													PSNGR CAR		01	DRVR	INJC	40	M	OR-Y OR<25		000	000		00
02357	N N N N N		07/02/2013	16	MAIN ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											03
CITY			TU	0	14TH ST	CN		STOP SIGN	N	DRY	ANGL		PRVTE	NE-SW									000		00
			8A			03	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	24	F	OR-Y OR<25		021	000		03
												02	NONE 0	STRGHT											
													PRVTE	NW-SE									000		00
													PSNGR CAR		01	DRVR	NONE	67	F	OR-Y OR<25		000	000		00
03983	N N N		10/18/2013	16	MAIN ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											03
NONE			FR	0	14TH ST	CN		FLASHBCN-R	N	DRY	ANGL		PRVTE	SE-NW									000		00
			2P			01	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	21	F	UNK OR<25		021	000		03
												02	NONE 0	STRGHT											
													PRVTE	NE-SW									015		00
													PSNGR CAR		01	DRVR	NONE	71	F	OR-Y OR<25		000	000		00
00647	N N N		02/13/2014	16	MAIN ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											02
NONE			TH	0	14TH ST	CN		FLASHBCN-R	N	DRY	ANGL		PRVTE	SW-NE									015		00
			1P			04	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	41	F	OR-Y OR<25		028	000		02
												02	NONE 0	STRGHT											
													PRVTE	NW-SE									000		00
													PSNGR CAR		01	DRVR	NONE	00	F	UNK OR<25		000	000		00
00942	N N N		03/06/2014	16	MAIN ST	INTER	CROSS	N	N	RAIN	O-1 L-TURN	01	NONE 0	STRGHT											02
NONE			TH	0	14TH ST	CN		FLASHBCN-R	N	WET	TURN		PRVTE	SE-NW									000		00
			11A			02	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	45	M	OR-Y OR<25		000	000		00
												02	NONE 0	TURN-L											
													PRVTE	NW-NE									000		00
													PSNGR CAR		01	DRVR	NONE	65	M	OR-Y OR<25		028,004	000		02
02048	N N N N N		05/29/2014	16	MAIN ST	INTER	CROSS	N	N	CLR	BIKE														110	03
CITY			TH	0	14TH ST	CN		STOP SIGN	N	DRY	ANGL			-											
			6A			03	0		N	DAWN	INJ			STRGHT NE SW	01	BIKE	INJC	51	M		I INRD	021	034		03
												01	NONE 0	STRGHT											
													PRVTE	NE-SW									000		00
													PSNGR CAR		01	DRVR	NONE	65	F	OR-Y OR<25		000	000		00
02751	N N N		07/17/2014	16	MAIN ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											02
NO RPT			TH	0	14TH ST	CN		FLASHBCN-R	N	DRY	ANGL		PRVTE	NW-SE									000		00
			4P			03	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	30	M	OR-Y OR<25		000	000		00
												02	NONE 0	STRGHT											

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CITY OF OREGON CITY, CLACKAMAS COUNTY

MAIN ST at 14TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 30

SER# / INVEST	S P E D	A L C	R U S	S C L	W O R K	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
																PRVTE	NE-SW									015	00
																PSNGR CAR		01	DRVR	NONE	40	M	OTH-Y N-RES		028	000	02
03506	N	N	N			09/08/2014		16	MAIN ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT										03
NONE						MO	0		14TH ST	CN		STOP SIGN	N	DRY	ANGL		PRVTE	SE-NW									000	00
						5P				02	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	24	M	OR-Y OR<25		000	000	00
																02	NONE 0	STRGHT										
																	UNKN	SW-NE									000	00
																	PSNGR CAR		01	DRVR	NONE	00	F	UNK UNK		021	000	03
04665	N	N	N			11/17/2014		16	MAIN ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT										02
NONE						MO	0		14TH ST	CN		FLASHBCN-R	N	DRY	ANGL		PRVTE	NE-SW									015	00
						10A				01	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	66	M	OR-Y OR<25		028	000	02
																02	NONE 0	STRGHT										
																	PRVTE	SE-NW									000	00
																	PSNGR CAR		01	DRVR	NONE	16	F	OR-Y OR<25		000	000	00
04069	N	N	N			10/13/2014		16	MAIN ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT										02
NO RPT						MO	0		14TH ST	CN		STOP SIGN	N	DRY	ANGL		PRVTE	NW-SE									000	00
						6P				04	0		N	DUSK	INJ		PSNGR CAR		01	DRVR	INJB	20	M	OTH-Y OR<25		028	000	02
																01	NONE 0	STRGHT										
																	PRVTE	NW-SE									000	00
																	PSNGR CAR		02	PSNG	INJB	40	F			000	000	00
																02	NONE 0	STRGHT										
																	PRVTE	SW-NE									015	00
																	PSNGR CAR		01	DRVR	NONE	57	M	OR-Y OR<25		000	000	00
00432	N	N	N			02/03/2015		16	MAIN ST	INTER	CROSS	N	N	UNK	ANGL-OTH	01	NONE 0	STRGHT										02
NONE						TU	0		14TH ST	CN		FLASHBCN-R	N	WET	ANGL		PRVTE	NW-SE									000	00
						11A				03	0		N	DAY	INJ		TRUCK		01	DRVR	NONE	38	M	OTH-Y N-RES		000	000	00
																02	NONE 0	STRGHT										
																	PRVTE	NE-SW									015	00
																	PSNGR CAR		01	DRVR	INJC	79	F	OR-Y OR<25		028	000	02
01732	N	N	N			05/08/2015		17	MAIN ST	INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 0	STRGHT										02
NONE						FR	0		14TH ST	CN		FLASHBCN-R	N	DRY	TURN		PRVTE	NW-SE									015	00
						6P				03	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	40	M	OR-Y OR<25		000	000	00
																02	NONE 0	TURN-L										
																	PRVTE	SE-SW									015	00
																	PSNGR CAR		01	DRVR	NONE	65	M	OR-Y OR<25		028,004	000	02
03374	N	N	N			08/18/2015		17	MAIN ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	TURN-L										03
NONE						TU	0		14TH ST	CN		FLASHBCN-R	N	DRY	TURN		PRVTE	SW-NW									000	00
						5P				01	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	55	M	OTH-Y N-RES		021	000	03

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CITY OF OREGON CITY, CLACKAMAS COUNTY

MAIN ST at 14TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 30

SER# / INVEST	S P E D	A L C	R S L	W C H	O R K	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	TYPE	SVRTY	A G E	S E X	LICNS / RES	PED LOC	ERROR	ACT EVENT	CAUSE
															02	NONE 0	STRGHT									
																PRVTE	SE-NW								000	00
																PSNGR CAR		01	DRVR	NONE	23	M	OR-Y		000	000	00
																							OR<25				
05284	N	N	N			12/10/2015	17	MAIN ST	INTER	CROSS	N	N	RAIN	ANGL-OTH	01	NONE 0	STRGHT										02
NO RPT						TH	0	14TH ST	CN		FLASHBCN-R	N	WET	ANGL		PRVTE	NE-SW								015	00
						12P			03	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	70	M	OR-Y		028	000	02
																							OR<25				
															02	NONE 0	STRGHT									
																PRVTE	NW-SE								000	00
																PSNGR CAR		01	DRVR	INJC	26	F	OR-Y		000	000	00
																							OR<25				
															02	NONE 0	STRGHT									
																PRVTE	NW-SE								000	00
																PSNGR CAR		02	PSNG	NO<5	01	F			000	000	00
01269	N	N	N			04/09/2015	17	MAIN ST	INTER	CROSS	N	N	FOG	ANGL-OTH	01	NONE 0	STRGHT										03
NONE						TH	0	14TH ST	CN		STOP SIGN	N	DRY	ANGL		PRVTE	SW-NE								000	00
						6A			03	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	75	M	OR-Y		021	000	03
																							OR<25				
															02	NONE 0	STRGHT									
																PRVTE	NW-SE								000	00
																PSNGR CAR		01	DRVR	NONE	75	M	OR-Y		000	000	00
																							OR<25				
01276	N	N	N			04/09/2015	17	MAIN ST	INTER	CROSS	N	N	UNK	ANGL-OTH	01	NONE 0	STRGHT										03
NONE						TH	0	14TH ST	CN		FLASHBCN-R	N	UNK	ANGL		PRVTE	NW-SE								000	00
						1P			03	0		N	DAY	PDO		MTRCYCLE		01	DRVR	NONE	00	Unk	OR-Y		021	000	03
																							OR<25				
															02	NONE 0	STRGHT									
																PRVTE	NE-SW								000	00
																PSNGR CAR		01	DRVR	NONE	25	F	OR-Y		000	000	00
																							OR<25				
01437	N	N	N			04/22/2015	17	MAIN ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT										02
NONE						WE	0	14TH ST	CN		FLASHBCN-R	N	DRY	ANGL		PRVTE	NE-SW								000	00
						5P			03	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	46	M	OR-Y		000	000	00
																							OR<25				
															02	NONE 0	STRGHT									
																PRVTE	NW-SE								015	00
																PSNGR CAR		01	DRVR	NONE	17	F	OR-Y		028	000	02
																							OR<25				
01862	N	N	N			05/16/2015	17	MAIN ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT										02
NO RPT						SA	0	14TH ST	CN		FLASHBCN-R	N	DRY	ANGL		PRVTE	NW-SE								000	00
						8A			01	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	68	M	OR-Y		000	000	00
																							OR<25				
															02	NONE 0	STRGHT									
																PRVTE	NE-SW								015	00
																PSNGR CAR		01	DRVR	NONE	36	F	OR-Y		028	000	02
																							OR<25				
04205	N	N	N			10/12/2015	17	MAIN ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	TURN-R										02
NONE						MO	0	14TH ST	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	SW-SE								016	00
						1P			04	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	27	M	OTH-Y		028	000	02

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CITY OF OREGON CITY, CLACKAMAS COUNTY

MAIN ST at 14TH ST, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 30

SER# INVEST	S P E D / D R A C / U G / S C H / W O R K	DATE DAY TIME	CLASS DIST FROM	CITY STREET FIRST STREET SECOND STREET	RD CHAR DIRECT LOCTN	INT-TYPE (MEDIAN) LEGS (#LANES)	INT-REL TRAF- CONTL	OFFRD RNDBT DRVWY	WTHR SURF LIGHT	CRASH COLL SVRTY	V#	SPCL USE TRLR QTY OWNER TYPE	MOVE FROM TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
																			OR<25					
											02	NONE 0	STRGHT											
												PRVTE	NW-SE									000		00
												PSNGR CAR		01	DRVR	NONE	48	F	OR-Y		000	000		00
																			OR<25					

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CRASH SUMMARIES BY YEAR BY COLLISION TYPE

WASHINGTON ST at CASCADE HY SOUTH, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

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: 2012														
ANGLE	0	0	1	1	0	0	0	1	0	1	0	1	0	0
REAR-END	0	2	4	6	0	3	0	4	1	5	1	6	0	0
SIDESWIPE - OVERTAKING	0	1	0	1	0	1	0	0	1	1	0	1	0	0
YEAR 2012 TOTAL	**0**	**3**	**5**	**8**	**0**	**4**	**0**	**5**	**2**	**7**	**1**	**8**	**0**	**0**
YEAR: 2011														
ANGLE	0	0	1	1	0	0	0	0	1	1	0	1	0	0
REAR-END	0	3	3	6	0	6	0	4	1	4	2	6	0	0
TURNING MOVEMENTS	0	0	1	1	0	0	0	1	0	1	0	1	0	0
YEAR 2011 TOTAL	**0**	**3**	**5**	**8**	**0**	**6**	**0**	**5**	**2**	**6**	**2**	**8**	**0**	**0**
FINAL TOTAL	**0**	**6**	**10**	**16**	**0**	**10**	**0**	**10**	**4**	**13**	**3**	**16**	**0**	**0**

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CITY OF OREGON CITY, CLACKAMAS COUNTY

WASHINGTON ST at CASCADE HY SOUTH, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 16

SER# / INVEST	SPEED	ALCHL	DRUGS	SCHL	WORK	DATE / DAY / TIME	CLASS / DIST FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF-CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
04848	N	N	N			12/16/2011	14	CASCADE HY SOUTH	INTER	CROSS	N	N	UNK	S-1STOP	01	NONE 0	STRGHT											07
NONE						FR		WASHINGTON ST	UN		TRF SIGNAL	N	UNK	REAR		PRVTE	UN-UN									000		00
						5P			06	1		N	DUSK	PDO		PSNGR CAR		01	DRVR	NONE	00	M	OR-Y OR<25		026	000		07
															02	NONE 0	STOP											
																PRVTE	UN-UN									011		00
																PSNGR CAR		01	DRVR	NONE	64	M	OR-Y OR<25		000	000		00
81700	N	N	N			02/16/2012	14	CASCADE HY SOUTH	INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT											013	07
NONE						TH		WASHINGTON ST	N		TRF SIGNAL	N	WET	REAR		UNKN	N -S									000		00
						10A			06	1		N	DAY	PDO		UNKNOWN		01	DRVR	NONE	00	Unk	UNK UNK		026	000		07
															02	NONE 0	STOP											
																PRVTE	N -S									011	013	00
																PSNGR CAR		01	DRVR	NONE	74	M	OR-Y OR<25		000	000		00
															03	NONE 0	STOP											
																UNKN	N -S									022		00
																UNKNOWN		01	DRVR	NONE	00	F	UNK UNK		000	000		00
01339	N	N	N			04/20/2011	14	CASCADE HY SOUTH	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT												07
NONE						WE		WASHINGTON ST	SE		TRF SIGNAL	N	DRY	REAR		PRVTE	SE-NW									000		00
						11A			06	1		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	21	F	OR-Y OR<25		026	000		07
															02	NONE 0	STOP											
																PRVTE	SE-NW									011		00
																PSNGR CAR		01	DRVR	INJC	24	F	OR-Y OR<25		000	000		00
															02	NONE 0	STOP											
																PRVTE	SE-NW									011		00
																PSNGR CAR		02	PSNG	INJC	25	F			000	000		00
01822	N	N	N			05/13/2011	14	CASCADE HY SOUTH	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT												07
NONE						FR		WASHINGTON ST	SE		TRF SIGNAL	N	DRY	REAR		PRVTE	SE-NW									000		00
						3P			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	F	OTH-Y N-RES		026	000		07
															02	NONE 0	STOP											
																PRVTE	SE-NW									011		00
																PSNGR CAR		01	DRVR	NONE	26	F	OR-Y OR>25		000	000		00
															02	NONE 0	STOP											
																PRVTE	SE-NW									011		00
																PSNGR CAR		02	PSNG	NO<5	01	M			000	000		00
															02	NONE 0	STOP											
																PRVTE	SE-NW									011		00
																PSNGR CAR		03	PSNG	NO<5	04	F			000	000		00
															02	NONE 0	STOP											
																PRVTE	SE-NW									011		00
																PSNGR CAR		04	PSNG	NO<5	02	F			000	000		00

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CITY OF OREGON CITY, CLACKAMAS COUNTY

WASHINGTON ST at CASCADE HY SOUTH, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 16

SER# / INVEST	SPEED	ALCHL	DRUGS	SCHL	WORK	DATE / DAY / TIME	CLASS / DIST FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF-CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
															02	NONE 0 PRVTE PSNGR CAR	STOP SE-NW	05	PSNG	NO<5	03	F			000	011 000		00 00
01563 NONE	N	N	N			05/06/2011 FR 6P	14	CASCADE HY SOUTH WASHINGTON ST	INTER SW 06	CROSS 1	N TRF SIGNAL	N N N	RAIN WET DAY	S-1STOP REAR PDO	01	NONE 0 PRVTE PSNGR CAR	STRGHT SW-NE	01	DRVR	NONE	43	M	OR-Y OR<25		026	000 000		07 00 07
															02	NONE 0 PRVTE PSNGR CAR	STOP SW-NE	01	DRVR	NONE	63	M	OR-Y OR<25		000	011 000		00 00
00651 NO RPT	N	N	N			02/19/2012 SU 4P	14	CASCADE HY SOUTH WASHINGTON ST	INTER SW 06	CROSS 1	N TRF SIGNAL	N N N	CLR UNK DUSK	S-1STOP REAR PDO	01	NONE 0 PRVTE PSNGR CAR	STRGHT SW-NE	01	DRVR	NONE	49	F	OR-Y OR<25		026	000 000		07 00 07
															02	NONE 0 UNKN PSNGR CAR	STOP SW-NE	01	DRVR	NONE	00	F	UNK UNK		000	011 000		00 00
03589 NONE	N	N	N			09/29/2011 TH 12P	14	CASCADE HY SOUTH WASHINGTON ST	INTER NW 06	CROSS 0	N TRF SIGNAL	N N N	CLR DRY DAY	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT NW-SE	01	DRVR	NONE	19	M	OR-Y OR>25		026	000 000		07 00 07
															02	NONE 0 PRVTE PSNGR CAR	STOP NW-SE	01	DRVR	INJC	44	F	OR-Y OR<25		000	011 000		00 00
04398 CITY	N	Y	N	Y		11/19/2011 SA 10P	14	CASCADE HY SOUTH WASHINGTON ST	INTER NW 06	CROSS 1	N TRF SIGNAL	N N N	CLD DRY DLIT	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT NW-SE	01	DRVR	NONE	45	F	SUSP OR<25		026	000 000	013	07 00 07
															02	NONE 0 PRVTE PSNGR CAR	STOP NW-SE	01	DRVR	INJC	30	M	OR-Y OR<25		000	011 000	013	00 00
															03	NONE 0 PRVTE PSNGR CAR	STOP NW-SE	01	DRVR	INJC	64	F	OR-Y OR<25		000	022 000		00 00
															03	NONE 0 PRVTE PSNGR CAR	STOP NW-SE	02	PSNG	INJC	33	M			000	022 000		00 00
00612 NONE	N	N	N	Y		02/17/2012 FR 12P	14	CASCADE HY SOUTH WASHINGTON ST	INTER NW 06	CROSS 1	N TRF SIGNAL	N N N	RAIN WET DAY	S-STRGHT SS-O INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT NW-SE	01	DRVR	INJC	59	F	OR-Y OR<25		045	000 000		13 00 13
															02	NONE 0 PRVTE	STRGHT NW-SE									000		00

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CITY OF OREGON CITY, CLACKAMAS COUNTY

WASHINGTON ST at CASCADE HY SOUTH, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 16

SER# / INVEST	SPEED	ALCHL	DRUGS	SCHL	WORK	DATE / DAY / TIME	CLASS / DIST FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES / EJECT	PED LOC	ERROR	ACT EVENT	CAUSE
																PSNGR CAR		01	DRVR	NONE	00	M	UNK OR<25		000	000	00
01212 NONE	N	N	N			03/31/2012 SA 2P	14	CASCADE HY SOUTH WASHINGTON ST	INTER NW 06	CROSS 1	N TRF SIGNAL	N N	CLR DRY DAY	S-1STOP REAR PDO	01	NONE 0 PRVTE PSNGR CAR	STRGHT NW-SE	01	DRVR	NONE	00	M	UNK OR>25		026	000 000	07 00 07
															02	NONE 0 PRVTE PSNGR CAR	STOP NW-SE	01	DRVR	NONE	73	F	OR-Y OR<25		000	011 000	00 00
01295 NONE	N	N	N			04/07/2012 SA 4P	14	CASCADE HY SOUTH WASHINGTON ST	INTER NW 06	CROSS 1	N TRF SIGNAL	N N	CLR DRY DAY	S-1STOP REAR PDO	01	NONE 0 UNKN PSNGR CAR	STRGHT NW-SE	01	DRVR	NONE	00	M	OR-Y UNK		026	000 000	07 00 07
															02	NONE 0 PRVTE PSNGR CAR	STOP NW-SE	01	DRVR	NONE	50	M	OR-Y OR<25		000	011 000	00 00
02387 NONE	N	N	N			07/03/2012 TU 11A	14	CASCADE HY SOUTH WASHINGTON ST	INTER NW 06	CROSS 1	N TRF SIGNAL	N N	CLD DRY DAY	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT NW-SE	01	DRVR	NONE	75	F	OR-Y OR<25		026	000 000	07 00 07
															02	NONE 0 PRVTE PSNGR CAR	STOP NW-SE	01	DRVR	INJC	23	F	OR-Y OR<25		000	012 000	00 00
03599 NO RPT	N	N	N			09/28/2012 FR 1P	14	CASCADE HY SOUTH WASHINGTON ST	INTER NW 06	CROSS 0	N TRF SIGNAL	N N	CLR DRY DAY	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT NW-SE	01	DRVR	NONE	57	M	OR-Y OR<25		026	000 000	07 00 07
															02	NONE 0 PRVTE PSNGR CAR	STOP NW-SE	01	DRVR	INJC	21	M	OR-Y OR<25		000	011 000	00 00
															02	NONE 0 PRVTE PSNGR CAR	STOP NW-SE	02	PSNG	INJC	60	F			000	011 000	00 00
01864 NONE	N	N	N			05/28/2011 SA 6P	14	CASCADE HY SOUTH WASHINGTON ST	INTER CN 04	CROSS 0	N TRF SIGNAL	N N	RAIN WET DAY	ANGL-OTH ANGL PDO	01	NONE 0 PRVTE PSNGR CAR	STRGHT NW-SE	01	DRVR	NONE	35	M	OR-Y OR>25		020	000 000	04 00 04
															02	NONE 0 PRVTE PSNGR CAR	STRGHT SW-NE	01	DRVR	NONE	34	F	OTH-Y N-RES		000	000 000	00 00
03019 CITY	N	N	N	N	Y	08/19/2011 FR 12P	14	CASCADE HY SOUTH WASHINGTON ST	INTER CN 01	CROSS 0	N TRF SIGNAL	N N	CLR DRY DAY	S-OTHER TURN PDO	01	NONE 0 PRVTE PSNGR CAR	TURN-R NW-SW	01	DRVR	NONE	61	M	OTH-Y N-RES		034	031 000	06 00 06
															02	NONE 0	TURN-R										

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OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANAYLYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CRASH LISTING

CITY OF OREGON CITY, CLACKAMAS COUNTY

WASHINGTON ST at CASCADE HY SOUTH, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 16

SER# / INVEST	S P E D	A L C	R U G	S C H	W O R	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
																PRVTE	NW-SW									000	00
																PSNGR CAR		01	DRVR	NONE	44	M	OR-Y OR>25		001	000	00
03865	N	N	N			10/16/2012	14	CASCADE HY SOUTH	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT										02
NONE						TU		WASHINGTON ST	CN		TRF SIGNAL	N	DRY	ANGL		UNKN	W -E									000	00
						4P			03	1		N	DAY	PDO		UNKNOWN		01	DRVR	NONE	00	Unk	UNK UNK		028	000	02
															02	NONE 0	STRGHT										
																PRVTE	N -S									000	00
																PSNGR CAR		01	DRVR	NONE	73	F	OR-Y OR<25		000	000	00

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CRASH SUMMARIES BY YEAR BY COLLISION TYPE

CLACKAMAS RIVER DR at CASCADE HY SOUTH, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

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: 2015														
FIXED / OTHER OBJECT	0	0	1	1	0	0	0	1	0	0	1	1	0	1
REAR-END	0	4	0	4	0	7	0	4	0	4	0	4	0	0
TURNING MOVEMENTS	0	0	1	1	0	0	1	1	0	1	0	1	0	0
YEAR 2015 TOTAL	**0**	**4**	**2**	**6**	**0**	**7**	**1**	**6**	**0**	**5**	**1**	**6**	**0**	**1**
YEAR: 2014														
ANGLE	0	0	1	1	0	0	0	0	0	1	0	1	0	0
MISCELLANEOUS	0	1	0	1	0	1	0	1	0	0	0	1	0	0
REAR-END	0	2	0	2	0	3	0	2	0	2	0	2	0	0
TURNING MOVEMENTS	0	1	0	1	0	2	0	1	0	1	0	1	0	0
YEAR 2014 TOTAL	**0**	**4**	**1**	**5**	**0**	**6**	**0**	**4**	**0**	**4**	**0**	**5**	**0**	**0**
YEAR: 2013														
MISCELLANEOUS	0	1	0	1	0	2	0	1	0	0	1	1	0	0
REAR-END	0	1	1	2	0	1	0	1	1	2	0	2	0	0
SIDESWIPE - OVERTAKING	0	1	0	1	0	1	0	1	0	1	0	1	0	0
YEAR 2013 TOTAL	**0**	**3**	**1**	**4**	**0**	**4**	**0**	**3**	**1**	**3**	**1**	**4**	**0**	**0**
YEAR: 2012														
BACKING	0	0	1	1	0	0	0	1	0	1	0	1	0	0
REAR-END	0	2	0	2	0	2	0	2	0	2	0	2	0	0
YEAR 2012 TOTAL	**0**	**2**	**1**	**3**	**0**	**2**	**0**	**3**	**0**	**3**	**0**	**3**	**0**	**0**
FINAL TOTAL	**0**	**13**	**5**	**18**	**0**	**19**	**1**	**16**	**1**	**15**	**2**	**18**	**0**	**1**

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CITY OF OREGON CITY, CLACKAMAS COUNTY

CLACKAMAS RIVER DR at CASCADE HY SOUTH, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 18

SER# / INVEST	SPEED	ALCHL	DRUGS	SCHL	WORK	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES / OR-Y / OR<25	PED LOC	ERROR	ACT EVENT	CAUSE
00824	Y	N	N	N	N	03/10/2013	14	CLACKAMAS RIVER DR	INTER	CROSS	N	N	CLD	OVERTURN	01	NONE 0	TURN-R										33,01
CITY						SU		CASCADE HY SOUTH	NE		TRF SIGNAL	N	DRY	OTH		PRVTE	SE-NE									000	00
						3A			05	1		N	DLIT	INJ		PSNGR CAR		01	DRVR	INJC	21	F	OR-Y		047,051	000	33,01
																							OR<25				
															01	NONE 0	TURN-R										
																PRVTE	SE-NE									000	00
																PSNGR CAR		02	PSNG	INJC	24	F			000	000	00
02192	N	N	N			06/18/2012	16	CLACKAMAS RIVER DR	INTER	CROSS	N	N	CLR	O-1STOP	01	NONE 0	BACK										10
NO RPT						MO	0	CASCADE HY SOUTH	NE		L-GRN-SIG	N	DRY	BACK		PRVTE	SW-NE									000	00
						9A			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	58	M	OR-Y		011	000	10
																							OR<25				
															02	NONE 0	STOP										
																PRVTE	NE-SW									011	00
																PSNGR CAR		01	DRVR	NONE	60	F	OR-Y		000	000	00
																							OR<25				
00300	N	N	N			01/25/2013	14	CLACKAMAS RIVER DR	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										07
NONE						FR		CASCADE HY SOUTH	SE		TRF SIGNAL	N	DRY	REAR		PRVTE	SE-NW									000	00
						3P			06	1		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	23	M	OR-Y		026	000	07
																							OR<25				
															02	NONE 0	STOP										
																PRVTE	SE-NW									011	00
																MOTRHOME		01	DRVR	INJC	55	F	OR-Y		000	000	00
																							OR<25				
02119	N	N	N			06/02/2014	14	CLACKAMAS RIVER DR	INTER		N	N	CLR	OVERTURN	01	NONE 0	STRGHT										10
NONE						MO		CASCADE HY SOUTH	SE		TRF SIGNAL	N	DRY	OTH		PRVTE	S -N									007	00
						6A			06	0		N	UNK	INJ		PSNGR CAR		01	DRVR	INJB	48	M	OR-Y		083	000	10
																							OR<25				
00563	N	N	N			02/13/2015	14	CLACKAMAS RIVER DR	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										29
NONE						FR		CASCADE HY SOUTH	SE		TRF SIGNAL	N	DRY	REAR		PRVTE	SE-NW									000	00
						8A			06	1		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	18	F	OTH-Y		026	000	29
																							N-RES				
															02	NONE 0	STOP										
																PRVTE	SE-NW									011	00
																PSNGR CAR		01	DRVR	INJC	33	F	OR-Y		000	000	00
																							OR<25				
00636	N	N	N			02/18/2015	14	CLACKAMAS RIVER DR	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										29
NONE						WE		CASCADE HY SOUTH	SE		TRF SIGNAL	N	DRY	REAR		UNKN	SE-NW									000	00
						8A			06	2		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	00	M	UNK		026	000	29
																							UNK				
															02	NONE 0	STOP										
																PRVTE	SE-NW									011	00
																PSNGR CAR		01	DRVR	INJC	16	M	OR-Y		000	000	00
																							OR<25				
05141	N	N	N			12/04/2015	14	CLACKAMAS RIVER DR	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										29
NONE						FR		CASCADE HY SOUTH	SE		TRF SIGNAL	N	DRY	REAR		PRVTE	SE-NW									000	00
						3P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	28	F	OR-Y		026	000	29
																							OR<25				
															02	NONE 0	STOP										
																PRVTE	SE-NW									011	00

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URBAN NON-SYSTEM CRASH LISTING

CITY OF OREGON CITY, CLACKAMAS COUNTY

CLACKAMAS RIVER DR at CASCADE HY SOUTH, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 18

SER# INVEST	S P E A U C O / D R S W / E L G H R / D C S L K	DATE DAY TIME	CLASS DIST FROM	CITY STREET FIRST STREET SECOND STREET	RD CHAR DIRECT LOCTN	INT-TYPE (MEDIAN) LEGS (#LANES)	INT-REL TRAF-CONTL	OFFRD RNDBT DRVWY	WTHR SURF LIGHT	CRASH COLL SVRTY	V# SPCL USE TRLR QTY OWNER TYPE	MOVE FROM TO	PRTC P# TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
											PSNGR CAR		01 DRVR	INJC	41	F	OR-Y		000	000		00
																	OR<25					
											02 NONE 0	STOP										
											PRVTE	SE-NW								011		00
											PSNGR CAR		02 PSNG	INJC	33	F			000	000		00
01484	N N N	04/22/2012	14	CLACKAMAS RIVER DR	INTER	CROSS	N	N	CLR	S-1STOP	01 NONE 0	STRGHT										07
NONE		SU		CASCADE HY SOUTH	S		TRF SIGNAL	N	DRY	REAR	PRVTE	S -N								000		00
		4P			06	1		N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	00	M	OR-Y		026	000		07
																	OR<25					
											02 NONE 0	STOP										
											PRVTE	S -N								011		00
											PSNGR CAR		01 DRVR	NONE	63	F	OR-Y		000	000		00
																	OR<25					
											02 NONE 0	STOP										
											PRVTE	S -N								011		00
											PSNGR CAR		02 PSNG	INJC	72	F			000	000		00
01672	N N N N N	05/15/2013	14	CLACKAMAS RIVER DR	INTER	CROSS	N	N	CLD	S-1STOP	01 NONE 0	STRGHT									013	07
CITY		WE		CASCADE HY SOUTH	NW		TRF SIGNAL	N	WET	REAR	PRVTE	NW-SE								000		00
		3P			06	0		N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	18	F	OR-Y		026	000		07
																	OR<25					
											02 NONE 0	STOP										
											PRVTE	NW-SE								011	013	00
											PSNGR CAR		01 DRVR	NONE	24	F	OR-Y		000	000		00
																	OR<25					
											03 NONE 0	STOP										
											PRVTE	NW-SE								022		00
											PSNGR CAR		01 DRVR	NONE	30	M	OR-Y		000	000		00
																	OR<25					
02081	N N N N N	06/12/2013	14	CLACKAMAS RIVER DR	INTER	CROSS	N	N	CLD	S-1STOP	01 NONE 0	STRGHT										13
COUNTY		WE		CASCADE HY SOUTH	NW		TRF SIGNAL	N	DRY	SS-O	PRVTE	NW-SE								000		00
		10A			06	1		N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	50	M	OR-Y		045	000		13
																	OR<25					
											02 NONE 0	STOP										
											PRVTE	NW-SE								011		00
											PSNGR CAR		01 DRVR	INJC	42	F	OR-Y		000	000		00
																	OR<25					
02995	N N N	08/05/2014	14	CLACKAMAS RIVER DR	INTER	CROSS	N	N	CLR	S-1STOP	01 NONE 0	STRGHT									013	29
NONE		TU		CASCADE HY SOUTH	NW		TRF SIGNAL	N	DRY	REAR	UNKN	NW-SE								000		00
		7P			06	0		N	DAY	INJ	UNKNOWN		01 DRVR	NONE	00	F	OTH-Y		026	000		29
																	UNK					
											02 NONE 0	STOP										
											PRVTE	NW-SE								011	013	00
											PSNGR CAR		01 DRVR	INJC	31	F	OR-Y		000	000		00
																	OR<25					
											02 NONE 0	STOP										
											PRVTE	NW-SE								011	013	00
											PSNGR CAR		02 PSNG	INJC	42	M			000	000		00
											03 NONE 0	STOP										

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CITY OF OREGON CITY, CLACKAMAS COUNTY

CLACKAMAS RIVER DR at CASCADE HY SOUTH, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 18

SER# / INVEST	S P E D	A L C	R U S	S C L	W O H K	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
																PRVTE	NW-SE									022		00
																PSNGR CAR		01	DRVR	NONE	31	F	OR-Y UNK		000	000		00
03780	N	N	N			09/25/2014	14	CLACKAMAS RIVER DR	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT												29
NONE						TH		CASCADE HY SOUTH	NW		TRF SIGNAL	N	DRY	REAR		PRVTE	NW-SE									000		00
						2P			06	1		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	71	M	OR-Y OR>25		026	000		29
															02	NONE 0	STOP											
																PRVTE	NW-SE									011		00
																PSNGR CAR		01	DRVR	INJC	19	F	OR-Y OR<25		000	000		00
00541	N	N	N			02/11/2015	14	CLACKAMAS RIVER DR	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											013	29
NO RPT						WE		CASCADE HY SOUTH	NW		TRF SIGNAL	N	DRY	REAR		PRVTE	NW-SE									000		00
						3P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	52	M	OR-Y OR<25		026	000		29
															02	NONE 0	STOP											
																PRVTE	NW-SE									011	013	00
																PSNGR CAR		01	DRVR	INJB	20	M	OR-Y OR<25		000	000		00
															03	NONE 0	STOP											
																PRVTE	NW-SE									022	013	00
																PSNGR CAR		01	DRVR	NONE	64	M	OR-Y OR<25		000	000		00
															04	NONE 1	STOP											
																PRVTE	NW-SE									022		00
																PSNGR CAR		01	DRVR	INJC	29	M	OTH-Y OR<25		000	000		00
															04	NONE 1	STOP											
																PRVTE	NW-SE									022		00
																PSNGR CAR		02	PSNG	INJC	56	M			000	000		00
03836	N	N	N			09/19/2015	14	CLACKAMAS RIVER DR	INTER	CROSS	N	Y	CLR	FIX OBJ	01	NONE 0	TURN-L											043	02,05,08
COUNTY						SA		CASCADE HY SOUTH	NW		TRF SIGNAL	N	DRY	FIX		PRVTE	NW-NE									000	043	00
						2A			05	2		N	DARK	PDO		PSNGR CAR		01	DRVR	NONE	48	M	UNK N-RES		073,039,002	000		02,05,08
04280	N	N	N			11/13/2012	14	CLACKAMAS RIVER DR	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT												26,07
NONE						TU		CASCADE HY SOUTH	CN		TRF SIGNAL	N	DRY	REAR		PRVTE	S -N									000		00
						7A			04	1		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	19	M	OR-Y OR<25		026	000		07
															02	NONE 0	STOP											
																PRVTE	S -N									011		00
																PSNGR CAR		01	DRVR	INJC	21	M	OR-Y OR<25		000	000		26
02997	N	N	N			08/05/2014	14	CLACKAMAS RIVER DR	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	TURN-L												04
NONE						TU		CASCADE HY SOUTH	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	NW-NE									000		00
						11A			01	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	68	F	OTH-Y N-RES		003	000		04
															02	NONE 0	STRGHT											
																PRVTE	NE-SW									000		00
																PSNGR CAR		01	DRVR	INJB	29	F	OR-Y OR<25		000	000		00

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CITY OF OREGON CITY, CLACKAMAS COUNTY

CLACKAMAS RIVER DR at CASCADE HY SOUTH, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 18

SER# / INVEST	S P E D	A L C	D R S L	S W C H	O R K	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
															02	NONE 0 PRVTE PSNGR CAR	STRGHT NE-SW	02	PSNG	INJB	05	M			000	000 000	00 00
03266 NO RPT	N	N	N			08/22/2014 FR 7A	14	CLACKAMAS RIVER DR CASCADE HY SOUTH	INTER CN 01	CROSS 0	N TRF SIGNAL	N N N	UNK UNK DAY	ANGL-OTH ANGL PDO	01	NONE 0 PRVTE PSNGR CAR	STRGHT UN-UN	01	DRVR	NONE	44	F	OR-Y OR<25		000	000 000	16,04 00 00
															02	NONE 0 PRVTE PSNGR CAR	STRGHT NW-SE	01	DRVR	NONE	23	M	UNK OR>25		020	000 025	00 16,04
02654 NONE	N	N	N			07/01/2015 WE 10A	14	CLACKAMAS RIVER DR CASCADE HY SOUTH	INTER CN 01	CROSS 0	N TRF SIGNAL	N N N	CLR DRY DAY	S-1TURN TURN PDO	01	NONE 0 PRVTE TRUCK	TURN-R N -W	01	DRVR	NONE	00	M	OR-Y OR<25		006	000 000	08 00 08
															02	NONE 0 PRVTE PSNGR CAR	STRGHT N -S	01	DRVR	NONE	71	F	OR-Y OR<25		000	000 000	00 00

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CRASH SUMMARIES BY YEAR BY COLLISION TYPE

CASCADE HY SOUTH at REDLAND RD, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

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: 2015														
REAR-END	0	6	2	8	0	11	0	6	2	4	4	8	0	0
TURNING MOVEMENTS	0	2	0	2	0	3	1	2	0	2	0	2	0	0
YEAR 2015 TOTAL	**0**	**8**	**2**	**10**	**0**	**14**	**1**	**8**	**2**	**6**	**4**	**10**	**0**	**0**
YEAR: 2014														
REAR-END	0	3	2	5	0	4	0	3	2	5	0	5	0	0
TURNING MOVEMENTS	0	0	1	1	0	0	0	1	0	1	0	1	0	0
YEAR 2014 TOTAL	**0**	**3**	**3**	**6**	**0**	**4**	**0**	**4**	**2**	**6**	**0**	**6**	**0**	**0**
YEAR: 2013														
REAR-END	0	7	2	9	0	8	0	6	2	8	1	9	0	0
SIDESWIPE - OVERTAKING	0	0	1	1	0	0	2	0	1	0	1	1	0	0
TURNING MOVEMENTS	0	1	0	1	0	1	0	0	1	1	0	1	0	0
YEAR 2013 TOTAL	**0**	**8**	**3**	**11**	**0**	**9**	**2**	**6**	**4**	**9**	**2**	**11**	**0**	**0**
YEAR: 2012														
REAR-END	0	2	1	3	0	5	0	2	0	3	0	3	0	0
TURNING MOVEMENTS	0	0	1	1	0	0	0	1	0	0	1	1	0	0
YEAR 2012 TOTAL	**0**	**2**	**2**	**4**	**0**	**5**	**0**	**3**	**0**	**3**	**1**	**4**	**0**	**0**
YEAR: 2011														
REAR-END	0	3	0	3	0	4	0	2	1	3	0	3	0	0

CRASH SUMMARIES BY YEAR BY COLLISION TYPE

CASCADE HY SOUTH at REDLAND RD, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

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
TURNING MOVEMENTS	0	2	0	2	0	3	0	1	1	2	0	2	0	0
YEAR 2011 TOTAL	**0**	**5**	**0**	**5**	**0**	**7**	**0**	**3**	**2**	**5**	**0**	**5**	**0**	**0**
FINAL TOTAL	**0**	**26**	**10**	**36**	**0**	**39**	**3**	**24**	**10**	**29**	**7**	**36**	**0**	**0**

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OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANAYLYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CRASH LISTING

CITY OF OREGON CITY, CLACKAMAS COUNTY

CASCADE HY SOUTH at REDLAND RD, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 36

SER# INVEST	S P E D / E A U C O / E L G H R / D C S L K	DATE DAY TIME	CLASS DIST FROM	CITY STREET FIRST STREET SECOND STREET	RD CHAR DIRECT LOCTN	INT-TYPE (MEDIAN) LEGS (#LANES)	INT-REL TRAF- CONTL	OFFRD RNDBT DRVWY	WTHR SURF LIGHT	CRASH COLL SVRTY	V#	SPCL USE TRLR QTY OWNER TYPE	MOVE FROM TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
01049	Y N N N N	03/28/2011	14	CASCADE HY SOUTH	INTER	3-LEG	N	N	CLD	O-1 L-TURN	01	NONE 0	TURN-L											32,01
STATE		MO		REDLAND RD	N		TRF SIGNAL	N	DRY	TURN		PRVTE	S -W									001		00
		5P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	19	M	OR-Y		052,047	000		32,01
																			OR<25					
											02	NONE 0	STOP											
												PRVTE	N -S									011		00
												PSNGR CAR		01	DRVR	NONE	50	F	OR-Y		000	000		00
																			OR<25					
02101	Y Y N	06/12/2011	14	CASCADE HY SOUTH	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											01,07
CITY		SU		REDLAND RD	N		TRF SIGNAL	N	DRY	REAR		PRVTE	N -S									000		00
		11A			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	38	M	OR-Y		047,043,026	000		01,07
																			OR<25					
											02	NONE 0	STOP											
												PRVTE	N -S									011		00
												PSNGR CAR		01	DRVR	INJC	41	F	OR-Y		000	000		00
																			OR<25					
											02	NONE 0	STOP											
												PRVTE	N -S									011		00
												PSNGR CAR		02	PSNG	INJC	56	F			000	000		00
01593	N N N	05/08/2013	14	CASCADE HY SOUTH	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											27,07
NO RPT		WE		REDLAND RD	N		TRF SIGNAL	N	DRY	REAR		PRVTE	N -S									000		00
		12P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	27	F	OR-Y		016,026	000		27,07
																			OR<25					
											02	NONE 0	STOP											
												PRVTE	N -S									011		00
												PSNGR CAR		01	DRVR	INJC	63	F	OR-Y		000	000		00
																			OR<25					
04034	Y N N	10/22/2013	14	CASCADE HY SOUTH	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											01,07
CITY		TU		REDLAND RD	N		TRF SIGNAL	N	DRY	REAR		PRVTE	N -S									000		00
		8P			06	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	INJC	57	F	OR-Y		047,043,026	000		01,07
																			OR<25					
											02	NONE 0	STOP											
												PRVTE	N -S									011		00
												PSNGR CAR		01	DRVR	NONE	16	M	OR-Y		000	000		00
																			OR<25					
04654	N N N	11/17/2014	14	CASCADE HY SOUTH	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
NONE		MO		REDLAND RD	N		TRF SIGNAL	N	DRY	REAR		PRVTE	N -S									000		00
		12P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	60	M	OTH-Y		026	000		29
																			N-RES					
											02	NONE 0	STOP											
												PRVTE	N -S									011		00
												PSNGR CAR		01	DRVR	NONE	66	F	OR-Y		000	000		00
																			OR>25					
											02	NONE 0	STOP											
												PRVTE	N -S									011		00
												PSNGR CAR		02	PSNG	INJC	61	F			000	000		00
01056	N N N	03/26/2015	14	CASCADE HY SOUTH	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
NONE		TH		REDLAND RD	N		TRF SIGNAL	N	DRY	REAR		PRVTE	N -S									000		00
		2P			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	53	F	OR-Y		026	000		29

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CITY OF OREGON CITY, CLACKAMAS COUNTY

CASCADE HY SOUTH at REDLAND RD, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 36

SER# / INVEST	SPEC	ALC	DRG	SCL	WK	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
																							OR<25					
															02	NONE 0	STOP											
																PRVTE	N -S									011		00
																PSNGR CAR		01	DRVR	NONE	44	F	OR-Y		000	000		00
																							OR<25					
02925	N	N	N			07/20/2015	14	CASCADE HY SOUTH	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
NONE						MO		REDLAND RD	N		TRF SIGNAL	N	DRY	REAR		PRVTE	N -S									000		00
						3P			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	35	F	OR-Y		026	000		29
																							OR<25					
															02	NONE 0	STOP											
																PRVTE	N -S									011		00
																PSNGR CAR		01	DRVR	NONE	19	M	OR-Y		000	000		00
																							OR<25					
00947	N	N	N			03/17/2011	14	CASCADE HY SOUTH	INTER	3-LEG	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT											07
NO RPT						TH		REDLAND RD	S		TRF SIGNAL	N	WET	REAR		PRVTE	S -N									000		00
						2P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	74	F	OR-Y		026	000		07
																							OR<25					
															02	NONE 0	STOP											
																PRVTE	S -N									011		00
																PSNGR CAR		01	DRVR	INJC	46	M	OR-Y		000	000		00
																							OR<25					
02552	N	N	N	N	Y	07/18/2011	14	CASCADE HY SOUTH	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										013	07
STATE						MO		REDLAND RD	S		TRF SIGNAL	N	DRY	REAR		PRVTE	S -N									000		00
						6A			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	16	M	OR-Y		043,026	000		07
																							OR<25					
															02	NONE 0	STOP											
																PRVTE	S -N									011	013	00
																PSNGR CAR		01	DRVR	INJC	48	M	OR-Y		000	000		00
																							OR<25					
															03	NONE 0	STOP											
																PRVTE	S -N									022		00
																PSNGR CAR		01	DRVR	NONE	52	F	OR-Y		000	000		00
																							OR<25					
04021	N	N	N			10/26/2012	14	CASCADE HY SOUTH	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE						FR		REDLAND RD	S		TRF SIGNAL	N	DRY	REAR		PRVTE	S -N									000		00
						5P			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	41	M	OR-Y		026	000		07
																							OR<25					
															02	NONE 0	STOP											
																UNKN	S -N									011		00
																UNKNOWN		01	DRVR	NONE	00	Unk	UNK		000	000		00
																							UNK					
00947	N	N	N			03/19/2013	14	CASCADE HY SOUTH	INTER	3-LEG	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT											07
NONE						TU		REDLAND RD	S		TRF SIGNAL	N	WET	REAR		UNKN	S -N									000		00
						1P			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	M	OR-Y		026	000		07
																							UNK					
															02	NONE 0	STOP											
																PRVTE	S -N									011		00
																PSNGR CAR		01	DRVR	NONE	18	F	OR-Y		000	000		00
																							OR<25					
02451	N	N	N	N	N	07/09/2013	14	CASCADE HY SOUTH	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										013	27,07
CITY						TU		REDLAND RD	S		TRF SIGNAL	N	DRY	REAR		PRVTE	S -N									000		00

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CITY OF OREGON CITY, CLACKAMAS COUNTY

CASCADE HY SOUTH at REDLAND RD, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 36

SER# / INVEST	S P E D	A L C	U G S	R H L	S R K	W O	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
							3P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	21	F	OR-Y OR<25		016,026	038		27,07
																02	NONE 0	STOP										
																	PRVTE	S -N									011	013	00
																	PSNGR CAR		01	DRVR	NONE	46	F	OR-Y OR<25		000	000		00
																03	NONE 0	STOP										
																	PRVTE	S -N									022		00
																	PSNGR CAR		01	DRVR	INJC	35	M	OR-Y OR<25		000	000		00
																03	NONE 0	STOP										
																	PRVTE	S -N									022		00
																	PSNGR CAR		02	PSNG	NO<5	04	M			000	000		00
03817	N	N	N				09/29/2014	14	CASCADE HY SOUTH	INTER	3-LEG	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT											29
NO RPT							MO		REDLAND RD	S		TRF SIGNAL	N	WET	REAR		PRVTE	S -N									000		00
							3P			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	35	M	OR-Y OR<25		026	000		29
																02	NONE 0	STOP										
																	PRVTE	S -N									011		00
																	PSNGR CAR		01	DRVR	NONE	19	F	OR-Y OR<25		000	000		00
04185	N	N	N				10/21/2014	14	CASCADE HY SOUTH	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
NONE							TU		REDLAND RD	S		TRF SIGNAL	N	DRY	REAR		PRVTE	S -N									000		00
							UNK			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	28	M	OTH-Y OR<25		026	000		29
																02	NONE 0	STOP										
																	PRVTE	S -N									011		00
																	PSNGR CAR		01	DRVR	INJC	44	M	OR-Y OR<25		000	000		00
01123	N	N	N				03/31/2015	14	CASCADE HY SOUTH	INTER	3-LEG	N	N	UNK	S-1STOP	01	NONE 0	STRGHT											29
NONE							TU		REDLAND RD	S		TRF SIGNAL	N	WET	REAR		PRVTE	S -N									000		00
							6A			06	0		N	DAWN	INJ		PSNGR CAR		01	DRVR	NONE	44	F	OR-Y OR<25		026	000		29
																02	NONE 0	STOP										
																	PRVTE	S -N									011		00
																	PSNGR CAR		01	DRVR	INJC	35	M	OR-Y OR<25		000	000		00
																02	NONE 0	STOP										
																	PRVTE	S -N									011		00
																	PSNGR CAR		02	PSNG	INJC	34	F			000	000		00
02150	N	N	N				06/04/2015	14	CASCADE HY SOUTH	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
NO RPT							TH		REDLAND RD	S		TRF SIGNAL	N	DRY	REAR		PRVTE	S -N									000		00
							10A			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	55	M	OR-Y OR<25		026	000		29
																02	NONE 0	STOP										
																	PRVTE	S -N									011		00
																	PSNGR CAR		01	DRVR	INJC	62	F	OR-Y OR<25		000	000		00
04080	N	N	N				10/04/2015	14	CASCADE HY SOUTH	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										013	29

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CITY OF OREGON CITY, CLACKAMAS COUNTY

CASCADE HY SOUTH at REDLAND RD, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 36

SER# / INVEST	S P E D	A L C	U G S	S H L	W R K	O	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ / SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
NONE							SU		REDLAND RD	S		TRF SIGNAL	N	DRY	REAR		PRVTE	S -N									000	00
							1P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	18	F	OR-Y OR<25		026	000	29
																02	NONE 0	STOP										
																	PRVTE	S -N									011 013	00
																	PSNGR CAR		01	DRVR	NONE	18	F	OR-Y OR<25		000	000	00
																03	NONE 0	STOP										
																	PRVTE	S -N									022	00
																	PSNGR CAR		01	DRVR	INJC	77	F	OR-Y OR<25		000	000	00
04189	N	N	N				10/11/2015	14	CASCADE HY SOUTH	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										29
NONE							SU		REDLAND RD	S		TRF SIGNAL	N	DRY	REAR		PRVTE	S -N									000	00
							7P			06	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	29	F	OR-Y OR<25		026	000	29
																02	NONE 0	STOP										
																	PRVTE	S -N									011	00
																	PSNGR CAR		01	DRVR	NONE	19	M	OR-Y OR<25		000	000	00
																02	NONE 0	STOP										
																	PRVTE	S -N									011	00
																	PSNGR CAR		02	PSNG	INJC	26	F			000	000	00
																02	NONE 0	STOP										
																	PRVTE	S -N									011	00
																	PSNGR CAR		03	PSNG	INJC	48	M			000	000	00
																02	NONE 0	STOP										
																	PRVTE	S -N									011	00
																	PSNGR CAR		04	PSNG	INJC	45	F			000	000	00
04343	N	N	N				10/21/2015	14	CASCADE HY SOUTH	INTER	3-LEG	N	N	FOG	S-1STOP	01	NONE 0	STRGHT										29
NONE							WE		REDLAND RD	S		TRF SIGNAL	N	DRY	REAR		PRVTE	S -N									001	00
							7A			06	0		N	DAWN	INJ		PSNGR CAR		01	DRVR	NONE	24	M	OR-Y OR<25		026	000	29
																02	NONE 0	STOP										
																	PRVTE	S -N									011	00
																	PSNGR CAR		01	DRVR	INJC	52	M	OR-Y OR<25		000	000	00
05452	N	N	N				12/18/2015	14	CASCADE HY SOUTH	INTER	3-LEG	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT										29
NONE							FR		REDLAND RD	S		TRF SIGNAL	N	WET	REAR		PRVTE	S -N									000	00
							6A			06	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	42	F	OR-Y OR<25		026	000	29
																02	NONE 0	STOP										
																	PRVTE	S -N									011	00
																	PSNGR CAR		01	DRVR	INJC	51	M	OR-Y OR<25		000	000	00
00828	N	N	N				02/25/2014	14	CASCADE HY SOUTH	INTER	3-LEG	N	N	CLR	ANGL-STP	01	NONE 0	TURN-R										08
NONE							TU		REDLAND RD	W		TRF SIGNAL	N	DRY	TURN		PRVTE	N -W									000	00
							2P			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	32	M	OR-Y OR<25		001	000	08

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CITY OF OREGON CITY, CLACKAMAS COUNTY

CASCADE HY SOUTH at REDLAND RD, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 36

SER# / INVEST	S P E D	A L C	D R S L	W C H K	O R	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
															02	NONE 0 PRVTE PSNGR CAR	STOP W -E	01	DRVR	NONE	50	M	OR-Y OR<25		000	012 000	00 00
02177 NO RPT	N	N	N			06/06/2015 SA 5P	14	CASCADE HY SOUTH REDLAND RD	INTER W 06	3-LEG 0	N TRF SIGNAL	N N N	CLR DRY DAY	ANGL-STP TURN INJ	01	NONE 0 PRVTE PSNGR CAR	TURN-R N -W	01	DRVR	INJC	32	M	OR-Y OR<25		001	000	08
															02	NONE 0 PRVTE TRUCK	STOP W -E	01	DRVR	NONE	35	M	OR-Y OR<25		000	012 000	00 00
															02	NONE 0 PRVTE TRUCK	STOP W -E	02	PSNG	INJC	42	M			000	012 000	00 00
00282 NONE	N	N	N			01/22/2012 SU 1P	14 0	CASCADE HY SOUTH REDLAND RD	INTER W 06	3-LEG 0	N TRF SIGNAL	N N N	UNK UNK DAY	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT W -E	01	DRVR	NONE	32	M	OR-Y OR<25		026	000	07
															02	NONE 0 PRVTE PSNGR CAR	STOP W -E	01	DRVR	INJC	65	M	OR-Y OR<25		000	011 000	00 00
03192 NO RPT	N	N	N			08/29/2012 WE 9A	16 0	CASCADE HY SOUTH REDLAND RD	INTER W 06	3-LEG 0	N TRF SIGNAL	N N N	CLR DRY DAY	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT W -E	01	DRVR	INJB	34	F	OR-Y OR<25		026	000	07
															02	NONE 0 PRVTE PSNGR CAR	STOP W -E	01	DRVR	INJC	34	M	OR-Y OR<25		000	012 000	00 00
															02	NONE 0 PRVTE PSNGR CAR	STOP W -E	02	PSNG	INJC	22	M			000	012 000	00 00
															02	NONE 0 PRVTE PSNGR CAR	STOP W -E	03	PSNG	INJC	22	M			000	012 000	00 00
00301 NONE	N	N	N			01/25/2013 FR 11A	16 0	CASCADE HY SOUTH REDLAND RD	INTER W 06	3-LEG 0	N R-GRN-SIG	N N N	UNK WET DAY	S-1STOP REAR PDO	01	NONE 0 PRVTE PSNGR CAR	TURN-R W -S	01	DRVR	NONE	59	M	OR-Y OR<25		006	000	08
															02	NONE 0 PRVTE PSNGR CAR	TURN-R W -S	01	DRVR	NONE	40	F	OR-Y OR<25		000	000 000	00 00
00847 NONE	N	N	N			03/12/2013 TU 10A	16 0	CASCADE HY SOUTH REDLAND RD	INTER W 06	3-LEG 0	N L-GRN-SIG	N N N	CLR DRY DAY	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT W -E	01	DRVR	NONE	00	F	UNK		026	000	07

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CITY OF OREGON CITY, CLACKAMAS COUNTY

CASCADE HY SOUTH at REDLAND RD, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 36

SER# / INVEST	S P E D	A L C	R U S	S C L	W O R K	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS / RES / OR<25	PED LOC	ERROR	ACT	EVENT	CAUSE
															02	NONE 0	STOP											
																PRVTE	W -E									012		00
																PSNGR CAR		01	DRVR	INJC	74	F	OR-Y		000	000		00
																							OR<25					
															02	NONE 0	STOP											
																PRVTE	W -E									012		00
																PSNGR CAR		02	PSNG	INJC	56	F			000	000		00
02290	N	N	N			06/28/2013	16	CASCADE HY SOUTH	INTER		N	N	CLR	S-1STOP	01	NONE 0	STRGHT											013	07
NONE						FR	0	REDLAND RD	W		TRF SIGNAL	N	DRY	REAR		PRVTE	W -E									000		00
						8A			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	74	M	OR-Y		026	000		07
																							OR<25					
															02	NONE 0	STOP											
																PRVTE	W -E									011	013	00
																PSNGR CAR		01	DRVR	INJC	43	M	OR-Y		000	000		00
																							OR<25					
															03	NONE 0	STOP											
																PRVTE	W -E									022		00
																PSNGR CAR		01	DRVR	NONE	46	F	OR-Y		000	000		00
																							OR<25					
03843	N	N	N			10/09/2013	16	CASCADE HY SOUTH	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT												07
NONE						WE	0	REDLAND RD	W		TRF SIGNAL	N	DRY	REAR		PRVTE	E -W									000		00
						9A			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	22	M	OR-Y		026	000		07
																							OR<25					
															02	NONE 0	STOP											
																PRVTE	E -W									012		00
																PSNGR CAR		01	DRVR	NONE	56	F	OR-Y		000	000		00
																							OR<25					
04583	N	N	N			11/25/2013	16	CASCADE HY SOUTH	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT												07
NONE						MO	0	REDLAND RD	W		TRF SIGNAL	N	UNK	REAR		PRVTE	W -E									000		00
						4P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	00	M	OTH-Y		026	000		07
																							N-RES					
															02	NONE 0	STOP											
																PRVTE	W -E									012		00
																PSNGR CAR		01	DRVR	INJC	51	F	OR-Y		000	000		00
																							OR<25					
00188	N	N	N			01/14/2014	16	CASCADE HY SOUTH	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT												07
NONE						TU	0	REDLAND RD	W		TRF SIGNAL	N	DRY	REAR		PRVTE	W -E									000		00
						4P			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	M	OR-Y		026	000		07
																							OR<25					
															02	NONE 0	STOP											
																PRVTE	W -E									011		00
																PSNGR CAR		01	DRVR	NONE	37	F	OR-Y		000	000		00
																							OR<25					
															02	NONE 0	STOP											
																PRVTE	W -E									011		00
																PSNGR CAR		02	PSNG	NO<5	01	M			000	000		00
04409	N	N	N			11/02/2014	16	CASCADE HY SOUTH	INTER	3-LEG	N	N	UNK	S-1STOP	01	NONE 0	STRGHT												29
NONE						SU	0	REDLAND RD	W		TRF SIGNAL	N	WET	REAR		PRVTE	W -E									000		00

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CITY OF OREGON CITY, CLACKAMAS COUNTY

CASCADE HY SOUTH at REDLAND RD, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 36

