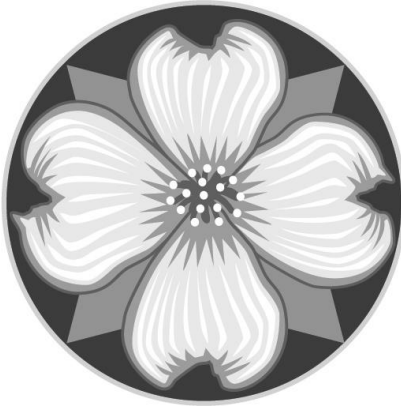




Work Session

WS

Milwaukie City Council

COUNCIL WORK SESSION

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

AGENDA

JANUARY 15, 2019

Note: times are estimates and are provided to help those attending meetings know when an agenda item will be discussed. Times are subject to change based on Council discussion. **Page #**

Council Photo Shoot (3:00 p.m.)

Prior to the Work Session, Council will participate in a photo shoot.

- | | |
|---|-----------|
| 1. Hillside Master Plan Update – Discussion (4:00 p.m.)
Staff: Alma Flores, Community Development Director | 1 |
| 2. E-Scooters and E-Bikes – Discussion (4:45 p.m.)
Staff: Leila Aman, Development Manager, and
Peter Passarelli, Public Works Director | 52 |
| 3. Adjourn (5:30 p.m.) | |

Americans with Disabilities Act (ADA) Notice

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Executive Sessions

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

Meeting Information

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



COUNCIL WORK SESSION

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

MINUTES

JANUARY 15, 2019

Mayor Mark Gamba called the Council meeting to order at 4:00 p.m.

Present: Councilors Angel Falconer, Lisa Batey, Wilda Parks, Kathy Hyzy

Staff: Administrative Specialist Christina Fadenrecht	Development Manager Leila Aman
Assistant City Manager Kelly Brooks	Events Specialist Laura Kirk
City Attorney Justin Gericke	Planning Director Denny Egner
City Manager Ann Ober	Public Affairs Specialist Jordan Imlah
City Recorder Scott Stauffer	Public Works Director Peter Passarelli
Climate Action and Sustainability Coordinator Natalie Rogers	Senior Planner David Levitan
Community Development Director Alma Flores	
Community Program Coordinator Jason Wachs	

Carefree Sunday Event Announcement

The group watched a video that announced Moda Health as the presenting sponsor for the 2019 Carefree Sunday event. **Ms. Brooks** noted staff's work to secure the sponsor and introduced Events Specialist Laura Kirk. The group thanked the team for their work.

1. Hillside Master Plan Update – Discussion

Stephen McMurtrey, Director of Housing Development at Clackamas County, and **Chuck Robbins**, Executive Director at the Housing Authority of Clackamas County (HACC), introduced themselves. **Ms. Flores** noted Jill Smith, Deputy Director of the County's Health, Housing, and Human Services Department, was also present.

Mr. McMurtrey provided an overview of the Hillside site and reported that the Hillside Manor tower had recently received funding for rehabilitation and redevelopment work. He explained the master planning process for Hillside and the stakeholder engagement done to-date. He noted an upcoming community design charrette and provided an overview of the ongoing housing design conversations.

Mayor Gamba observed that the results from the internal design workshops included parking spaces and wide streets. He wondered if these workshops had been informed by the sustainability charrette which had prioritized reduced parking, car and scooter share services, and woonerf street concepts. **Mr. McMurtrey** said the intent had been to look at site layout configurations as currently allowed by the Milwaukie Municipal Code (MMC) and work with the City on options such as street layouts and zoning.

Mayor Gamba and **Councilor Batey** discussed the layout of the Hillside portion of 29th Avenue and whether the intent of the City's Transportation System Plan (TSP) was to have it open for automobile traffic. **Mr. McMurtrey** noted his desire to work with the City on the traffic requirement details. **Ms. Flores** noted that staff also wanted work on clarifying zoning requirements.

Councilor Batey observed that HACC was investigating the idea of selling the Lot C part of Hillside. **Mr. McMurtrey** said it was something that has always been an option and noted it could be potential income to help fund the project. He discussed possible private development on Lot C that could be mixed use with community and/or green

spaces. **Mr. Robbins** explained how the money from the sale of Lot C could help fund the project. **Mayor Gamba** and **Mr. McMurtrey** discussed how the Metro Housing Bond funds factored into the project.

Mayor Gamba asked if HACC had reached out to the intergenerational neighborhood support group Bridge Meadows. **Mr. Robbins** said they had not talked to that group recently, but would like to meet with them and discuss options.

Councilor Batey asked about Lot F. **Mr. McMurtrey** explained that currently Hillside Manor had to pump the sewer for the bottom two floors and he noted the difficulties with providing services to Lot F. He explained that HACC was not entertaining the idea for any permanent structures or housing on Lot F and suggested it could be a community park. He and **Councilor Batey** noted locations that could feature community gardens.

Mr. McMurtrey remarked on the purpose of the upcoming community design charrette.

Councilor Hyzy asked if woonerf streets were included as an option during the design charrette. **Mayor Gamba** asked if the map could be given as a blank canvas for participants to fill in during the charrettes. **Mr. McMurtrey** clarified that the layout given to participants did not specifically include the option for narrower streets or woonerfs. He explained that the street layout was based on current MMC standards and other requirements. The group discussed how the street layout included in the map could constrain how people imagined possibilities for the site. **Mr. McMurtrey** noted that he could talk with the design consultants and try to provide a blank canvas at the charrette. **Ms. Flores** noted the base map could be a starting point for additional creative options.

Mr. Robbins wanted to make sure fire engines and other vehicles could access the site, especially Hillside Manor. **Mayor Gamba** explained the design and concept of a woonerf. **Ms. Brooks** provided City standards for low-volume streets such as woonerfs. **Mayor Gamba** noted his desire for neighborhood streets to be locations where people should drive slowly. The group discussed fire truck access on woonerfs.

Councilor Falconer noted the public desire for people-oriented navigation. **Ms. Ober** remarked that City staff could discuss the approval process for a lower volume street. **Ms. Flores** said the project team did plan to meet and talk about MMC requirements.

2. E-Scooters and E-Bikes – Discussion

Mr. Passarelli explained that staff would provide information on e-scooters and e-bikes and ask for Council direction. He reported that the City of Portland had just released a finding report on their e-scooter pilot program.

Ms. Rogers reviewed state laws related to e-scooters and e-bikes. She explained that e-scooters are subject to the Oregon Vehicle Code, while e-bikes are not. The group discussed how fast bikes and scooters could travel and helmet requirements.

Ms. Rogers provided an overview of Portland's e-scooter pilot program. **Councilor Batey** asked about law and code enforcement. **Ms. Rogers** explained that Portland had not enforced a lot of the rules they set for themselves. She reported that three e-scooter operators had participated in Portland's program.

Mr. Passarelli noted the workload impact to Portland staff and the amount of outreach that had taken place. **Jacob Sherman**, Portland Bureau of Transportation (PBOT) employee and Milwaukie resident, introduced himself. He explained the staff workload of Portland's program and noted the interest in making the program successful. **Mayor Gamba** and **Mr. Sherman** discussed how Portland's staff workloads may differ between

the pilot program and a more permanent program. **Councilor Batey** and **Mr. Sherman** discussed how Portland dealt with improperly parked scooters.

Ms. Rogers provided statistics from Portland's program, including the total rides, positive reviews, rides that replaced local car trips, permits and fees collected, and administrative, outreach, and evaluation costs. She discussed how e-scooters and e-bikes could help the City meet community and Council goals. The group discussed environmental concerns and the estimated lifespan of e-scooters.

Ms. Rogers explained how an e-scooter and e-bike program related to the City's transportation connectivity, equity, and parking goals. The group discussed e-scooters as last-mile transportation options. The group discussed the use of e-scooters and e-bikes on the Springwater Trail and the Trolley Trail. **Mr. Sherman** and **Councilor Batey** discussed the need and capacity for reliable access to e-scooters and e-bikes.

Ms. Rogers noted potential concerns about a shared transportation program. She discussed the impact of improperly parked e-scooters and e-bikes with Americans with Disabilities Act (ADA) accessibility and general accessibility to walkways and roadways. She discussed the environmental impacts of e-scooters and noted the vandalism that occurred during Portland's pilot program. She provided an overview of the workload impacts Milwaukie would face with such a program. The group discussed how to hold users and the scooter and bike companies accountable for issues like parking violations. **Ms. Rogers** discussed injury reports from the Portland pilot program.

Ms. Rogers summarized that there were many unknowns as the impact on staff workloads in a city of Milwaukie's size. **Ms. Ober** reported that staff reached out to cities looking at similar programs and the smallest city had a population of 60,000 residents. The group discussed Metro's role and potential role in these discussions.

Councilor Batey asked about scooter operators' policies for banning individuals that repeatedly break user rules. The group was not sure about such policies.

Ms. Rogers provided an overview of climate goals and actions the City was hoping to implement and begin progress on in the next two years. She also provided a list of her actions and goals as the Climate Action Sustainability Coordinator. She presented questions to Council and asked for direction on a shared e-bike and e-scooter program.

Mayor Gamba asked when the new Portland pilot program would start, if there were plans to expand the fleet, and when PBOT's contract with Nike for Biketown would end. **Mr. Sherman** reported that Portland's new pilot program would start in spring 2019, PBOT staff was having discussions about fleet size, and the Nike contract would end in about two years. He reported that PBOT was looking into a separate e-bike program.

Mayor Gamba believed it made sense for Milwaukie to engage with the Portland's e-scooter program. He expressed support for moving forward with an e-bike program.

Councilor Hyzy wanted to explore how to make the program as revenue-neutral as possible. **Ms. Rogers** noted how program details could influence costs. **Councilors Parks and Batey** were interested in hearing what the City would have to give up if the program was pursued. **Ms. Ober** noted the City had received a \$70,000 grant to look at a shuttle system. She reported that the Clackamas Community College (CCC) Harmony Campus was also interested in e-bikes. The group noted the residents in Milwaukie's unincorporated area and commented on whether Clackamas County was interested in being a partner in an e-bike or e-scooter program.

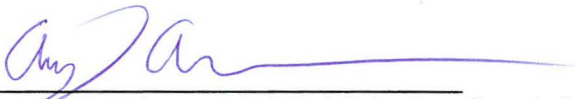
Mayor Gamba discussed the concept of people changing their habits and moving towards using e-bikes and e-scooters. He suggested engaging with Portland's e-scooter program once it starts up again. **Ms. Ober** clarified that Portland has been a great partner and has also made it clear that Milwaukie would need to develop its own process. **Mayor Gamba** suggested the timing be similar for both cities. He discussed initial conversations Milwaukie had with the e-scooter company Lime.

Councilor Hyzy summarized that the conversation was exciting. She understood the staff time issues and the multiple goals the City wanted to pursue related to the Climate Action Plan (CAP). **Ms. Ober** summarized that Council wanted staff to continue considering these programs and report back to Council.

3. Adjourn

Mayor Gamba adjourned the Work Session at 5:50 p.m.

Respectfully submitted,



Amy Aschenbrenner, Administrative Specialist II



CITY OF MILWAUKIE

Memorandum

To: City Council
From: Alma Flores, Community Development Director
CC: Ann Ober, City Manager
Date: January 11, 2018
Re: Community Development Department Projects - City Council Update for January 15, 2019 Council meeting

Community Development/Housing/Economic Development ▪ Milwaukie Housing Affordability Strategy: 2018-2023 ▪ Housing Authority of Clackamas County: Hillside Manor rehabilitation and Hillside Master Plan ▪ Cottage Cluster Feasibility Study ▪ Business Support During Construction ▪ Coho Point at Kellogg Creek	Building ▪ December in review
Planning ▪ Comprehensive Plan ▪ Land Use/Development Review: • City Council • Planning Commission ▪ Design and Landmarks Committee	Engineering ▪ Traffic Control ▪ Engineering Projects

COMMUNITY DEVELOPMENT/ECONOMIC DEVELOPMENT/HOUSING

Milwaukie Housing Affordability Strategy (MHAS): 2018-2023

- City staff updated council on December 18 on the progress of implementing the MHAS and held a discussion on the city of Portland's Tenant Relocation ordinance for council to understand the case study and evaluate the outcomes and potential relevance to Milwaukie.
- In addition to a new Housing Affordability Website (<https://www.milwaukieoregon.gov/housingaffordability/>), the Community Development department has launched an interactive mapping website (<https://bit.ly/2EjVyrC>) that displays various housing related maps that support the three main goals of the MHAS.

Housing Authority of Clackamas County (HACC): Hillside Manor Rehabilitation and Hillside Master Plan

- City Council will be provided with a quarterly update of the Hillside master plan on

January 15th. A public Hillside Master Plan Charette will be hosted on Thursday February 21st at the Ardenwald Elementary School from 6:30 to 8:30pm. The event is now posted on the City of Milwaukie's calendar (<https://www.milwaukieoregon.gov/communitydevelopment/hillside-master-plan-community-design-workshop>) and will be included in the February issue of The Pilot. This open house will help develop and refine design concepts from a community perspective. Staff continues to dedicate time to bi-weekly Health Impact Assessment (HIA) team meetings, monthly stakeholder meetings and planning committee meetings with the County and consultants. Visit the county's website periodically for updated information at <https://clackamas.us/housingauthority/hillsidemasterplan.html>

Cottage Cluster Feasibility Study

- The next Stakeholder Advisory Group (SAG) meeting has been scheduled for Friday February 1st, 2019. Please visit the website for additional information on the project—<https://www.milwaukieoregon.gov/communitydevelopment/cottage-cluster-feasibility-study>. A parallel study of Accessory Dwelling Unit zoning code has begun and will have a panel of experts inform the development of the code modifications.

Business Support During Construction

- Working with the Downtown Milwaukie Business Association (DMBA) and other downtown business to install temporary signs throughout the downtown to alert people to the construction and that businesses are open during construction. Construction on City projects will commence on January 7th beginning with the underpass. Staff Will be attending this month's NDA meeting and working with the DMBA. Visit the South Downtown website for up-to-date information: <https://www.milwaukieoregon.gov/southdowntown>

Coho Point at Kellogg Creek

- A kickoff for schematic design was held on January 11 at Jones Architecture. Preliminary schedule for the project is being developed. The schedule will include community outreach and key council decision points.

PLANNING

Comprehensive Plan Update

- The Comprehensive Plan Advisory Committee (CPAC) met on Monday, January 7 and provided their final comments on the Block 2 policies (Parks and Recreation, Willamette Greenway, Climate Change and Energy, and Natural Hazards.) The meeting also served as the kick-off for the Housing Chapter. Staff provided a presentation and background materials on demographics, housing demand and supply, and housing-related equity.

Land Use/Development Review¹

- City Council
 - The City Council is scheduled to adopt a resolution “pinning down” the draft Comprehensive Plan Block 2 policies at their January 15 regular meeting.
- Planning Commission

¹ Only those land use applications requiring public notice are listed here.

- CU-2018-003 (master file) – The application for a 170-unit senior housing development at 13333 SE Rusk Rd has been deemed incomplete, but a resubmittal is anticipated within the next two weeks.
- CSU-2018-018 – On January 8, the Planning Commission approved the North Clackamas School District's Transportation Demand Management Plan (TDMP) for the Milwaukie High School's Lake Rd Sports Fields Facility. Conditions of approval include a limit on the number of games or practices that can take place at one time, requirements for regular Good Neighbor meetings and annual report-back meetings, an on-site monitor for tournament-type events, and a check-in at the 2-year point for the Planning Director to determine whether additional review by the Planning Commission is needed.
- VR-2019-001 – An application for a Type II variance to the minimum rear yard setback, minimum vegetation, and maximum fence height for the property at 2024 SE Eagle St is in completeness review.
- ZA-2018-002, CPA-2018-002 – A zone change and a Comprehensive Plan Amendment is proposed for 4 properties on Railroad Ave. They are proposing a zone change from R-7 to R-5. One of the four properties is being looked at to subdivide at a later time this year. The zone change is going to Planning Commission on January 22, 2019.

Design and Landmarks Committee (DLC)

- The DLC's next meeting is February 4, 2019, where they will continue their work to update the Downtown Design Review process.

BUILDING

December 2018 in review

	<u>Valuation of permits issued:</u>
New Single Family – 4	\$1,260,569
New ADU issued – 0 issued	\$0
Solar 1 Issued	\$28,000
Residential Alterations/Additions –1 issued	\$80,000
Commercial new - 1 issued	\$2,005,400 (Library)
Commercial Alterations –9 issued	\$907,159
Demo's –2 issued	

Total number of permits issued (Structural, Mechanical, Plumbing, Electrical): 122

Total number of Inspections performed (Structural, Mechanical, Plumbing, Electrical): 308

ENGINEERING

Traffic Control:

- A Linwood and Monroe safety improvements pre-installation meeting was held on 12/19 with Clackamas County. A general understanding was reached regarding maintenance of the interim striping, signing, plastic curbs, and delineators. Installation is slated for the first striping permissible weather day. Public outreach continues. The future Monroe Greenway Project will redevelop the intersection with new maintenance needs. The pedestrian crossing funded by PCC Structurals across Johnson Creek is proceeding. PCC is contacting firms and the traffic regulation is being finalized with the report submitted by DKS engineering.

Engineering Projects:

South Downtown Improvements:

- SODO has truly begun! The Notice to Proceed was issued and Main street was closed on January 7th. Construction crews are installing utilities on the southern portion of Main Street and night utility work is scheduled to begin at the end of the month.

Ardenwald SAFE Project:

- Preconstruction meeting scheduled for January 31, 2018. Construction to begin March 1, 2018.

Sellwood / 30th / Madison SAFE Project:

- Construction will begin the week of January 14, 2019. Project is scheduled to be complete by March 15, 2019.

Asphalt Pavement Overlay:

- Remaining two items are weather dependent and should be completed between rain storms.

Public Works Standards update:

- The 30-day review period will be complete on January 21, 2019. Based on review of the added sections, additional changes were made to Drawing 505 Street Cross Sections and to Section 5.0200 Low Volume Streets.

Kellogg Creek Bridge:

- The project is complete and working on close out.

Riverfront Park Bank Repair:

- The project is complete and working on close out.

Milwaukie Bay Park Pedestrian Bridge A Repair:

- The project is complete and working on close out.

Kronberg Park Multi-Use Walkway:

- ODOT has received final submittal for review and the City is anticipating any comments from ODOT in the next two weeks. Building permits have been submitted. The City is splitting the contract into two, in order to have tree removal complete by March 1, 2019.

THE FOLLOWING **ANNOUNCEMENT** HAS BEEN APPROVED FOR
CITY COUNCIL AUDIENCES
BY STAFF MEMBERS AT THE CITY OF MILWAUKIE

CAREFREE
SUNDAY
MILWAUKIE, OREGON

PRESENTED BY





COUNCIL STAFF REPORT

To: Mayor and City Council
Ann Ober, City Manager

Date Written: Jan 4, 2019

Reviewed: Richard Swift, Director of Health and Human Services (H3S) for Clackamas County; Jill Smith, Director of Housing for H3S, Chuck Robbins, Director of Housing Authority of Clackamas County, Stephen McMurtrey, Clackamas County Director of Housing Development; Valeria Vidal, Housing and Economic Development Coordinator

From: Alma Flores, Community Development Director

Subject: **Clackamas County Housing Authority: Hillside Manor Rehabilitation and Hillside Park Master Plan Update #3**

ACTION REQUESTED

Listen to a presentation by Clackamas County staff on the rehabilitation of the Hillside Manor tower and the Hillside Park master planning process.

HISTORY OF PRIOR ACTIONS AND DISCUSSIONS

The City of Milwaukie was a partner in the grant application to Metro for the Hillside Master Plan submitted in June 2017. Metro announced the grant award for the project in November 2017 and a consultant was selected to proceed with the scope of work for the master plan development. Clackamas County staff provided a progress update in September 2018.

ANALYSIS

The Hillside Manor and Park community is comprised of 200 units of public housing located on 16 acres on SE 32nd Avenue. The Housing Authority of Clackamas County (HACC) has launched revitalization efforts for the site that include two phases:

1. Rehabilitation of the 9-story tower (Hillside Manor)
2. Master planning for the redevelopment of the site (Hillside Park)

The Master Plan for Hillside kicked off on June 27th at the HACC 80th Anniversary Celebration. To date, public engagement for the plan has included seven stakeholder interviews held between August 21-29, 2018 and a resident listening session that City staff attended on September 5th. Three visioning workshops were held on October 24th & 25th (see Visioning Sessions Summary, attached).

A stakeholder committee that meets bimonthly has been convened for this process, as well as a planning committee that meets monthly. A sustainability charrette was conducted by Brightworks Sustainability on November 7th to examine City and project priorities as part of the Master Plan (see Sustainability Charrette Summary, attached). Finally, two internal design workshops were held on December 11th and December 20th, the first one for the planning committee and the second one for the stakeholder committee. Both groups shared their ideas on a range of design concepts as presented by the Scott Edwards Architecture team (see Internal Design Summary, attached). A community design charrette is scheduled for February.

A demographic and site analysis have been conducted in order to target the needs of the community and the capacity of the site (Demographic and Site Analysis attached).

As part of a comprehensive approach to the development of the Master Plan, a health impact assessment team was formed that meets monthly to discuss and advocate for a process that is mindful of the current and future health conditions of residents.

Upcoming Events

Community Design Charrette – February 21, 6:00-8:30 pm Ardenwald Elementary Cafeteria

BUDGET IMPACTS

None

WORKLOAD IMPACTS

Community Development staff are attending meetings and participating in outreach activities.

COORDINATION, CONCURRENCE, OR DISSENT

The Community Development Director and Economic and Housing Coordinator concur with this staff report.

STAFF RECOMMENDATION

Staff recommends that City Council listen and ask clarifying questions of Clackamas County staff.

ATTACHMENTS

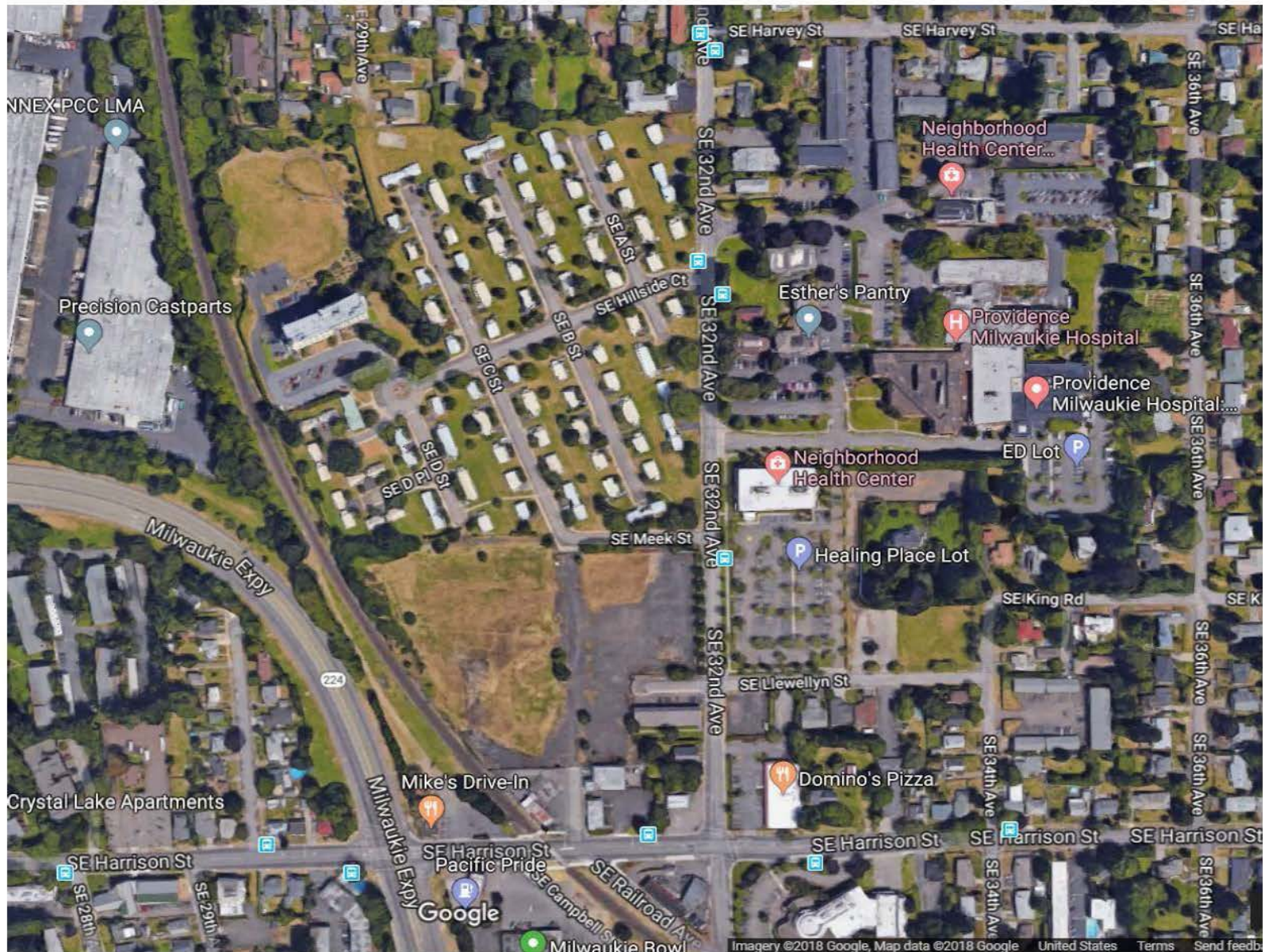
1. Presentation--Hillside Manor and Park Update #3
2. Visioning Sessions Summary
3. Sustainability Charrette Summary
4. Internal Design Workshop Summary
5. Demographic Analysis
6. Site Analysis

Hillside Manor and Park

Rehabilitation and Master Plan for Housing Opportunity

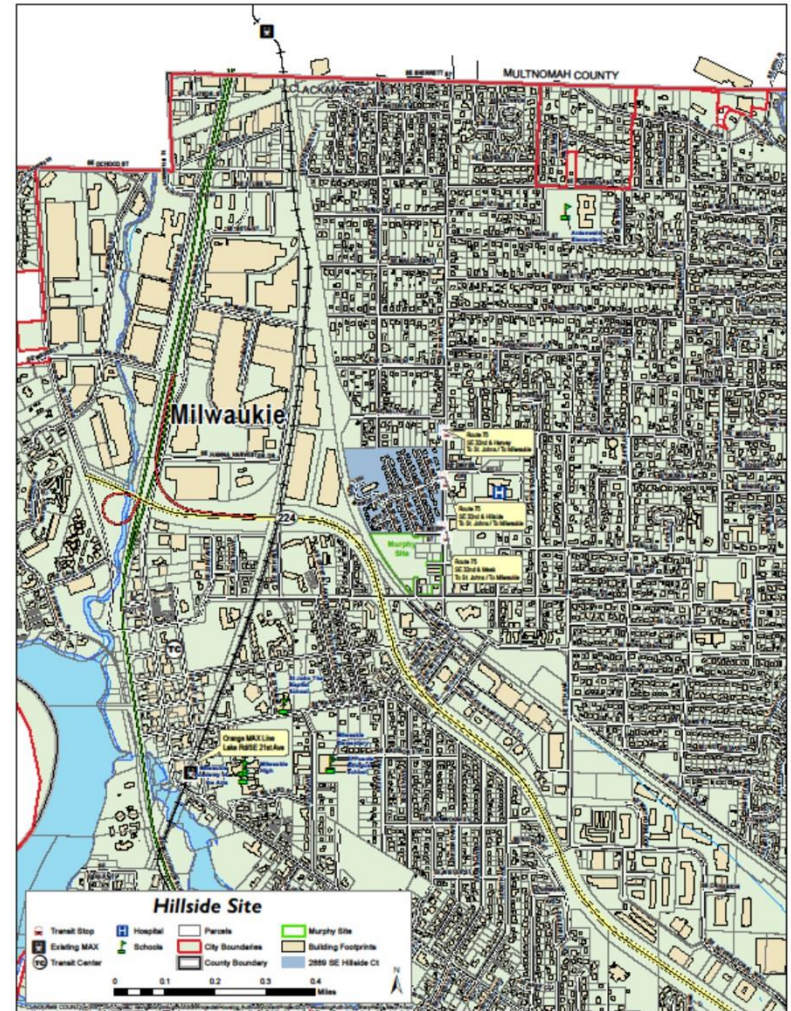
Update #3





Project Background

- 16 acre site
- Currently 200 units of Public Housing
- Rental Assistance Demonstration project (HUD)
- Metro 2040 Planning and Development Grant Awardee



Phase 1: Hillside Manor Rehabilitation



- 9 story, concrete tower built in 1970
- 100 units of public housing serving the elderly and people with disabilities
- RAD project priority for rehabilitation using Low Income Housing Tax Credits (LIHTC)
- Initial 9% LIHTC application not funded
- 4% LIHTC application submitted to the state on December 14th, 2018
- Scope of work includes major systems replacements, seismic upgrades, and complete interior renovations

Phase 2: Master Plan for Housing Affordability

- Master plan will establish the vision for redevelopment of the community
- Scott Edwards Architecture selected as lead firm



Stakeholder Engagement to Date

- Kick-off event held on June 27th at the HACC 80th Anniversary Celebration
- Resident Listening Session on September 5th
- Visioning Sessions October 24th & 25th
- Sustainability Charrette November 7th
- Internal Design Workshop December 11th
- Stakeholder Interviews in August 2018
- Bimonthly Stakeholder Meetings
- Monthly Planning Committee Meetings
- Health Impact Assessment Team meets monthly to discuss inclusion of potential health related issues throughout the process

Next Steps

- Increased outreach to Hillside residents
- Community Design Charrette – February 21, Ardenwald Elementary Cafeteria

Questions?