SER# / INVEST	S P E D / A L C	R U G S	S W C H L	O R K	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
					9A			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	61	M	OR-Y OR<25		026	000		29
														02	NONE 0	STOP										
															PRVTE	W -E								011		00
															PSNGR CAR		01	DRVR	INJC	35	M	OR-Y OR<25		000	000		00
														02	NONE 0	STOP										
															PRVTE	W -E								011		00
															PSNGR CAR		02	PSNG	INJC	12	F			000	000		00
00811	N	N	N		03/07/2011	14	CASCADE HY SOUTH	INTER	3-LEG	N	N	RAIN	O-1 L-TURN	01	NONE 0	STRGHT										013,010		04
NO RPT					MO		REDLAND RD	CN		TRF SIGNAL	N	WET	TURN		PRVTE	N -S								000	013,010		00
					12P			01	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJA	76	F	OR-Y OR<25		020	000		04
														02	NONE 0	TURN-L										
															PRVTE	S -W								000		00
															PSNGR CAR		01	DRVR	INJC	35	M	OR-Y OR<25		000	000		00
														03	NONE 0	UNK										
															PRVTE	UN-UN								022		00
															PSNGR CAR		01	DRVR	NONE	17	F	OR-Y OR<25		000	000		00
04246	N	N	N		11/10/2012	14	CASCADE HY SOUTH	INTER	3-LEG	N	N	CLD	ANGL-OTH	01	NONE 0	STRGHT												04
CITY					SA		REDLAND RD	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	N -S								000		00
					5A			01	0		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	21	F	OR-Y OR<25		000	000		00
														02	NONE 0	TURN-L										
															PRVTE	W -N								000		00
															PSNGR CAR		01	DRVR	NONE	52	M	NONE OR<25		020	000		04
04081	Y	N	N	N	Y 10/25/2013	14	CASCADE HY SOUTH	INTER	3-LEG	N	N	CLD	S-STRGHT	01	NONE 0	STRGHT												13,01,07
STATE					FR		REDLAND RD	CN		TRF SIGNAL	N	WET	SS-O		PRVTE	S -N								007			00
					7A			04	0		N	DAWN	PDO		TRUCK		01	DRVR	NONE	54	M	OR-Y OR<25		045,047,026	000		13,01,07
														02	LOG 0	STRGHT										
															PRVTE	S -N								006		00
															BOBTAIL		01	DRVR	NONE	60	M	OTH-Y N-RES		000	000		00
														03	NONE 0	STOP										
															PRVTE	S -N								011		00
															PSNGR CAR		01	DRVR	NONE	58	F	OR-Y OR<25		000	000		00
04321	Y	N	N		11/07/2013	14	CASCADE HY SOUTH	INTER	3-LEG	N	N	RAIN	ANGL-OTH	01	NONE 0	STRGHT										124		04,01
NO RPT					TH		REDLAND RD	CN		TRF SIGNAL	N	WET	TURN		PRVTE	N -S								000			00
					2P			03	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	44	M	OR-Y OR<25		000	000		00
														02	NONE 0	TURN-L										
															PRVTE	W -N								001		00
															PSNGR CAR		01	DRVR	INJC	59	F	OR-Y OR<25		047,020	000		04,01
05054	N	N	N		11/29/2015	14	CASCADE HY SOUTH	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT												04

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CITY OF OREGON CITY, CLACKAMAS COUNTY

CASCADE HY SOUTH at REDLAND RD, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 36

SER# / INVEST	S P E D C	R A L S	S U G L	W C H K	O R	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ / SVRTY	A G E	S X	LICNS / RES	PED LOC	ERROR	ACT EVENT	CAUSE
NO RPT						SU 10A		REDLAND RD	CN 03	 0	TRF SIGNAL	N N	DRY DAY	TURN INJ		PRVTE PSNGR CAR	N -S	01	DRVR	INJC	80	F	OR-Y OR<25		020	000 038	00 04
															02	NONE 0 PRVTE PSNGR CAR	TURN-L W -N	01	DRVR	NONE	64	F	OR-Y OR<25		000	000 000	00 00

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CRASH SUMMARIES BY YEAR BY COLLISION TYPE

CASCADE HY SOUTH at S BEAVERCREEK RD, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

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: 2015														
REAR-END	0	10	17	27	0	13	0	17	9	14	13	27	0	0
SIDESWIPE - OVERTAKING	0	1	0	1	0	1	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	1	1	2	0	1	0	2	0	0	2	2	0	0
YEAR 2015 TOTAL	**0**	**12**	**18**	**30**	**0**	**15**	**0**	**20**	**9**	**15**	**15**	**30**	**0**	**0**
YEAR: 2014														
REAR-END	0	9	10	19	0	11	0	16	2	11	7	19	0	0
SIDESWIPE - OVERTAKING	0	0	1	1	0	0	0	0	1	1	0	1	0	0
TURNING MOVEMENTS	0	0	1	1	0	0	0	0	1	0	1	1	0	0
YEAR 2014 TOTAL	**0**	**9**	**12**	**21**	**0**	**11**	**0**	**16**	**4**	**12**	**8**	**21**	**0**	**0**
YEAR: 2013														
ANGLE	0	0	1	1	0	0	0	0	1	0	1	1	0	0
BACKING	0	0	1	1	0	0	0	0	1	0	0	1	0	0
REAR-END	0	17	11	28	0	18	0	22	5	20	8	28	0	0
SIDESWIPE - OVERTAKING	0	0	1	1	0	0	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	2	0	2	0	3	1	2	0	1	1	2	0	0
YEAR 2013 TOTAL	**0**	**19**	**14**	**33**	**0**	**21**	**1**	**25**	**7**	**22**	**10**	**33**	**0**	**0**
YEAR: 2012														
ANGLE	0	0	1	1	0	0	0	1	0	1	0	1	0	0
FIXED / OTHER OBJECT	0	1	0	1	0	1	0	1	0	1	0	1	0	1
PEDESTRIAN	0	1	0	1	0	1	0	1	0	1	0	1	0	0
REAR-END	0	18	6	24	0	24	0	16	6	16	8	24	0	0

CRASH SUMMARIES BY YEAR BY COLLISION TYPE

CASCADE HY SOUTH at S BEAVERCREEK RD, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

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
TURNING MOVEMENTS	0	2	0	2	0	3	0	2	0	0	2	2	0	0
YEAR 2012 TOTAL	**0**	**22**	**7**	**29**	**0**	**29**	**0**	**21**	**6**	**19**	**10**	**29**	**0**	**1**
YEAR: 2011														
ANGLE	1	0	2	3	1	2	1	1	2	2	1	3	0	0
REAR-END	0	12	13	25	0	13	0	19	6	18	7	25	0	0
TURNING MOVEMENTS	0	2	0	2	0	3	0	0	2	0	2	2	0	0
YEAR 2011 TOTAL	**1**	**14**	**15**	**30**	**1**	**18**	**1**	**20**	**10**	**20**	**10**	**30**	**0**	**0**
FINAL TOTAL	**1**	**76**	**66**	**143**	**1**	**94**	**2**	**102**	**36**	**88**	**53**	**143**	**0**	**1**

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CITY OF OREGON CITY, CLACKAMAS COUNTY

CASCADE HY SOUTH at S BEAVERCREEK RD, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 143

SER# / INVEST	SPEED	ALCHL	DRUGS	SCHL	WORK	DATE / DAY / TIME	CLASS / DIST FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF-CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
04839	N	N	N			11/29/2014	14	S BEAVERCREEK RD	INTER	CROSS	N	N	UNK	S-1STOP	01	NONE 0	STRGHT											29
NO RPT						SA		CASCADE HY SOUTH	UN		TRF SIGNAL	N	UNK	REAR		PRVTE	UN-UN									000		00
						UNK			06	3		N	UNK	PDO		PSNGR CAR		01	DRVR	NONE	39	F	OR-Y OR<25		026	000		29
															02	NONE 0	STOP											
																PRVTE	UN-UN									011		00
																PSNGR CAR		01	DRVR	NONE	27	M	OR-Y OR<25		000	000		00
01828	N	N	N			05/25/2011	14	S BEAVERCREEK RD	INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT											013	07
NONE						WE		CASCADE HY SOUTH	N		TRF SIGNAL	N	WET	REAR		PRVTE	N -S									000		00
						2P			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	76	M	OR-Y OR<25		026	000		07
															02	NONE 0	STOP											
																PRVTE	N -S									011	013	00
																PSNGR CAR		01	DRVR	NONE	00	M	OR-Y UNK		000	000		00
															03	NONE 0	STOP											
																PRVTE	N -S									022		00
																PSNGR CAR		01	DRVR	NONE	00	Unk	UNK UNK		000	000		00
02674	N	N	N			07/27/2011	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT												07
NONE						WE		CASCADE HY SOUTH	N		TRF SIGNAL	N	DRY	REAR		PRVTE	N -S									000		00
						7P			06	2		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	29	M	OR-Y OR<25		026	000		07
															02	NONE 0	STOP											
																PRVTE	N -S									011		00
																PSNGR CAR		01	DRVR	NONE	27	M	OR-Y OR<25		000	000		00
															02	NONE 0	STOP											
																PRVTE	N -S									011		00
																PSNGR CAR		02	PSNG	INJC	05	F			000	000		00
01982	N	N	N	N	N	05/30/2012	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	PED	01	NONE 0	STRGHT												18,14
STATE						WE		CASCADE HY SOUTH	N		TRF SIGNAL	N	DRY	PED		PRVTE	N -S									000		00
						4P			06	2		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	32	F	OR-Y OR<25		000	000	082	00
																	- STRGHT E W	01	PED	INJB	14	M		I	XWLK 028,020	035		18,14
00662	N	N	N	N	N	02/25/2013	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	O-1STOP	01	NONE 0	BACK												10
CITY						MO		CASCADE HY SOUTH	N		TRF SIGNAL	N	SNO	BACK		PRVTE	S -N									000		00
						6P			06	3		N	UNK	PDO		PSNGR CAR		01	DRVR	NONE	34	F	SUSP OR<25		011	000		10
															02	NONE 0	STOP											
																PRVTE	N -S									011		00
																PSNGR CAR		01	DRVR	NONE	31	F	OR-Y OR<25		000	000		00
02051	N	N	N			06/10/2013	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT												10
NONE						MO		CASCADE HY SOUTH	N		TRF SIGNAL	N	DRY	SS-O		PRVTE	N -S									000		00
						12P			06	3		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	18	F	OR-Y		080	000		10

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CITY OF OREGON CITY, CLACKAMAS COUNTY

CASCADE HY SOUTH at S BEAVERCREEK RD, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 143

SER# / INVEST	S P E D	A L C	D R S L	S W U H	C O R K	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
																							OR<25				
															02	NONE 0 / PRVTE / PSNGR CAR	STOP / N -S									011	00
																		01	DRVR	NONE	87	F	OR-Y OR<25		000	000	00
02085 / NONE	N	N	N			06/12/2013 / WE / 10A	14	S BEAVERCREEK RD / CASCADE HY SOUTH	INTER / N / 06	CROSS / 3	N / TRF SIGNAL	N / N / N	UNK / UNK / DAY	S-1STOP / REAR / PDO	01	NONE 0 / PRVTE / PSNGR CAR	STRGHT / N -S	01	DRVR	NONE	39	F	OR-Y OR<25		026	000	07
																										000	00
															02	NONE 0 / PUBLC / PSNGR CAR	STOP / N -S	01	DRVR	NONE	00	M	OR-Y UNK		000	011 / 000	00 / 00
03700 / NONE	N	N	N			10/01/2013 / TU / 1P	14	S BEAVERCREEK RD / CASCADE HY SOUTH	INTER / N / 06	CROSS / 3	N / TRF SIGNAL	N / N / N	CLR / DRY / DAY	S-1STOP / REAR / PDO	01	NONE 0 / UNKN / PSNGR CAR	STRGHT / N -S	01	DRVR	NONE	00	F	UNK UNK		026	000	07
																										000	00
															02	NONE 0 / PRVTE / PSNGR CAR	STOP / N -S	01	DRVR	NONE	52	M	OR-Y OR<25		000	011 / 000	00 / 00
04798 / CITY	N	Y	N			12/11/2013 / WE / 8P	14	S BEAVERCREEK RD / CASCADE HY SOUTH	INTER / N / 06	CROSS / 3	N / TRF SIGNAL	N / N / N	FOG / DRY / DLIT	S-1STOP / REAR / INJ	01	NONE 0 / PRVTE / PSNGR CAR	STRGHT / N -S	01	DRVR	NONE	64	M	OR-Y OR<25		026	000	07
																										000	00
															02	NONE 0 / PRVTE / PSNGR CAR	STOP / N -S	01	DRVR	INJC	58	M	OR-Y OR<25		000	011 / 000	00 / 00
01637 / NO RPT	N	N	N			04/29/2014 / TU / 2P	14	S BEAVERCREEK RD / CASCADE HY SOUTH	INTER / N / 06	CROSS / 3	N / TRF SIGNAL	N / N / N	CLR / DRY / DAY	S-1STOP / REAR / PDO	01	NONE 0 / PRVTE / PSNGR CAR	STRGHT / N -S	01	DRVR	NONE	00	M	OR-Y OR<25		026	000	07
																										000	00
															02	NONE 0 / PRVTE / PSNGR CAR	STOP / N -S	01	DRVR	NONE	65	F	OR-Y OR<25		000	011 / 000	00 / 00
03308 / NONE	N	N	N			08/25/2014 / MO / 4P	14	S BEAVERCREEK RD / CASCADE HY SOUTH	INTER / N / 06	CROSS / 3	N / TRF SIGNAL	N / N / N	CLR / DRY / DAY	S-1STOP / REAR / PDO	01	NONE 0 / PRVTE / PSNGR CAR	STRGHT / S -N	01	DRVR	NONE	22	F	OR-Y OR<25		026	000	29
																										000	00
															02	NONE 0 / PRVTE / PSNGR CAR	STOP / S -N	01	DRVR	NONE	28	F	OR-Y OR<25		000	011 / 000	00 / 00
04757 / NO RPT	N	N	N			11/22/2014 / SA / 1P	14	S BEAVERCREEK RD / CASCADE HY SOUTH	INTER / N / 06	CROSS / 3	N / TRF SIGNAL	N / N / N	UNK / WET / DAY	S-STRGHT / SS-O / PDO	01	NONE 0 / UNKN / PSNGR CAR	STRGHT / N -S	01	DRVR	NONE	00	F	OR-Y UNK		045	000	13
																										000	00
															02	NONE 0 / PRVTE	STRGHT / N -S									000	00

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CITY OF OREGON CITY, CLACKAMAS COUNTY

CASCADE HY SOUTH at S BEAVERCREEK RD, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 143

SER# / INVEST	S P E A U C O / D R S W (E L G H R / D C S L K)	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	SPCL USE TRLR QTY / OWNER / V# TYPE	MOVE / FROM / TO	PRTC / P# TYPE	INJ / SVRTY	AGE	SEX	LICNS / RES	PED / LOC	ERROR	ACT EVENT	CAUSE
											PSNGR CAR		01 DRVR	NONE	19	F	OR-Y		000	000	00
																	OR<25				
01497	N N N	04/21/2015	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01 NONE 0	STRGHT									29
NONE		TU		CASCADE HY SOUTH	N		TRF SIGNAL	N	DRY	REAR	PRVTE	N -S								000	00
		10P			06	3		N	DARK	INJ	PSNGR CAR		01 DRVR	INJB	54	M	OR-Y		026	000	29
																	OR<25				
											02 NONE 0	STOP									
											UNKN	N -S								011	00
											PSNGR CAR		01 DRVR	NONE	49	M	OR-Y		000	000	00
																	UNK				
01876	N N N	05/21/2015	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-STRGHT	01 NONE 0	STRGHT									10
NO RPT		TH		CASCADE HY SOUTH	N		TRF SIGNAL	N	DRY	SS-O	PRVTE	N -S								000	00
		4P			06	3		N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	78	F	OR-Y		080	000	10
																	OR<25				
											02 NONE 0	STRGHT									
											PRVTE	N -S								000	00
											PSNGR CAR		01 DRVR	NONE	44	M	OR-Y		000	000	00
																	OR<25				
											03 NONE 0	STRGHT									
											PRVTE	N -S								000	00
											PSNGR CAR		01 DRVR	INJC	54	F	OR-Y		000	000	00
																	OR<25				
02710	N N N	07/04/2015	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01 NONE 0	STRGHT									16,29
NO RPT		SA		CASCADE HY SOUTH	N		TRF SIGNAL	N	DRY	REAR	PRVTE	N -S								000	00
		3P			06	3		N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	63	F	OR-Y		026	025	16,29
																	OR<25				
											02 NONE 0	STOP									
											PRVTE	N -S								011	00
											PSNGR CAR		01 DRVR	NONE	62	F	OR-Y		000	000	00
																	OR<25				
03650	N N N	09/02/2015	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01 NONE 0	STRGHT									29
NONE		WE		CASCADE HY SOUTH	N		TRF SIGNAL	N	DRY	REAR	PRVTE	N -S								000	00
		2P			06	3		N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	43	F	OR-Y		026	000	29
																	OR<25				
											02 NONE 0	STOP									
											PRVTE	N -S								011	00
											PSNGR CAR		01 DRVR	NONE	61	F	OR-Y		000	000	00
																	OR<25				
05088	N N N	12/01/2015	14	S BEAVERCREEK RD	INTER	CROSS	N	N	RAIN	S-1STOP	01 NONE 0	STRGHT									29
NONE		TU		CASCADE HY SOUTH	N		TRF SIGNAL	N	WET	REAR	PRVTE	N -S								000	00
		5P			06	3		N	DUSK	PDO	PSNGR CAR		01 DRVR	NONE	20	M	OR-Y		026	000	29
																	OR<25				
											02 NONE 0	STOP									
											PRVTE	N -S								011	00
											PSNGR CAR		01 DRVR	NONE	44	M	OR-Y		000	000	00
																	OR<25				
00115	N N N	01/10/2011	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01 NONE 0	STRGHT									07
NO RPT		MO		CASCADE HY SOUTH	NE		TRF SIGNAL	N	DRY	REAR	PRVTE	NE-SW								000	00
		5P			06	2		N	DLIT	PDO	PSNGR CAR		01 DRVR	NONE	00	F	OR-Y		026	000	07
																	OR<25				
											02 NONE 0	STOP									

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CITY OF OREGON CITY, CLACKAMAS COUNTY

CASCADE HY SOUTH at S BEAVERCREEK RD, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 143

SER# / INVEST	SPEED	ALCHL	DRUGS	SCHL	WORK	DATE / DAY / TIME	CLASS / DIST FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
																	PRVTE		NE-SW									011	00
																	PSNGR CAR			01	DRVR	NONE	21	M	OR-Y OR<25		000	000	00
00158	N	N	N			01/13/2011	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-STRGHT	01	NONE 0	STRGHT											07
NONE						TH		CASCADE HY SOUTH	NE		YIELD	N	DRY	REAR		PRVTE	NE-SW										000	00
						4A			09	2		N	DLIT	INJ		PSNGR CAR			01	DRVR	INJC	36	F	OR-Y OR<25		042	000	07
															02	NONE 0	STRGHT											
																PRVTE	NE-SW										000	00
																PSNGR CAR			01	DRVR	NONE	55	F	OR-Y OR>25		000	000	00
00268	N	N	N			01/22/2011	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE						SA		CASCADE HY SOUTH	NE		YIELD	N	DRY	REAR		PRVTE	SE-NW										000	00
						1P			09	2		N	DAY	INJ		PSNGR CAR			01	DRVR	NONE	48	F	OR-Y OR<25		026	000	07
															02	NONE 0	STOP											
																PRVTE	SE-NW										011	00
																PSNGR CAR			01	DRVR	INJC	47	M	OR-Y OR<25		000	000	00
00504	N	N	N			02/10/2011	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE						TH		CASCADE HY SOUTH	NE		YIELD	N	DRY	REAR		PRVTE	SE-NW										000	00
						3P			09	2		N	DAY	PDO		PSNGR CAR			01	DRVR	NONE	35	M	OR-Y OR<25		026	000	07
															02	NONE 0	STOP											
																PRVTE	SE-NW										011	00
																PSNGR CAR			01	DRVR	NONE	20	M	OR-Y OR<25		000	000	00
00807	N	N	N			03/07/2011	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NO RPT						MO		CASCADE HY SOUTH	NE		YIELD	N	DRY	REAR		PRVTE	SE-NW										000	00
						6A			09	3		N	DAWN	PDO		PSNGR CAR			01	DRVR	NONE	45	M	OR-Y OR>25		026	000	07
															02	NONE 0	STOP											
																PRVTE	SE-NW										011	00
																PSNGR CAR			01	DRVR	NONE	53	M	OR-Y OR<25		000	000	00
81746	N	N	N			04/04/2011	14	S BEAVERCREEK RD	INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT											07
NONE						MO		CASCADE HY SOUTH	NE		YIELD	N	WET	REAR		PRVTE	SE-NW										000	00
						10A			09	3		N	DAY	PDO		PSNGR CAR			01	DRVR	NONE	44	M	OR-Y OR<25		026	000	07
															02	NONE 0	STOP											
																PRVTE	SE-NW										011	00
																PSNGR CAR			01	DRVR	NONE	19	F	OR-Y OR<25		000	000	00
02297	N	N	N			06/30/2011	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE						TH		CASCADE HY SOUTH	NE		YIELD	N	DRY	REAR		PRVTE	SE-NW										000	00
						12P			09	3		N	DAY	INJ		PSNGR CAR			01	DRVR	NONE	30	M	OR-Y OR<25		026	000	07
															02	NONE 0	STOP											
																PRVTE	SE-NW										011	00
																PSNGR CAR			01	DRVR	INJC	48	M	OR-Y OR<25		000	000	00

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CITY OF OREGON CITY, CLACKAMAS COUNTY

CASCADE HY SOUTH at S BEAVERCREEK RD, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 143

SER# / INVEST	S P E D	A L C	R U S	S C L	W O R K	DATE / DAY / TIME	CLASS / DIST FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AG E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
03876	N	N	N			10/15/2011	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE						SA		CASCADE HY SOUTH	NE		YIELD	N	DRY	REAR		UNKN	SE-NW									000		00
						12A			09	3		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	00	F	OR-Y UNK		026	000		07
															02	NONE 0	STOP											
																PRVTE	SE-NW									011		00
																PSNGR CAR		01	DRVR	NONE	22	F	OR-Y OR<25		000	000		00
03993	N	N	N			10/25/2011	14	S BEAVERCREEK RD	INTER	CROSS	N	N	FOG	S-1STOP	01	NONE 0	STRGHT											07
NO RPT						TU		CASCADE HY SOUTH	NE		YIELD	N	WET	REAR		PRVTE	SE-NW									000		00
						6P			09	2		N	DARK	PDO		PSNGR CAR		01	DRVR	NONE	00	F	OTH-Y OR<25		026	000		07
															02	NONE 0	STOP											
																PRVTE	SE-NW									011		00
																PSNGR CAR		01	DRVR	NONE	64	M	OR-Y OR<25		000	000		00
04755	N	N	N			12/09/2011	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	UNKN 0	STRGHT										013	07
NONE						FR		CASCADE HY SOUTH	NE		YIELD	N	DRY	REAR		UNKN	SE-NW									000		00
						8A			09	2		N	DAY	PDO		UNKNOWN		01	DRVR	NONE	00	Unk	UNK UNK		026	000		07
															02	NONE 0	STOP											
																PRVTE	SE-NW									011	013	00
																PSNGR CAR		01	DRVR	NONE	25	F	OR-Y OR<25		000	000		00
															03	NONE 0	STOP											
																PRVTE	SE-NW									022		00
																PSNGR CAR		01	DRVR	NONE	00	F	UNK UNK		000	000		00
00376	N	N	N	N	N	01/28/2012	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
STATE						SA		CASCADE HY SOUTH	NE		YIELD	N	DRY	REAR		PRVTE	SE-NW									000		00
						7P			09	2		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	45	F	OR-Y OR<25		026	000		07
															02	NONE 0	STOP											
																PRVTE	SE-NW									011		00
																PSNGR CAR		01	DRVR	INJC	19	F	OR-Y OR<25		000	000		00
															02	NONE 0	STOP											
																PRVTE	SE-NW									011		00
																PSNGR CAR		02	PSNG	INJC	20	F			000	000		00
00436	N	N	N			02/02/2012	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE						TH		CASCADE HY SOUTH	NE		YIELD	N	DRY	REAR		PRVTE	SE-NW									000		00
						4P			09	2		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	85	M	OR-Y OR<25		026	000		07
															02	NONE 0	STOP											
																UNKN	SE-NW									011		00
																PSNGR CAR		01	DRVR	NONE	00	M	UNK UNK		000	000		00
00485	N	N	N	N	N	02/06/2012	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
CITY						MO		CASCADE HY SOUTH	NE		TRF SIGNAL	N	DRY	REAR		PRVTE	SE-NW									000		00
						6P			09	3		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	65	M	OTH-Y		043,026	000		07

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OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANAYLYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CRASH LISTING

CITY OF OREGON CITY, CLACKAMAS COUNTY

CASCADE HY SOUTH at S BEAVERCREEK RD, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 143

SER# INVEST	S P E E D / A L C / R U G S / S C H L / W O R K	DATE DAY TIME	CLASS DIST FROM	CITY STREET FIRST STREET SECOND STREET	RD CHAR DIRECT LOCTN	INT-TYPE (MEDIAN) LEGS (#LANES)	INT-REL TRAF- CONTL	OFFRD RNDBT DRVWY	WTHR SURF LIGHT	CRASH COLL SVRTY	SPCL USE TRLR QTY OWNER V# TYPE	MOVE FROM TO	PRTC P# TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
																	N-RES				
											02 NONE 0	STOP									
											PRVTE	SE-NW								011	00
											PSNGR CAR		01 DRVR	INJC	26	M	OR-Y		000	000	00
																	OR>25				
00679	N N N	02/22/2012	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01 NONE 0	STRGHT									07
NONE		WE		CASCADE HY SOUTH	NE		YIELD	N	DRY	REAR	UNKN	SE-NW								000	00
		1P			09	2		N	DAY	INJ	UNKNOWN		01 DRVR	NONE	00	M	UNK		026	000	07
																	UNK				
											02 NONE 0	STOP									
											PRVTE	SE-NW								011	00
											PSNGR CAR		01 DRVR	INJC	23	F	OR-Y		000	000	00
																	OR<25				
											02 NONE 0	STOP									
											PRVTE	SE-NW								011	00
											PSNGR CAR		02 PSNG	INJC	28	F			000	000	00
											02 NONE 0	STOP									
											PRVTE	SE-NW								011	00
											PSNGR CAR		03 PSNG	INJC	55	F			000	000	00
00763	N N N	02/29/2012	14	S BEAVERCREEK RD	INTER	CROSS	N	N	RAIN	S-1STOP	01 NONE 0	STRGHT									07
NONE		WE		CASCADE HY SOUTH	NE		YIELD	N	WET	REAR	PRVTE	SE-NW								000	00
		7P			09	3		N	DLIT	INJ	PSNGR CAR		01 DRVR	NONE	00	F	OR-Y		026	000	07
																	OR<25				
											02 NONE 0	STOP									
											PRVTE	SE-NW								011	00
											PSNGR CAR		01 DRVR	INJC	17	F	OR-Y		000	000	00
																	OR<25				
00972	N N N	03/15/2012	14	S BEAVERCREEK RD	INTER	CROSS	N	N	RAIN	S-1STOP	01 NONE 0	STRGHT									07
NONE		TH		CASCADE HY SOUTH	NE		YIELD	N	WET	REAR	PRVTE	SE-NW								000	00
		6A			09	2		N	DLIT	INJ	PSNGR CAR		01 DRVR	NONE	59	F	OR-Y		026	000	07
																	OR<25				
											02 NONE 0	STOP									
											PRVTE	SE-NW								011	00
											PSNGR CAR		01 DRVR	INJC	56	F	OR-Y		000	000	00
																	OR<25				
01301	N N N	04/07/2012	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01 NONE 0	STRGHT									07
NO RPT		SA		CASCADE HY SOUTH	NE		YIELD	N	DRY	REAR	PRVTE	SE-NW								000	00
		9A			09	2		N	DAY	INJ	MTRCYCLE		01 DRVR	INJC	33	M	OR-Y		026	000	07
																	OR<25				
											02 NONE 0	STOP									
											PRVTE	SE-NW								011	00
											PSNGR CAR		01 DRVR	NONE	28	M	OR-Y		000	000	00
																	OR<25				
01649	N N N	05/05/2012	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01 NONE 0	STRGHT									07
NONE		SA		CASCADE HY SOUTH	NE		YIELD	N	DRY	REAR	PRVTE	SE-NW								000	00
		2P			09	2		N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	35	M	OR-Y		026	000	07
																	OR<25				
											01 NONE 0	STRGHT									
											PRVTE	SE-NW								000	00

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CITY OF OREGON CITY, CLACKAMAS COUNTY

CASCADE HY SOUTH at S BEAVERCREEK RD, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 143

SER# / INVEST	S P E D	A L C	R U S	S C L	W O H K	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
																PSNGR CAR		02	PSNG	NO<5	01	F			000	000	00
															02	NONE 0	STOP										
																PRVTE	SE-NW									011	00
																PSNGR CAR		01	DRVR	NONE	53	M	OR-Y		000	000	00
																							OR<25				
															02	NONE 0	STOP										
																PRVTE	SE-NW									011	00
																PSNGR CAR		02	PSNG	INJC	49	F			000	000	00
01694	N	N	N			05/08/2012	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE						TU		CASCADE HY SOUTH	NE		YIELD	N	DRY	REAR		PRVTE	SE-NW									000	00
						8P			09	3		N	DUSK	PDO		PSNGR CAR		01	DRVR	NONE	72	M	OR-Y		026	000	07
																							OR<25				
															02	NONE 0	STOP										
																PRVTE	SE-NW									011	00
																PSNGR CAR		01	DRVR	NONE	00	M	UNK		000	000	00
																							OR<25				
02190	N	N	N			06/18/2012	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 1	STRGHT											07
NONE						MO		CASCADE HY SOUTH	NE		YIELD	N	DRY	REAR		PRVTE	SE-NW									000	00
						12P			09	3		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	70	M	OTH-Y		026	000	07
																							OR<25				
															02	NONE 0	STOP										
																PRVTE	SE-NW									011	00
																PSNGR CAR		01	DRVR	INJC	43	F	OR-Y		000	000	00
																							OR<25				
															02	NONE 0	STOP										
																PRVTE	SE-NW									011	00
																PSNGR CAR		02	PSNG	INJC	07	M			000	000	00
															02	NONE 0	STOP										
																PRVTE	SE-NW									011	00
																PSNGR CAR		03	PSNG	INJC	09	F			000	000	00
02429	N	N	N			07/06/2012	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE						FR		CASCADE HY SOUTH	NE		YIELD	N	DRY	REAR		PRVTE	SE-NW									000	00
						2P			09	3		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	61	M	OR-Y		026	000	07
																							OR<25				
															02	NONE 0	STOP										
																PRVTE	SE-NW									011	00
																PSNGR CAR		01	DRVR	INJC	54	M	OTH-Y		000	000	00
																							N-RES				
02909	N	N	N			08/07/2012	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE						TU		CASCADE HY SOUTH	NE		YIELD	N	DRY	REAR		PRVTE	SE-NW									000	00
						3P			09	3		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	27	M	OR-Y		026	000	07
																							OR<25				
															02	NONE 0	STOP										
																PRVTE	SE-NW									011	00
																PSNGR CAR		01	DRVR	INJC	70	M	OR-Y		000	000	00
																							OR<25				
04569	N	N	N			11/26/2012	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLD	S-1STOP	01	NONE 0	STRGHT											27,07

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URBAN NON-SYSTEM CRASH LISTING

CITY OF OREGON CITY, CLACKAMAS COUNTY

CASCADE HY SOUTH at S BEAVERCREEK RD, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 143

SER# INVEST	S P E A U C O / D R S W / E L G H R / D C S L K	DATE DAY TIME	CLASS DIST FROM	CITY STREET FIRST STREET SECOND STREET	RD CHAR DIRECT LOCTN	INT-TYPE (MEDIAN) LEGS (#LANES)	INT-REL TRAF- CONTL	OFFRD RNDBT DRVWY	WTHR SURF LIGHT	CRASH COLL SVRTY	V#	SPCL USE TRLR QTY OWNER TYPE	MOVE FROM TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
NONE		MO		CASCADE HY SOUTH	NE		YIELD	N	DRY	REAR		PRVTE	SE-NW									000		00
		3P			09	3		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	66	F	OR-Y		016,026	000		27,07
																			OR<25					
											02	NONE 0	STOP											
												PRVTE	SE-NW									011		00
												PSNGR CAR		01	DRVR	INJB	27	F	OR-Y		000	000		00
																			OR<25					
											02	NONE 0	STOP											
												PRVTE	SE-NW									011		00
												PSNGR CAR		02	PSNG	NO<5	02	M			000	000		00
00193	N N N	01/17/2013	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE		TH		CASCADE HY SOUTH	NE		YIELD	N	DRY	REAR		PRVTE	SE-NW									000		00
		10A			09	3		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		026	000		07
																			OR<25					
											02	NONE 0	STOP											
												PRVTE	SE-NW									011		00
												PSNGR CAR		01	DRVR	NONE	29	F	OR-Y		000	000		00
																			OR<25					
00296	N N N	01/25/2013	14	S BEAVERCREEK RD	INTER	CROSS	N	N	UNK	S-1STOP	01	NONE 0	STRGHT											07
NONE		FR		CASCADE HY SOUTH	NE		YIELD	N	WET	REAR		PRVTE	SE-NW									000		00
		7A			09	3		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	25	F	OR-Y		026	000		07
																			OR<25					
											02	NONE 0	STOP											
												PRVTE	SE-NW									011		00
												PSNGR CAR		01	DRVR	INJC	24	F	OR-Y		000	000		00
																			OR<25					
											02	NONE 0	STOP											
												PRVTE	SE-NW									011		00
												PSNGR CAR		02	PSNG	NO<5	03	M			000	000		00
03686	N N N	03/27/2013	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE		WE		CASCADE HY SOUTH	NE		YIELD	N	DRY	REAR		PRVTE	SE-NW									000		00
		9A			09	3		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	00	F	OR-Y		026	000		07
																			OR<25					
											02	NONE 0	STOP											
												PRVTE	SE-NW									011		00
												PSNGR CAR		01	DRVR	INJC	59	M	OR-Y		000	000		00
																			OR<25					
01343	N N N	04/10/2013	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE		WE		CASCADE HY SOUTH	NE		YIELD	N	DRY	REAR		PRVTE	SE-NW									000		00
		5P			09	3		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	00	F	OR-Y		026	000		07
																			OR<25					
											02	NONE 0	STOP											
												PRVTE	SE-NW									011		00
												PSNGR CAR		01	DRVR	INJC	41	F	OR-Y		000	000		00
																			OR<25					
01405	N N N N N	04/24/2013	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											27,07
CITY		WE		CASCADE HY SOUTH	NE		YIELD	N	DRY	REAR		PRVTE	SE-NW									000		00
		1P			09	3		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	23	F	OR-Y		016,043,026	000		27,07
																			OR<25					

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CITY OF OREGON CITY, CLACKAMAS COUNTY

CASCADE HY SOUTH at S BEAVERCREEK RD, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 143

SER# / INVEST	S P E D	A L C	R U S	S G L	W H K	C R	O	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
																	02	NONE 0 PRVTE PSNGR CAR	STOP SE-NW									011 000	00 00
01782 NONE	N	N	N					05/21/2013 TU 7A	14	S BEAVERCREEK RD CASCADE HY SOUTH	INTER NE 09	CROSS 3	N YIELD	N N N	CLR DRY DAY	S-1STOP REAR PDO	01	NONE 0 PRVTE PSNGR CAR	STRGHT SE-NW	01	DRVR	NONE	50 F		OR-Y OR<25		026	000	07
																	02	NONE 0 PRVTE PSNGR CAR	STOP SE-NW	01	DRVR	NONE	62 F		OR-Y OR<25		000	011 000	00 00
02276 NONE	N	N	N					06/27/2013 TH 10A	14	S BEAVERCREEK RD CASCADE HY SOUTH	INTER NE 09	CROSS 3	N YIELD	N N N	CLR DRY DAY	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT SE-NW	01	DRVR	NONE	00 M		UNK OR<25		026	000	07
																	02	NONE 0 PRVTE PSNGR CAR	STOP SE-NW	01	DRVR	INJC	63 F		OR-Y OR<25		000	011 000	00 00
																	02	NONE 0 PRVTE PSNGR CAR	STOP SE-NW	02	PSNG	NO<5	01 F				000	011 000	00 00
03212 CITY	N	N	N					08/29/2013 TH 11A	14	S BEAVERCREEK RD CASCADE HY SOUTH	INTER NE 09	CROSS 3	N TRF SIGNAL	N N N	RAIN WET DAY	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT SE-NW	01	DRVR	NONE	19 M		OR-Y OR<25		026	000	07
																	02	NONE 0 PRVTE PSNGR CAR	STOP SE-NW	01	DRVR	INJC	24 F		OR-Y OR<25		000	011 000	00 00
03276 CITY	N	N	N	N	N			09/01/2013 SU 12P	14	S BEAVERCREEK RD CASCADE HY SOUTH	INTER NE 09	CROSS 3	N YIELD	N N N	CLR DRY DAY	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT SE-NW	01	DRVR	NONE	62 M		OR-Y OR<25		043,026	000	07
																	02	NONE 0 PRVTE PSNGR CAR	STOP SE-NW	01	DRVR	INJC	48 F		OR-Y OR>25		000	011 000	00 00
																	02	NONE 0 PRVTE PSNGR CAR	STOP SE-NW	02	PSNG	INJC	49 F				000	011 000	00 00
03531 NONE	N	N	N					09/21/2013 SA 9A	14	S BEAVERCREEK RD CASCADE HY SOUTH	INTER NE 09	CROSS 3	N YIELD	N N N	CLR DRY DAY	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT SE-NW	01	DRVR	NONE	00 M		UNK N-RES		026	000	07
																	02	NONE 0 PRVTE PSNGR CAR	STOP SE-NW	01	DRVR	INJC	44 F		OR-Y		000	011 000	00 00

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CITY OF OREGON CITY, CLACKAMAS COUNTY

CASCADE HY SOUTH at S BEAVERCREEK RD, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 143

SER# / INVEST	SPEED	ALCHL	DRUGS	SCHL	WORK	DATE / DAY / TIME	CLASS / DIST FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF-CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
04072	N	N	N			10/24/2013	14	S BEAVERCREEK RD	INTER	CROSS	N	N	FOG	S-1STOP	01	NONE 0	STRGHT						OR<25				07
NONE						TH		CASCADE HY SOUTH	NE		YIELD	N	DRY	REAR		UNKN	SE-NW									000	00
						7A			09	3		N	DLIT	PDO		UNKNOWN		01	DRVR	NONE	00	Unk	UNK		026	000	07
																							OR<25				
															02	NONE 0	STOP										
																PRVTE	SE-NW									011	00
																PSNGR CAR		01	DRVR	NONE	69	M	OR-Y		000	000	00
																							OR<25				
00987	N	N	N			03/11/2014	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										07
NONE						TU		CASCADE HY SOUTH	NE		YIELD	N	DRY	REAR		PRVTE	SE-NW									000	00
						6P			09	3		N	DUSK	INJ		PSNGR CAR		01	DRVR	INJB	38	F	OR-Y		026	000	07
																							OR<25				
															02	NONE 0	STOP										
																PRVTE	SE-NW									011	00
																PSNGR CAR		01	DRVR	NONE	36	M	OR-Y		000	000	00
																							OR<25				
00273	N	N	N			01/22/2015	14	S BEAVERCREEK RD	INTER	CROSS	N	N	FOG	S-1STOP	01	NONE 0	STRGHT										29
NONE						TH		CASCADE HY SOUTH	NE		YIELD	N	DRY	REAR		PRVTE	SE-NW									000	00
						6A			09	3		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	21	F	OR-Y		026	000	29
																							OR<25				
															02	NONE 0	STOP										
																PRVTE	SE-NW									011	00
																PSNGR CAR		01	DRVR	INJC	25	F	OR-Y		000	000	00
																							OR<25				
															02	NONE 0	STOP										
																PRVTE	SE-NW									011	00
																PSNGR CAR		02	PSNG	INJC	04	F			000	000	00
02876	N	N	N			07/17/2015	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										29
NONE						FR		CASCADE HY SOUTH	NE		YIELD	N	DRY	REAR		PRVTE	SE-NW									000	00
						7A			09	3		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	69	M	OR-Y		026	000	29
																							OR<25				
															02	NONE 0	STOP										
																PRVTE	SE-NW									011	00
																PSNGR CAR		01	DRVR	INJC	33	M	OR-Y		000	000	00
																							OR<25				
03849	N	N	N			09/17/2015	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										29
NONE						TH		CASCADE HY SOUTH	NE		YIELD	N	DRY	REAR		PRVTE	SE-NW									000	00
						6P			09	3		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	42	M	OR-Y		026	000	29
																							OR<25				
															02	NONE 0	STOP										
																PRVTE	SE-NW									011	00
																PSNGR CAR		01	DRVR	INJC	47	F	OR-Y		000	000	00
																							OR<25				
00553	N	N	N			02/12/2015	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										29
NONE						TH		CASCADE HY SOUTH	NE		YIELD	N	DRY	REAR		PRVTE	SE-NW									000	00
						7P			09	3		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	65	M	OR-Y		026	000	29
																							OR<25				
															02	NONE 0	STOP										
																UNKN	SE-NW									011	00

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CITY OF OREGON CITY, CLACKAMAS COUNTY

CASCADE HY SOUTH at S BEAVERCREEK RD, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 143

SER# / INVEST	S P E D	A L C	D R S	S W U L	C O H	O R K	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
																	UNKNOWN		01	DRVR	NONE	45	F	OR-Y UNK		000	000	00
01159 NONE	N	N	N				04/02/2015 TH 4P	14	S BEAVERCREEK RD CASCADE HY SOUTH	INTER NE 09	CROSS 3	N YIELD	N N N	CLR DRY DAY	S-1STOP REAR PDO	01	NONE 0 PRVTE PSNGR CAR	STRGHT SE-NW	01	DRVR	NONE	00	F	OR-Y OR>25		026	000 000	29 00 29
																02	NONE 0 PRVTE PSNGR CAR	STOP SE-NW	01	DRVR	NONE	58	F	OR-Y OR<25		000	011 000	00 00
04182 NONE	N	N	N				09/14/2015 MO 12A	14	S BEAVERCREEK RD CASCADE HY SOUTH	INTER NE 09	CROSS 3	N YIELD	N N N	CLR DRY DLIT	S-1STOP REAR PDO	01	NONE 0 PRVTE PSNGR CAR	STRGHT SE-NW	01	DRVR	NONE	00	F	UNK N-RES		026	000 000	29 00 29
																02	NONE 0 PRVTE PSNGR CAR	STOP SE-NW	01	DRVR	NONE	27	F	OR-Y OR<25		000	011 000	00 00
05566 NONE	N	N	N				12/22/2015 TU 5A	14	S BEAVERCREEK RD CASCADE HY SOUTH	INTER NE 09	CROSS 3	N YIELD	N N N	UNK WET DARK	S-1STOP REAR PDO	01	NONE 0 UNKN PSNGR CAR	STRGHT SE-NW	01	DRVR	NONE	00	F	UNK UNK		026	000 000	29 00 29
																02	NONE 0 PRVTE PSNGR CAR	STOP SE-NW	01	DRVR	NONE	42	F	OR-Y OR<25		000	011 000	00 00
00577 CITY	N	N	N	N	N		02/19/2013 TU 6A	16 0	S BEAVERCREEK RD CASCADE HY SOUTH	INTER NE 09	CROSS 3	N YIELD	N N N	RAIN WET DLIT	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT SE-NW	01	DRVR	NONE	53	M	OR-Y OR<25		043,026	000 000	07 00 07
																02	NONE 0 PRVTE PSNGR CAR	STOP SE-NW	01	DRVR	INJB	57	M	OR-Y OR<25		000	011 000	00 00
01893 CITY	N	N	N				05/30/2013 TH 2P	14	S BEAVERCREEK RD CASCADE HY SOUTH	INTER E 06	CROSS 3	N TRF SIGNAL	N N N	CLD DRY DAY	ANGL-STP TURN INJ	01	NONE 1 PRVTE SEMI TOW	TURN-R S -E	01	DRVR	NONE	29	M	OR-Y OR<25		017	000 017	22 00
																02	NONE 0 PRVTE PSNGR CAR	STOP E -W	01	DRVR	INJC	48	F	OR-Y OR<25		000	012 000	00 00
00120 NONE	N	N	N				01/09/2014 TH 5P	14	S BEAVERCREEK RD CASCADE HY SOUTH	INTER E 03	CROSS 3	N TRF SIGNAL	N N N	RAIN WET DUSK	ANGL-OTH TURN PDO	01	NONE 0 PRVTE PSNGR CAR	TURN-R W -S	01	DRVR	NONE	56	F	OR-Y OR<25		028	016 000	02 00 02
																02	NONE 0 PRVTE PSNGR CAR	STRGHT N -S	01	DRVR	NONE	63	M	UNK OR>25		000	000 000	00 00

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CITY OF OREGON CITY, CLACKAMAS COUNTY

CASCADE HY SOUTH at S BEAVERCREEK RD, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 143

SER# / INVEST	SPEC	ALC	DRG	SCH	WRK	DATE / DAY / TIME	CLASS / DIST FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AG E	SEX	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
01893	N	N	N			04/20/2015	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
NONE						MO		CASCADE HY SOUTH	E		TRF SIGNAL	N	DRY	REAR		PRVTE	E -W									000		00
						3P			06	3		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	17	F	OR-Y OR<25		026	000		29
															02	NONE 0	STOP											
																PRVTE	E -W									011		00
																PSNGR CAR		01	DRVR	INJC	47	F	OR-Y OR<25		000	000		00
04437	N	N	N			10/27/2015	14	S BEAVERCREEK RD	INTER	4-LEG	N	N	CLR	S-STRGHT	01	NONE 0	STRGHT											29
NONE						TU		CASCADE HY SOUTH	E		TRF SIGNAL	N	DRY	REAR		PRVTE	E -W									000		00
						5P			06	3		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	17	M	OR-Y OR<25		042	000		29
															02	NONE 0	STRGHT											
																PRVTE	E -W									006		00
																PSNGR CAR		01	DRVR	NONE	53	F	OR-Y OR<25		000	000		00
00355	Y	N	Y	N	N	01/30/2011	16	S BEAVERCREEK RD	INTER	CROSS	N	N	CLD	S-1STOP	01	NONE 0	STRGHT											16,32
CITY						SU	0	CASCADE HY SOUTH	E		TRF SIGNAL	N	DRY	REAR		PRVTE	E -W									000		00
						3P			06	2		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	72	F	OR-Y OR<25		053,026,011	025		16,32
															02	NONE 0	STOP											
																PRVTE	E -W									011		00
																PSNGR CAR		01	DRVR	INJB	51	F	OR-Y OR<25		000	000		00
															03	NONE 0	STOP											
																PRVTE	E -W									022		00
																PSNGR CAR		01	DRVR	NONE	54	M	OR-Y OR<25		000	000		00
01217	N	N	N			04/11/2011	16	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-OTHER	01	NONE 0	STRGHT											07
NONE						MO	0	CASCADE HY SOUTH	E		UNKNOWN	N	DRY	REAR		PRVTE	E -W									000		00
						8P			06	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	47	F	OTH-Y N-RES		042	000		07
															02	NONE 0	STRGHT											
																PRVTE	E -W									006		00
																PSNGR CAR		01	DRVR	NONE	56	F	OR-Y OR<25		000	000		00
															02	NONE 0	STRGHT											
																PRVTE	E -W									006		00
																PSNGR CAR		02	PSNG	INJC	18	F			000	000		00
01368	Y	N	N	N	N	04/22/2011	16	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										013	01
STATE						FR	0	CASCADE HY SOUTH	E		TRF SIGNAL	N	DRY	REAR		PRVTE	S -N									000		00
						2P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	41	F	OR-Y OR<25		047,026	000		01
															02	NONE 0	STOP											
																PRVTE	S -N									011	013	00
																PSNGR CAR		01	DRVR	NONE	17	F	OR-Y OR<25		000	000		00
															03	NONE 0	STOP											
																PRVTE	S -N									022		00
																PSNGR CAR		01	DRVR	NONE	22	M	OR-Y		000	000		00

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CITY OF OREGON CITY, CLACKAMAS COUNTY

CASCADE HY SOUTH at S BEAVERCREEK RD, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 143

SER# / INVEST	S P E D	A L C	R S L	S W C K	O R	DATE / DAY / TIME	CLASS / DIST FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF-CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AG E	AS E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
04115	N	N	N			11/03/2011	16	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT						OR<25				07
NONE						TH	0	CASCADE HY SOUTH	E		TRF SIGNAL	N	DRY	REAR		PRVTE	E -W									000	00
						11A			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	00	M	UNK		026	000	07
																							UNK				
															02	NONE 0	STOP										
																PRVTE	E -W									011	00
																PSNGR CAR		01	DRVR	INJC	25	F	OR-Y		000	000	00
																							OR>25				
00750	N	N	N			02/27/2012	16	S BEAVERCREEK RD	INTER	CROSS	N	N	UNK	S-1STOP	01	NONE 0	STRGHT										07
NONE						MO	0	CASCADE HY SOUTH	E		TRF SIGNAL	N	WET	REAR		PRVTE	E -W									000	00
						2P			06	3		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	19	M	OR-Y		026	000	07
																							OR<25				
															02	NONE 0	STOP										
																PRVTE	E -W									011	00
																PSNGR CAR		01	DRVR	INJC	33	M	OR-Y		000	000	00
																							OR<25				
05319	N	N	N			12/31/2014	16	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										29
NONE						WE	0	CASCADE HY SOUTH	E		TRF SIGNAL	N	DRY	REAR		UNKN	UN-UN									000	00
						9P			06	3		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		026	000	29
																							UNK				
															02	NONE 0	STOP										
																PRVTE	UN-UN									011	00
																PSNGR CAR		01	DRVR	INJC	16	F	OR-Y		000	000	00
																							OR<25				
															02	NONE 0	STOP										
																PRVTE	UN-UN									011	00
																PSNGR CAR		02	PSNG	INJC	18	F			000	000	00
03287	N	N	N			08/13/2015	16	S BEAVERCREEK RD	INTER	CROSS	N	N	UNK	S-1STOP	01	NONE 0	STRGHT										29
NO RPT						TH	0	CASCADE HY SOUTH	E		TRF SIGNAL	N	UNK	REAR		UNKN	E -W									000	00
						3P			06	3		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	F	OR-Y		026	000	29
																							UNK				
															02	NONE 0	STOP										
																PRVTE	E -W									011	00
																PSNGR CAR		01	DRVR	NONE	65	F	OR-Y		000	000	00
																							OR<25				
00353	N	N	N			01/25/2012	14	S BEAVERCREEK RD	INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT										07
NONE						WE		CASCADE HY SOUTH	SE		YIELD	N	WET	REAR		PRVTE	SW-NE									000	00
						7P			09	2		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	18	M	OR-Y		026	000	07
																							OR<25				
															02	NONE 0	STOP										
																PRVTE	SW-NE									011	00
																PSNGR CAR		01	DRVR	INJC	50	F	OR-Y		000	000	00
																							OR<25				
02025	N	N	N			06/03/2012	14	S BEAVERCREEK RD	INTER	CROSS	N	N	UNK	S-1STOP	01	NONE 0	STRGHT										07
NONE						SU		CASCADE HY SOUTH	SE		YIELD	N	UNK	REAR		PRVTE	SW-NE									000	00
						5P			09	3		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	M	OR-Y		026	000	07
																							OR<25				
															02	NONE 0	STOP										
																PRVTE	SW-NE									011	00

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CITY OF OREGON CITY, CLACKAMAS COUNTY

CASCADE HY SOUTH at S BEAVERCREEK RD, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 143

SER# / INVEST	S P E D	A L C	R U S	S C L	W O R K	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC / TYPE / SVRTY	INJ	A G E	S E X	LICNS / RES	PED LOC	ERROR	ACT	EVENT	CAUSE
																PSNGR CAR		01	DRVR	NONE	46	M	OR-Y OR<25		000	000		00
03609 NO RPT	N	N	N			09/29/2012 SA 8A	14	S BEAVERCREEK RD CASCADE HY SOUTH	INTER SE 09	CROSS 3	N YIELD	N N	CLR DRY DAY	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT SW-NE	01	DRVR	NONE	38	M	OR-Y OR<25		026	000 000		07 00 07
															02	NONE 0 PRVTE PSNGR CAR	STOP SW-NE	01	DRVR	INJC	24	M	OR-Y OR<25		000	011 000		00 00
															02	NONE 0 PRVTE PSNGR CAR	STOP SW-NE	02	PSNG	INJC	24	F			000	011 000		00 00
00303 NONE	N	N	N			01/25/2013 FR 11A	14	S BEAVERCREEK RD CASCADE HY SOUTH	INTER SE 09	CROSS 3	N YIELD	N N	CLD DRY DAY	S-1STOP REAR PDO	01	NONE 0 PRVTE PSNGR CAR	STRGHT SW-NE	01	DRVR	NONE	00	M	OR-Y OR<25		026	000 000	004	07 00 07
															02	NONE 0 PRVTE PSNGR CAR	STOP SW-NE	01	DRVR	NONE	73	M	OR-Y OR<25		000	011 000	004	00 00
01066 NONE	N	N	N			03/29/2013 FR 5P	14	S BEAVERCREEK RD CASCADE HY SOUTH	INTER SE 09	CROSS 3	N YIELD	N N	CLR DRY DAY	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT SW-NE	01	DRVR	NONE	53	M	OR-Y OR<25		026	000 000		07 00 07
															02	NONE 0 PRVTE PSNGR CAR	STOP SW-NE	01	DRVR	INJC	32	F	OR-Y OR<25		000	011 000		00 00
03374 NONE	N	N	N			09/11/2013 WE 8A	14	S BEAVERCREEK RD CASCADE HY SOUTH	INTER SE 09	CROSS 3	N YIELD	N N	CLR DRY DAY	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT SW-NE	01	DRVR	NONE	32	F	OR-Y OR<25		026	000 000		07 00 07
															02	NONE 0 PRVTE PSNGR CAR	STOP SW-NE	01	DRVR	INJC	74	M	OR-Y OR<25		000	011 000		00 00
04298 NONE	N	N	N			11/05/2013 TU 5P	14	S BEAVERCREEK RD CASCADE HY SOUTH	INTER SE 09	CROSS 3	N YIELD	N N	RAIN WET DLIT	S-1STOP REAR PDO	01	NONE 0 PRVTE PSNGR CAR	STRGHT SW-NE	01	DRVR	NONE	22	F	OR-Y OR<25		026	000 000		07 00 07
															02	NONE 0 PRVTE PSNGR CAR	STOP SW-NE	01	DRVR	NONE	59	F	OR-Y OR<25		000	011 000		00 00
00483 CITY	N	N	N			02/06/2014 TH 10P	14	S BEAVERCREEK RD CASCADE HY SOUTH	INTER SE 09	CROSS 3	N YIELD	N N	SNOW SNO DLIT	S-STRGHT REAR PDO	01	NONE 0 UNKN PSNGR CAR	STRGHT SW-NE	01	DRVR	NONE	00	M	UNK UNK		042	000	124 000 124	07 00 07
															02	NONE 0	STRGHT										

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CITY OF OREGON CITY, CLACKAMAS COUNTY

CASCADE HY SOUTH at S BEAVERCREEK RD, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 143

SER# / INVEST	S P E D	A L C	R U G S	S C H L	W O R K	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
																PRVTE	SW-NE									006	00
																PSNGR CAR		01	DRVR	NONE	18	M	OR-Y OR<25		000	000	00
01591	N	N	N			04/26/2014	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
NONE						SA		CASCADE HY SOUTH	SE		YIELD	N	DRY	REAR		PRVTE	SW-NE									000	00
						4P			09	3		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	28	M	OR-Y OR<25		026	000	29
															02	NONE 0	STOP										
																PRVTE	SW-NE									011	00
																PSNGR CAR		01	DRVR	NONE	69	M	OR-Y OR<25		000	000	00
00664	N	N	N			02/20/2015	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
NONE						FR		CASCADE HY SOUTH	SE		YIELD	N	DRY	REAR		PRVTE	SW-NE									000	00
						3P			09	3		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	46	M	OR-Y OR<25		026	000	29
															02	NONE 0	STOP										
																PRVTE	SW-NE									011	00
																PSNGR CAR		01	DRVR	NONE	17	F	OR-Y OR<25		000	000	00
00930	N	N	N			03/15/2015	14	S BEAVERCREEK RD	INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT											29
NONE						SU		CASCADE HY SOUTH	SE		YIELD	N	WET	REAR		PRVTE	SW-NE									000	00
						10A			09	3		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	20	M	OR-Y OR<25		026	000	29
															02	NONE 0	STOP										
																PRVTE	SW-NE									011	00
																PSNGR CAR		01	DRVR	NONE	00	M	UNK OR<25		000	000	00
05136	N	N	N			12/03/2015	14	S BEAVERCREEK RD	INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT											29
NONE						TH		CASCADE HY SOUTH	SE		YIELD	N	WET	REAR		PRVTE	SW-NE									000	00
						5P			09	3		N	DUSK	PDO		PSNGR CAR		01	DRVR	NONE	41	M	OR-Y OR<25		026	000	29
															02	NONE 0	STOP										
																PRVTE	SW-NE									011	00
																PSNGR CAR		01	DRVR	NONE	56	F	OR-Y OR<25		000	000	00
00146	N	N	N			01/12/2011	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLD	S-1STOP	01	NONE 0	STRGHT											07
CITY						WE		CASCADE HY SOUTH	S		TRF SIGNAL	N	WET	REAR		PRVTE	S -N									000	00
						4P			06	2		N	DUSK	INJ		PSNGR CAR		01	DRVR	NONE	22	F	OR-Y OR<25		026	000	07
															02	NONE 0	STOP										
																PRVTE	S -N									011	00
																PSNGR CAR		01	DRVR	INJC	24	F	OR-Y OR<25		000	000	00
															02	NONE 0	STOP										
																PRVTE	S -N									011	00
																PSNGR CAR		02	PSNG	INJC	24	F			000	000	00
00864	N	N	N			03/11/2011	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE						FR		CASCADE HY SOUTH	S		L-GRN-SIG	N	DRY	REAR		PRVTE	S -N									000	00
						1P			06	2		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	24	M	OR-Y OR<25		026	000	07

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CITY OF OREGON CITY, CLACKAMAS COUNTY

CASCADE HY SOUTH at S BEAVERCREEK RD, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 143

SER# INVEST	S D P R S W E A U C O E L G H R D C S L K	DATE DAY TIME	CLASS DIST FROM	CITY STREET FIRST STREET SECOND STREET	RD CHAR DIRECT LOCTN	INT-TYPE (MEDIAN) LEGS (#LANES)	INT-REL TRAF- CONTL	OFFRD RNDBT DRVWY	WTHR SURF LIGHT	CRASH COLL SVRTY	V#	SPCL USE TRLR QTY OWNER TYPE	MOVE FROM TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
											02	NONE 0	STOP											
												PRVTE	S -N									012		00
												PSNGR CAR		01	DRVR	INJB	51	M	OR-Y		000	000		00
																			OR<25					
01684	N N N	05/16/2011	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE		MO		CASCADE HY SOUTH	S		TRF SIGNAL	N	DRY	REAR		PRVTE	S -N									000		00
		8A			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	24	F	OR-Y		026	000		07
																			OR<25					
											02	NONE 0	STOP											
												PRVTE	S -N									011		00
												PSNGR CAR		01	DRVR	NONE	39	M	OR-Y		000	000		00
																			OR>25					
03992	N N N	10/25/2011	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE		TU		CASCADE HY SOUTH	S		TRF SIGNAL	N	DRY	REAR		PRVTE	S -N									000		00
		10A			06	2		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	57	M	OR-Y		026	000		07
																			OR<25					
											02	NONE 0	STOP											
												PRVTE	S -N									011		00
												PSNGR CAR		01	DRVR	NONE	32	F	OR-Y		000	000		00
																			OR<25					
04652	N N N N N	12/03/2011	14	S BEAVERCREEK RD	INTER	CROSS	N	N	FOG	S-1STOP	01	NONE 0	STRGHT											27,07
NONE		SA		CASCADE HY SOUTH	S		TRF SIGNAL	N	DRY	REAR		PRVTE	S -N									000		00
		9A			06	2		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	45	M	OR-Y		016,026	000		27,07
																			OR<25					
											02	NONE 0	STOP											
												PRVTE	S -N									011		00
												PSNGR CAR		01	DRVR	INJC	73	M	OR-Y		000	000		00
																			OR<25					
00069	N N N N N	01/06/2012	14	S BEAVERCREEK RD	INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT										004	07
STATE		FR		CASCADE HY SOUTH	S		TRF SIGNAL	N	WET	REAR		PRVTE	S -N									000		00
		2P			06	3		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	16	F	OR-Y		043,026	000		07
																			OR<25					
											02	NONE 0	STOP											
												PRVTE	S -N									011	004	00
												PSNGR CAR		01	DRVR	INJC	55	F	OR-Y		000	000		00
																			OR<25					
02327	N N N N N	06/29/2012	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLD	S-1STOP	01	NONE 0	STRGHT											07,27
UNK		FR		CASCADE HY SOUTH	S		TRF SIGNAL	N	DRY	REAR		PRVTE	S -N									000		00
		7A			06	2		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	53	M	OR-Y		026,016	038		07,27
																			OR<25					
											02	NONE 0	STOP											
												PRVTE	S -N									011		00
												PSNGR CAR		01	DRVR	INJC	44	F	OR-Y		000	000		00
																			OR<25					
03411	N N N	09/13/2013	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE		FR		CASCADE HY SOUTH	S		TRF SIGNAL	N	DRY	REAR		PRVTE	S -N									000		00
		11A			06	3		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	63	F	OR-Y		026	000		07
																			OR<25					
											02	NONE 0	STOP											
												PRVTE	S -N									011		00
												PSNGR CAR		01	DRVR	NONE	00	M	UNK		000	000		00

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OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANAYLYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CRASH LISTING

CITY OF OREGON CITY, CLACKAMAS COUNTY

CASCADE HY SOUTH at S BEAVERCREEK RD, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 143

SER# / INVEST	S P E D	A L C	R S L	S W C K	O R	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
03520	N	N	N			09/20/2013	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT						UNK				
NONE						FR		CASCADE HY SOUTH	S		TRF SIGNAL	N	DRY	REAR		PRVTE	S -N									000	00
						6A			06	3		N	DAWN	INJ		PSNGR CAR		01	DRVR	NONE	37	M	OR-Y		026	000	07
																							OR<25				
															02	NONE 0	STOP										
																PRVTE	S -N									011	00
																PSNGR CAR		01	DRVR	INJC	29	M	OR-Y		000	000	00
																							OR<25				
03630	N	N	N			09/27/2013	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										07
NONE						FR		CASCADE HY SOUTH	S		TRF SIGNAL	N	DRY	REAR		PRVTE	S -N									000	00
						5A			06	3		N	DAWN	PDO		PSNGR CAR		01	DRVR	NONE	34	F	OR-Y		026	000	07
																							OR<25				
															02	NONE 0	STOP										
																PRVTE	S -N									011	00
																PSNGR CAR		01	DRVR	NONE	49	F	OR-Y		000	000	00
																							OR<25				
00463	Y	N	N	N	N	02/05/2014	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										07,01
COUNTY						WE		CASCADE HY SOUTH	S		TRF SIGNAL	N	DRY	REAR		PRVTE	S -N									000	00
						5A			06	3		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	19	M	OTH-Y		026,047	000	07,01
																							N-RES				
															02	NONE 0	STOP										
																PRVTE	S -N									011	00
																PSNGR CAR		01	DRVR	INJC	44	F	OR-Y		000	000	00
																							OR<25				
00709	N	N	N			02/17/2014	14	S BEAVERCREEK RD	INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT										07
NONE						MO		CASCADE HY SOUTH	S		TRF SIGNAL	N	WET	REAR		UNKN	S -N									000	00
						5A			06	3		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	00	M	UNK		026	000	07
																							UNK				
															02	NONE 0	STOP										
																PRVTE	S -N									011	00
																PSNGR CAR		01	DRVR	INJC	55	M	OR-Y		000	000	00
																							OR<25				
01295	N	N	N			04/03/2014	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										07
NONE						TH		CASCADE HY SOUTH	S		TRF SIGNAL	N	DRY	REAR		PRVTE	S -N									000	00
						9A			06	3		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	20	F	OR-Y		026	000	07
																							OR<25				
															02	NONE 0	STOP										
																UNKN	S -N									011	00
																PSNGR CAR		01	DRVR	NONE	00	M	UNK		000	000	00
																							UNK				
02651	N	N	N			06/26/2014	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										29
NO RPT						TH		CASCADE HY SOUTH	S		TRF SIGNAL	N	DRY	REAR		PRVTE	S -N									000	00
						2P			06	3		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	F	UNK		026	000	29
																							OR<25				
															02	NONE 0	STOP										
																PRVTE	S -N									011	00
																PSNGR CAR		01	DRVR	NONE	22	M	OR-Y		000	000	00
																							OR<25				
02801	N	N	N			07/21/2014	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										29

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URBAN NON-SYSTEM CRASH LISTING

CITY OF OREGON CITY, CLACKAMAS COUNTY

CASCADE HY SOUTH at S BEAVERCREEK RD, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 143

SER# INVEST	S P E A U C O D R S W E L G H R D C S L K	DATE DAY TIME	CLASS DIST FROM	CITY STREET FIRST STREET SECOND STREET	RD CHAR DIRECT LOCTN	INT-TYPE (MEDIAN) LEGS (#LANES)	INT-REL TRAF- CONTL	OFFRD RNDBT DRVWY	WTHR SURF LIGHT	CRASH COLL SVRTY	V# SPCL USE TRLR QTY OWNER TYPE	MOVE FROM TO	P# PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
NONE		MO		CASCADE HY SOUTH	S		TRF SIGNAL	N	DRY	REAR	PRVTE	S -N								000	00
		11A			06	3		N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	25	F	OR-Y OR<25		026	000	29
											02 NONE 0	STOP									
											PRVTE	S -N								011	00
											PSNGR CAR		01 DRVR	INJC	20	F	OR-Y OR<25		000	000	00
04596	N N N	11/04/2015	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01 NONE 0	STRGHT									29
NONE		WE		CASCADE HY SOUTH	S		TRF SIGNAL	N	DRY	REAR	PRVTE	S -N								000	00
		5P			06	3		N	DLIT	INJ	PSNGR CAR		01 DRVR	NONE	76	M	OR-Y OR>25		026	000	29
											02 NONE 0	STOP									
											PRVTE	S -N								011	00
											PSNGR CAR		01 DRVR	INJC	81	M	OR-Y OR<25		000	000	00
											02 NONE 0	STOP									
											PRVTE	S -N								011	00
											PSNGR CAR		02 PSNG	INJC	60	F			000	000	00
04973	N N N	11/23/2015	14	S BEAVERCREEK RD	INTER	CROSS	N	N	RAIN	S-1STOP	01 NONE 0	STRGHT									29
NONE		MO		CASCADE HY SOUTH	S		TRF SIGNAL	N	WET	REAR	UNKN	S -N								000	00
		6P			06	3		N	DUSK	PDO	UNKNOWN		01 DRVR	NONE	00	Unk	UNK UNK		026	000	29
											02 NONE 0	STOP									
											PRVTE	S -N								011	00
											PSNGR CAR		01 DRVR	NONE	72	M	OR-Y OR<25		000	000	00
01378	N N N	01/12/2011	14	S BEAVERCREEK RD	INTER	CROSS	N	N	RAIN	S-1STOP	01 NONE 0	STRGHT									07
NONE		WE		CASCADE HY SOUTH	W		TRF SIGNAL	N	WET	REAR	PRVTE	W -E								000	00
		12P			06	2		N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	23	F	OR-Y OR<25		026	000	07
											02 NONE 0	STOP									
											PRVTE	W -E								011	00
											PSNGR CAR		01 DRVR	NONE	54	M	OR-Y OR<25		000	000	00
03959	N N N	10/07/2014	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01 NONE 0	STRGHT									29
NONE		TU		CASCADE HY SOUTH	W		TRF SIGNAL	N	DRY	REAR	PRVTE	W -E								000	00
		7A			06	3		N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	18	M	OR-Y OR<25		026	026	29
											02 NONE 0	STOP									
											PRVTE	W -E								011	00
											PSNGR CAR		01 DRVR	NONE	28	M	OR-Y OR<25		000	000	00
04748	N N N	11/12/2015	14	S BEAVERCREEK RD	INTER	CROSS	N	N	RAIN	S-1STOP	01 NONE 0	STRGHT									29
NONE		TH		CASCADE HY SOUTH	W		TRF SIGNAL	N	WET	REAR	PRVTE	W -E								000	00
		1P			06	3		N	DAY	INJ	PSNGR CAR		01 DRVR	INJC	20	F	OR-Y OR<25		026	000	29
											01 NONE 0	STRGHT									
											PRVTE	W -E								000	00
											PSNGR CAR		02 PSNG	INJC	18	F			000	000	00

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CITY OF OREGON CITY, CLACKAMAS COUNTY

CASCADE HY SOUTH at S BEAVERCREEK RD, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 143

SER# / INVEST	S P E D	A L C	R S L	S W C K	O R	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
															02	NONE 0	STOP									
																PRVTE	W -E								011	00
																PSNGR CAR		01	DRVR	NONE	17	M	OR-Y OR<25		000	000 00
05677	N	N	N			12/29/2015	14	S BEAVERCREEK RD	INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT										29
NONE						TU		CASCADE HY SOUTH	W		TRF SIGNAL	N	WET	REAR		PRVTE	W -E								000	00
						5P			06	3		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	80	M	OR-Y OR<25		026	000 29
															02	NONE 0	STOP									
																PRVTE	W -E								011	00
																PSNGR CAR		01	DRVR	INJC	27	M	OR-Y OR<25		000	000 00
04873	N	N	N			12/19/2011	16	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										07
NONE						MO	0	CASCADE HY SOUTH	W		TRF SIGNAL	N	DRY	REAR		PRVTE	W -E								000	00
						2P			06	1		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	M	OR-Y OR<25		026	000 07
															02	NONE 0	STOP									
																PRVTE	W -E								011	00
																PSNGR CAR		01	DRVR	NONE	30	F	OR-Y OR<25		000	000 00
02778	N	N	N			07/29/2012	16	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										07
NONE						SU	0	CASCADE HY SOUTH	W		L-TURN REF	N	DRY	REAR		PRVTE	W -E								000	00
						10A			06	2		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	37	F	OR-Y OR<25		026	000 07
															02	NONE 0	STOP									
																PRVTE	W -E								012	00
																PSNGR CAR		01	DRVR	NONE	51	F	OR-Y OR<25		000	000 00
02536	N	N	N			07/15/2013	16	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										07
NONE						MO	0	CASCADE HY SOUTH	W		TRF SIGNAL	N	DRY	REAR		PRVTE	W -E								000	00
						6P			06	3		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	44	M	OR-Y OR<25		026	000 07
															02	NONE 0	STOP									
																PRVTE	W -E								011	00
																PSNGR CAR		01	DRVR	NONE	60	F	OR-Y OR<25		000	000 00
04147	N	N	N			10/29/2013	16	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										07
NONE						TU	0	CASCADE HY SOUTH	W		TRF SIGNAL	N	DRY	REAR		PRVTE	W -E								000	00
						3P			06	3		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	20	F	OR-Y OR>25		026	000 07
															02	NONE 0	STOP									
																PRVTE	W -E								011	00
																PSNGR CAR		01	DRVR	INJC	34	F	OR-Y OR<25		000	000 00
00273	N	N	N	N	N	01/01/2014	16	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										07
CITY						WE	0	CASCADE HY SOUTH	W		TRF SIGNAL	N	DRY	REAR		PRVTE	W -E								000	00
						9A			06	3		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	65	F	SUSP OR<25		026	000 07
															02	NONE 0	STOP									
																PRVTE	W -E								011	00
																PSNGR CAR		01	DRVR	INJC	21	F	OR-Y		000	000 00

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CITY OF OREGON CITY, CLACKAMAS COUNTY

CASCADE HY SOUTH at S BEAVERCREEK RD, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 143

SER# / INVEST	S P E D	A L C	R S L	S W C K	O R	DATE / DAY / TIME	CLASS / DIST FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AG E	AS E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
00762	N	N	N			03/02/2015	16	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT						OR<25				29
NONE						MO	0	CASCADE HY SOUTH	W		TRF SIGNAL	N	DRY	REAR		PRVTE	W -E									000	00
						2P			06	2		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	65	M	OR-Y		026	000	29
																							OR<25				
															02	NONE 0	STOP										
																PRVTE	W -E									011	00
																PSNGR CAR		01	DRVR	INJC	54	F	OR-Y		000	000	00
																							OR<25				
04147	N	N	N			10/08/2015	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										29
NONE						TH	0	CASCADE HY SOUTH	W		TRF SIGNAL	N	DRY	REAR		PRVTE	W -E									000	00
						10A			06	3		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	M	OR-Y		026	000	29
																							OR<25				
															02	NONE 0	STOP										
																PRVTE	W -E									011	00
																PSNGR CAR		01	DRVR	NONE	59	F	OR-Y		000	000	00
																							OR<25				
															02	NONE 0	STOP										
																PRVTE	W -E									011	00
																PSNGR CAR		02	PSNG	NO<5	03	F			000	000	00
04684	N	N	N			11/08/2015	14	S BEAVERCREEK RD	INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT										29
NONE						SU	0	CASCADE HY SOUTH	W		TRF SIGNAL	N	WET	REAR		PRVTE	W -E									000	00
						5P			06	3		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	00	F	OR-Y		026	000	29
																							OR<25				
															02	NONE 0	STOP										
																PRVTE	W -E									011	00
																PSNGR CAR		01	DRVR	NONE	64	M	OR-Y		000	000	00
																							OR<25				
01141	N	N	N			04/04/2011	14	S BEAVERCREEK RD	INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT										07
NONE						MO		CASCADE HY SOUTH	NW		YIELD	N	WET	REAR		PRVTE	NE-SW									000	00
						11A			09	2		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	F	OR-Y		026	000	07
																							UNK				
															02	NONE 0	STOP										
																PRVTE	NE-SW									011	00
																PSNGR CAR		01	DRVR	NONE	44	M	OR-Y		000	000	00
																							OR<25				
04735	N	N	N			12/08/2011	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										07
NONE						TH		CASCADE HY SOUTH	NW		YIELD	N	DRY	REAR		PRVTE	NE-SW									000	00
						1P			09	3		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	70	M	OR-Y		026	000	07
																							OR<25				
															02	NONE 0	STOP										
																PRVTE	NE-SW									011	00
																PSNGR CAR		01	DRVR	NONE	64	F	OR-Y		000	000	00
																							OR<25				
03846	N	N	N			10/15/2012	14	S BEAVERCREEK RD	INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT										07
NONE						MO		CASCADE HY SOUTH	NW		YIELD	N	WET	REAR		PRVTE	NE-SW									000	00
						5P			09	3		N	DUSK	PDO		PSNGR CAR		01	DRVR	NONE	46	M	OR-Y		026	000	07
																							OR<25				
															02	NONE 0	STOP										
																PRVTE	NE-SW									011	00

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CITY OF OREGON CITY, CLACKAMAS COUNTY

CASCADE HY SOUTH at S BEAVERCREEK RD, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 143

SER# / INVEST	S P E D	A L C	R U S	S C L	W O R K	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
																PSNGR CAR		01	DRVR	NONE	00	F	OR-Y OR<25		000	000		00
04066	N	N	N			10/29/2012	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE						MO		CASCADE HY SOUTH	NW		YIELD	N	DRY	REAR		PRVTE	NE-SW									000		00
						12P			09	3		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	24	M	OR-Y OR<25		026	000		07
															02	NONE 0	STOP											
																PRVTE	NE-SW									011		00
																PSNGR CAR		01	DRVR	INJC	52	F	OR-Y OR<25		000	000		00
04076	N	N	N			10/29/2012	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE						MO		CASCADE HY SOUTH	NW		YIELD	N	DRY	REAR		PRVTE	NE-SW									000		00
						4P			09	3		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	50	M	OR-Y OR<25		026	000		07
															02	NONE 0	STOP											
																PRVTE	NE-SW									011		00
																PSNGR CAR		01	DRVR	INJB	46	M	OR-Y OR<25		000	000		00
04216	Y	N	N			11/08/2012	14	S BEAVERCREEK RD	INTER	CROSS	N	Y	CLD	FIX OBJ	01	NONE 0	STRGHT										055	01
CITY						TH		CASCADE HY SOUTH	NW		YIELD	N	DRY	FIX		PRVTE	NE-SW									000	055	00
						2P			09	3		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	51	F	OR-Y OR<25		047,081	000		01
02430	N	N	N			07/07/2013	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE						SU		CASCADE HY SOUTH	NW		YIELD	N	DRY	REAR		PRVTE	NE-SW									000		00
						12P			09	3		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	00	F	UNK OR<25		026	000		07
															02	NONE 0	STOP											
																PRVTE	NE-SW									011		00
																PSNGR CAR		01	DRVR	INJC	36	M	OR-Y OR<25		000	000		00
03349	N	N	N	N	N	09/10/2013	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
CITY						TU		CASCADE HY SOUTH	NW		YIELD	N	DRY	REAR		PRVTE	NE-SW									000		00
						1P			09	3		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	60	F	OR-Y OR<25		043,026	000		07
															02	NONE 0	STOP											
																PRVTE	NE-SW									011		00
																PSNGR CAR		01	DRVR	INJC	30	F	OR-Y OR<25		000	000		00
04790	N	N	N			12/12/2013	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE						TH		CASCADE HY SOUTH	NW		YIELD	N	DRY	REAR		PRVTE	NE-SW									000		00
						2P			09	3		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	54	M	OR-Y OR<25		026	000		07
															02	NONE 0	STOP											
																PRVTE	NE-SW									011		00
																PSNGR CAR		01	DRVR	INJC	56	F	OR-Y OR<25		000	000		00
00348	N	N	N			01/26/2014	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE						SU		CASCADE HY SOUTH	NW		YIELD	N	DRY	REAR		PRVTE	NE-SW									000		00
						4P			09	3		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	F	UNK OR<25		026	000		07

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CITY OF OREGON CITY, CLACKAMAS COUNTY

CASCADE HY SOUTH at S BEAVERCREEK RD, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 143

SER# / INVEST	SPEED	ALCHL	DRUGS	WORK ZONE	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
														02	NONE 0 PRVTE	STOP NE-SW									011	00
															PSNGR CAR		01	DRVR	NONE	18	F	OR-Y OR<25		000	000	00
00768 NONE	N	N	N		02/21/2014 FR 7A	14	S BEAVERCREEK RD CASCADE HY SOUTH	INTER NW 09	CROSS 3	N YIELD	N N N	CLR DRY DAY	S-1STOP REAR PDO	01	NONE 0 PRVTE PSNGR CAR	STRGHT NE-SW	01	DRVR	NONE	61	M	OR-Y OR<25		026	000 000	07 00 07
														02	NONE 0 PRVTE PSNGR CAR	STOP NE-SW	01	DRVR	NONE	49	F	OR-Y OR<25		000	011 000	00 00 00
01784 NONE	N	N	N		05/09/2014 FR 10A	14	S BEAVERCREEK RD CASCADE HY SOUTH	INTER NW 09	CROSS 3	N YIELD	N N N	CLR DRY DAY	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT NE-SW	01	DRVR	NONE	23	F	OR-Y OR<25		026	000 000	07 00 07
														02	NONE 0 PRVTE PSNGR CAR	STOP NE-SW	01	DRVR	INJC	41	M	OR-Y OR<25		000	011 000	00 00 00
02955 NONE	N	N	N		08/01/2014 FR 9P	14	S BEAVERCREEK RD CASCADE HY SOUTH	INTER NW 09	CROSS 3	N YIELD	N N N	CLR DRY DLIT	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT NE-SW	01	DRVR	NONE	29	F	OR-Y OR<25		026	000 000	29 00 29
														02	NONE 0 PRVTE PSNGR CAR	STOP NE-SW	01	DRVR	INJC	34	M	OR-Y OR<25		000	011 000	00 00 00
														02	NONE 0 PRVTE PSNGR CAR	STOP NE-SW	02	PSNG	INJC	36	F			000	011 000	00 00 00
04683 NO RPT	N	N	N		11/18/2014 TU 5P	14	S BEAVERCREEK RD CASCADE HY SOUTH	INTER NW 09	CROSS 3	N YIELD	N N N	CLR DRY DLIT	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT NE-SW	01	DRVR	NONE	50	M	OR-Y OR<25		026	000 000	29 00 29
														02	NONE 0 PRVTE PSNGR CAR	STOP NE-SW	01	DRVR	INJB	35	M	OR-Y OR<25		000	011 000	00 00 00
04227 NO RPT	N	N	N		10/13/2015 TU 7P	14	S BEAVERCREEK RD CASCADE HY SOUTH	INTER NW 09	CROSS 3	N YIELD	N N N	CLR DRY DLIT	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT NE-SW	01	DRVR	NONE	37	M	OR-Y OR<25		026	000 000	29 00 29
														02	NONE 0 PRVTE PSNGR CAR	STOP NE-SW	01	DRVR	INJB	77	F	OR-Y OR<25		000	011 000	00 00 00
01216 NONE	N	N	N		04/06/2015 MO 3P	14	S BEAVERCREEK RD CASCADE HY SOUTH	INTER NW 09	CROSS 3	N YIELD	N N N	CLR DRY DAY	S-1STOP REAR PDO	01	NONE 0 PRVTE PSNGR CAR	STRGHT NE-SW	01	DRVR	NONE	57	F	OR-Y		026	000 000	29 00 29

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CITY OF OREGON CITY, CLACKAMAS COUNTY

CASCADE HY SOUTH at S BEAVERCREEK RD, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 143

SER# / INVEST	S P E D	A L C	D R S L	S W C H	O R K	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES OR<25	PED LOC	ERROR	ACT EVENT	CAUSE
															02	NONE 0	STOP										
																PRVTE	NE-SW									011	00
																PSNGR CAR		01	DRVR	NONE	60	F	OR-Y		000	000	00
04738	N	N	N			11/09/2015	14	S BEAVERCREEK RD	INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT											29
NO RPT						MO		CASCADE HY SOUTH	NW		YIELD	N	WET	REAR		PRVTE	NE-SW									000	00
						6P			09	3		N	DUSK	PDO		PSNGR CAR		01	DRVR	NONE	00	M	OR-Y		026	000	29
																							OR<25				
															02	NONE 0	STOP										
																PRVTE	NE-SW									011	00
																PSNGR CAR		01	DRVR	NONE	59	F	OR-Y		000	000	00
																							OR<25				
00286	N	N	N	N	N	01/23/2011	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLD	O-1 L-TURN	01	NONE 0	TURN-L											02,04
STATE						SU		CASCADE HY SOUTH	CN		TRF SIGNAL	N	WET	TURN		PRVTE	SW-NW									000	00
						6A			02	2		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	65	F	OR-Y		028,003	000	02,04
																							OR<25				
															02	NONE 0	STRGHT										
																PRVTE	NE-SW									000	00
																PSNGR CAR		01	DRVR	NONE	21	M	OR-Y		000	000	00
																							OR<25				
															02	NONE 0	STRGHT										
																PRVTE	NE-SW									000	00
																PSNGR CAR		02	PSNG	INJC	27	F			000	000	00
00804	N	N	N			03/07/2011	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											04
NONE						MO		CASCADE HY SOUTH	CN		TRF SIGNAL	N	DRY	ANGL		PRVTE	S -N									000	00
						10A			04	2		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	F	UNK		020	000	04
																							OR<25				
															02	NONE 0	STRGHT										
																PRVTE	W -E									000	00
																PSNGR CAR		01	DRVR	NONE	67	M	OR-Y		000	000	00
																							OR<25				
00825	N	Y	N			03/09/2011	14	S BEAVERCREEK RD	INTER	CROSS	N	N	RAIN	O-OTHER	01	NONE 0	TURN-L											08
CITY						WE		CASCADE HY SOUTH	CN		TRF SIGNAL	N	WET	TURN		PRVTE	N -E									000	00
						9P			01	2		N	DLIT	INJ		PSNGR CAR		01	DRVR	INJC	46	M	OR-Y		001	000	08
																							OR<25				
															02	NONE 0	TURN-L										
																PRVTE	S -W									000	00
																PSNGR CAR		01	DRVR	NONE	21	M	OR-Y		000	000	00
																							OR<25				
															02	NONE 0	TURN-L										
																PRVTE	S -W									000	00
																PSNGR CAR		02	PSNG	INJC	21	M			000	000	00
03843	N	Y	N	N	N	09/18/2011	14	S BEAVERCREEK RD	INTER	CROSS	N	N	RAIN	ANGL-OTH	01	NONE 0	STRGHT											04
STATE						SU		CASCADE HY SOUTH	CN		TRF SIGNAL	N	WET	ANGL		PRVTE	N -S									000	00
						1A			03	2		N	DLIT	FAT		PSNGR CAR		01	DRVR	INJC	58	M	OR-Y		000	000	00
																							OR<25				
															02	NONE 0	STRGHT										
																PRVTE	W -E									000	00

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CITY OF OREGON CITY, CLACKAMAS COUNTY

CASCADE HY SOUTH at S BEAVERCREEK RD, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 143

SER# / INVEST	S P E D	A	R U L	S C	W H	O R	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
																	PSNGR CAR		01	DRVR	KILL	29	F	OR-Y OR<25		020	000	04
																02	NONE 0 PRVTE	STRGHT W -E									000	00
																	PSNGR CAR		02	PSNG	INJB	26	M			000	000	00
04463 NONE	N	N	N				11/22/2011 TU 10A	14	S BEAVERCREEK RD CASCADE HY SOUTH	INTER CN 02	CROSS 0	N TRF SIGNAL	N N	RAIN WET DAY	ANGL-OTH ANGL PDO	01	NONE 1 PRVTE SEMI TOW	STRGHT S -N	01	DRVR	NONE	44	M	OR-Y OR<25		097	000	04 00 00
																02	NONE 0 PRVTE	STRGHT E -W									000	00
																	PSNGR CAR		01	DRVR	NONE	77	F	OR-Y OR<25		097	000	00
00857 CITY	N	N	N	N	N		03/06/2012 TU 9P	14	S BEAVERCREEK RD CASCADE HY SOUTH	INTER CN 02	CROSS 2	N TRF SIGNAL	N N	CLD DRY DLIT	O-1 L-TURN TURN INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT S -N	01	DRVR	NONE	27	M	OR-Y OR<25		020	000	04 00 04
																02	NONE 0 PRVTE	TURN-L N -E									000	00
																	PSNGR CAR		01	DRVR	INJC	45	M	OR-Y OR<25		000	000	00
																02	NONE 0 PRVTE	TURN-L N -E									000	00
																	PSNGR CAR		02	PSNG	INJA	39	F			000	000	00
02536 STATE	N	N	N	N	N		07/13/2012 FR 7P	14	S BEAVERCREEK RD CASCADE HY SOUTH	INTER CN 03	CROSS 2	N TRF SIGNAL	N N	CLR DRY DAY	ANGL-OTH ANGL PDO	01	NONE 0 PRVTE PSNGR CAR	STRGHT W -E	01	DRVR	NONE	28	M	OR-Y OR<25		028,024	000	02,14 00 02,14
																02	POLCE 0 PUBLC	STRGHT N -S									000	00
																	PSNGR CAR		01	DRVR	NONE	45	M	OR-Y OR<25		000	000	00
03642 NO RPT	N	N	N				10/01/2012 MO 6A	14	S BEAVERCREEK RD CASCADE HY SOUTH	INTER CN 01	CROSS 3	N TRF SIGNAL	N N	CLR DRY DAWN	O-1 L-TURN TURN INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT N -S	01	DRVR	NONE	19	F	OR-Y OR<25		020	000	04 00 04
																02	NONE 0 PRVTE	TURN-L S -W									000	00
																	PSNGR CAR		01	DRVR	NONE	28	F	OR-Y OR<25		000	000	00
																02	NONE 0 PRVTE	TURN-L S -W									000	00
																	PSNGR CAR		02	PSNG	NO<5	01	M			000	000	00
																02	NONE 0 PRVTE	TURN-L S -W									000	00
																	PSNGR CAR		03	PSNG	INJC	03	F			000	000	00
04829	N	N	N				12/13/2012	14	S BEAVERCREEK RD	INTER	CROSS	N	N	UNK	S-1STOP	01	NONE 0	STRGHT											07

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CITY OF OREGON CITY, CLACKAMAS COUNTY

CASCADE HY SOUTH at S BEAVERCREEK RD, City of Oregon City, Clackamas County, 01/01/2011 to 12/31/2015

Total crash records: 143

SER# / INVEST	S P E D	A L C	D R S L	S W C H	O R K	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
NONE						TH 7A		CASCADE HY SOUTH	CN 03	 3	TRF SIGNAL	N N	UNK DAWN	REAR PDO		PRVTE PSNGR CAR	W -E	01	DRVR	NONE	35	M	OR-Y OR<25		026	000 000	00 07
															02	NONE 0 PRVTE PSNGR CAR	STOP W -E	01	DRVR	NONE	00	F	UNK OR<25		000	011 000	00 00
00083	N	N	N			01/08/2013	14	S BEAVERCREEK RD	INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 0	TURN-L										07
NONE						TU 7A		CASCADE HY SOUTH	CN 02	 3	TRF SIGNAL	N N	WET DARK	REAR PDO		PRVTE PSNGR CAR	W -N	01	DRVR	NONE	35	F	OR-Y OR<25		026	000 000	00 07
															02	NONE 0 PRVTE PSNGR CAR	STOP W -N	01	DRVR	NONE	38	M	OR-Y OR<25		000	013 000	00 00
03336	N	N	N	N	N	09/09/2013	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 0	STRGHT										04
CITY						MO 11P		CASCADE HY SOUTH	CN 04	 3	TRF SIGNAL	N N	DRY DLIT	TURN INJ		PRVTE PSNGR CAR	S -N	01	DRVR	INJC	29	M	OR-Y OR<25		000	000 000	00 00
															01	NONE 0 PRVTE PSNGR CAR	STRGHT S -N	02	PSNG	INJB	21	F			000	000 000	00 00
															02	NONE 0 PRVTE PSNGR CAR	TURN-L N -E	01	DRVR	NONE	42	F	OR-Y OR<25		003	000 000	00 04
05036	N	N	N			12/26/2013	14	S BEAVERCREEK RD	INTER	CROSS	N	N	UNK	ANGL-OTH	01	NONE 0	STRGHT										04
NONE						TH 7A		CASCADE HY SOUTH	CN 02	 3	TRF SIGNAL	N N	WET DLIT	ANGL PDO		PRVTE PSNGR CAR	S -N	01	DRVR	NONE	30	M	OR-Y OR<25		020	000 000	00 04
															02	NONE 0 PRVTE PSNGR CAR	STRGHT E -W	01	DRVR	NONE	57	F	OR-Y OR<25		000	000 000	00 00
00292	N	N	N			01/23/2015	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-OTHER	01	NONE 0	TURN-L										08
NO RPT						FR 11P		CASCADE HY SOUTH	CN 02	 3	L-GRN-SIG	N N	DRY DLIT	TURN INJ		PRVTE PSNGR CAR	W -N	01	DRVR	NONE	28	F	OR-Y OR<25		007	000 000	00 08
															02	NONE 0 PRVTE PSNGR CAR	TURN-L W -N	01	DRVR	INJC	20	M	OR-Y OR<25		000	000 000	00 00
04783	N	N	N			11/13/2015	14	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 0	STRGHT										02
NO RPT						FR 11P		CASCADE HY SOUTH	CN 01	 3	TRF SIGNAL	N N	DRY DLIT	TURN PDO		PRVTE PSNGR CAR	SE-NW	01	DRVR	NONE	16	F	OR-Y OR<25		000	000 000	00 00
															02	NONE 0 UNKN UNKNOWN	TURN-L NW-NE	01	DRVR	NONE	00	Unk	UNK UNK		028,004	000 000	00 02

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Left-Turn Lane Warrant Analysis

Project: 17038 - Park Place Annexation
Intersection: 14th Street at Main Street
Date: 7/19/2017
Scenario: Existing Conditions - AM Peak Hour (NWB)

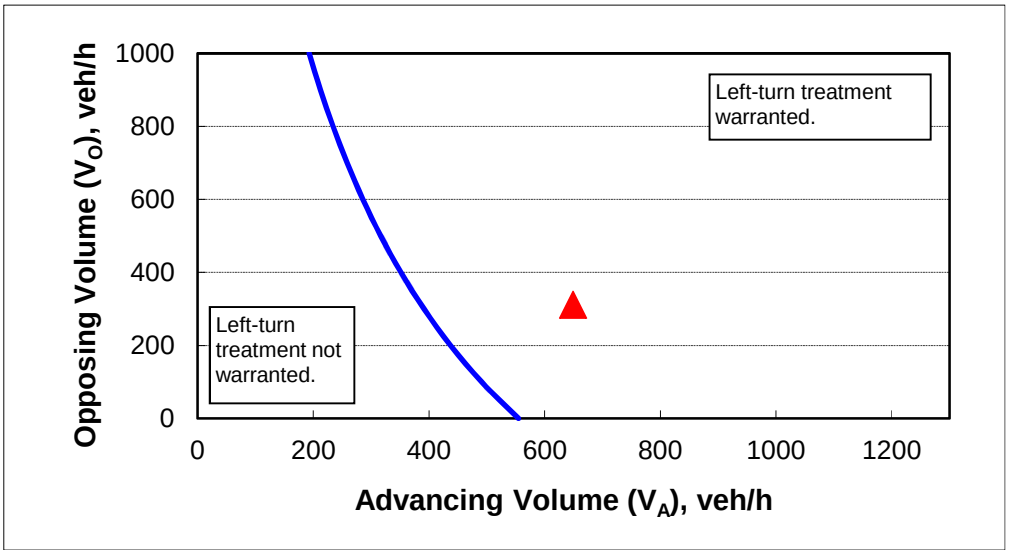
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	20
Number of left-turns in advancing volume (V_A), veh/h:	117
Advancing volume (V_A), veh/h:	649
Opposing volume (V_O), veh/h:	311

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	387
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Left-Turn Lane Warrant Analysis

Project: 17038 - Park Place Annexation
Intersection: 14th Street at Main Street
Date: 7/19/2017
Scenario: Existing Conditions - PM Peak Hour (NWB)

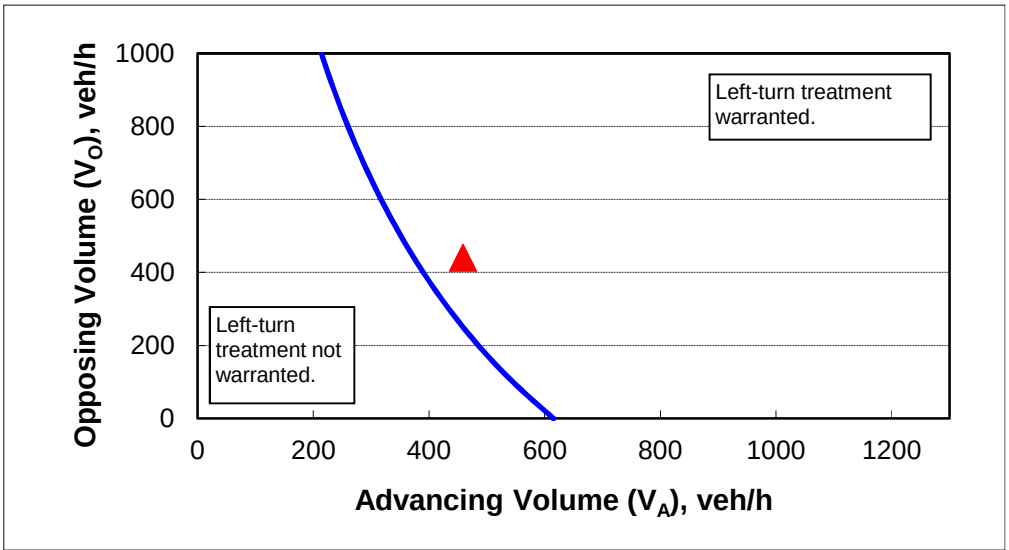
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	20
Number of left-turns in advancing volume (V_A), veh/h:	64
Advancing volume (V_A), veh/h:	459
Opposing volume (V_O), veh/h:	440

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	374
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Left-Turn Lane Warrant Analysis

Project: 17038 - Park Place Annexation
Intersection: Holly Lane at S Holcomb Boulevard
Date: 7/19/2017
Scenario: 2035 Planning Horizon w/ Annexation - AM Peak Hour (WB)

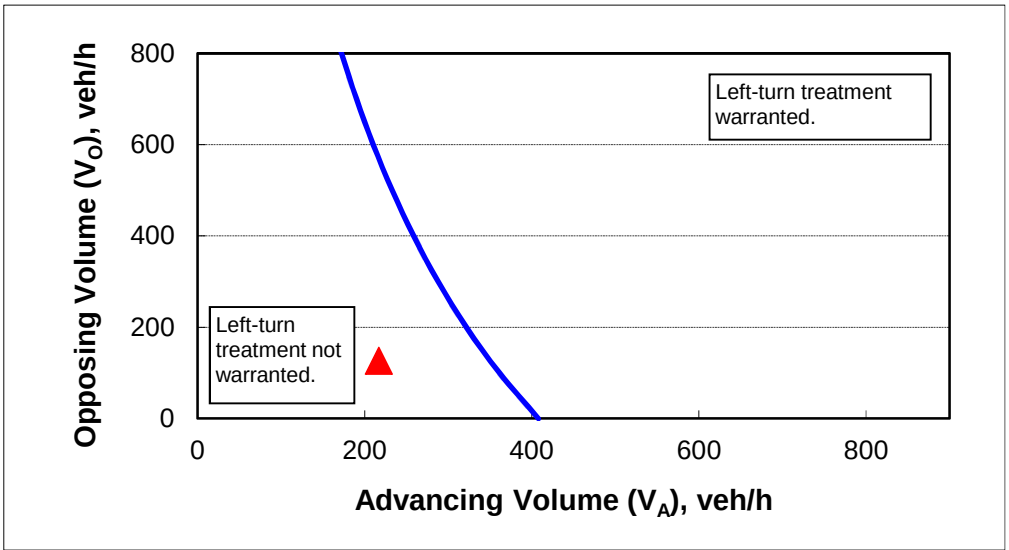
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	40
Number of left-turns in advancing volume (V_A), veh/h:	52
Advancing volume (V_A), veh/h:	217
Opposing volume (V_O), veh/h:	126

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	350
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Left-Turn Lane Warrant Analysis

Project: 17038 - Park Place Annexation
Intersection: Holly Lane at S Holcomb Boulevard
Date: 7/19/2017
Scenario: 2035 Planning Horizon w/ Annexation - PM Peak Hour (WB)

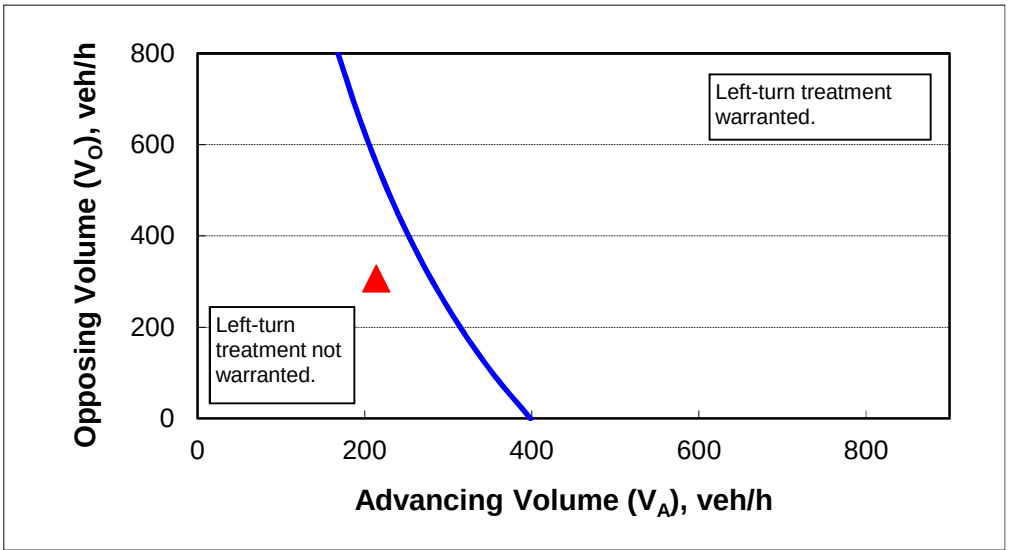
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	40
Number of left-turns in advancing volume (V_A), veh/h:	55
Advancing volume (V_A), veh/h:	214
Opposing volume (V_O), veh/h:	306

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	279
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Left-Turn Lane Warrant Analysis

Project: 17038 - Park Place Annexation
Intersection: Holly Lane at S Redland Road
Date: 7/19/2017
Scenario: 2035 Planning Horizon w/ Annexation - AM Peak Hour (EB)

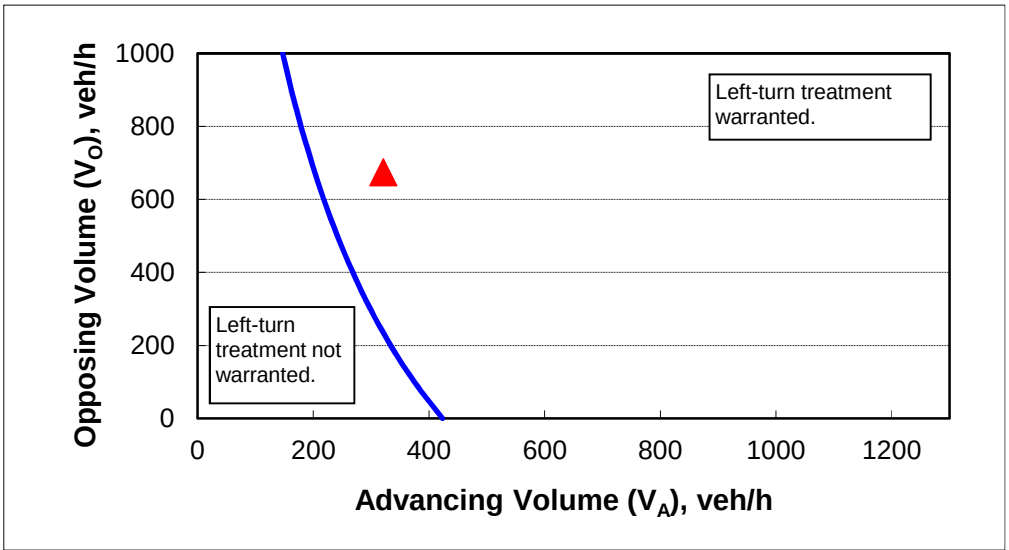
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	45
Number of left-turns in advancing volume (V_A), veh/h:	58
Advancing volume (V_A), veh/h:	321
Opposing volume (V_O), veh/h:	674

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	203
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Left-Turn Lane Warrant Analysis

Project: 17038 - Park Place Annexation
Intersection: Holly Lane at S Redland Road
Date: 7/19/2017
Scenario: 2035 Planning Horizon w/ Annexation - PM Peak Hour (EB)

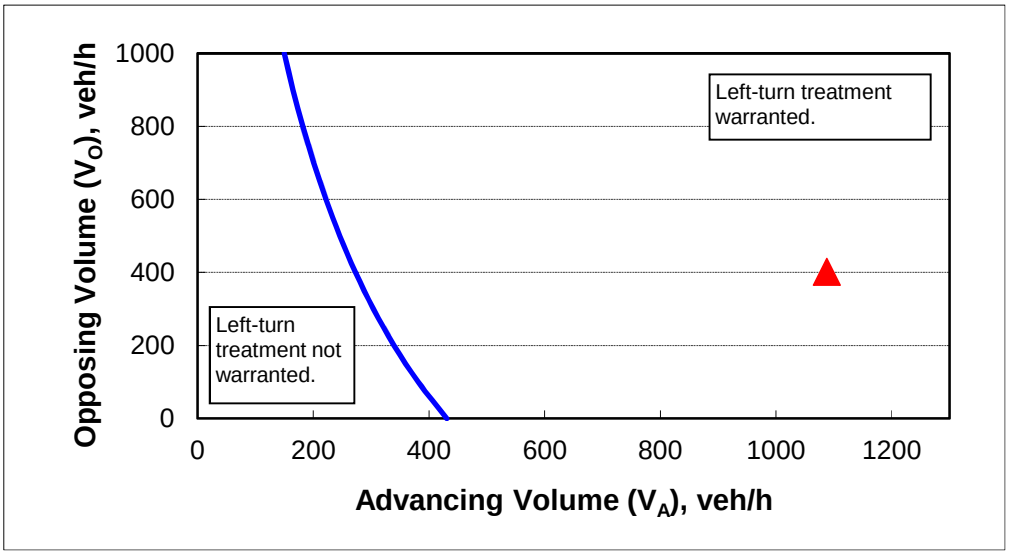
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	45
Number of left-turns in advancing volume (V_A), veh/h:	188
Advancing volume (V_A), veh/h:	1088
Opposing volume (V_O), veh/h:	401

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	273
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Left-Turn Lane Warrant Analysis

Project: 17038 - Park Place Annexation
Intersection: Holly Lane at S Redland Road
Date: 7/19/2017
Scenario: Existing Conditions - AM Peak Hour (WB)

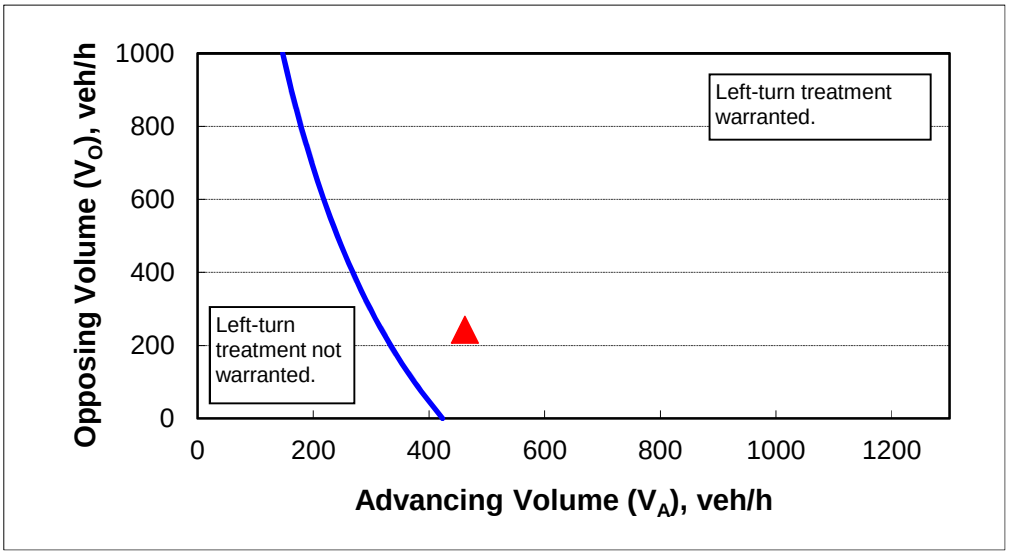
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	45
Number of left-turns in advancing volume (V_A), veh/h:	58
Advancing volume (V_A), veh/h:	462
Opposing volume (V_O), veh/h:	243

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	203
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Left-Turn Lane Warrant Analysis

Project: 17038 - Park Place Annexation
Intersection: Holly Lane at S Redland Road
Date: 7/19/2017
Scenario: 2035 Planning Horizon w/o Annexation - PM Peak Hour (WB)

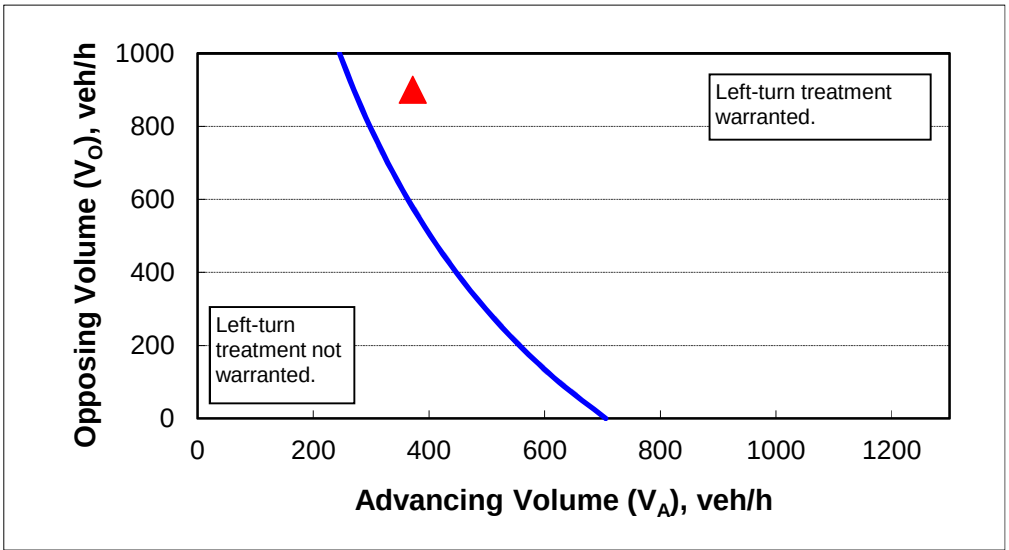
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	45
Number of left-turns in advancing volume (V_A), veh/h:	21
Advancing volume (V_A), veh/h:	372
Opposing volume (V_O), veh/h:	900

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	270
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Traffic Signal Warrant Analysis

Project: 17038 - Park Place Annexation
Date: 7/19/2017
Scenario: Year 2035 Planning Horizon plus Annexation

Major Street:	OR-99E	Minor Street:	15th Street
Number of Lanes:	2	Number of Lanes:	1
PM Peak Hour Volumes:	4854	PM Peak Hour Volumes:	0

Warrant Used:

X 100 percent of standard warrants used

_____ 70 percent of standard warrants used due to 85th percentile speed in excess of 40 mph or isolated community with population less than 10,000.

Number of Lanes for Moving Traffic on Each Approach:		ADT on Major St. (total of both approaches)		ADT on Minor St. (higher-volume approach)	
WARRANT 1, CONDITION A		100%	70%	100%	70%
Major St.	Minor St.	Warrants	Warrants	Warrants	Warrants
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
WARRANT 1, CONDITION B					
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

Note: ADT volumes assume 8th highest hour is 5.6% of the daily volume

	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
Warrant 1			
Condition A: Minimum Vehicular Volume			
Major Street	48,540	10,600	
Minor Street*	0	2,650	**No**
Condition B: Interruption of Continuous Traffic			
Major Street	48,540	15,900	
Minor Street*	0	1,350	**No**
Combination Warrant			
Major Street	48,540	12,720	
Minor Street*	0	2,120	**No**

* Minor street right-turning traffic volumes reduced by 85% of the right-turn capacity.

Traffic Signal Warrant Analysis

Project: 17038 - Park Place Annexation
Date: 7/19/2017
Scenario: Year 2035 Planning Horizon plus Annexation

Major Street:	14th Street	Minor Street:	Main Street
Number of Lanes:	1	Number of Lanes:	1
PM Peak Hour Volumes:	1289	PM Peak Hour Volumes:	211

Warrant Used:

X 100 percent of standard warrants used

_____ 70 percent of standard warrants used due to 85th percentile speed in excess of 40 mph or isolated community with population less than 10,000.

Number of Lanes for Moving Traffic on Each Approach:		ADT on Major St. (total of both approaches)		ADT on Minor St. (higher-volume approach)	
WARRANT 1, CONDITION A		100%	70%	100%	70%
Major St.	Minor St.	Warrants	Warrants	Warrants	Warrants
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
WARRANT 1, CONDITION B					
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

Note: ADT volumes assume 8th highest hour is 5.6% of the daily volume

	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
Warrant 1			
Condition A: Minimum Vehicular Volume			
Major Street	12,890	8,850	
Minor Street*	2,110	2,650	**No**
Condition B: Interruption of Continuous Traffic			
Major Street	12,890	13,300	
Minor Street*	2,110	1,350	**No**
Combination Warrant			
Major Street	12,890	10,640	
Minor Street*	2,110	2,120	**No**

* Minor street right-turning traffic volumes reduced by 25%

Traffic Signal Warrant Analysis

Project: 17038 - Park Place Annexation
Date: 7/19/2017
Scenario: Year 2035 Planning Horizon plus Annexation

Major Street:	S Holcomb Boulevard	Minor Street:	Holly Lane
Number of Lanes:	1	Number of Lanes:	1
PM Peak Hour Volumes:	520	PM Peak Hour Volumes:	112

Warrant Used:

X 100 percent of standard warrants used

_____ 70 percent of standard warrants used due to 85th percentile speed in excess of 40 mph or isolated community with population less than 10,000.

Number of Lanes for Moving Traffic on Each Approach:		ADT on Major St. (total of both approaches)		ADT on Minor St. (higher-volume approach)	
WARRANT 1, CONDITION A		100%	70%	100%	70%
Major St.	Minor St.	Warrants	Warrants	Warrants	Warrants
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
WARRANT 1, CONDITION B					
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

Note: ADT volumes assume 8th highest hour is 5.6% of the daily volume

	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
Warrant 1			
Condition A: Minimum Vehicular Volume			
Major Street	5,200	8,850	
Minor Street*	1,120	2,650	**No**
Condition B: Interruption of Continuous Traffic			
Major Street	5,200	13,300	
Minor Street*	1,120	1,350	**No**
Combination Warrant			
Major Street	5,200	10,640	
Minor Street*	1,120	2,120	**No**

* Minor street right-turning traffic volumes reduced by 25%

Traffic Signal Warrant Analysis

Project: 17038 - Park Place Annexation
Date: 7/19/2017
Scenario: Year 2035 Planning Horizon plus Annexation

Major Street:	S Redland Road	Minor Street:	Holly Lane
Number of Lanes:	1	Number of Lanes:	1
PM Peak Hour Volumes:	1489	PM Peak Hour Volumes:	182

Warrant Used:

_____ 100 percent of standard warrants used
X 70 percent of standard warrants used due to 85th percentile speed in excess of 40 mph or isolated community with population less than 10,000.

Number of Lanes for Moving Traffic on Each Approach:		ADT on Major St. (total of both approaches)		ADT on Minor St. (higher-volume approach)	
WARRANT 1, CONDITION A		100%	70%	100%	70%
Major St.	Minor St.	Warrants	Warrants	Warrants	Warrants
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
WARRANT 1, CONDITION B					
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

Note: ADT volumes assume 8th highest hour is 5.6% of the daily volume

	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
Warrant 1			
Condition A: Minimum Vehicular Volume			
Major Street	14,890	6,200	
Minor Street*	1,820	1,850	**No**
Condition B: Interruption of Continuous Traffic			
Major Street	14,890	9,300	
Minor Street*	1,820	950	**Yes**
Combination Warrant			
Major Street	14,890	7,440	
Minor Street*	1,820	1,480	**Yes**

* Minor street right-turning traffic volumes reduced by 25%

OREGON CITY

Community Development Department

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PRE-APPLICATION MEETING NOTES
Date: November 29, 2016
Notes Prepared: November 30, 2016.

Pre-App Number:	**PA 16-57**
Addresses:	AN-16-0005
	Multiple
	16472 Livesay Road & 15110 Holcomb Boulevard & others
Map Number(s):	2-2E-27B, 2-2E-28D
Tax Lot(s):	1000 and 2000 of 2-2E-27B, 100, 190, 300, 301, 302, 303, 400, 500, 502, 3700 & 3701 of 2-2E-28D
Addresses:	AN-16-0004
Address:	NO SITUS ADDRESSES
Clackamas Map Number(s):	2-2E-28A -00580, 2-2E-28A -00590, 2-2E-21D -02190, 2-2E-21D -02100, 2-2E-21D -02200, 2-2E-28A -00500
Project Name:	Park Place Annexation Zone Changes
Meeting Date:	November 29, 2016
Reviewer:	Pete Walter, AICP, Associate Planner

Parties present

City Staff	P. Walter, AICP, Planner
	W. Marshall, PE, Public Works
	A. Froman-Goodrich, PE, City Engineer
	C. Richter, City Attorney
	J. Replinger, PE, Transportation Consultant
Applicants	Rick Givens, Consultant
	Mark Handris, ICON
	Darren Gusdorf, ICON
	Dan Serres, Owner
	Mike Robinson, Attorney
ODOT	Avi Tayar, PE, Development Review Team Leader
	Seth Brumley, Planner
OC School District	Wes Rogers, Director of Operations

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PA-16-57: These notes are intended to update the Pre-application Conference Notes for two annexations which are under review and which are being revised to include formal requests for zone change.

One of the proposed zone changes is for the annexation of approximately 92 acres in the Park Place Concept Plan area (AN-16-0005) which is south of Holcomb Blvd. Prior pre-app number PA 16-40.

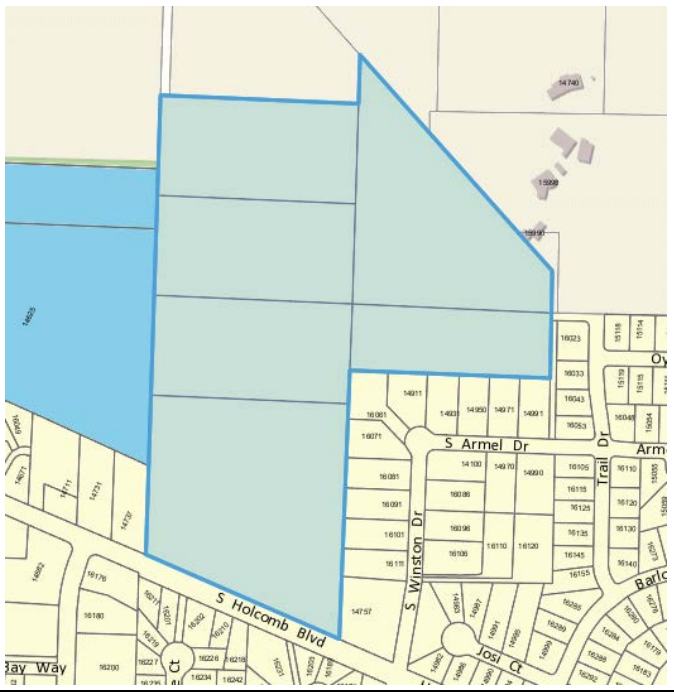
The other zone change is for the annexation of approximately 35 acres that is north of Holcomb Blvd (AN-16-0004). This area is not within the PPCP area. Prior pre-app number PA 16-20.