Health, Housing
& Human Services 
CLACKAMAS COUNTY

Visioning Session Event Summary

DRAFT – 11/15/2018

Overview



On October 24th and 25th, 2018, residents of Hillside, the community and local service providers were invited to participate in a visioning session in the Mother Gamelin room at Providence Milwaukie as part of the Hillside Master Plan for Housing Opportunity. The purpose of the event was to begin the discussion of what the community and residents envision for the redevelopment of the Hillside site; and to gather feedback to help inform the upcoming community work sessions.

A total of three sessions were held over the course of the two days. Two sessions were held on the 24th (9:30-11:00 and 5:00 – 7:30) and were focused on gathering input from the community and the existing Hillside residents. While the last session on the 25th (3:30 -5:00) solicited feedback from local service providers. The sessions on the 24th had a total of 50 participants (20 and 30 respectively). While the 25th had ten individuals in attendance.

All three sessions were similarly arranged and formatted. Upon arrival attendees were given a comment form and color-coded stickers (red, yellow and green). After a short project introduction and explanation, the attendees were encouraged to move throughout the room to visit four stations addressing the following categories;

- Housing Density and Style
- Neighborhood Character
- Healthy Community
- Open Space

Each station had 18 images for participants to “vote” on by applying stickers to the image. A green sticker represented what the individual liked, a yellow sticker represented they were unsure, while the red sticker indicated a dislike.

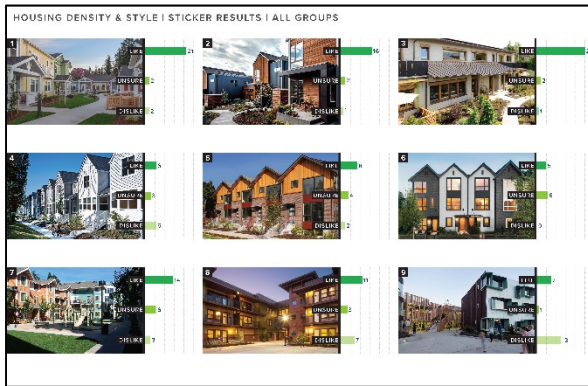
After participants had a chance to visit all four stations the group reconvened to



Hillside Master Plan: Visioning Session Summary

review summarize the group's likes and dislikes. People were then asked to comment on why they felt strongly in favor for or against an image. All the comments were recorded by the design team to be incorporated into the final report.

The following graphs summarize each session's votes and display which images received the most likes and dislikes. The first graph summarizes the vote tallies from all three meetings combined, while the second graph breaks down the tallies per session. The legend indicates which tallies belong to each group.



Graph 1

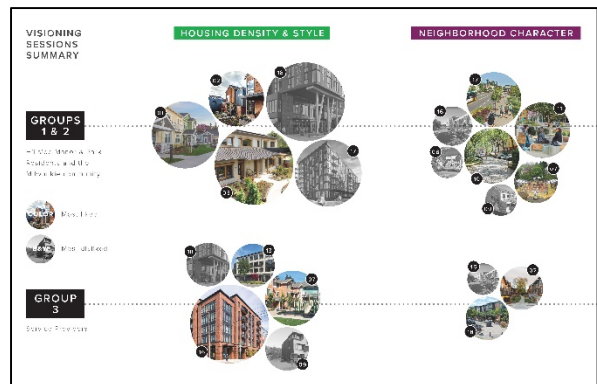


Graph 2

For each category, the third graph summarizes the comment forms collected from all sessions. Comments from all sessions were compiled and assigned a value like the vote tallies—like, unsure, or dislike. The images are scaled to the percentage of comments that fall under each value. The fourth graph summarizes the previous graphs to display what participants liked or disliked the most. The graph is split between the Hillside Manor and Park residents and the Milwaukie community (Groups 1 and 2), and the service providers (Group 3). Complete visioning sessions results are attached below.



Graph 3



Graph 4

HOUSING AUTHORITY OF CLACKAMAS COUNTY
HILLSIDE MASTER PLAN

SUSTAINABILITY CHARRETTE REPORT



An aerial photograph of a neighborhood, likely Hillside, showing a baseball field, residential streets, and buildings. The image is faded and serves as a background for the text.

CHARRETTE PURPOSE

Members of the Hillside Master Plan project team participated in a sustainability charrette on November 7, 2018. The primary purpose of the charrette was to identify, evaluate and prioritize sustainability strategies for the design, construction and operations of the redeveloped Hillside neighborhood.

Interdisciplinary project team representatives participated in interactive sessions, spending most of the meeting in focused working groups to brainstorm and vet sustainability strategies. Participants identified sustainability strategies for Hillside Master Plan to pursue or to explore further.



Clackamas County

Allison Coe
Chuck Robbins
Eben Polk
Jamie Zentner
Laurel Bentley Moses
Rich Malloy
Stephen McMurtrey

City of Milwaukie

Alma Flores
David Levitan
Mark Gamba
Natalie Rogers
Peter Passarelli

Scott Edwards Architecture

Chris Olenyik
Lisa McClellan

Dalla Terra

Julie Proksch

Portland General Electric

Tarah DeGeorge

Energy Trust of Oregon

Trisha Paul

Walker Macy

Paul Wroblewski

Brightworks Sustainability

Elena Lake
Mitch Dec
Rita Haberman
Shilpa Surana

STEPPING INTO THE FUTURE TO DEFINE SUCCESS

Sustainability efforts must be developed through the lens of the project's priorities, leveraging the strengths and opportunities unique to the organizations inhabiting and operating the buildings.

To kick off the charrette, participants considered the question, "It's 2023. Construction of Hillside is completed. Returning and new residents of Hillside have moved in. Later that week, you're reading The Sunday Oregonian, and you are thrilled and proud to read an in-depth story about Hillside. What is the story headline?"

Team members' responses were varied, but some recurring themes included:

- Net Zero Energy/Emissions neighborhood
- Connection and integration with the broader Milwaukie community
- Residents are thriving
- A new model for sustainable and affordable housing
- Ample funding from public-private partnerships

"Hillside is the ultimate opportunity to prove the model of a community that is really livable, desirable, net zero and affordable."

Mark Gamba,
Mayor, City of Milwaukie

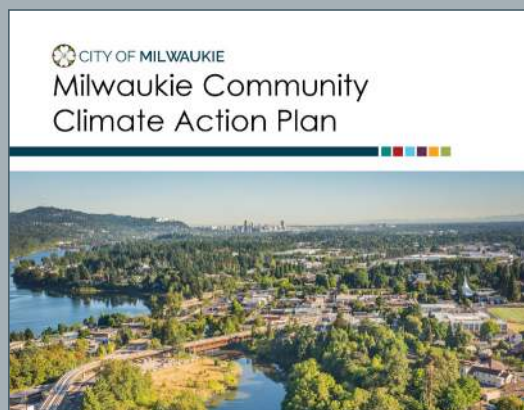




Goals for the Hillside Master Plan include providing:

- Up to 400 new affordable housing units
- Community gathering space
- Enhanced outdoor recreation areas
- Other amenities that will serve both Hillside residents and neighbors
- A mixed-use community with potential new retail and office space

“In 2040, Milwaukie is a flourishing city that is entirely equitable, delightfully livable, and completely sustainable. It is a safe and welcoming community whose residents enjoy secure and meaningful work, a comprehensive educational system, and affordable housing. A complete network of sidewalks, bike lanes, and paths along with well-maintained streets and a robust transit system connect our neighborhood centers. Art and creativity are woven into the fabric of the city.”



Milwaukie Community Vision and Action Plan(September 5, 2017)

ASSESSING SUSTAINABILITY STRATEGIES

A circular image showing a close-up of solar panels with a grid pattern.

ENERGY

A circular image showing a busy farmers market with people selecting fresh produce like tomatoes and bananas.

HEALTH + WELLNESS

A circular image showing two people riding bicycles on a paved street with buildings in the background.

**PLACE + GREEN
INFRASTRUCTURE**

Charrette participants engaged in an interactive exercise intended to identify which sustainability strategies are central to supporting Hillside's priorities, why they are important, and next steps to turn the most important items from ideas into reality.

Small-table working groups each focused on a sustainability category: Energy, Health & Wellness, and Sense of Place/Green Infrastructure. The working groups were tasked with identifying the Top Ten Best Strategies for their category, and to plot each strategy as "Baseline," "Targeted," or "Aspirational."

- "Best Strategies" = the most meaningful, most impactful, and in line with the project's goals
- "Baseline" = deemed as meaningful, impactful and feasible to be included in the project
- "Targeted" = deemed as meaningful and impactful, but with some challenges to overcome
- "Aspirational" = deemed as meaningful and impactful, but with some significant challenges to overcome

After each working group completed the two-step exercise, everyone came together for a round-robin report-out by a chosen speaker from each group to share and discuss their recommendations.

ENERGY

Sustainability Strategies

- PASSIVE HOUSE (Envelope Construction) std not certification.
- EV CHARGING INFRASTRUCTURE = ^{Bike}
^{Car}
^{Scooter}
- OCCUPANT ENGAGEMENT = ^{Onboarding}
^{Education}
- METERING / MONITORING = ^{energy allowance}
^{incentives to conserve}
- Tree canopy for shading / Neighbourhood coding strategies.
- SOLAR
- Mixed Use Development
- Central System for housing = ^{Demand}
^{Response}
- Resiliency

ENERGY

Elaborate, Quantify, Quality, Illustrate

- Passive House - Tease out the elements.

- Occupant engage: NEST thermostats.

Street lighting / Site lighting

- Metering - Residents pay utility allowance. Electricity, water paid by owner. Hot water usage is a huge cost. Sub meter water.

- Tree - Shade & provide food. Reduce heat island. Use pavers. Moorey. Reduce paving, use permeable. Thermal

- Solar - Battery storage ^{Thermal}
Building level? Community level?
Funding

- Central System - Heat Pump Water Heater
└ central laundry
└ District heat/cool

- Resiliency - energy storage generation



- Multi-functional
Flexible -

Health + WELLNESS

Sustainability Strategies (and alleviate toxic stress)

- Food systems
 - grocery store
 - corner store
 - garden
 - farmer market
 - kitchen
- Poverty alleviation systems
 - social services
 - child care
 - business develop
- Transportation
 - active
 - bike
 - walk
 - Public transit
 - ride share
- Physical wellness - Physical activity
- Safety
 - design - visibility
 - lighting
- Multi functional Community Space (+)
 - outdoor
 - indoor
 - flexible
- Education
 - youth
 - adult
 - formal (+) informal (community groups)
 - (school district)
- Green space / open space
 - TREES
 - provide shade
 - connection to nature
 - Noise mitigation (frames)
 - HVAC
- Internet / technology access
- Trauma informed design

Health + Wellness

Elaborate, Quantify, Quality, Illustrate

Food pantry (OFB)
Food delivery
Coffee shop



Community Gardens expanded



Farmer Market



Grocery store (corner market)

Community Kitchen

Root top gardens



Micro-transit to/from light rail, bus, ride share
Lower parking ratio



Exercise Station Loop - enhancements
Bicycle parking - secure, accessible
Mobile Gym
Boys + Girls Club

Cooling and air quality relief centers

Lighting, safety + security

Kitchen services

Integration



"Neighborhood Hubs"

Safe Access for Everyone (SAFE) - bicycle, pedestrian, wheelchair

Community Space

Maximizing the Impact for Children and Families
Partnering with diverse underserved families to create healthy, affordable, sustainable communities, which is a key to long-term success.



Poverty Alleviation

Activated Spaces

Dental Center, Clinic, Child Care

Outdoor gathering spaces

Community capacity 8/15 - increased



Via Verde's rooftop gardens serve residents by providing fresh produce in community gardens, places to exercise in public spaces, and energy through solar panels. Photo courtesy of David Sundberg/Edo



PLACE + GREEN INFRASTRUCTURE



GREEN INFRASTRUCTURE

SENSE OF PLACE

Sustainability Strategies

- ACCESSABLE + EQUITABLE
- SEAMLESS INTEGRATION OF GREEN INFRASTRUCTURE
- MULTIMODAL TRANSPORTATION PROMOTION
- RESILIENT TRANSPORTATION SYSTEM
- PRIORITIZATION OF RESILIENT GREENSPACES w/ ENGAGEMENT OPPORTUNITIES
- PROMOTE GREEN PAVEMENT ALTERNATIVES TO REDUCE URBAN HEAT ISLAND
- HABITAT CREATION FOR LOCAL NATIVE WILDLIFE + POLLINATORS
- SAFE LIGHTING MINIMIZING LIGHT POLLUTION
- ON-SITE WATER RECLAMATION

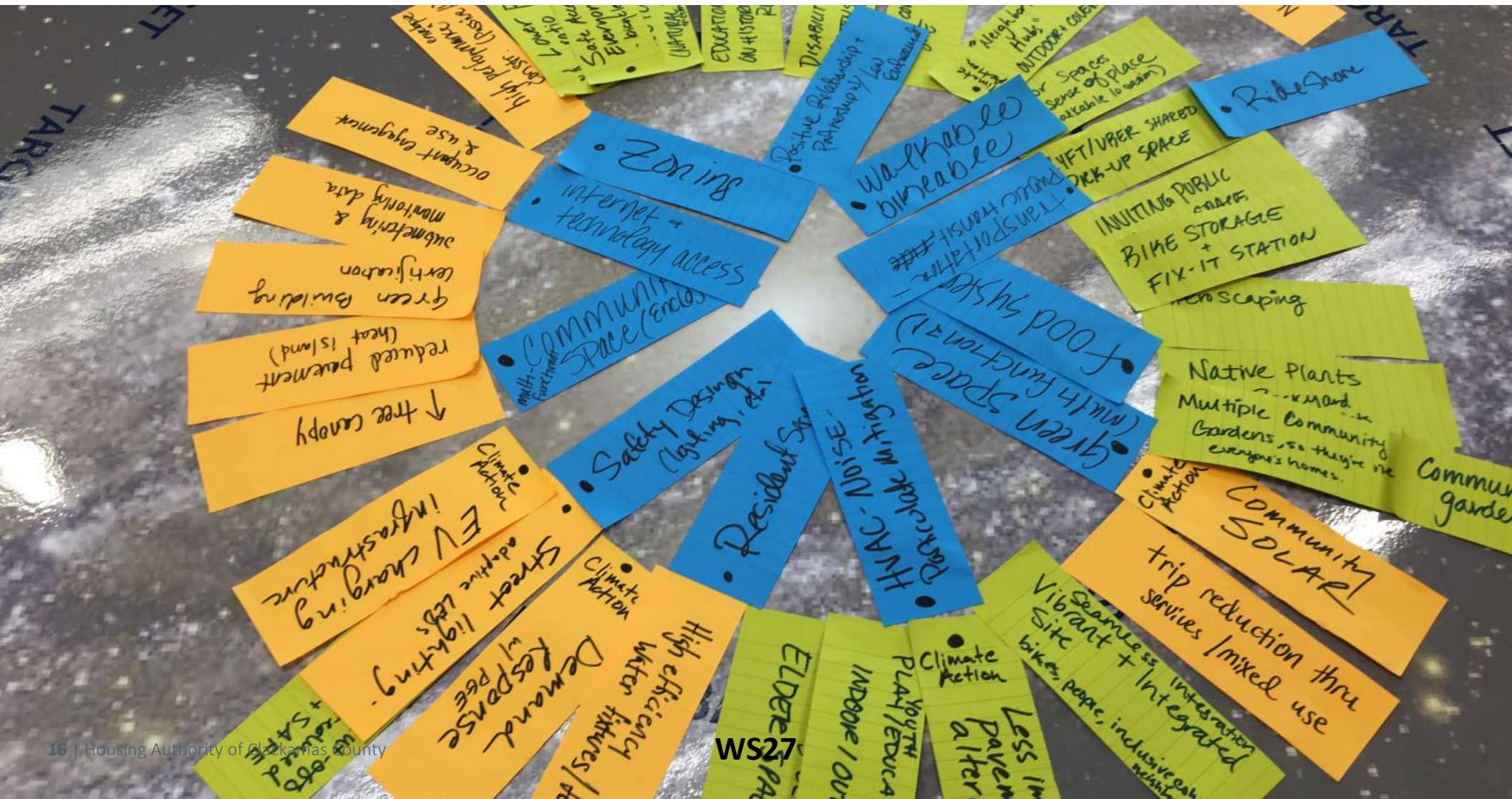
Green Infrastructure/Sense of Place

Elaborate, Quantify, Quality, Illustrate

- ↳ INDOOR + OUTDOOR SPACES (+SOCIAL SPACES)
DISPERSED, FREQUENT, REPEATING
INDIVIDUAL 'FEEL' IN COMMUNITY SPACE (OWN THEIR HOME)
- ↳ BIKES, CARS, STORMWATER MGMT HABIT
NO HARD BORDERS, ON SITE COMPOSTING
- CARS OUTER
BIKES/WALK/SHARED BIKES
INTERIOR
- ↳ ENOUGH RESOURCES TO RELY ON
SAFE BIKE STREET OPTIONS
SHARED RIDE SERVICES
- ELECTRIC SCOOTERS
RAISED BIKE LANES
- ↳ CONNECTED, AFFORDABLE, FLEXIBLE
- ↳ 50% TREE CANOPY IN HILLSIDE
WILDLIFE + PLANT HABITAT (COLLABORATION w/ ORGANIZATIONS)
- ↳ POROUS CONCRETE, NO ASPHALT
GREEN ROOFS,
- ↳ U3NW Feel,
- ↳ DEFINES PLACE, SAFETY PRIORITY, SMART LED
- ↳ 98th Percentile storm water event treated on-site

NEAR-TERM NEXT STEPS

The recommendations from the sustainability charrette will be revisited periodically as the Hillside Master Plan process progresses. Additional vetting of the many sustainability strategies identified is needed to understand tradeoffs and to refine priorities. The essence of the “baseline,” “targeted,” and “aspirational” strategies and goals will be captured for future reference in the Hillside Master Plan.



	ENERGY	HEALTH & WELLNESS	PLACE / GREEN INFRASTRUCTURE
BASELINE Deemed as meaningful, impactful and feasible to be included in the project	- Tree canopy area enhancements - Pavement use limited to reduce heat island effect - EV charging infrastructure - Vehicular trip reduction due to mixed-use - Community Solar - Demand Response program with PGE - Green certification for future buildings - High-performance building envelopes (strive to meet Passive House principles) - Water fixtures & features – high-performance and water efficient - Energy sub-metering & monitoring systems - Occupant education and engagement - Street lighting with adaptive LEDs	- Multifunctional outdoor green spaces - Multifunctional indoor/outdoor community spaces - Food systems – gardens, markets, community kitchens, rooftop and balcony gardens - Public transit with easy access - Active transportation – walkable, bikable - On-site resident services (child care, social services, microenterprise support) - Good relations and partnerships with law enforcement - Noise mitigation through high performance building envelopes - Building HVAC supply air filtration for healthy indoor air quality - Technology and internet access - Sense of safe community – lighting, visibility	- Landscaping with native/adapted/drought-tolerant - Neighborhood hubs - Vibrant, integrated, coherent neighborhood - Play/Educational indoor/outdoor spaces for youth and teens - Community gardens near dwellings and throughout - Lyft-Uber shared pick-up areas - Less impactful pavement alternatives - Limited vehicle parking - Safe networks for pedestrians - Safe networks for bicyclists - Bicycle storage and repair stations - Equitable access for disabled - Education and celebration of cultural and natural resources - Active composting system - Wetlands for on-site stormwater management - Sense of safe community
TARGETED Deemed as meaningful and impactful, but with some challenges to overcome	- Net-Zero Energy - Solar-covered parking, awnings & other surfaces - Micro-grids of on-site renewables & storage - Heat pump hot water systems - Energy “allowances” & incentives for residents	- RideShare programs - Drop-in clinic services - Service options & relationships	- People-centric (not car-centric) streets -- woonerfs - Limited vehicle access to neighborhood core - Recreational spaces for elders - Food Forest - Tree canopy 40% - Porous concrete - On-site stormwater management for 98th percentile of events - Comprehensive recycling-reuse programs - Full participation in food waste/green waste collection, composting - Community Tool-Equipment share programs
ASPIRATIONAL Deemed as meaningful and impactful, but with some significant challenges to overcome	- District hot water system - District Heat/Cool (solar thermal, geothermal) - EV bicycle share - EV scooter share - EV car share - On-site blackwater treatment system	- Connection to downtown - Pedestrian overpass to-from downtown - Food delivery services	- Tree canopy 50% - No black asphalt - EV-Ready infrastructure for 100% solar EV - On-site blackwater treatment system



MEETING NOTES

Job: 18073 Hillside Master Plan

Date: December 11, 2018

Time: 9:00-12:00pm

Location: Public Safety Building, Milwaukie

Prepared By: Amy Cripps / Chris Olenyik

Attendees: See attached

Notes: Internal Charrette

- 1) **Presentation** – SEA presented a summary of the site conditions and constraints that lead to the development of the proposed / potential site layout.
 - a) A pdf of the presentation has been attached
 - b) Comments during the presentation;
 - i) Existing Conditions
 - (1) City staff said Meek St may not need to extend to end of site & 29th is the more important connection to keep in mind
 - (2) There is a new storm drain being put in on Meek St
 - (3) City is building a new detention facility in the northwest part of the site outside the Hillside property
 - (4) There are problems with the existing utilities and the water system potentially needs to be upgraded—Housing Authority recommends not keeping any of the existing utilities and to start with a “clean slate”
 - (5) Hillside staff said that the depression in the northwest corner does fill with water, but drains rather quickly (Walker Macy identified that there is a large structure that collects most of the water from that area)
 - ii) Parking
 - (1) 800 sf unit = 1 stall/unit, and over 800 sf unit = 1.25 stall/unit
 - (2) In the NMU zone, there are some areas with a 50% reduction in parking
 - (3) Hillside staff indicated there are 50 parking spots at the Manor and unsure about how many people have parking permits
 - (4) About 50% of residents don't have cars
 - (5) From the HIA surveys 36% of the residents, park and manor, said they drove in the last week.
 - (6) Residents are mostly taking shuttles or public transit.
 - (7) Marketing determinants: city staff said could set the parking for the property or create a “new zone” or the parking couldn't fall below a certain percentage
 - (8) HIA suggested putting a transit stop near the manor, but the city staff said that Trimet may not be inclined to do so
 - iii) 29th Ave

- (1) Un-designed greenway that could be similar to the Monroe Greenway (shared bike/vehicular)
 - iv) Murphy Site
 - (1) Structure PDX brought it to attention that the zoning has an industrial overlay which is defined as “light industrial”
 - v) Stressed importance of 40% tree canopy goal
 - vi) Northwest corner of the site
 - (1) It was clarified that there are two reports addressing this site: 1) the Geotech analysis identified the soil in this area as unstable, and 2) the environmental review, phase 2 analyses the variety of pollutants in the area
 - vii) Potential pedestrian bridge
 - (1) The TSP shows a bike-pedestrian connection over railroad tracks and LRT just north of the Hillside site between Balfour St and Kelvin St
 - (2) HIA strongly suggested that an effort be made to look into placing a pedestrian bridge or transit stop at the west end of the property because that is where the most disabled residents live
 - (3) SJE A reminded that the most disabled residents may not always be in the manor—they could move closer to 32nd, closer to public transit
 - viii) A third point of entry off 32nd Ave may not be possible, but could be a pedestrian connection
- 2) **Working Session** – The group was divided into three smaller groups and asked to come up with different potential site layouts with the provided game pieces.
- a) All of the options developed were recorded and have been attached below with unit and parking counts as well as additional bullet points for each option.
 - b) Below are comments received during the session report out.
 - i) Group 1
 - (1) scheme with public community building and park at the center of the site (Lot H)
 - (2) Portion of 29th where community building faces could be a plaza, pedestrian entry to the northwest park, and a traffic slowing opportunity



- ii) Group 2
 - (1) Placed community center in Lot E and converted existing parking lot in front of manor into a plaza.
 - (2) Designated Lot A as detached single family homes
 - (3) Another scheme moved community gardens to the southern side of the manor—discussed that this is an important amenity to the residents and could be expanded
- iii) Group 3
 - (1) The road in-between lots E & F could be closed for events
 - (2) Possible traffic circle at 29th and the manor
 - (3) Created instances throughout scheme where townhomes and walk-ups faced each other across a R.O.W.
 - (4) Designated Dwyer as the neighborhood entry, and Meek as the community center and park entry.
 - (5) Meek is the “most urban street” on this site because it faces the Murphy site

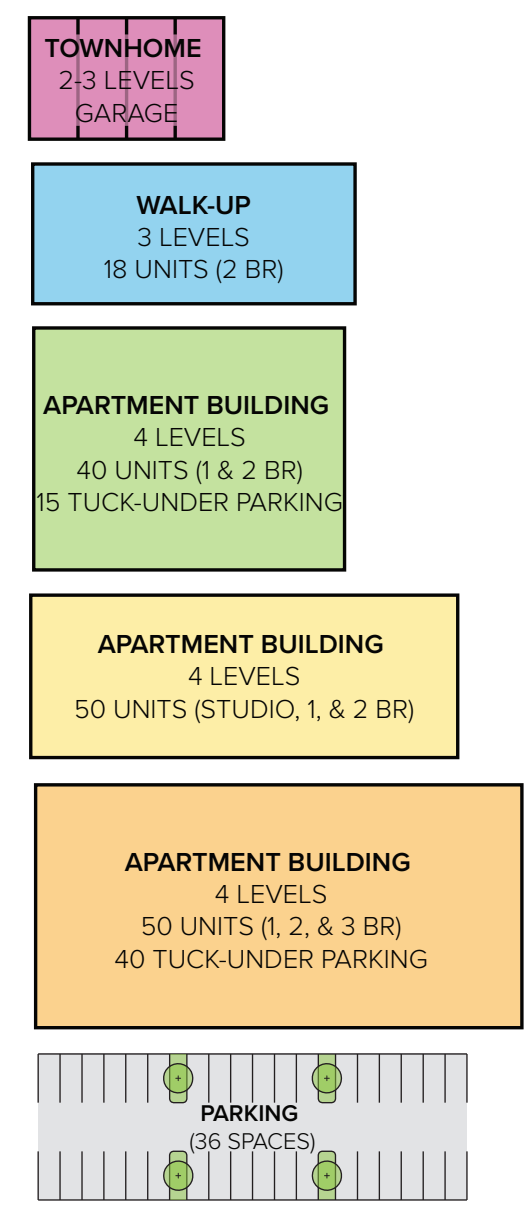
3) Upcoming Community Work Session

- a) For the community charrette, advised to spend more time on what each building piece is and relate back to the visioning session images
- b) Change Lot F to a green color to designate it as a park
- c) Draw in street sections to show the anticipated sidewalks and tree canopy
- d) Street pieces that have varying widths to overlay site plan
- e) Different sized community center pieces
- f) Different sized playgrounds and community garden pieces

Next Meeting: TBD



Game Board



Pieces

OPTION A-1

432 Units
308 Parking Stalls

- Investigated developing the site with the assumption that the Housing Authority would sell Lot C
- Access:
 - Primary: Meek St.
 - Secondary: Dwyer St.
- Building Frontage:
 - Primary: 32nd.
 - Secondary: Meek St.
- Building density decreases to the northern part of the site.
- A pedestrian esplanade flanks the western edge of 29th st. creating an active bike / pedestrian connection through the site.
- A pedestrian-only street off SE 32nd Ave leads straight to a public community center occupying Lot E.



OPTION A-2

416 Units
300 Parking Stalls

- Investigated developing the site with the assumption that the Housing Authority would sell Lot C
- Access:
 - Primary: Dwyer St.
 - Secondary: Meek St.
- Building Frontage:
 - Primary: 32nd.
 - Secondary: Dwyer St., Meek St
- Building density increased on Lot G, but held back from the northern boundary of the site.
- A pedestrian esplanade flanks the western edge of 29th st. creating an active bike / pedestrian connection through the site.
- The community center has been centralized and surrounded with public park / plaza space. A pedestrian-only street connects the community center to SE 32nd Ave.
- This option focuses combining walk-ups with higher density buildings and combined parking on each lot.



OPTION A-3

416 Units
298 Parking Stalls

- Investigated developing the site with the assumption that the Housing Authority would sell Lot C
- Access:
 - Primary: Meek St.
 - Secondary: Dwyer St.
 - Third: Mid block (presumably Hillside St.)
- Building Frontage:
 - Primary: Meek St. (assuming development on the Murphy Site) and along 32nd.
 - Secondary: Dwyer St.
- Building density decreases to the northern part of the site.
- A pedestrian esplanade flanks the western edge of 29th st. creating an active bike / pedestrian connection through the site.
- A community center has been added to Lot E to be in close proximity to the manor and the public park.



OPTION A-4

474 Units
379 Parking Stalls

- Investigated developing the entire site.
- Access:
 - Primary: Meek St.
 - Secondary: Dwyer St.
 - Third: Mid block (presumably Hillside St.)
- Building Frontage:
 - Primary: Meek St. (assuming development on the Murphy Site) and along 32nd.
 - Secondary: Dwyer St.
- Building density decreases to the northern part of the site.
- A pedestrian esplanade flanks the western edge of 29th st. creating an active bike / pedestrian connection through the site.
- Housing is built above the community center.