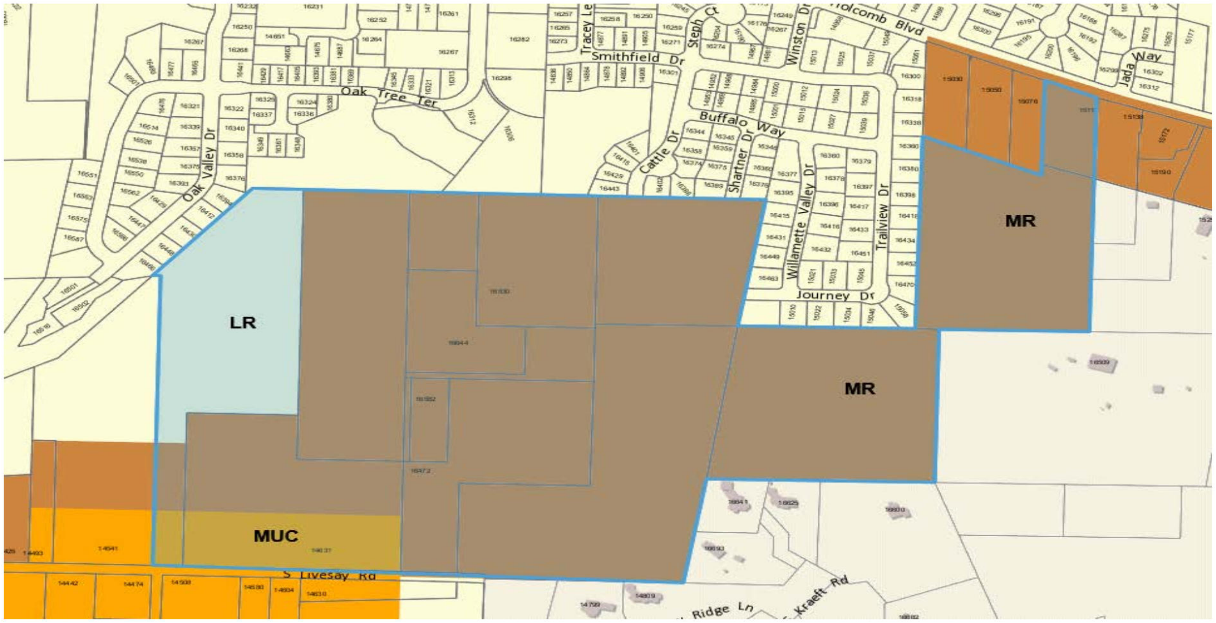
Please note that AN-16-0004 is under review by the Planning Commission which has continued the public hearing to January 9, 2017. The City Commission hearing will be continued to February 1st, 2017.

Please note that AN-16-0005 has been deemed incomplete as of the date of the pre-application conference and the applicant also needs to address the items listed in the City's determination of incompleteness for AN-16-0005.

Comprehensive Plan Designations

The Comprehensive Plan designations for the subject properties are shown below.
AN-16-0004 –all Low Density Residential





Approval Criteria to Address in Narrative:

The items required to be submitted for annexation were covered in the prior two pre-application conferences and are not repeated here. The following items are required in order to supplement the submitted annexation materials and to address the zone change.

1. Zone Change

Staff understands that the applicant is proposing to revise the annexation applications to include a separate zone change. The submitted pre-application materials do not specify the specific zone district(s) that the applicant intends to apply for, however staff anticipates that the Serres Farm application AN-16-0004 will be for a change from the County FU-10 zone to the City R-10 Single-Family Zone.

The application for the zone change should address the following code sections.

Applicant should address section (A) which provides that a public hearing be held by both the planning commission and city commission in accordance with the procedures outlined in Chapter 17.68 (except for the provisions of Section 17.68.025) for those instances in which more than one zoning designation carries out a city plan classification.

Table 17.06.030

CITY LAND USE CLASSIFICATIONS	
Residential Plan Classification	*City Zone*
Low-Density Residential	*R-10, R-8, R-6*
Medium-Density Residential	*R-3.5, R-5*
High-Density Residential	*R-2*
Commercial Plan Classification	*City Zone*
General Commercial	*C*
Mixed-Use Downtown	*MUD, WFDD*
Mixed-Use Corridor	*MUC I, MUC 2, NC, HC*
Mixed-Use Employment	*MUE*
Industrial Plan Classification	*City Zone*
Industrial	*CI, GI*

In those cases where only a single city zoning designation corresponds to the comprehensive plan designation and thus the rezoning decision does not require the exercise of legal or policy judgment on the part of the community development director, Chapter 17.68 shall control. The decision in these cases shall be a ministerial decision of the community development director made without notice or any opportunity for a hearing.

A. A public hearing shall be held by both the planning commission and city commission in accordance with the procedures outlined in Chapter 17.68 (except for the provisions of Section 17.68.025) for those instances in which more than one zoning designation carries out a city plan classification.

- *OCMC 17.68 - Zoning Changes and Amendments*
- *OCMC 17.68.025 - Zoning changes for land annexed into the city.*

A. Notwithstanding any other section of this chapter, when property is annexed into the city from the city/county dual interest area with any of the following comprehensive plan designations, the property shall be rezoned upon annexation to the corresponding city zoning designation as follows:

Plan Designation	*Zone*
Low-Density Residential	*R-10*
Medium-Density Residential	*R-5*
High-Density Residential	*R-2*
General Commercial	*C*
Industrial	*CI-Campus Industrial*
Mixed-Use Downtown	*MUD*
Mixed-Use Employment	*MUE*
Mixed-Use Commercial	*- NC*
Future Urban	*FU-10*

- *OCMC 17.50 Administration and Procedures*

  With respect to compliance with other titles of the code, the applicant should address *OCMC 17.50.230 – Interpretation* and how the proposed rezoning will address the separate requirements of *OCMC chapter 12.04.205 – Mobility Standards*.

17.68.020 - Criteria.
The criteria for a zone change are set forth as follows:
A. The proposal shall be consistent with the goals and policies of the comprehensive plan.

- Address the Park Place Concept Plan – See Item 2 below.
- Address the following goals and policies of the Oregon City Comprehensive Plan.
  - Goal 1: Citizen Involvement
    - Goal 1.1 - Policy 1.1.1, Goal 1.4 - Policy 1.4.1
  - Goal 2: Land Use
    - Goal 2.1 – Policy 2.1.3
    - Goal 2.4 – Policy 2.4.1, 2.4.2, 2.4.3, 2.4.4
    - Goal 2.5 – Policy 2.5.1, 2.5.2, 2.5.3, 2.5.4, 2.5.5 (applies along Livesay Road, design standards implemented by OCMC 17.21)
    - Goal 2.7 – Policy 2.7.2
  - Goal 5: Open Spaces, Scenic and Historic Areas, and Natural Resources
    - Goal 5.1 – Policies 5.1.1, 5.1.2

- Goal 5.2 – Policy 5.2.1, 5.2.2
- Goal 5.3 – Policy 5.3.3, 5.3.8
- Goal 5.4 – Policy 5.4.1, 5.4.5, 5.4.9, 5.4.12, 5.4.13, 5.4.16, 5.4.18

- Goal 6: Quality of Air, Water, and Land Resources
  - Goal 6.1- Policy 6.1.1
  - Goal 6.2 – Policy 6.2.1, 6.2.2
  - Goal 6.3 – Policy 6.3.2
  - Goal 6.4 – Policy 6.4.1
- Goal 7: Natural Hazards
  - Goal 7.1 – Policy 7.1.1, 7.1.8, 7.1.9, 7.1.11
- Goal 8: Parks and Recreation
  - Goal 8.1 – Policy 8.1.1, 8.1.5, 8.1.6, 8.1.9, 8.1.12, 8.1.14
- Goal 10: Housing
  - Goal 10.1 – Policy 10.1.1, 10.1.3, 10.1.4, 10.1.7
  - Goal 10.2 – Policy 10.2.2
- Goal 11: Public Facilities
  - Goal 11.1 – Policy 11.1.1, 11.1.2, 11.1.3, 11.1.5, 11.1.6
  - Goal 11.2 – Policy 11.2.4
  - Goal 11.3 – Policy 11.3.3
  - Goal 11.4 – Policy 11.4.1, 11.4.2, 11.4.4, 11.4.5
- Goal 12: Transportation
  - See also Transportation System Plan Goals and Policies
  - Goal 12.1 – Policy 12.1.1, 12.1.2, 12.1.3, 12.1.4
  - Goal 12.3 – Policy 12.3.1, 12.3.2, 12.3.3, 12.3.4, 12.3.5, 12.3.6, 12.3.9
  - Goal 12.6 – Policy 12.6.1, 12.6.2, 12.6.3, 12.6.4
- Goal 13 – Energy
  - Goal 13.1 – Policy 13.1.2
  - Goal 13.2 – Policy 13.2.1, 13.2.2, 13.2.3
- Goal 14 – Urbanization
  - This should already have been covered in the Annexation narrative, but the applicant should cross reference or repeat those sections here.

B. That public facilities and services (water, sewer, storm drainage, transportation, schools, police and fire protection) are presently capable of supporting the uses allowed by the zone, or can be made available prior to issuing a certificate of occupancy. Service shall be sufficient to support the range of uses and development allowed by the zone.

- The applicant should address the existing and proposed public facilities and services to serve the proposed zoning.

C. The land uses authorized by the proposal are consistent with the existing or planned function, capacity and level of service of the transportation system serving the proposed zoning district.

- The applicant should address the existing and proposed transportation facilities to serve the proposed zoning.

D. Statewide planning goals shall be addressed if the comprehensive plan does not contain specific policies or provisions which control the amendment.

Comments:

- Consider and address provisions relating to zone changes upon annexation set forth in OCMC 17.06.030 and 17.68.025, and the zone change criteria of OCMC 17.68.020.
- An application for zone change will at some point need to show compliance with the Transportation Planning Rule by the time it becomes effective. The applicant should address this in responding to OCMC 12.04.205.
- Address in more detail the off-site improvements that are required in order to serve and develop the properties and their surroundings in the long term.
- Address water system concerns related to fire flow pressure issues discussed by Clackamas River Water at pre-application conference (PA-16-0040)
- Address timing of water system improvements associated with development of Nielson property (TP-16-0001).

2. Park Place Concept Plan (PPCP) Goals and Policies (AN-16-0005)

The proposed zone change for AN-16-0005 should address the following:

- Address Vision, Goals and Policies
- Specifically address how the Zone Change is consistent with the North Village concept
- Specifically address how this Zone Change is consistent with the conceptual transportation network in the PPCP.
- Address how the Zone Change will implement the Core Values and Concept Plan Elements.

3. Transportation

- Traffic Impact Analysis is required. John Replinger reviewed the pre-applications PA-16-20 and 16-40 and had the following comments;

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For the proposed annexation (PA 16-40), it appears the following actions will be necessary to fully develop the property:

- Annexation process
- Rezoning of the parcels from their existing (County) zoning to city zoning consistent with the Comprehensive Plan
- Transportation analyses for 1) a specific development as required by city code and 2) showing compliance with the Transportation Planning Rule (TPR)

For annexation alone – without a zone change – neither a transportation impact analysis nor an analysis of compliance with the TPR will be required.

For most land use actions involving a specific development proposal, such as creation of a subdivision, a transportation impact analysis consistent with Oregon City's *Guidelines for Transportation Impact Analysis* will be required. For development to occur at the densities specified in the Comprehensive Plan, the parcels will need to be changed from county to city zoning. To support this zone change, an analysis indicating compliance with the TPR will be required in addition to the required transportation impact analysis consistent with Oregon City's *Guidelines for Transportation Impact Analysis*. The argument in support of the zone change should include information about consistency between the planned land use and the development assumptions in Oregon City's *Transportation System Plan* (TSP). Showing that the planned development was accounted for in the development assumptions of the TSP is important, but is not likely to be considered sufficient to demonstrate compliance with the TPR.

One particular issue that must be addressed in any zone change is the impact on the intersections specified in OCMC 12.04.205(D) [I-205 / OR 99E Interchange; I-205 / OR 213 Interchange; and OR 213 / Beavercreek Road intersection.] Under OCMC 12.04.205, these three specified locations are exempted from the TSP mobility standards, but only for development that is permitted, either conditionally, outright, or through detailed development master plan approval.

The applicant should also address 12.04.205(D)(2) which states:

> Development which does not comply with the mobility standards for the intersections identified in [Section] 12.04.205.D shall provide for the improvements identified in the Transportation System Plan (TSP) in an effort to improve intersection mobility as necessary to offset the impact caused by development. Where required by other provisions of the Code, the applicant shall provide a traffic impact study that includes an assessment of the development's impact on the intersections identified in this exemption and shall construct the intersection improvements listed in the TSP or required by the Code.

4. Fees (will apply to each zone change proposed)

2016 Planning Fee Schedule

Zone Change / Text Amendment	$2,764
Mailing Labels	$15

2017 Planning Fee Schedule

Zone Change / Text Amendment	$2,798
Mailing Labels	$15

5. Neighborhood Association Meeting Required

Per OCMC 17.50.055 - Neighborhood association meeting. Documentation of the meeting with the Park Place Neighborhood Association is required for a complete application. See http://www.orcity.org/community/park-place-neighborhood-association for contact and meeting information.

Code Responses and Narrative

Staff can provide you with previous annexation Staff Reports and electronic versions of the applicable plans, policies and approval criteria above to assist in the preparation of your application.

Checklists and Application Forms

Land Use Application Form (682 KB)
Planning Fee Schedule (482 KB)

17.50.050 - Preapplication conference.

A. Preapplication Conference. Prior to submitting an application for any form of permit, the applicant shall schedule and attend a preapplication conference with City staff to discuss the proposal. To schedule a preapplication conference, the applicant shall contact the Planning Division, submit the required materials, and pay the appropriate conference fee. At a minimum, an applicant should submit a short narrative describing the proposal and a proposed site plan, drawn to a scale acceptable to the City, which identifies the proposed land uses, traffic circulation, and public rights-of-way and all other required plans. The purpose of the preapplication conference is to provide an opportunity for staff to provide the applicant with information on the likely impacts, limitations, requirements, approval standards, fees and other information that may affect the proposal. The Planning Division shall provide the applicant(s) with the identity and contact persons for all affected neighborhood associations as well as a written summary of the preapplication conference. Notwithstanding any representations by City staff at a preapplication conference, staff is not authorized to waive any requirements of this code, and any omission or failure by staff to recite to an applicant all relevant applicable land use requirements shall not constitute a waiver by the City of any standard or requirement.

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B. A preapplication conference shall be valid for a period of six months from the date it is held. If no application is filed within six months of the conference or meeting, the applicant must schedule and attend another conference before the city will accept a permit application. The community development director may waive the preapplication requirement if, in the Director's opinion, the development does not warrant this step. In no case shall a preapplication conference be valid for more than one year.

PARK PLACE NEIGHBOORHOOD ASSOCIATION

SIGN IN SHEET

DATE: 06-07-2016 Special

NAME	ADDRESS	PHONE	E-MAIL
TROY LAVOIE	15114 OYER	503 744 0007	TroyLAVoie@Gmail.com
Lorey Lamm	16285 Barlow	808-499-5491	lorey.lamm@live.com
Danyelle Lamm	16285 Barlow	808-499-9182	danyelle.lamm@live.com
Bill & Marcy Erickson	15740 Harley Ave	503 656 6566	—
Jerry & Molly BAUCK	14456 Ames St	503-722-9354	mollybauck@q.com
Shlo & Jennifer Reitsma	16415 Willamette Valley Dr	503-539-2413	jdreitsma@gmail.com
John Andreasen	16179 Widmer Ct		
Nick Dieckmann	16273 Barlow Dr		
Gary & Marti Moody	16551 OAK TREE Tn	503 305 8010	Marti.L97223@gMail.com
FRANK DURKEE	15817 PASTURE WAY	5038163098	durkee4@gmail.com
KATHY HAYDON	14991 ARMEL DR	503 722 7083	
Steve & Lorna Miller	15875 Altona Lane	(503)387-5544	dloremiller@gmail.com
Jamie VanDomelen	15831 Stables Pl	503-710-5564	Vandomelen6966@Comcast.net
DARREN GUSTOF	1742 19th St. W.L.	503-657-0466	
GARY MARTIN	15893 Altona Ln	503 881 4156	Martingl@comcast.net
JOHN EDWARDS	16081 WINSTON DR	5036567990	-

PARK PLACE NEIGHBOORHOOD ASSOCIATION

SIGN IN SHEET

DATE: 06-07-2016

NAME	ADDRESS	PHONE	E-MAIL
LISA NOVAK	14234 HOLCOMB BLVD	847-340-4422	novak0929@gmail.com
Mary DeWall	16466 Oak Valley Dr	503-723-9054	
John Bacevich	16359 Wayne Dr.	503-709-6859	JRBacevich@comcast.net
MIKE MARCHIONE	16061 WINSTON DR	503-413-0503	MMKE@COMCAST.NET
Shareen Reed	16025 Hunter Ave	503 998-9323	
Josh Surenik	16432 Willamette Valley Dr.	9715067586	joshnoke@yahoo.com
Mike & Jan Grady	15021 Journey Dr	503-557-2993	myg1976@msn.com
Russ & Sue Kumas	16071 Apperson Blvd.	503-235-5754	russellkumas@msn.com
Greg & Marie Teela	15033 Journey Dr	503-756-6969	GregTeela@Comcast.NET
Bob Tershel	~~5933~~ 14024 Livesay	503-244-3077	bobtershel@comcast.net
Shirley & Bill Hall	16633 Trail Dr	503-655-0839	(OR P.O. BOX 190 Beaverton 97004 (mail
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Michelle & Kirk Tolstrup			
Michelle Riddle	15990 Ames St.	503 [illegible]	michelleriddle2@comcast.net

PARK PLACE NEIGHBOORHOOD ASSOCIATION

SIGN IN SHEET

DATE: 6-7-16

NAME	ADDRESS	PHONE	E-MAIL
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Oregon City Public Schools

Learning to be our Best

P.O. Box 2110 (1417 12TH St.), Oregon City, Oregon 97045-5010
Wesley Rogers, Director of Operations • Telephone: (503) 785-8426 • FAX: (503) 657-2492

March 13, 2017

Planning Commission
City of Oregon City
625 Center Street
Oregon City, OR 97045

Re: File AN-16-0004, ZC-16-0001

Members of the Planning Commission,

The Oregon City School District was contacted via e-mail by Pete Walter, AICP, Planner to respond to testimony and exhbits presented at the February 27, 2017 Planning Commission meeting concerning File AN-16-0004/ZC-16-0001, annexation of 35.65 acres north of Holcomb Boulevard. I believe the Planning Commission has requested the District formally respond to "perceived capacity of Holcomb Eelementary and schools in Park Place." Pete included in his e-mail 3 attachments as follows: a letter dated February 24, 2017 from Rick Givens to myself (Attachment A); a copy of the Holcomb Elementary webpage that includes enrollment info (Attachment B); and a copy of the District's 2012 Enrollment Forecast (Title page Attachment C). Let me respond.

We have recently completed our annual enrollment forecast update by the Center for Population Research at Portland State University. The above mentioned 2012 Enrollment Forecast has now been updated with the 2017 Enrollment Forecast. However the 2017 Enrollment Forecast does not include either Park Place/Holcomb annexation request presently before the City of Oregon City.I have listed current enrollment/capacity information for Holcomb Elementary:

Current March 10, 2017 Enrollment	498
Current Total Capacity (2016 study)	564
2021-22 Forecasted Enrollment (2017 Study)	483
2026-27 Forecasted Enrollment (2017 Study)	534

As shown without consideration of the annexation requests, Holcomb Elementary will not exceed capacity in the next 10 years.

As to the impact of the 35.65 acre annexation request File AN-16-0004/ZC-16-0001, the grade level district-wide average ratio information contained in Attachment A Givens letter was reviewed by our demographer and found to be accurate for forecasting purposes. The district has adequate secondary school enrollment capacity to accomodate the forecasted middle and high school students generated by this annexation. However, in 2026-27, assuming 35 new elementary students, Holcomb Elementary would be slightly above capacity at 569. For impact of current developments on Holcomb Elementary I can share that the school has yet to enroll any students from the almost completed Sunnybrook Ridge development to the west of the school. This is why annual

With high expectations for all, we engage all students in meaningful learning activities that prepare them for a successful life.

updates to our enrollment forecasts are so important so as to reflect current trends.

As to the larger 92 acre Park Place/Holcomb annexation mentioned by Mr. Givens but is not a direct part of this file, the District has always known that as the Park Place Concept Plan was significantly developed, additional elementary and middle school capacity would have to constructed. Currently the elementary school of attendance for this area would be Redland Elementary.

Forecasted enrollment growth is not new to the District and the Oregon City School Board and administration have been studying facility needs for the past several years. Although well maintained, District facilities do not support current educational practice and all District facilities are in need of serious renovation or replacement and in some cases minor expansion. Preliminary plans to ask for a school construction bond have not been finalized but the current draft scenario shows that the District (with voter support) would have additional middle school capacity within 5 years and additional elementary school capacity within 5-10 years. In the meantime the District has several other tools to help with over capacities by installing semi-permanent buildings and/or redrawing attendance boundaries.

Sincerely,

Wes Rogers
Director of Operations
Oregon City School District
PO Box 2110
Oregon City, OR 97045
503-785-8426

OREGON CITY

Police Department

320 Warner Milne Road | PO Box 3040 | Oregon City OR 97045
Ph (503) 657-4964 | Fax (503) 655-0530| Non Emergency Police Dispatch: (503) 655-8211

January 31, 2018

The Oregon City Police Department appreciates the opportunity to comment on the Park Place Annexation. OCPD already provides police services within and adjacent to the area.

When land within the Park Place Annexation area is annexed to Oregon City, the properties will be removed from the jurisdiction of the Clackamas County Enhanced Law Enforcement District and served by the Oregon City Police Department.

Currently our officer force is 47 and our reserve officer force is 3, providing a ratio of 1.31 officers/per 1000 population.

OCPD does not anticipate any problems being able to patrol and serve this area with police officers as development occurs. We anticipate that as urbanization occurs, our response times will remain within acceptable industry standards.

OCPD already works closely with the Planning Division to review new development applications to assure continued public safety.

Sincerely,

Jim Band, Chief
Oregon City Police Department

City of Oregon City
Planning Commission meeting of February 12th, 2018

RE: AN 17-0004 Annexation 92 Acres
ZC 17-0005 Zone Change

2018 FEB -2 PM 1:36
RECEIVED

Testimony of: Christine Kosinski, Unincorporated Clackamas County

I remain concerned over the City's plan to consider annexation of 92 acres, South of Holcomb Blvd and North of S. Livesay Road in the Park Place area due to unstable slopes, poor soil conditions, a plethora of landslides existing on slopes of as little as 5%, the homeowners inability to understand they are living in a landslide risk area where landslide insurance will be extremely difficult to obtain. Lastly, weak City regulations over steep slopes and landslides.

I have been an active participant in the Park Place Concept Plan from the beginning. I attended the PAC meetings, the Urban-Rural Reserve meetings, City and County meetings and so many others. I've personally testified to the City on numerous occasions, trying my best to represent the many concerns of the people of Holly Lane where many homeowners have lived here more than 50-60 years and had hoped to remain in their homes on Holly Lane to live out the rest of their lives. Their concerns are well known to you, through hundreds of testimonies from myself and from the people who live here. They remain highly concerned about the safety and livability for the people of Holly Lane. As the city has developed, these people have endured several years of heavy and speeding traffic, the area is noisy with traffic where the people find it difficult to have the peace and serenity in their lives that they once had here, after all, this is why they moved here.

As I have testified in the past, the land is unstable here, filled with many landslides and sink holes. Homes have been destroyed or heavily damaged on Holly Lane due to landslides, placing heavy financial burdens on some.

Please understand, the landslides on Holly Lane occurred on **Only 11% Slope!** . Several landslides, within the boundary of the 92 acres you propose to annex are only **10-15% Slope**, the Street of Dream homes, in close proximity to these 92 acres, occurred on as little as 5% and some on less, per DOGAMI. The entire Park Place Plan area contains quite a few landslides of only **5-10-15-20%**, and yet the City **Only regulates steep slopes of 25% or greater!** I ask, why isn't the City regulating slopes that are less than 25%? It makes one wonder if the City truly wants to regulate landslides.

Following is information to help you understand our concerns for considering these 92 acres for annexation and future development of as many as 522 homes.

See **Exhibit 1**, news article from 2003 about 20 acres Mark Handris tried to develop. The developer was fined for continuing to work without taking adequate steps to stop the slides, and as well, the project was shut down by Oregon City due to all of the slopes failing and slipping. This project is close to the 92 acres you are considering for annexation. Can the City have trust in this same developer for 92 acres and is the proposed Park Place Plan also in a same area of failing and slipping slopes?

See **Exhibit 2 Marked Draft Report** GRI Geotechnical and Environmental Consultants report of their "Preliminary geologic and geotechnical evaluation for proposed Park Place Concept Plan".

See **Exhibit 3 GRI Report – Not Marked**

One of GRI's reports has been stamped **DRAFT** while the other report has not. On Page 5 of the draft report, second paragraph under Conclusions and recommendations, it is stated "We also recommend that the City require a geotechnical evaluation/investigation as part of any future development in areas **with slopes of 15% or steeper.**

Now compare to the report that is not marked "draft." (exhibit 3) On the second page, first paragraph, it is stated "we also recommend that the City require a geotechnical evaluation/investigation as part of any future development in areas **with slopes of 25% or steeper.**
I ask, **which report is correct** and why didn't the City change it's hazard regulations to regulate slopes of 15% or steeper if this is the correct report from GRI?

In the Draft report, see Page 2 under Previous Work "This report identified **slopes of 10% to more than 50% within the study area".** Also, see Page 4, first paragraph of this report, "Several small roads intersect Redland Road and extend northward into residential developments. These residential developments are generally low density and established on **slopes of 5 to 15%".**

This validates previous remarks "that slopes in both the Park Place Plan and Holly Lane" are much less than the 25% slopes that the City is currently regulating.

In this same Draft report, see Page 4, third paragraph from the top, "development has occurred immediately outside the study area, in the Oak Valley area. Evidence of **soil creep** observed during the reconnaissance includes tilted and bowed trees around the perimeter slopes of the development".
In this area, on Oak Tree Terrace, a new home was purchased in 2004. A few years later the back yard of this home began to sink, drifting towards a cliff. The value of the home took a huge drop until repairs were done, the home went back on the market at a much lower cost. This continues the concerns for the instability of this area for development, and when considering the fact that homeowners will find it almost impossible to get landslide insurance, should the government allow development in such a hazardous area, **Goal 7 says NO!**

The City cannot meet the **requirements of Land Use Goal 7,** as your current regulations "Do not protect people and property from natural hazards". As well, the City has not formally adopted Goal 7 requirements.

Planning Commissioners: I am enclosing the complete GRI Geotechnical and Environmental Consultants Preliminary Geologic and Geotechnical Evaluation for your review (Draft Report). I have highlighted sections of the report that I feel are extremely important.

See Exhibit 4 – Within the boundaries of the 92 acres, proposed for annexation, please note that the largest percentage of land is comprised of Slopes of 0-10 and 10-25% and yet the City only regulates slopes of 25% or more. I ask why?

See Exhibit 5 – There were a series of e-mails exchanged by the people of Holly Lane and Nancy Kraushaar. Question, was the second stage of the Geologic Hazards code ever re-written? If not, will these be in place before approving the 92 acre annexation for the Park Place Plan and will the template from the City of Salem be used (as developed by FEMA)?

See Exhibit 6 - For your review, I am enclosing the most important pages from an "Application for Landslide Insurance". On the first page you will note the question "Is the building in a known landslide area or have there been any incidents of landslide within 1 mile of the property?". It really does not matter if the applicant answers Yes or No since the underwriting agency uses Lidar Landslide maps to locate whether your property is within 1 mile of a previous slide. Therefore, every homeowner on Holly and every prospective buyer of a new home in the Park Place Concept Plan, will probably be denied Landslide Insurance and therefore will have to bear all losses personally. There are so many exclusions that these plans virtually do not pay. Again, I have highlighted important sections. I have included this exhibit in my testimony as I feel it is very important that our Planning Commission understand that landslide insurance pretty much does not exist, and yet Oregon City continues to build in these hazardous areas knowing the homeowners are purchasing homes in an area that is risking their lives and the lives of their families. Oregon City has the DOGAMI Lidar Maps, they know what lies beneath the ground homes are built on. The new homeowner does not have this knowledge, they cannot see beneath their new homes, but you can. Where is your responsibility to these homeowners?

See Exhibit 7 – Landslide in 2008 in Burlingame. First picture shows home before it slid down a slope onto another home and was destroyed. Although the homeowners took legal action, none of their insurance coverage would pay and they were not covered by Landslide Insurance. Total losses.

See Exhibit 8 - "Insurance won't pay" for landslide damage in Corvallis, OR home. Please see Pg 2. The homeowners had $2 million dollars worth of insurance, it won't do any good as standard insurance will not cover landslides. Also, see Pg 2, last paragraph, "Homeowners insurance covers a whole lot of stuff, but earth movement isn't in there". This is stated by Oregon's own, Ron Fredrickson who manages the consumer advocacy team for the Oregon Insurance Division. "It's specifically excluded, as are earthquake and flood". Pg 3, first paragraph, Mr. Fredrickson states "landslide insurance is almost unheard of, it can be purchased only from highly specialized carriers and it's liable to come with a hefty premium. I've yet to come across anybody who has it!".

Professor Scott Burns was interviewed by KUOW News after the devastating OSO, WA landslide. Dr. Burns states "It is rare that people will get landslide insurance. You can buy it through Lloyd's of London. They're the ultimate insurers, but it's so expensive, a minimum of $1000 a year and it goes up from there. All those people who lost their houses in the Oso landslide have **lost everything, and there's NO INSURANCE covering them. We lost lives. That is the worst thing. But then property is the second thing".**

These are just a few examples to help you understand the huge financial losses, and losses of life, people endure after landslides hit their homes. I have many, many more cases, just like these that I can give to you if you want to read more. I also have news articles from other States showing that homeowners are beginning to take local governments to task. They are asking, why weren't we told? They state the developer didn't warn them, sellers and real estate agents also never disclosed landslide problems.

There is much for the Planning Commission to consider regarding this proposal to annex and change zoning in an area where "susceptibility for landslides is "HIGH" and likely to occur", per DOGAMI Lidar Mapping. Consider as well that a home on Holly Lane remains **condemned due to landslides** and this is in an area where the City proposes to build the Swan Rd extension! Consider that in the Country Village Estates, some homes have been removed where water and mud invaded. Certain parts of Country Village are banned from future development. I also want you to consider the City's Hazard/Landslide regulations. Many other communities are strictly regulating steep slopes and landslide areas. **There is a City not too far from Oregon City** with a larger population. It's interesting to read their Landslide Regulations which are, for slopes of 25% or more, there will be absolutely no development. They regulate slopes of 15% and greater and they have in their regulations that their City supports the requirements of Goal 7 and that protecting their citizens is of the utmost importance to their government. Even Portland regulates slopes of 20% or more, so why is Oregon City only regulating slopes of 25% or more.

I do not believe Oregon City can continue to develop in hazardous landslide areas until their regulations are changed. Regulating slopes of 25% or more places the City in great jeopardy. Oregon City's topography is very difficult, there will be more landslides, will the homeowners take the City to task? Will they ask you, why weren't we told our property is in a landslide area and why weren't we told, before signing final papers, that we should check with our Insurance Agent to see if we would be covered for losses due to landslides?

For all the reasons I have given to you, for the protection and safety of the people and their families, for not meeting the requirements of **Goal 7**, for putting people and their property in harm's way, I cannot find it within myself to support this 92 acre annexation and zone change located in a dangerous and unsafe landslide area, where State Land Use **Goal 7** clearly states "Local governments shall adopt comprehensive plans to reduce risk to people and property from natural hazards." This cannot be accomplished by just regulating slopes of 25% or more when landslides are occurring on 5-10-15-20% and by withholding landslide information from the people.

Enclosing Exhibits 1-8
Enclosing my **denial for landslide insurance** because my property is within one mile of previous landslides

From: Jackie Goodman <jackie@huggins.com>
To: britenshin <britenshin@aol.com>
Subject: RE: Landslide and earthquake quote
Date: Wed, Oct 28, 2015 11:20 am

Hello Christine and John,

I received a response from the Underwriter and I am sorry to tell you that your application has been denied. Unfortunately you are ineligible for landslide coverage at this time. The comments from the Underwriter indicate the risk is surrounded by 6 large landslides and a recent fan of debris. The Catcoverage.com market is the only market that we have available for this type of coverage.

I am so sorry that I am unable to assist you. If you have any questions or concerns, please let me know.

Kindly,

Jackie Goodman
Account Manager
Huggins Insurance Services
jackie@huggins.com

South

MetroSouth News Bureau 503-656-0083
Calendar and information 503-294-5913
News tips 503-294-5920
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Oregon City halts Holcomb Ridge project

The city stops construction at the subdivision because of landslides; the developer says he's making fixes

By **STEVE MAYES**
THE OREGONIAN

OREGON CITY — Concerns about erosion and landslides have prompted the city to shut down construction at a controversial subdivision.

The city issued a stop-work order on the 20-acre Holcomb Ridge subdivision on Nov. 25 and fined developer Mark Handris for continuing work without taking adequate steps to stop the slides or cover dirt piles.

Last summer, critics of the project warned that clearing trees and plants, cutting into hillsides and developing the sloped site could be risky. The 40-lot project is on South Holcomb Boulevard near South Longview Way.

"Pretty much all the slopes have started to fail," said John Burrell, Oregon City associate engineer.

When the project was approved earlier this year — over the objections of the Park Place Neighborhood Association — the city imposed conditions intended to limit erosion.

Handris complied, but the measures proved insufficient.

On Nov. 20, the city notified Handris that he needed to address the landslides and dirt piles, which had started to wash into a small creek.

When the work wasn't done by Nov. 25 and more slides appeared, the city shut down the project, said Burrell, who estimated about a half-mile of slope could slip.

Handris said the city has blown the situation out of proportion. The problem is "insignificant," he said.

Some people who live nearby don't see it that way.

"It's gone over the barrier and into the creek in some spots," said Tam Seasholtz, a neighbor who counted seven Holcomb Ridge landslides from her kitchen window.

The hillsides are stable, Handris said. The recent earth movement resulted largely from a loose layer of dirt, grass and plant material that a contractor spread on top of compacted dirt, he said.

"Some of our silt fencing and jute netting on some of our slopes has started to wash away, so that's being repaired," Handris said.

Handris said the city-required work should be done by the end of the week. "We're out there making a heck of an effort to correct the problem," he said.

The city has fined Handris $3,600, said Nancy Busch, an Oregon City code enforcement officer. Handris said he will fight the penalty.

Those who live around the project are skeptical that fences, matting and straw can stop the soil movement.

"It's not terrible yet, but there's still another four months of rain," said Tim Williams, who has lived in the neighborhood since 1990.

Oregon City Commissioner Doug Neeley said he has been concerned about the development since he first viewed the site last summer.

"I thought, 'Man, that was a steep area they've scooped out,'" Neeley said.

"I was hoping the developer would take appropriate erosion-control actions. Apparently, that didn't happen," said Neeley, who wants the city to adopt stricter standards for development on some slopes.

♦

Steve Mayes: 503-294-5916; stevemayes@news.oregonian.com

EXH 1

GRI Geotechnical & Environmental Consultants
9725 SW Beaverton Hillsdale Hwy, Ste 140
Portland, Oregon 97005-3364
PHONE 503/641/3478 FAX 503/644/8034

February 7, 2007

4584 PRELIM GEOTECH EVALUATION

SERA Architects
338 NW 5th Avenue
Portland, OR 97209

DRAFT

Attention: David Berniker

SUBJECT: **Preliminary Geologic and Geotechnical Evaluation**
Park Place Concept Plan
Oregon City, Oregon

At your request, GRI has completed a preliminary geologic and geotechnical evaluation for the proposed Park Place Concept Plan project in Oregon City, Oregon. This evaluation addressed the Park Place study area, which is shown on the Vicinity Map, Figure 1. The Park Place Concept Plan is being developed to identify the preferred long-term land use of the study area. The Concept Plan was developed by the design team and local community during a design charrette and series of community meetings.

The purpose of the evaluation was to identify, on a preliminary basis, the potential geologic hazards within the study area and provide geotechnical considerations for future development, to be included in the Concept Plan document for the City of Oregon City (City). This includes recommendations for site-specific geotechnical evaluations prior to development and general slope hazard management. The conclusions and recommendations provided in this report are based on a review of the previous work completed in the study area by others and other sources of information described herein.

The evaluation consisted of limited field reconnaissance; review of published geologic reports and maps, readily available geotechnical reports and subsurface information, and water well records on file with the Oregon Water Resources Department (OWRD); and examination of aerial photographs. The intent of this document is to serve as a practical guide to assist the City in their understanding and management of the short- and long-term geologic risks associated with future development in the Park Place Concept Plan study area.

PROJECT DESCRIPTION

The study area is located in Clackamas County, Oregon, east of Highway 213 and south of Redland and Holcomb roads. The total study area is approximately 470 acres; 180 acres of the study area are located immediately adjacent to Oregon City limits in the vicinity of Livesay Road, but have not been annexed as part of the City, and 300 acres were brought into the Urban Growth Boundary in 2002. The study area is composed of 138 individual property owners. The largest property under one ownership is approximately 48 acres, and nearly half the parcels in the study area are 1 acre or less.

EXH 2

The Park Place Concept Plan was developed to identify the preferred long-term land use of the study area. The Concept Plan identifies the general areas of different housing densities, commercial and industrial land uses, parks, open spaces, and schools.

The study area includes existing residential developments and a public middle school, but is generally rural and distinguished by steep slopes, several creeks, marsh areas, and wooded areas. The general topography of the study area is shown on the Slope Map, Figure 2, and the Landslide Geomorphology Map, Figure 3. The long-term development outlined in the proposed Concept Plan includes new mixed-use and residential development, new roads between Holly Lane and Highway 213 and Redland and Holcomb roads, and improvements to existing roadways. We understand the proposed Concept Plan has identified open space areas located in conjunction with environmentally constrained and natural areas, which will serve as undeveloped parks and natural resource areas for the study area. These open spaces include all areas with slopes of 25% or steeper within the Concept Plan study area.

GEOLOGIC SETTING

The study area is located in the Abernathy Creek drainage of the Willamette Valley. The Abernathy Creek drainage consists of a narrow meandering creek, fed by Newell and Holcomb creeks, which flows directly into the Willamette River immediately northwest of the study area. The drainage is characterized by steep canyons subject to ongoing slope processes. The local geology is dominated by the fine-grained facies of the Missoula Flood deposits (Madin, in press) primarily comprised of silt, sand, and gravel of late Pleistocene age, as shown on the Geologic Map, Figure 4. These deposits generally form terraces at the lower extent of the local creeks and mantle slopes up to about elevation 200 to 250 ft. In the low-lying areas within the floodplain of Abernathy Creek is alluvium and Pleistocene-age Willamette Silt, which consists of fine-grained sands, silt and clay with scattered lenses of fine- to medium-grained sand. At the north edge of the study area (along Holcomb Road, at the south end along Holly Lane and at the southwest edge, adjacent to Newell Creek Canyon), mudstone, claystone, and sandstone of the Troutdale Formation are present, typically in steep canyons and ridges. Geomorphic and geologic evidence indicates these tributary canyons of Abernathy Creek have been modified by ongoing, large-scale landslides. The Oregon Department of Geology and Mineral Industries' (DOGAMI) preliminary geologic map of the area indicates an inferred trace of the Oatfield Fault may extend into the northwest portion of the study area; however there is no direct evidence that the fault exists in this area (Madin, in press).

PREVIOUS WORK

Due to the presence of landslides in the Oregon City area, a number of geologic maps and geotechnical studies have been completed in the vicinity of the Concept Plan study area. DOGAMI Bulletin 99, "Geology and Geologic Hazards of Northwestern Clackamas County, Oregon," documents the initial study focusing on the geology and geologic hazards of the area (Schlicker & Finlayson, 1979). This report identified slopes of 10 to more than 50% within the study area. The report also identified hazards associated with flooding along Abernathy Creek and the potential for a high water table near Ogden Middle School, west of Holly Lane. Bulletin 99 did not identify landslide-specific hazards within the Concept Plan study area, but

identified landslide topography, local slumping, earthflow, mudflow, and debris flow in Newell Creek Canyon, immediately west of the study area, and in canyons on both sides of Holly Lane, south and east of the study area. Most of the landslide topography identified on the Bulletin 99 "Geologic Hazards Map of the Canby and Oregon City Quadrangles, Oregon" occurs on slopes of 10 to 20%.

Subsequent to Bulletin 99, Portland State University (PSU) evaluated geologic constraints for future development of Newell Creek Canyon (Burns and others, 1993). The study area included in this report is immediately adjacent to the Concept Plan study area, to the west. The report included evaluation of geologic, soil, and groundwater conditions within the canyon and included a landslide susceptibility map for the canyon, which identified existing landslides as high risk, and exposures of Troutdale Formation with slopes of 8° or more as having a moderate risk of landslides. The report identified over 50 existing landslides in Newell Creek Canyon and noted that 73% of the project area was at moderate risk for landslides. Several other site-specific geologic and geotechnical investigations have been conducted within Newell Creek Canyon to assess landslide hazards associated with residential development. In addition, two studies have been published following storm-induced landslides in 1996 and 1997, documenting landslides immediately adjacent to the study area (Burns and others, 1998; Hofmeister, 2000).

In 2006, DOGAMI developed a map identifying landslide geomorphology in the vicinity of Oregon City, including the Concept Plan study area, using light detection and ranging (LIDAR) surveys and air photos (Madin and Burns, 2006). This map identifies over 35 existing landslides and debris fans within the Concept Plan study area, as shown in Figure 3. DOGAMI is currently completing a geologic map of the Oregon City vicinity (Madin, in press). A draft version of this map is shown on Figure 4. At this time, the 2006 map is the most up-to-date source of information concerning landslides in the study area.

SITE RECONNAISSANCE

Methodology

A certified engineering geologist (CEG) and registered geologist (RG) from GRI conducted a general reconnaissance of the study area on November 29, 2006. The ground-level reconnaissance consisted of viewing the majority of the study area from roadway rights-of-way. Visual reconnaissance was limited to areas and facilities that were readily observable from streets or other public areas.

Study Area Observations

The study area lies on both sides of Redland Road, extending north toward Holcomb Road and south toward Maple Lane, primarily along adjacent creek canyons. Redland Road bisects the study area from east to west, and Holly Lane extends from Redland to the south end of the study area. There are no north-south connecting roads from Redland Road to Holcomb Boulevard. Between Redland Road and Holcomb Boulevard there are a number of separate residential developments with discontinuous streets. Significant portions of the study area include steep, wooded creek canyons and generally rural property.

Redland Road is a two-lane, minor arterial linking Highway 213 to residential areas to the east of Oregon City. Redland Road transects the Abernathy Creek valley and crosses Abernathy Creek four times within the study area. As shown on Figure 2, the slopes at creek crossings are typically steeper than 25%. We observed localized slumping and raveling along these stream banks. In addition, slopes greater than 25% were observed along much of Redland Road, as road cuts on the north side of the road and sloping toward the creek on the south side of the road. Several small roads intersect Redland Road and extend northward into residential developments. These residential developments are generally low density and established on slopes of 5 to 15%. Readily apparent and obvious indications of recent large-scale, deep seated slope instability were not observed in these developments.

Holly Lane is a local street that runs south from Redland Road to Maplelane Road and has steep grades and very narrow shoulders. There is a steep canyon to the east of Holly Lane and steep slopes (greater than 25%)along Holly Lane between Redland Road and Donovan Lane. Based on personal communication with property owners, GRI understands that localized slope failures have occurred at residential properties on the south east side of Holly Lane, just outside the Concept Plan study area (Moxley, personal communication, 2006).

There are no connecting roads between Redland Road and Holcomb Boulevard in the north portion of the study area. Development in this area is composed of isolated residential developments that have been constructed over the past 50 years. Swan Avenue and Livesay Road are residential streets that extend east-west through this portion of the study area. These residential developments occur on the relatively flat plateau above Redland Road. We did not observe any development adjacent to the canyon at the north edge of the study area; however, development has occurred immediately outside the study area, in the Oak Valley area. Evidence of soil creep observed during the reconnaissance includes tilted and bowed trees around the perimeter slopes of the development.

SUBSURFACE CONDITIONS

To provide a preliminary characterization of subsurface materials and conditions within the study area, GRI reviewed water well logs available through OWRD and available boring logs for sites adjacent to the project area. There are limited well logs available for the study area, as shown on Figures 2 through 4. Review of well logs indicates the study area is generally mantled with silt, which is underlain by weathered sedimentary rocks. This characterization is consistent with the conditions described in boring logs included in the study by PSU (1993) and in the preliminary mapping by Madin (in press).

Groundwater

It is anticipated that the groundwater level in low-lying areas of the study area, in the Abernathy Creek drainage, will fluctuate according to seasonal rainfall and may occur near the ground surface during wet, winter and spring months and during periods of prolonged or intense rainfall, and within several feet of the ground surface during drier months.

It is anticipated the regional water table occurs at depth in areas of higher elevation; however, shallow perched water can occur in and over the weathered sedimentary rock and fine-grained soil, particularly following intense and/or prolonged precipitation.

CONCLUSIONS AND RECOMMENDATIONS

Landslides have occurred within the study area and in adjacent areas with similar topography, geology, and groundwater conditions. With regard to slope instability, most of the known slope instability has occurred on the steeper slopes on ravines along streams and drainages. We understand the recommended Concept Plan developed by the design team identifies areas with slopes of 25% or more as open space that will remain undeveloped. Limiting development in these areas is an appropriate measure to limit the risk of slope instability and landslides impacting future development. In addition, for the purpose of this Concept Plan, GRI recommends further site-specific study be conducted for future developments, in accordance with the City's municipal code Chapter 17.44, for managing geologic hazards and in accordance with following recommendations.

It would be prudent for the City to expand the definitions included in the City of Oregon City Municipal Code, Chapter 17.44.020, to include the Portland State University study, "Landslides in the Portland, Oregon, Metropolitan Area Resulting from the Storm of February 1996: Inventory Map, Database and Evaluation" (Burns and others, 1998); the DOGAMI Open File Report O-06-27, "Map of Landslide Geomorphology of Oregon City, Oregon, and Vicinity Interpreted from LIDAR Imagery and Aerial Photographs" (Madin and Burns, 2006); and the upcoming "Preliminary Geologic Map of the Oregon City Quadrangle, Clackamas County, Oregon" (Madin, in press), as references for identifying "landslide areas," "unstable slopes," "unstable soils," and debris fans. We also recommend that the City require a geotechnical evaluation/investigation as part of any future development in areas with slopes of 15% or steeper. This would include all new construction, including additions to existing homes such as swimming pools and retaining walls, installation of underground utilities, new access driveways and/or roadways, and similar types of projects that require significant earthwork. The geotechnical evaluation/investigation should address the slope hazards in the development and specifically address how the proposed development will limit the risk of future slope instability, prior to issuing a building permit. The geotechnical evaluation/investigation should also address setbacks from existing slopes and recommendations for cut and fill and on-site stormwater management, as described in more detail below. In addition, the City should require special inspection by the geotechnical engineer during construction of soil- and foundation-related elements and a summary letter of compliance upon completion of the work.

The actual scope of the geotechnical evaluation/investigation will depend somewhat on the location within the study area and the proposed development. For example, for development in areas that will likely require little if any earthwork, a reconnaissance-level site evaluation may be adequate prior to issuing a building permit. However, if the new development requires cuts deeper than about 5 ft into the existing hillsides, the geotechnical engineer may need to consider performing subsurface explorations, such as test pit excavations and/or shallow borings, as part of their evaluation/investigation. For any

development within or adjacent to mapped landslide areas or debris fans, or any development that requires excavations deeper than about 10 ft into the existing hillside, it would be prudent to perform a more-detailed, comprehensive geotechnical investigation prior to issuing a building permit. An engineering geologist should provide site-specific geologic input for any development with proposed cuts deeper than about 10 ft and all evaluations within the limits of mapped landslide areas and debris fans.

To assist the City, GRI has prepared the following geotechnical-related considerations for future development in the Park Place Concept Plan area.

1) Require a development- and/or lot-specific evaluation/investigation and report by a Professional Engineer, registered in the State of Oregon, who by training, education, and experience is qualified in the practice of geotechnical engineering. The engineer should be assisted in the evaluation of mapped landslide areas and debris fans by a Certified Engineering Geologist (CEG) certified in the State of Oregon. The evaluation/investigation and report should include, but not be limited to, the following type of considerations, as appropriate for the type of proposed development:

   General earthwork considerations, including recommendations for temporary and permanent cut and fill slopes and placement of structural fill,

   Location of residence on lot,

   Building setbacks from slopes,

   Subdrainage and/or management of groundwater seepage,

   Foundations,

   Embedded/retaining walls,

   Management of surface water and irrigation water, and

   Impact of the development on the slope stability of the lot and the adjacent properties

2) The geotechnical engineer of record should review final grading, drainage, and foundation plans and specifications and confirm in writing that they are in conformance with the recommendations provided in their report.

3) For large complex developments on sites with challenging conditions, at the City's discretion, it may be appropriate to obtain a peer review of the geotechnical evaluation/investigation report for the development and/or

lot plans. Based on the finding of the peer review, the applicant's geotechnical engineer will need to respond to written comments provided by the City's peer review prior to issuance of building permit.

4 The applicant's geotechnical engineer should provide special inspection during construction to confirm that the subsurface conditions/assumptions made as part of their geotechnical evaluation/investigation are appropriate. This will allow for timely design changes if site conditions are encountered that are different from those anticipated. In addition, prior to issuing an occupancy permit, the City should require the geotechnical engineer to prepare a summary letter stating that the soils- and foundation-related project elements were accomplished in substantial conformance with their recommendations.

Concluding Remarks and Limitations

This report has been prepared to identify geologic hazards and geotechnical considerations associated with future development in the Park Place Concept Plan study area.

The opinions and recommendations stated in this report are based on a review of the previous work completed in the study area by others and other sources of information described herein. With respect to the work performed by others, GRI did not participate in the implementation of the work and did not independently verify the accuracy or completeness of the information provided. GRI makes no representations or warranty regarding instruments of service completed by others. The information presented in this report was developed by GRI in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions. No other warranty, expressed or implied, is made.

It is important to note that GRI's work evaluated the study area as a whole and did not address individual properties. For this reason, property owners/developers should retain qualified engineers and geologists to assist in the evaluation of specific properties and to prepare associated development plans and designs.

This evaluation has been prepared to aid SERA Architects in the completion of the Park Place Concept Plan. The scope is limited by the fact that the actual plans for the study area are indefinite; hence, only preliminary opinions are presented.

Submitted for GRI,

GRI Geotechnical & Environmental Consultants
9725 SW Beaverton Hillsdale Hwy, Ste 140
Portland, Oregon 97005-3364
PHONE 503/641/3478 FAX 503/644/8034

February 7, 2007

4584 PRELIM GEOTECH EVALUATION
(ISSUED 3-28-07)

SERA Architects
338 NW 5th Avenue
Portland, OR 97209

Attention: David Berniker

SUBJECT: Preliminary Geologic and Geotechnical Evaluation
Park Place Concept Plan
Oregon City, Oregon

At your request, GRI has completed a preliminary geologic and geotechnical evaluation for the proposed Park Place Concept Plan project in Oregon City, Oregon. This evaluation addressed the Park Place study area, which is shown on the Vicinity Map, Figure 1. The Park Place Concept Plan is being developed to identify the preferred long-term land use of the study area. The Concept Plan was developed by the design team and local community during a design charrette and series of community meetings.

The purpose of the evaluation was to identify, on a preliminary basis, the potential geologic hazards within the study area and provide geotechnical considerations for future development, to be included in the Concept Plan document for the City of Oregon City (City). This includes recommendations for site-specific geotechnical evaluations prior to development and general slope hazard management. The conclusions and recommendations provided in this report are based on a review of the previous work completed in the study area by others and other sources of information described herein.

The evaluation consisted of limited field reconnaissance; review of published geologic reports and maps, readily available geotechnical reports and subsurface information, and water well records on file with the Oregon Water Resources Department (OWRD); and examination of aerial photographs. The intent of this document is to serve as a practical guide to assist the City in their understanding and management of the short- and long-term geologic risks associated with future development in the Park Place Concept Plan study area.

PROJECT DESCRIPTION

The study area is located in Clackamas County, Oregon, east of Highway 213 and south of Redland and Holcomb roads. The total study area is approximately 470 acres; 180 acres of the study area are located immediately adjacent to Oregon City limits in the vicinity of Livesay Road, but have not been annexed as part of the City, and 300 acres were brought into the Urban Growth Boundary in 2002. The study area is composed of 138 individual property owners. The largest property under one ownership is approximately 48 acres, and nearly half the parcels in the study area are 1 acre or less.

EXH 3

It would be prudent for the City to expand the definitions included in the City of Oregon City Municipal Code, Chapter 17.44.020, to include the Portland State University study, "Landslides in the Portland, Oregon, Metropolitan Area Resulting from the Storm of February 1996: Inventory Map, Database and Evaluation" (Burns and others, 1998); the DOGAMI Open File Report O-06-27, "Map of Landslide Geomorphology of Oregon City, Oregon, and Vicinity Interpreted from LIDAR Imagery and Aerial Photographs" (Madin and Burns, 2006); and the upcoming "Preliminary Geologic Map of the Oregon City Quadrangle, Clackamas County, Oregon" (Madin, in press), as references for identifying mapped landslides and landslide materials, "landslide areas," "unstable slopes," "unstable soils," and debris fans. We also recommend that the City require a geotechnical evaluation/investigation as part of any future development in areas with slopes of 25% or steeper and within a 200-ft setback of the crest and toe of these slopes, and in areas previously mapped as landslides. This would include all new construction, including additions to existing homes such as swimming pools and retaining walls, installation of underground utilities, new access driveways and/or roadways, and similar types of projects that require significant earthwork. The geotechnical evaluation/investigation should address the slope hazards in the development and specifically address how the proposed development will limit the risk of future slope instability, prior to issuing a building permit. The geotechnical evaluation/investigation should also address setbacks from existing slopes and recommendations for cut and fill and on-site stormwater management, as described in more detail below. In addition, the City should require special inspection by the geotechnical engineer during construction of soil- and foundation-related elements and a summary letter of compliance upon completion of the work.

The actual scope of the geotechnical evaluation/investigation will depend somewhat on the location within the study area and the proposed development. For example, for development in areas that will likely require little if any earthwork, a reconnaissance-level site evaluation may be adequate prior to issuing a building permit. However, if the new development requires cuts deeper than about 5 ft into the existing hillsides, the geotechnical engineer may need to consider performing subsurface explorations, such as test pit excavations and/or shallow borings, as part of their evaluation/investigation. For any development within or adjacent to mapped landslide areas or debris fans, or any development that requires excavations deeper than about 10 ft into the existing hillside, it would be prudent to perform a more-detailed, comprehensive geotechnical investigation prior to issuing a building permit. An engineering geologist should provide site-specific geologic input for any development with proposed cuts deeper than about 10 ft and all evaluations within the limits of mapped landslide areas and debris fans.

To assist the City, GRI has prepared the following geotechnical-related considerations for future development in the Park Place Concept Plan area.

1) Require a development- and/or lot-specific evaluation/investigation and report by a Professional Engineer, registered in the State of Oregon, who by training, education, and experience is qualified in the practice of geotechnical engineering. The engineer should be assisted in the evaluation of mapped landslide areas and debris fans by a Certified Engineering Geologist (CEG) certified in the State of Oregon. The evaluation/investigation and report should include, but not be limited to, the following type of considerations, as appropriate for the type of proposed development:

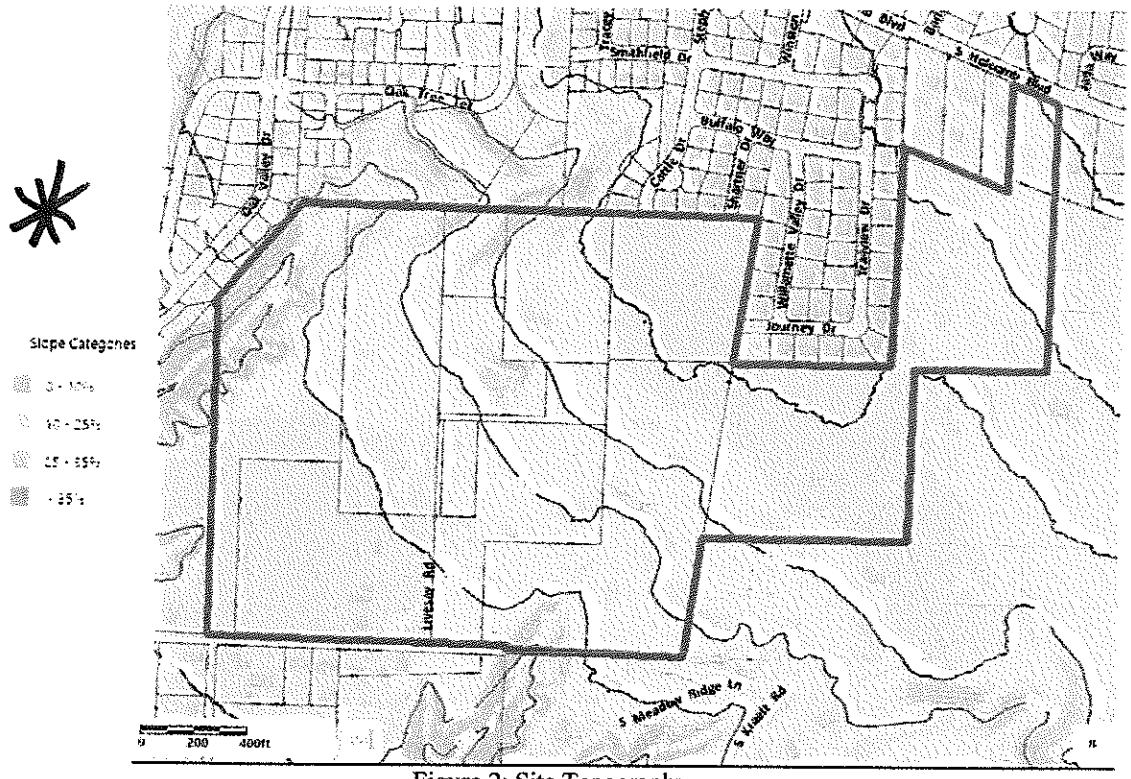


Figure 2: Site Topography

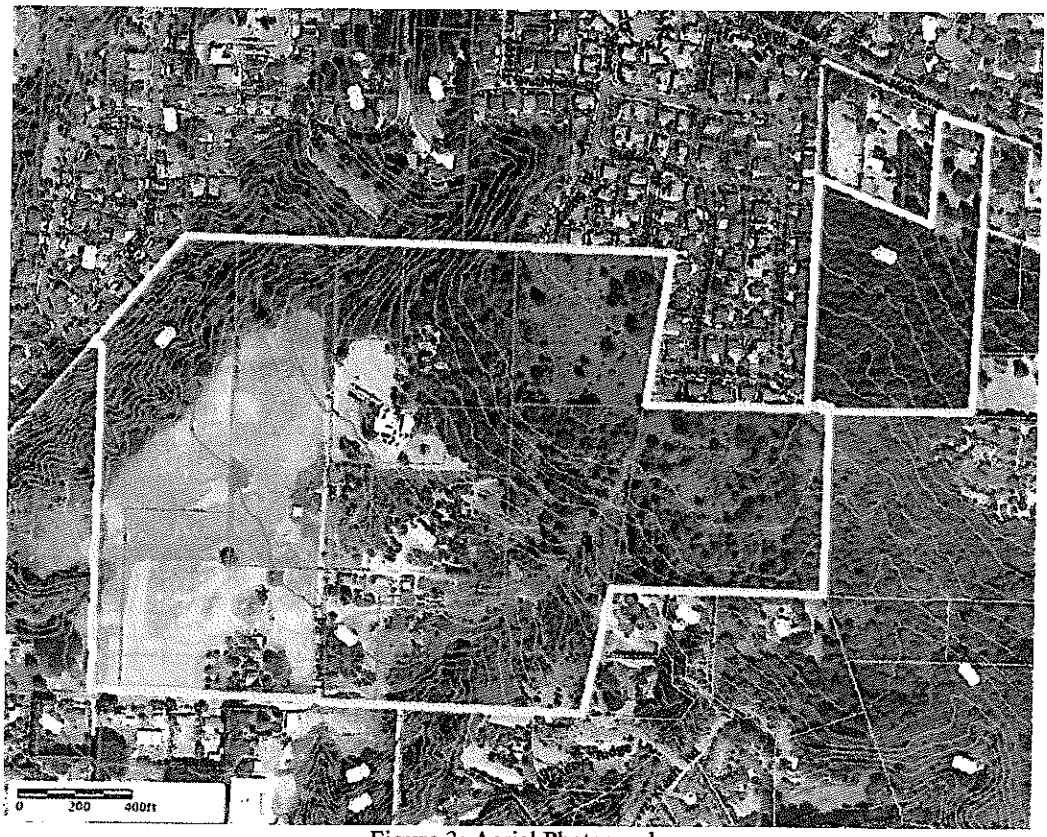


Figure 3: Aerial Photograph

EXH 4

Nancy J.T. Kraushaar, PE
City Engineer/Public Works Director
City of Oregon City
320 Warner Milne Road, PO Box 3040
Oregon City, OR 97045

Phone: 503-496-1545
Fax: 503-657-7892
E-mail: nkraushaar@ci.oregon-city.or.us

From: Britenshin@aol.com [mailto:Britenshin@aol.com]
Sent: Tuesday, February 19, 2008 4:29 PM
To: Nancy Kraushaar; Alice Norris; Damon Mabee; Daphne Wuest; Trent Tidwell; Doug Neeley; Larry Patterson; Pete Walter; Christina Robertson-Gardiner; Tony Konkol; Dan Drentlaw; kat2kami@yahoo.com; rodmoxley@comcast.net; bigcozz@comcast.net; bobn2b@msn.com; gardengifts@juno.com; paintfx@juno.com; tgeil@comcast.net; steve@vanhaverbeke.org; Britenshin@aol.com; pauloedgar@qwest.net; HOGANSBLUFF@aol.com; rlp@hevanet.com; sha-z@earthlink.net; johnwilliams38@gmail.com
Subject: Steep Slope/Landslide Regulations

Nancy: Citizens of our neighborhood would like to be updated on the proposed policy changes for Steep Slopes and Landslides. When do you anticipate the new policy to be finalized and in effect, and will the new regulations be city wide?