OPTION B-2

580 Units
408 Parking Stalls

- Investigated developing the site with the assumption that the Housing Authority would sell Lot C
- Access:
 - Primary: Meek St.
 - Secondary: Dwyer St.
- Building Frontage:
 - Primary: Meek St. (assuming development on the Murphy Site) and along 32nd.
 - Secondary: Dwyer St.
- Building density decreases to the northern part of the site.
- A pedestrian esplanade flanks the western edge of 29th st. creating an active bike / pedestrian connection through the site.
- The community center has been moved closer to the existing manor creating an active plaza.
- A pocket park is created behind the large apartment buildings shown on Lot B



OPTION B-3

600 Units
No Parking

- Investigated developing the site with the assumption no on site parking was provided
- Access:
 - Primary: Meek St.
 - Secondary: Dwyer St.
- Building Frontage:
 - Primary: 32nd.
 - Secondary: Dwyer St., Meek, and 30th
- Building density decreases to the northern part of the site.
- A pedestrian esplanade flanks the western edge of 29th st. creating an active bike / pedestrian connection through the site.
- Multiple pocket parks are created throughout the site
- (14) single family homes are proposed on Lot A that would be sold off at market rate.
- Additional community gardens have been added to the front of the manor



Summary

- The majority of lower income households (earning 80% or less than the median family income) in Clackamas County have two or fewer people
- The majority of lower income households in Clackamas County are housing cost-burdened
- Households with three or more people have a higher share of cost-burdened households than smaller households
- Likely market rate rents for new construction would be affordable to households earning \$81,400 a year (the median family income) or more
- Clackamas County has a deficit of housing units affordable to households earning less than \$35,000 (about 45% of median)

Clackamas County Demographics

Household Sizes by Income Group

- Countywide, the majority of households (64%) have two or fewer people. This is similar for Milwaukie (based on the 2016 HNA).
- Only 21% of households earning less 80% or less than the median income have households with three or more people
- This 21% total 12,800 households in Clackamas County, which is still a sizable number, even if it's a small share of total households

Percent of All Clackamas County Households, 2017

Percent of Median Income	Household Income Group	Household Size				
		1 person	2 persons	3 persons	4 or more persons	All households
< 30%	< \$24,000	8.8%	2.4%	0.6%	0.6%	12.3%
30-50%	\$24,000 - \$39,999	3.6%	3.1%	1.1%	1.4%	9.1%
50-80%	\$40,000 - \$63,999	5.0%	7.3%	2.3%	2.1%	16.6%
80-120%	\$64,000 - \$95,999	4.0%	9.2%	3.1%	4.8%	21.1%
> 120%	> \$96,000	4.5%	15.8%	7.4%	13.1%	40.8%
All Income Categories		25.9%	37.7%	14.4%	21.9%	100.0%

Source: US Census, Public Use Microdata, 2017 1-year Estimates

Clackamas County Demographics

Cost-Burdened Households

- Countywide, over 30% of households are cost-burdened (they spend more than 30% of the gross income on housing).
- A households earning 80% of the median paying more than \$1,600 a month for housing would be considered cost-burdened
- Almost half of 1-person households are cost-burdened
- For households earning 80% or below the median income, larger households are more cost-burdened

Share of Cost-burdened Clackamas County Households, 2017

Percent of Median Income	Household Income Group	Household Size					All households
		1 person	2 persons	3 persons	4 or more persons		
< 30%	< \$24,000	78.9%	81.9%	93.7%	100.0%		81.2%
30-50%	\$24,000 - \$39,999	61.1%	74.6%	85.8%	76.2%		70.8%
50-80%	\$40,000 - \$63,999	47.3%	50.0%	50.6%	66.1%		51.3%
80-120%	\$64,000 - \$95,999	21.0%	12.4%	18.8%	29.4%		18.8%
> 120%	> \$96,000	1.0%	4.3%	5.0%	3.3%		3.8%
All Income Categories		47.8%	25.7%	24.8%	22.1%		30.5%

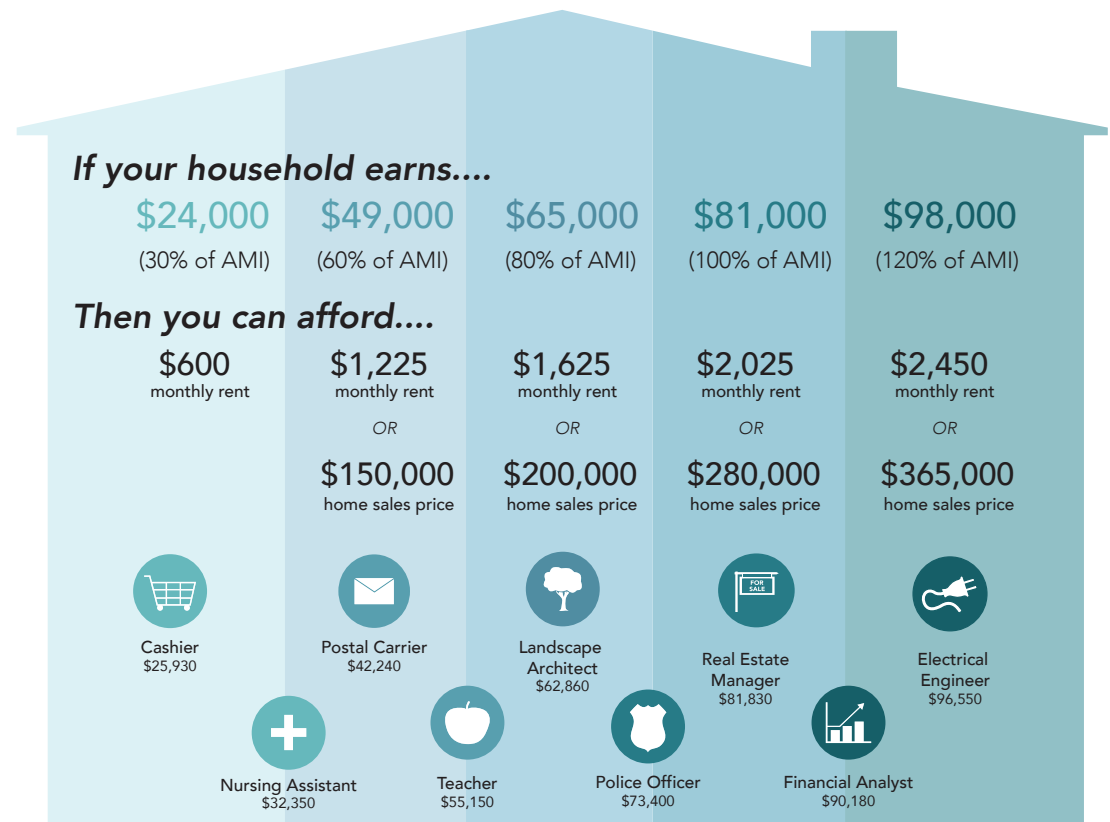
Source: US Census, Public Use Microdata, 2017 1-year Estimates

Clackamas County Demographics

Housing Affordability

- Market-rate apartments in Milwaukie would rent for an estimated \$2.00-\$2.10 a sqft (\$2,000 for a 1,000 sqft, 2-bedroom) based on the market analysis
- This rent level would be affordable to a household earning the median income
- A household at 80% of the median income could afford rent of \$1,625 a month

Affordable Housing Costs in Clackamas County, 2018



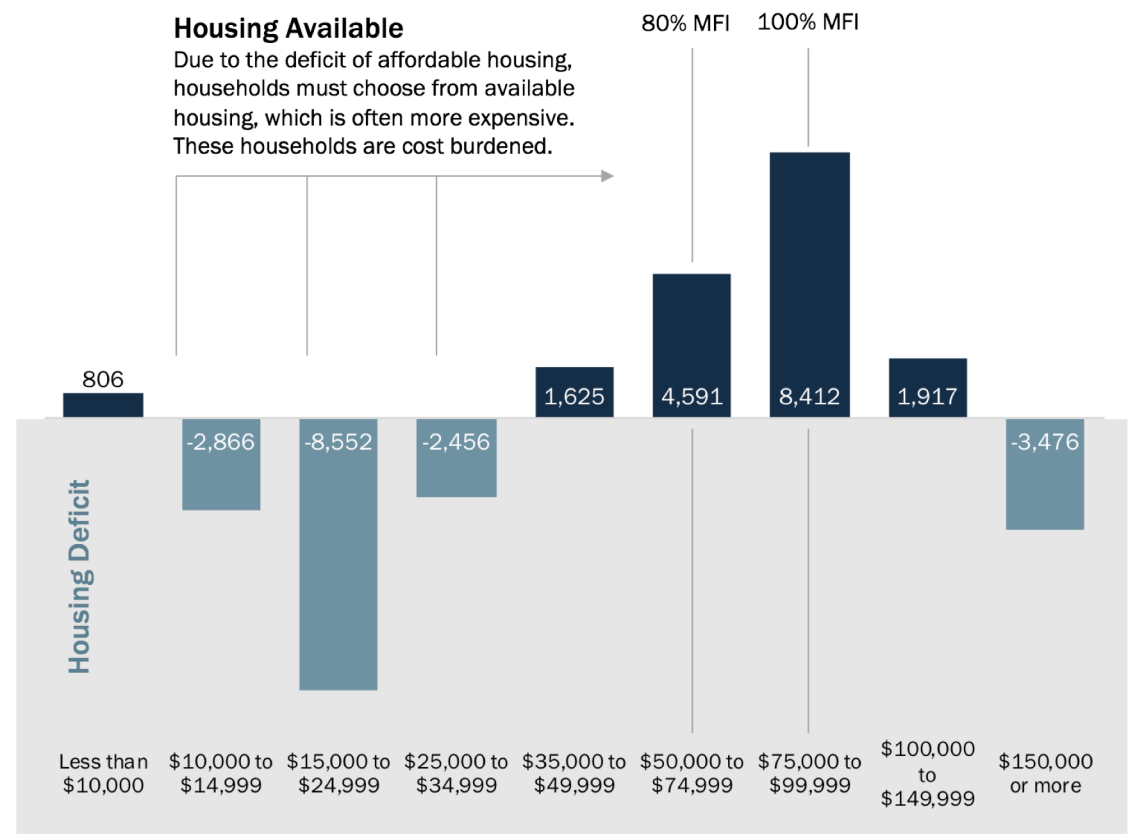
Source: U.S. Department of Housing and Urban Development, Clackamas County, 2018. Bureau of Labor Services, Portland MSA, 2018.

Clackamas County Demographics

Housing Need

- Clackamas County has a deficit of housing units affordable to households earning less than \$35,000 (about 45% of AMI)
- Milwaukie's HNA also estimated a deficit of homes and apartments affordable to households earning about 50% or less of the median income

Number of Units Affordable by Income Range in Clackamas County, 2018



Source: U.S. Census Bureau. Note: AMI is Median Family Income, determined by HUD for Clackamas County.



MEMORANDUM

Date: October 8, 2018

To: Chris Olenyik, AIA
Scott Edwards Architecture
Chris@seallp.com

From: David J. Humber, PE
Humber Design Group
dave.humber@hdgpdx.com

Subject: Hillside Manor – Master Plan – Civil Memo
DRAFT

This memo is being provided as requested, to summarize our current understanding of the Hillside Manor project. The following information is based on preliminary research of information available on the city website, a field walk on Thursday, September 20, 2018 and a subsequent meeting with city staff on Friday, September 28, 2018.

LAND USE PLANNING AND APPROVALS

We understand that the property will be up zoned to increase the allowed density. This process is a land use action and will require review of existing public utility capacities to confirm that they will be able to support the increased density. The design team will coordinate this effort with Wendy Marshall, PE at city engineering.

RECONFIGURATION OF TAX LOT LINES

The city indicated that existing series of public roads (SE A Street, SE B Street, SE C Street, SE D Street, and SE Hillside Court) could potentially be converted back to private property, and or reconfigured as desired.

Reconfiguration of the property and public rights of way is accomplished thru either a partition (3 lots or less) or thru a subdivision (4 lots or more). If the project does go thru a subdivision replat, the city cautioned that there are solar orientation standards that are part of the subdivision code that would need to be met.

Key Issues to Consider:

- SE Hillside Court needs to be realigned with SE Dwyer Drive.
- Replatting property involves a partition or subdivision which are land use procedures.

PUBLIC STREET IMPROVEMENTS

SE 32nd Avenue

SE 32nd Avenue (collector) may need to be widened based on review of Transportation System Plan (TSP). Existing overhead utilities do not need to be undergrounded, however all new private utilities along the street frontage will need to be undergrounded.

The city did note that they are currently planning a traffic signal upgrade at the intersection of SE 32nd Avenue and SE Harrison Street. This project is currently time sensitive and the city asked Hillside Manor representatives to let them know if there are any identified impacts from our project that may affect the signal project.

SE 29th Avenue

Extension of SE 29th Avenue thru the site from the northern property line, south thru the site and connecting with SE Meek Street is required of the overall redevelopment project. The design team needs to complete their review of the current TSP to confirm what the SE 29th Avenue street section requirements will be.

The city has indicated that the portion of SE 29th between the property and SE Balfour Street will be paved during the fall of 2018 and painted with “Sharrows” that accommodate automobile, bike and pedestrian traffic within the same paved surface. No curbs or sidewalks are expected.

The Hillside Manor portion of SE 29th Avenue extension could also be marked with “Sharrows” if the traffic study indicates that the vehicle volume is low enough.

SE Meek Street

SE Meek Street (local street; 50-foot ROW) must be extended from its current terminus to the west near the railroad tracks, where a large 90-foot radius cul-de-sac will be required to be installed to facilitate fire truck turnaround at the end of SE Meek Street.

Because the Hillside Manor project will likely construct their half-portion of SE Meek Street before their southern neighbor, the city suggested that it may be possible to temporarily remove on street parking in order to minimize the section constructed and associated right of way dedication that may be required.

SE Hillside Court

It was clearly stated that SE Hillside Court would need to be realigned at 32nd opposite of SE Dwyer Road (the hospital entry drive). This is required to reduce/eliminate left turn conflicts. Road geometry can be based on latest AASHTO design guidelines. We can go thru a modification or variance with city if necessary to allow sharper geometry to be used.

The city staff suggested that the traffic study could potentially identify a need for a 3-lane section approaching SE 32nd Avenue with a left turn pocket.

SE A, B, C and D Streets

Realignment of any of these streets should assume a 50-foot minimum required right of way, unless reduced by removal of on street parking. The TSP acknowledges certain allowances, and any request to reduce required right of way width is simply a submittal request to the engineering director.

Public infrastructure is permitted thru a Right of Way Permit.

Key Issues to Consider:

- Complete review of city TSP to determine final street cross sections required.
- SE Hillside Court needs to be realigned with SE Dwyer Drive.
- Complete Traffic Impact Study (TIS)
- Right of Way Permit required for public street improvements.

STORM SYSTEM

The property is divided into two drainage basins that exit to the north and south via an 18-inch and 12-inch storm lines respectively. We do not expect that these conduits are undersized and that they will be usable, especially after the project provides appropriate storm management features. We have reviewed the 2014 Stormwater Master Plan and confirmed that there are downstream flooding issues identified near the property, but not on the property.

Based on the city meeting, it was confirmed that the city is installing a large 36- to 48-inch diameter storm line parallel with the railroad tracks. This facility is to provide water quality and stormwater retention for upstream areas. It will not provide any capacity to the Hillside Manor property.

Water quality design will be completed in accordance with the City of Portland's Stormwater Management Manual (SWMM 2016). All detention will be provided so that we are able to "match existing" conditions. We can receive credit for pre-existing impervious areas that are removed/reduced from the project site areas.

The city staff did acknowledge that the Hillside Manor project would be required to provide its own storm water quality and detention. These private facilities are not allowed to treat "public" water.

Public storm facilities will be required to treat any new public road facilities that are constructed on the Hillside Manor property. These public facilities, if placed on private property, can be placed within a master facility that will require an easement to be recorded over them, giving the city access for maintenance and inspection.

Key Issues to Consider:

- Reconfigured public right of way within property boundaries will require storm management and may be configured as green streets or have a master facility.
- Easement to city required over public storm facilities that will treat public streets within private property.
- Review existing public storm systems vs. future redevelopment of site and how these facilities are impacted or need to be adjusted.

SANITARY SYSTEM

The existing site is currently served by a series of pipe diameters ranging from 6-inches to 12-inches. The entire site discharges thru a 12-inch sanitary line at the far southwest corner of the property.

We believe that this existing 12-inch line is oversized for the full property buildout, and therefore has sufficient capacity. This will be confirmed with developing some projected sewerage flow calculations for full buildout.

We have reviewed the 2010 Wasterwater Master Plan and confirmed that there are not specific capital projects noted near the limits of the project site. This implies and will be confirmed with a call to city engineer, that the capacities of full buildout for the property at the current zone have been accommodated in the master plan study. We do not expect any downstream capacity issues off the site.

We did question the city about potentially running a sanitary extension up from SE Balfour Street, along the rail tracks in order to provide service to the northwest corner (lowest point) of the site. The city noted that the sewer in Balfour is higher than this portion of site and not a feasible option.

We understand that the existing Manor building's basement is currently pumped up to the first floor so that gravity service is available to the southwest corner of the project. This does strongly suggest that no gravity service is available to the northwest corner of the property and that any proposed development would require permanent pumping.

Key Issues to Consider:

- Development in the northwest corner of property (lowest point) will require permanent sanitary pump station to service all sewer fixtures.
- Review proposed up zone in density and future sewer loads with engineering staff.
- Review existing public sanitary systems vs. future redevelopment of site and how these facilities are impacted or need to be adjusted.

WATER SYSTEM

We have reviewed the 2010 Water System Master Plan and confirmed that there is the following water system lines

The property is currently served by Pressure Zone 2 within the city water system. The master plan does not describe what pressures Zone 2 operates in, so we'll need to confirm with city engineer.

The property is currently served by a 6-inch water in SE Hillside Ct, that is connected to a 12-inch water in SE 32nd Avenue. There is also an 8-inch water in SE C Street, that connects to a 16-inch water in SE Balfour Street and a 12-inch water in SE Meek Street. On the surface, we may want to consider upsizing the 6-inch line to support hydrant placements if needed. There 12-inch and 16-inch lines in the area with likely more than enough flow to the property.

These observations will want to be discussed directly with the city engineer to confirm and obtain any different conditions that the plans note so that we know how those may impact the project.

Key Issues to Consider:

- Confirm with city existing water pressures for site.
- Review proposed up zone in density and future water use loads with engineering staff.
- Review existing public water systems vs. future redevelopment of site and how these facilities are impacted or need to be adjusted.
- Potential upsizing of the existing 6-inch water to support additional fire hydrants.

End of memo.

COUNCIL STAFF REPORT

To: Mayor and City Council
Ann Ober, City Manager

Date Written: Dec. 31, 2018

Reviewed: Blanca Marston (as to form), Administrative Assistant,
Leila Aman, Development Manager, and Peter Passarelli, Public Works
Director

From: Natalie Rogers, Climate Action and Sustainability Coordinator

Subject: **E-scooter and E-bike Discussion**

ACTION REQUESTED

Direction on whether to continue research on a potential shared electric-assisted scooter (e-scooter) and/or electric-assisted bike (e-bike) program within city limits.

HISTORY OF PRIOR ACTIONS AND DISCUSSIONS

September/October 2018 – Staff met with several e-scooter and e-bike vendors to discuss potential programs.

November 27, 2018 – Staff from the City of Milwaukie and City of Portland met to discuss overall thoughts on the City of Portland pilot program, potential applicability in Milwaukie, and coordination opportunities for a future shared e-scooter or e-bike program.

January 3, 2019 – Staff from the City of Milwaukie, City of Portland, and Metro met to discuss potential collaboration on a shared e-scooter program.

ANALYSIS

To deliver on Transportation System Plan and Climate Action Plan (CAP) goals, staff have been exploring dockless e-bikes and e-scooters for the City of Milwaukie. The intent of the program is to help reduce reliance on Single Occupancy Vehicles (SOVs) to reduce carbon emissions and provide additional travel choices within the City. The following summarizes program elements and anticipated community impacts based on research conducted to date:

Program Elements for Consideration

Fleet Size - The program should be limited to a manageable number of operators and fleet size with regular distribution to targeted geographic areas of interest. Milwaukie could cap fleet size at numbers in proportion to similar regional programs (Appendix A: Table 1).

Safety & Enforcement - The allowance of e-bikes and/or e-scooters within the Milwaukie downtown area would require adjustment to current City code and riders would be subject to applicable laws for bikes and vehicle enforcement. Operators must require users to agree to City-approved terms of use, including release of the City of Milwaukie from any liability and agreement to follow best operating practices.

E-scooter/ E-bike Parking – Operators must require users to agree to terms including appropriate parking of e-bikes and e-scooters. Equipment must be parked upright, off street,

and out of way from walkways and ramps for public safety. This includes maintaining the five feet width obstruction free zone required in the city American's with Disability Plan adopted by Council on x.

Public Engagement – E-bike and e-scooter companies often provide their own outreach, in-app training, and education through print and digital media. The City could provide additional outreach on personal safety, appropriate operation, connection to City CAP goals, and program evaluation.

Community Impacts for Consideration

ADA Accessibility – Because dockless e-bikes and e-scooters can be parked anywhere by the rider, placement of e-bikes and e-scooters on walkways and streets may impact accessibility for persons with disabilities by limiting mobility and access. Operators can be required to move inappropriately parked e-bikes or e-scooters within specific timeframes after being reported by the City or community members. The City can also create and enforce code violations for repeat offenses.

Vehicle Parking Impacts – The availability of e-scooters or e-bikes for personal transportation may alleviate vehicle parking needs in certain areas of Milwaukie. Last-mile transit options could assist local businesses and organizations with low parking supply.

Equity – Providing last-mile transit for public transportation and alternative mobility options is a key component of equitable access in City transportation. E-bikes and e-scooters could increase low-cost transportation options for disadvantaged communities with transportation limitations and connectivity barriers. For short distance transit, e-scooter pricing is more comparable to public transit costs and cheaper than ride-share companies and taxi cabs (Appendix A: Table 2). A low-cost fare option should be discussed to ensure equitable access. Data from e-bikes and e-scooters is needed to assess Milwaukie's transportation limitations and connectivity issues. The transportation benefit cannot be realized, however, if E-bike and E-scooter providers allow the fleet to concentrate in more affluent areas, or only in one area of town.

Environment – E-scooters and e-bikes have lower carbon emissions than traditional combustion vehicles, even when accounting for charging and collection of scooters using combustion vehicles¹. However, e-scooters and e-bikes have short lifespans with high levels of "wear-and-tear" from riders, therefore an increase in electrical waste in the waste stream from damaged e-scooters or e-bikes can be expected. The metal and electrical components also pose a high-risk to already stressed urban ecological systems if e-bikes and e-scooters are disposed in natural areas. Public misuse and vandalism of e-bikes and e-scooters have been reported in multiple cities, including e-scooters ending up in waterways². While operators are required to retrieve e-scooters and e-bikes where dumping is reported, retrieval can be difficult.

¹ Chester, Matt. "The Electric Scooter Fallacy: Just because they're electric doesn't mean they're green" *Chester Energy and Policy*, 11 June 2018, www.chestereenergyandpolicy.com/2018/06/11/the-electric-scooter-fallacy-just-because-theyre-electric-doesnt-mean-theyre-green/

² Glaser, April. "People Keep Throwing Electric Scooters Into Lakes and Rivers." *Slate Magazine*, Slate, 10 Dec. 2018, slate.com/technology/2018/12/electric-scooter-bird-lime-lakes-rivers-environment-vandalism.html.

BUDGET IMPACTS

Depending on program design, permitting and administrative fees could cover potential costs incurred by the City due to e-bikes and e-scooters. Operator fees would help the City recover costs associated with permit review, administrative oversight, bike hub installation, and data collection and analysis. Portland's 2018 pilot charged \$5,000 for a non-refundable permit fee, along with a \$250 application fee, and a \$0.25 per-trip surcharge. Within the four-month pilot program, Portland had grossed \$188,245.25 in application fees, permits, use fees, and penalties, and had spent \$86,420.86 on administration, enforcement, and evaluation fees. More costs may occur as Portland conducts post-program analysis and books final expenses⁷. A partnership with the Portland may reduce budgetary impacts due to lowered costs of administrative planning (such as fee-structure creation) and outreach. More information is needed to accurately project incurred costs to Milwaukie as well as potential revenue.

WORKLOAD IMPACTS

To manage development, implementation, and data analysis, Portland devoted roughly 0.9-1.1 FTE for their e-scooter pilot program. Based on discussions with Portland staff, a large portion of employee workload was spent on analysis of raw data. This data is important to assess city-wide access to the services and regulate providers.

Public Works Workload Impacts – Public Works (PW) staff would have workload impacts as an e-scooter/e-bike program would require data analysis and evaluation. Milwaukie's GIS Coordinator would see a workload impact due to the spatial data collected through the operators. Analysis of data could be performed by a third-party contractor, which would lessen the need for in-house cleaning and analysis of data. Data interpretation would still be required.

PW staff may also be tasked with removing e-bikes and/or e-scooters located in waterways, stormwater systems, or City properties. E-bikes and e-scooters may also interfere with street maintenance operations.

Climate Action and Sustainability Coordinator (CASC) Workload Impacts – Depending on program scale and coordination, management of an e-bike and/or e-scooter program could have significant impact on the CASC's workload. Additional work incurred by a shared e-bike/e-scooter program may include management of overall program goals, development of outreach materials, communication and coordination of operators and City departments, data analysis, and public engagement and communication. Workload impacts are highly dependent on potential third-party contractors and coordination with Portland in a potential larger program. Further evaluation of Portland's pilot program is needed to better estimate the workload impact. If the Milwaukie were to implement a shared e-bike and e-scooter program, the CASC two-year workplan would need to change to reflect the adoption of the program and may result in the removal of a different action to accommodate workload changes.

Police Department and Code Compliance Workload Impacts – A shared e-scooter and/or e-bike program would require facilitation of rider behavior as well as operator compliance, impacting the workloads of Milwaukie's police and code compliance staff.

⁷Herron, Elise. "Early Figures Show Scooter Companies Paid Portland Transportation Bureau Several Hundred Thousand Dollars Garnered From Rides" *Willamette Week*, 7 Dec. 2018, www.wweek.com/news/2018/12/07/portland-transportation-bureau-made-over-100000-on-e-scooters-during-the-citys-pilot-program/

Milwaukie Police would be required to enforce applicable laws for both traffic as well as public safety. The department would need to monitor and enforce restrictions for potential improper e-bike and e-scooter use and parking. Further impacts due to increased monitoring and enforcement need to be assessed. In addition to the monitoring and enforcement of riders, operators will need to be managed by the code enforcement team to ensure permit compliance and appropriate fleet management. Third-party contractor tools are available to assist in monitoring of operator fleets and compliance; however, more research is needed to best determine the extent of automation possible and the overall workload impacts. Outreach and education for personal safety, traffic law, and appropriate rider behavior would also impact the workloads of public safety employees and of community-organizing employees.

Community Development Department Workload Impacts – A shared e-bike and/or e-scooter program would have impacts on relationships with residents and members of the business community, future development, and infrastructure. Community Development (CD) staff will lead outreach efforts to businesses and assist with program evaluation. The Development Manager will lead any efforts related to potential changes to parking demand. Any changes to code or related ordinances could impact workload of planners and other C D staff.

Engineering Department Workload Impacts - Depending on program framework and community needs, there could be increased demand for alternative transportation-associated infrastructure such as bike lanes, bike racks, covered areas, or designated parking areas. This would impact the workload of engineers, as well as other associated CD and PW staff.

COORDINATION, CONCURRENCE, OR DISSENT

Staff from multiple City departments have been participating in discussions and development of a potential e-scooter and e-bike program, including the Development Manager and the Code Compliance Coordinator.

Milwaukie could partner with the City of Portland on an e-scooter program, taking advantage of their program experience and framework. The City of Portland may have limitations to e-bike sharing programs due to the current Nike 'BIKETOWN' docked conventional bike sharing program. Such a partnership would not involve the City running the program for Milwaukie.

Milwaukie has an opportunity to partner with Clackamas Community College to provide alternative transportation methods to students visiting the Harmony Campus, an opportunity that could allow data collection on commuters with diverse ages, backgrounds, lifestyles, and challenges in equity.

STAFF RECOMMENDATION

Milwaukie should evaluate the findings from Portland's pilot program and continue research on workload impacts, budget impacts, and potential program frameworks to determine if a shared dockless e-bike and/or e-scooter program is advisable.

ALTERNATIVES

1. City Council could choose to start discussions on and recommend research of exclusively non-electric, shared conventional bikes for the City. These could be docked or dockless.
2. City Council could choose to start discussions on and recommend research of an e-scooter or e-bike share program that excludes partnership with Portland.

3. City Council could move to not start discussions or continue research of a possible shared e-bike or e-scooter program.

ATTACHMENTS

1. Appendix A: E-scooter/E-bike Staff Report Tables
2. [Portland Bureau of Transportation 2018 E-Scooter Pilot Frequently Asked Questions](#)
3. [Portland Bureau of Transportation 2018 E-Scooter Pilot User Survey Results](#)
4. [Seattle Department of Transportation 2017 Free-Floating Bike Share Pilot Report](#)

Appendix A: E-scooter/E-bike Staff Report Tables

Table 1: Pacific Northwest conventional bike, e-bike, and e-scooter sharing programs with comparable fleet sizes for Milwaukie, OR.

City Program	City Population Size ¹	City Program Fleet Size	# People per bike/scooter	Milwaukie Population Size ¹	Equivalent Milwaukie Fleet Size
City of Portland e-scooter PILOT	647,805	2,500 E-scooters (Max Cap) ²	259	20,801	80 e-scooters
City of Portland Nike BIKETOWN	647,805	1,000 Conventional Bikes ³	648	20,801	32 conventional bikes
City of Seattle Free-Floating Bikeshare	724,745	8,600 Conventional Bikes ⁴	84	20,801	248 conventional bikes
		1,400 E-bikes ⁴	518	20,801	40 e-bikes

Table 2: Estimated transportation cost and duration by transportation type from Milwaukie Public Works to Milwaukie City Hall (~2.9 miles).

Transportation Type	Cost (dollars)	Approx. Trip Time	Calculation Method / Source
E-scooter	\$3.70	18 min	[(3 mile trip @ 10 miles/hr) × (\$0.15 minute)]+(\$1.00 Surcharge) City of Portland PILOT FAQ Site
Conventional Bike	\$0.00	16 min	Google Maps
Lyft	\$8.00-12.00	9 min	Lyft Fare Estimator
Taxi	\$11.00-16.00	10min	Taxi-Calculator.com Taxi Fare Finder
Bus	\$2.50	19 – 30 min (schedule dependent)	Google Maps

¹ Source: 2017 U.S Census Data² Source: [City of Portland 2018 PILOT program FAQ site](https://www.portlandoregon.gov/transportation/article/692208) (https://www.portlandoregon.gov/transportation/article/692208)³ Source: [Nike BIKETOWN Main Website](https://www.biketownpdx.com/) (https://www.biketownpdx.com/)⁴ Source: [City of Seattle 2017 Bike Program Presentation to Council 06/05/2018](https://www.seattle.gov/Documents/Departments/SDOT/BikeProgram/Presentation_City_Council_Pilot_Evaluation_20180605.pdf) (https://www.seattle.gov/Documents/Departments/SDOT/BikeProgram/Presentation_City_Council_Pilot_Evaluation_20180605.pdf)



Portland Bureau of Transportation

Phone: 503-823-5185 Fax: 503-823-7576 1120 SW Fifth Ave, Suite 800, Portland, OR 97204

More Contact Info (<http://www.portlandoregon.gov/transportation/article/319727>)

Frequently Asked Questions (FAQ)

Citywide scooter cap: 2,500

Fees: \$0.25 Per-Trip Surcharge

Fees, surcharges and penalties will be placed in a New Mobility Account. PBOT will use the funds for program administration and enforcement; safe travel infrastructure; and expanded and affordable access.

Which companies are permitted? Each permitted scooter will have a City of Portland vehicle permit sticker.

Bird

Company website: <https://www.bird.co>

Customer service: 1-866-205-2442; hello@bird.co

Lime

Company website: www.limebike.com

Customer Service: 1.888.LIME.345; support@limebike.com

Skip

Company website: <https://skipscooters.com/>

Customer service: 844-929-2687; support@skipscooters.com

What are the state legal requirements for electric scooters? The Permit requires companies to develop compliance strategies. Applicable laws include: Where can I park a Scooter?

Helmet use is required

Sidewalk riding is prohibited

Minimum age requirement of 16 years old

Where can I ride a Scooter?

Use the kickstand and park Scooters on the sidewalk in between the street curb and walking path. Leave space for people walking and people with disabilities to access transit stops, parked cars, bike racks, loading zones, and crosswalks, as well as other amenities.

You can ride in bike lanes and city streets. Check out Portland's Bike Map (<http://www.portlandoregon.gov/transportation/article/391729>) to find a good route.

Don't ride: It's against the law to ride an electric scooter on sidewalks, in Portland Parks (including the Waterfront Park Trail, Eastbank Esplanade, and Springwater Corridor), and on freeways.

Don't park:

Near ADA Access Ramps

On transit platforms (TriMet MAX, Portland Streetcar, or near bus stops)

In Portland Parks

On landscaped areas

How much does it cost to rent a scooter?

Typical pricing is \$1 to unlock, plus \$0.15 per minute. Companies can set their own rates; please refer to companies' websites.

What low-income pricing options are available?

The City has required the scooter companies to provide a low-income fare option. You can inquire about details with the permitted companies.

What cash payment options are available?

The City has encouraged scooter companies to provide a cash fare option. Inquire about details with the permitted companies.

What are you doing to educate the public on the rules?

Companies' efforts will include:

Workshops for riders, chargers, and community education

Ambassadors – remind users on-the-ground, pass out helmets

In-app training – users agree at time of registration

To end the ride, users have to certify they parked correctly, and/or take a photo of parking spot

Incentives and disincentives for user behavior

Education via print and digital communication channels

The City can require the companies to increase educational measures

City efforts will include:

Education via print and digital communication channels

PBOT staff will also undertake education events to educate scooter riders about safety and their responsibilities as riders.

Community engagement

Who is enforcing State and City rules?

Police and Regulatory and Parking Enforcement staff from PBOT.

What about illegal sidewalk riding?

As a condition of receiving a permit, companies must provide rider education making it clear that sidewalk riding is prohibited. PBOT will monitor sidewalk riding during the pilot and may require scooter companies to engage in more robust rider education.

What will the City do with scooters not parked correctly?

Companies are required to move scooters blocking the right-of-way. The timeframe depends on the severity of the obstruction.

How fast do e-scooters go?

Companies are required to cap the speed of their scooters at 15 MPH.

How will users get helmets?

Companies will be distributing helmets to users. Some companies will mail users a helmet if they request one in the App. Others will distribute via ambassadors, community events, hotel concierges, and/or bike shops.

Why didn't the City conduct public engagement before the Shared Scooter pilot?

Shared Electric Scooter companies have been aggressively launching in cities without seeking permits. In order to protect Portlanders from a rogue launch and unregulated companies, the City felt it important to set up a pilot permit structure within an accelerated timeframe. The most effective way to evaluate scooters is through a real-world test. Throughout the 120-day pilot, the City will be engaging the public, and the public's feedback will help the City determine whether scooters can support the City's policy goals.

I'm concerned about the safety of riders in East Portland because of the lack of infrastructure. Why is the City requiring Scooters to be deployed in East Portland?

We're concerned about safety too. We know several areas of the city, including East Portland, have been historically underserved, lack safe infrastructure and experience higher rates of serious collisions and fatalities. Portlanders in East Portland also experience longer transit wait times and have fewer transportation options. The City is interested in understanding if scooters will contribute to a more equitable transportation system. To answer this question, we need to require companies – who are profit motivated – to distribute part of their fleet in historically underserved neighborhoods.

I've heard/read complaints about scooters in other cities; why is the City permitting scooters here?

The City believes the most effective way to evaluate the role of scooters in Portland is through an on-the-ground learning experience. Throughout the 120-day pilot, the City will be engaging the public, and the public's feedback will help the City determine whether Shared Scooters can support the City's policy goals.

What happens after the pilot?

The last day of the pilot period is November 20, and the City currently intends to only provide permits to companies for the pilot period. Permitted companies are required to remove their scooters on November 21 so the City can conduct an evaluation of whether scooters have a long-term role.

If the City determines that Shared Scooters DO NOT have a long-term role in Portland, companies will no longer be able to operate in the City.

If the City determines that Shared Scooters DO have a long-term role in Portland, the companies will be required to reapply for an annual permit.

2018 E-SCOOTER PILOT User Survey Results



PBOT

PORTLAND BUREAU OF TRANSPORTATION

Commissioner: CHLOE EUDALY | Interim Director: CHRIS WARNER

It is the policy of the City of Portland that no person shall be excluded from participation in, denied the benefits of, or be subjected to discrimination in any city program, service, or activity on the grounds of race, color, national origin, disability, or other protected class status. Adhering to Civil Rights Title VI and ADA Title II civil rights laws, the City of Portland ensures meaningful access to city programs, services, and activities by reasonably providing: translation and interpretation, modifications, accommodations, alternative formats, and auxiliary aids and services. To request these services, contact 503-823-5185, City TTY 503-823-6868, Relay Service: 711

WS60

Do you live or work in Portland?	Total (N =)
Yes	3444

Why did you try e-scooters for the first time, either in Portland or another city? (Select all that apply.)	Percent of respondents
Save money on transportation	26.60%
Get around more easily, faster	63.10%
It's good for the environment	27.18%
It looked like fun / curious to try it out	83.68%

How often do you ride e-scooters?	Percent of total
1-3x per week	26.33%
3-6x per week	8.14%
Daily	2.03%
I've never ridden e-scooters	2.33%
I've only ridden once	18.46%
More than 1x per day	1.55%
Occasionally, but less than once per week	41.17%
Grand Total	100.00%

How often do you use e-scooters to access a bus, MAX, or streetcar?	Percent of total
1-3x per week	8.09%
3-6x per week	2.00%
Daily	1.11%
More than 1x day	0.42%
Never	61.05%
Occasionally, but less than once per week	27.33%
Grand Total	100.00%

What are the top three trip types for which you use shared e-scooters? (Rank your top three trip types.)	First	Second	Third
To or from work	18.35%	8.57%	6.62%
To or from a Bus/MAX/Streetcar	5.69%	6.36%	6.65%
To or from school	2.09%	1.71%	2.12%
Social/entertainment	13.85%	18.73%	14.37%
To or from a restaurant	11.09%	13.79%	14.26%
Get exercise	0.46%	1.48%	2.96%
For fun/recreation	28.16%	18.58%	15.97%
Shopping or errands	9.61%	11.21%	10.71%
To or from work-related meeting/appointment	5.72%	7.32%	9.20%

Thinking about your most recent e-scooter trip, why did you choose to take an e-scooter? (Select all that apply.)	Percent of total
It was the fastest and most reliable	46.08%
It was less expensive than other ways to get there	31.13%
Didn't want to get sweaty	19.28%
Parking is difficult at that time/destination	27.18%
No bus/train at that time/destination	16.70%
Don't have a car	14.17%
It was just for fun	44.11%

If an e-scooter had not been available for your last trip, how would you have made that trip? (Select only one.)	Percent of respondents
Driven a personal vehicle, carshare vehicle, or other motor vehicle	18.82%
Other (please specify below)	1.19%
Ridden a personal bike	5.13%
Ridden a personal e-scooter	0.19%
Ridden as a passenger in a vehicle and dropped off by a friend, family member, or other person	1.35%
Ridden BIKETOWN	3.69%

Taken a bus/ MAX/ Streetcar	10.21%
Taken a taxi, Uber, or Lyft	15.37%
Walked	36.51%
Would not have made this trip	7.55%
Grand Total	100.00%

Still thinking of your most recent e-scooter trip, how did you get to the e-scooter that you rode? (Select only one.)	Percent of total
Walked	84.32%
Drove a personal vehicle, carshare vehicle, or other motor vehicle	7.20%
Rode a BIKETOWN bike	0.34%
Rode as a passenger in a vehicle and dropped off by a friend, family member, or other person	1.78%
Rode personal bike	0.53%
Took a Bus/ MAX/ streetcar	3.97%
Took a taxi, Uber, or Lyft	0.56%
Other (please specify below)	1.28%
Grand Total	100.00%

If you work or attend school, what is your work or school zip code? (Enter a 5-digit ZIP code; for example, 97212.)	Percent of total
97209	12.79%
97201	9.95%
97214	8.33%
97204	8.18%
97205	6.37%
97202	5.22%
97232	5.15%
97212	3.49%
97239	3.15%
97210	2.96%

97217	2.76%
97211	2.30%
97206	2.00%
97203	1.92%
97213	1.77%
97220	1.54%
97227	1.31%
97233	1.11%
97215	1.11%
97124	1.04%
97230	1.00%
97219	1.00%
97216	1.00%
97236	0.92%
97218	0.88%
97229	0.84%
97223	0.73%
97266	0.73%
97222	0.73%
97225	0.65%
97006	0.58%
97035	0.50%
97030	0.50%
97005	0.50%
97015	0.46%
97207	0.46%
97267	0.38%
97221	0.38%
97258	0.31%
97068	0.27%
97008	0.23%
97224	0.23%

97003	0.23%
97086	0.19%
97007	0.19%
97034	0.19%
98660	0.15%
97080	0.15%
97060	0.12%
97062	0.12%
98665	0.12%
97208	0.12%
97226	0.12%
98661	0.12%
97045	0.08%
98642	0.08%
98684	0.08%
98686	0.08%
98683	0.08%
97302	0.08%
98663	0.08%
97070	0.08%
98006	0.08%
98266	0.04%
98771	0.04%
92220	0.04%
10004	0.04%
98626	0.04%
7211	0.04%
96204	0.04%
97945	0.04%
38104	0.04%
97602	0.04%
97243	0.04%

97401	0.04%
98501	0.04%
97385	0.04%
97242	0.04%
97140	0.04%
92715	0.04%
97129	0.04%
85118	0.04%
97126	0.04%
97329	0.04%
97366	0.04%
98666	0.04%
97123	0.04%
97022	0.04%
97116	0.04%
97009	0.04%
97113	0.04%
98416	0.04%
97238	0.04%
98209	0.04%
97292	0.04%
97002	0.04%
97075	0.04%
95148	0.04%
97235	0.04%
92701	0.04%
97323	0.04%
87204	0.04%
97304	0.04%
43209	0.04%
98682	0.04%
97301	0.04%

97056	0.04%
97339	0.04%
97970	0.04%
Grand Total	100.00%

Before using e-scooters, I....	1-2x per week	Daily	Less than 1x per week	More than 3x per week	Never	Grand Total
Walked	17.94%	45.57%	10.70%	19.13%	6.67%	100%
Bus/MAX/Streetcar	13.96%	14.51%	33.94%	13.33%	24.26%	100%
Drove a car	15.72%	37.39%	14.43%	17.42%	15.04%	100%
Took a Taxi, Uber, Lyft	19.34%	1.43%	51.15%	5.83%	22.24%	100%
Zipcar, Car2Go, ReachNow, etc.	4.92%	0.61%	16.48%	2.50%	75.50%	100%
Bicycled (personal bike)	12.83%	10.21%	21.48%	10.72%	44.76%	100%
BIKETOWN	3.71%	0.71%	16.40%	1.45%	77.74%	100%

Since first using shared e-scooters, how has your use of the following options changed? (If your behavior hasn't changed or if you never used one of the below options, select "About the same".) Since first using shared e-

	About the same	Less often	More often	Grand Total
Walk	74.44%	14.94%	10.62%	100.00%
Bus/MAX/Streetcar	75.26%	20.28%	4.46%	100.00%
Drove a car	59.88%	38.58%	1.54%	100.00%
Took a Taxi, Uber, Lyft	55.18%	44.14%	0.68%	100.00%
Zipcar, Car2Go, ReachNow, etc.	68.14%	31.48%	0.38%	100.00%
BIKETOWN	70.90%	28.12%	0.98%	100.00%

Have you reduced the number of automobiles you (or your family) own because of e-scooters? Percent of total

N/A, I didn't own an automobile before using e-scooters and currently don't own one. 14.85%

No	63.89%
No, but I've considered it.	15.56%
Yes	5.70%
Grand Total	100.00%

What changes would encourage you to use e-scooters more often? (Select all that apply.)	Percent of total
More e-scooters available	58.74%
E-scooters in surrounding cities (e.g. Beaverton, Gresham, Milwaukie)	24.04%
Lower cost	29.67%
E-scooters with seats	9.03%
Safer places to ride (e.g. bike lanes or paths separated from vehicles)	43.61%
Longer battery life	34.32%
Different e-scooter design (e.g. more stable)	17.36%
None of these changes would encourage me to use e-scooters more often	4.82%

Which of the following are laws related to e-scooters in Portland? (Select all that apply.)	Percent of total
All users must wear a helmet when riding an e-scooter	77.73%
E-scooters are not allowed to ride on the sidewalk	77.38%
E-scooters are not allowed to ride in the street	34.47%
E-scooters are not allowed to ride or park in Portland Parks	51.45%
I don't know what the e-scooter laws are in Portland or Oregon	7.58%
None of the above	0.75%

How did you learn about e-scooter laws? (Select all that apply.)	Percent of respondents
--	------------------------

Through the companies' e-scooter apps	58.25%
Community event	1.63%
PBOT flyer on e-scooter	9.96%
On e-scooter vehicle	20.47%
Social media	14.98%
Googled it (Or used another search engine)	11.03%
Newspaper, blog, magazine, radio/TV news	17.60%
From a friend, family member, co-worker	15.39%
From an e-scooter representative	1.48%
PBOT website	4.73%
I don't know what the e-scooter laws in Portland or Oregon	6.53%

How old are you?	Percent of respondents
16-20	3.77%
20-29	31.13%
30-39	37.62%
40-49	17.52%
50-59	7.88%
60-69	1.88%
70-79	0.15%
90-99	0.04%
Grand Total	100.00%

Please identify your race/origin by selecting all that apply.	Percent of respondents
White - German, Irish, English, Italian, Lebanese, Egyptian, etc.	72.13%
Black or African American - African American, Jamaican, Haitian, Nigerian, Ethiopian, Somali, etc.	3.22%

American Indian or Alaska Native - Navajo Nation, Blackfeet Tribe, Mayan, Aztec, Native Village of Barrow Inupiat Traditional Government, Nome Eskimo Community, etc.	2.21%
Chinese	1.89%
Filipino	0.90%
Asian Indian	0.84%
Vietnamese	0.73%
Korean	1.02%
Japanese	1.10%
Native Hawaiian	0.46%
Samoan	0.23%
Chamorro	0.35%
Other Asian or Pacific Islander - Pakistani, Cambodian, Hmong, Tongan, Fijian, Marshallese, etc.	1.05%
Mexican - Mexican American, Chicano, etc.	4.09%
Puerto Rican	0.61%
Cuban	0.49%
Some other Hispanic, Latino, or Spanish origin - Salvadoran, Dominican, Colombian, Guatemalan, Spaniard, Ecuadorian, etc.	3.11%

What gender do you identify with?	Percent of total
Man	61.74%
Woman	33.40%
Prefer not to answer	2.45%
Non-Binary	1.43%
Transgender	0.61%
Don't know	0.37%
Grand Total	100.00%

What is your home zip code? (Enter a 5-digit ZIP code; for example 97212.)	Count
97209	8.87%
97202	7.96%
97214	7.82%
97217	5.31%
97201	4.85%
97206	4.82%
97232	4.64%
97212	4.36%
97210	4.05%
97211	4.01%
97213	3.00%
97215	2.93%
97239	2.44%
97203	2.41%
97220	2.20%
97205	2.09%
97219	1.88%
97233	1.68%
97266	1.54%
97236	1.22%
97230	1.22%
97216	1.19%
97229	1.15%
97222	1.15%
97227	0.94%
97218	0.91%
97223	0.91%
97225	0.77%
97221	0.66%
97005	0.59%

97007	0.59%
97003	0.52%
97086	0.52%
97035	0.49%
97006	0.49%
97030	0.45%
97267	0.42%
97224	0.42%
97008	0.38%
97068	0.38%
97080	0.31%
97015	0.31%
97123	0.31%
97078	0.28%
98661	0.28%
97034	0.28%
97045	0.28%
97124	0.24%
97204	0.24%
97062	0.21%
98660	0.17%
98607	0.17%
97140	0.17%
97060	0.17%
98663	0.14%
97070	0.14%
98684	0.14%
97208	0.14%
97231	0.14%
97305	0.10%
97055	0.10%
97056	0.10%

97027	0.10%
98685	0.10%
98664	0.07%
97024	0.07%
97303	0.07%
98682	0.07%
97207	0.07%
97116	0.07%
97009	0.07%
98686	0.07%
97042	0.07%
98675	0.03%
97960	0.03%
97385	0.03%
97121	0.03%
98606	0.03%
90036	0.03%
97306	0.03%
96744	0.03%
97701	0.03%
96821	0.03%
98117	0.03%
96822	0.03%
92646	0.03%
97000	0.03%
94590	0.03%
9729	0.03%
97321	0.03%
97004	0.03%
97405	0.03%
10001	0.03%
97934	0.03%

11797	0.03%
98035	0.03%
19054	0.03%
98372	0.03%
22015	0.03%
98642	0.03%
91710	0.03%
8213	0.03%
22201	0.03%
98683	0.03%
97022	0.03%
92627	0.03%
92010	0.03%
97317	0.03%
97026	0.03%
97340	0.03%
97129	0.03%
97401	0.03%
97029	0.03%
97539	0.03%
38104	0.03%
97712	0.03%
97031	0.03%
97935	0.03%
98771	0.03%
98026	0.03%
97132	0.03%
98107	0.03%
85118	0.03%
98202	0.03%
82221	0.03%
98375	0.03%

97141	0.03%
90604	0.03%
97237	0.03%
97071	0.03%
84045	0.03%
97089	0.03%
97242	0.03%
98671	0.03%
97051	0.03%
92651	0.03%
97200	0.03%
97115	0.03%
97295	0.03%
92264	0.03%
90007	0.03%
43209	0.03%
97033	0.03%
Grand Total	100.00%

Do you identify with having or living with a disability?	Percent of total
No	92.07%
Yes	4.42%
Prefer not to answer	3.51%
Grand Total	100.00%

Please describe the nature of your disability. Check all that apply:	Percent of respondents
Mobility or dexterity (e.g. walking, climbing stairs)	1.48%
Visual (e.g. blind, low vision)	0.26%
Deaf or hard-of-hearing	0.32%
Speech or communication	0.32%

What is your income?	Percent of total
Between \$15,000 and \$29,999	10.81%
Between \$30,000 and \$49,999	19.54%
Between \$50,000 and \$74,999	21.52%
More than \$75,000	35.83%
Under \$15,000	12.30%
Grand Total	100.00%

What is your highest level of education?	Percent of total
2-year degree	5.14%
College degree/4-year degree	40.21%
Doctorate	4.86%
High school degree	5.86%
Master's Degree	14.38%
Other (please specify)	1.13%
Some college	18.66%
Some high school	2.26%
Some Post graduate	5.62%
Technical Degree	1.88%
Grand Total	100.00%

Where do you typically ride e-scooters? (The image above shows different places where you might ride an e-scooter.)	About half the time	Always	Most of the time	Never	Sometimes	Grand Total
Sidewalk	3.58%	0.91%	2.26%	53.81%	39.43%	100.00%
Bike lane in the street	17.03%	17.77%	46.68%	2.63%	15.88%	100.00%
Trail/path (e.g. Waterfront Park, Eastbank Esplanade, I-205 Path)	5.11%	1.78%	4.50%	53.82%	34.80%	100.00%
Shared travel lane (same lane used by cars)	19.93%	6.68%	23.35%	10.21%	39.83%	100.00%

Where do you prefer to ride an e-scooter? 1 = first choice, 4= last choice (The image above shows different places where you might ride an e-scooter.)

	1	2	3	4	Grand Total
Sidewalk	7.55%	13.64%	24.19%	54.62%	100.00%
Bike lane in the street	65.94%	21.51%	9.48%	3.07%	100.00%
Trail/path (e.g. Waterfront Park, Eastbank Esplanade, I-205 Path)	19.58%	30.38%	37.18%	12.86%	100.00%
Shared travel lane (same lane used by cars)	7.16%	34.86%	28.86%	29.12%	100.00%

How often do you wear a helmet when riding an e-scooter?	Percent of total
Always	16.50%
Usually	13.40%
Sometimes	12.77%
Rarely	12.51%
Never	44.81%
Grand Total	100.00%

How likely are you to recommend shared e-scooters to a friend?	Percent of total
Extremely likely	62.15%
Not at all likely	2.07%
Not so likely	2.36%
Somewhat likely	10.44%
Very likely	22.98%
Grand Total	100.00%

If the shared e-scooter program continues in Portland, how often do you think you'll use e-scooters in the future?	Percent of total
Less than 1x week	26.34%

1-3x week	48.73%
3-6x week	15.38%
Daily	5.98%
More than 1x day	3.58%
Grand Total	100.00%

Do you live or work in Portland?	Total (N=)
No	1088
Grand Total	1088

Why did you try e-scooters for the first time, either in Portland or another city? (Select all that apply.)	Percent of respondents
Save money on transportation	27.94%
Get around more easily, faster	61.40%
It's good for the environment	24.45%
It looked like fun / curious to try it out	87.68%

How long was your most recent visit to Portland?	Percent of total
1 - 2 days	22.17%
3 - 4 days	40.75%
5 - 7 days	14.53%
Less than 24 hours	11.98%
Over one week	10.57%
Grand Total	100.00%

Response	Percent of total
Shopping	22.15%
Restaurant	34.93%
Sightseeing	60.29%
Recreation	60.39%
Transportation	72.15%
Exercise	5.51%

During your visit, did you use shared e-scooters to access a bus, MAX, or streetcar?	Percent of total
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No	81.96%
Yes - 1 to 2 times	14.64%
Yes - more than 3 times	3.40%
Grand Total	100.00%

Think about your last ride on an e-scooter in Portland. If a shared e-scooter had not been available, how would you have gotten around? (Select only one.)

Percent of total	
Driven a personal vehicle, carshare vehicle, or other motor vehicle	14.33%
Other (please specify below)	1.04%
Ridden a personal bike	0.76%
Ridden a personal e-scooter	0.28%
Ridden as a passenger in a vehicle and dropped off by a friend, family member, or other person	1.80%
Ridden BIKETOWN	3.13%
Taken a Bus/ MAX/ Streetcar	3.89%
Taken a taxi, Uber, or Lyft	34.25%
Walked	35.48%
Would not have taken trip	5.03%
Grand Total	100.00%

What changes would encourage you to use e-scooters more often? (Select all that apply.)