We had hoped these would be in place prior to the adoption of the Concept Plan as it is felt difficult by the community to pass the Plan without having the knowledge of these new regulations. The City of Salem's Hazard/Steep Slope/Landslide policy (adopted in conjunction with FEMA) is considered to be the most comprehensive in the State if not in the entire Nation. A question I have.....Would it save you work to simply adopt these same criteria and codes thus keeping continuity within the State and being in alignment with FEMA regulations? Your Thoughts please.

Thank You
Christine Kosinski
Holly Lane
e-mail:britenshin@aol.com

Delicious ideas to please the pickiest eaters. Watch the video on AOL Living.

EXH 5

Subj: **RE: Steep Slope/Landslide Regulations**
Date: 2/20/2008 11:34:39 A.M. Pacific Standard Time
From: nkraushaar@ci.oregon-city.or.us
To: Britenshin@aol.com, anorris@ci.oregon-city.or.us, dmabee@ci.oregon-city.or.us, dwuest@ci.oregon-city.or.us, ttidwell@ci.oregon-city.or.us, dneeley@ci.oregon-city.or.us, lpatterson@ci.oregon-city.or.us, pwalter@ci.oregon-city.or.us, crobertson@ci.oregon-city.or.us, tkonkol@ci.oregon-city.or.us, ddrentlaw@ci.oregon-city.or.us, kat2kami@yahoo.com, rodmoxley@comcast.net, bigcozz@comcast.net, bobn2b@msn.com, gardengifts@juno.com, paintfx@juno.com, tgeil@comcast.net, steve@vanhaverbeke.org, pauloedgar@qwest.net, HOGANSBLUFF@aol.com, rlp@hevanet.com, sha-z@earthlink.net, johnwilliams38@gmail.com

Christine:

Below you will find a summary of what staff *will be proposing* to the City Commission for their adoption. What is finally adopted may look a little different, but I have no way of knowing that now. What the City Commission ultimately adopts is their decision.

The public should expect two stages of code changes that will govern Geologic Hazards (or Steep Slopes).

The first stage will be included in the packet of code language changes that Planning has been working on. The primary revision to our existing code for Geologic Hazards (OCMC 17.44) will be to redefine "geologic hazard areas" to include area within 200 feet of the crest or toe of a slope that is 25% or greater. This expands the areas for which an approved permit is required before development is authorized. The permit could be obtained after a developer has submitted geotechnical and geologic reports and comprehensive documentation pertaining to the proposed development and the site geology. Another significant change to the existing code will be that the reports and documentation for the development will be subject to peer review. The peer reviewer will be selected by the City and shall have expertise in regional and Oregon City geology, slope stability analysis, landslides, and engineering mitigation for hazardous sites.

The second stage will be a re-write of the Geologic Hazards code to implement the new risk-based maps that DOGAMI is developing. We will be using the City of Salem's code as the template for our code. I agree that Salem's code will provide a very good model for us to use. We will not be able to propose this code for adoption until the DOGAMI maps are complete and can be adopted by the City Commission.

Regarding the DOGAMI maps - I met with Bill Burns about two weeks ago and he showed me the work he has completed so far. We are preparing to provide an in-house review of the work he has completed. He will also have others reviewing his work (I believe others from DOGAMI and Scott Burns).

Let me know if you have additional questions regarding this information.

Thank you for your inquiry.

-Nancy

Nancy J.T. Kraushaar, PE
City Engineer/Public Works Director
City of Oregon City
320 Warner Milne Road, PO Box 3040
Oregon City, OR 97045

Phone: 503-496-1545
Fax: 503-657-7892
E-mail: nkraushaar@ci.oregon-city.or.us

NCIP

NATURAL CATASTROPHE INSURANCE PROGRAM

Coverage Underwritten by Certain Underwriters at Lloyd's, London B1180D150591

Earthquake, Landslide Application
Application No. NCIP435439

Building Information

Foundation Type:	Crawl Space
Dwelling Type:	Owner Occupied Primary Residence
Year Built:	1971
Roof Update:	1998
Construction Type:	Wood Frame
Dwelling Value Declared at 100% Replacement Cost:	$200,000.00
Total Square Footage:	1,410
Do you own this property?	Yes
Select the option that best describes the building:	Single-Family
Is this a split level home?	No

General Questions

Does the building have additions or extensions supported by posts, piers, or beams?	No
Is there existing cracking of wall or foundation?	No
Is there a garage attached to the building?	Yes
Is the sill plate permanently bolted to the foundation of the building?	No
What year was the roof last updated?	1998

Earthquake Questions

Have any buildings or personal property located on the premises been damaged from an incident of Earthquake Shock?	No

Landslide Questions

Is the building in a known landslide area or have there been any incidents of landslide within 1 mile of the property?	Yes
Have any buildings or personal property located on the premises been damaged from an incident of landslide, earth movement, or land subsidence?	No

EXH 6

POULTON ASSOCIATES, INC. | State License Number: 230392
3785 South 700 East, Second Floor, Salt Lake City, Utah 84106
Phone: 801-268-2600 Opt# 2 | Fax: 801-268-2674 | icservice@poulton.com

Surplus Lines Disclosure

The Insurance policy that you have purchased or are applying to purchase is being issued by Certain Underwriters at Lloyd's, London (Lloyd's). Lloyd's is a Nonadmitted Surplus Lines Alien Insurer. A Nonadmitted insurer is an insurance company is licensed and domiciled outside of the boarders of state where the subject of insurance is located.

The Nonadmitted Insurance title of the Dodd-Frank Wall Street Reform and Consumer Protection Act, identifies Nonadmitted insurers domiciled outside the U.S. as eligible and otherwise approved to conduct business in any state in the U.S. so long as they are shown on National Association of Insurance Commissioners (NAIC) Quarterly Listing of Alien Insurers. Dodd-Frank Act, Title V, Subtitle B (§§ 511 et seq.)

In accordance with state law we are obliged to inform you that:

This evidence of insurance was procured and developed under the Oregon Surplus Lines laws. It is NOT covered by the provisions of ORS734.510 to 734.710 relating to the Oregon Insurance Guaranty Association. If the insurer issuing this insurance becomes insolvent, the Oregon Insurance Guaranty Association has no obligation to pay claims under this evidence of insurance. (ORS § 735.435)

Confirmation and Signature

By signing below, I acknowledge:

This application is for underwriting purposes only. This application is subject to final underwriting approval. Coverage will not become effective until the application has been approved by underwriting and the full total annual cost has been received by Poulton Associates, Inc. Applications approved by underwriting are valid for 30 days. The inception date of coverage may not predate payment of premium.

We reserve the right to change the rate and any resulting premium at any time. Payment of premium does not automatically attach coverage. There are waiting periods, as described in the insurance contract that applies. Coverage is not in effect until confirmed by an authorized representative. The terms of this application do not in any way alter the terms of any policy delivered. Please closely examine this application and contact your insurance producer immediately to request any needed corrections. If payment is tendered and is subsequently dishonored by the issuing financial institution, coverage will terminate on the date of inception.

To the best of my knowledge, the above questions are answered truthfully. I understand that any contract issued will be in full reliance upon statements and representations made in this application. This application will be made a part of the policy. False or misleading answers to questions could result in the policy being null and void.

Signature of Applicant	Date	Signature of Producer	Date

POULTON ASSOCIATES, INC. | State License Number: 230392
3785 South 700 East, Second Floor, Salt Lake City, Utah 84106
Phone: 801-268-2600 Opt# 2 | Fax: 801-268-2674 | icservice@poulton.com

b. Residential structures with basements that satisfy FEMA's standard published in the Code of Federal Regulations [44 CFR 60.6 (b) or (c)].

2. Limit of Liability. We will pay up to $30,000 under this coverage Increased Cost of Compliance, which only applies to policies with **building** coverage as designated on the coverage declaration. Our payment of claims is in addition to the amount of coverage shown on the coverage declarations page under **building**. But the maximum you can collect under this Policy for both **building** and Increased Cost of Compliance coverage cannot exceed the limit of liability shown for **building** coverage. A separate deductible does not apply

3. Nothing contained in this Clause shall override any Seepage and/or Pollution and/or Contamination Exclusion or any Radioactive Contamination Exclusion or any other Exclusion applicable to this Policy.

4. Any provision within this Policy (or within any Endorsement which forms part of this Policy) which insures Debris Removal is cancelled and replaced by the above.

II. Definitions

A. ACT:

1. Refers to the The National Flood Insurance Act of 1968, as amended, and The Flood Disaster Protection Act of 1973, as amended,42 U.S.C. 4001 et. seq. in effect as of the effective date of this Policy as evidenced on the Coverage Declarations.

B. Building(s) means:

1. The Dwelling where you principally reside, or your secondary residence and

2. Appurtenant Structures, being other permanent **buildings** or structures, with walls and a roof, on the **premises**.

C. Catastrophic ground collapse means geological activity that result in an abrupt collapse of ground cover causing a depression in the ground cover clearly visible to the naked eye that causes structural damage to the **building**, including the foundation.

D. Earthquake shock means physical damage caused by earth movement including landslide, mudflow, earth sinking or earth rising or shifting, only as a direct and immediate result of **earthquake shock**, but shall not include any consequential loss or damage from any other ensuing peril.

Each loss by **earthquake shock** shall constitute a single loss hereunder, provided, if more than one **earthquake shock** shall occur within any period of 72 hours commencing during the term of this Policy, such **earthquake shocks** shall be deemed to be a single earthquake within the meaning hereof. Underwriters shall not be liable for any loss caused by any **earthquake shock** occurring before the effective date and time of this Policy, nor for any loss occurring after the expiration date and time of this Policy. The insured may select the time from which any such period shall commence but no two selected periods may overlap.

E. Flood means physical damage caused by a general and temporary condition of partial or complete inundation of normally dry land areas from surface water, waves, tidal water, overflow of a body of water, mudflow or spray from any of these whether or not driven by wind arising during any one period of 72 consecutive hours during the period of this Policy. Underwriters shall not be liable for any loss caused by any **flood** occurring before the effective date and time of this Policy, nor for any loss occurring after the expiration date and time of this Policy. The insured may select the time from which any such period shall commence but no two selected periods may overlap.

F. Landslide except landslide as covered by **earthquake shock** definition above, means physical damage caused by the sudden movement of earth and/or rock ("land"), including sliding of land, mudflow except mudflow as covered by the **earthquake shock** and **flood** definitions above, land sinking, rising or shifting but excluding normal settling, gradual subsidence, gradual slippage and processes of erosion that take place over time.

G. Personal property means:

1. **Personal property** usual to the occupancy of the Dwelling and owned or used by you or permanent members of your household while such **personal property** is on the **premises**. We will also cover personal effects owned by a guest or servant while such personal effects are on the **premises**.

2. Materials, and supplies for use in the construction, structural alteration, alteration, maintenance or repair of the **premises** while such materials, and supplies are at the **premises**.

3. Foodstuffs, bedding, tack and other equipment while at the **premises**, which is used for the maintenance and care of pets and livestock, provided such pets or livestock are not kept for commercial or business purposes.

H.Premises means the real property at the address shown on the Coverage Declarations.

I. **Sinkhole** collapse means the settlement or systematic weakening of the land supporting the **building(s)**, when such settlement or systematic weakening results from movement or ravelling of soils, sediments, or rock materials into subterranean voids created by the effect of water on a limestone or similar rock formation.

III. Losses Excluded

A. This Policy does not insure against:

1. Loss or damage arising directly or indirectly out of nuclear reaction, nuclear radiation or radioactive contamination, however such nuclear reaction, nuclear radiation or radioactive contamination may have been caused.
2. Loss or damage arising directly or indirectly out of war, invasion, acts of foreign enemies, hostilities (whether war be declared or not) civil war, rebellion, revolution, insurrection, military or usurped power or martial law or confiscation or nationalization or requisition or destruction of or damage to property by or under the order of any government or public or local authority.
3. Loss, damage or increased cost arising directly or indirectly out of enforcement of any ordinance or law regulating the use, reconstruction, repair or demolition of any **building(s)** insured hereunder, nor any loss, damage, cost, expense, fine or penalty which is incurred, or sustained by or imposed on you at the order of any governmental agency, court or other authority arising from any cause whatsoever.
4. Loss or damage arising out of acts or decisions, including the failure to act or decide, of any person, group, organization or governmental body relating to faulty, inadequate or defective:
   a. Planning, zoning, development, surveying, siting;
   b. Design, specifications, workmanship, repair, construction, renovation, remodelling, grading, compaction;
   c. Materials used in repair, construction, renovation or remodelling; or
   d. Maintenance of all or part of any property on or off the **premises**.
5. Loss or damage arising out of normal settling, shrinking or expansion of land, **buildings**, structures or foundations; or erosion, gradual subsidence or the processes of erosion that take place over time, or any other gradually occurring loss or damage whether caused by **earthquake shock**, **flood** or **landslide** or not, or any loss or damage which commenced prior to the inception of this Policy.
6. Loss or damage arising out of fire regardless of any other event which contributes concurrently or in any sequence to the loss or damage.
7. Loss or damage arising out of exposure to weather conditions where any **personal property** is left in the open or not contained in **buildings** which are on permanent foundations and capable of secure storage.
8. Mysterious disappearance or inventory shortage, theft, fraud, or any kind of wrongful conversion or abstraction.
9. The costs for reconstruction of electronic data or other data.
10. Loss or damage arising out of cessation, fluctuation or variation in, or insufficiency of, water, gas or electricity supplies, or other public utility service supplying the **premises**.
11. Reduction in rental value, reduction in market value or the saleability of property insured by this Policy, or any costs or expenses related thereto.

B. Notwithstanding any provision in this Policy to the contrary (or within any Endorsement which forms part of this Policy), this Policy does not insure:

1. Any loss, damage, costs or expense, or
2. Any increase in insured loss, damage, cost or expense, or
3. Any loss, damage, cost, expense, fine or penalty, which is incurred, sustained or imposed by order, direction, instruction or request of, or by any agreement with, any court, government agency or any public, civil or military authority, or threat thereof, (and whether or not as a result of public or private litigation) which arises from "any kind of seepage or any kind or pollution and/or contamination," or threat thereof, whether or not caused by or resulting from a peril insured, or from

This exclusion applies regardless whether there is (i) any physical loss or damage to insured property; (ii) any insured peril or cause, whether or not contributing concurrently or in any sequence; (iii) any loss of use, occupancy, or functionality; or (iv) any action required, including but not limited to repair, replacement, removal, clean-up, abatement, disposal, relocation, or steps taken to address medical or legal concerns.

This exclusion replaces and supersedes any provision in the Policy that provides insurance, in whole or in part, for these matters.

I. This Policy does not cover any costs and expenses, whether preventative, remedial or otherwise, arising out of or relating to change, alteration or modification of any computer system, hardware, program or software and/or any microchip, integrated circuit or similar device in computer equipment or non-computer equipment, whether the property of the insured or not.

J. Notwithstanding any provision to the contrary within this insurance or any endorsement thereto it is agreed that this insurance excludes loss, damage, cost or expense of whatsoever nature directly or indirectly caused by, resulting from or in connection with any act of terrorism regardless of any other cause or event contributing concurrently or in any other sequence to the loss.

For the purpose of this Policy an act of terrorism means an act, including but not limited to the use of force or violence and/or the threat thereof, of any person or group(s) of persons, whether acting alone or on behalf of or in connection with any organization(s) or government(s), committed for political, religious, ideological or similar purposes including the intention to influence any government and/or to put the public, or any section of the public, in fear.

This also excludes loss, damage, cost or expense of whatsoever nature directly or indirectly caused by, resulting from or in connection with any action taken in controlling, preventing, suppressing or in any way relating to any act of terrorism.

If the underwriters allege that by reason of this exclusion, any loss, damage, cost or expense is not covered by this insurance the burden of proving the contrary shall be upon the insured.

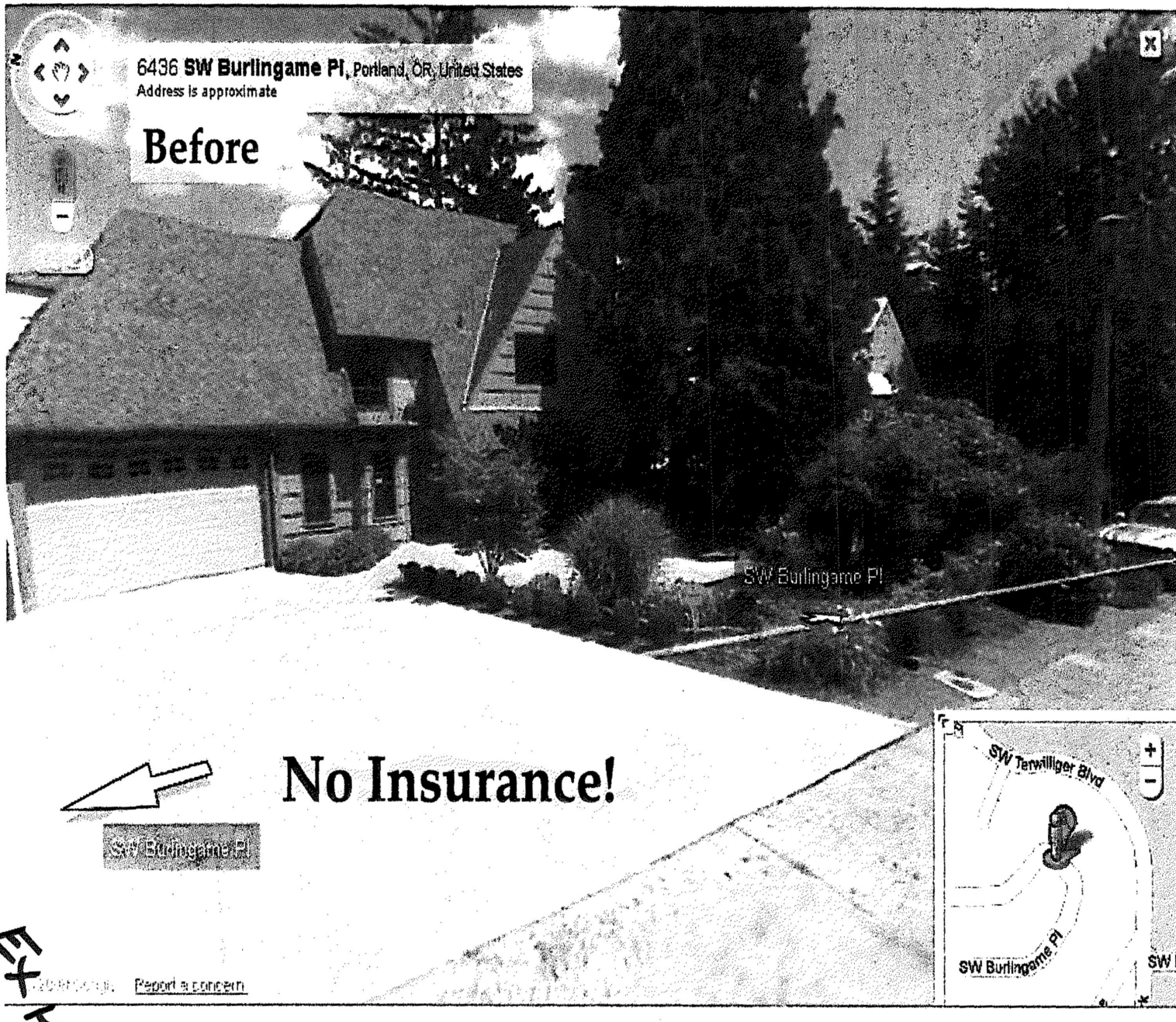
In the event any portion of this endorsement is found to be invalid or unenforceable, the remainder shall remain in full force and effect.

IV. Property Excluded

A. This Policy does not cover:

1. Land, land values, soil, water, air, or any interest or right therein.
2. **Building(s)** and other structures used in whole or in part for any commercial, farming or manufacturing purposes, other than residences on the **premises** held for rental.
3. Mobile homes; but this exclusion does not apply to modular or manufactured housing permanently attached to foundations.
4. Paved areas, including but not limited to parking lots, terraces, driveways, walkways, sidewalks, pavements, paths, curbing and swimming pools.
5. Bridges, steps and stairs; wharves, piers and jetties, unless physically attached to any **building(s)**.
6. Retaining walls whether or not necessary for the continuing stability of any part of the **premises**, and whether or not attached to any **building(s)**.
7. Fences; embankments and earthen structures, tanks, wells, ponds, dams, and dikes.
8. Trees, shrubs, lawns, plants, landscaping costs, animals, birds or fish.
9. Any aircraft or other aerial device, watercraft and their trailers, motorized and non-motorized vehicles other than motorized equipment used to maintain the **premises**.
10. Accounts, bills, currency, money, medals, notes, credit cards, securities, deeds, bullion, books of account, evidences of debt or title, manuscripts, passports, tickets, stamps and valuable papers.
11. Jewellery, watches, precious stones, precious metals, silverware, silver-plated ware, gold-ware, gold-plated ware, and pewter ware, fine art, objects d'art, firearms, sculpture and statuary, furs and garments trimmed with fur.
12. Loss or damage to the basement and/or real property and **personal property** suffering loss or damage within the basement where the basement has not been declared within the Policy Application for this insurance.

SPECIMEN


6436 SW Burlingame Pl, Portland, OR, United States
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Report a concern

Ex 7


After
October 8, 2008

http://www.gazettetimes.com/news/local/insurance-won-t-pay-for-landslide-damage/article_10c17900-5216-11e1-80fe-0019bb2963f4.html

Insurance won't pay for landslide damage

By Bennett Hall, Corvallis Gazette-Times Feb 8, 2012

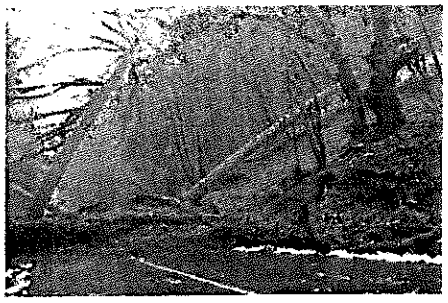
A house on Vineyard Mountain shifted down the hillside Thursday morning. (Jesse Skoubo | Corvallis Gazette-Times)

Like most homeowners, Bob and Gayna Flake had no coverage slide that wrecked their house

The owners of a Corvallis-area house knocked off its

EXH 8

Neighbors question drainage



Rains send earth moving

foundations by a landslide last month have plenty of insura but that doesn't mean they're covered.

"We have the same exclusion as everybody else," Bob Flake "At this point it looks like it's just a total loss."

Flake and his wife, Gayna, were awakened in the predawn hours of Jan. 19 by a call from their security company inforr them that a sliding glass door was broken. A quick inspectic revealed cracks in the walls, and soon the house at 5994 N.\ Rosewood Drive was breaking apart.

The couple got out before the structure failed completely, b now it's uninhabitable. The Flakes are staying at their daugh house and wondering what they're going to do next.

"We have $2 million worth of insurance, and it's not doing u any good," Bob Flake said. "And we've still got to pay the mortgage."

At first the Flakes, like many people, assumed their homeowners insurance would help them rebuild. As it turn out, however, landslides aren't covered by standard policies

"Homeowners insurance covers a whole lot of stuff, but ear movement isn't in there," said Ron Fredrickson, who manag the consumer advocacy team for the Oregon Insurance Division. "It's specifically excluded, as are earthquake and flood."

And while it's possible to buy additional coverage to protect against loss from flooding or earthquakes, landslide insurar is almost unheard of. It can be purchased only from highly specialized carriers called surplus lines companies, and it's liable to come with a hefty premium.

"I've yet to come across anybody who has it," Fredrickson sa

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The reason landslide coverage is so hard to come by — and pricey — is simple, Fredrickson said. Relatively few homeowners are ever likely to need it, but when they do, th damage is apt to be catastrophic — meaning the individual claims could be quite high.

Not the kind of odds that appeal to underwriters.

"The chance of loss is very great for a small number of peop he said.

For the Flakes, the loss has been devastating, and they've retained an attorney to explore the possibility of a lawsuit tc recover some of their investment. The couple believe Bento County should shoulder at least some of the blame for a drainage system that routed runoff from the January storm directly onto their property.

County officials say the drainage system was designed by a private developer and was built years before the county assumed responsibility for the road that runs through the

REPLINGER & ASSOCIATES LLC
TRANSPORTATION ENGINEERING

February 5, 2018

Mr. Pete Walter
City of Oregon City
PO Box 3040
Oregon City, OR 97045

SUBJECT: REVIEW OF TRAFFIC IMPACT STUDY – PARK PLACE ANNEXATION AND REZONING – AN17-04 & ZC17-05

Dear Mr. Walter:

In response to your request, I have reviewed the materials submitted in support of the proposed Park Place annexation to the city and rezoning. The relevant materials consisted of the Traffic Impact Study (TIS), dated August 2, 2017. It was prepared under the direction of Michael T. Ard, PE of Lancaster Engineering.

The proposed annexation and rezoning is for 92 acres located to the north and west of S Livesay Road and south of Holcomb Boulevard. Upon annexation, 87.5 acres of the property will be rezoned to R-5 zoning and 4.5 acres of the property will be rezoned to Neighborhood Commercial, in conformance with the city's Comprehensive Plan. The development scenario evaluated in this TIS was for 533 single-family dwellings and 49,000 of community commercial space.

The TIS provides a comparison of the future traffic operations for key intersections both with and without the proposed rezoning as a basis for assessing compliance with the Transportation Planning Rule. Current county zoning is calculated to allow 11 single-family dwellings.

The TIS provides a basis upon which the annexation and rezoning proposal can be evaluated.

Comments

1. ***Study Area.*** The study addresses the appropriate intersections. The engineer evaluated traffic patterns and traffic volumes and evaluated sixteen locations. The key intersections were:

    1. Interstate 205 (I-205) southbound ramps at McLoughlin Boulevard (OR-99E);
    2. I-205 northbound ramps at OR-99E;
    3. 15th Street at OR-99E;
    4. 14th Street at OR-99E;

5. Abernethy Road/S Holcomb Boulevard at Redland Road;
6. Abernethy Road at Washington Street;
7. 15th Street at Washington Street;
8. 14th Street at Washington Street;
9. 14th Street at Main Street;
10. I-205 southbound ramps at Trails End Highway (OR-213);
11. I-205 northbound ramps at OR-213;
12. Prairie Schooner Way/Clackamas River Drive at OR-213;
13. Redland Road at OR-213;
14. Beavercreek Road at OR-213;
15. Holly Lane at S Holcomb Boulevard (future intersection); and
16. Holly Lane at S Redland Road.

These intersections were identified for the study in consultation with city staff and the Oregon Department of Transportation (ODOT). The study area is appropriate.

2. ***Traffic Counts.*** Most of the traffic counts were conducted in January 2017 and May 2017. Some intersections were counted during 2015 and 2016 but were adjusted to 2017 conditions based on the difference observed at nearby intersections to account for regional growth during the intervening period. The adjustments appear adequate to account for base year 2017 conditions at the intersections in #1, above. Traffic counts were conducted during the AM and PM peak periods. The base year traffic volumes appear reasonable.

3. ***Trip Generation.*** The TIS presents information on trip generation under both current and proposed zoning. Under current county zoning, the engineer calculated 8 AM peak hour trips; 11 PM peak hour trips; and 104 total weekday trips. Under the proposed zoning, the engineer calculated trips from the construction of 533 new single-family dwellings and 49,000 square feet of neighborhood commercial establishments. The trip generation rates were taken from the Institute of Transportation Engineers' *Trip Generation Manual – 9th Edition.* The engineer calculated the neighborhood commercial development using the trip generation rate for shopping centers using ITE land use code 820. He accounted for internal trips (those that remain within the zone, and pass-by trips for the neighborhood commercial area. The engineer calculated the combination of residences and neighborhood commercial would produce 393 AM peak hour trips; 542 PM peak hour trips; and 5,712 total weekday trips that need to be accounted for on the major street network.

   The Oregon Department of Transportation has raised concerns that the amount and type of development analyzed for the neighborhood commercial area does not represent the reasonable worst case development scenario. Further analysis of a more intense development scenario for the 4.5 acres of neighborhood commercial land will be necessary to fully assess compliance with the Transportation Planning Rule.

4. ***Trip Distribution.*** The engineer's trip distribution shows traffic using a variety of routes and distribution to major regional facilities as follows:

    - Approximately 25 percent of site trips will travel to/from the northeast along I-205;
    - Approximately 15 percent of site trips will travel to/from the southwest along I-205;
    - Approximately 13 percent of site trips will travel to/from the southwest along Washington Street;
    - Approximately 9 percent of site trips will travel to/from the east along S Holcomb Boulevard;
    - Approximately 9 percent of site trips will travel to/from the east along S Redland Road;
    - Approximately 8 percent of site trips will travel to/from the north along OR-99E;
    - Approximately 4 percent of site trips will travel to/from the south along S Holly Lane;
    - Approximately 3 percent of site trips will travel to/from the southwest along Main Street;
    - Approximately 3 percent of site trips will travel to/from the southwest along S Anchor Way;
    - Approximately 2 percent of site trips will travel to/from the south along OR-213;
    - Approximately 1.5 percent of site trips will travel to/from the west along Beavercreek Road;
    - Approximately 1 percent of site trips will travel to/from the southwest along OR-99E;
    - Approximately 0.5 percent of site trips will travel to/from the east along Beavercreek Road; and
    - Approximately 6 percent of site trips will travel to/from locales within the immediate vicinity, including surrounding residential areas, Holcomb Elementary School, and other land-uses such as Steve's Marketplace and the Quick Stop Market.

    For traffic to and from the subject area, Redland Road is calculated to be the most heavily utilized route with a lesser amount of traffic using Holcomb Boulevard.

    The trip distribution seems reasonable.

5. ***Traffic Growth.*** The engineer calculated 2035 traffic volumes using several factors. The predicted increase in total peak hour trips specified in the Transportation System

Plan (TSP) were used to develop an annual traffic volume increase applicable to local streets. ODOT's Future Volume Tables were used to calculate increases in traffic on Highway 213 and Highway 99E. This methodology is likely to produce somewhat different future year volumes than those developed from a regional transportation model, as used in the TSP, for example, but the methodology does allow a good assessment of the impact of the proposed zone change with assumed development of the subject property.

The engineer also accounted for the effect of the North Holly Lane Extension between Holcomb Boulevard and Redland Road, project D48 in the TSP. This new facility is predicted to cause some adjustment to existing traffic patterns by allowing traffic from Holcomb Boulevard to go south to Redland Road and beyond.

It is worth noting that transportation analysis zone (TAZ) 726, which includes the subject property, is predicted in the TSP to experience an increase of 397 dwelling units prior to 2035. The development of the subject property as assumed in the TIS is somewhat more intense than assumed in the TSP.

6. ***Analysis.*** Traffic volumes were calculated for the intersections described in #1, above. At each location, the level of service (LOS), delay calculations, and the volume-to-capacity ratio (v/c) were provided to assess operations relative to the ODOT and city's operational standards. The analysis was undertaken for the AM and PM peak hours and included year 2017 existing conditions, 2035 background conditions, and year 2035 traffic conditions with the proposed zone change.

   According to the analysis, six intersections are predicted to fail to meet the applicable performance standards by 2035, the TSP planning horizon year. At some intersections, the predicted failure is attributable to growth in background traffic with minimal effect from the proposed rezoning. In other cases, some degradation in performance is significant and is attributable to the rezoning. Each of these is discussed below.

   At the I-205/99E interchange, both the northbound and southbound ramp terminals are predicted to fail to meet ODOT performance standards by 2035 with or without the proposed rezoning and development. This prediction is consistent with the TSP, which included projects to improve the southbound ramp terminal (TSP Project D75) and the northbound ramp terminal (TSP Project D76). The TIS predicts that the v/c at the southbound ramp terminal would be 1.21 during the AM peak hour and 1.13 during the PM peak hour with or without the annexation and rezoning. The TIS predicts that the v/c at the northbound ramp terminal would be 1.33 during the AM peak hour and 1.17 during the PM peak hour with or without the annexation and rezoning. With dual turn lanes and ramp widening, both ramp terminals are predicted to operate within adopted performance standards.

In its current configuration, the intersection of Highway 213/Redland Road is also predicted to fail to meet intersection performance standards during the PM peak hour in 2035 with or without the proposed rezoning. The predicted performance is worse with the rezoning. The calculated v/c during the PM peak hour is 1.19 under background conditions and 1.23 with the annexation. The TSP proposed a solution for the predicted failure to achieve operational standards at the intersection of Highway 213/Redland Road. The principal capacity-increasing feature of this project was increasing the number of through lanes on Highway 213 in both the northbound and southbound directions. The engineer calculated that the PM peak hour v/c would decrease to 0.94, easily meeting the adopted performance standard. The Highway 213/Redland Road project, identified in the TSP as project D79, was listed among the "not likely to be funded" category. It is, however, listed in the financially-constrained project list in the Regional Transportation Plan.

According to the analysis, the impact of the zone change and development of the subject property has virtually no effect on the intersection of Highway 213/Beavercreek Road. The predicted increase in traffic volumes from potential development of the 92 acres is only 15 trips during the AM peak hour and 21 trips during the PM peak hour. These volume changes are insignificant in comparison to the current volumes – over 4500 during the AM peak hour and over 6000 during the PM peak hour. The calculated v/c for the 2035 background condition and the 2035 total traffic condition with the annexation and development is the same using the standard level of precision of calculating the v/c to two decimal points, which is the customary approach. The city's *Guidelines for Transportation Impact Analyses* specify a threshold value of 20 peak hour trips to trigger analysis of an intersection. Since this value is exceeded during the PM peak hour, it is appropriate for the applicant to share in the cost of a project to improve the intersection's performance. A project to improve the operation of this intersection was identified in the 2017 Highway 213 Corridor Alternative Mobility Targets study. The project cost was estimated to be $1.5 million. Inclusion of this project in the TSP is anticipated with an amendment planned for 2018.

The intersection of Highway 99E/14th Street is also predicted to operate below adopted performance standards in 2035. Under both 2035 background conditions and 2035 with the annexation, the intersection is predicted to operate at a v/c of 1.14 during the AM peak hour. The long delays and lengthy queues impact adjacent intersections including Main Street/14th Street. Washington Street/14th Street is also predicted to fail to meet operational standard and is calculated to operate at 1.06 and 1.17 under 2035 background conditions during the AM and PM peak hours respectively. With the increased traffic associated with the annexation, the performance is expected to degrade to v/c of 1.12 and 1.26 for the AM and PM peak hours respectively. To address the operational problems at these intersections, the TSP identified Projects D7, D8, and D13. These involve reconfiguration of several streets including 14th Street and 15th Street and signal modifications.

In addition to the six intersections identified above that are predicted to fail to meet operational standards, the intersection of Abernethy/Holcomb/Redland Road was predicted to operate at a v/c of 1.08 during the PM peak hour. Since this intersection is within the regional center, the applicable v/c standard is 1.10, but motorists using intersections operating at a v/c greater than 1.0 will experience poor performance. In the TIS, the engineer explored mitigation concepts that could be used to improve the performance of the Redland Road/Holcomb Boulevard/Abernethy Road intersection. He concludes that adding an eastbound right turn lane to the Abernethy Road approach would improve the intersection's performance to a v/c of 0.93 during the PM peak hour. This offers a feasible, potential solution that would allow the intersection operate better than it would in its current configuration. Additional analysis of this concept could lead to inclusion of a project at this location in the TSP.

The engineer also analyzed two other intersections that are important: Redland Road/Holly Lane and Holcomb Boulevard/Holly Lane. The former is currently a three-leg, T-intersection; the second does not exist. Both are identified in the TSP for future roundabouts. The Redland/Holly intersection is identified as TSP Project D36; the Holcomb/Holly intersection is TSP Project D43. The engineer calculated that the Holcomb/Holly intersection would operate acceptably as a stop-controlled intersection or as a roundabout. He calculated that the Redland/Holly intersection would meet warrants for left-turn lanes on both Redland approaches and it would meet warrants for installation of a traffic signal by 2035. He also calculated that it would operate acceptably either as a signal-controlled intersection or as a roundabout as specified in the TSP.

The engineer's operational analysis and explanation of potential mitigation measures appears appropriate.

7. ***Crash Information.*** The TIS provides crash information for the five-year period from 2011 through 2015. Two intersections experienced a crash rate in excess of 1.0 crashes per million entering vehicles. These two intersections are discussed below.

   The crash history at the intersection of Highway 213/Beavercreek Road puts it in the top ten percent of high crash locations in the state. The engineer summarizes the crash history. Rear-end crashes are the most common type. The engineer recommended installation of a queue warning system and notes that the TSP includes a project (D14) that would involve a queue warning system. This project is in the likely to be funded category. The very few numbers of vehicles added to the intersection from the subject annexation and development have no measurable effect on the need for implementation of this project or any other safety mitigation measures at the Highway 213/Beavercreek Road intersection.

The intersection of Main Street and 14th Street experienced a crash rate of just under 1.5 reported crashes per million entering vehicles. The high crash rate at this intersection has been previously documented. Many of the crashes at this intersection are susceptible to correction by conversion to all-way stop-control. As noted above, TSP projects D7 and D8 would involve modification of this intersection.

The engineer supports the implementation of the queue warning system at Beavercreek/213 (TSP Project D14) and conversion of Main Street/14th Street (TSP Project D7). There is no reason to expect that the proposed annexation would have a disproportionate effect on the safety of the transportation system.

8. ***Transportation Planning Rule Analysis.*** Because the proposed annexation also involves rezoning of the property to R-10, a TPR analysis is also included. The analysis is predicated on the development of the land at a density that would allow 533 single-family dwellings and 4.5 acres of neighborhood commercial establishments. The engineer states that the proposal does not change the functional classification of any existing or planned transportation facility and does not alter the standards for implementing the functional classification system.

   As discussed in #6, above, the annexation and development of the subject property is predicted to degrade the performance at key intersections such that these intersections would not meet applicable performance standards. The applicant's participation in the funding of projects identified in the TSP or from other analyses area proposed to mitigate for these impacts.

   A new analysis of a more intense development scenario will be needed to adjust the applicant's share for funding of projects. A more intense development scenario can be expected to slightly increase the applicant's share of projects needed to serve the development.

9. ***Conclusions and Recommendations.*** As stated in the TIS, several intersections are predicted to fail to meet applicable performance standards. The engineer recognizes that conditions may be necessary to limit development to that allowed under current zoning or development agreements provide for mitigation in proportion to the development's impacts.

Conclusions Recommendations

I find that the TIS provides an adequate basis upon which to assess the impacts of the proposed annexation and rezoning. I agree that the proposal does not cause the need for change in the functional classification of any existing or planned facility. I concur with the engineer's analysis concluding that key intersections will fail to meet adopted performance standards at the following intersections:

- I-205/99E Northbound Ramp Terminal
- I-205/99E Southbound Ramp Terminal
- Highway 213/Redland Road
- Highway 99E/14th Street
- 14th Street/Washington Street
- Beavercreek/Highway 213

Two intersections critical to the development of the subject property will need to be created or significantly modified to serve their role in the city's transportation network: Holcomb Boulevard/Holly Lane and Redland Road/Holly Lane.

In addition, poor operating performance is predicted at the intersection of Redland Road/Holcomb Boulevard/Abernethy Road. The engineer's analysis indicates that the addition of an eastbound right-turn lane would significantly improve the performance of the intersection.

Recommendations

To verify the engineer's conclusion that the proposed action is in compliance with the TPR, the applicant needs to revise and update the TIS using a more intense development scenario that in ODOT's judgment represents a reasonable worst case development scenario for the 4.5 acres of neighborhood commercial land.

With regard to the proposed annexation and zone change, I recommend that as a condition of approval the following be included:

> At such time as a detailed development plan is prepared or in connection with development of a master plan, the applicant will need to submit additional materials to address specific requirements outlined in the city's *Guidelines for Transportation Impact Analyses*. These include, but are not limited to requirements associated with intersection spacing and sight distance. The applicant will also need to address trip generation associated with the specific uses proposed in such developments, especially as it relates to the 4.5-acre community commercial property, which for this TIS was evaluated using the generic "shopping center" category.

With regard to the mitigation for off-site transportation impacts of proposed development, I recommend the following conditions of approval:

> At the time that a General Development Plan or Detailed Development Plan for the subject property is approved the following conditions shall apply:

The developer shall participate in the funding of improvements for the I-205/OR-99E ramp terminal projects (TSP Projects D75 and D76) in proportion to the development's traffic volumes as a percentage of total year 2035 intersection volumes from the TSP. The project cost for D75 is $3,000,000. Based on this methodology and the preliminary PM peak hour trip generation from the proposed development, the development accounts for 0.76 percent of the 2035 volume and the development's share of the project is $22,800. The project cost of D76 is $3,000,000. The development accounts for 0.70 percent of the 2035 volume and the development's share is $21,000.

The developer shall participate in the funding of improvements for the Main Street/14th Street improvements (TSP Projects D7 and D8) in proportion to the development's traffic volume as a percentage of the predicted 2035 traffic volume at the intersection calculated in the TSP. The higher cost option in the TSP is listed at $670,000. Based on this methodology and the preliminary PM peak hour trip generation from the proposed development, the development accounts for 2.98 percent of the 2035 volume and the development's share of the project is $19,966.

The developer shall participate in the funding of improvements for the Abernethy/Holcomb/Redland intersection in proportion to the development's traffic volume as a percentage of the predicted 2035 traffic volume. No project is currently identified in the TSP. The project concept is to provide an additional lane on the eastbound approach; it may involve restriping or widening and signal modifications. No project cost is available at this time. Based on this methodology and the preliminary PM peak hour trip generation from the proposed development, the development accounts for 13.34 percent of the 2035 volume.

The developer shall participate in the funding of improvements for the intersection of OR213/Redland Road (TSP Project D79) in proportion to the development's traffic volume as a percentage of the predicted 2035 traffic volume at the intersection calculated in the TSP. The TSP project cost is listed at $10,060,000. Based on this methodology and the preliminary PM peak hour trip generation from the proposed development, the development accounts for 3.58 percent of the 2035 volume and the development's share of the project is $360,148.

The developer shall participate in the funding of improvements for the Holly Lane/Holcomb Boulevard intersection (TSP Project D43) in proportion to the development's traffic volume as a percentage of the predicted 2035 traffic volume. Project D43 is a roundabout with an estimated project cost in the TSP of $505,000. Based on this methodology and the preliminary PM peak hour trip generation from the proposed development, the development accounts for 22.67 percent of the 2035 volume and the development's share of the project is $114,484.

The developer shall participate in the funding of improvements for the Holly Lane/Redland Road intersection (TSP Project D36) in proportion to the development's traffic volume as a percentage of the predicted 2035 traffic volume. Project D36 is a roundabout with an estimated project cost in the TSP of $515,000. Based on this methodology and the preliminary PM peak hour trip generation from the proposed development, the development accounts for 21.33 percent of the 2035 volume and the development's share of the project is $109,850.

The developer shall participate in the funding of improvements for the Highway 213/Beavercreek Road intersection in proportion to the development's traffic volume as a percentage of the predicted 2035 traffic volume. A project to add a right-turn lane on westbound Beavercreek Road and a merge lane on northbound Highway 213 was identified in the July 2017 Highway 213 Corridor Alternative Mobility Study. The project's cost was estimated at $1.5 million. Inclusion of this project in the TSP is anticipated by an amendment planned during 2018. Based on this methodology and the preliminary PM peak hour trip generation from the proposed development, the development accounts for 0.30 percent of the 2035 volume and the development's share of the project is $4,500.

The applicant's preliminary proportionate share for project listed above as conditions of approval are based on the assumption that the 4.5 acre commercial development is developed as a shopping center. A more intense development is likely to increase the applicant's share of projects as calculated above.

The applicant's final share of project costs may be modified as necessary when a Master Plan is approved to reflect any a modification of the development's trip generation or a change in project costs resulting from revisions to project costs associated with an updates to the City's Transportation System Plan or Capital Improvement Program.

If you have any questions or need any further information concerning this review, please contact me at replinger-associates@comcast.net.

Sincerely,

John Replinger, PE
Principal

Oregon City\2017\AN17-04v3

AN 16-05 Fiscal impact to provide public services, over typical project cost

Note: The easterly off-site sewer mains shown on the map below (12" & 21") are NOT needed to serve the annexation area. Those costs would be borne by the future annexation of property south of Livesay Road.

SANITARY SEWER:

Oregon City Sanitary Master Plan 2014 and Park Place Concept Plan

Green = mains to be constructed per master plan
Yellow = AN 16-05
Red dotted line = approximate total boundary of basin to lower convergence point on Redland Road

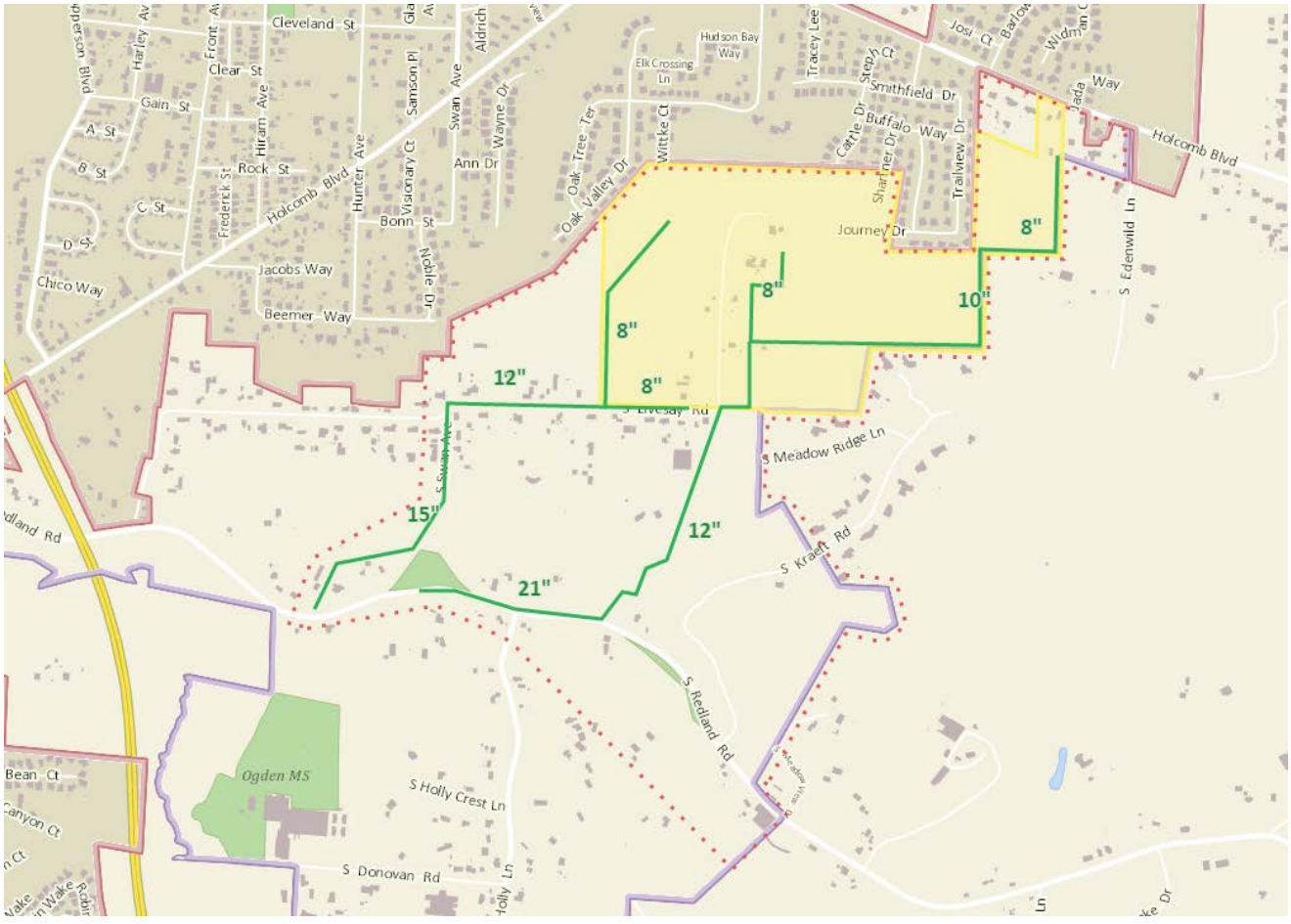
1. Within Site Boundary: In yellow area, AN 16-05 derives 100% of benefit from sanitary mains lying within boundaries. These mains are the minimum size needed to serve the development, and should not be included in the fiscal impact figure.

2. Offsite Improvements: Outside yellow area, within red dotted line, AN 16-05 derives a portion of the benefit from sanitary mains lying between site boundary and total basin boundary, or 91 acres/265 acres = 34%
   _3,000_ LF x $225 /LF x 34% = $ 229,500

3. Offsite easement or right-of-way: _30,000_ SF x $_2.50_/SF land acquisition cost = $_75,000_

4. No SDC Credits anticipated at this time.

5. **Approximate fiscal impact of providing public sanitary service, over typical project cost = $**_304,500__



WATER:
Oregon City Water Master Plan 2012 and Park Place Concept Plan

Red dashed area = approximate limits of AN 16-05

- Proposed annexation area appears to be located within the Park Place Intermediate pressure zone, Park Place Upper pressure zone, and Park Place Livesay Road pressure zone.
  - Upper Zone is served by Clackamas River Water (CRW) through HOPP Agreement.
  - Intermediate zone is served by Oregon City.
  - Livesay Road Zone is a sub-zone that will be rezoned with the development of the annexation area.
- Water Infrastructure required:
  - 12”-inch waterline required through annexation area providing transmission/distribution main from Holcomb Boulevard to Livesay Road.
  - One pressure reducing valve station between Park Place Intermediate zone and Park Place Lower zone.
  - Removal of one water pump station at Livesay Road when Livesay Road zone is rezoned to Intermediate zone.

Within limits of annexation Site Boundary: AN 16-05 needs 100% of 12” water main from Holcomb Boulevard to Livesay Road, one pressure reducing valve station, and removal of one water pump station.

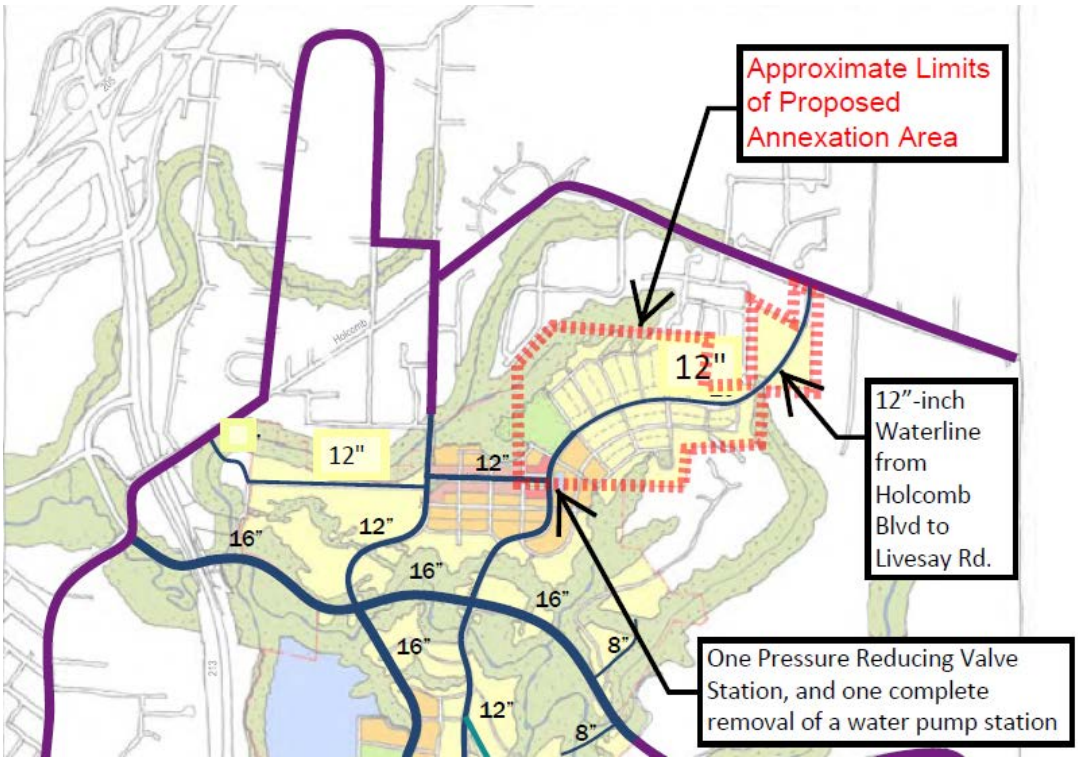
1. (4,000 LF of 12-inch waterline and all appurtenances) x $_170_/LF x 100% = $__680,000____

2. (one pressure reducing valve station) x $20,000_ Lump Sum x 100% = $20,000___

3. (one complete removal of water pump station) x $15,000 Lump Sum x 100% = $15,000____

4. No SDC Credits anticipated at this time.

5. **Approximate fiscal impact of providing public water service, over typical project cost = $715,000**



Tri City Service District Annexation Packet

Contact: Rob Hungerford
Technical Services Specialist
Water Environment Services
150 Beavercreek Road
Oregon City, OR 97045

Ph# 503-742-4576
Dept. Ph# 503-742-4567

Revised June 2017

ANNEXATION FEES

The elections office will require two checks with boundary change applications: one to Clackamas County for the application fee, and the second to Metro for the "mapping fee". The former will be deposited by the County, and the latter sent along to Metro's Boundary Commission's agent with the application materials.

ANNEXATION OR WITHDRAWAL FROM THE SEWER DISTRICT INSIDE THE REGIONAL URBAN GROWTH BOUNDARY:

(Check payable to Clackamas County)

1. Consisting of 1 acre or less…….$225
2. Consisting or more than 1 acre, but less than 2 acres…….$395
3. Consisting of at least 2 acres, but less than 5 acres…… $605
4. Consisting of at least 5 acres, but less than 10 acres……. $895
5. Consisting of at least 10 acres, but less than 20 acres…… $1160
6. Consisting of at least 20 acres, but less than 40 acres…… $1535
7. Consisting of 40 acres or more……...$1835

MAPPING FEE

(An additional mapping fee will be charged for all applications according to the schedule below, check payable Metro 3/15/2000).

1. Single tax lot of less than 1 acre…….$150
2. 1 – 5 acres……...$250
3. 5 – 40 acres…….$300
4. Greater than 40 acres……..$400

Annexation Instruction Information

Water Environment Services
A Department of Clackamas County
(On Behalf of Tri City Service District)
150 Beavercreek Road
Oregon City, Oregon 97045
PHONE: 503-742-4567
FAX: 503-742-4565

The Annexation Packet needs to be filled out in order to process the annexation request.

You need to fill out the following forms:

- ❑ (1) PETITION OF ALL LAND OWNERS (Please include Exhibit A with legal description and Exhibit B with map of proposed area if possible)
- ❑ (2) PETITION for ANNEXATION of TERRITORY to TRI CITY SERVICE DISTRICT
- ❑ (5) LIST OF LANDOWNER(S)
- ❑ (6) LIST OF SURROUNDING LANDOWNER(S) & MAILING LABELS
- ❑ (7) BOUNDARY CHANGE DATA SHEET
- ❑ (8) Attachments, surveys, deeds, records, plats (if necessary)
- ❑ (9) Tax lot Map with boundary change highlighted

After you complete the above forms submit the uncompleted packet and the required checks (One to Clackamas County for the application fee and One to Metro for the mapping fee) to Water Environment Services (WES).

WES will complete forms listed below.

The District will complete the following form:

- ❑ (3) CERTIFICATION OF PETITION OF LAND OWNER(S)
- ❑ (4) CERTIFICATION OF LEGAL DESCRIPTION AND MAP
- ❑ (11) ENDORSEMENT OF ANNEXATION OF TERRITORY TO TRI CITY SERVICE DISTRICT
- ❑ (12) AFFIDAVIT OF POSTING

Once all the forms are completed, the packet is taken to Clackamas County Election Division, along with the two checks. The Election Division takes the packet and forwards the County check to County Finance, and submits the completed annexation packet along with the check made out to Metro to Clackamas County Boundary Consultant.

Annexation Checklist for WES

Date / Initials

- ☐ **1)** *Petition of Landowners, with Legal Description Attached & Area Map* _____
- ☐ **2)** *Petition - Signature Form* _____
- ☐ **3)** *Certification of Property Ownership & Certification of Legal Description* _____
- ☐ **4)** *Notice List (Property Owners Info) and Mailing Labels* _____
- ☐ **5)** *Boundary Change Data Sheet* _____
- ☐ **6)** *Attachments, surveys, deeds, records, plats* _____
- ☐ **7)** *Taxlot Map with boundary change highlighted.* _____
- ☐ **8)** *WES Director's recommendation to annex* _____

- ☐ **A)** *Compliance Review (Submit to County Clerk w/ Fees)* _____
- ☐ **B)** *Public Hearing Date* _____
- ☐ **C)** *Public Hearing Notice* _____
- ☐ **D)** *Staff Report* _____
- ☐ **E)** *Public Hearing* _____
- ☐ **F)** *Board Approval / Denial* _____

PETITION OF LAND OWNER(S)
FOR A DISTRICT ANNEXATION

PETITION FOR ANNEXATION TO THE: Tri City Service District, a district organized under ORS 451. This petition is filed pursuant to ORS 198.705 to 198.955.

TO: The Board of Commissioners of Clackamas County

We, the undersigned land owner(s) in the territory proposed to be annexed, as described below, hereby petition for, and give our consent to, annexation of the area to the Tri City Service District.

The area to be annexed is inhabited.

Other affected districts (if any), and the principal Act of each are: _____

The affected county is: Clackamas County

The proposed annexation is subject to the following terms and conditions (if any):

_____

We request that the Board of Commissioners, the governing body of Tri City Service District, undertake annexations proceedings pursuant to ORS 198.850 to 198.869.

The Chief Petitioners are: _____
(name)

_____
(name)

_____
(name)

The property to be annexed is described as follows:

See Exhibit A for description
See Exhibit B for map

ANNEXATION PETITION - LANDOWNER SIGNERS

To: The Board of Commissioners of Clackamas County

We, the undersigned land owners in the area described below, hereby petition for, and give our consent to, annexation of the area to the Tri City Service District.

Land Owner Signature(s)	Printed Name	Mailing Address	Land Address, or Taxlot No.	Date

I, _____, certify that every person who signed this petition did so in my presence.

CERTIFICATION OF LAND OWNERS

ORS 198.855(3) If the annexation petition is signed by all of the owners of all land in the territory proposed to be annexed or is signed by a majority of the electors registered in the territory proposed to be annexed and by the owners of more than half of the land in the territory, an election in the territory and district shall be dispensed with. After the hearing on the petition, if the county board approves the petition as presented or as modified or, if an election is held, if the electors approve the annexation, the county board shall enter an order describing the boundaries of the territory annexed and declaring it annexed to the district (https://www.oregonlaws.org/ors/198.855)

Petition signed by all landowners (100%)

I hereby certify that the attached petition for a proposed boundary change involving the territory described in the petition contains the names of the owners* of all land in the territory proposed to be annexed within the area described in the petition, as shown on the last available complete assessment roll.

NAME_____

TITLE_____

DEPARTMENT_____

COUNTY OF CLACKAMAS

DATE_____

*"Landowner" or "owner of land" means any person shown as the owner of land on the last available assessment roll; however, where such person no longer holds the title to the property, then the terms mean any person entitled to be shown as owner of land on the next assessment roll; or, where land is subject to a written agreement of sale, the terms mean any person shown in the agreement as purchaser to the exclusion of the seller; and the terms include any public agency owning land.

CERTIFICATION OF LEGAL DESCRIPTION AND MAP

I hereby certify that the description of the property included within the attached petition (located on Assessor's Map _____) has been checked by me and it is a true and exact description of the property under consideration, and the description corresponds to the attached map indicating the property under consideration.

NAME_____

TITLE_____

DEPARTMENT_____

COUNTY OF CLACKAMAS

DATE_____

LIST OF LAND OWNERS

(This form is NOT the petition)

LIST ALL LAND OWNERS OF PROPERTY INCLUDED IN BOUNDARY OF THE AREA PROPOSED TO BE ANNEXED.

(Only those land owners within the area of annexation)

NAME OF OWNER	ADDRESS	PROPERTY DESIGNATION (Indicate tax lot, section number township and range)
(1)		
(2)		
(3)		
(4)		
(5)		
(6)		
(7)		

(Attached additional sheets if necessary)

NOTICE LIST FOR SURROUNDING PROPERTY OWNERS

(This form is NOT the petition)

*LIST ALL LAND OWNERS OF PROPERTY WITHIN **100 FEET** OF THE OUTSIDE BOUNDARY OF THE AREA TO BE ANNEXED. IF THE TERRITORY TO BE ANNEXED IS OUTSIDE AN URBAN GROWTH BOUNDARY, THE DISTANCE IS **250-FEET**, OR **500-FEET** IF THE TERRITORY TO BE ANNEXED WITHIN A FARM OR FOREST ZONE.*

NAME OF OWNER	ADDRESS	PROPERTY DESIGNATION (Indicate township and range, section, tax lot number)

(1) _____

_____

(2) _____

_____

(3) _____

_____

(4) _____

_____

(5) _____

_____

(6) _____

_____

(Attach additional sheets if necessary)

BOUNDARY CHANGE DATA SHEET

I. EXISTING CONDITIONS IN AREA TO BE ANNEXED OR WITHDRAWN

A. General location _____

B. Land Area: Acres ___ or Square Miles _____

C. General Description of Territory. (Include topographic features such as slopes, vegetation, drainage basins, floodplain areas, which are pertinent to this proposal.)

_____

_____.

D. Describe land uses on surrounding parcels. Use tax lots as reference points.

North: _____

East: _____

South: _____

West: _____

E. Existing Land Use:

Number of single family units:_____ Number of multi-family units:_____

Number commercial structures:_____ Number industrial structures:_____

Public facilities or other uses:_____

What is the current use of the land proposed to be annexed:

_____

F. Current year total Assessed Value: $_____

G. Total existing population: _____

II. REASON FOR BOUNDARY CHANGE

A. The County Board is required to utilize the criteria spelled out in ORS 199.462 to determine if the area can be benefited by annexation to the District. That statute says the County " . . . . shall consider local comprehensive planning for the area, economic, demographic, and sociological projections pertinent to the proposal, and past and prospective physical developments of land that would directly or indirectly be affected by the proposed boundary change **. . .** " The Metro Code spells out additional criteria for consideration (Metro Code 3.09.050):

1. Consistency with directly applicable provisions in an urban service provider agreement or annexation plan adopted pursuant to ORS 195.065. [Urban service provider agreements are agreements between various service providers about who will provide which services where. Annexation plans are timelines for annexation, which can only be done after all required 195 agreements are in place and which must have been voted on by the City residents and the residents of the area to be annexed.]
2. Consistency with directly applicable provisions of urban planning or other agreements, other that agreements adopted pursuant to ORS 195.065, between the affected entity and a necessary party.
3. Consistency with specific directly applicable standards or criteria for boundary changes contained in comprehensive land use plans and public facility plans.
4. Consistency with specific directly applicable standards for boundary changes contained in the Regional Framework Plan or any functional plan.
5. Whether the proposed boundary change will promote or not interfere with the timely, orderly and economic provision of public facilities and services.
6. The territory lies within the Urban Growth Boundary.
7. Consistency with other applicable criteria for the boundary change in question under state and local law.

You may wish to provide additional information on all or any of these considerations. Use additional pages if necessary.

III. LAND USE AND PLANNING

A. If the property to be served is entirely or substantially undeveloped, what are the plans for future development? Be specific. Describe type (residential, industrial, commercial, etc.), density, etc.

_____

_____

_____

B. Is the subject territory inside or outside the Metro Regional Urban Growth Boundary? _____

C. Do agreements pursuant to ORS 195.065 exist for this area and if so how does this proposal measure up to those agreements?

_____

D. What is the applicable County Planning Designation?_____ Or City Planning Designation?_____
Does the proposed development comply with applicable regional, county or city comprehensive plans? Please describe.

_____

_____

E. What is the zoning on the territory to be served?

_____

F. Can the proposed development be accomplished under current county zoning?

☐ Yes ☐ No

If No, ---has a zone change been sought from the county either formally or informally.

☐ Yes ☐ No

G. Please describe outcome of zone change request if answer to previous question was Yes.

_____

H. Is the proposed development compatible with the city's comprehensive land use plan for the area?

☐ Yes ☐ No ☐ City has no Plan for the area

Has the proposed development been discussed either formally or informally with any of the following? (Please indicate)

☐ City Planning Commission ☐ City Planning Staff
☐ City Council ☐ City Manager

Please describe the reaction to the proposed development from the persons or agencies indicated above.

_____

_____

I. Please indicate all permits and/or approvals from a City, County, or Regional Government that will be needed for the proposed development. If already granted, please indicate date of approval and identifying number:

APPROVAL	PROJECT FILE#	DATE OF APPROVAL	FUTURE REQUIREMENT
Metro UGB Amendment			
City or County Plan Amendment			
Pre-Application Hearing (City or County)			
Preliminary Subdivision Approval			
Final Plat Approval			
Land Partition			
Conditional Use			
Variance			
Sub-Surface Sewage Disposal			
Building Permit			

Please submit copies of proceedings relating to any of the above permits or approvals which are pertinent to the annexation.

J. If a city and/or county-sanctioned citizens' group exists in the area of the annexation, please list its name and the name and address of the contact person.

_____

_____

IV. SERVICES AND UTILITIES

A. Please indicate the following:

1. Location and size of nearest water line which can serve the subject area.

_____

_____

2. Location and size of nearest sewer line which can serve the subject area.

_____

_____

3. Proximity of other facilities (storm drains, fire engine companies, etc.) which can serve the subject area.

_____

_____

4. The time at which services can be reasonably provided by the district.

_____

5. The estimated cost of extending such facilities and/or services and what is to be the method of financing? (Attach any supporting documents.)

_____

_____

6. Availability of the desired service from any other unit of local government. (Please indicate the government.)

_____

7. What other assurances exist that demonstrate that urban services are now or can be made available?

_____

B. If the territory described in the proposal is presently included within the boundaries of or being served extraterritorially or contractually by any of the following types of governmental units, please so indicate by stating the name or names of the governmental units involved:

City _____ Rural Fire Dist. _____

County Service Dist._____ Sanitary District _____

Hwy Lighting Dist. _____ Water District _____

Grade School Dist._____ Drainage District _____

High School Dist. _____ Diking District _____

Library Dist. _____ Park & Rec District _____

Special Road Dist._____ Other Dist. Supplying Water Service_____

C. If any of the above units are presently servicing the territory (for instance, are residences in the territory hooked up to a public sewer or water system), please so describe.

_____

_____

_____

APPLICANT'S NAME: _____

MAILING ADDRESS: _____

_____

TELEPHONE NO.: _____(work)

_____ (Res.)

REPRESENTING: _____

DATE: _____

CLACKAMAS COUNTY

DAN JOHNSON
DIRECTOR

DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
DEVELOPMENT SERVICES BUILDING
150 BEAVERCREEK ROAD OREGON CITY, OR 97045

Date: April 3, 2018
To: Pete Walter, City of Oregon City
From: Christian Snuffin, P.E., PTOE, Clackamas County
Rick Nys, P.E., Clackamas County
Subject: AN 17-0004 / ZC 17-0005: Park Place Annexation and Rezoning of 92 acres

Mr. Walter,

We have the following comments about this project:

- Clackamas County has jurisdiction over several of the study intersections and roadways including a portion of Redland Road, Livesay Road, a portion of Holcomb Boulevard, and Holly Lane.
- The County was not contacted by the applicant to participate in the traffic impact analysis (TIA) scoping process.
- The zone change has a significant effect on the Redland Road/Holly Lane intersection per the TIA. The proposed mitigation suggested by Replinger & Associates for a proportional share contribution is agreeable to Clackamas County. We question the assumption that both the Holly Lane extension and the Redland Road/Holly Lane intersection improvement projects can be considered as planned per the Transportation Planning Rule without a more defined funding plan. We have concerns about the Redland Road/Holly Lane operations without the provision of a roundabout or other intersection improvement when the Holly Lane extension is constructed. Alternatively, additional study should be conducted that establishes compliance with the Transportation Planning Rule as well as compliance with County safety criteria to determine the appropriate intersection improvement at the Redland Road/Holly Lane intersection with the construction of the extension. This can be accomplished as part of a Master Plan TIA.
- Either with or without a connection to Redland Road via a Holly Lane extension, the County has concerns about the impact to Livesay Road and its intersection with Redland Road, which would directly serve a future development. The TIA assumes no site traffic on Livesay Road, which we think is not realistic without further analysis. The Oregon City Transportation System Plan assumes no planned improvements for the Redland Road/Livesay Road intersection. The TIA should evaluate the Redland Road/Livesay Road intersection and the need for a westbound left turn lane. This analysis should be conducted prior to approval of the zone change.
- The intersection of Redland Road/Anchor Way should be analyzed as part of a revised TIA. With the Holly Lane connection, this intersection will experience a substantial increase in traffic. That evaluation should include evaluating the need for a westbound left turn lane on Redland Road. This analysis should be conducted prior to approval of the zone change.

Should you have any questions or comments, please contact Christian Snuffin at 503-742-4716.

CLACKAMAS COUNTY

DAN JOHNSON
DIRECTOR

DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
DEVELOPMENT SERVICES BUILDING
150 BEAVERCREEK ROAD OREGON CITY, OR 97045

Date: April 6, 2018
To: Pete Walter, City of Oregon City
From: Christian Snuffin, P.E., PTOE, Clackamas County
Rick Nys, P.E., Clackamas County
Subject: AN 17-0004 / ZC 17-0005: Park Place Annexation and Rezoning of 92 acres

Mr. Walter,

We've reviewed the April 5, 2018 memorandum from Lancaster Engineering. We have the following updated comments about this project:

- We are satisfied with the assertion that the intent of the development is not to rely on Livesay Road to the west of the project site, and that planned improvements to the eastern portion of Livesay, as well as the Swan Avenue connector, will address future transportation needs.
- In our previous memo, dated April 3, 2018, we asked for additional analysis at the Redland Road/Anchor Way intersection. Mr. Mobley's memo does describe the additional site trips on Redland Rd, and it indicates that the number of additional site trips are not significant. However, a capacity analysis that addresses requirements of the Transportation Planning Rule and a westbound left turn lane analysis is still needed. This analysis should be conducted prior to approval of the zone change.

Should you have any questions or comments, please contact Christian Snuffin at 503-742-4716.

Oregon Historic Sites Map

Select Sites / Legend

Legend

- Eligible/Listed
- Eligible
- Not Eligible/Listed
- Not Eligible
- Undetermined/Listed
- Undetermined
- Demolished/Listed
- Demolished

Measurement

Switch Basemap

Oregon Historic Site Form

14493 Livesay Rd
Oregon City, Clackamas County

LOCATION AND PROPERTY NAME

address: **14493 S Livesay Rd** ☐ apprx. addrs

Oregon City ☐ vcnt **Clackamas County**

historic name:

current/ other names:

Optional Information

assoc addresses:
(former addresses, intersections, etc.)

location descr:
(remote sites)

block nbr: ____ lot nbr: ____ tax lot nbr: ____

township: ____ range: ____ section: ____ 1/4: ____

zip: ____

PROPERTY CHARACTERISTICS

resource type: **Building** height (# stories): **1**

elig. evaluation: **eligible/contributing**

primary constr date: **1948** (c. ☐ secondary date: ____ (c.) ☐
(optional--use for major addns)

primary orig use:

secondary orig use:

primary style: **Minimal Traditional**

secondary style:

primary siding: **Cedar Rake Shingle**

secondary siding: **Wood Sheet**

plan type:

comments/notes: **Some replacement windows. Garage: NC**

total # eligible resources: ____ total # ineligible resources: ____

NR status:

NR date listed: ____ (indiv listed only; see Grouping for hist dist)

orig use comments:

prim style comments:

sec style comments:

siding comments:

architect:

builder:

GROUPINGS / ASSOCIATIONS

survey project name or other grouping name: Oregon City RLS 2011 Survey & Inventory Project

farmstead/cluster name:

external site #: ____
(ID# used in city/agency database)

SHPO INFO FOR THIS PROPERTY

NR date listed: ____ ____

ILS survey date: ____

RLS survey date: **3/18/2011**

Gen File date: ____

106 Project(s)

Oregon Historic Site Form

15138 Holcomb Blvd
Oregon City, Clackamas County

LOCATION AND PROPERTY NAME

address: **15138 S Holcomb Blvd** ☐ apprx. addrs

Oregon City ☐ vcnt **Clackamas County**

historic name:

current/ other names:

Optional Information

assoc addresses:
(former addresses, intersections, etc.)

location descr:
(remote sites)

block nbr: ____ lot nbr: ____ tax lot nbr: ____

township: ____ range: ____ section: ____ 1/4: ____

zip: ____

PROPERTY CHARACTERISTICS

resource type: **Building** height (# stories): **1**

elig. evaluation: **eligible/contributing**

primary constr date: **1940** (c. ☐ secondary date: ____ (c.) ☐
(optional--use for major addns)

primary orig use:

secondary orig use:

primary style: **Ranch (Type)**

secondary style:

primary siding: **Wood Sheet**

secondary siding:

plan type:

comments/notes:

total # eligible resources: ____ total # ineligible resources: ____

NR status:

NR date listed: ____ (indiv listed only; see Grouping for hist dist)

orig use comments:

prim style comments:

sec style comments:

siding comments:

architect:

builder:

GROUPINGS / ASSOCIATIONS

survey project name or other grouping name: Oregon City RLS 2011 Survey & Inventory Project

farmstead/cluster name:

external site #: ____
(ID# used in city/agency database)

SHPO INFO FOR THIS PROPERTY

NR date listed: ____ ____

ILS survey date: ____

RLS survey date: **3/12/2011**

Gen File date: ____

106 Project(s)

Oregon Historic Site Form

15172 Holcomb Blvd
Oregon City, Clackamas County

LOCATION AND PROPERTY NAME

address: **15172 S Holcomb Blvd** ☐ apprx. addrs

Oregon City ☐ vcnt **Clackamas County**

historic name:

current/ other names:

Optional Information

assoc addresses:
(former addresses, intersections, etc.)

location descr:
(remote sites)

block nbr: ____ lot nbr: ____ tax lot nbr: ____

township: ____ range: ____ section: ____ 1/4: ____

zip: ____

PROPERTY CHARACTERISTICS

resource type: **Building** height (# stories): **1**

elig. evaluation: **eligible/contributing**

primary constr date: **1935** (c. ☐ secondary date: ____ (c.) ☐
(optional--use for major addns)

primary orig use:

secondary orig use:

primary style: **Minimal Traditional**

secondary style:

primary siding: **Synthetic Wood Siding**

secondary siding:

plan type:

comments/notes: **Siding replacement**

total # eligible resources: ____ total # ineligible resources: ____

NR status:

NR date listed: ____ (indiv listed only; see Grouping for hist dist)

orig use comments:

prim style comments:

sec style comments:

siding comments:

architect:

builder:

GROUPINGS / ASSOCIATIONS

survey project name or other grouping name: Oregon City RLS 2011 | Survey & Inventory Project

farmstead/cluster name:

external site #: ____
(ID# used in city/agency database)

SHPO INFO FOR THIS PROPERTY

NR date listed: ____ ____

ILS survey date: ____

RLS survey date: **3/12/2011**

Gen File date: ____

106 Project(s)

OREGON INVENTORY OF HISTORIC PROPERTIES

HISTORIC RESOURCE SURVEY FORM

County: Clackamas

PAGE 1

Historic Name: Waldron, George W. and Amanda House	Original Use: Single family residence
Common Name: Gabriel Residence	Current Use: Single family residence
Street Address: 14508 South Livesay Road	Condition (Circle One): (Good) Fair Poor Moved
City: Oregon City	Date of Construction: c1900
Owner: Gabriel, Peter L. and Dolores A. Circle One: (P) L S F M	Theme: 20th Century Architecture
Circle One: (Building) Structure District Site Object	Style: Vernacular
Location, Circle One: (Rural) Town Urban	Architect: Unknown
Number of Associated Features: 1 List: Garage	Builder: Unknown
Map #: 28CD Tax Lot: 01000	Quadrangle: Oregon City Twnshp/Range/Section: T2S R2E S28
Block: NA Lot: NA	UTM or GPS Latitude: Longitude:
Addition Name: NA	Local Ranking:

Plan Type/Shape: Square	Number of Stories: Two
Foundation Material: Concrete and brick	Basement? (Y/N) No
Roof Form & Materials: Cross gable Wood shakes	Porch? (Y/N) Yes
Structural Framing: Wood, balloon frame	
Primary Window Type: 1/1 double hung , replacement window on first level, small hipped dormer	
Exterior Surfacing Materials: Primary: Wide shiplap with corner boards Decorative:	
Decorative Features: Wide frieze board, interior corbelled brick chimney	
Integrity (Circle One): Good Fair (Poor)	
Exterior Alterations/Additions: Replacement window	Date:
Noteworthy Landscape Features: Minimal landscaping with native shrubs, three large cedar trees to the west	
Known Archaeological Features:	
Setting: House faces north on Livesay Road, a fairly busy country road, semi-rural with houses of various ages; dead end road.	
Other:	

Recorded By: Marianne Kadas	Date: July 1997
Local Inventory Number: 1076	SHPO Inventory Number:

OREGON INVENTORY OF HISTORIC PROPERTIES
HISTORIC RESOURCE SURVEY FORM
PAGE 2

County: Clackamas

Statement of Significance: (Use additional sheets if necessary)

House is located on part of the George Abernethy Donation Land Claim. Livesay Road is named for members of the Livesay who owned property in the vicinity as early as the 1870s.

No information regarding the early history of the house is available at this time.

Historic Name: Waldron, Geroge W. and Amanda House	Map #: 28CD Tax Lot #: 01000
Address: 14508 South Livesay Road	Quadrangle: Oregon City Twnshp/Range/Section: T2S R2E S28
UTM or Latitude: GPS Longitude:	SHPO Inventory Number:

OREGON INVENTORY OF HISTORIC PROPERTIES
HISTORIC RESOURCE SURVEY FORM
PAGE 3

County: Clackamas

Roll & Negative Number: Roll C, # 13	Photographer: Marianne Kadas
Roll & Slide Number: Roll 1, #13	Date: June 1997

Historic Name: Waldron, George and Amanda House	Map #: 29CD Tax Lot #:01000
Address: 14508 South Livesay Road	Quadrangle: Oregon City Twnshp/Range/Section: T2S R2E S28
UTM or Latitude: GPS Longitude:	SHPO Inventory Number:

Cultural Resource Survey Form:

CLACKAMAS COUNTY

I.D. NUMBER _____

PHOTO INFORMATION:
ROLL: LXXXVII
FRAME: 13

STUDY AREA: OC/B
LEGAL: T. 2S R. 2E SEC. 28D
TAX (LOTS): 1000
ZONE _____ SIZE _____

IDENTIFICATION:

COMMON/HISTORICAL NAME: KRAEFT RESIDENCE
ADDRESS: 14508 S. Livesay Road AREA: Clackamas Heights
CURRENT OWNER: PETER L. GABRIEL USE: Residence
OWNER'S ADDRESS: Same Oregon City 97045
ORIGINAL OWNER: KRAEFT USE: Residence
AREA OF SIGNIFICANCE: TOWN: _____ COUNTY: X CITY: _____ NATION: _____

HISTORIC INTEREST:

THEME: Architecture - 20th Century DATE: 1903
DESCRIPTION:

ARCHITECTURAL INTEREST:

STYLE: Vernacular STORIES: 2½
DATE: 1903 CONDITION: Good ARCHITECT:
SIDING: Wide shiplap with rake and cornerboards.
ROOF: Cross gable.
DOORS: Vertical panels.
WINDOWS: 1/1 double-hung sash. Front window replaced in 1940's.

MAIN ENTRANCE: Altered. Gable roof extends over front porch with no support.

NOTES:

BIBLIOGRAPHY:

DATE: September 1984
RECORDER: Altier/Hayden

Oregon Historic Site Form

15110 Holcomb Blvd
Oregon City, Clackamas County

LOCATION AND PROPERTY NAME

address: **15110 S Holcomb Blvd** ☐ apprx. addrs

Oregon City ☐ vcnt **Clackamas County**

historic name:

current/ other names:

Optional Information

assoc addresses:
(former addresses, intersections, etc.)

location descr:
(remote sites)

block nbr: ____ lot nbr: ____ tax lot nbr: ____

township: ____ range: ____ section: ____ 1/4: ____

zip: ____

PROPERTY CHARACTERISTICS

resource type: **Building** height (# stories): **1**

elig. evaluation: **not eligible/non-contributing**

primary constr date: **1920** (c. ☐ secondary date: ____ (c.) ☐
(optional--use for major addns)

primary orig use:

secondary orig use:

primary style: **Craftsman**

secondary style:

primary siding: **Shingle**

secondary siding:

plan type:

total # eligible resources: ____ total # ineligible resources: ____

NR status:

NR date listed: ____ (indiv listed only; see Grouping for hist dist)

orig use comments:

prim style comments:

sec style comments:

siding comments:

architect:

builder:

comments/notes: **Asbestos shingle siding; porch alteration**

GROUPINGS / ASSOCIATIONS

survey project name or other grouping name: Oregon City RLS 2011 | Survey & Inventory Project

farmstead/cluster name:

external site #: ____
(ID# used in city/agency database)

SHPO INFO FOR THIS PROPERTY

NR date listed: ____ ____

ILS survey date: ____

RLS survey date: **3/12/2011**

Gen File date: ____

106 Project(s)

Oregon Historic Site Form

16472 Livesay Rd
Oregon City, Clackamas County

LOCATION AND PROPERTY NAME

address: **16472 S Livesay Rd** ☐ apprx. addrs

historic name:

Oregon City ☐ vcnt **Clackamas County**

current/ other names:

Optional Information

assoc addresses:
(former addresses, intersections, etc.)

location descr:
(remote sites)

block nbr: ____ lot nbr: ____ tax lot nbr: ____

township: ____ range: ____ section: ____ 1/4: ____

zip: ____

PROPERTY CHARACTERISTICS

resource type: **Building** height (# stories): **1.5**

total # eligible resources: ____ total # ineligible resources: ____

elig. evaluation: **not eligible/non-contributing**

NR status:

primary constr date: **1910** (c. ☐ secondary date: ____ (c.) ☐
(optional--use for major addns)

NR date listed: ____ (indiv listed only; see Grouping for hist dist)

primary orig use:

secondary orig use:

orig use comments:

primary style: **Craftsman**

secondary style:

prim style comments:

sec style comments:

primary siding: **Aluminum**

secondary siding:

siding comments:

plan type:

architect:

builder:

comments/notes: **Some replacement windows, siding**

GROUPINGS / ASSOCIATIONS

survey project name or other grouping name: Oregon City RLS 2011 | Survey & Inventory Project

farmstead/cluster name:

external site #: ____
(ID# used in city/agency database)

SHPO INFO FOR THIS PROPERTY

NR date listed: ____

ILS survey date: ____

RLS survey date: **3/18/2011**

Gen File date: ____

106 Project(s)

Oregon Historic Site Form

16582 Livesay Rd
Oregon City, Clackamas County

LOCATION AND PROPERTY NAME

address: **16582 S Livesay Rd** ☐ apprx. addrs

Oregon City ☐ vcnt **Clackamas County**

historic name:

current/ other names:

Optional Information

assoc addresses:
(former addresses, intersections, etc.)

location descr:
(remote sites)

block nbr: ____ lot nbr: ____ tax lot nbr: ____

township: ____ range: ____ section: ____ 1/4: ____

zip: ____

PROPERTY CHARACTERISTICS

resource type: **Building** height (# stories): **1.5**

elig. evaluation: **not eligible/non-contributing**

primary constr date: **1920** (c. ☐ secondary date: ____ (c.) ☐
(optional--use for major addns)

primary orig use:

secondary orig use:

primary style: **Craftsman**

secondary style:

primary siding: **Shingle**

secondary siding: **Horizontal Board**

plan type:

comments/notes: **Asbestos shingle siding; replacement windows**

total # eligible resources: ____ total # ineligible resources: ____

NR status:

NR date listed: ____ (indiv listed only; see Grouping for hist dist)

orig use comments:

prim style comments:

sec style comments:

siding comments:

architect:

builder:

GROUPINGS / ASSOCIATIONS

survey project name or other grouping name: Oregon City RLS 2011 | Survey & Inventory Project

farmstead/cluster name:

external site #: ____
(ID# used in city/agency database)

SHPO INFO FOR THIS PROPERTY

NR date listed: ____ ____

ILS survey date: ____

RLS survey date: **3/18/2011**

Gen File date: ____

106 Project(s)

From:	Laura Terway
To:	Pete Walter
Subject:	FW: Park Place Annexation Hearing Testimony #1
Date:	Monday, April 02, 2018 3:31:10 PM

From: Tom Geil [mailto:tom.geil@rocketmail.com]
Sent: Friday, March 30, 2018 2:22 PM
To: Laura Terway <lterway@orcity.org>
Subject: Park Place Annexation Hearing Testimony #1

To Laura Terway and the PLANNING COMMISIONERS of Oregon City for April 9th Hearing

Whether you are in South End, or Beavercreek, or north to Park Place, the Citizens of Oregon City are concerned with traffic and safety. **Our city has so many concept plans to build out in so many directions, that Oregon City could become the next Tigard or Beaverton, with so much traffic that our current roads would end up in total congestion.**

The neighbors of Trailview, Wasco and Pacific Homes who live with a half block Winston Drive for our only entrance and exit for 96 Homes, specifically request that a condition approval be placed on this annexation, that the entire Holly Lane extension be in place before they open the stub roads in our neighborhood for our traffic safety and livability.

TRAFFIC SAFETY:
The major concern of Park Place residents is traffic safety. 92 acres are scheduled for annexation. If you look closely at the attached map, there are several stub roads that the city intends to open up in the Trailview Heights neighborhood, and Wasco Acres. These are residential streets where children ride their bikes, play basketball, kids walk to and from schools, and residents walk their dogs.

OPENING STUB ROADS WILL INCREASE TRAFFIC THROUGH EXISTING NEIGHBORHOODS:
The city and developers want a major connector road from Holcomb down to Redland, referred to as the Holly Lane extension. **The BIG problem is that the whole road will not be built out for some time**. The 92 acres does not include the lower portion of the Concept Plan. What this means is that all the homes within the 92 acres will need entrance and exit for their vehicles. The homes that wrap around the Trailview area will not travel all the way back up to the new Holly Lane entrance, but instead will travel through the opened stub roads.

HALF BLOCK WINSTON DRIVE NOT SAFE:

Winston Drive is the only inlet/outlet for 96 homes in this current subdivision. Barlow Crest, across the way on Holcomb has two streets to enter and exit. If this Concept Plan is to be approved, the Park Place residents want the entire new Extension Connector Road to be constructed from Holcomb to Redland Rd. If that does not occur, that means that all these new homes will use a very narrow Holcomb Blvd to get to their homes. But for Trailview, it means that with all stub roads opened, there will be more than 96 homes, possibly several hundred using just one half block Winston Drive to enter and exit. Check out the map. There is a stop sign coming into Trailview, but anyone travelling through that development can tell you that very few observe the Stop sign, and blow right through it.

HOLCOMB BLVD IS VERY NARROW FOR INCREASE TRAFFIC IF THE ENTIRE HOLLY LANE EXTENSION IS NOT BUILT FIRST.

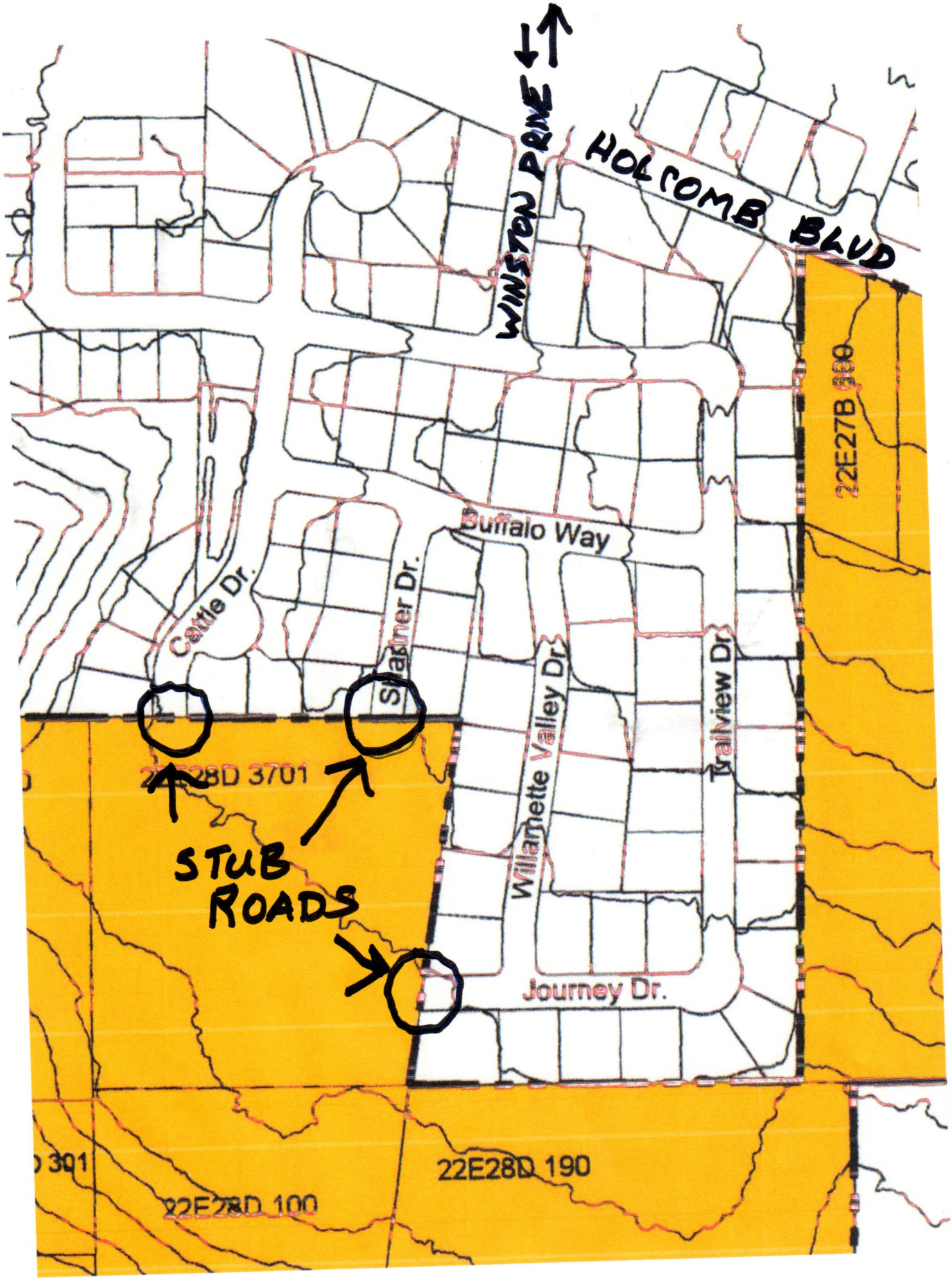
Holcomb itself is a very narrow road. We encourage all Commissioners to take a short drive up Holcomb Blvd to see for themselves how narrow the road is, and how close to the road that homes are built. There is a major bend near Holcomb Middle School. There is an even steeper, accident-proned sharp curve at the base of Holcomb. There are homes that are built within feet of Holcomb Blvd. There are drop offs into valley and canyons, just feet off Holcomb. There is no way that this road can be widened to accommodate the huge increase in traffic that this annexation will incur.

WHY NOT START THE NEW HOLLY LANE EXTENSION BELOW AT REDLAND AND WORK YOUR WAY UP

The bigger question is why this new road cannot be started first down at Redland. The majority of those who have appeared at Commission meetings to encourage the annexation are from the Livesay Road area. They all seem to want this new growth so they can reap the benefits of selling their properties. No one above off Redland wants this annexation. Why not start the annexation below, rather than above off Holcomb Blvd.

The arguments appear to be clear, traffic and safety are a major issue in the Park Place Neighborhoods. Is anyone listening, or is it all about profits for developers who drive the city coffers.

Please review the attached maps. One shows the entire annexation area, and the other is a closeup of the Trailview, Wasco Acres, and Pacific Homes residential area.


WINSTON PRIME
HOLCOMB BLVD
22E27B 900
Buffalo Way
Cattle Dr.
Stabler Dr.
Willamette Valley Dr
Trailview Dr
22E28D 3701
STUB ROADS
Journey Dr.
22E28D 190
22E28D 100

March 30, 2018

To the Planning Commission,

TREE CUTTING & CLEARING

At the last meeting regarding the Park Place Annexation of 92 acres, it was stated that there should be no tree cutting during the annexation process. I'm here to tell you that the clearing began last summer. All day long from early morning through the evening we heard the chain saws and the grinders eating up the leftover branches. Several people called the county, the city and other locations asking if this was legal. The neighborhood felt that the developers were trying to cut down all the trees before the Planning Commission or the City Commission could see the trees. No one seemed to care or help, implying that it was private land. Our thought was private land or not, they should not be cutting down all the trees prior to presenting to either Commission.

I finally called Rick Givens and requested that he ask for a halt of the indiscriminate tree cutting before they reached down all the way to the pinch point. Mr. Givens walked the forest with me and agreed to contact the land owner. Things got quiet for a few days and then the chain saws started up again. I was requesting that some of the older, bigger trees behind some of our homes in Trailview be left standing to create a small pocket park near the Pinch Point road for the Holly Lane Extension. **It was Kent Ziegler who had walked this area with me years ago, and had come up with the idea of small pocket park directly behind the two homes impacted by the new road to absorb some of the noise and the headlights.**

Here are some photos as proof of the clear cutting that has already begun to create a road outline:

Photo#1

Photo#2

Photo#4

Good Evening,

APR 2
2018 MAR 33 AM 11:46
RECEIVED

I'm Barbara Renken, Barlow Crest – Park Place Neighborhood

Thank you for the time you all commit to this Commission, and mostly for really listening to citizens and their concerns.

I'm speaking primarily on issues involving Oregon City Schools as a result of the probable approval of Annexation of AN 17-0004 and ZC 17-0005.

Park Place neighbors are not opposed to development. All of the active neighbors in our association live in newer developments. Opposition is not the issue. The issue is safety, services and doing development accountably and responsibly.

Earlier this year I attended an Oregon City School District Board work session. Present were 20 members of the Board, several teachers, as well as citizens. Work sheets were available, one of which I have shared with you. The session was constructive and informative.

Jeremy Wright, representing a Portland Analytical Company presented a report based on a March 2017 survey the district engaged in. 400 citizens responded to the survey regarding the School Board's consideration of a proposed School Bond in November 2017 for $188 Million. Feedback revealed 48% of the 400 participants were positive about a school bond in November 2018. The participants expressed concerns including earthquake readiness, safety, overcrowding, and inability to do a school lockdown if needed.

Oregon City currently has 12 schools dating from 1938 to 2003. The only school considered to be safe is OCHS, built in 2003. Obviously, our schools all need upgrading and improvement, if not new schools in some cases.

The proposed bond measure for $188 Million Dollars would focus on elementary and middle schools, bringing them up to safety standards as well as meeting the standards for today's curriculums.

In light of recent applications for annexation and housing developments, a plan is to build a new Ogden Middle School on property adjacent to Holcomb Elementary School in Park Place neighborhood. A new elementary school would be constructed at the Ogden location. If the Bond doesn't pass in November, OCSD Schools will experience overcrowding and unsafe conditions as well as funding for additional buses and drivers to transport students, until $188 Million or more can be raised.

If this current annexation is approved, Park Place neighborhood will be adding a potential 400 homes to the current projects, totaling almost 800 in our neighborhood all using Holcomb Blvd. Phase II of the Park Place Concept Plan will add 600 more units. Additionally, Clackamas County is selling View Manor and Clackamas Heights for private, high density development. Common sense will tell you there will be a need for additional and larger schools not to mention more

vehicle access on Holcomb Blvd. While Mr. Rogers of OCSD assured us that the district has adequate space at this time, adding even Phase I will change that assessment.

The State, the County and the City are unable to contribute to Redland Rd. #213 modifications. When the State approaches its limit, services will be cut. A budget report at the meeting revealed funds are already very limited and curriculum adjustments are being considered.

Oregon City cannot even afford sidewalks for students and residents to safely cross Holcomb Blvd. There is not one pedestrian crosswalk on Holcomb; not even at Holcomb School Road.

Please seriously consider these issues before approving annexation of this property at this time. We all know once it is annexed, development will be approved, with no concern for the existing citizens of this and outlying neighborhoods.

The owner or proposed contractor of this project might consider providing a roadway for trucks and construction materials through Redland and Livesay, alleviating some of the stress on Holcomb and minimizing some of the safety and traffic issues until/if the Holly Lane Extension, estimated at $18 Million can be funded.

I respectfully request this annexation be delayed until the owner/developer can provide Oregon City citizens additional access. Building more homes, more traffic and more congestion will not lead to a safer atmosphere for our citizens, their families and pets unless access to our neighborhood can be improved.

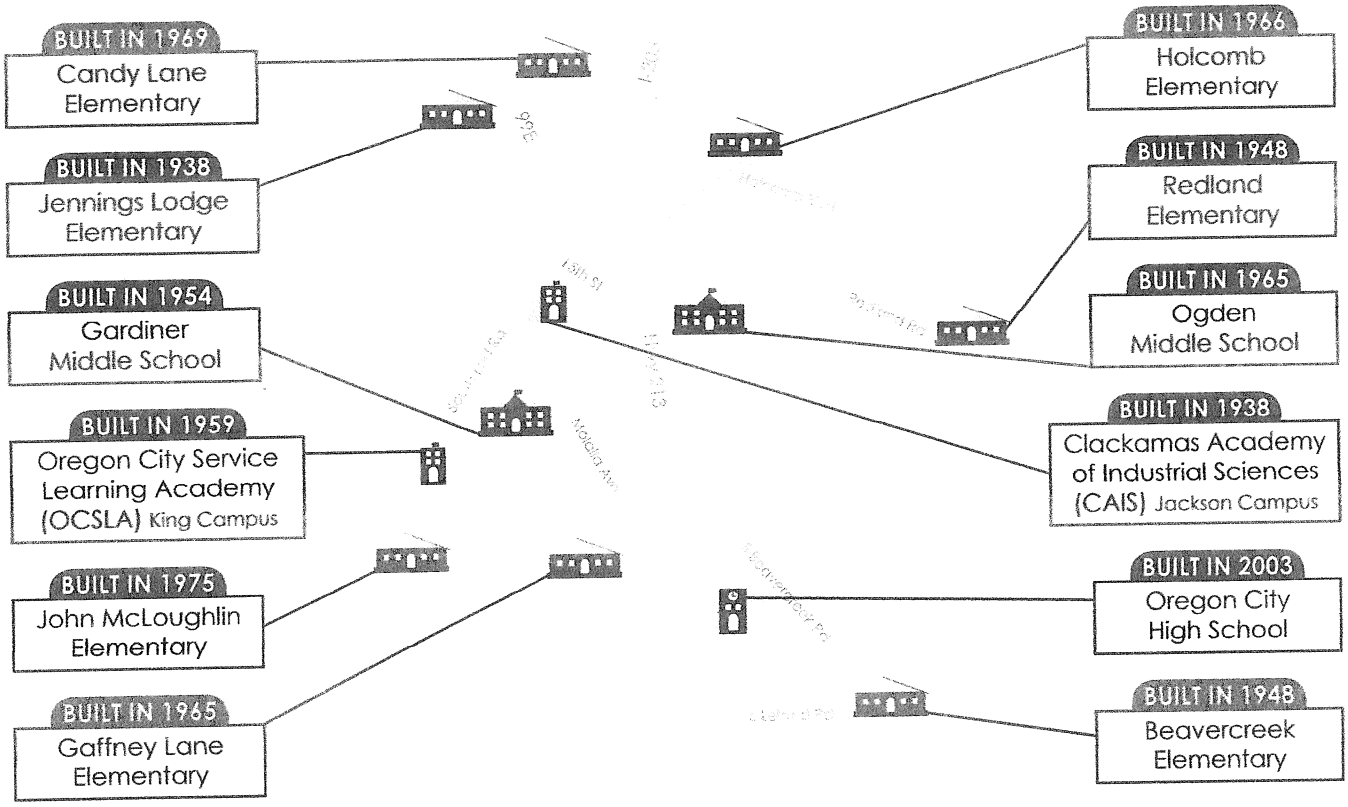
Thank you for your time and consideration.

Previous Bonds
2000
1970s

OREGON CITY SCHOOLS

By the Numbers

When Were Our Schools Built?



Recent School Bonds History

2000 - *Phase 1*
Voters approved funds to build new Oregon City High School. The Bond helped to transform the high school experience and brought a sense of pride to the entire community.

Oregon City High School Success by the Numbers since 2000

94% Graduation Rate
(State average 74%)

200 Classes Offered
26 Classes that earn College Credit
16 Advanced Placement Courses

40 Clubs

27 Athletic Sports Programs

2018 - *Phase 2*
Oregon City School District is considering placing a bond on the November 2018 ballot to modernize the educational experience and improve the health and safety at our middle and elementary schools.

We want to hear from you! Tell us what you think!

OCSchoolBond.org

OCSD62.ORG/bond - middle/elementary schools

Planning Commission

re: April 9 meeting

AN 17-0004

~~PA~~ ZC 17-0005

From: Laura Terway
To: Christina Robertson-Gardiner
Subject: Fwd: Oregon City Annexation Report - 92 acres 2-12-18
Date: Thursday, February 15, 2018 3:54:31 PM

-Laura Terway

Begin forwarded message:

From: Nick Veroske <nick@willamette-equities.com>
Date: February 15, 2018 at 3:44:48 PM PST
To: 'Kent Ziegler' <kntzig001@aol.com>, 'Nick Dierckman' <ndierckman@gmail.com>, 'William Gifford' <WilliamG@ocbusinessalliance.com>, 'Crocker' <robb@funnelbox.com>, 'Fowler' <danf@abernethycenter.com>, 'Henson' <SHenson@columbiabank.com>, 'Holden' <Rose@ocgolfclub.com>, 'Meier' <blane@fccycles.net>, 'Parkin' <maureen@parkinelectric.com>, 'Slack' <donslack5@msn.com>, 'Storey' <chrisbstorey@yahoo.com>
Cc: Dan Holladay <dholladay@orcity.org>, Tony Konkol <tkonkol@orcity.org>, Laura Terway <lterway@orcity.org>
Subject: FW: Oregon City Annexation Report - 92 acres 2-12-18

All,

Please see the comment email below to KATU News regarding their reporting of the annexation hearing and efforts this week.

Laura: Would you please enter the comments into the public record for the annexation effort? Thank you.

Nick Veroske
Director, Oregon City Business Alliance
Office: 503-617-7662
Cell/Text: 503-577-6903
www.ocbusinessalliance.com

From: Nick Veroske [mailto:nick@willamette-equities.com]
Sent: Thursday, February 15, 2018 3:35 PM
To: KATU Channel 2 News (thedesk@katu.com); KATU Channel 2 Comments (webstaff@katu.com)
Subject: Oregon City Annexation Report - 92 acres 2-12-18

Dear KATU News, Anchor Steve Dunn and reporter Lashay Wesley:

Your recent reporting of Oregon City's proposed annexation of 92 acres was disappointing at best. Landowners, developers, and the City of Oregon City have been working for years to bring a desperately needed, fresh housing supply to a city who has seen its median home prices increase nearly 45%, from $350,000 to $500,000 since February, 2015. It is important for your viewers to understand how the lack of buildable land, thus lack of housing, affects the ability of both young families and our critical workforce to afford a home with a yard to raise their children or to build up their future retirement savings.

Oregon voters passed revolutionary land use planning legislation in 1978 in an effort to preserve farmland and wildlife habitat. The legislation also recognized the importance of "people habitat" as well as the importance of the environment by requiring cities to periodically expand their urban growth boundaries to meet their 20-year forecast of population and employment growth. Properly implemented, such a system should reduce the distance that commuters must drive to and from their jobs, thus reducing the need for highways and fuel consumption, thus reducing pollution and potential accidents. Shorter commute times also allow parents to spend more time with their children, more time at home together, or more time giving back to their communities in numerous ways.

Your report focused on one owner couple who appear to have lived in Oregon long enough to understand our land use system, its value and sometimes its consequences. You did not discuss the plight of the other dozen or so property owners who will finally be able to sell their lands, potentially realizing a financial return for the investments some of them may have made years ago as they planned for their financial futures. What was not reported by you was the harm those the property owners are doing to the remaining land owners and to the families that would eventually occupy those desperately needed homes.

Recall your reporting of the 23 Oregon City families displaced from their affordable apartments when the land slid out from under them a couple of Christmases ago. Lack of ANY housing forced those families into the high school gym, then out to who-knows-where as they were forced to evacuate the gym before school resumed for the new year. Understand that your sensationalist reporting in no small way actually contributes to the housing shortage plaguing Oregon.

Oregon taxpayers fund a state department, Oregon Housing and Community Services, with $1.2 BILLION in the current biennium whose sole purpose is to help lower-income Oregonians simply FIND affordable housing. Under the direction of Governor Brown, numerous State Departments are currently engaged in helping create housing affordable for the State's workforce. Workforce housing is critical to Oregon employers to attract the workers they need to meet demand for the goods and services they produce and sell worldwide. Should companies leave the state due to an inability to attract the employees they need in order to meet their production demands? The couple you chose to interview imply that our employers should leave. Perhaps their

attitudes will change when they are ready to sell their home and pursue other goals.

Please let me know when you will be airing a report addressing Oregon's critical housing shortage and some of the solutions being sought by enterprising developers. May I suggest you research the effect it is having on the ability of families trying to start building wealth for their futures by purchasing their first home? I might also suggest that you look at Sheridan, Oregon, a community of 4,400 people. Sheridan is so encumbered by Federal and State environmental regulations that, as of a month ago, they had only four homes for sale and NONE under construction. A national manufacturer will soon begin operations in Sheridan hoping to employ 300 people. When I spoke with their officials last October, they reported that half of their prospective employees wanted to live in the community in which they worked. That is an immediate need for 146 new homes for family-wage workers, giving a much-needed boost to a community suffering from a poverty rate nearly 50% above the national average, persons under 65 without health insurance twice the national average and a school system that is declining from loss of students.

I'm looking forward to your thoughtful response. I'm also looking forward to seeing KATU News, of which I was formerly a dedicated viewer, take an active role in helping our state provide for its citizens by positive reporting of the seriousness of this situation rather than highlighting the emotional responses of obstructionist views.

Thank you for your attention.

Sincerely,

Nick Veroske
Director, Oregon City Business Alliance, and
Land owner and developer of housing for Oregon's workforce

From: Kattie Riggs
To: Laura Terway; Christina Robertson-Gardiner
Subject: FW: Proposed 8 Lot Subdivision and Park Place Annexation &Zone Change.
Date: Thursday, February 22, 2018 8:53:54 AM

Laura,

I think this citizen meant to email you or the planner working on this Annexation to be added to the list for information.

Thank you,
Kattie

Kattie Riggs, CMC
City Recorder
kriggs@orcity.org
City of Oregon City
PO Box 3040
625 Center Street
Oregon City, Oregon 97045
503-496-1505 Direct phone
503-657-0891 City phone
503-657-7026 fax

Website: www.orcity.org | Recorder Page |Facebook!|Twitter
PUBLIC RECORDS LAW DISCLOSURE: This e-mail is subject to the State Retention Schedule and may be made available to the public.

From: LINDA L PETERSON [mailto:lindapj@comcast.net]
Sent: Wednesday, February 21, 2018 7:01 PM
To: Kattie Riggs <kriggs@orcity.org>
Subject: Proposed 8 Lot Subdivision and Park Place Annexation &Zone Change.

My email is lindapj@comcast.net thank you.

Thanks for keeping your neighbors informed. The part about this whole thing is taking our right to vote on this project away and them wanting us to pay for their water and the infrastructure for the developers and those land owners.

Oregon City Planning Commission
Meeting of April 9th, 2018

2018 MAR 30 PM 12:52
RECEIVED

Testimony for April 9th meeting from: Christine Kosinski, Unincorporated Clackamas County

RE: AN 17-0004 Annexation of 92 acres and ZC 17-0005 Zone Change

There is much for the City to consider before contemplating approval of this annexation and zone change. I, for one, do not approve for many reasons, however the one huge issue that the City will not be able to fix is the fact that if development is untaken in the Park Place Concept Plan boundaries, new homeowners will not be told they are moving into a landslide area, and furthermore, they will find it impossible to obtain Landslide Insurance for any and all losses due to landslides.

The City should understand that if annexation and zone change of these 92 acres is approved, then the City may become liable if landslides occur here. And why do I say this? It is because the City has the DOGAMI Landslide and Susceptibility Maps, you can see what lies beneath this land, where prospective new homeowners do not have the maps, they do not know what lies beneath their property along with the risk that may come from living in a landslide zone. Further, I say this because in many other States, such as, Wyoming, Utah, Colorado, Washington and in Oregon (Corvallis, Portland, Burlingame, Lake Oswego, just to mention a few) the homeowners struck with landslides have brought their governments to task, stating "Why did you approve development knowing this is a landslide area, why didn't you warn us and why didn't you tell us our insurance would pay nothing for losses due to landslides." Some took legal actions and then the Federal Government and FEMA became involved to help these victims of landslides who suffered large financial losses.

For these reasons, I am asking the City, **Not to Approve this annexation and zone change,** the City would be extremely foolish to consider any approval of this large annexation until full Geological testing is done for all land within the boundaries of the Park Place Concept Plan. The type of, and the immense testing that should be required is found in the following report.

Exhibit #1 (Pg. 93) Engineering Geology and Relative Stability of the Southern Half of Newell Creek Canyon, Oregon City, OR – by William J. Burns, DOGAMI.
Here, Professor Burns gives the Suggested Engineering Geologic and Geotechnical Investigations that should be undertaken, and I again would state strongly, that this should be done prior to any considerations for annexation and zone change in this hazardous landslide area. Additional important information the City should study from this Engineering and Geology report is as follows below.

Pgs 54, 60, 61 – The Highway 213-Morton Road Landslide. Speaks to the reactivation of the landslide. You may ask, why is this important? It is important because in the Park Place Plan, the City proposes the **SWAN RD EXTENSION (to Morton Road)** as a parallel road to Holly Lane to take some of the heavy traffic. I believe, however, once you read this report you will find that building the Swan Road Extension will be out of question due to the Morton Road Landslide as well as the large amount of wetlands that must be crossed when building a road.

Pgs 61-62 – If the Highway 213/Morton Road area experiences a major earthquake (magnitude 6.5) this could cause a decrease in the factor of safety to below one, indicating reactivation of this landslides as well as others in the same area. Pgs. 61-62 continue on to speak to the Highway 213, Mile post 2.1 Deep Seated Landslides where the scarp and toe parallel Highway 213, **Holly Lane** and Newell Creek.

Pg 62 speaks to these Deep-Seated landslides, and highlights the extreme caution that should be exercised before any construction takes place on any of the slides. Here it is suggested that a complete surface/subsurface investigation and a slope stability analysis including earthquake loads be performed by an engineering geologist and a geotechnical engineer.

Pgs 81-82 – Potentials for earthquake induced movement in deep-seated slides greatly increases and has become reality in areas such as the Aldercrest Landslide in Kelso, WA as well as several landslides within kilometers of Newell Creek Canyon, such as the **Holly Lane Landslide** and the Mathew Court Landslide. All of these active, deep-seated landslides are located in the Upper Troutdale Formation which is also discussed in the third paragraph of Pg 79.

Pg 92 – This investigation of the relative stability of the Southern half of Newell Creek Canyon mapped **79 landslides** in the Southern half of Newell Creek Canyon.

Pg. 94 – Professor Burns states why Suggested Further Studies are given for Newell Creek Canyon.

Pgs 93-95 – Professor Burns details the type of Engineering Geologic and Geotechnical Investigations that should be undertaken as an essential first step in evaluating the landslide hazards here and that the investigations should be completed prior to decision making and development. On **Pg 95**, last paragraph, Professor Burns suggests that before an area is urbanized, a study similar to this one should be performed on this zone (Park Place Plan), and that included with this study should be an evaluation for reactivation of earthquake induced landslides. The City should understand that a large earthquake fault line exists here. **End of report.**

I strongly urge the City to conduct in depth studies in the Park Place Concept Plan boundaries, as suggested by Professor William Burns, again, this should be done prior to any decision making by the City. There are 34 Landslides in the Concept Plan boundaries, with many of them having slopes of only 5-18% and where the **Holly Lane Landslides occurred on only 11% slopes.** The current Landslide Regulations of Oregon City only regulates slopes of 25% or more, and the City fails to address the real landslide problems that exist in slopes of much lesser degree than 25%. This could be a fatal decision on the part of the City to grossly underestimate the power of these landslides occurring on less than 25% slopes, such as the large landslides on Frank Rd and Oak Tree Terrace which are 10% slopes and yet have already inflicted high damages from landslides.

Oregon City Comprehensive Plan

Unstable Soils – The type of soils within the Park Place Concept Plan boundaries cannot be fully understood unless the studies, as suggested by Professor Burns, on Pages 93-94 & 95 are undertaken. He does mention the Troutdale soils and those of the Upper Troutdale formation, but only a very in depth study would result in the City having a strong understanding of the type of soils that exist in the Park Place area.

In February of 2007, it was felt that the City's current landslide regulations needed to be strengthened due to the serious slope issues within the Plan, therefore instead of the City authorizing an in depth Geological study to be performed within the boundaries of the plan, the City decided only to order a Preliminary geological study. This was an extremely preliminary study for which the City paid GRI Geological Consultants only $19,000 dollars. This was only enough to allow the consultants to study old logs and not much more than that.

The City has been derelict in ordering a full in depth study of the Park Place Plan, where landslides pose a much more serious threat to the homeowners than what the City realizes. It seems to me that the City is going on a wing and a prayer when it comes to the Park Place Plan. Instead of just a preliminary study, they should be ordering in depth soil and landslide studies, but to date, the City has not wanted to pay for the studies that it really needs in order to make good decisions on whether they can safely undertake development here. At this time, the City is unable to meet the Unstable Soils requirements in their own Comprehensive Plan.

Comprehensive Plan - Landslides – The City cannot meet the requirements as set out in their Comprehensive Plan. The Comp Plan states landslides can be exacerbated by removing vegetation, altering drainage and runoff patterns. All of these will occur if annexation, leading to development, is undertaken. Once the natural vegetation and trees are removed from this hillside – lookout! This is the only thing holding this hill from failing. Development from thousands of homes above off Holcomb Road will drain their waters down into this hillside. New homes will further drain water, and yes drainage patterns will change. Detention Ponds do not help. Even though they are metered, they eventually allow the waters to drain right back into the landslides. Landslides can be triggered by heavy rains (which caused the 96-97 slides on Holly Ln). Heavy traffic, as proposed by the City, will pose serious threats to the people of Holly Ln where the homeowners are unable to obtain insurance that will cover losses due to landslides, as well, it is rare to find Earthquake coverage. These homeowners are unable to protect themselves and this should be in the Comprehensive Plan.