Percent of respondents	
More e-scooters available	59.47%
E-scooters in surrounding cities (e.g. Beaverton, Gresham, Milwaukie)	22.52%
E-scooters with seats	7.08%
Safer places to ride (e.g. bike lanes or paths separated from vehicles)	43.57%
Longer battery life	35.20%
Different e-scooter design (e.g. more stable)	7.54%

None of these changes would encourage me to use e-scooters more often 7.26%

Which of the following are laws related to e-scooters in Portland? (Select all that apply.)	Percent of respondents
All users must wear a helmet when riding an e-scooter	67.46%
E-scooters are not allowed to ride on the sidewalk	65.26%
E-scooters are not allowed to ride in the street	4.41%
E-scooters are not allowed to ride on the waterfront trails	17.65%
E-scooters are not allowed to ride or park in Portland Parks	24.54%
I don't know what the e-scooter laws are in Portland or Oregon	25.64%
None of the above	1.29%

How did you learn about e-scooter laws? (Select all that apply.)	Percent of respondents
Through the companies' e-scooter apps	49.72%
Community event	0.09%
PBOT flyer on e-scooter	3.58%
On e-scooter vehicle	20.04%
Social media	4.69%
Newspaper, blog, magazine, radio/TV news	2.39%
From a friend, family member, co-worker	12.68%
From an e-scooter representative	0.64%
PBOT website	0.92%
I don't know what the e-scooter laws in Portland or Oregon	21.97%

How old are you?	Percent of total
16-20	4.59%
20-29	39.15%
30-39	32.33%

40-49	13.09%
50-59	8.50%
60-69	2.24%
70-79	0.11%
Grand Total	100.00%

Please identify your race/origin by selecting all that apply.	Percent of total
White - German, Irish, English, Italian, Lebanese, Egyptian, etc.	73.16%
Black or African American - African American, Jamaican, Haitian, Nigerian, Ethiopian, Somali, etc.	2.94%
American Indian or Alaska Native - Navajo Nation, Blackfeet Tribe, Mayan, Aztec, Native Village of Barrow Inupiat Traditional Government, Nome Eskimo Community, etc.	1.65%
Chinese	2.94%
Filipino	2.67%
Asian Indian	1.65%
Vietnamese	0.74%
Korean	1.10%
Japanese	0.92%
Native Hawaiian	0.55%
Samoan	0.18%
Chamorro	0.18%
Other Asian or Pacific Islander - Pakistani, Cambodian, Hmong, Tongan, Fijian, Marshallese, etc.	1.75%
Mexican - Mexican American, Chicano, etc.	6.25%
Puerto Rican	0.74%
Cuban	0.18%

Some other Hispanic, Latino, or Spanish origin - Salvadoran, Dominican, Colombian, Guatemalan, Spaniard, Ecuadorian, etc.	3.11%
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What gender do you identify with?	Percent of total
Man	58.19%
Woman	39.35%
Prefer not to answer	1.38%
Non-Binary	0.59%
Transgender	0.30%
Don't know	0.20%
Grand Total	100.00%

What is your home zip code? (Enter a 5-digit ZIP code; for example 97212.)	Count
97124	5.19%
97701	3.90%
97401	3.25%
97006	3.25%
97007	3.25%
97405	3.25%
98107	3.25%
97212	3.25%
98684	3.25%
98682	2.60%
97005	2.60%
98664	2.60%
97223	1.95%
97306	1.95%
97230	1.95%
97031	1.95%

98642	1.95%
97068	1.95%
97224	1.95%
97078	1.95%
97303	1.95%
97123	1.95%
98683	1.95%
97015	1.95%
98026	1.30%
98607	1.30%
98375	1.30%
97116	1.30%
97045	1.30%
98686	1.30%
97008	1.30%
97225	1.30%
97219	1.30%
98661	1.30%
98660	1.30%
97213	1.30%
22201	1.30%
97317	0.65%
97070	0.65%
97141	0.65%
97214	0.65%
97305	0.65%
97080	0.65%
97003	0.65%
97220	0.65%
97034	0.65%
97222	0.65%
97035	0.65%

97089	0.65%
97140	0.65%
97027	0.65%
92627	0.65%
97060	0.65%
97004	0.65%
97229	0.65%
97062	0.65%
38104	0.65%
97204	0.65%
97236	0.65%
97071	0.65%
97267	0.65%
97132	0.65%
97211	0.65%
11797	0.65%
90036	0.65%
97201	0.65%
10001	0.65%
97202	0.65%
Grand Total	100.00%

Do you identify with having or living with a disability?	Percent of total
No	96.09%
Yes	1.95%
Prefer not to answer	1.95%
Grand Total	100.00%

Please describe the nature of your disability. Check all that apply:	Percent of respondents
Mobility or dexterity (e.g. walking, climbing stairs)	0.92%

Visual (e.g. blind, low vision)	0.09%
Deaf or hard-of-hearing	0.28%
Speech or communication	0.28%

What is your income?	Percent of total
Between \$15,000 and \$29,999	9.53%
Between \$30,000 and \$49,999	16.94%
Between \$50,000 and \$74,999	19.68%
More than \$75,000	41.89%
Under \$15,000	11.97%
Grand Total	100.00%

What is your highest level of education?	Percent of total
2-year degree	4.82%
College degree/4-year degree	40.46%
Doctorate	5.92%
High school degree	7.03%
Master's Degree	14.66%
Some college	16.27%
Some high school	1.61%
Technical Degree	2.71%
Some Post graduate	5.42%
Other (please specify)	1.10%
Grand Total	100.00%

Where do you typically ride e-scooters?	About half the time	Always	Most of the time	Never	Sometimes	Grand Total
Sidewalk	8.19%	1.14%	7.62%	33.90%	49.15%	100.00%
Bike lane in the street	18.54%	13.71%	45.39%	4.04%	18.31%	100.00%

Trail/path (e.g. Waterfront Park, Eastbank Esplanade, I-205 Path)	17.68%	4.05%	15.88%	16.55%	45.83%	100.00%
Shared travel lane (same lane used by cars)	10.56%	2.72%	10.90%	34.17%	41.66%	100.00%

Where do you prefer to ride e-scooters?	1	2	3	4	Grand Total
Sidewalk	11.83%	19.91%	30.94%	37.32%	100.00%
Bike lane in the street	57.13%	25.36%	11.67%	5.84%	100.00%
Trail/path (e.g. Waterfront Park, Eastbank Esplanade, I-205 Path)	25.51%	32.57%	29.61%	12.30%	100.00%
Shared travel lane (same lane used by cars)	6.01%	22.22%	27.44%	44.33%	100.00%

How often do you wear a helmet when riding an e-scooter?	Percent of total
Usually	7.58%
Sometimes	9.81%
Rarely	15.94%
Never	58.97%
Always	7.69%
Grand Total	100.00%

How likely are you to recommend shared e-scooters to a friend?	Percent of total
Extremely likely	68.53%
Not at all likely	1.46%
Not so likely	1.57%
Somewhat likely	7.73%
Very likely	20.72%
Grand Total	100.00%

If the shared e-scooter program continues in Portland, how often do you think you'll use e-scooters in the future?	Percent of total
1-3x week	38.40%
3-6x week	11.54%
Daily	12.80%
Less than 1x week	32.46%
More than 1x day	4.80%
Grand Total	100.00%

Seattle Department of Transportation

2017 FREE-FLOATING BIKE SHARE PILOT EVALUATION REPORT



August 2018

WS89



Seattle
Department of
Transportation



ACKNOWLEDGEMENTS

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Appendix B - TDC Bike Share Evaluation Report

Appendix C - EMC Survey Report

Appendix D - SDOT Citywide Survey Report

Appendix E - SDOT Disability Specific Survey

Appendix F - Feedback Received Report

Appendix G - Bike Parking Analysis

Note: Appendices can be found at www.seattle.gov/transportation/bike-share

Seattle's Vision and Values for Transportation

At the Seattle Department of Transportation (SDOT), our vision is a vibrant Seattle with connected people, places, and products. Our mission is to deliver a high-quality transportation system for the city of Seattle.

SDOT is focused on creating a safe, interconnected, vibrant, affordable, and innovative city for all. We value:

A Safe City

We will not accept traffic deaths as an inevitable part of traveling together in a safe city. Our goal is to eliminate serious and fatal crashes in Seattle. Safety also means being prepared for a natural disaster by seismically reinforcing our bridges to withstand earthquakes.

An Interconnected City

More travel options doesn't always equate to an easy-to-use, interconnected system. Our goal is to provide an easy-to-use, reliable transportation system that gives you the options you want when you need them.

A Vibrant City

A vibrant city is one where the streets and sidewalks hum with economic and social activity. People meet and shop and enjoy the beautiful city we live in, side by side with goods delivery and freight shipping. Our goal is to use Seattle's streets and sidewalks to improve the city's health, prosperity, and happiness.

An Affordable City

Our goal is to give all people high-quality and low-cost transportation options that allow them to spend their money on things other than transportation. The transportation system in an affordable city improves the lives of all travelers – those with the latest model smartphones in their pockets and those without.

An Innovative City

Demographic changes and technological innovation are radically reshaping transportation. Our goal is to understand and plan for the changes of tomorrow, while delivering great service today. This includes newer, more nimble approaches to delivering projects and programs to our customers.



INTRODUCTION

Increasing Options in a Growing City

Seattle is one of the fastest growing cities in the US. With growth, our city entered into a period of dynamic change. Our population, our ability to live affordably, and our daily travel habits are all in flux.

Roughly 36% of Seattle's residents moved here in the last eight years. Over half of downtown's residents arrived in Seattle after 2010. The pace of our growth is accelerating and placing immense pressure on our transportation system. We need a variety of sustainable mobility options to keep our city moving and meet broader objectives related to affordability, access to opportunity, active living, and reducing transportation-related carbon emissions.

To that end, Seattle has grown one of the most robust transportation marketplaces in United States. As we invest in public transit service and infrastructure, private app-enabled mobility services are expanding transportation options to meet people's daily travel needs and supporting walkable, bikeable, and

transit-oriented lifestyles. The emergence of app-based mobility services like car sharing, ridehailing, and dynamic carpooling are providing flexibility and further reducing the need to own a car in Seattle.

In July 2017, the Seattle Department of Transportation **introduced the nation's first private free-floating bike share marketplace**, enabling a new, citywide mobility option. The City established an innovative permitting pilot to test this new transportation technology, learn if and how it can achieve mobility and livability goals, and determine how to leverage private sector innovation to meet the Seattle public's interest in a long-term program framework.

This emerging mobility service affords exciting opportunities for active, low-carbon transportation and recreation. As "bike share" evolves to include new approaches, features, and devices, SDOT will structure the Program so everyone can benefit from the upsides while anticipating and protecting against the downsides.





Free-Floating Bike Share

From October 2014 to March 2017, Seattle operated a traditional station-based bike share program known as *Pronto! Cycle Share*. With station-based systems, bike share bikes are kept at docking stations scattered throughout a limited coverage area. Users need to find a station to rent a bike, and then find another to return the bike near their destination. The stations also often serve as kiosks, letting users buy memberships and activate their rentals.

With the newer technology of free-floating bike share, the system no longer needs stations. Users typically use a smartphone app to unlock a bike wherever they're found, and end the ride by simply appropriately parking the bike and locking it. The bikes lock either with a wheel lock that keeps the wheels from rolling or an integrated lock that locks that bike to a bike rack or other appropriate object.

Three companies participated in Seattle's pilot program, all with the wheel lock method that allowed users to leave the bike anywhere the permit parking requirements allowed. Those three companies were:

- LimeBike (green bikes)
- ofo (yellow bikes)
- Spin (orange bikes)

Program Goals

Rooted in our values, SDOT seeks to create a safe, interconnected, vibrant, affordable, and innovative city for all. Our [New Mobility Playbook](#) describes our principles and strategies for adapting emerging mobility services to meet the needs of our city. The Playbook informed the development of the pilot permit requirements.

Done correctly, free-floating bike share has the potential to meet many of the challenges in Seattle's transportation future. It can offer an affordable and healthy option that bridges gaps in our transportation system. To maximize those benefits while minimizing potential downsides, SDOT developed the following program goals:

1. Support an **active, healthy, and people-first** use of Seattle's streets;
2. Ensure **affordable and equitable** service—particularly for cost-burdened communities of color—while expanding access to opportunities;
3. Fill mobility gaps and improve **connections to transit**;
4. Be **safe** and advance our **Vision Zero** objectives;
5. Provide a **low-carbon mobility option** as part of Seattle's efforts to reduce carbon emissions;
6. **Manage public space** to ensure sidewalks are organized and free from obstructions; and
7. Derive insights into how people use the system, compliance issues, and targeted bike infrastructure investments with **robust data partnerships**.

Seattle's Approach

Developing a new management approach to an entirely new mode of transportation is inherently challenging. Over the past year, SDOT developed and refined a novel method to regulate free-floating bike share companies. This method is now being replicated in many cities across the United States and beyond. **The intent of this management approach is to be flexible enough to allow the private sector to innovate, while ensuring the public attains the outcomes that best meet the public interest.** To that end, we will optimize our permit requirements through an iterative process, collaboratively changing requirements as we continue to learn and understand the ongoing shifts in the free-floating bike share technology and business model.

Our general approach to the free-floating bike share pilot program included the following:

Rethink procurement. Pronto!, Seattle's first-generation docked bike share system, is an example of how local governments typically establish a bike share system. Cities are on the hook to identify millions of dollars to fund a system that might not meet the mobility needs of the entire city. In the case of Seattle, that approach and docked bike share did not work. Is there a way to obtain the benefits of a bike share system without spending millions of dollars in capital and operating costs? Our approach seeks to answer that very question by creating a tightly controlled permitting program at no cost to the taxpayer.

Establish a sandbox based on values. Policy innovation and programmatic rule making cannot happen in a vacuum. Guiding what is new requires a north star. We used the City's five core values and the five Principles for New Mobility in the development of the free-floating bike share program and its permit requirements.

Foster a first-of-its-kind data and research partnership.

SDOT partnered with the University of Washington's Transportation Data Collaborative (TDC) to ingest and process the permitted vendors' data. This unique partnership was invaluable for the City to aggregate data and support data reporting, while protecting the public's personally identifiable information.

Test pilot permit requirements.

SDOT established a set of pilot permit requirements as a way to enable private bike share vendors to provide a service in exchange for public benefits. The permit requirements control for risks while enabling us to learn about this new technology and business model, identify how the system does or does not meet our objectives, and make changes to the permit requirements based on our findings. The aim is to remain nimble, making annual permit changes that allow vendors to innovate while ensuring we are getting the most value and responsibly managing the right-of-way.

Evaluate the program. This evaluation aims to answer the fundamental question: Should SDOT continue to support a free-floating bike share program? The report represents the culmination of a 6-month data collection period, in which we gathered quantitative data from the bike share companies' and public surveys, as well as qualitative data from public stakeholders, residents, and system users.

Our free-floating bike share program will be modified based on this pilot's findings. As with any pilot, there were successes and failures. Our aim is to use lessons learned in the pilot to advance the positive aspects of free-floating bike share, while adapting the system to eliminate the unintended negative aspects.

METHODOLOGY

The following describes our overall pilot evaluation study period and area, data collection and methods, and key metrics.

Study Period and Service Area

Seattle's free-floating bike share pilot launched on July 7, 2017. For the purposes of this evaluation, we defined the study period as July 7, 2017, to December 31, 2017, or approximately 5.5 months of data collection. The study period spanned three seasons (partial summer, fall, and partial winter). With all three operators covering the entire city, the service area is defined as the City of Seattle city limits.

Data Collection Methods

While data was assessed on a rolling and monthly basis in collaboration with permit holders and the TDC, the evaluation will aggregate data across the study period.

Raw ridership data, as specified by the SDOT permit and the TDC, was submitted via Application Program Interface (API) or spreadsheet by the three independent bike share companies. The companies submitted data on a weekly basis directly to the TDC over the course of the study period. Importantly, this data contained unique anonymized Rider Identifiers that allowed the TDC to calculate accurate trip pattern data while not collecting any personally identifiable information. The TDC cleaned and aggregated data across all three companies in order to provide insight on

SDOT and UW data partnership

The University of Washington (UW) approached SDOT in the spring of 2017 about an innovative data-sharing collaborative created in partnership with the UW's Information School and Washington State Transportation Center (TRAC). This partnership was named the Transportation Data Collaborative (TDC). In an effort to leverage new technology partnerships and innovative approaches to data collection, privacy, and reporting, SDOT allowed the private bike share companies to submit data specified in the pilot permit requirements directly to the TDC. This allowed the TDC to serve as a data aggregator and data reporter, bringing third-party analytical and privacy expertise to support the reporting needs of the bike share pilot program.

The data requirements were defined in the permit (Appendix A) and could be submitted via API or spreadsheet (CSV file) to be stored by the TDC. The TDC then created aggregated reports and presented them to the City of Seattle on a regular basis.

our key metrics and research questions. The TDC then produced an analytical report that serves as one of the inputs for this evaluation (Appendix B).

The data fields required by the permit and sent to the TDC included:

- Trip start date, time, location, bike identifier, and anonymized user identifier
- Trip end date, time, location, bike identifier, and anonymized user identifier
- Available bike location, start date and time, and end date and time.

The permit also required that each company issue an SDOT-designed survey to gather demographic and ridership data from bike share users. The TDC coordinated with the three bike share companies to issue this survey and collect responses. These responses included the anonymized Rider ID field, allowing the TDC to tie trip data to survey answers.

Qualitative Methods

To gain a better and more complete understanding of non-ridership-related impacts of bike share, SDOT took a multi-faceted approach.

- We issued 3 surveys:
 - A statistically-valid 4% margin-of-error web-panel survey with EMC Research based on a random sample of 600 Seattle adults with internet access
 - An open community survey through Survey Monkey that received 1,883 responses
 - An open survey focused on people with disabilities with 56 responses
- We hosted a public meeting to learn about the impacts of bike share on disabled people.
- We attended SDOT Mobility Fairs at two Seattle Housing Authority properties:
 - Yesler Terrace
 - New Holly

- We attended, spoke at, and listened at 5 community meetings hosted by:
 - The Seattle Pedestrian Advisory Board
 - The Pedestrian Access Advisory Committee
 - The United Blind of Seattle
 - The West Seattle Transportation Coalition
 - The Squire Park Community Council
- We met with several community partners and advocate organizations, including:
 - The Seattle Housing Authority
 - Entre Hermanos
 - Transportation Choices Coalition
 - Feet First
 - Cascade Bicycle Club
 - Seattle Neighborhood Greenways
 - Outdoors for All
- We collected and recorded 134 emails and phone calls to SDOT that had specific bike share feedback during the study period.

Equity Analysis

To determine if bike share was reaching Seattle neighborhoods where cheap and healthy transportation options are most needed, we first needed to determine a baseline geospatial equity metric. Seattle's Comprehensive Plan, Seattle 2035, includes two indices: the Displacement Risk index and the Access to Opportunity index. We combined the two indices to create our own equity aggregate score.¹ The results of this analysis can be found on page 37.

¹. Methodology for combining Displacement Risk and Access to Opportunity indices:

1. We calculated the mean displacement risk score and access to opportunity score in each of our Seattle neighborhoods.
2. To normalize the two scores, so that in both cases a higher score corresponds to higher equity concerns, we subtracted all values in the access to opportunity score from the maximum value of 37.71.
3. To weight access to opportunity and displacement risk evenly, we multiplied the displacement risk scores by 1.95.
4. We added the scores to create a new equity aggregate score.
5. Finally, we divided the scores into five even tiers, so that each tier has the same number of neighborhoods. Tier 1 includes areas with the highest scores, meaning they have the highest displacement risk and lowest access to opportunity, and Tier 5 includes areas with the lowest scores, or lowest displacement risk and highest access to opportunity.

Key Metrics

In order to fairly evaluate the free-floating bike share pilot, SDOT identified a set of key success metrics. For comparative purposes, we attempted to keep parity with industry standards for station-based bike share. However, there are a number of differences from standard docked systems that came to light due to the dynamic nature of free-floating fleets. Without a strong precedent or comparison, we created evaluation measures that fall into the following top-line categories:

- **Ridership:** Total trips
- **Geographic Coverage:** Amount of city covered
- **Equity:** Coverage, usage, low-barrier options, and outreach
- **Safety:** Number of collisions per 1 million trips
- **Parking Compliance:** Percent of bikes incorrectly parked and blocking access
- **Disabled Access:** Parking issues and bike availability
- **Maintenance:** Percent of bikes in good working condition and Percent of bikes with safety hazards
- **Public Opinion:** Favorability and issues
- **Cost:** Total public subsidy

In addition to our key metrics, we looked at a number of other data points and findings to comprehensively evaluate this complex pilot program.

Definitions

Definitions were determined through a collaborative effort between the TDC (analyst), SDOT (permit manager), and the bike share companies (permit holders).

Fleet Size: Total number of bikes on the street, including active and inactive bikes. This term was not well-defined early in the pilot (see call-out on page 14)

Trips Per Bike Per Day: Daily average of number of trips started divided by fleet size.

Unique rider: Total number of rider IDs across all three companies. Note that if a rider had signed up through more than one company, they would be overcounted. Conversely, if a rider shared their registration with friends or family, they would be undercounted. Therefore, this number is only a sum of all three companies' unique rider accounts in Seattle.

Total Trip Time: Trip end time minus trip start time.

Total Miles Per Trip: Trip time (fraction of hour) multiplied by average bike speed (6mph). To reduce overestimated trip times as a result of a user failing to end the trip, the TDC discounted all trips over 24 hours in their more conservative estimate and all trips over 3 hours in a less-conservative approach.

Total Trips: Trip starts minus trips under 30 seconds, which were categorized as false starts.

Trips Per 1000 Residents: Total City of Seattle Population (713,700) divided by Total Trips.

Collision: All collisions reported to bike share companies, and all bike collisions reported to SPD where the police report indicates a bike share bike was involved.



BIKE SHARE BY THE NUMBERS

Measuring bike share's mobility impacts in Seattle

To fairly and accurately evaluate Seattle's free-floating bike share pilot, SDOT analyzed ridership data, parking data, outside studies, surveys, and observations. Ridership data answers the most basic questions about system productivity, use case, and travel behavior, including:

- How much is the system used?
- Where are the bikes used?
- When are the bikes used?
- Who is using the bikes?
- How are people using bike share?

Throughout the pilot, SDOT worked with the Transportation Data Collaborative at the University of Washington to collect bike, trip, and survey data from all three companies, aggregate the data to protect private and proprietary information, verify the data, and report the data back to SDOT to be included in this evaluation.

Where applicable, the evaluation compares performance to successful and unsuccessful dock-based bike share systems, including Pronto!, Seattle's previous, unsuccessful dock-based bike share system and Biketown, Portland's successful hybrid bike share system that is predominantly dock-based, but also allows users to lock to a bike rack for an added fee.





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Fleet Size

SDOT allowed the company fleet sizes to grow throughout the pilot period. Figure 1 shows monthly fleet sizes using different counting methods, along with the SDOT cap for that month. The fleet size started at just under 1,000 bikes in the first month and swelled to 9,450 bike by the end of the pilot study period. For comparison, Seattle's fleet surpassed Portland's Biketown system size in the 5th week of the pilot.

Managing any new mobility system, particularly one that has no precedent, will be met with challenges and unforeseen gaps. SDOT identified issues related to fleet size early on during the pilot study period. One company exceeded the fleet cap in August and SDOT also found process delays in reporting. The Lesson Learned call out box to the right explains fleet size data discrepancies and the need to set clear fleet size definitions.

LESSON LEARNED

Define all terms

SDOT found discrepancies in reported fleet size throughout the pilot study period. Without a clear definition of "fleet size" in the pilot permit, companies simply counted the number of available bikes. Meanwhile, the TDC was originally counting all bikes ever deployed and not counting bikes lost, broken, located in bike share company storage, or otherwise removed. SDOT is confident that the actual fleet sizes were closer to the company-reported "available bikes", but a future permit will need a clear definition of this term and the data needed to calculate it.

That definition should account for all bikes on the street regardless of their availability for rent, but not bikes removed from the street or not in Seattle.

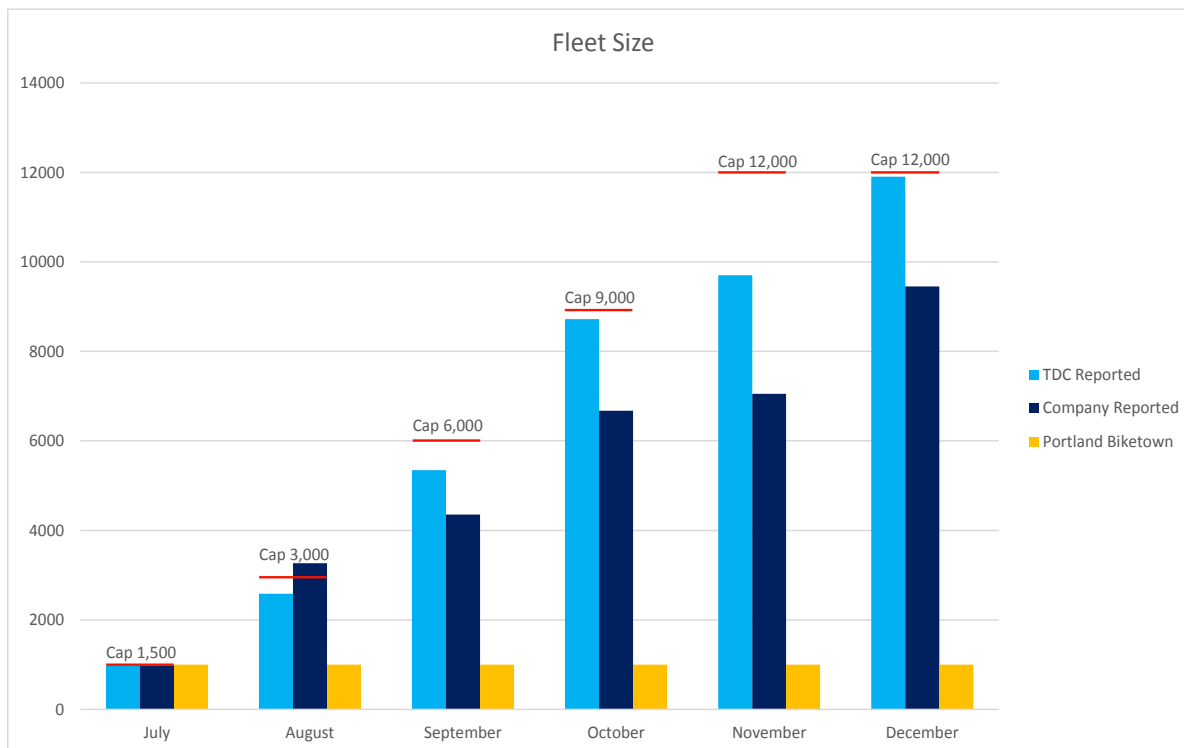


Figure 1: Overall fleet size from July to December, 2017

Total Trips

Across the three companies, 468,976 total trips were taken in the 5.5 month pilot period, averaging 2,791 rides a day. This is almost ten times more trips taken than during the same time frame in 2016 with Seattle's decommissioned dock-based system, Pronto!. Compared to Portland's Biketown, a dock-based system in a comparable climate, Seattle's free-floating bike share pilot counted almost three times the rides during the same period.

Monthly ridership (Figure 3) growth was commensurate with the growth in fleet size until ridership declined along with weather conditions in November and December. However, even during these months of rain, cold temperatures, and short days, users were still taking over 60,000 trips per month. This data suggests that we can expect significantly more trips as bike share fleet size and service area coverage expansion coincide with improved weather.

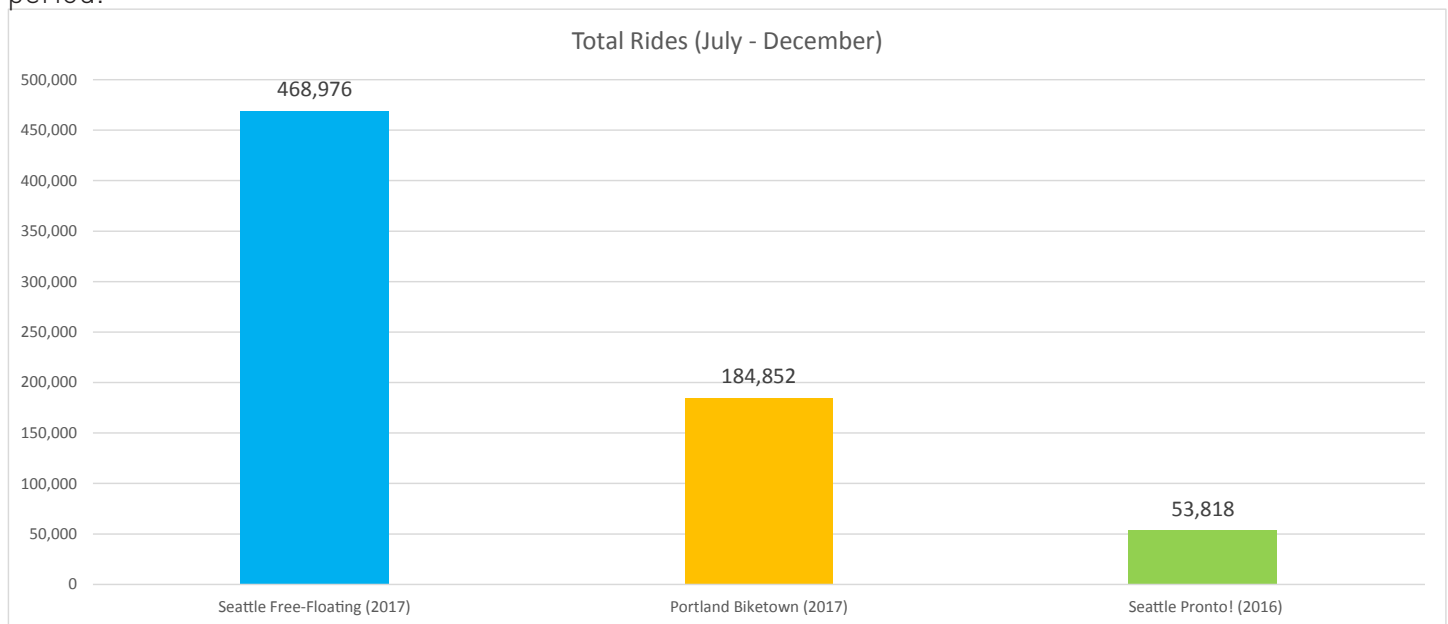


Figure 2: Total rides from July to December across Seattle's free-floating system, Portland's Biketown, and Seattle's Pronto!

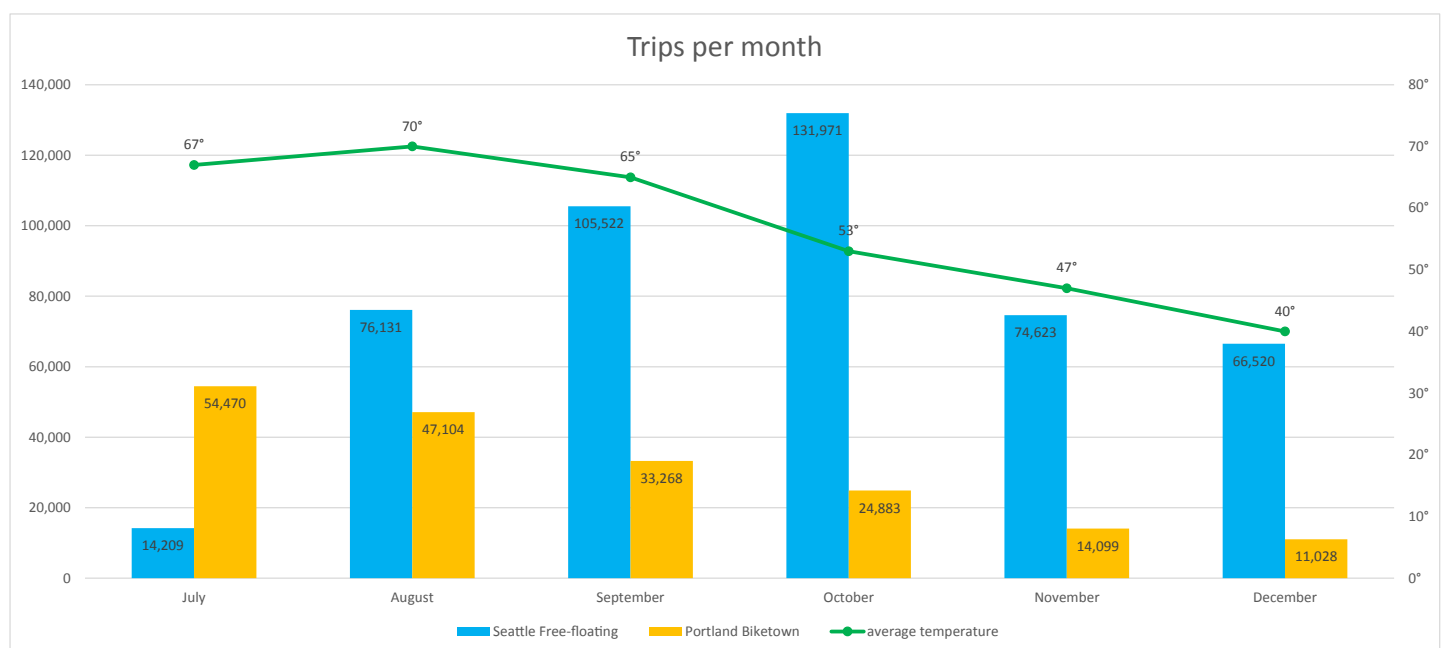


Figure 3: Rides taken per month from July to December, 2017 for Seattle's free-floating system and Portland's Biketown, shown with the average temperature per month

Rides per Bike per Day

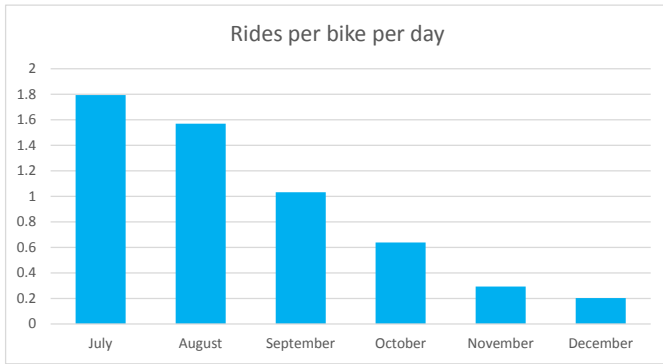


Figure 4: Rides per bike per day by month, from July to December, 2017

During the pilot period, the pilot averaged **0.84** rides per bike per day (rbd). This peaked above 2.5 rbd early in the pilot, when the fleet was small and the weather warm, while a cold December day with a large fleet had less than 0.1 rbd. For comparison, Seattle's old dock-based system, Pronto!, saw an average of 0.7 rbd, while the National Association of City Transportation Officials reports that the 2017 nationwide average for dock-based systems was 1.7 rbd.