Exhibit #2 - Goal 7 - Areas Subject to Natural Hazards

The City is unable to meet the Goal 7 requirements for both Holly Lane and the land within the boundaries of the Park Place Concept Plan.

Goal 7 requires Natural Hazard Planning, where local governments shall adopt Comprehensive Plans to reduce risk to people and property from natural hazards. Oregon City has done nothing to reduce the risk on Holly Lane, in fact it's just the opposite, Oregon City has done everything to grossly raise the risk on Holly Lane to it's people and property owners. The City has proposed plans to bring in heavy traffic from the North and South, to extend Holly Lane beyond it's current 1 ¼ miles to more than four times the current size. The City has failed to consider heavy traffic, development, earthquakes and damages from landslides, to the people of Holly Lane. The City has failed to comply with sections of Goal 7, ie, **Implementation, Coordination, Planning.** The City cannot comply with, **C (c)** The potential for development in the hazard area to increase the frequency and severity of the hazard.
C (d) The types and intensities of land uses to be allowed in the hazard are of Holly Lane.
C (2) Allow an opportunity for citizen review and comment on the new inventory information and the results of the evaluation and incorporate such information into the comprehensive plan, as necessary.
C (3) Adopt or amend, as necessary, based on the evaluation of risk, plan policies and implementing measures consistent with the following principles.
C (3a) Avoiding development in hazard areas where the risk to people and property cannot be mitigated. **The City cannot comply with Goal 7.**

Annexation Factors: 14.04.060

Adequacy of access to the site – Poor access to the site because contractor, city, all construction crews can only access through small residential streets where children play and families live. Appears only one way in and out and unsafe to current residents. **City does not comply**

Conformity of the proposal with the city's comprehensive plan –City does not comply Unstable soils, steep slopes, landslides, absence of City Regulations to regulate slopes of less than 25%. Many landslides here have occurred on only 10% slopes and even lesser. Absence of in depth geological studies and soil studies as well.

Adequacy and availability of public facilities and services to service potential development City does not comply. No roads. The City has not proven that the Holly Ln Extension can even be built. No soil, steep slope, no landslide, no geological studies have been done. The Swan Road Extension has not been studied, it has not been evaluated for the landslide danger nor for the ability to even extend this road over Redland Road. Read above what I have submitted about Morton Road, Highway 213 landslides. The Swan Rd Extension was planned to come up to Morton Road, however one large home and smaller home were destroyed by liquidfaction here in the 1996 floods. How can you possibly put people into such danger? Geological studies must be done prior to any approval of annexation, zone change or possible development, as none of the homeowners on Holly Lane are able to obtain landslide insurance to cover losses from landslides. Landslide Insurance pretty much does not exist, therefore any new homeowners moving into the boundaries of the Park Place Plan will (1) **not be told they are moving into a landslide area, and** (2) **that it would be close to impossible for them to find landslide insurance to cover any losses from landslides.** It has yet to be determined if fire equipment will have an access to property. There are NO roads here, many roads currently close to failing. Alternative Mobility Targets will be useless, they will not work. Putting an extra right turn lane from Beavercreek Road to Highway 213 will only further the already over capacity issues because vehicles will find it S-L-O-W.....to merge from Beavercreek Rd into Hwy 213. Additionally, Oregon City is a Regional Hub, therefore traffic coming through the City will only intensify as development continues to outpace the few roads we have.

Natural Hazards identified by the city, such as wetlands, floodplains and steep slopes - Again, the **City does not comply** and the City is not prepared to develop in areas where so many landslides exist and their landslide codes are poor, regulating slopes of 25% or more is inadequate when most landslides occur on slopes much less than 25%. Regulations must be brought current after a full in depth geological study of this area is completed. Holly Lane should be taken out of the TSP since the homeowners here cannot protect themselves. They are unable to obtain landslide insurance, heavy traffic, a plethora of landslides, along with a very narrow street where homes sit only about 20-30 feet off the road does not make this a street that should be used heavily by the City. The City should have sought alternatives years ago when these conditions were brought to their attention. Does not conform.

Any significant adverse effects on specially designated open space, scenic, historic or natural resource areas by urbanization of the subject property at time of annexation - Everything I have listed as above applies here as well. This is not an area to develop. **City does not comply**

Lack of any significant adverse effects on the economic, social and physical environment of the community by the overall impact of the annexation. - City does not comply. Adverse effects on all issues listed, economic, social, physical environment will be devastating to an area where lack of roads, heavy traffic already exists, heavy with landslides and steep slopes and poor regulations to deal with the repercussions of, No landslide insurance exists to cover homeowners for losses due to landslides. New homeowners will not be told they are moving into a landslide area.

Goal 5 – The City does not comply with Goal 5

Our forest canopy will be cut down and that will destroy the environment of this entire area as natural vegetation and trees will be taken down. What happened to the Upland Game Corridor that Commissioner Doug Neely asked for and that was in the plan? It not longer exists unless the new homeowners want to pay annually to keep it open and that won't happen. Why aren't we protecting the small animals and fish? We only seem to do everything to kill them off. Lead fumes and chemicals from more and more cars, the vegetation removal will warm the creeks and streams too much. Chemicals and poisons from new homes will further poison the creeks and streams so that the small animals will have no good water to drink. Yes, we are killing our environment. The City and it's developer seem only interested in building more and more homes. Certainly, preserving this beautiful canyon, the fish, streams, creeks, the small animals and upland game should be a huge priority with the City, however Goal 5 requirements are constantly dismissed by the City where they seem to only build for density, leaving no quality of life for the people. Abernethy and Newell Creeks are two of the most important creeks for Salmon and other types of fish. I'm sure the water they will be drinking after the huge development here, will be awful, it will make the fish sick and diseased. Water quality here will be below failing. What are we doing to this beautiful canyon, to it's forest and animal life. We certainly seem to be doing everything we can to destroy it.

In 1999, Metro stated for budget reasons they dropped their landslide program. They would rely on local governments to write their own landslide regulations, however, many of them were not prepared for development in hazardous areas. Since this time, Metro has continued to spin out more lands into the UGB and many of them are in hazardous areas, at times placing people and their property in jeopardy. In 2006, I took Carlotta Collette, Metro District 2 Representative, on a two hour tour of the boundaries of the Park Place Concept Plan, and as well to the Newell Creek Apartments, to Thayer Road, to Holly Lane and others where she was able to personally see the many areas of this part of Clackamas County that are treacherous, dangerous and are capable of taking people's lives and property in these hazardous areas of landslides and steep slopes. Therefore, Metro has been aware of the dangers of landslides, but has not taken an active role in living out the requirements of Goal 7 and labeling certain lands as unbuildable due to severe hazards. This has placed many people in harm's way who do not understand they may be living in a landslide area and they certainly do not know their insurance coverage will pay nothing for losses due to landslides. When the City and a developer met with Metro in the early 2000's and asked for the Park Place area to be brought into the UGB for development, this should never have been allowed in such a dangerous place. Oregon City knows the dangers here and they seem willing to allow their developer to build homes and then withhold landslide and landslide insurance information from new buyers. This is simply unconscionable to me. I thought I lived in America!

Lastly, I want to include information for you regarding a Landslide Bill that was introduced in March of 2017 by Representative Del Bene of the State of Washington, by Suzanne Bonamici, Mr. Cartwright, Ms. Lee, Ms. Norton, Mr. Smith of Washington, Mr. Kilmer, Mr. Heck and Mr. Grijalva. The Bill has passed through the Natural Resources Committee and the Committee on Science, Space and Technology. The Bill is also Co-Sponsored by Senator Ron Wyden.

Exhibit #3 Bill H.R. 1675 and can be found on the internet. The Bill is to establish a national program to identify and reduce losses from landslide hazards, to establish a national 3D Elevation Program, and for other purposes. This act may be cited as the "National Landslide Preparedness Act" and will cover many issues such as identifying and understanding landslide hazards and risks, to reduce losses from landslides, to develop and implement landslide hazard guidelines for land use and other decision-makers. The USGS will coordinate the program throughout the U.S.

CC: Senator Ron Wyden
Tom Hughes – Metro

ENGINEERING GEOLOGY AND RELATIVE STABILITY OF THE SOUTHERN HALF OF NEWELL CREEK CANYON, OREGON CITY, OREGON

by

WILLIAM J. BURNS

A thesis submitted in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

in

GEOLOGY

Portland State University

1999

EXB #1

exposed scarps occurring at an average of 12 meters (±6.6 meters) (Figure 16). The area of these deep-seated slide complexes is generally much larger than that of the shallow-seated slides and range from 1,622 m^2 to 256,436 m^2 or 0.05% to 7.41% of the study area. Almost all of these deep-seated landslides have smaller, inactive-young and active, shallow-seated slides within their boundaries. Out of the two active deep-seated landslides in the study area, one of these landslides had a complete evacuation of material, while the other landslide seemed to have relatively smaller horizontal and vertical movements, probably constrained by the depth to the failure plane. These relatively smaller horizontal and vertical movements are most likely indicating drained conditions.

Out of the 14 deep seated landslides, the Highway 213-Morton Road landslide and the Highway 213-Mile Post 2.1 landslide were examined in detail. Both of these landslides seemed to be representative of most of the deep-seated slides in the study area based on size and morphology.

The Highway 213-Morton Road Landslide

The Highway 213-Morton Road deep-seated landslide was mapped by Schlicker and Finlayson in 1979 as a "large area of bedrock (Troutdale Formation) failure characterized by irregular topography, disrupted stratigraphy, overall anomalous moderate to shallow slope, and disrupted drainage pattern" (Figure 17 and Figure 18). This large inactive-mature slide has an estimated area of 208,925 m^2 and contains

subsurface soil properties from bore holes TB-104 and TB-108 and phreatic water surfaces found in well log 29 and bore hole TB-104 (appendix 2, Figure 18). This analysis consisted of three trials, starting with estimated material properties (cohesion and angle of internal friction) from the subsurface data, then lowering the values until a reasonable factor of safety was found (

Table 4, appendix 2). The material properties displayed in Figure 18 are most likely very close to the residual strength. The most critical failure plane (F_s=1.2) occurs at a maximum depth of 25 meters, approximately twice the exposed scarp (12 meters), and is depicted on the cross-section (Figure 18). To confirm this approximate depth to the failure plane, the critical thickness was calculated, resulting with a thickness of 21.5 meters, a value slightly less than that calculated by XSTABL, but within a close range of approximation considering the lack of subsurface information (appendix 2). Further stability analysis of this landslide included the addition of a horizontal earthquake load through a coefficient (k). Recommended values from the California Department of Conservation (1997) included k=0.10 for a 6.5 magnitude earthquake (major) and k=0.15 for a 8.25 magnitude earthquake (great). This analysis resulted in a factor of safety ranging from 1.5 to 0.6 for a major earthquake and 1.3 to 0.5 for a great earthquake (appendix 2).

Although major development, including cutslopes and fills, occurred during the building of Highway 213, which passes across the toe of this landslide, this slide does not appear to have any deep-seated movements since this construction. But, examination

of the toe and the scarp indicate active and inactive-young slides have been modifying this deep-seated landslide continuously. The stability analysis confirms the current conditions of this deep-seated movement with a factor of safety of 1.2 for the current conditions. It was also discovered that a even major earthquake (magnitude=6.5) could cause a decrease in the factor of safety below one, indicating reactivation of this landslide (California Department of Conservation, 1997). These predicted factors of safety show that there is a chance of reactivation for this inactive-mature, deep-seated landslide and others like it.

The Highway 213, Mile Post 2.1 Deep-Seated Landslide

In 1979 the Oregon Department of Transportation began investigation for the construction of Highway 213. Included in this investigation was a series of bore holes. Some of these bore holes were very helpful in more accurately assessing the depth to the failure plane of some of the deep-seated landslides. The Highway 213, mile post 2.1 landslide (Plate 1), located crossing Highway 213 in the central portion of the study area is a deep-seated, inactive-mature landslide very similar to the Highway 213-Morton Road landslide described in the last section. This slide has a double bowl shape in plan view and is approximately 300 meters wide and 300 meters long with an exposed maximum scarp of approximately nine meters. The scarp and toe parallel Highway 213, Holly Lane and Newell Creek. Within this landslide's boundaries are two smaller, shallow-seated, active slides, both of which appear to have their scarps in the road prism

of Highway 213. During the building of Highway 213, the Oregon Department of Transportation recognized this deep-seated slide through surficial mapping and subsurface exploration and mitigated it with a rock buttress located upslope from the highway (ODOT, 1998).

One of the bore holes, TB-109, drilled during construction of the highway, notes the presence of slickensides at a depth of approximately 13.5 meters (ODOT, 1998) (appendix 1). The depth of the slickensides in this bore hole (TB-109), located in the middle the Highway 213, mile post 2.1 deep seated landslide, is interpreted to display the approximate depth to the failure plane. Although this interpreted depth to failure plane (13.5 meters) does not match the estimated depth from the exposed scarp (nine meters), their comparison confirms that this slide is deep-seated.

Deep-Seated Landslide Conclusions

Since most of these deep-seated slides are prehistoric, human caused induction can be ruled out. The most probable initiating causes of these slides are a wetter prehistoric climate, inundation and quick lake level drop following the 40+ Missoula Floods (12,700 to 15,300 years B.P.), and earthquake shaking (CDC, 1997; Waitt, 1985). Although most of these slides are considered inactive-mature (dormant), extreme caution should be exercised before any construction takes place on or near one of these deep-seated slides, including a complete surface/subsurface investigation and a slope stability analysis including earthquake loads by an engineering geologist and a geotechnical ENGINEER

the observations and mapping of the growth of this landslide tend to confirm that the head scarp (right-bowl) and upper right flank are the areas most susceptible to further growth.

Conclusions for Deep and Shallow-Seated Landslides

The main hazards associated with deep and shallow-seated landslides in the study area are very different. The shallow-seated slides generally fail very rapidly, sometimes spawning a potentially life-threatening debris flow in the valley below. Although these shallow-seated landslides are dangerous and can cause considerable damage when they occur, it is relatively easy and economically feasible to mitigate these landslides. Another hazard associated with the shallow-seated slides is the potential for growth if mitigation is not implemented immediately, as shown with the Spady Landslide.

The deep-seated slides in the study area are generally not as dangerous (life-threatening), because their movements, at one time, are generally less and much slower than shallow-seated slides. But these landslides can be extremely costly to mitigate if movement does occur, as shown with the Dewey-Warren Street landslide. Another concern is the potential for earthquake induced movement, as studied with the Highway 213-Morton Road landslide. If a major or great earthquake did occur, the potential for movement of these deep-seated slides greatly increases.

This concern of reactivation of deep-seated landslides is (1998) becoming a reality in some other areas, such as the Aldercrest Landslide in Kelso, Washington, and several

landslides within kilometers of Newell Creek Canyon, such as the Holly Lane Landslide and the Mathew Court Landslide. All of these active, deep-seated landslides are located in the Upper Troutdale Formation.

CHAPTER 8: CONCLUSIONS

This engineering geologic investigation and interpretation of the relative stability of the southern half of Newell Creek Canyon covered an area roughly 3.1 km^2. The results of this study are a set of detailed maps displaying areas of active and formerly active landslides, geologic bedrock and soil distribution, and a set of recommendations concerning future development and the possible stability conditions that may be encountered.

The mapping of morphological landslide features and associated features resulted in the identification of 79 landslides in the southern half of Newell Creek Canyon (Plate 1). These landslides were divided into two classes related to the depth to the failure plane resulting with 65 shallow-seated and 14 deep-seated landslides. All of these landslides were also classified geomorphologically, totaling 65 earthflows, 3 earthflow/debrisflows, 9 slumps, and 2 slump/earthflows (Easterbrook, 1993). From the Engineering Geology Map combined with a stability analysis, the Relative Stability Map was created resulting in three zones of relative stability with the following percents of the study area: moving ground (5%), potentially unstable ground (56%), stable ground (38%).

Suggested Engineering Geologic and Geotechnical Investigation

Engineering geologic investigations and interpretation of the relative slope stability serve as an essential first step in the evaluation of landslide hazards for regional and community land-use planning, decision making, and development. After this decision making has taken place, an experienced engineering geologist should complete a similar site-specific investigation including an engineering geologic map, relative stability map, and a report of observations and suggestions concerning development. This investigation should, in turn, be followed by a geotechnical study including a subsurface investigation such as drilling or trenching with insitu testing and sampling, testing of soil and bedrock samples, and stability computations.

The annual estimated $4 million cost of landslide damage in Oregon reveals the severity of the problem. In 1997, along with one of my professors, Scott Burns, and two other graduate students completed a landslide inventory of the entire Portland Metropolitan Region (Burns et al., 1998). This study focused only on landslides occurring in the past two years (1996-1997), yet 705 landslides were mapped, and a total of over $40 million for mitigation was estimated! However, I suggest that this study on Newell Creek Canyon and studies similar to it, followed by the recommended site-specific studies can reduce these costs immensely.

Suggested Land Use Planning

The purpose of the engineering geologic investigation is not to prevent development, but to promote educated decision making and wise development. Any area can be developed if the potential for instability is determined and the cost of stabilization and development meets the developer's budget. Yet, some of these areas may be worth more to the community, socially and economically, if other land uses are implemented, such as parks.

Suggested Further Study

As Portland continues to expand its suburbs due to continued population increases and as there is continued pressure to develop in geologically hazardous terrain, the need for the development of relative stability maps for educated decision making is increased. In a recent study by Burns et al. (1998), five zones of high risk for landsliding were delineated for the Portland Metropolitan Region. One of these zones is the fine grained facies of The Troutdale Formation, which covers hundreds of square kilometers in the southeast section of Portland. Newell Creek Canyon is located within this zone and most of the rest of this zone contains slides similar in type and density to these in Newell Creek Canyon.

Another concern within the Portland Metropolitan Region is the potential for earthquake induced and reactivation of currently identified landslides. Portland is in seismic risk zone 3, meaning the area can experience earthquakes of magnitudes up to

VIII (Schlicker and Finlayson, 1979). The effects of an earthquake can be added to the simplified factor of safety equation through a second pseudostatic driving force component or earthquake thrust (Abel, 1997).

I suggest that before the area zoned as a high potential for landslides in the 1998 study by Burns, et al. becomes urbanized, a study similar to this one should be performed on this zone. Included with this study should be the evaluation for reactivation of earthquake induced landslides.

Adopted September 28, 2001
Effective June 1, 2002

Oregon's Statewide Planning Goals and Guidelines
GOAL 7: AREAS SUBJECT TO NATURAL HAZARDS

To protect people and property from natural hazards.

A. NATURAL HAZARD PLANNING

1. Local governments shall adopt comprehensive plans (inventories, policies and implementing measures) to reduce risk to people and property from natural hazards.

2. Natural hazards for purposes of this goal are: floods (coastal and riverine), landslides,[1] earthquakes and related hazards, tsunamis, coastal erosion, and wildfires. Local governments may identify and plan for other natural hazards.

B. RESPONSE TO NEW HAZARD INFORMATION

1. New hazard inventory information provided by federal and state agencies shall be reviewed by the Department in consultation with affected state and local government representatives.
2. After such consultation, the Department shall notify local governments if the new hazard information requires a local response.
3. Local governments shall respond to new inventory information on natural hazards within 36 months after being notified by the Department of Land Conservation and Development, unless extended by the Department.

C. IMPLEMENTATION

Upon receiving notice from the Department, a local government shall:

1. Evaluate the risk to people and property based on the new inventory information and an assessment of:
   a. the frequency, severity and location of the hazard;
   b. the effects of the hazard on existing and future development;
   c. the potential for development in the hazard area to increase the frequency and severity of the hazard; and
   d. the types and intensities of land uses to be allowed in the hazard area.
2. Allow an opportunity for citizen review and comment on the new inventory information and the results of the evaluation and incorporate such information into the comprehensive plan, as necessary.
3. Adopt or amend, as necessary, based on the evaluation of risk, plan policies and implementing measures consistent with the following principles:
   a. avoiding development in hazard areas where the risk to people and property cannot be mitigated; and
   b. prohibiting the siting of essential facilities, major structures, hazardous facilities and special occupancy structures, as defined in the state building code (ORS 455.447(1) (a)(b)(c) and (e)), in identified hazard areas, where the risk to public safety cannot be mitigated, unless an essential facility is needed within a hazard area in order to provide essential emergency response services in a timely manner.[2]
4. Local governments will be deemed to comply with Goal 7 for coastal and riverine flood hazards by adopting and

[1] For "rapidly moving landslides," the requirements of ORS 195.250-195.275 (1999 edition) apply.

[2] For purposes of constructing essential facilities, and special occupancy structures in tsunami inundation zones, the requirements of the state building code - ORS 455.446 and 455.447 (1999 edition) and OAR chapter 632, division 5 apply.

EXB #2

implementing local floodplain regulations that meet the minimum National Flood Insurance Program (NFIP) requirements.

D. COORDINATION

1. In accordance with ORS 197.180 and Goal 2, state agencies shall coordinate their natural hazard plans and programs with local governments and provide local governments with hazard inventory information and technical assistance including development of model ordinances and risk evaluation methodologies.

2. Local governments and state agencies shall follow such procedures, standards and definitions as may be contained in statewide planning goals and commission rules in developing programs to achieve this goal.

GUIDELINES

A. PLANNING

1. In adopting plan policies and implementing measures to protect people and property from natural hazards, local governments should consider:

a. the benefits of maintaining natural hazard areas as open space, recreation and other low density uses;

b. the beneficial effects that natural hazards can have on natural resources and the environment; and

c. the effects of development and mitigation measures in identified hazard areas on the management of natural resources.

2. Local governments should coordinate their land use plans and decisions with emergency preparedness, response, recovery and mitigation programs.

B. IMPLEMENTATION

1. Local governments should give special attention to emergency access when considering development in identified hazard areas.

2. Local governments should consider programs to manage stormwater runoff as a means to help address flood and landslide hazards.

3. Local governments should consider nonregulatory approaches to help implement this goal, including but not limited to:

a. providing financial incentives and disincentives;

b. providing public information and education materials;

c. establishing or making use of existing programs to retrofit, relocate, or acquire existing dwellings and structures at risk from natural disasters.

4. When reviewing development requests in high hazard areas, local governments should require site-specific reports, appropriate for the level and type of hazard (e.g., hydrologic reports, geotechnical reports or other scientific or engineering reports) prepared by a licensed professional. Such reports should evaluate the risk to the site as well as the risk the proposed development may pose to other properties.

5. Local governments should consider measures that exceed the National Flood Insurance Program (NFIP) such as:

a. limiting placement of fill in floodplains;

b. prohibiting the storage of hazardous materials in floodplains or providing for safe storage of such materials; and

c. elevating structures to a level higher than that required by the NFIP and the state building code.

Flood insurance policy holders may be eligible for reduced insurance rates through the NFIP's Community Rating System Program when local governments adopt these and other flood protection measures.

115TH CONGRESS
1ST SESSION

H. R. 1675

To establish a national program to identify and reduce losses from landslide hazards, to establish a national 3D Elevation Program, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

MARCH 22, 2017

Ms. DELBENE (for herself, Ms. BONAMICI, Mr. CARTWRIGHT, Ms. LEE, Ms. NORTON, Mr. SMITH of Washington, Mr. KILMER, Mr. HECK, and Mr. GRIJALVA) introduced the following bill; which was referred to the Committee on Natural Resources, and in addition to the Committee on Science, Space, and Technology, for a period to be subsequently determined by the Speaker, in each case for consideration of such provisions as fall within the jurisdiction of the committee concerned

---

A BILL

To establish a national program to identify and reduce losses from landslide hazards, to establish a national 3D Elevation Program, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the "National Landslide Preparedness Act".

SEC. 2. DEFINITIONS.

In this Act:

EXB #3

COMMENT FORM

*****PLEASE PRINT CLEARLY*****

- SPEAK INTO THE MICROPHONE AND STATE YOUR NAME AND RESIDING CITY
- Limit Comments to ***3 MINUTES***.
- Give to the Clerk in Chambers ***prior*** to the meeting.

OREGON CITY

Date of Meeting 12FEB17

Item Number From Agenda 3A

City of Oregon City
Planning Commission
Public Comment #
17

NAME: Nick Boecheit

*****Please provide complete contact information in order to receive notice of a land use decision as required by OCMC 17.50.130(C).**

ADDRESS: **Street:** 13941 S Redland Rd

City, State, Zip: OC, OR 97045

PHONE NUMBER: 503-939-4451

E-MAIL ADDRESS: Golfnick@Gmail.Com

SIGNATURE:

COMMENT FORM

*****PLEASE PRINT CLEARLY*****

- SPEAK INTO THE MICROPHONE AND STATE YOUR NAME AND RESIDING CITY
- Limit Comments to ***3 MINUTES***.
- Give to the Clerk in Chambers ***prior*** to the meeting.

Date of Meeting 2/12/18

Item Number From Agenda 3A

City of Oregon City
Planning Commission
Public Comment #
7

NAME: BILL TRUMBO

*****Please provide complete contact information in order to receive notice of a land use decision as required by OCMC 17.50.130(C).**

ADDRESS: **Street:** 20180 WOODGLEN WAY

City, State, Zip: OREGON CITY, OR 97045

PHONE NUMBER: 503-705-9043

E-MAIL ADDRESS: BILL-TRUMBO@YAHOO.COM

SIGNATURE:

COMMENT FORM

No

OREGON CITY

*****PLEASE PRINT CLEARLY*****

- SPEAK INTO THE MICROPHONE AND STATE YOUR NAME AND RESIDING CITY
- Limit Comments to ***3 MINUTES***.
- Give to the Clerk in Chambers ***prior*** to the meeting.

City of Oregon City
Planning Commission
Public Comment #
16

Date of Meeting 02/12/18

Item Number From Agenda 3A

NAME: CAPTAIN STEVE FORD

*****Please provide complete contact information in order to receive notice of a land use decision as required by OCMC 17.50.130(C).**

ADDRESS: **Street:** 15190 HOLCOMB BLVD

City, State, Zip: OREGON CITY, OR

PHONE NUMBER: 971-295-2846

E-MAIL ADDRESS: 1978captain@gmail.com

SIGNATURE: Stephen M. Ford

COMMENT FORM

OREGON CITY

*****PLEASE PRINT CLEARLY*****

- SPEAK INTO THE MICROPHONE AND STATE YOUR NAME AND RESIDING CITY
- Limit Comments to ***3 MINUTES***.
- Give to the Clerk in Chambers ***prior*** to the meeting.

Date of Meeting 2/12/19

Item Number From Agenda —

NAME: JOHN REPLINGER

*****Please provide complete contact information in order to receive notice of a land use decision as required by OCMC 17.50.130(C).**

ADDRESS: **Street:** _____

City, State, Zip: _____

PHONE NUMBER: _____

E-MAIL ADDRESS: replinger2associates@comcast.net

SIGNATURE: John Replinger

no testimony

COMMENT FORM

OREGON CITY

*****PLEASE PRINT CLEARLY*****

- SPEAK INTO THE MICROPHONE AND STATE YOUR NAME AND RESIDING CITY
- Limit Comments to ***3 MINUTES***.
- Give to the Clerk in Chambers ***prior*** to the meeting.

Date of Meeting 2.12.18

Item Number From Agenda 3.A

NAME: MICHAEL C. ROBINSON

*****Please provide complete contact information in order to receive notice of a land use decision as required by OCMC 17.50.130(C).**

ADDRESS: **Street:** 1211 SW 5th Avenue ~~PORTLAND~~, SUITE 1900

City, State, Zip: PORTLAND, OR 97204

PHONE NUMBER: (503) 727.2264

E-MAIL ADDRESS: MROBINSON@SCHWABE.COM

SIGNATURE: M.C. Robinson

COMMENT FORM

OREGON CITY

*****PLEASE PRINT CLEARLY*****

- SPEAK INTO THE MICROPHONE AND STATE YOUR NAME AND RESIDING CITY
- Limit Comments to ***3 MINUTES***.
- Give to the Clerk in Chambers ***prior*** to the meeting.

Date of Meeting 2/12/2015

Item Number From Agenda 3a

NAME: Rick Givens

*****Please provide complete contact information in order to receive notice of a land use decision as required by OCMC 17.50.130(C).**

ADDRESS: **Street:** 15680 Sunblaze Dr

City, State, Zip: Oregon City, OR 97045

PHONE NUMBER:

E-MAIL ADDRESS:

SIGNATURE:

COMMENT FORM

No

OREGON CITY

*****PLEASE PRINT CLEARLY*****

- SPEAK INTO THE MICROPHONE AND STATE YOUR NAME AND RESIDING CITY
- Limit Comments to ***3 MINUTES***.
- Give to the Clerk in Chambers ***prior*** to the meeting.

Date of Meeting 2/12/18

Item Number From Agenda 3A

NAME: Tom Geil

*****Please provide complete contact information in order to receive notice of a land use decision as required by OCMC 17.50.130(C).**

ADDRESS: **Street:** Known

City, State, Zip:

PHONE NUMBER: Known

E-MAIL ADDRESS:

SIGNATURE: Tom Geil

City of Oregon City
Planning Commission
Public Comment #
1

COMMENT FORM

yp

OREGON CITY

*****PLEASE PRINT CLEARLY*****

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- Limit Comments to ***3 MINUTES***.
- Give to the Clerk in Chambers ***prior*** to the meeting.

Date of Meeting 2/12/18

Item Number From Agenda —

City of Oregon City
Planning Commission
Public Comment #
2

NAME: LINDA ATACK (ATTIC

*****Please provide complete contact information in order to receive notice of a land use decision as required by OCMC 17.50.130(C).**

ADDRESS: **Street:** 14432 LIVESAY RD

City, State, Zip: OREGON City, OR 97045

PHONE NUMBER: 503-189-5650

E-MAIL ADDRESS: LLROYER@AOL.COM

SIGNATURE: Linda Atack

COMMENT FORM

Yes

PLEASE PRINT CLEARLY

- SPEAK INTO THE MICROPHONE AND STATE YOUR NAME AND RESIDING CITY
- Limit Comments to ***3 MINUTES***.
- Give to the Clerk in Chambers ***prior*** to the meeting.

OREGON CITY

Date of Meeting 2-12-18

Item Number From Agenda —

City of Oregon City
Planning Commission
Public Comment #
3

NAME: George E. Thomas

***Please provide complete contact information in order to receive notice of a land use decision as required by OCMC 17.50.130(C).

ADDRESS: **Street:** 16644 S. Livesay Rd

City, State, Zip: ORE City OR 97045

PHONE NUMBER: 971-209-1407

E-MAIL ADDRESS: geopc3@aol.com

SIGNATURE: George E Thomas

COMMENT FORM

No

PLEASE PRINT CLEARLY

- SPEAK INTO THE MICROPHONE AND STATE YOUR NAME AND RESIDING CITY
- Limit Comments to ***3 MINUTES***.
- Give to the Clerk in Chambers ***prior*** to the meeting.

OREGON CITY

Date of Meeting 2-12-2018

Item Number From Agenda 3A

City of Oregon City
Planning Commission
Public Comment #
4

NAME: Lynnette Basiou (Ba-se-o)

***Please provide complete contact information in order to receive notice of a land use decision as required by OCMC 17.50.130(C).

ADDRESS: **Street:** 16402 Cattle Drive

City, State, Zip: Oregon City, OR 97045

PHONE NUMBER: 503-866-4482

E-MAIL ADDRESS: basiou@comcast

SIGNATURE:

COMMENT FORM

Yes

OREGON CITY

*****PLEASE PRINT CLEARLY*****

- SPEAK INTO THE MICROPHONE AND STATE YOUR NAME AND RESIDING CITY
- Limit Comments to ***3 MINUTES***.
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Date of Meeting 2/12/18

Item Number From Agenda 3A

City of Oregon City
Planning Commission
Public Comment #
18

NAME: KENT ZIEGLER

*****Please provide complete contact information in order to receive notice of a land use decision as required by OCMC 17.50.130(C).**

ADDRESS: **Street:** 2142 MARYLWOOD COURT

City, State, Zip: WEST LINN, OR 97068

PHONE NUMBER: 503-701-9716

E-MAIL ADDRESS: KNTZIG001@AOL.COM

SIGNATURE: K H Ziegler

COMMENT FORM

No

OREGON CITY

*****PLEASE PRINT CLEARLY*****

- SPEAK INTO THE MICROPHONE AND STATE YOUR NAME AND RESIDING CITY
- Limit Comments to ***3 MINUTES***.
- Give to the Clerk in Chambers ***prior*** to the meeting.

Date of Meeting 2/12/18

Item Number From Agenda — PROPOSED ANNEXATION of LIVESAY RD

NAME: TODD THOMAS

*****Please provide complete contact information in order to receive notice of a land use decision as required by OCMC 17.50.130(C).**

ADDRESS: **Street:** 704 BARCLAY HILLS DRIVE

City, State, Zip: O.C.

PHONE NUMBER: 503-502-3264

E-MAIL ADDRESS:

SIGNATURE: Todd Thomas

City of Oregon City
Planning Commission
Public Comment #
5

COMMENT FORM

for

PLEASE PRINT CLEARLY

- SPEAK INTO THE MICROPHONE AND STATE YOUR NAME AND RESIDING CITY
- Limit Comments to ***3 MINUTES***.
- Give to the Clerk in Chambers ***prior*** to the meeting.

OREGON CITY

Date of Meeting 2-12-18

Item Number From Agenda – 3A

City of Oregon City
Planning Commission
Public Comment #
6

NAME: ART KIRCHHOFER

***Please provide complete contact information in order to receive notice of a land use decision as required by OCMC 17.50.130(C).

ADDRESS: **Street:** 14097 S. LINDSAY RD

City, State, Zip: OREGON CITY OR 97045

PHONE NUMBER: 503 319-8961

E-MAIL ADDRESS: ART@CLACKAMASAUTOPARTS.COM

SIGNATURE:

COMMENT FORM

OREGON CITY

*****PLEASE PRINT CLEARLY*****

- SPEAK INTO THE MICROPHONE AND STATE YOUR NAME AND RESIDING CITY
- Limit Comments to ***3 MINUTES***.
- Give to the Clerk in Chambers ***prior*** to the meeting.

City of Oregon City
Planning Commission
Public Comment # **8**

Date of Meeting 2-12-18

Item Number From Agenda —

NAME: WES ROGERS

*****Please provide complete contact information in order to receive notice of a land use decision as required by OCMC 17.50.130(C).**

ADDRESS:
Street: 906 SUMMIT ST
City, State, Zip: OREGON CITY OR 97045

PHONE NUMBER: 503 785 5426

E-MAIL ADDRESS: WES.ROGERS@OCSD62.ORG

SIGNATURE:

COMMENT FORM

NO

OREGON CITY

*****PLEASE PRINT CLEARLY*****

- SPEAK INTO THE MICROPHONE AND STATE YOUR NAME AND RESIDING CITY
- Limit Comments to ***3 MINUTES***.
- Give to the Clerk in Chambers ***prior*** to the meeting.

Date of Meeting 2/12/18

Item Number From Agenda PARK PLACE 92nd Ave Annex

NAME: CHRISTINE KOSINSKI

*****Please provide complete contact information in order to receive notice of a land use decision as required by OCMC 17.50.130(C).**

City of Oregon City
Planning Commission
Public Comment #
9

ADDRESS: **Street:** HOLLY LN

City, State, Zip:

PHONE NUMBER:

E-MAIL ADDRESS: BRITTENSMIN@AOL.COM

SIGNATURE:

COMMENT FORM

Concerns

PLEASE PRINT CLEARLY

- SPEAK INTO THE MICROPHONE AND STATE YOUR NAM
- Limit Comments to ***3 MINUTES***.
- Give to the Clerk in Chambers ***prior*** to the meeting.

City of Oregon City
Planning Commission
Public Comment #
11

Date of Meeting 02/12/18

Item Number From Agenda Park Place Annexation

NAME: Michael Doran

***Please provide complete contact information in order to receive notice of a land use decision as required by OCMC 17.50.130(C).

ADDRESS: **Street:** 16267 Oak Valley Drive

City, State, Zip: Oregon City, OR 97045

PHONE NUMBER: 503-659-2108

E-MAIL ADDRESS: mikedoran99@hotmail.com

SIGNATURE: Michael D

COMMENT FORM

Concerns

PLEASE PRINT CLEARLY

- SPEAK INTO THE MICROPHONE AND STATE YOUR NAME AND RESIDING CITY
- Limit Comments to ***3 MINUTES***.
- Give to the Clerk in Chambers ***prior*** to the meeting.

OREGON CITY

Date of Meeting 9/12/18

Item Number From Agenda 17-0004 Park Plans

NAME: Paul Edgar

***Please provide complete contact information in order to receive notice of a land use decision as required by OCMC 17.50.130(C).**

ADDRESS: **Street:**

City, State, Zip:

PHONE NUMBER:

E-MAIL ADDRESS:

SIGNATURE:

City of Oregon City
Planning Commission
Public Comment #
12

COMMENT FORM

PLEASE PRINT CLEARLY

- SPEAK INTO THE MICROPHONE AND STATE YOUR NAME AND RESIDING CITY
- Limit Comments to ***3 MINUTES***.
- Give to the Clerk in Chambers ***prior*** to the meeting.

OREGON CITY

Date of Meeting 2-12-18

Item Number From Agenda 3a

City of Oregon City
Planning Commission
Public Comment #
10

NAME: BOB LA SALLE

***Please provide complete contact information in order to receive notice of a land use decision as required by OCMC 17.50.130(C).

ADDRESS: **Street:** 20131 Spyglass Ct.

City, State, Zip: Orega City OR 97045

PHONE NUMBER: 503.780.9270

E-MAIL ADDRESS: cathie@mobilitymules.com

SIGNATURE: Cathie Ross

110

COMMENT FORM

OREGON CITY

*****PLEASE PRINT CLEARLY*****

- SPEAK INTO THE MICROPHONE AND STATE YOUR NAME AND RESIDING CITY
- Limit Comments to ***3 MINUTES***.
- Give to the Clerk in Chambers ***prior*** to the meeting.

Date of Meeting 2-12-18

Item Number From Agenda —

NAME: Chris Cook

*****Please provide complete contact information in order to receive notice of a land use decision as required by OCMC 17.50.130(C).**

ADDRESS: **Street:** 16429 CATTLE DR.

City, State, Zip: OREGON CITY, OR 97045

PHONE NUMBER: 503-789-3111

E-MAIL ADDRESS: ccookl pdx@msn.com

SIGNATURE:

EXHIBITS ENTERED INTO THE RECORD AT A HEARING

Community Development Department, 221 Molalla Avenue, Suite 200, P.O. Box 3040, Oregon City, OR 97045, (503) 722.3789
www.orcity.org

Hearing Date: 2.12.18

File Number: AN 17-04, ZC17-05

Exhibit Number:	Description of Exhibit:	Submitted By:
1	Staff Presentation	Staff
2	Oregon City News Article	Mike Robinson
3	Feb 12, 2018 Letter- Wes Rogers	Wes Rogers
4	Tom Geil - Large Copy of Article	Tom Geil
5	DOGAMI MAP - CD	Paul Edgar -
6		
7		
8		
9		
10		

AN-17-0004 / ZC-17-0005

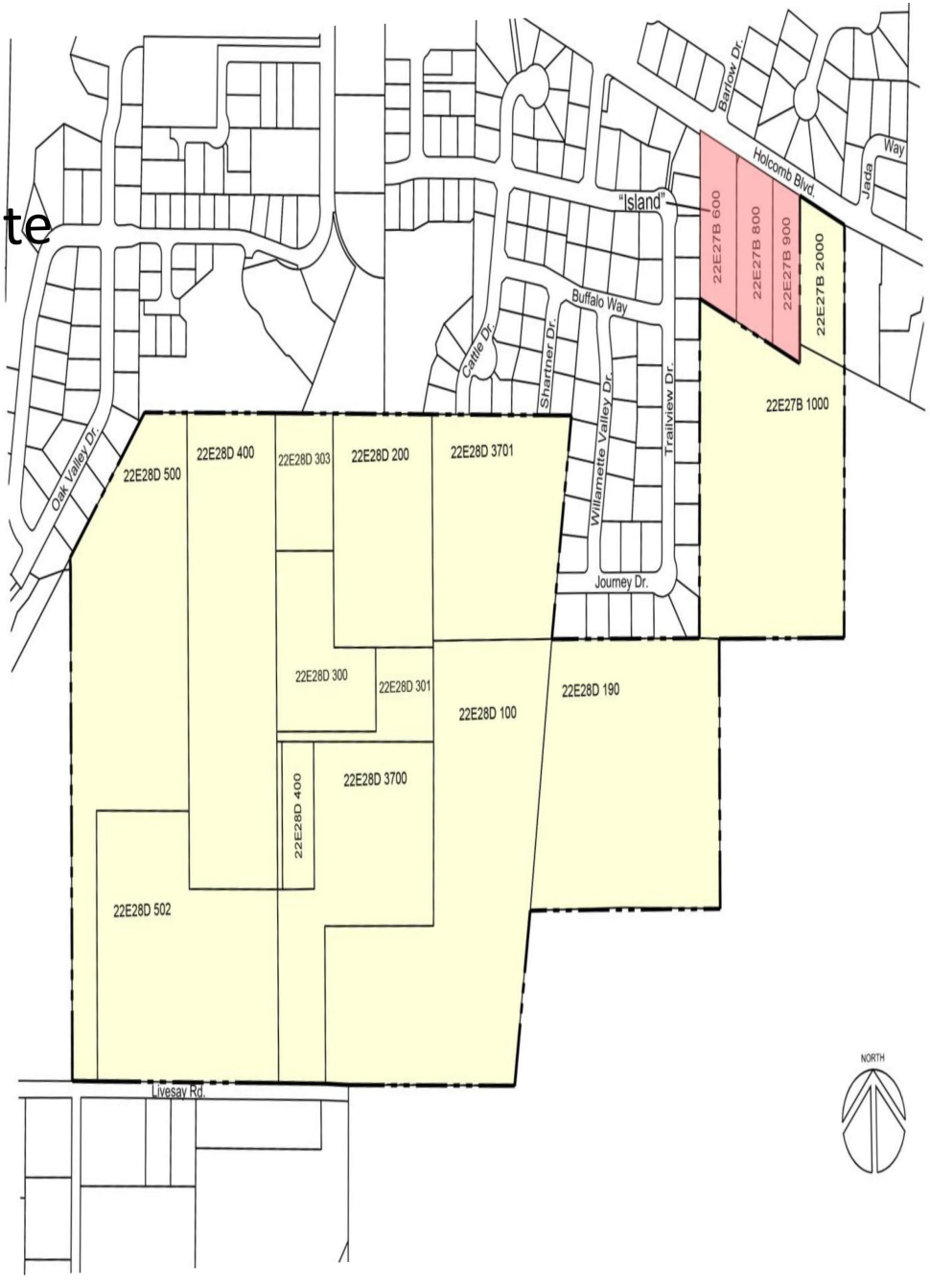
Type IV - Annexation with Zone Change –Park Place

Planning Commission February 12, 2018

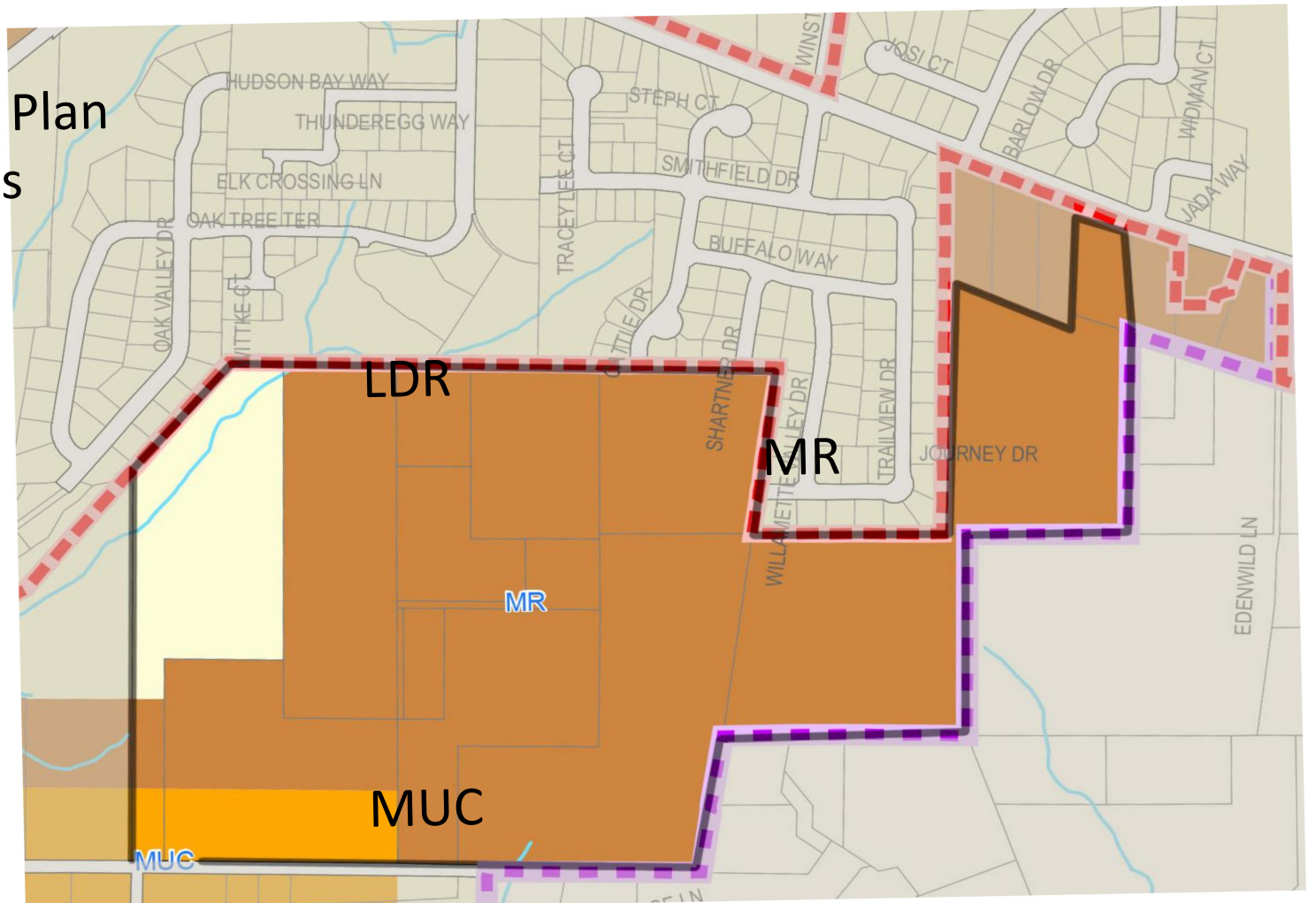
Background

- Annexation of 92 acres of land within the Urban Growth Boundary
- Apply zoning to the annexed area in conformance with the land use designations in the Oregon City Comprehensive Plan
- Change from Clackamas County Future Urbanizable-10 (FU-10) and RRF5 (Rural Farm and Forest 5-Acre) to:
    - R-10 Single-Family Dwelling District
    - R-5 Dwelling District
    - NC Neighborhood Commercial District
- The proposed zoning designations, if approved, represent an initial step in implementing the vision for the “North Village” of the adopted Park Place Concept Plan, adopted by the City in 2008

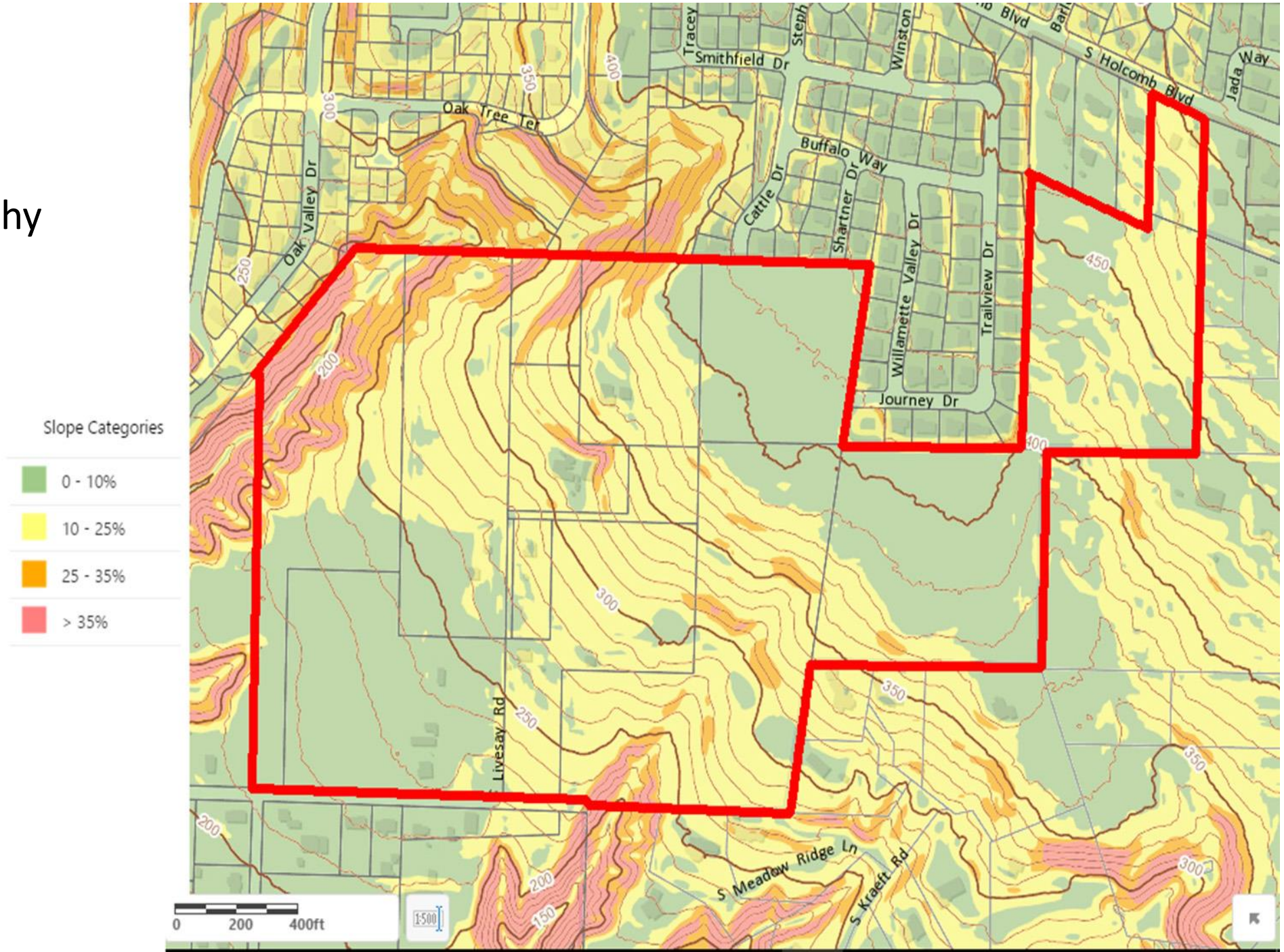
Subject Site



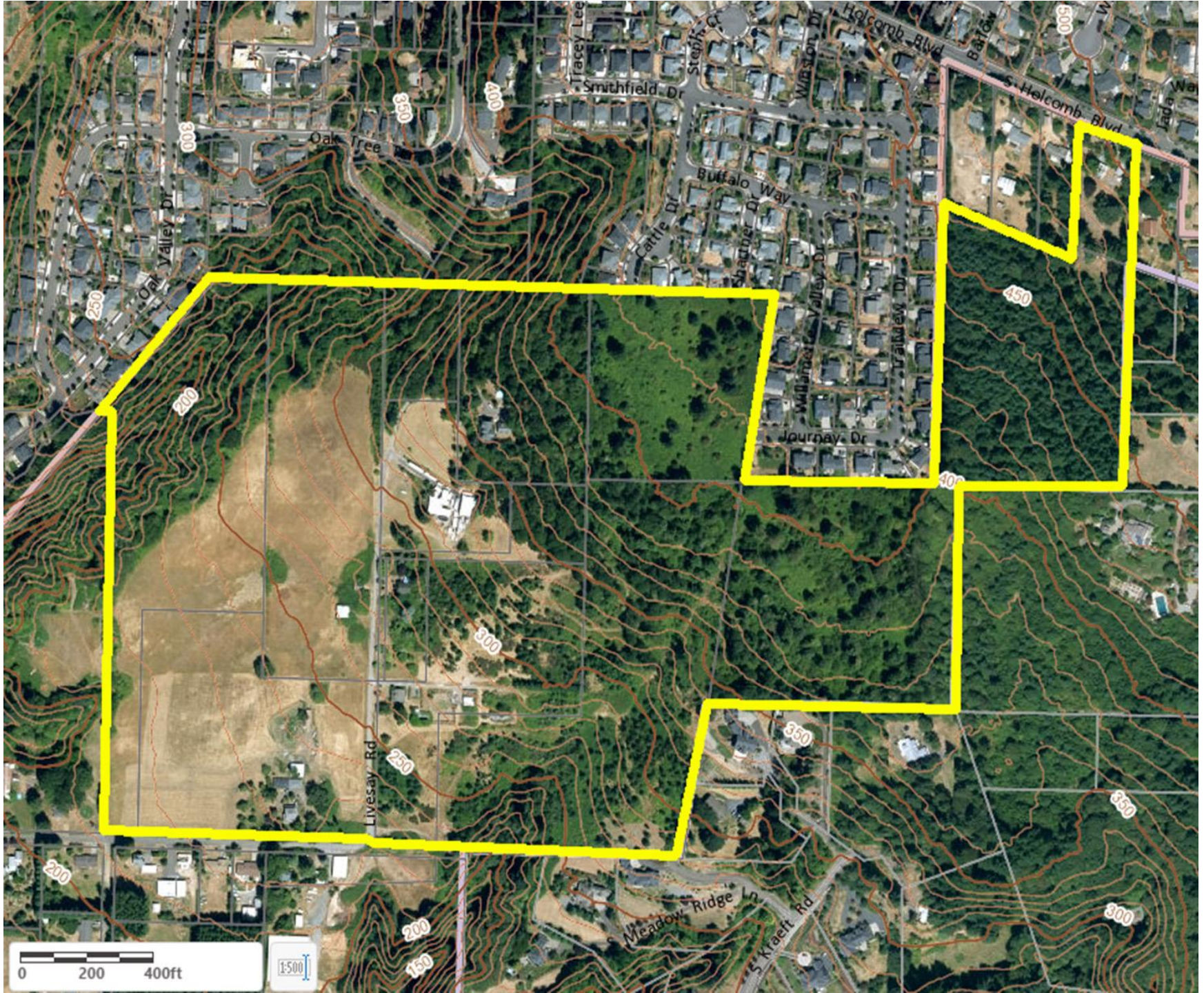
Comprehensive Plan Designations



Site Topography

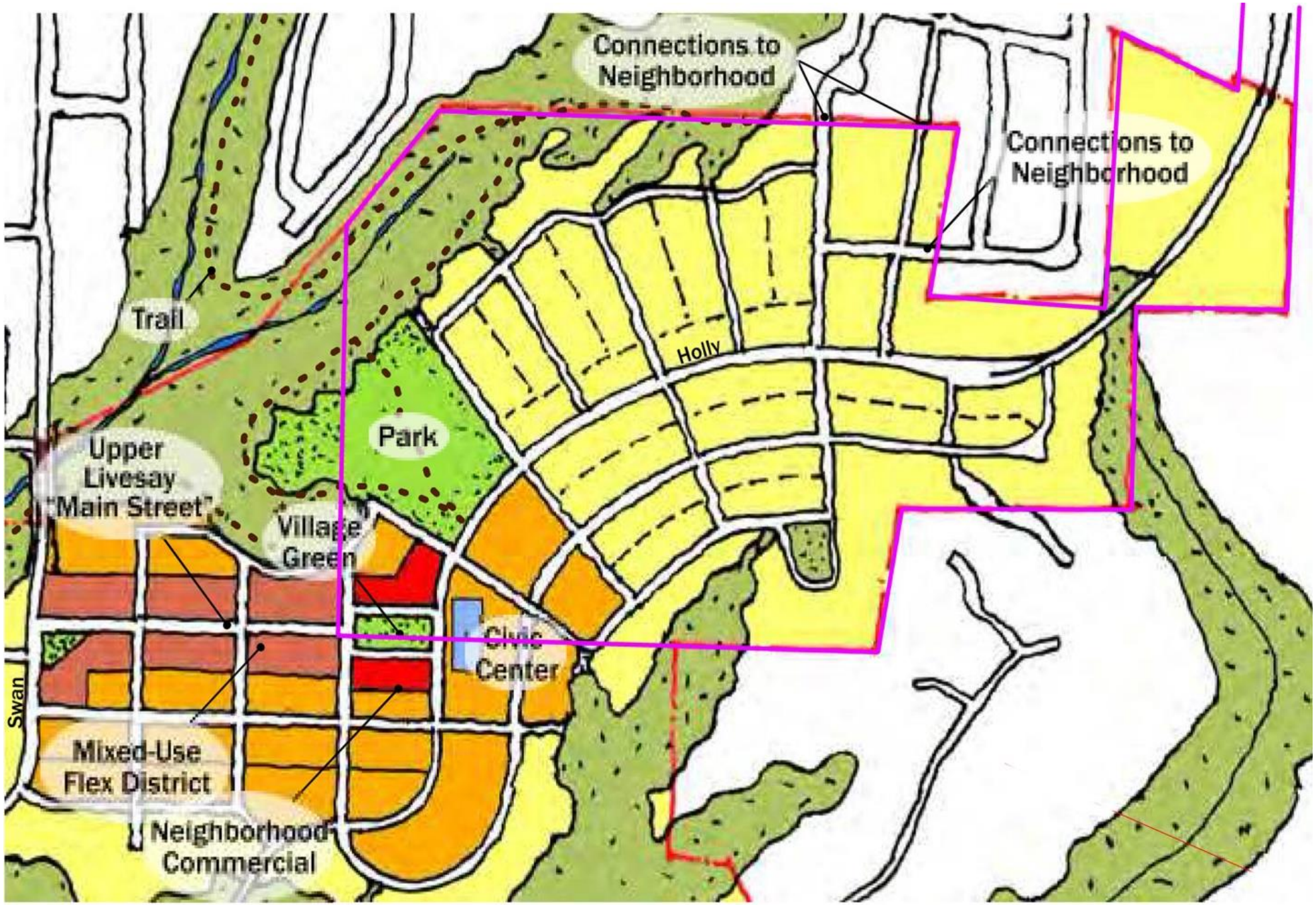


Aerial Photograph



North Village Neighborhood

(Annexation Area Outlined in Magenta)



Metro Boundary Change Criteria – Chapter 3.09

1. Consistency with directly applicable provisions in ORS 195 agreements or ORS 195 annexation plans.

2. Consistency with directly applicable provisions of urban planning area agreements between the annexing entity and a necessary party.

3. Consistency with directly applicable standards for boundary changes contained in Comprehensive land use plans and public facility plans.

4. Consistency with directly applicable standards for boundary changes contained in the Regional framework or any functional plans.

5. Whether the proposed boundary change will promote or not interfere with the timely, orderly and economic provision of public facilities and services.