LESSON LEARNED

Rides per bike per day is a less useful metric for free-floating than for dock-based bike share systems

The traditional "standard metric" measuring docked bike share success across the United States is **rides per bike per day**, or the average number of times each bike was used each day. This efficiency metric is important to docked systems for good reason: the high cost of docks makes efficiency and return on investment a vital City metric. For Seattle, which invests no public dollars in private free-floating bike share, this efficiency metric is less important than overall mobility. For free-floating systems, cities need to develop a new standard to measure bike share success that places greater emphasis on usage and mobility benefits than efficiency.

For Seattle, the important metrics are daily trip counts and trips per 1000 residents. In each of these metrics, Seattle's system has far surpassed the previous dock-based system, neighboring hybrid systems, and SDOT's own expectations.

Average Daily Trips per 1000 Residents

Seattle's pilot averaged **3.9** trips per day per 1000 residents. This number is difficult to compare to cities with dock-based systems, as docked service areas do not typically cover the entire city. However, average daily trips per 1000 residents will be a useful baseline for comparing free-floating usage across cities of different sizes.



1.4 Distance Traveled

Seattle users averaged an estimated **2.2 miles per trip**, or over **1 million total miles** ridden in the pilot period alone.¹

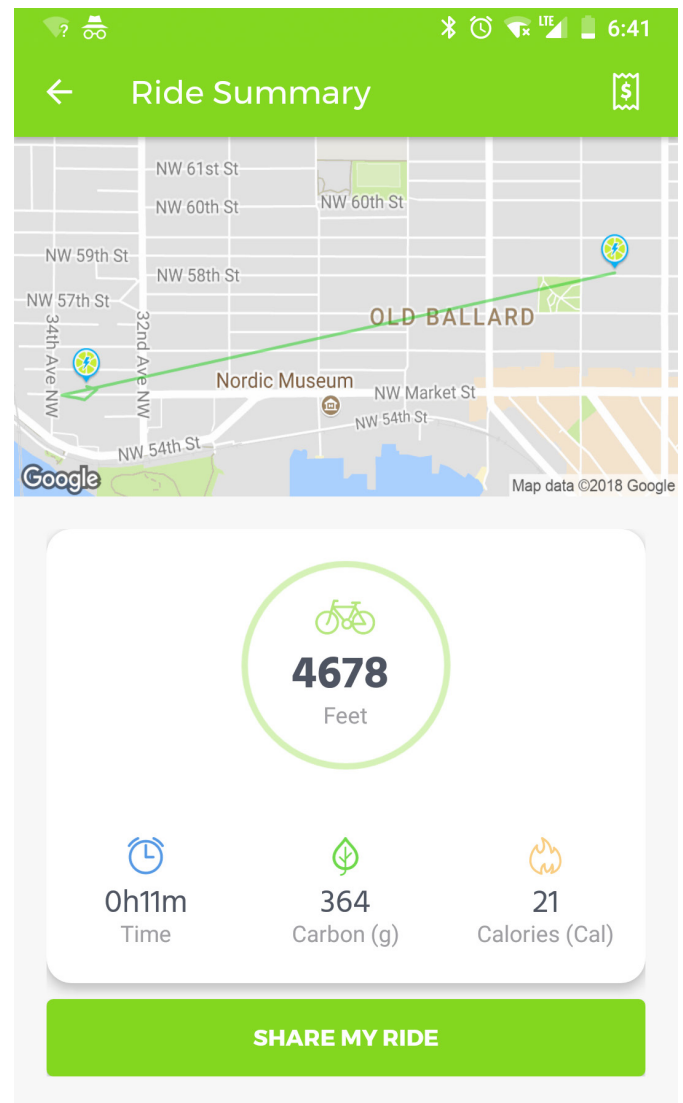
In the next phase, SDOT will capture anonymized waypoint data to calculate, rather than estimate, distance traveled. This method will better measure usage and compare trip distances originating in different neighborhoods, land use environments, and topographies (see Lesson Learned). There is no national standard for estimating bike share mileage², which makes this a difficult data point to use as a comparative metric between municipalities.

LESSON LEARNED

Request waypoint data

One exciting prospect of GPS-enabled bike share is the potential for city planners to collect and use detailed trip routing data that can tell exactly how long people are riding, how fast, what routes they choose and what routes they avoid. This data is vital to ensure the City understands travel patterns, aligns bike behavior with infrastructure plans, and works to give people more safe, healthy, and low-carbon transportation options. This could also inform a much more accurate “distance traveled” metric than the speed/time extrapolation used by most docked systems and the SDOT pilot.

The bike share pilot permit only required time and location data at trip start and trip end, but we know this mid-trip data is essential to fully understand how people are using free-floating bike share.



This ride summary screenshot from the LimeBike app shows an impossible straight line as the route between the origin and destination. This inaccurate route representation demonstrates how rides lacking good waypoint data tell little about which routes users are choosing.

¹ This estimate is based on all trips under 24 hours in length and an assumed speed of 6 mph, assuming that trips over 24 hours constitute errors and/or instances where users failed to close their trip. If we focus on trips under three hours, possibly losing some actual trips as well as more false reports, that estimate changes to **1.5 miles per trip**.

² As an example, New York's Citibike uses 7.5 miles per hour and a maximum of 2 hours or 14.9 miles. SDOT and the UW determined 7.5 mph was not accurate in Seattle, nor was dropping all trips over 2 hours. Many other systems simply avoid reporting this metric.

Crashes, Safety, and Helmets

As part of the pilot bike share permits, each company was required to send weekly reports of bike share-related collisions to SDOT. In addition to this, we read each Seattle Police Department (SPD) report of bicycle-related collisions for any mention of bike share.

Through those two data streams, we found **five total bike share related collisions** from the pilot period. The bike share companies reported three collisions and we found two collisions in SPD reports. None of these reports included serious injury, although the two SPD collisions did include unidentified pain, scrapes, and abrasions.

Researchers at the University of Washington, led by Dr. Frederick Rivara, conducted a parallel study where preliminary reports indicate that of 96 bike-related injuries treated at Harborview Medical Center, only 3 were on bike share bikes. The study team has indicated that these results will not be published.

Although we recognize that this data may not capture all bike share crashes, these findings are consistent with national bike share studies. One study found that although bike share riders used helmets less often and were less experienced than personal bike riders, the collision and injury rates for bike share riders were lower than cyclists using personal bikes¹. The study found that this may be due to bike share bikes being slower and more stable than personal bikes, and bike share users taking fewer risks than personal bike riders.

Survey responses and direct feedback from the community did identify helmet use as a concern. Even with King County's all-ages helmet law and educational messaging from the bike share companies, our user survey found that only **24% of respondents reported wearing helmets**. SDOT will continue to educate the public about helmet use, encourage companies to provide helmets to users, and cooperate in studies to ensure bike sharing remains a safe mode of transportation.



Surveys show that most users are choosing to ride without a helmet.

¹Martin, Elliot, Ph.D., Adam Cohen, Jan Botha, Ph.D., and Susan Shaheen, Ph.D. (March 2016). Bikesharing and Bicycle Safety. Mineta Transportation Institute. CA-MTI-15-1204.

Trip Origin by Neighborhood

Bike share served the entire city in the pilot period, with all neighborhoods reporting trip starts. Figure 5 shows the number of trips starting in each neighborhood, with darker blue representing more trip starts, and lighter blue fewer. Belltown had over 35,000 trip starts, while Broadview, in the far northwest corner of the city, had only 46 trip starts. This shows the success the free-floating pilot had in reaching the entire city, with some neighborhoods of high use outside the coverage area of our old dock-based system (outlined in white). However, it also shows a great disparity in use, and more work is needed to make bike share a better tool in the northernmost and southernmost neighborhoods of the city.

Most trips began in the Downtown¹ area and the University District with 21% beginning Downtown and 12% beginning in the University District or on the University of Washington Main Campus. The neighborhoods west of UW along the Burke-Gilman Trail also saw high usage. The far northern and southern parts of the city saw the fewest trip starts, often coinciding with lower-density and lower-income neighborhoods. A future program must work to better serve all Seattle's neighborhoods.

Trip Destination by Neighborhood

Bike share users also ended trips all across the city. Similar to bike share trip origins, bike share destination density is concentrated in Center City neighborhoods, the University District, Green Lake, Roosevelt, and along the ship canal (see Figure 6). Again, trip ends extended far beyond the service area of the previous dock-based system. Trip activity in the Rainier Valley, SODO, and Georgetown demonstrate potential demand for affordable mobility in areas that were previously unserved by bike share.

¹Downtown neighborhoods include Belltown, the Central Business District, Chinatown / International District, First Hill, Pioneer Square, and Yesler Terrace.

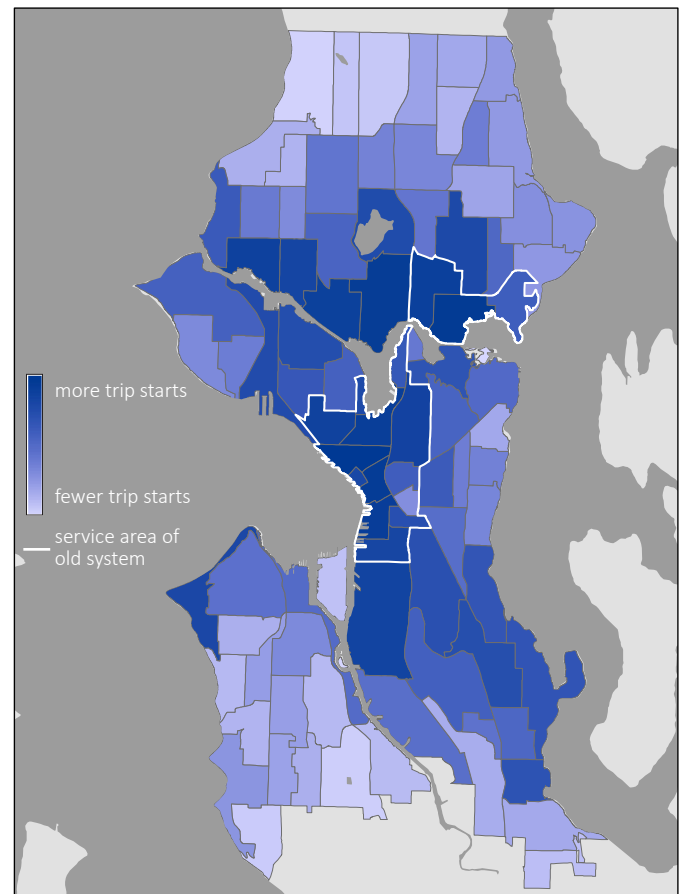


Figure 5: Trip starts by neighborhood

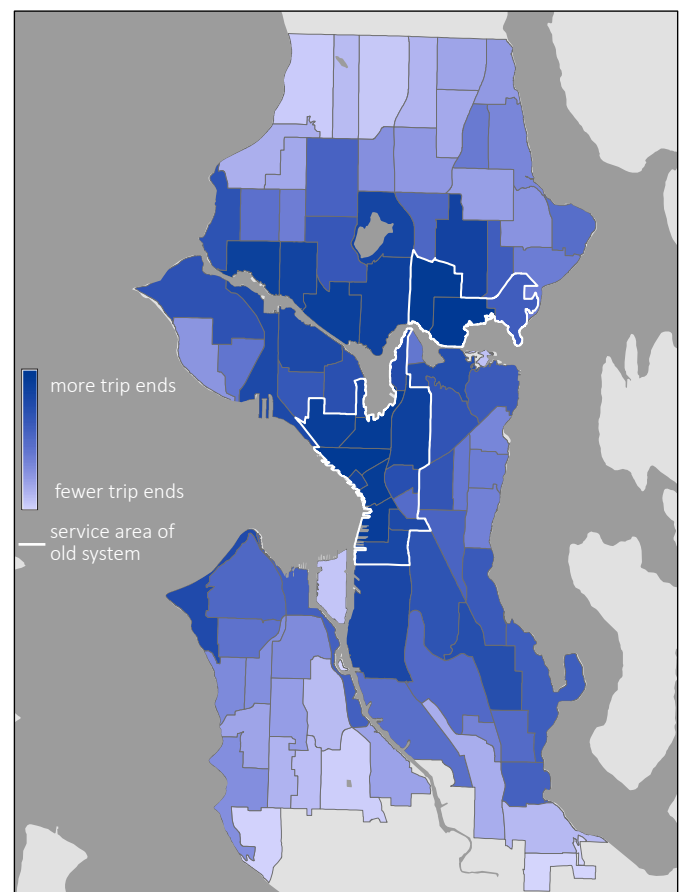


Figure 6: Trip ends by neighborhood

Origins Minus Destinations

Tracking the difference between origins and destinations by neighborhoods can show highly aggregated trip-patterns. Figure 7 demonstrates this difference, with lighter colors showing neighborhoods with more trip ends than starts and darker colors showing neighborhoods with more trip starts than ends. Figure 7 shows that generally, the bike share system was often used to move from the job centers near the center of the city towards the edges. This pattern aligns with weekday time usage that shows more trips happen in the afternoon, suggesting people may be using bike share to leave the job centers during the evening commute.

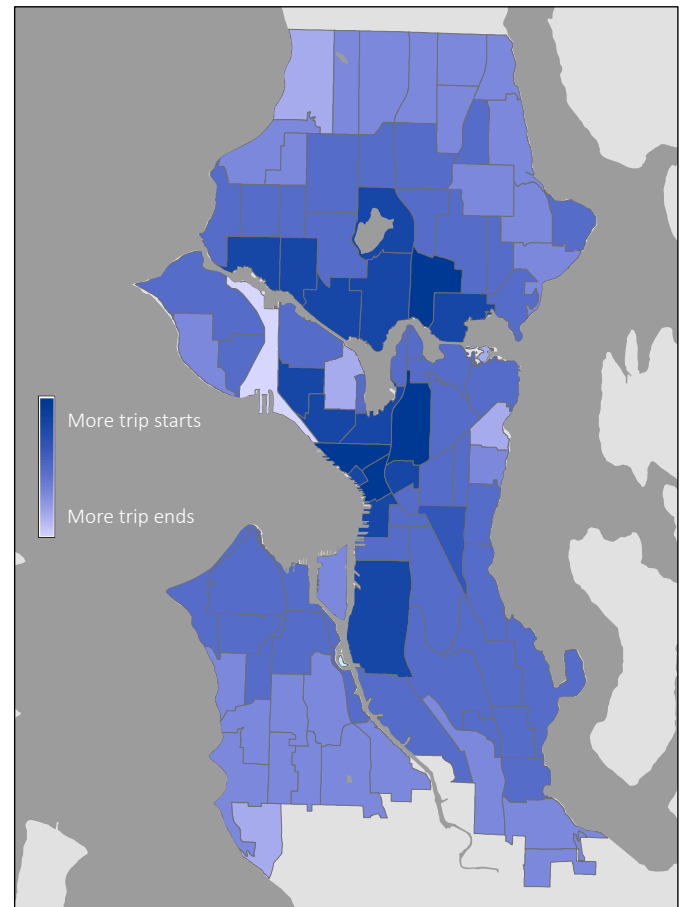


Figure 7: Map showing the difference between the amount of trip starts and the amount of trip ends by neighborhood.



Bike Availability

While trips began and ended throughout the city, we also wanted to understand where available bikes were located. Figures 8 through 12 show the average number of available bikes per day by month.

Early in the pilot, with fewer bikes, bike density was concentrated in the Center City and the neighborhoods north of the ship canal. However, as the fleet size grew throughout the pilot, the bikes spread to outlying neighborhoods and south into the Rainier Valley. This suggests that larger fleets contribute to bike share serving more of the city, including areas that have been traditionally underserved by affordable mobility options.

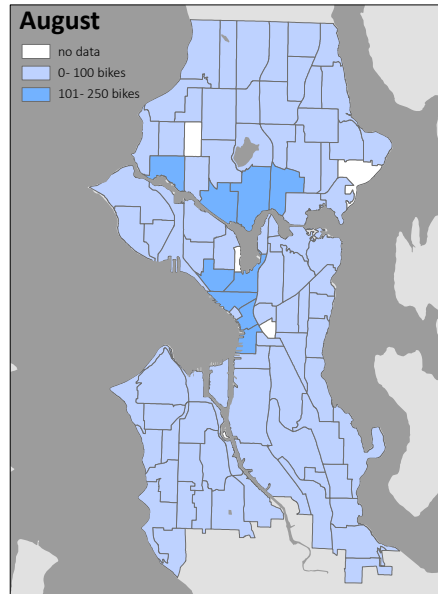


Figure 8: fleet size: 3,265

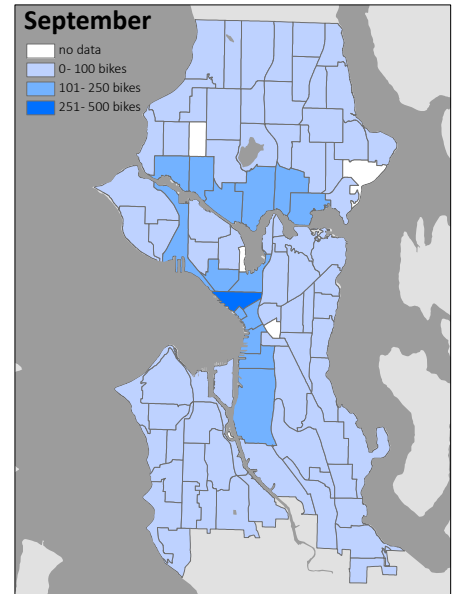


Figure 9: fleet size: 4,356

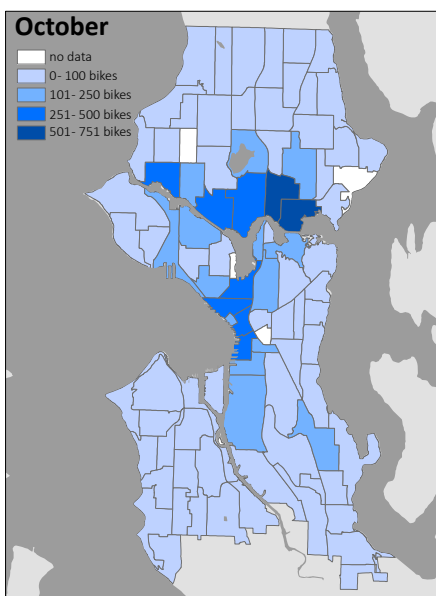


Figure 10: fleet size: 6,672

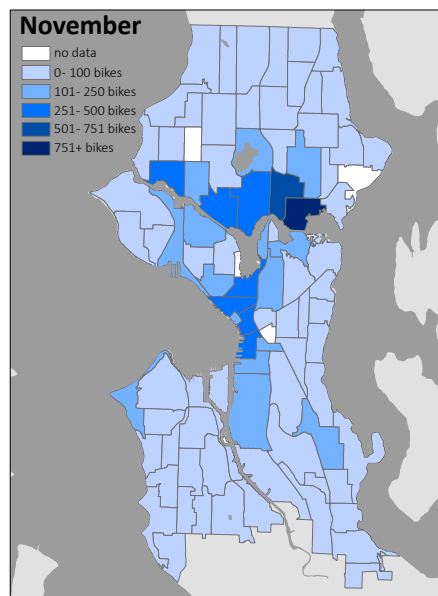


Figure 11: fleet size: 7,095

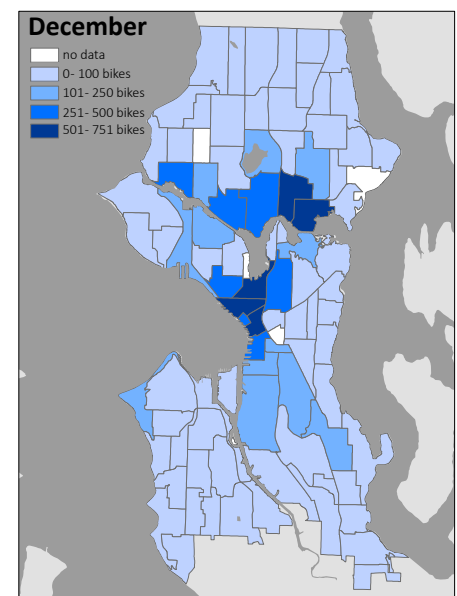


Figure 12: fleet size: 9,450

Daily Trip Times and Trip Types

Trip and survey data suggest that many people used bike share as a **mobility tool** for **utilitarian trips, first- and last-mile access to transit, commutes, and recreational trips**.

As shown in figures 13 and 14, an examination of trip distribution across weekday times and weekend times demonstrates¹:

- Weekday trips show a **pronounced PM peak** that corresponds with the afternoon commute
- A larger percentage of trips taken in the weekday **AM peak** hours than over the same period on weekends
- Weekends saw slightly more rides than weekdays, with 10% more rides on the average weekend day than weekday

With pronounced afternoon peaks, discernible morning peak usage, and comparable ridership on weekdays relative to weekends, it is clear that the system is being used for far more than as an additional recreation or exercise option.

User survey data confirms this interpretation. Survey respondents indicated they used bike share most often get to **social and leisure activities, errands and appointments, and to commute to work**. Only 6.8% of respondents listed “exercise and recreation” as their only use of bike share.

This diverse use of bike share is important. It demonstrates that bike share is helping people move about Seattle for a variety of reasons, rather than just work commutes or just recreation, and that bike share is a true mobility tool for more of the city.

¹Note that this data is concentrated on the fall and winter months, and a full year’s data including sunnier weather and tourist season may show different usage trends. Also note our survey limitations acknowledged on page 24.

Accessing Transit

User survey data also showed that respondents are using bike share to access Seattle’s **transit options**, with almost **75% having taken bike share to access transit** and 33% regularly accessing transit with bike share. By providing easy and convenient first- and last-mile connections to transit, bike share shows its value in augmenting rather than supplanting Seattle’s public transportation network.

LESSON LEARNED

Improve access to transit

Our citywide surveys showed that there is room for even more bike share ridership growth by better connecting bike share to transit. Over 60% of respondents said that they would use bike share more if connections to transit were made easy and reliable.



A construction professional using bike share

Weekday Trip Times

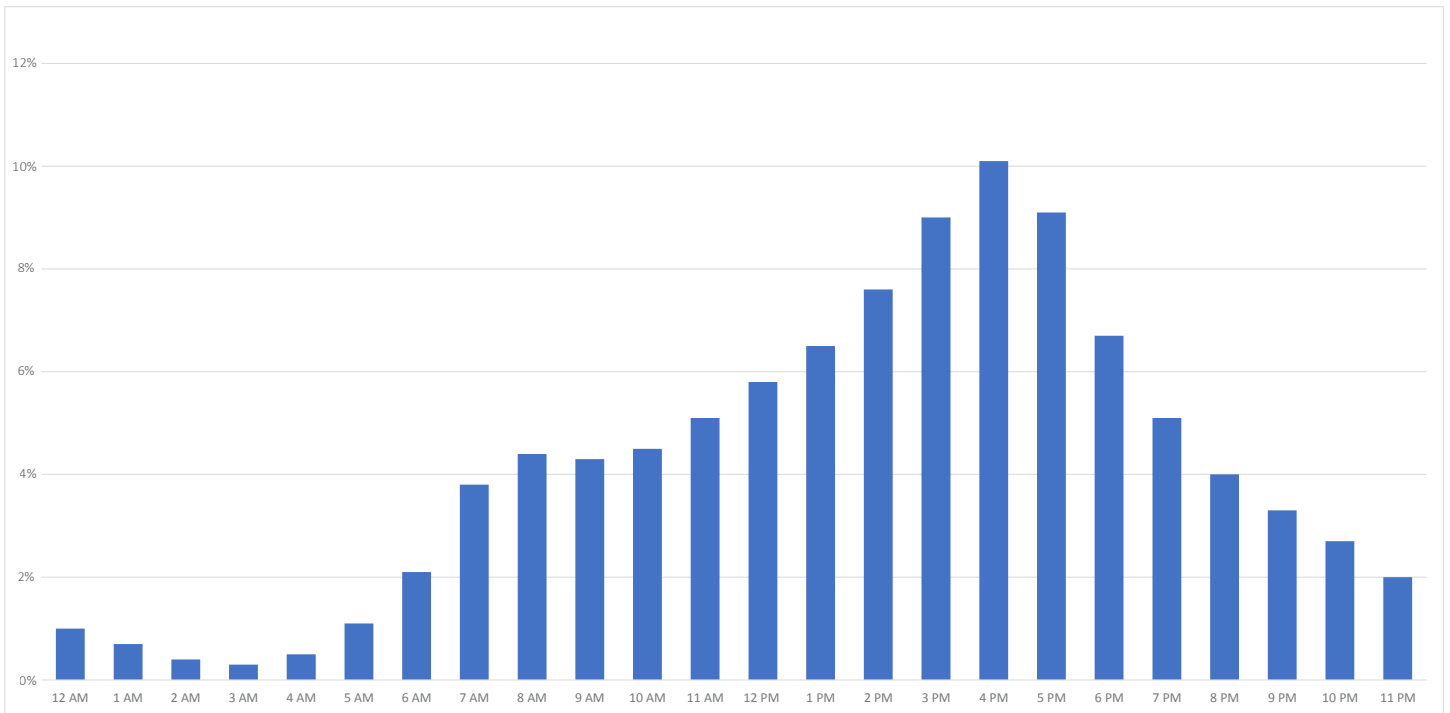


Figure 13: Weekday trips show a clear PM peak, and significantly more trips in the AM commute time than weekend trips.

Weekend Trip Times

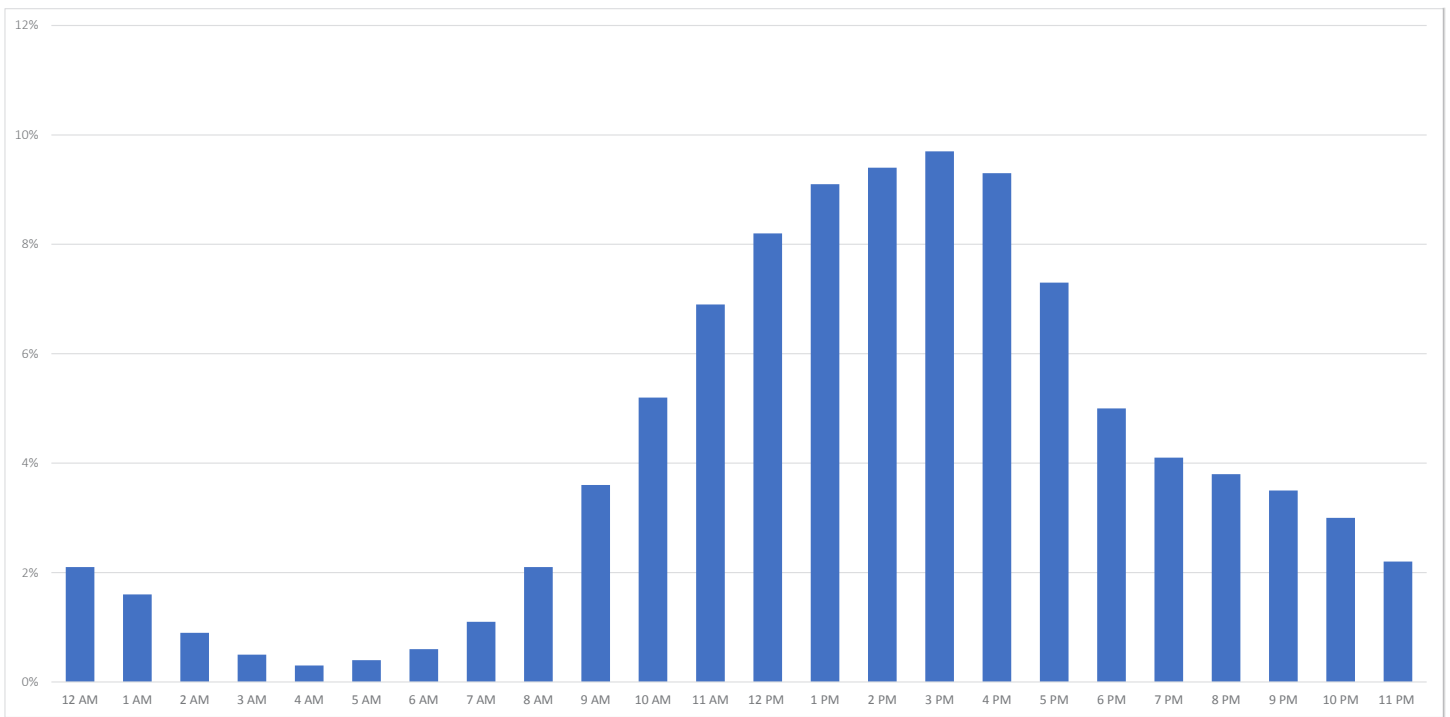


Figure 14: Weekend trips are more evenly spread through the late morning and early afternoon hours than weekday trips.

User Data

To gather user data, SDOT designed and administered two surveys - a company-issued user survey and a statistically valid city-wide survey of both users and non-users - to better understand who is using bike share in Seattle.

Number of users: The city-wide survey found that **1/3 of the sample had used free-floating bike share**, and 1/3 of non-users were open to trying the system in the future. This shows the pilot's success in bringing bike share to a large portion of Seattle and highlights the potential for bike share to capture even more riders.

Note that the number of unique rider identifications reported by the TDC, **137,214**, cannot be relied upon as a total number of users. We lacked the data to determine if a user used more than one vendor's system, and are therefore overcounted. Conversely, users at times share their account to rent bikes for others, and would therefore be undercounted. In a future evaluation, **more work is needed to estimate the total number of users**.

Gender: Both surveys showed around **2/3 of bike share riders were men** and **1/3 women** (Figure 15). This breakdown is similar to nationwide bike ridership in general. More research is needed to understand how transgender and non-binary people use bike share.

The city-wide survey also showed that, of people who have not ridden bike share, **more women are willing to try it than men**, with 35% of women who had not tried bike share open to using it in the future, versus 29% of men. This indicates there may be barriers that specifically keep women from participating in bike share. Future work needs to identify and lower these barriers and decrease the gender-participation gap.

Age: Both surveys found that the majority of bike share users in Seattle fell between **25 and 44 years old**, showing that more young people used bike share (Figure 16). More work is needed to expand ridership for those over 45. Note that this data was collected before electric-assist bicycles joined Seattle's fleet, and a future evaluation will investigate if e-bikes encourage bike share use to a larger age range.

Race: The city-wide survey found that about 1/3 of Seattle's white population and 1/3 of Seattle's non-white population had tried bike share (Figure 17). While more granular information is needed, this is a good indicator that the pilot bike share program was successful in serving a diverse population of Seattleites.

LESSON LEARNED

Tighter controls are needed on user surveys

As part of the pilot permit, each company was required to release an SDOT designed user-survey to help SDOT gain a better understand of who was using bike share and how they were using the system. However, operators gave users free rides for taking the survey, which may have biased the sample towards users who value free rides and find the system more useful. For future surveys, SDOT will need to either simplify the survey process or keep more of the survey work in-house to avoid these issues.

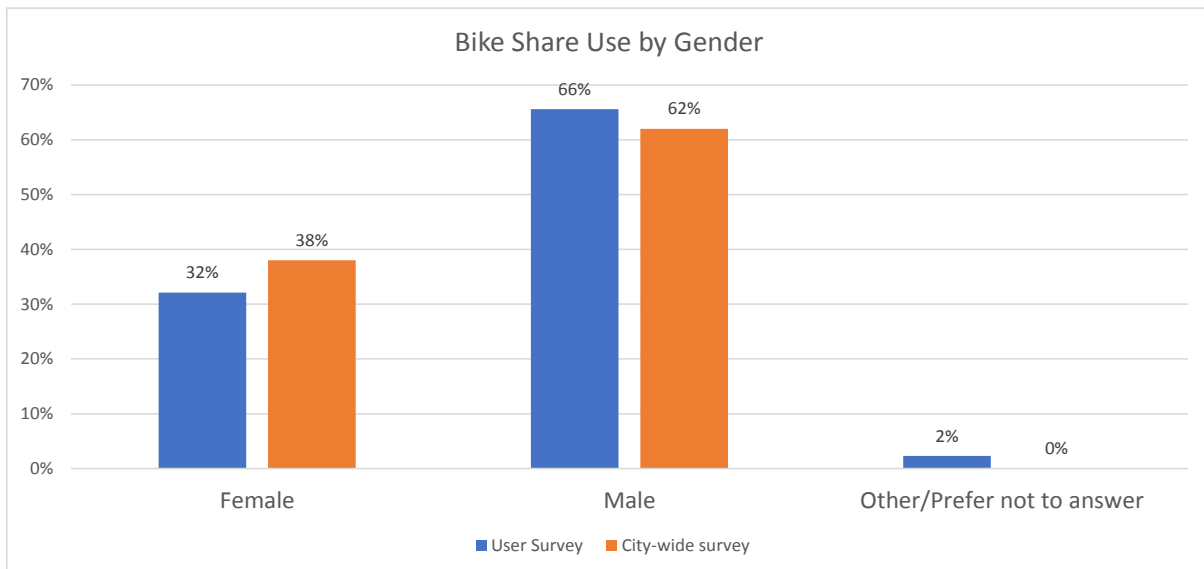


Figure 15: Bike share use by gender

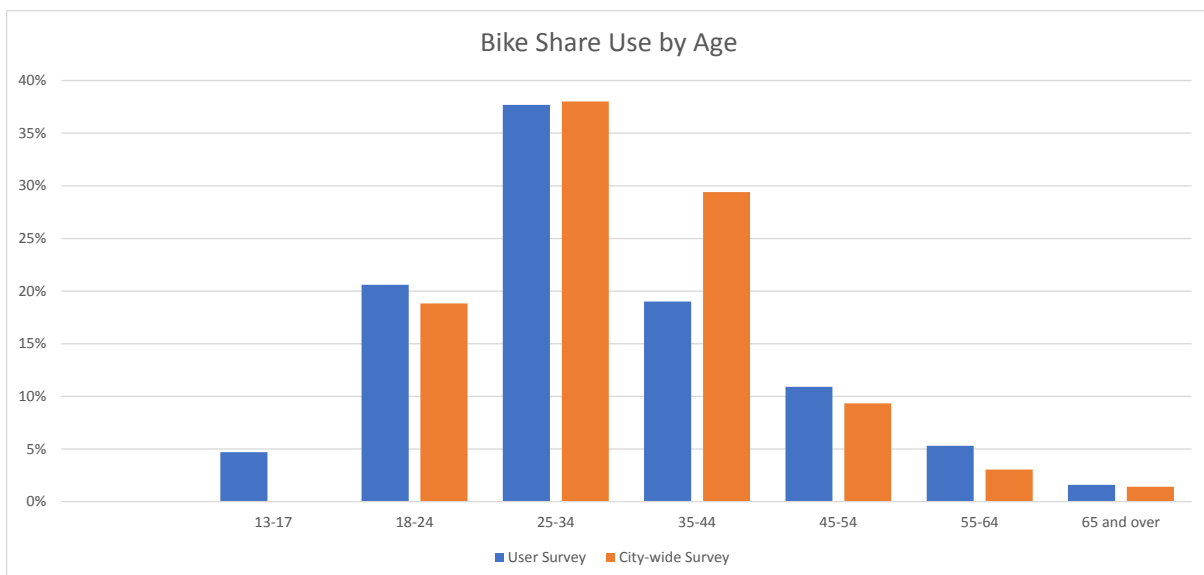


Figure 16: Bike share use by age. Note the large discrepancy between the two surveys in the 35-44 age bracket. This is likely related to sampling issues in the user survey

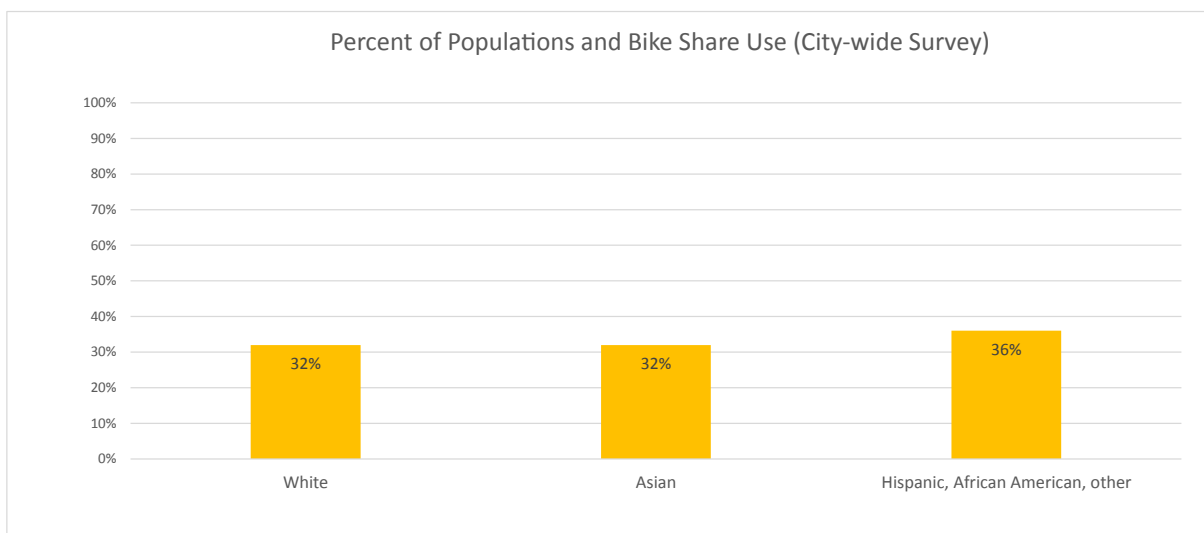


Figure 17: Percent of Seattle's White, Asian, and Hispanic, African American, and other populations that have tried bike share.

Elevation Gain and Loss

Seattle's hills are a significant factor in bicycle use and route selection, and could influence how people use a bike share system. As an example, a system that is used only for downhill trips presents challenges as bike share operators must constantly rebalance the fleet back uphill, and users that need access to bike share bikes in higher elevations may find it difficult to easily find a bike.

While many trips were downhill, the average bike share ride was relatively flat, with an elevation change of only -4.7 feet per ride. Almost 70% of trips didn't lose or gain more than 50 feet of elevation. This indicates that people were avoiding Seattle's steep topography and stuck to predominantly flatter routes. While the data indicates Seattle avoided the prevailing "downhill shuttle" scenario, there is still room for improvement, as bike share should be a mobility tool for all destinations in Seattle, and not just those on flatter routes.

Accordingly, LimeBike launched e-assist bicycles in Seattle after the data-collection period. While these bicycles were not included in this evaluation, future evaluations should assess the benefits and use patterns of e-assist bikes. We hope that e-assist will encourage users to tackle hillier terrain, open new routes to bike share users, and extend the benefits of bike share to more people.

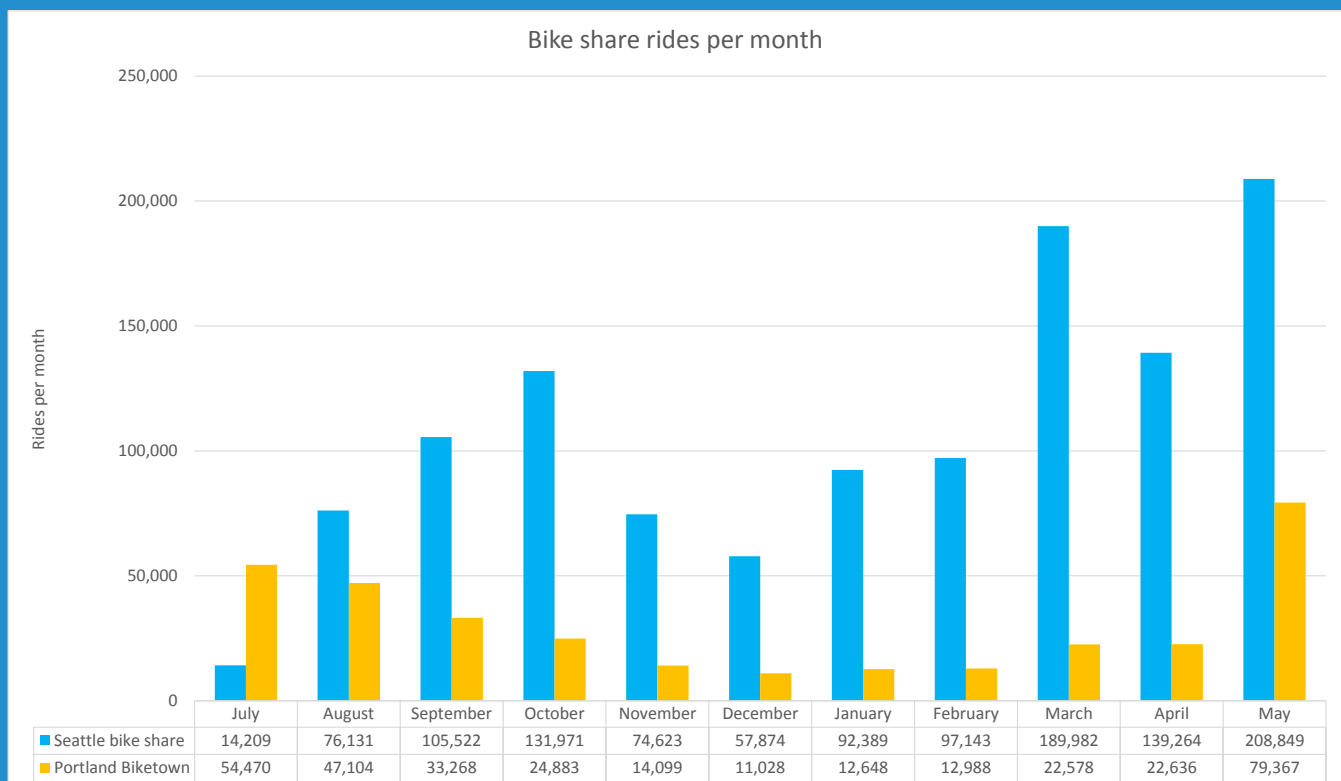
2018 RIDERSHIP UPDATE

While this evaluation focuses on the pilot data collection period of July through December, 2017, the bike share companies continue to share data with the UW Transportation Data Collaborative. In June, 2018, the TDC shared a ridership data update with SDOT that is included below.

That update shows **that ridership continued to grow** as the weather improved, fleet management improved, and people became more familiar with the system. After a quieter December, ridership dramatically increased in January and February. By May, there were over **200,000 rides per month**.

Highlights

- Over 1.3 million rides through May, 2018
- Average of over 7200 rides per day from June 1 to June 19, 2018
- Fleet sizes remained static between 9000 - 10,000 bikes
- A rainy April led to lower usage



SEATTLE'S BIKE SHARE EXPERIENCE

Measuring impacts to the people of Seattle and Seattle's

The experience of bike share and its impacts goes far beyond the story that ridership and system data alone can tell us. During the bike share pilot program, SDOT pushed to understand those qualities that go beyond the system data, including:

- The impacts of bike share on people's lives, both positive and negative;
- The impacts of bike share on Seattle's parks, sidewalks, public spaces, and privately-owned land;
- The impacts on people with disabilities, both in using bike share and in trying to navigate Seattle's sidewalks; and
- How the program is viewed and used by Seattle's low-income communities and communities of color.

Strengths:

- Almost 3/4 of Seattleites view the bike share program favorably
- Bike share offers an additional mobility option for some people with disabilities
- Bike share reaches all areas of the city, and is widely accepted by Seattle's low-income communities and communities of color

Challenges:

- Too many bikes are parked incorrectly, blocking sidewalks, curb ramps, transit access, loading zones, and more. This is especially hazardous and restrictive to people with disabilities
- Even properly parked bikes can pose a hazard to people with vision impairments



General Public Opinion

As part of the bike share evaluation, SDOT wanted a firm grasp of public opinion surrounding the pilot program. To achieve this, we took a multi-faceted approach, contracting with EMC Research on **a statistically-valid city-wide survey** of adults with internet access (Appendix C), and releasing a shorter version of that same survey on Survey Monkey (Appendix D) to gather even more public opinion. We also compiled and analyzed all emails and phone calls to SDOT on the subject of bike share during the pilot period to understand the main concerns of the people who took the time to reach out (Appendix F).

The two surveys showed that people are overwhelmingly favor bike share, with the EMC survey showing that **almost 3/4 of the city has a favorable opinion of bike share**. The self-selected Survey Monkey survey also showed

strong favorability, but with people more likely to have a strong opinion rather than more neutral opinions or no opinion (Figure 18).

Public comments received tell a drastically different story, with **85% of all comments received voicing an overall negative opinion** of Seattle's bike share pilot program. These comments are important, and they highlight the areas where bike share needs improvement, but it is also important to note that the high percentage of negative comments *does not* indicate that the public as a whole feels negatively towards the program.

While it remains critical to acknowledge and work to solve the negative issues raised in the comments received, it is also important to acknowledge that, for most of Seattle, bike share brings valuable benefits to the community that should be further pushed and explored.

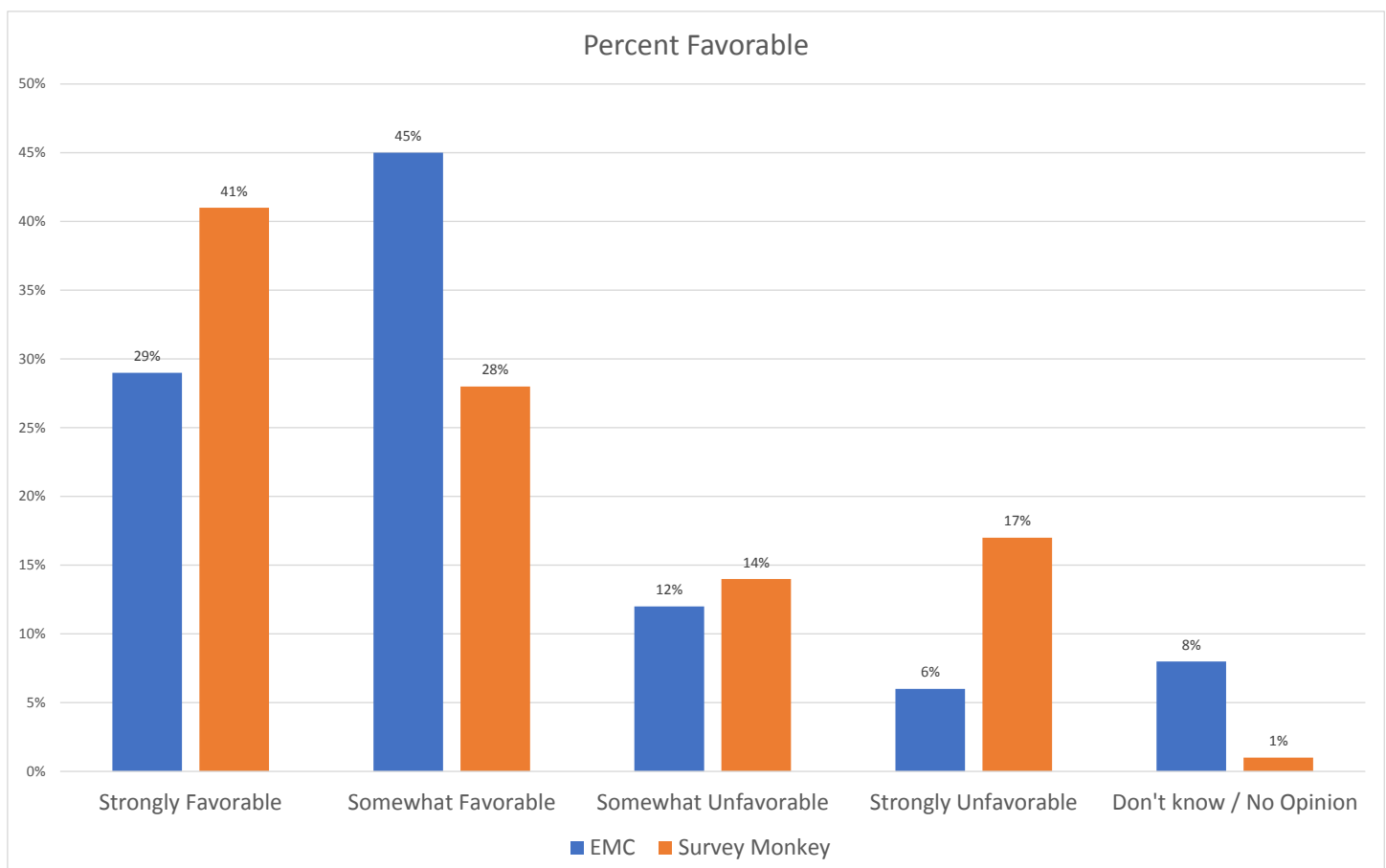


Figure 18: Overall public opinion of the bike share program

Successes of bike share

In addition to learning that people hold favorable opinions about bike share, we also learned why. The EMC statistically-valid survey gives us good insight into these answers.

Eighty-three percent of respondents agreed with the statement that **the bike share program helped reduce carbon emissions.**

As the most agreed-to “success” statement in the EMC survey, this suggests the potential of reducing carbon emissions is important to the respondents, and further suggests that they see adding carbon-reducing transportation options as a positive development.

74% agreed that **bike share lets them ride a bike without having to bother with secure storage or worrying the bike will get stolen.** An additional 66% agree that it is **easy to rent a bike through the smartphone apps.** These statements indicate that by making biking simpler and worry-free, more people will consider bikes as an option for moving around the city.

Finally, 70% agree that **bike share gives them more options for recreation and exercise,** while 66% agree that **bike share makes it more fun to move around the city.** These strong agreements show the importance of joy, exercise, and recreation in these programs. Seattleites see bike share as sources of healthy fun, and these views should be encouraged along with the more utilitarian benefits of bike share as a mobility option.



Drawbacks of bike share

It is also vitally important to understand what didn't work about the pilot program. The EMC survey shows **three clear drawbacks**: bike parking behavior, bike riding behavior, and bike infrastructure.

1. Bike parking needs to be improved.

Sixty-eight percent of respondents believe that too many bikes wind up toppled over, littered in parks, and left in other places they don't belong. An additional 60% are concerned that too many bikes are parked in the middle of sidewalks and curb ramps, inhibiting travel for those with visual or physical disabilities. These views were echoed in the comments sent directly to SDOT, with over half of all complaints addressing the incorrectly parked bikes.



Bikes can end up toppled over and misparked.

2. People also felt that **bike share leads to an increase in poor riding behavior**, with 59% agreeing to the statement that bike share increased the number of cyclists on the road who don't know or follow the rules. Also, 62% felt that too many bike share users ride without a helmet. While not directly echoed in phone and email comments received, over half did mention pedestrian, bicycle, or car safety as a drawback of bike share. Fourteen percent mentioned lack of helmet use and 6% directly mentioned rider behavior.

Importantly, neither of these statements are because there are more bike share crashes or serious injuries; the data shows that bike share remains a safe transportation option. It does show, however, that better riding behavior is important to people and could reduce traffic stress and the perceived potential for conflicts.

3. Fifty-five percent of people agree that there are **not enough bike trails or protected bike lanes where they want to go**, suggesting that a lack of bike facilities is keeping people from using bike share, and bicycles in general, as a mobility option.



Many people choose to ride without helmets.

Bike Share Parking

Surveys, public comments, outreach meetings, and our own observations all indicated that the largest drawback of Seattle's free-floating bike share pilot was a lack of bicycle parking management. Without docking stations, users are supposed to park the bikes in a paved furniture zone area, avoiding the pedestrian path, curb ramps, and corner areas. Additionally, bikes cannot block transit zones, loading zones, or business access.¹ Unfortunately, people did not always abide by these rules, and bikes have been mis-parked, blocking sidewalks, curb-ramps, bus access, as well as dumped in parks, water bodies, on train tracks, and other inappropriate places.

To quantify how people are parking, SDOT surveyed how all bike share bikes were parked in seven Seattle neighborhoods where bikes were frequently parked, capturing commercial, industrial, low-rise residential, single-family, and mixed commercial land-use types. SDOT staff completed the study between October and December 2017.

The study found that, city-wide, **70% of bikes were wholly compliant with permit parking guidelines, 26% were non-compliant but not impeding access, and 4% were non-compliant and impeding access** (see Appendix G for full study). These findings roughly matched two independent studies done in Seattle. Toole Design Group released a November 2017 study that found 76% of Seattle's bikes were parked correctly, and 6% were causing obstructions. And also in December 2017, the Portland Bureau of Transportation studied bike share parking in Seattle and found that 87% of bikes were parked correctly, but with 10% "completely or partially blocking access or pedestrian movement." While methodologies of the three studies differed, **even 4% of bike share bikes blocking pathways constitutes too many**, especially considering that needed ADA-required access may be obstructed. Further work is needed to reduce the number of mis-parked bikes.

Interestingly, SDOT's study found **single-family zones had the highest percentage of mis-parked bikes**. These areas generally lack wide sidewalks or paved furniture zones, leaving the 6' pedestrian path as the only place for people to park. In commercial zones, only 16% of bikes were non-compliant, and only 1% blocking access. These findings suggest that in many instances, users will park correctly if there is space to do so, but end up blocking sidewalks and access if they cannot find suitable parking.

LESSON LEARNED

Vendors need to be proactive in managing parking compliance

To manage parking, the pilot permit required companies to move mis-parked bikes within **two hours** of receiving a complaint or notification during business hours, and ten hours otherwise. Throughout the pilot, all 3 operating companies had difficulty consistently meeting this target time frame. This non-compliance, combined with our findings that too many bikes are blocking access, shows that this reactive, complaint-response approach does not work in effectively managing the right of way.

Even if the complaint-response mechanism worked, mis-parked bikes could still block ADA-required access for up to two hours. A future permit will need to be more proactive in compelling companies to ensure that bike share does not restrict ADA-required access.

¹For full parking rules during the pilot period, see the "Parking" section of the Pilot Permit Requirements in Appendix A.

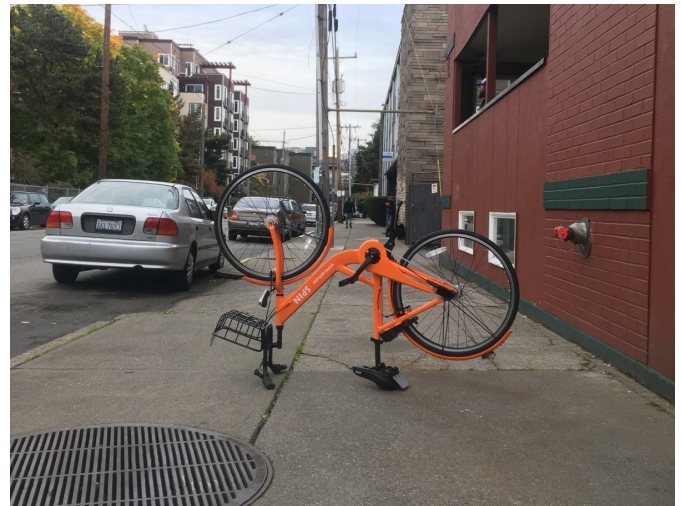


Landscape/Furniture Zone

Pedestrian Zone

Frontage Zone

The pilot permit required that bikes be parked upright and on hard surfaces in the sidewalk landscape/furniture zone.



This bike is improperly parked. Not only is it upside-down, thus making it more difficult to move, but it is parked in the middle of the pedestrian through zone and blocking the sidewalk.



These two bikes have been parked according to the permit, and do not block the sidewalks, curb ramps, business, transit, or loading access.



These bikes are mis-parked for several reasons. The nearest bike is not upright and is partially blocking the sidewalk. None of the bikes are parked on hardscape.



This bike, parked at an SDOT bike rack, is properly parked according to the permit.



These two bikes are parked in a hardscape furniture zone, but also in a busy transit loading area, blocking access. Therefore, these bikes are mis-parked.

Impacts to People with Disabilities

Early on in the bike share pilot, we saw that free-floating bike share had the potential to have an disproportionate negative impact on people with disabilities in Seattle. While we've heard that bikes and e-bikes have provided an additional mobility option to many people with mobility challenges, we also know that some bikes can obstruct necessary access, pose a tripping hazard, or block navigation cues used by those with low vision or mobility difficulties.

To better understand how people with disabilities experienced bike share, SDOT issued a survey targeted for people with disabilities, held a public meeting to discuss the issues, and engaged community groups.

The survey, public meeting, and observations all confirmed **that mis-parked bikes can be a hazard for people who have vision or mobility-impairments**. Especially when blocking curb ramps or other constrained areas, a bike that may be a simple annoyance to some can be an insurmountable obstacle to others. Even bikes parked seemingly out of the way can pose a hazard. A bike parked tightly next to a building can **block the path of a person who is blind or has low vision** and uses that building for navigation.

We heard that **requiring companies to move mis-parked bikes is not good enough**. If a bike is blocking someone's path, having it moved within two hours does not help that person reach their destination. Bikes need to be parked responsibly by each user.