6. Consistency with other applicable criteria for the boundary change in question under state and local law.

Criteria for Annexation- OCMC Title 14

(a) The territory is included within an urban growth boundary adopted by the city or Metro, as defined in ORS 197.015

(b) The territory is, or upon annexation of the territory into the city will be, subject to the acknowledged comprehensive plan of the city.

(c) At least one lot or parcel within the territory is contiguous to the city limits or is separated from the city limits only by a public right of way or a body of water.

(d) The proposal conforms to all other requirements of the city's ordinances.

Criteria for Zone Change OCMC 17.68

17.68.020 - Criteria.

The criteria for a zone change are set forth as follows:

A. The proposal shall be consistent with the goals and policies of the comprehensive plan.

B. That public facilities and services (water, sewer, storm drainage, transportation, schools, police and fire protection) are presently capable of supporting the uses allowed by the zone, or can be made available prior to issuing a certificate of occupancy. Service shall be sufficient to support the range of uses and development allowed by the zone.

C. The land uses authorized by the proposal are consistent with the existing or planned function, capacity and level of service of the transportation system serving the proposed zoning district.

D. Statewide planning goals shall be addressed if the comprehensive plan does not contain specific policies or provisions which control the amendment.

Conditions for Approval

- If Annexed, Zoning may not be applied until Alternative Mobility Targets are adopted and amendments have been made to OCMC Chapter 12.04

- If Annexed, no development may happen onsite until approval of a Type III Master Plan of the entire 91-acre property that addresses:
  - The Park Place Concept Plan
  - Oregon City's Public Facilities Plans
    - **Park and trails** (*timing of parkland acquisitions and development*)
    - **Sewer, water, stormwater** (*utility phasing that can foster redevelopment of the entire concept plan area)*
    - **Transportation System Plan**. (*proposed phasing of major roads to ensure a timely connection to Holly)*

Conditions for Approval

- At the time that a Master Plan, the developer shall participate in the proportional funding of offsite intersection improvements which include but are not limited to:
  - I-205/OR-99E ramp terminal projects (TSP Projects D75 and D76)
  - Main Street/14th Street improvements (TSP Projects D7 and D8)
  - Abernethy/Holcomb/Redland intersection
  - OR213/Redland Road (TSP Project D79)
  - Holly Lane/Holcomb Boulevard intersection (TSP Project D43)
  - Holly Lane/Redland Road intersection (TSP Project D36)
  - Highway 213/Beavercreek Road- right-turn lane on westbound Beavercreek Road and a merge lane on northbound Highway 213 (*Alternative Mobility Study*)

Island Annexation An

- Oregon City Comprehen
  requires that the City "e
  creating unincorpated i
- The applicant indicates
  unsuccessfully to inclu
  annexation.
- Policy 14.4.3 provides t
  City may "require that
  proposed annexation"
  annexation request.

Should the city require annexation of these three
would be required, since there would no longer b
for the annexation.

Request for Continuance to April 9, 2018

- Revision to Applicant's Traffic Analysis for Neighborhood Commercial based on ODOT’s review for reasonable worst case scenario.
- Applicant is currently working with ODOT on this request as the traffic analysis will be further refined at the time of the Master Plan review based on a specific proposal.

City of Oregon City Planning Commission
Meeting of February 12th, 2018 7:00pm

Testimony of: Christine Kosinski, Unincorporated Clackamas County, Holly Lane

RE: AN 17-0004 ZC 17-0005 Park Place Annexation and Rezoning – 92 Acre

I'm requesting that the City hold this hearing open until the following concerns are addressed:

I request that Oregon City send notice of this Land Use Application to annex and re-zone 92 acres South of Holcomb Blvd and North of Livesay Rd. Notices to be sent to each property owner on Holly Ln, (including all streets coming off Holly), Maplelane, Thayer and Redland Road. These are all homeowners in Clackamas County which will be highly affected by this proposed annexation and zone change, and yet, they have been invited to NO hearings. This is the beginning of the Holly Ln extension, isn't it about time the City meets with these homeowners and explains it's future plans for both Holly Ln and all other roads listed here.?

I request that the Planning Commissioners invite Scott Burns, Professor of Geology, PSU to attend an upcoming meeting on this proposed annexation and zone change. Scott Burns is highly qualified to address any concerns the Commission may have regarding landslides that exist in the Park Place and Holly Ln areas. Professor Burns also can validate the fact that homeowners in a landslide area are unable to get Landslide Insurance. In a recent conversation, Professor Burns stated he would welcome such a meeting, he told the City about Park Place years ago and would be happy to speak again, to the Commissioners and the community, about all landslide issues.

I request that the City clarify for the record.....Should this annexation be approved, this would be the beginning of the Holly Lane Extension. Oregon City, please state for the record that Holly Ln (as it stands now between Maplelane and Redland Rd) will not become part of the City with this annexation.

ITEMS ENTERED INTO RECORD
FILE: ZC 1704 ZC 17-05
DATE: 2-12-18
EXHIBIT: 5
SUBMITTED BY: Christine Kosinski

Oregon City School District No. 62

Learning to be our Best

PO Box 2110 (1417 12th St.), Oregon City, Oregon 97045-5010

February 12, 2018

Planning Commission
City of Oregon City
625 Center Street
Oregon City, OR 97045

RE: AN-17-0004, ZC-17-0005

Regarding the 92 acre annexation request and accompanying zone change in the area south of Holcomb Blvd. and north of S Livesay Road. Impacted school enrollment areas are Holcomb and Redland Elementary Schools, Ogden Middle School and Oregon City High School.

The District has limited short-term capacity available at both Redland and Holcomb Elementary Schools, capacity available at Ogden Middle School and Oregon City High School. Recent development in the area by Holcomb Elementary School has yielded significantly less than one student per household. The District currently is planning a capital bond measure on the November 2018 ballot that presently includes replacing and expanding Ogden Middle School to a new location adjacent to Holcomb Elementary School. The former Ogden Middle School site would then be repurposed into an elementary school when elementary enrollment in the Ogden Middle School area requires a new school. We believe this plan will be adequate to meet the long-term enrollment generated by this annexation and zone change.

I've attached my business card should you have further comments and or questions.

Sincerely,

Wes Rogers

Wes Rogers
Director of Operations
503-785-8426, wes.rogers@orecity.k12.or.us


Kathy Schaub
ccount Executive
aukie/Happy Valley
kschaub@
mplinmedia.com
971-204-7779


Joleen Taylor
Advertising Representative
jtaylor@
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nting Specialist
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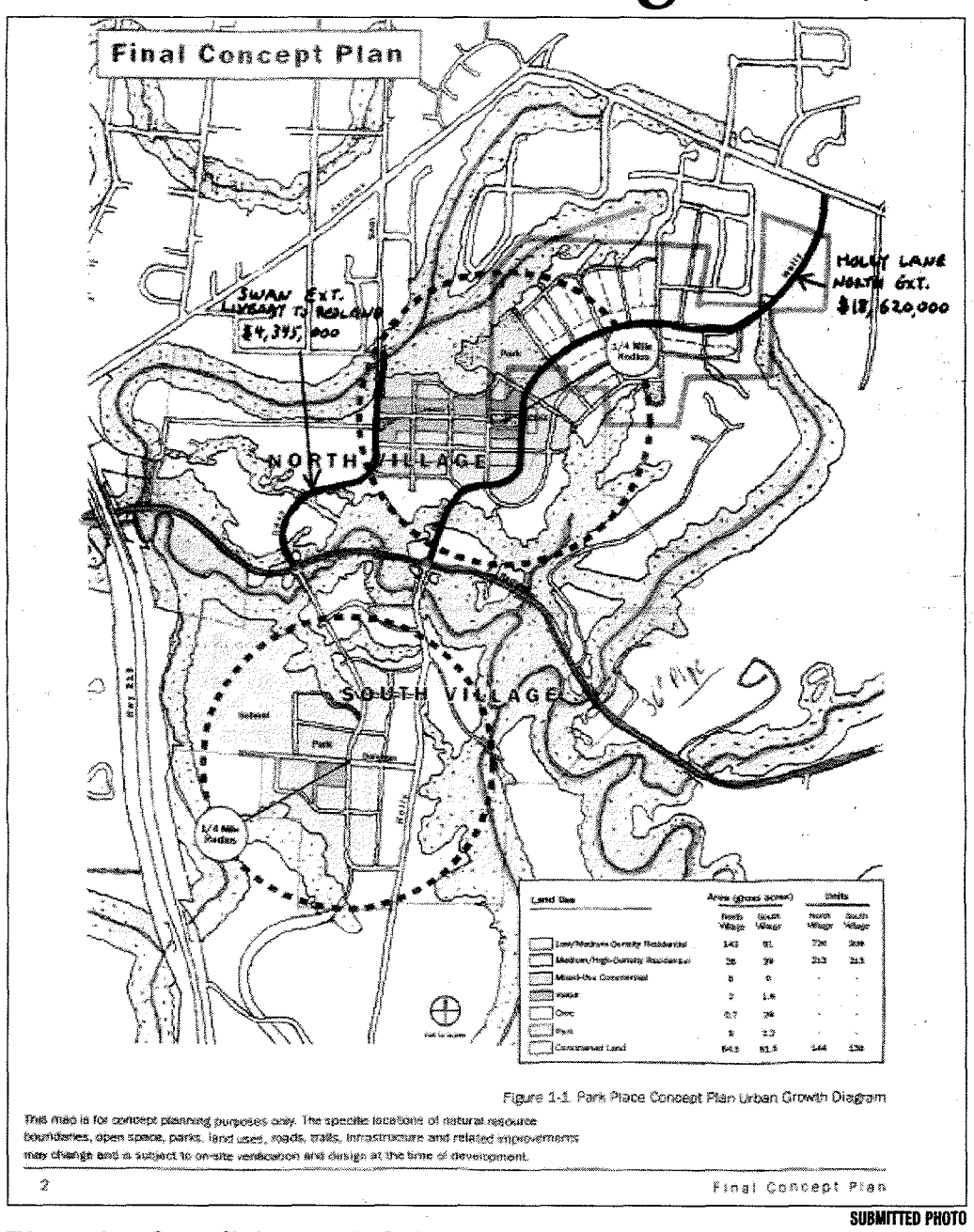
503-546-0788

s Review and Oregon City News
) are weekly community newspa-
shed Wednesdays by Community
s. The contents of these news-

Proposed annexation is dangerous, short-sided



SUBMITTED PHOTO

This map shows Oregon City's concept for Park Place neighborhood.

COMMUNITY SOAPBOX
Tom Geil

Like the proverbial "bad penny," it's back. Like the sales tax that the state of Oregon still keeps talking about bringing back to us for yet another vote, it's back. The Park Place Concept Plan Annexation is back.

Except this time, Oregon City residents don't get a vote in the process. Even though it's in our city charter that citizens shall have a vote on all annexations, Gov. Kate Brown, coerced by high paid lobbyists, signed a bill two springs ago that allows developers to annex into a city if their property is contiguous to a city boundary — so much for Brown's "transparency" in government.

Several cities, including Corvallis, sued the state on the basis that it is in their city charters to allow voting on all annexations. It is also in Oregon City's Charter but our city did not join in that lawsuit. That decision is still working its way through the courts.

But what does this mean? Three times developers have tried to bring this property into Oregon City, and three times (2008, 2010, 2011) by overwhelming margins, informed citizens voted it down. They've tried all sorts of arguments and smaller portions of the annexation, hoping that they could get it piecemeal into the city, guising it under all sorts of reasoning.

Before the Planning Commission 7 p.m. Tuesday, Feb. 12, at City Hall, the next annexation attempt is for 92 acres for 400-450 homes, just off Holcomb Boulevard. The full buildout of the Park Place Concept Plan calls for 1,400 homes. This annexation involves the beginning of the proposed Holly Lane extension that will eventually link Holcomb Boulevard to Redland Road. The cost of the road is estimated by city staff at $18.6 million at full extension, and will dump all the traffic from all the Holcomb Boulevard current developments, plus the 1,400-plus residents of the Concept Plan area onto Redland Road where it is eventually planned to connect to an already congested and crudely laid-out Holly Lane.

Until such time that the new road can be built out, the current proposed 92-acre annexation (future development) will surround the Trailview Heights and other existing neighborhoods with numerous residents who will only have one entrance and exit out of the area, known as Winston Drive. All the stub roads (Journey Drive, Shartner Drive and Cattle Drive) will be open to provide access to this new development, but there are no other alternative roads for the new traffic to move except for Winston Drive. Currently there are approximately 93 homes that need to enter/exit on this one short drive.

This mirrors the last annexation attempt and was in large part, its undoing. It would mean that all large construction trucks for the entire area would have to come through Winston Drive, endangering the residents' children who travel to and from school in the area, and play in the streets. The project would tear up existing blacktop roads. When completed, all that new residential traffic will, again, have only one route to enter or exit the large development, causing big concerns for fire and ambulance safety.

Until the full $18.6 million road can be completely built, this proposed annexation means that all new construction will add to current development of an estimated 727 homes along Holcomb, adding to traffic jams at the bend near Holcomb Middle School, as well as at the base of the hill at Redland Road. Holcomb Boulevard cannot be widened, because older, existing homes, some several decades old, are built close to the existing road. Homes would have to be closed and purchased in order to widen the road. And even then, there are culverts and cliffs near the canyons off Holcomb. The increased traffic becomes a bottleneck nightmare for existing residential, but increases the already well-known traffic jam at Holcomb, Abernethy and Redland Road.

At the most recent Planning Commission meeting Jan. 22, Public Works Director John Lewis informed an overflow crowd that the state has no intentions of improving Redland Road at Highway 213, through 2035. Adding this much traffic from more annexations on Holcomb, will only increase the traffic jam and safety on Redland, from Holcomb to 213. There are no plans to even widen or reshape Redland at this juncture. The costs are prohibitive.

Adding to this confusing mess is the fact that on the developer's application plan, they are asking the city to pick up $715,000 to expand the water main along the lower extension of this new road. And those are only current costs that could easily rise as construction costs increase in coming years. Why should residents have to pick up infrastructure costs in order that the developers and landowners can reap large profits from this unnecessary annexation and development?

Developers have tried just about every trick in the book to get this area annexed. On three separate occasions, it was offered to me that I would keep quiet and support these annexations, and previous owners would purchase my current home and move me. More recently there are three existing homes on Holcomb that would become an island surrounded by Oregon City annexed properties. Those residents were offered $5,000 checks, by a developer/landowner if they would not fight the process and simply acquiesce to being forced into the city limits. The checks were not accepted.

There is so much more to this story including schools, livability and more, but the written explanation could take up several pages of our newspaper. Park Place Neighborhood Association is planning a full testimony at the Feb. 12 Planning Commission meeting.

Communities further south on Redland from Holly Lane, Redland Road and further out have not been mailed postcards to inform them of this future development. It's dependent on all those reading this article to keep their neighbors informed. Most information can be followed at orcity.org.

If you wish to provide testimony regarding this fourth attempt to shove this development down current residents' throats, come to the Feb. 12 Planning Commission meeting. Each citizen has three minutes to address the Planning Commission at City Hall, 625 Center St.

Tom Geil is a resident of the Park Place neighborhood in Oregon City.

Paul Edgar submitted a varierty of Geographic Information System LIDAR data from DOGAMI into the record for AN-17-0005 / ZC-17-0006. Much of this data is in ArcView files which are not readily converted into maps. These data are GIS layers requiring special software to access and view.

Please note that this information is part of the record and can be obtained at the Planning Division.

City of Oregon City

625 Center Street
Oregon City, OR 97045
503-657-0891

Staff Report

File Number: PC 18-054

Agenda Date: 4/9/2018

Status: Draft

To: Planning Commission

Agenda #: 3b.

From: Christina Robertson-Gardiner

File Type: Planning Item

SUBJECT:
CD 18-01: Code Interpretation to Allow Structured Parking on a Pre-Existing Nonconforming Use for Lithia Subaru
of Oregon City.

RECOMMENDED ACTION (Motion):
Staff recommends approval of this application.

BACKGROUND:
The applicant is requesting a Planning Commission code interpretation to allow an additional level of structured parking/car storage on a pre-existing nonconforming use. No changes to the code are proposed. This code interpretation review is specific to the application being proposed.

- If the Planning Commission finds that the proposal does not constitute an intensification of the pre-exiting nonconforming use, the applicant will submit for a Type II Site Plan and Design Review for the construction of the structure.
- If the Planning Commission finds that the proposal does constitute an intensification of the pre-exiting nonconforming use, the applicant will retain and use the existing parking/fleet storage area in its current condition.

The Applicant, Lithia Subaru of Oregon City owns property located at 1404 Main Street, Oregon. The property is the entire block that extends from Main Street east to Center Street, and between 14th and 15th Streets. Lithia Subaru operates an automobile business on the property.

BUDGET IMPACT:
Amount:
FY(s):
Funding Source:

OREGON CITY

Planning Department

221 Molalla Ave. Suite 200 | Oregon City OR 97045
Ph (503) 722-3789 | Fax (503) 722-3880

CODE INTERPRETATION
Staff Recommendation
March 28, 2018

FILE NO.: CD 16-01: Code Interpretation

HEARING DATE: March 26, 2018

APPLICANT: Lithia Subaru of Oregon City
1404 Main Street
Oregon City, OR 97045

REQUEST: Planning Commission code interpretation to allow an additional level of structured parking on a pre-existing nonconforming use. No changes to the code are proposed.

LOCATION: 1404 Main Street
Oregon City, OR 97045
Clackamas County Map 3-2E-05C - 00803

NEIGHBORHOOD ASSOCIATION: Two Rivers Neighborhood Association

REVIEWER: Christina Robertson-Gardiner, AICP Senior Planner (503) 496-1564

PROCESS: Type III decisions involve the greatest amount of discretion and evaluation of subjective approval standards, yet are not required to be heard by the city commission, except upon appeal. Applications evaluated through this process include code interpretations. The process for these land use decisions is controlled by ORS 197.763. Notice of the application and the planning commission hearing is published and mailed to the applicant, recognized neighborhood association and property owners within three hundred feet of the subject property. Notice must be issued at least twenty days pre-hearing, and the staff report must be available at least seven days pre-hearing. At the evidentiary hearing held before the planning commission, all issues are addressed. The decision of the planning commission is appealable to the city commission within fourteen days of the issuance of the final decision. The city commission hearing on appeal is on the record and no new evidence shall be allowed. Only those persons or a city-recognized neighborhood association who have participated either orally or in writing have standing to appeal the decision of the planning commission. Grounds for appeal are limited to those issues raised either orally or in writing before the close of the public record. A city-recognized neighborhood association requesting an appeal fee waiver pursuant to OCMC 17.50.290.C must officially approve the request through a vote of its general membership or board at a duly announced meeting prior to the filing of an appeal. The city commission decision on appeal from the planning commission is the city's final decision

and is appealable to the Land Use Board of Appeals (LUBA) within twenty-one days of when it becomes final.

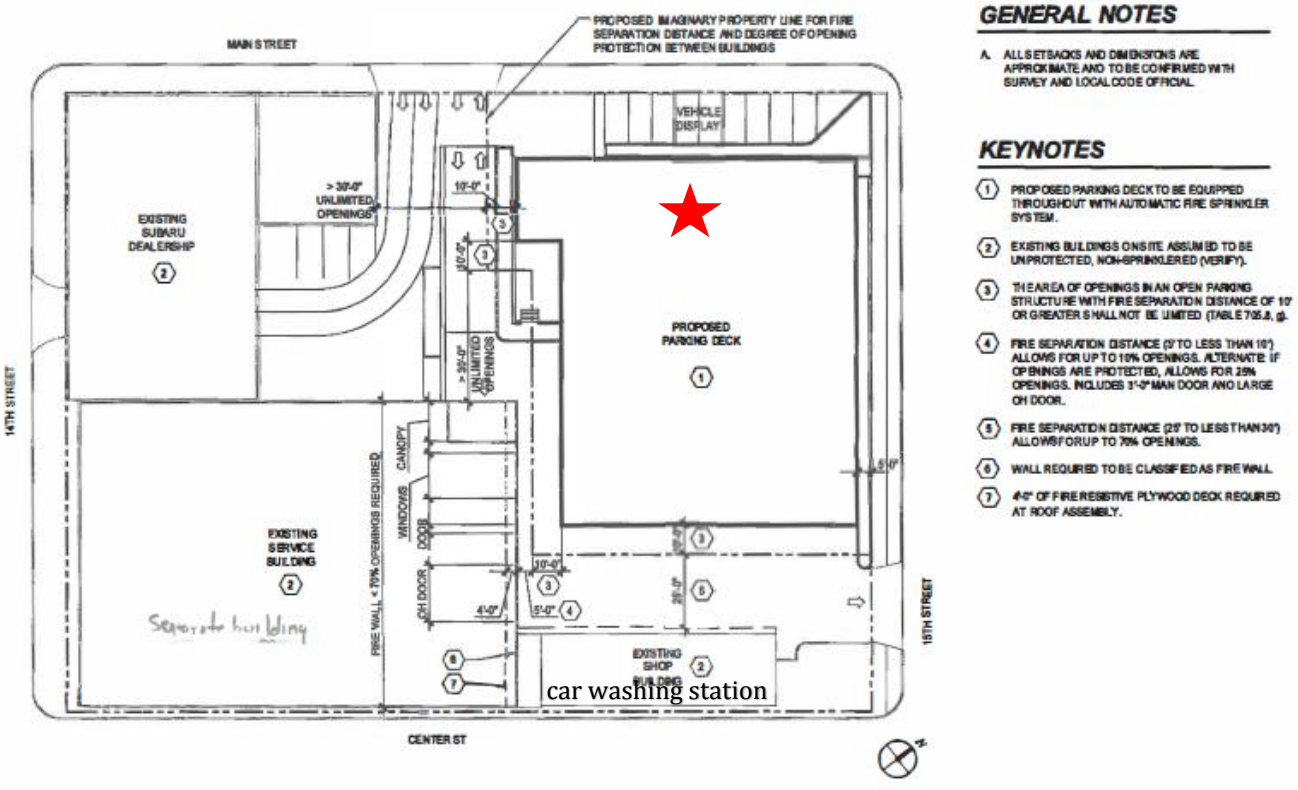
I. BACKGROUND:

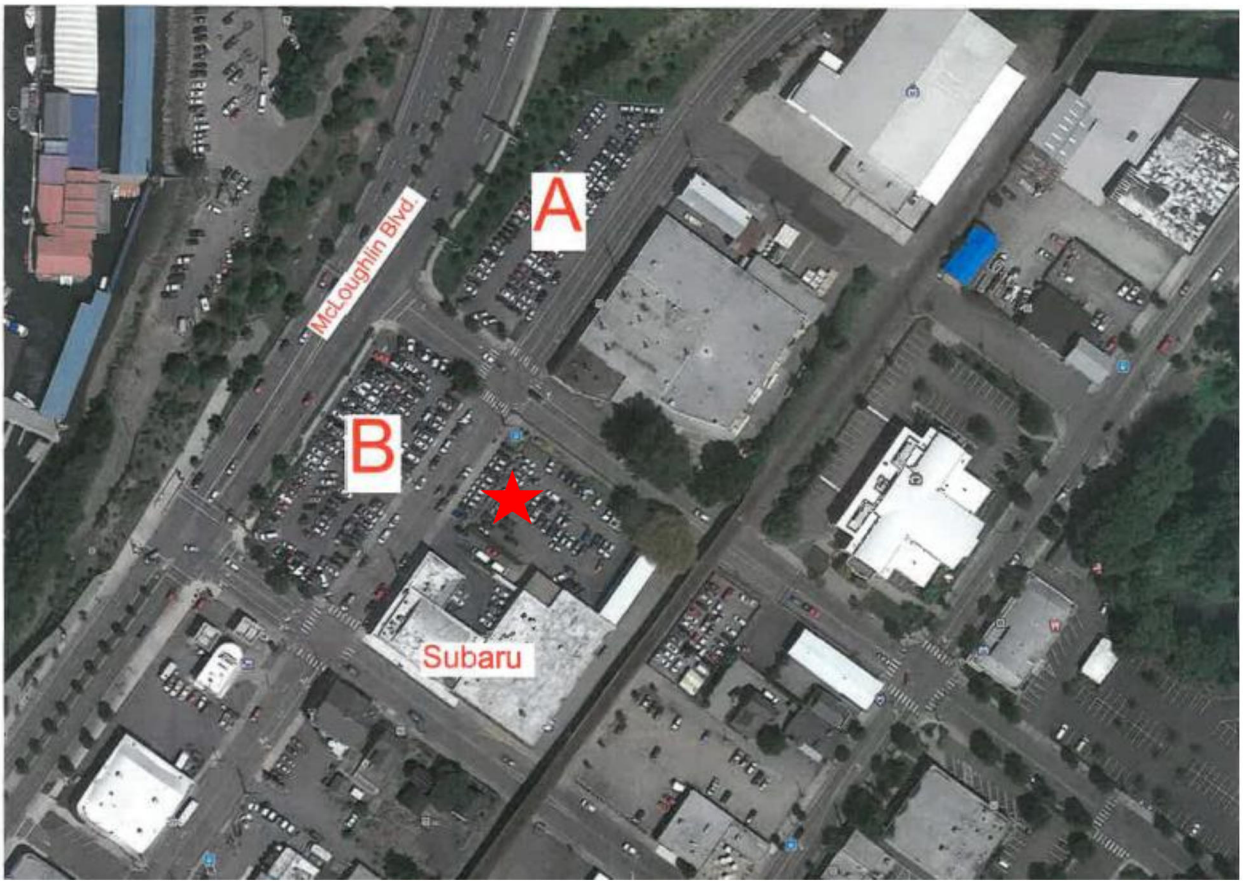
1. Project Description

The applicant is requesting a Planning Commission code interpretation to allow an additional level of structured parking/car storage on a pre-existing nonconforming use. No changes to the code are proposed. This code interpretation review is specific to the application being proposed.

- If the Planning Commission finds that the proposal does not constitute an intensification of the pre-exiting nonconforming use, the applicant will submit for a Type II Site Plan and Design Review for the construction of the structure.
- If the Planning Commission finds that the proposal does constitute an intensification of the pre-exiting nonconforming use, the applicant will retain and use the existing parking/fleet storage area in its current condition.

The Applicant, Lithia Subaru of Oregon City owns property located at 1404 Main Street, Oregon. The property is the entire block that extends from Main Street east to Center Street, and between 14th and 15th Streets. Lithia Subaru operates an automobile business on the Property. The main sales and administrative building is located at the southwest comer of the Property. That building contains the indoor show room, sales offices, finance department and administrative offices. Behind the service building along the Property's east boundary line, there is a 1,760 square foot building used for washing/detailing vehicles. That building was the subject of a June 23, 2014 Type II decision approving the replacement of the old 700 square foot building with a larger 1,760 square foot building.





Lithia Subaru is proposing to add a level to the existing u-shaped retaining wall in the area identified by a red star at 15th and Main. The applicant describes the retaining wall as a structure and, in this instance, staff agrees with this description/categorization. Lithia believes that its proposal will improve the streetscape and enhance the pedestrian experience in the vicinity consistent with the purposes of the Downtown Design District.

The existing parking will be retained. The proposed structure will be accessed similarly to the existing configuration: from 15th Street, vehicles will be able to drive as they did, slightly downhill into the lower level. The proposed new level of the structure will be roughly at the same grade as the entrance from 15th Street, allowing vehicles to drive onto that level. The proposed level rises in elevation slightly as it extends toward Main Street so that at the west end, it will be at the same level as Main Street. The proposed structure itself will not be higher than the Main Street elevation. With the proposed landscaping on the other improvements, the addition to the existing structure will improve the sidewalk corridor and enhance the streetscape.

The applicant contends that the proposed structure will not be used for any activity for which the existing structure is not already used. It will be used to house vehicle inventory. The proposed structure will allow more of the inventory to be housed closer to the main building. Lithia Subaru's operations conducted on the property will remain unchanged. Lithia Subaru will continue to operate the retail automobile dealership.

View from Main Street

View from 15th Street

2. PROPOSED ELEVATION AT 15TH STREET

SCALE: 1/16" = 1'-0"

NORTHEAST ELEVATION
03.17.2018

LITHIA SUBARU OF OREGON CITY
PROJECT NO. 217287

Relevant Previous Approvals

SP 15-16 – C*irculation and exterior alterations*

The applicant submitted an application for alterations to circulation, parking, and building façades in the service area of the auto dealership. This alteration improved circulation and exiting for cars at the service drop off and pick up location. The area in the courtyard north of the building and inside the building serve as parking for both pick up and drop off of cars to be repaired. Cars are temporarily parked in this location while customers interact with service advisors. The car is then transported to the basement where car service occurs. The existing turnaround area is located in the through lanes making it difficult or impossible to retrieve many cars after there're serviced. This scope of work was intended to improve customer experience by providing a single direction of traffic flow through the area. The use was identified as a pre-existing non-conforming use.

SP 14-02 – Car Washing Station

The applicant proposed to remove an existing 700 square foot accessory structure on the north side of the site and build a new 1,760 square feet accessory structure in the same location, along Center Street. The new structure required the removal of a chain link fence along Center Street, an existing pine tree near the Center Street frontage, and 8 existing parking spaces. The applicant also provided upgrading to adjacent landscaping. Staff found that the proposal was not an intensification of use and the car washing station was required to meet the commercial standards of OCMC 17.62- Site Plan and Design Review. The use was identified as a pre-existing non-conforming use.

Code Analysis

The below analysis, findings, and interpretation is based on review of the current Oregon City Municipal Code. Changes to the current zoning regulations require a code amendment. Any citizen, business, or organization can apply for a text amendment to the zoning code, which is subject to a legislative public approval process by the Planning Commission and City Commission. There is no guarantee that such a text amendment would be approved by the Commissions, and no refund of the application fee is given if the amendment is not approved. If the City intends to consider code amendments on this topic, the Planning Division recommends a robust public outreach and engagement process to formulate regulations and policies that would have the support of Oregon City business owners, neighbors, and Planning and City Commissions.

II. ANALYSIS AND FINDINGS:

CHAPTER 17.50 - ADMINISTRATION AND PROCEDURES

17.50.030 *Summary of the City's Decision-Making Processes.*

Finding: Complies as Proposed. The proposed Code Interpretation is being processed as a Type III application per chapter 17.50.030 of the Oregon City Municipal Code.

17.50.090 *Public Notices.*

Finding: Complies as Proposed. Once the application was deemed complete, the City noticed the application to all neighborhood associations, Citizens Involvement Council, general circulation paper, and posted the application on the City's website. Staff provided email transmittal of the application and

notice to affected agencies, the Natural Resource Committee and to all Neighborhood Associations requesting comment. All interested persons have the opportunity to comment in writing or in person through the public hearing process. No comments were received regarding this application.

CHAPTER 17.58 – LAWFUL NONCONFORMING USES, STRUCTURES AND LOTS

17.58.030 - Lawful nonconforming use.

A use that was lawfully established on a particular development site but that no longer complies with the allowed uses or the standards for those uses in this title may be considered a lawful nonconforming use. Change of ownership, tenancy, or management of a lawfully established nonconforming use shall not affect its lawful nonconforming status. The continuation of a lawful nonconforming use is subject to the following:

F. Expansion. No lawful nonconforming use may be replaced by a different type of nonconforming use, nor may any legal nonconforming use be expanded or intensified.

Finding: Complies as proposed. This report analyses if the additional parking deck is an expansion or intensification of the automobile sales onsite.

The applicant believes that Lithia Subaru's proposed expansion of an existing nonconforming structure is not an expansion of the use of the site, nor an intensification of that use.

If approved by the Planning Commission, the applicant will submit for a Type II Site Plan and Design Review for an expansion to an existing structure which will be required to meet current commercial Site Plan and Design Review standards.

The use of the property will remain the same Subaru dealership and the applicant is not proposing to add any uses or activities onsite. Storage for inventory has always been an element of the dealership as it is with any retail automobile dealership. Staff agrees that it would be different if the proposal was for some use never conducted as part of the dealership, such as general storage or a vehicle rental operation.

The applicant contends that the proposed parking/fleet storage deck will allow more vehicles to be stored closer to the main building, but should not be considered an intensification of the existing use. The dealership will continue to operate exactly as it has for years. They contend that adding additional inventory spaces does not change the business model or increase or decrease the number of customers who will come to the store to buy a car and should not be seen as an intensification of use.

Staff requested the applicant provide additional findings that spoke to question of how the expansion of fleet storage/structured parking near the building would not be considered an intensification of the use. In a supplementary memo dated March 26, 2018, the applicant provides the following summarized arguments:

"The applicant believes that the City should interpret the code to allow expansions of structures associated with nonconforming uses without the expansion being deemed an expansion of the use.

The proposed expansion of the parking structure will provide a much safer and more convenient location for Lithia Subaru to have vehicles in the examples above. When a customer arrives to test drive a number of different vehicles, the sales representative can, in advance, have the vehicles brought over to a location immediately outside the main building. They can walk out the door to the vehicles without having to cross busy streets or driveways. The same is true when a customer arrives to pick up a vehicle after a purchase or after service.

….increasing sales in a retail context is not a good indication of whether a use is more or less intense. However, even if you consider the level of sales or revenue, it is incorrect to assume that expanding the parking structure for convenience will increase operations, sales or inventory. Retail automobile dealerships acquire sites that have a good location and sufficient size for their operations. They do not simply look to acquire the largest site they can find, so they can have massive inventories. Having large inventories that one cannot sell is a poor business strategy. Because the size of a dealership has little to do with the sales volume, it is not a prudent economic decision to simply acquire as much property as possible. The factors that influence sales volume, are demand for the product, the level of service and general economic conditions.

A dealership with 200,000 square feet can sell more vehicles than a dealership with 100,000 square feet, if the dealership is in a good location, is run effectively, and there is a demand for the vehicles in their platform. Simply having more vehicles on site does not in any way mean the dealership can sell all of those vehicles. If that were the case, every dealership in Oregon would be significantly larger. It is important to keep in mind that dealerships pay for their inventory. No dealership is going to increase inventory simply because they have space for more inventory. They will maintain inventory based upon the demand for the product and the market factors that impact sales. Assuming no changes in the size of a dealership, inventory is going to fluctuate up and down based upon those market conditions. No dealership is going to add inventory just because they have space.

Like any retail business, sales will fluctuate depending on the market and other forces. Many retail automobile dealerships will lease property on a short term basis to accommodate increase demands. To avoid the consequences of losing a lease, other dealerships like Lithia, purchase additional property to accommodate fluctuating sales and rises in demand. Acting to meet demands as sales fluctuate cannot be deemed an overall intensification of the use. In one period, a dealership may use the leases property to have more inventory and in another period, it may leave that space vacant because sales are down. In light of the nature of retail business in general, using inventory levels and sales volume to define whether a use has intensified is not a workable policy"

Staff finds these arguments compelling and sees this request to be consistent with previous expansions onsite such as the carwash booth that staff previously did not view as an expansion of use. Constructing buildings and structures onsite that meet Site Plan and Design Review Code allows for a pre-existing non-conforming business to continue their legal use by making investments that are needed to sustain their business onsite. These improvements also improve the compatibility of the site to the neighboring permitted uses.

III. CONCLUSION AND RECOMMENDATION:

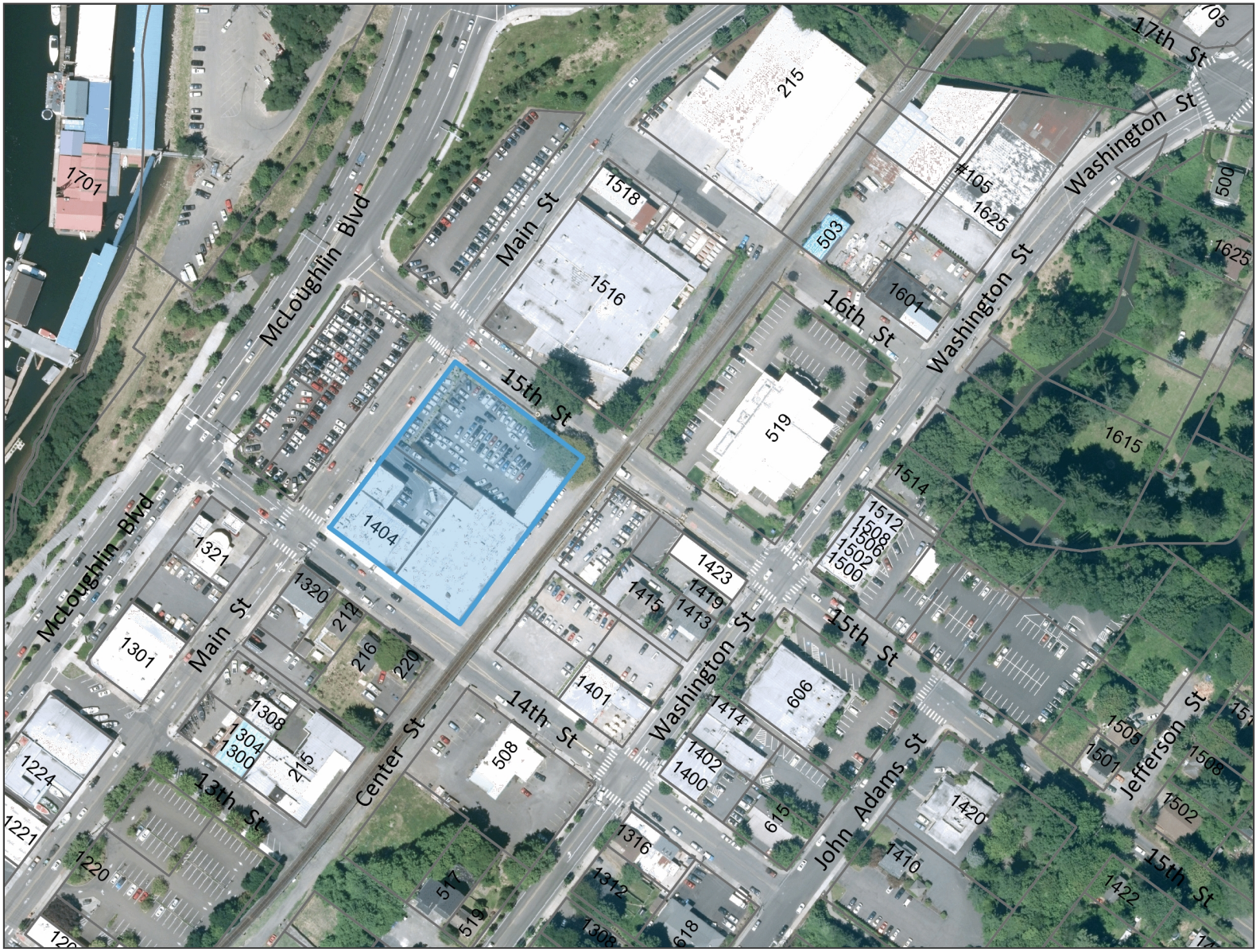
Based on the analysis and findings as described above, Staff concludes that the Code Interpretation supports the request to allow an additional level of structured parking on a pre-existing nonconforming

use. No changes to the code are proposed. Staff recommends the Planning Commission approve file CD 18-01 based upon the findings and exhibits contained in this staff report.

IV. EXHIBITS:

1. Vicinity Map
2. Applicant's Submittal
3. Applicant's Supplemental Letter Dated March 26, 2018

Oregon City GIS Map



Legend

- Taxlots
- Basemap

Notes

Overview Map

0 200 400 Feet

1: 2,400

CD 18-01

The City of Oregon City makes no representations, express or implied, as to the accuracy, completeness and timeliness of the information displayed. This map is not suitable for legal, engineering, surveying or navigation purposes. Notification of any errors is appreciated.

Map created 2/23/2018

City of Oregon City
PO Box 3040
625 Center St
Oregon City
OR 97045
(503) 657-0891
www.orcity.org

tyler TECHNOLOGIES

City of Oregon City
Permit Receipt
RECEIPT NUMBER 00038353

Account Number: 017060 **Date:** 2/1/2018

Applicant: LITHIA REAL ESTATE INC

Type: check # 2827

Permit Number	Fee Description	Amount
CD-18-0001	4332 Code Interp/Sim Use Fee	1,092.00
	Total:	$1,092.00

HATHAWAY LARSON

Koback · Connors · Heth

March 26, 2018

VIA MAIL & EMAIL

Christina Robertson-Gardiner
Senior Planner
Community Development Division
PO Box 3040
Oregon City, OR 97045

RE: CD 18-01 – Lithia Subaru

Dear Christina:

I am writing to supplement the Applicant's narrative to respond to the issue you raised in our recent call about whether expanding the existing parking structure constitutes an intensification of the use. The use of the site is, and has been for many years, a retail automobile dealership. Lithia is not proposing to add any uses to the site.

You indicated that Lithia Subaru's proposed expansion of the existing parking structure could allow more inventory to be stored on site and that could be viewed as an expansion or intensification of the nonconforming use. We explained in our initial application narrative, under the cases decided in Oregon, expanding the existing structure cannot be deemed an expansion of the use. It does not allow for any activity not currently being conducted on site. It does not introduce any new uses on the site. It does not expand the footprint of any of the buildings.

Your comments suggest that that because the proposed parking deck could allow for additional vehicle inventory, it could be viewed as an intensification of the use. In the context of a nonconforming retail use, we do not believe that is a reasonable conclusion. The term intensification comes from the root term intensify. In all contexts, the term intensify is an active term. It means to do something. The Cambridge American Dictionary defines intensify to mean make something stronger or more extreme, to become stronger or more extreme. The term is consistent with the concept of adding an activity to a nonconforming use that was not present before. Adding another nonconforming activity would intensify the existing nonconforming use. It would make it greater. Changing how or where an existing activity is done on the site does not intensify the use.

Christopher P. Koback
1331 NW Lovejoy Street, Suite 950
Portland, OR 97209
chris@hathawaylarson.com
(503) 303-3107 direct
(503) 303-3101 main

It appears that perhaps you view any expansion of an existing structure that could increase the sales as an expansion of the underlying use. We do not believe that in the context of a nonconforming retail use situation, the possibility of expanded sales is an appropriate measuring stick for the intensity of the use. Most, if not all, retail uses strive to increase sales. If increasing sales is the definition of intensifying the use, nonconforming retail uses could not work to increase sales without the risk of being accused of intensifying the nonconforming use. If taking action that could increase sales constitutes an intensification of a retail use, every time a nonconforming retail use hired a new sales person to meet increased demand, it would be an intensification of the nonconforming use. Also, as we will explain more below, having capacity for more inventory does not equate more sales.

Initially, I want to point out that the code text supports the conclusion that an expansion to a nonconforming structure is not automatically an intensification of the use. OCMC 17.58.030 addresses nonconforming uses. That section states that legal nonconforming uses may not be expanded. OCMC 17.58.040 addresses nonconforming structures. That section permits expansions of nonconforming structures. The code text gives no indication that that the section allowing expansions of nonconforming structures is limited to situations where the use within the structure is deemed conforming. In many cases, if a structure is nonconforming, the use within the structure will also be nonconforming. In fact, one could argue that any use within a nonconforming structure is nonconforming. If an expansion of a nonconforming structure always equates to an expansion or intensification of the nonconforming use within the structure, it is difficult to imagine when a request to expand any existing structure could be approved. Thus, we believe that the City should interpret the code to allow expansions of structures associated with nonconforming uses without the expansion being deemed an expansion of the use.

Lithia Subaru's request demonstrates that expanding a nonconforming structure often has no relationship to the intensity or scope of the underlying use. The proposed expansion of the existing parking structure is not for the purpose of expanding sales, increasing inventory or intensifying the use. Lithia is seeking to expand the existing structure to add customer convenience, customer and employee safety, and efficiency in operations. In any retail automobile dealership, customers arrive at the main operations building, which contains the sales office and cashier's office, for a variety of reasons. Customers may have an appointment to test drive a number of vehicles, looking toward purchasing a new vehicle. They may arrive at the dealership to pick up a new vehicle they purchased, or to pick up a vehicle that they had serviced. In each situation, the dealership must have a safe convenient location for the customer to get to the vehicles in question.

In a situation where a customer arrives to test five vehicles, they will meet a sales representative in the main building. Currently, Lithia Subaru does not have a convenient location immediately near the sales office where the sales representative can have vehicles waiting for the customer. There is limited space in the below grade existing structure, but to get to this space, the customers have to walk out of the building and through a driveway down to the lower parking area. Because space is limited in the existing structure, often the sales representative must walk the customer across Main Street to one of the surface lots. With vehicles coming and leaving the site, that is neither convenient nor safe.

The same is true when a customer arrives to pick up a new vehicle or one that Lithia Subaru serviced. In those cases, the customer meets the sales representative or service advisor in the main building. Particularly in the case of a new purchase, the Lithia representative will escort the customer to the vehicle for some basic presentation on the vehicle and to make sure it is clean and ready to release. Currently, as noted above, Lithia Subaru lacks a safe, convenient place for that action to occur.

The proposed expansion of the parking structure will provide a much safer and more convenient location for Lithia Subaru to have vehicles in the examples above. When a customer arrives to test drive a number of different vehicles, the sales representative can, in advance, have the vehicles brought over to a location immediately outside the main building. They can walk out the door to the vehicles without having to cross busy streets or driveways. The same is true when a customer arrives to pick up a vehicle after a purchase or after service.

As we explained above, increasing sales in a retail context is not a good indication of whether a use is more or less intense. However, even if you consider the level of sales or revenue, it is incorrect to assume that expanding the parking structure for convenience will increase operations, sales or inventory. Retail automobile dealerships acquire sites that have a good location and sufficient size for their operations. They do not simply look to acquire the largest site they can find, so they can have massive inventories. Having large inventories that one cannot sell is a poor business strategy. Because the size of a dealership has little to do with the sales volume, it is not a prudent economic decision to simply acquire as much property as possible. The factors that influence sales volume, are demand for the product, the level of service and general economic conditions.

A dealership with 200,000 square feet can sell more vehicles than a dealership with 100,000 square feet, if the dealership is in a good location, is run effectively, and there is a demand for the vehicles in their platform. Simply having more vehicles on site does not in any way mean the dealership can sell all of those vehicles. If that were the case, every dealership in Oregon would be significantly larger. It is important to keep in mind that dealerships pay for their inventory. No dealership is going to increase inventory simply because they have space for more inventory. They will maintain inventory based upon the demand for the product and the market factors that impact sales. Assuming no changes in the size of a dealership, inventory is going to fluctuate up and down based upon those market conditions. No dealership is going to add inventory just because they have space.

Like any retail business, sales will fluctuate depending on the market and other forces. Many retail automobile dealerships will lease property on a short term basis to accommodate increase demands. To avoid the consequences of losing a lease, other dealerships like Lithia, purchase additional property to accommodate fluctuating sales and rises in demand. Acting to meet demands as sales fluctuate cannot be deemed an overall intensification of the use. In one period, a dealership may use the leases property to have more inventory and in another period, it may leave that space vacant because sales are down. In light of the nature of retail business in general, using inventory levels and sales volume to define whether a use has intensified is not a workable policy.

Specific to Lithia Subaru, it has maintained the same dealership size for a number of years. Its capacity for inventory has not changed appreciably. Yet, its inventory has fluctuated based upon market factors; its sales have gone up and down in those years based upon the same market conditions and the related demand for its product. In determining the amount of inventory to maintain, Lithia Subaru, like all retail dealerships, factors in the costs of maintaining its inventory against the demand for the product and expected sales. Thus, even if the proposed expansion to the existing structure may add capacity for vehicles and sales is used to define intensity, it will not necessarily result in any intensified use of the dealership.

If increasing inventory on occasions to meet market demands is, in and of itself, an intensification of a nonconforming dealership, every time a nonconforming dealership added inventory to meet a period of higher demand, they would be deemed to be expanding and intensifying the nonconforming use. Lithia does not believe that the City intended its nonconforming use regulations to operate in such a manner. Rather, because inventory is going to increase and decrease at times, it is not appropriate to use inventory capacity as the measuring stick for the intensity of the use at a retail dealership.

Another example also bears out some possible inconsistency in a position that the expansion of the structure is an intensification of use. The nonconforming use regulations apply to the use on the subject site. They restrict expansions of the use on that site. Lithia Subaru, or any similarly situated non-conforming dealership, could increase inventory and sales to meet a market demand by leasing property nearby for more vehicles on a short-term basis. They would not have to seek any land use approval. They would not be adding any new use or making any changes to the nonconforming site. Thus, they would not trigger any issue over expansion of the use on the site under the code. The use on the nonconforming site would not have been expanded or changed in any way. Yet, the business's inventory will have increased temporarily. However, in another situation, a dealership could request approval to expand an existing structure on site with no actual impact on inventory or sales, and would arguably run afoul of the nonconforming use regulations because the dealership acted to address a possible need for inventory to meet a period of high demand.

For the reasons above, Lithia Subaru's proposed expansion of an existing nonconforming structure is not an expansion of the its use of the site, nor an intensification of that use.

Thank you.

Very truly yours,

HATHAWAY LARSON LLP

Christopher P. Koback

CPK/mo

City of Oregon City

625 Center Street
Oregon City, OR 97045
503-657-0891

Meeting Minutes - Draft

Planning Commission

Monday, April 10, 2017 | **7:00 PM** | **Commission Chambers**

1. Call to Order

Chair McGriff called the meeting to order at 7:00 PM.

Present: 6 - Zachary Henkin, Paul Espe, Denyse McGriff, Damon Mabee, Tom Geil and Vern Johnson

Absent: 1 - Robert Mahoney

Staffers: 2 - Laura Terway and Christina Robertson-Gardiner

2. Public Comments

There were no public comments on non-agenda items.

3. Work Session

3a. Proposed Amendments to the Oregon City Municipal Code for Sheds, Carports, Membrane Structures and Accessory Structures

Laura Terway, Community Development Director, gave a presentation on proposed code amendments for membrane structures. Currently the code prohibited fabric or metal structures for single family homes when they were visible from the right-of-way. Citizens had expressed concern about that and the City Commission had directed staff to amend the code. She explained the concerns from the public and clarified these were proposed amendments to the planning regulations only. She described the current applicable standards. The changes included allowing existing structures constructed prior to January 1, 2017 which were not in front of homes to remain if they complied with building codes, allowing corner setbacks to be reduced, allowing height setbacks to be reduced to 3 feet if the structure was no taller than 17 feet, no fabric or tarp structures were allowed but metal structures would be allowed, allowing temporary membrane structures on commercial property up to four times per year, allowing temporary membrane structures in the public right-of-way by obtaining a right-of-way permit for no more than seven consecutive days or possibly 60 days, and relocating the code language for hooved animals.

Commissioner Geil was concerned about the people who had already removed their structures.

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Commissioner Mabee suggested allowing temporary structures in the right-of-way for special events only for up to seven consecutive days.

Lynn Anderson, resident of Oregon City, had watched the 2010 meeting videos when this was discussed. The original intent was to clean up unsafe and nuisance storage.

The metal cover she had in her backyard was one of more than 200 that existed in the City. These structures were aesthetically pleasing, safe, and were being used to protect recreational vehicles, boats, and outdoor activity equipment. She supported the original intent of the code, but the unintended consequences were violating her property rights and common sense. The proposed changes respected the historic neighborhoods and she was in favor of them. Regarding those who had removed their structures, that was their choice. Her choice was to get involved and take action about the code she thought was unfair and others could have done the same. She hoped the Commission would support the changes.

Mark Litzke, resident of Oregon City, owned two lots and asked how the setbacks applied in that situation. Chair McGriff said the setbacks applied the same regardless of ownership.

Mr. Litzke said there was no place for a structure on his two lots that would not be visible to the right-of-way. Ms. Terway could talk with him about his situation.

Kim Yoder, resident of Oregon City, had a corner lot where her side yard was her back yard and her structure was in front of her house because of the lot layout. She recommended lot layouts be looked at as not everyone had the opportunity to put structures behind their house. She was trying to protect her investment.

Brian Gibson, resident of Oregon City, had put his structure up before the code changes and it covered an investment. He had talked to his neighbors before putting in the structure, and they did not have an issue with it.

Tony Gibson, resident of Oregon City, said she and Mr. Gibson had paid a great deal of money for their RV and they wanted to protect it. The structure was safe and securely anchored. She thought it looked good aesthetically. She was in favor of the proposed code changes.

Dale Klineman, resident of Oregon City, was also on a corner lot. He would like to put in a structure to cover his investment. He hoped that people would be allowed to put in structures if they had the room to do it and it was a permanent structure, metal and structurally sound.

Wayne Morris, resident of Oregon City, had seen others in his neighborhood had structures, so he put in a permanent structure in the back of his house. There needed to be a balance between property rights and the code requirements. He supported the proposed amendments.

Commissioner Espe was looking for consideration of the goals in the Comprehensive Plan that had to do with good neighborhood design and livability.

Commissioner Johnson said the public input was consistent regarding the need for clarity across the spectrum for what could be done with these structures. He thought they were headed in the right direction.

Commissioner Geil thought there should be some exceptions for certain lot layouts.

Commissioner Henkin would like the code amendments not to have to be amended again.

Commissioner Mabee was concerned about the long term and how metal structures

could rust. Corner lots had a lot more view from the right-of-way and it seemed inappropriate to penalize them.

Chair McGriff had concerns about corner lots and side yards. She thought anything that was a permanent structure required a permit. She did not think these structures should be allowed in the historic districts. She also did not want to see these structures in the right-of-way.

3b. Willamette Falls Legacy Project Riverwalk Update

Christina Robertson-Gardiner, Planner, provided an update on the Willamette Falls Legacy Project and Riverwalk including the adoption of the Framework Master Plan, public outreach to date, tribal advisory board, Riverwalk design process, Phase 1 construction of the Riverwalk, preferred design open house on June 3 at OMSI, parking access and transportation plan, and Planning Access Summit meetings where Commissioner Espe and Chair McGriff would be attending as representatives of the Planning Commission.

There was discussoin regarding how the conceptual design plan was a fluid plan.

Ms. Terway said in the Framework Plan there was a requirement for design professionals to be added to the review process. She suggested getting three design professionals to join the Planning Commission to look at Willamette Falls Legacy Project applications and participate in the deliberations, but not vote on the applications. They would be advisors to the Commission and serve five year terms.

There was discussion regarding the qualities needed for those who would serve in these design professional positions, the next steps after the June 3 open house, and what happened to historical information people provided.

4. Communications

Ms. Terway welcomed new Planning Commissioner Vern Johnson. She announced Oregon City Enhancement Day on April 29. This was the City's fifth year as a Tree City USA.

5. Adjournment

Chair McGriff adjourned the meeting at 9:34 PM.

City of Oregon City

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Oregon City, OR 97045
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Meeting Minutes - Draft

Planning Commission

Monday, May 8, 2017 | **7:00 PM** | **Commission Chambers**

1. Call to Order

Chair McGriff called the meeting to order at 7:00 PM.

Present: 7 - Robert Mahoney, Zachary Henkin, Paul Espe, Denyse McGriff, Damon Mabee, Tom Geil and Vern Johnson

Staffers: 3 - Laura Terway, Pete Walter and Carrie Richter

2. Public Comments

There were no public comments on non-agenda items.

3. Public Hearing

3a. CU 17-01 / SP 17-16 / VR 17-01: North Clackamas Christian School Modular Building

Chair McGriff opened the public hearing and read the hearing statement. She asked if the Commission had any ex parte contacts, conflicts of interest, bias, or any other statements to declare.

Commissioner Mahoney visited the site. Commissioner Espe had looked at the aerials and had been by the site on previous occasions. Commissioner Mabee had looked at the aerials and looked the property from the Hagen's store site. Commissioner Geil knew where this was and had looked at the aerials. Commissioner Johnson had visited the site. Chair McGriff visited the site. One of the school's staff walked with her to where the modular building would be placed. She had a brief discussion on the location with the staff person. She had also contacted some of her fellow Commissioners and let them know they could go to the school property to see it for themselves and that the school staff was helpful and accommodating.

Pete Walter, Planner, gave the staff report, which was entered into the record as Exhibit A. This was a request for a conditional use, site plan and design review, and variance for a modular building for North Clackamas Christian School. He discussed the location of the project site, existing conditions, project description, overall site plan and setbacks, building floor plan, landscaping plan, building elevations, applicable code criteria, conditional use criteria, variance requests from six sections of the code regarding institutional and commercial building standards, variance criteria, and recommended condition of approval for additional mitigation at the front of the site. Staff recommended approval of the application with conditions. He reviewed the recommended conditions of approval and revisions to the landscaping plan.

There was discussion regarding the proposed variances and landscaping.

Chair McGriff thought perennial shrubs needed to be added to the landscaping. Typically landscape establishment was a two year time period, and it was suggested to be three years in this application.

Commissioner Mabee was concerned about people being able to get out of the building if there was a fire or other emergency as there were no windows or doors in the back. Laura Terway, Community Development Director, said the application would be reviewed for safety compliance.

Roseanne Johnson, consultant representing the applicant, said the school was upgrading their technology and resources for their students. She passed around an updated plan for the front setback area and landscaping. She pointed out that perennials were included in the revised plan. The placement of the building was intentional to not interfere with the soccer field. The increased landscaping to respond to Condition #9 included the picnic tables and additional seating as well as enhanced landscaping around the signs. Conditions #4 and #5 were also taken care of through the revised rear landscape plan.

There was discussion regarding the views of the northern residences into the school.

Tim Tutty, Principal, explained the area in the back where there was a natural area that was used for outdoor school and a garden for the children. Putting in more vegetation would destroy it.

Ms. Johnson explained why the school chose to put in a modular building as opposed to an addition to an existing structure.

Mr. Tutty explained how the modular building would be on a foundation and they did not intend to move it once it was placed. He thought it would be a quality building that would fit their needs. He thought students would be able to vacate the building quickly. There was an intercom system in the school that was used for lock down and fire drills. He did not think safety would be an issue.

Commissioner Mabee recommended fire doors be installed that would exit to the soccer field.

There was discussion regarding the safety measures at the school and the school's interaction with the neighborhood.

Ms. Terway stated there was no criteria for the safety access issue, and it could not be a condition of approval.

Carrie Richter, City Attorney, clarified the Planning Commission's purview was the appropriateness of the use and the site details. The Building Department was charged with ensuring the safety of the structure in consultation with fire and police. The Commission could make a recommendation about this issue.

Chair McGriff suggested removing the arborvitae from the landscaping plan.

Chair McGriff closed the public hearing.

A motion was made by Commissioner Espe, seconded by Commissioner Johnson, to approve CU 17-01 / SP 17-16 / VR 17-01: North Clackamas Christian School modular building with the removal of Conditions 4, 5, and 9 and

addition of the revised landscape plan. The motion carried by the following vote:

Aye: 7 - Robert Mahoney, Zachary Henkin, Paul Espe, Denyse McGriff, Damon Mabee, Tom Geil and Vern Johnson

4. Communications

Ms. Terway said the City budget had been passed by the Budget Committee. She thanked everyone who participated in the Oregon City Enhancement Day. On June 3 there would be a Riverwalk design open house at OMSI. There would be a joint City Commission and Planning Commission Work Session in June.

Commissioner Mabee reported on the meeting regarding Beavercreek and Highway 213. He pointed out an illegal sign. Ms. Terway would look into it.

Commissioner Espe reported on the Riverwalk Parking and Transportation Summit meeting on April 26.

There was discussion regarding the perception of downtown Oregon City parking, traffic issues, and options for parking.

5. Adjournment

Chair McGriff adjourned the meeting at 8:26 PM.