However, we also heard that bike share has helped some people with mobility limitations who find that cycling is more manageable than walking or driving. Electric-assist bikes can greatly expand this potential use. Also, we heard that adaptive cycles such as tricycles, recumbent bikes, tandems, and others all have the potential to greatly increase the accessibility of bike share for users of different abilities.



While this bike may appear to allow plenty of room to pass, it still poses a hazard to those with mobility difficulties or low-vision. Placement along the building frontage puts bikes in the path of people who are blind or low-vision and use the building to help navigate.



Adaptive cycles can bring bike sharing to people with diverse physical abilities. Detroit's MoGo system launched 13 adaptive cycles in May, 2018 to bring bike share to a new audience. (Photo courtesy of MoGo Detroit).

Bike Share Equity Analysis

Seattle's recent growth has not only strained our transportation system, it has deepened the income inequality gap along racial demographics and contributed to displacement, especially in communities of color. Transportation is the second largest household expense, thus SDOT is committed to safe, affordable, environmentally sustainable, and accessible transportation options.

Free-floating bike share, at about \$1 per ride for conventional bikes, is **lower in cost than most transportation options**, including reduced-fare transit. However, for bike share to be an equitable mobility option, it must accrue economic and transportation service benefits to Seattle's low-income communities and communities of color. This requires ongoing engagement with these communities about the opportunities and the incorporation of their input into the service design, delivery, and operations.

Data collected during the pilot indicates that **bike share reached many neighborhoods that have a high displacement risk and low access to opportunity**, which are two indices Seattle uses to determine equity concerns. With above average ridership through much of Beacon Hill and Rainier Valley, the pilot showed initial success in reaching some of these communities. However, the far south, southwest, and northern parts of the city saw far less ridership in some of the areas of highest equity priority. More work is needed to offer bike share to these outlying neighborhoods.

Likewise, free-floating bike share and the supporting operation that make the system run is **an opportunity for economic inclusion and workforce equity**, so the benefits accrue directly to people of color and high priority equity communities. During the pilot, one company voluntarily participated in local hire programs specifically around veteran and homeless hiring. While the City has limited oversight in permitted vendor hiring

practices and operation, SDOT aims to work with permitted vendors to encourage local hire practices among high-priority equity communities.

In addition to our geo-spatial equity analysis, SDOT met with community groups and community partners to determine what barriers were keeping some of the low-income communities and communities of color from using bike share. We found there were seven main barriers:

- **Bike access barriers** - There are simply not enough bikes in some of these neighborhoods for the communities to access or rely on bike share.
- **Technology access barriers** - Not all people have access to both a smartphone and data plan, and although companies offered non-smartphone plans, they were little advertised and little used.
- **Banking barriers** - Bike share use often required a credit card or bank account to participate, adding more barriers to those who may benefit the most from the service.
- **Knowledge barriers** - Potential riders depend on access to marketing or word-of-mouth information that expand knowledge about the potential benefits and uses of bike share, as well as how to use the system. Our community conversations revealed that many people didn't understand the bike share system or how to access it.
- **Financial barriers** - Although conventional bike share prices are relatively low-cost, electric-assist bikes are a growing portion of the bike share fleet and come with significantly higher prices. Bike share must remain a financially accessible option for all Seattleites.
- **Helmet access barriers** - We heard that many people lack access to a bike helmet. Not only is this a safety concern, but it increases the likelihood of police encounters which can be an especially stressful for people of color. Community partnerships, educational campaigns, and ensuring helmet access could lower this barrier.

- **Language barriers** – Bike share companies apps and marketing materials are not available in the broad range of languages spoken in Seattle.

More work is needed to ensure that bike share is addressing the above barriers *and* meeting the needs of Seattle’s high priority equity communities. SDOT will need to conduct more thorough and targeted outreach and engagement to determine how to best lower the barriers to bike share usage so that the system can become a viable transportation and recreation option for all of the city. Additionally, there is opportunity and growth potential for the vendors and SDOT to partner with community-based organizations to create educational and capacity building programs, job pipelines, and career pathways in this emerging sector.

LESSON LEARNED

Adjust permit fees to cover a comprehensive and ongoing outreach and engagement effort

Due to a lack of funds, this evaluation does not include a strong enough outreach and engagement component that targeted Seattle’s low-income communities and communities of color. While our data-collection and survey efforts give some insight, a future permit and evaluation will require a much more comprehensive outreach and engagement effort to better understand the impacts of bike share on these communities and inform future permit iterations to reflect those lessons learned.

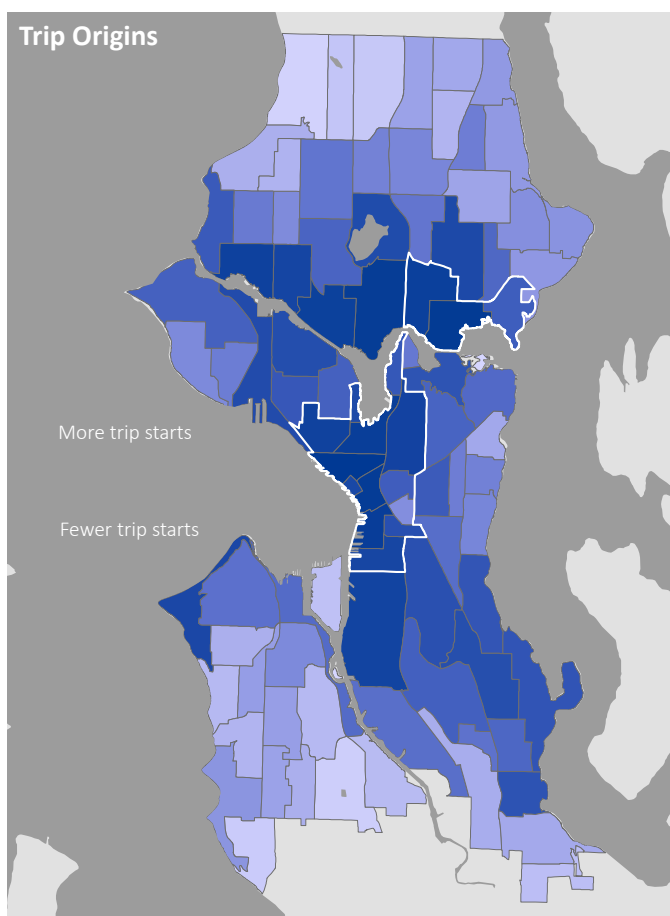


Figure 19: Bike share usage was concentrated in the Center City, but saw significant usage in the southeast area of the city as well. The far north, south, and southwest parts of the city were not well served by bike share.

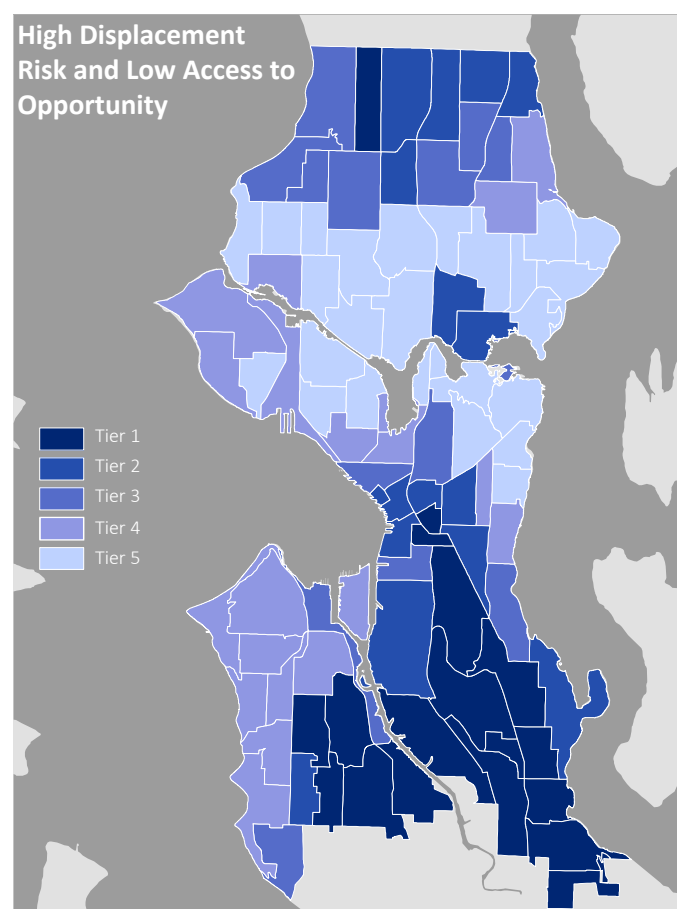


Figure 20: Seattle neighborhoods with a high displacement risk and low access to opportunity (represented by Tier 1 and 2 neighborhoods) are concentrated in the southern and northern portions of the city, with the highest concentration centered around Rainier Valley.

CONCLUSION

Free-floating bike share has revolutionized shared mobility over the past twelve months. What started in Seattle as the first permit program in the country to offer free-floating bikes has since spread to over 30 cities across the country. Being the first permitting program of its kind in the country required SDOT to utilize values-driven permit requirements that put people and data at the forefront. As a result, the program yielded unique insights and quantitative data that will help to inform future iterations of the free-floating bike share program as well as provide innovative leadership for other cities.

This evaluation aimed to answer the fundamental question: Should SDOT continue to support a free-floating bike share program? Based on the findings outlined in the chapters above, the Seattle free-floating program met or exceeded the quantitative metrics of the previous docked program (total trips, miles traveled, number and diversity of users, etc.). While performance of the qualitative metrics was less conclusive, it signaled a generally positive attitude about the program and identified key themes for improvement. Below we summarize key highlights and challenges of the evaluation period and make recommendations for the next iteration of a free-floating bike share program.

People-First Design

By placing an emphasis on people, free-floating bike share served all neighborhoods of Seattle. This coverage ensured that Seattleites and visitors, regardless of where they lived or worked, could potentially access the program. As a result, the free-floating program saw ten times the number of rides in a six-month period than Pronto! did during the same time frame in 2016. Data obtained from the companies showed that trips were indeed originating and ending across the City, demonstrating demand for these services outside of the original Pronto! service area, which included the Center City, Capitol Hill, and the University District. With a people-first approach, SDOT created a **flexible initial goal-oriented permit** that did not over-prescribe requirements during the pilot phase. This allowed the City to administer the program at **no cost to taxpayers**.

Survey results found that **free-floating bike share riders were as racially diverse as the city**, indicating that wide geographic access and low-cost led to wide and diverse support. Riders indicated that they used bike share to access transit, get to social outings and appointments, commute to work, or simply ride the bikes for fun. This showed that the people-first approach encouraged users to incorporate bike share into their daily lives, rather than for just a specific trip type. The people-first approach led to a popular program, with 75% of survey respondents from the city-wide survey sharing a favorable opinion of the program and 33% reporting trying out free-floating bike share during the first six months of operation.

Listening to the Public

Taking a people-first approach requires listening to users and non-users alike. Despite overall positive responses in city-wide surveys, 85% of the unsolicited comments that SDOT received on the program were negative. While most customer inquiries for City programs are complaint-based, these unsolicited comments indicate that the free-floating bike share program has room for improvement.

Most of the complaints and suggestions centered on a few themes: **inappropriate bike parking, lack of helmets, poor rider behavior, and education and access**. Inappropriate bike parking impacted people by blocking physical access to critical infrastructure (e.g., bus loading zones, curb ramps, etc.) and causing potential safety hazards for people with disabilities. Even where access issues were not relevant, illegal bike parking elicited a strong responses from some residents.

SDOT intends to reduce bike parking issues through different permit requirements, incentives offered to the companies, and better education and awareness for system users. SDOT is currently experimenting with designated bike parking areas in an effort to limit bike clutter in high pedestrian zones. SDOT understands the importance of building strong community partners to champion the benefits of free-floating bike share across all Seattle neighborhoods, including low-income neighborhoods of color. This should help to close the gap in awareness and access that was evident based on community-driven conversations on this topic.

Data-Driven Results

Seattle's pilot permit required that service providers provide trip data that included origin and destination information, total trips, and available bikes. The permit also required that companies survey their users to understand use trends, perceptions, and attitudes toward the pilot program. As a result, the pilot period yielded rich insights not found in other cities. We received information about where people were traveling to and from by neighborhood, popular days and times of day (weekends and afternoon peak period), and where bikes were available (i.e., density and distribution). Companies were also required to survey users as a part of the permit requirements. Additionally, we commissioned a citywide survey and a parking study to better understand resident perceptions and rider behaviors. This combination of quantitative and qualitative data together painted a cohesive picture of the program and helped SDOT understand areas of success and areas for improvement.

Data Challenges and Opportunities

Collecting data requirements for a new industry did not come without challenges. Docked bike share programs (like Pronto! Cycle Share) with fixed fleets, kiosk-based payment, and station-based maintenance use a consistent set of metrics, which have been truth tested over many years and in many cities. Free-floating bike share systems are fluid and dynamic by design, requiring new ways to measure success. Thus, established docked system metrics do not align perfectly with free-floating success criteria. For example, docked systems measure efficiency using rides per bike per day to maximize rides on a limited number of bikes (tied to dock parking). However, in a free-floating system, availability and distribution are better measures of reliability and access. SDOT seeks to design new metrics to capture these unique characteristics.

The unique data partnership established for this pilot—including SDOT, UW, and the permitted companies—struggled to align on a definition of “fleet size,” as free-floating fleets have a larger number of unavailable bikes (i.e., non-revenue or broken bikes) than docked fleets. The next iteration of the free-floating bike share permit will address this issue with more clarity around “available bikes” and other metrics.

The emergence of app-based mobility services ushered in new transportation options, but also new data and privacy considerations. Cities are leveraging these services’ data collection capabilities to access insights such as routing and origins and destinations. This data can help SDOT better understand travel behaviors and align infrastructure investments in a strategic way. SDOT will continue to balance the need for these insights with customer privacy considerations and commit to evolving our permit over time to align with new industry standards and regulations. SDOT is also working closely with other city leaders to align on standardized free-floating bike share metrics to allow for better comparisons between city programs.



MEASURES OF SUCCESS

Measure of Success	Metrics Used	Score	Justification
			
Ridership	Total trips		With 468,976 rides in the pilot period, ridership showed the utility of a free-floating system.
Geographic Coverage	Amount of city covered		Bike share covered the entire city , with good ridership in many areas dock-based failed to cover. However, the far north and south portions saw little ridership and few bikes.
Equity	Coverage, usage, low-barrier options, and outreach		The evaluation showed that the system covered the entire city, but more work is needed to reduce barriers to access and ensure that bike share is an equitable system.
Safety	# of collisions per 1 million trips		With 0.01 collisions per million trips and no reported serious injuries , bike share is a safe mobility option.
Parking Compliance	% of bikes incorrectly parked and blocking access		While our surveys showed most bikes were parked correctly, 4% were blocking hazards. This is too many blockages.
Disabled Access	Parking issues and bike availability		Too many bikes block access , and while bikes, and especially e-bikes, can be an option for those who have difficulty walking or driving, no adaptive bikes were launched in the pilot.
Maintenance	% of bikes in good working condition, % of bikes with safety hazards		With limited operating funds, SDOT did not independently survey fleet maintenance. This will be an important piece of future evaluations.
Public Opinion	Favorability and issues		Our surveys showed that 74% were favorable towards the system.
Cost	Total public subsidy		Permit fees collected from the companies covered all city costs , keeping bike share free of public subsidy.

RECOMMENDATIONS AND NEXT STEPS

Shaping an iterative approach

Based on the successes and lessons learned in the pilot program, SDOT is making high-level recommendations to include in the next iteration of a permit. Those recommendations fall into two broad categories: **permit structure** recommendations focused on shaping the permitting approach, and **permit requirements** that address overall operational lessons learned.

Permit Structure

Recommendation: Stay flexible and continue to learn and adjust. In January 2017, free-floating bike share did not exist in the United States. Only 12 months later, over 44,000 bikes were spread across over 25 cities. Over the next 12 months, we expect that pace of change to continue or accelerate, and that is why SDOT is committing to an **iterative annual permit**, giving us the flexibility to learn and adjust as the city and the industry evolve.

Recommendation: Establish a regional approach to bike share management. SDOT's bike share pilot showed that people used the bikes to not only travel throughout Seattle, but also into neighboring communities. To allow bike share to be a region-wide transportation option, SDOT is collaborating with neighboring cities to make bike share permits as consistent as possible from a user perspective.

Recommendation: Consider allowing more companies. In an evolving field, it is important that SDOT builds competition and resilience into its permitting structure. Competition will likely continue to lower prices, ensure the availability of well-maintained bikes, and foster technology developments. Additionally, multiple vendors give the system needed resiliency if companies consolidate or fail as the market matures.

Recommendation: Right-size the fleet to meet unmet demand. The pilot evaluation showed that there was unmet demand for bike share, with ridership rising with fleet growth through October. Additionally, as the fleet grew more bikes were available in outlying neighborhoods. To encourage continued ridership growth and coverage growth, SDOT recommends allowing controlled fleet growth.

Permit Requirements

Recommendation: Compel companies to improve parking behavior. SDOT's bike share evaluation showed that too many bikes are parked incorrectly, blocking sidewalks, curb ramps, and transit access. In future permits, SDOT will require that companies submit comprehensive parking plans with permit applications. Companies with superior plans will be more likely to receive a permit.

Additionally, SDOT will enforce parking requirements in a proactive manner by continually auditing parking compliance by each company, and taking enforcement actions against vendors that do not meet minimum standards. By setting clear goals and parking standards but allowing companies to design methods and programs for meeting those goals, SDOT will be able to test different methods that will inform future permit iterations.

Recommendation: Build capacity for all bikes including shared bikes and personal bikes.

While bike share companies need to do much more to ensure good parking behavior, SDOT can build clarity and capacity for bike parking by **installing designated bike parking areas**. These locations, prioritized in high-use areas and near transit, will add the needed capacity for free-floating bike share without negatively impacting the public realm. Before bringing these spots to communities, SDOT will work with the local communities on siting and design to maximize the benefits while minimizing negative impacts.

Recommendation: Ensure that bike share serves Seattle equitably. The pilot evaluation demonstrated that free-floating bike share did far more to serve Seattle equitably than our previous dock-based system, but more needs to happen to ensure that bike share is an equitable transportation option. SDOT's future permit will require citywide coverage and that bikes are available in areas with a high displacement risk and low access to opportunity. Additionally, SDOT will require that companies have low-income access plans and plans to allow people that lack smartphones, data plans, credit/debit cards, and/or bank accounts to use the system.

Recommendation: Clearly define all terms and data standards. In the brand-new industry of free-floating bike share, there is a lack of cohesion and understanding around regulatory terms and data standards. For instance, a "fleet size" can mean any bike within the city, even if the bike is in warehouse storage or undergoing maintenance, or it can mean only those bikes deployed on the street and available for rent. These terms and data standards need to be agreed upon and defined in a bike share permit.

The Seattle Department of Transportation
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PO Box 34996
Seattle, WA 98124-4996
206-684-ROAD (7623)
www.seattle.gov/transportation



Seattle
Department of
Transportation

8.2018

WS134



CITY OF MILWAUKIE

E-Scooter and E-Bike Share Program



Program Overview and Potential Community and Staff Impacts

Peter Passarelli
Public Works Director

Natalie Rogers
Climate Action and Sustainability Coordinator

E-bike and E-scooters are motorized alternative transportation options subject to local code

E-Bikes

- Not subject to Oregon Vehicle Code
 - Regulated like conventional bikes if under 20mph
- Not allowed on sidewalks or walking paths
- 16 y/o minimum age
- Yield to pedestrians
- Helmets **not required**



E-Scooters

- Subject to Oregon Vehicle Code
 - Max speed 15mph
- Not allowed on sidewalks or walking paths
- 16 y/o minimum age
- Yield to pedestrians
- Helmets **required**



City of Portland implemented an e-scooter pilot program from July 23 – November 20, 2018



- Four month feasibility pilot
 - Mobility, equity, safety, climate action goals
- 0.7-0.8 FTE -program management
- 0.2-0.3 FTE –data management
- Three operators: Skip, Lime, Bird
 - 2,043 permitted scooters total
 - 15 mph maximum speed cap
 - Independent rate setting by operators with city surcharge
 - Outreach and education requirements for operators

700,369
total rides

62%
Portlanders
with positive
review

34%
rides
replaced
local car trips

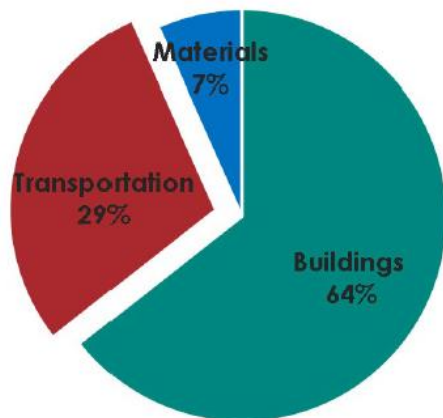
\$212,077
permits and
fees
collected

\$287,282
admin, outreach
and evaluation
costs

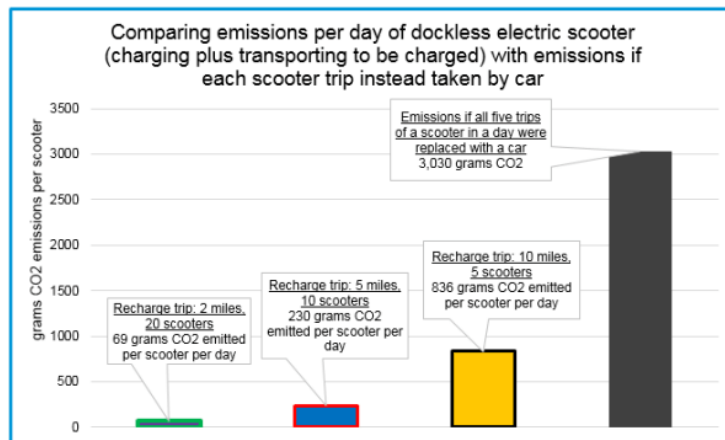
Community and City Goal Considerations

Climate Action Plan Goals

- Aligns with land use and transportation section goals
- Promotes transportation mode shift
- Lowers carbon emissions from transportation
- May close gap in carbon emission targets for net zero



City of Milwaukie Emissions
(CO₂e)



Note: In each case, 28 grams of CO₂ per day come from the recharging of the scooter while the rest comes from driving around to collect and redistribute them

ChesterEnergyandPolicy.com

Community and City Goal Considerations

Transportation Connectivity

- Transportation System Plan travel choices and sustainability goals
- Last-mile transportation option
Increases accessibility of parks and community spaces
- Potential for 'mobility hubs'



Equity Goals

- Lower-cost transportation option *but more expensive than other active transportation options*
 - PBOT low income fare:
\$1.83-\$2.85/19 min ride
- Non-vehicle mobility option



Parking

- Potentially less SOV's on road
- Potential influence on parking demand



Potential Program Conflicts and Concerns

Parking and ADA Accessibility

- Improper parking can block walkways and roadways
- Operator response time to move fleet may be too slow

Equity Goals

- Potential for inequitable access/use
- Equity challenges in similar past programs

Personal Safety and Traffic

- Helmet use on e-scooters is very low, even with education and outreach
- Riders unsure of traffic law
- Increased monitoring for police and code enforcement

Potential Program Conflicts and Concerns

Environmental Impacts and Vandalism

- Short lifecycles from 'wear and tear' leads to more e-waste
- E-bikes and e-scooters in waterways impact aquatic ecosystems
 - Nickle and Li+ Batteries
 - Public concern and awareness
- E-bikes and e-scooters face vandalism and damage from riders

**How many scooters have been
thrown into the Willamette
River?**

at least...

17

Follow us on Instagram:

pdxscootermess

Workload Impacts

Public Safety

- Operator compliance and monitoring
- User behavior monitoring and enforcement
- Outreach efforts (public safety and traffic law)

Community Development

- Outreach efforts (business and resident communication)
- Program evaluation

Engineering

- Alternative transportation infrastructure needs

Public Works

- Climate Action and Sustainability Coordinator (CASC)
 - Program management
 - Communication and coordination
 - Outreach efforts (Program and climate goals)
- PW streets blockage and scooter removal efforts

There are many unknowns for program impact on staff workloads and schedules

Two Year Post Adoption Prioritized Actions and Goals	Term	City Investment	Primary Facilitator
Building Energy and Efficiency			
Work with PGE to become "net zero" from electricity by 2035	Long Term	\$	Public Works
Engage NW Natural to develop strategy for becoming "net zero" from natural gas by 2040	Long Term	\$	Public Works
Adopt a commercial and residential building energy score program based on the City of Portland's programs	Short Term	\$\$	PW/CD
Work with PGE to implement demand response programs	Long Term	\$	Public Works
Advocate for more energy efficiency state building codes	Short Term	\$	Planning
Vehicles and Fuels			
Incentivize workplace electric vehicle charging in parking lots	Mid-Term	\$\$	Public Works
Support outreach efforts to encourage shift to electric vehicles	Short Term	\$	Public Works
Optimize the City's light duty fleet and replace least efficient vehicles with more efficient vehicles	Short Term	\$\$	Public Works
Land Use and Transportation			
Implement the Safe Access for Everyone (SAFE) street and sidewalk improvement program to expand bike and pedestrian access	Long Term	\$\$\$	Engineering
Partner with Metro and TriMet to increase transit service, particularly to underserved employment areas	Mid-Term	\$	Assist. City Manager
Promote "neighborhood hubs" through Comprehensive Plan policies		\$	Planning
Implement parking strategies and pricing downtown		\$	Community Dev
Materials Use, Purchasing and Recovery			
Promote the repair of equipment and materials and buy used and durable before purchasing new	Short Term	\$\$	Finance
Provide education and outreach to avoid edible food waste	Short Term	\$	Public Works
Promote existing food waste composting services	Short Term	\$	Public Works
Natural Resources			
Work with the COM Tree Board to develop a tree planting program focused on shielding low income neighborhoods from heat		\$\$	Public Works
Increase tree canopy from 26% to 40%	Long Term	\$\$\$	Public Works
Review intergovernmental water agreements		\$	Public Works
Identify sewer and waterways vulnerable to flooding	Short Term	\$\$	Engineering
Adjust code to require on-site stormwater storage and water filtration before release that meets future conditions	Short Term	\$\$	Engineering
Work with the Federal Emergency Management Agency (FEMA) to update flood plain maps	Short Term	\$\$	Engineering

Climate Action Sustainability Coordinator Actions and Goals

Additional actions and goals pertaining to the implementation and outreach of City climate goals

Administrative, Reporting, and Data Management

Update GHG Inventory reflecting changes to COM carbon emission equivalents due to implemented programs

Assist staff and community members in climate and sustainability related questions and concerns

Attend stakeholder and regional meetings to encourage interagency partnership and collaboration

Promote climate advocacy through partnership with other local and regional governments to influence local, state and federal climate policy activities

Track progress annually, provide progress reports to City Council and publish results for community tracking and accountability

Assist communication and coordination regarding existing city sustainability programs and resources

Maintain frequent program and metric evaluation to ensure action success and adjust completion date as needed

Coordinate planning and draft updated Climate Action Plan every five years reflecting updated city goals and actions

Internal Outreach

Facilitate interdepartmental collaboration, engagement, information exchange and peer-to-peer learning related to City of Milwaukie climate action efforts

Assist departments in creating work plans that incorporate climate change actions as appropriate

Assist in changing standard operating procedures and policies to reflect relevant climate actions

Assist HR in incorporating climate change mitigation and adaptation actions into every position and application process

External Outreach

Develop and manage an official climate action-centered webpage for public engagement and resources

Develop and distribute climate and sustainability related materials for public awareness, engagement, and education

Coordinate climate and sustainability outreach events featuring city actions, partnerships, and stakeholder actions

Serve as resource for community questions and concerns for climate and sustainability city policies, goals, and projects

Questions for Council:

- 1. What are we hoping to achieve through a shared e-bike/e-scooter program?**
 - Program goals
 - Data collection purposes
 - Mode shift data
 - Equity data
 - GHG data
 - Alternatives to shared e-bike/e-scooter program?
- 2. Are we wanting to continue exploring a program given potential impact on staff workload?**
- 3. What concerns or program components are of particular interest to council?**

Potential opportunity for a unique program model and small-city case study



CITY OF MILWAUKIE



Questions?

Natalie Rogers

Climate Action and Sustainability Coordinator
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Scott Stauffer

From: Jay Panagos <jtpanagos@comcast.net>
Sent: Monday, January 14, 2019 11:46 AM
To: OCR
Cc: Lisa Batey
Subject: E-Scooter/E-Bicycles

To Whom This May Concern,

In regards to the discussion regarding the possible enactment of a E-Scooter/E-Bicycle program for the City of Milwaukie thru the Climate Action Plan.

As an avid cyclist who rides to commute, to be healthy, and to simply enjoy life at a sometimes slower pace, I believe its very important to reduce our carbon footprint. An E-Scooter/E-Bicycle program is a positive move in the right direction. The concern of all age groups to reduce the effects of climate change is having an impact in the rise of the acceptance of E-Scooter/E-Bicycle SHARE programs not only in Portland and Seattle but throughout the USA/World. However with these new transportation alternatives come a potential burden on responsibility and accountability. For those individuals that are serious about adjusting and improving our transportation needs, please study not only the Portland area, but all cities that have established SHARE programs. How can Milwaukie rise above and create a SHARE program that other communities will envy? Can a Milwaukie program limit the pitfalls that come with a SHARE program?

Thanks,
Jay Panagos