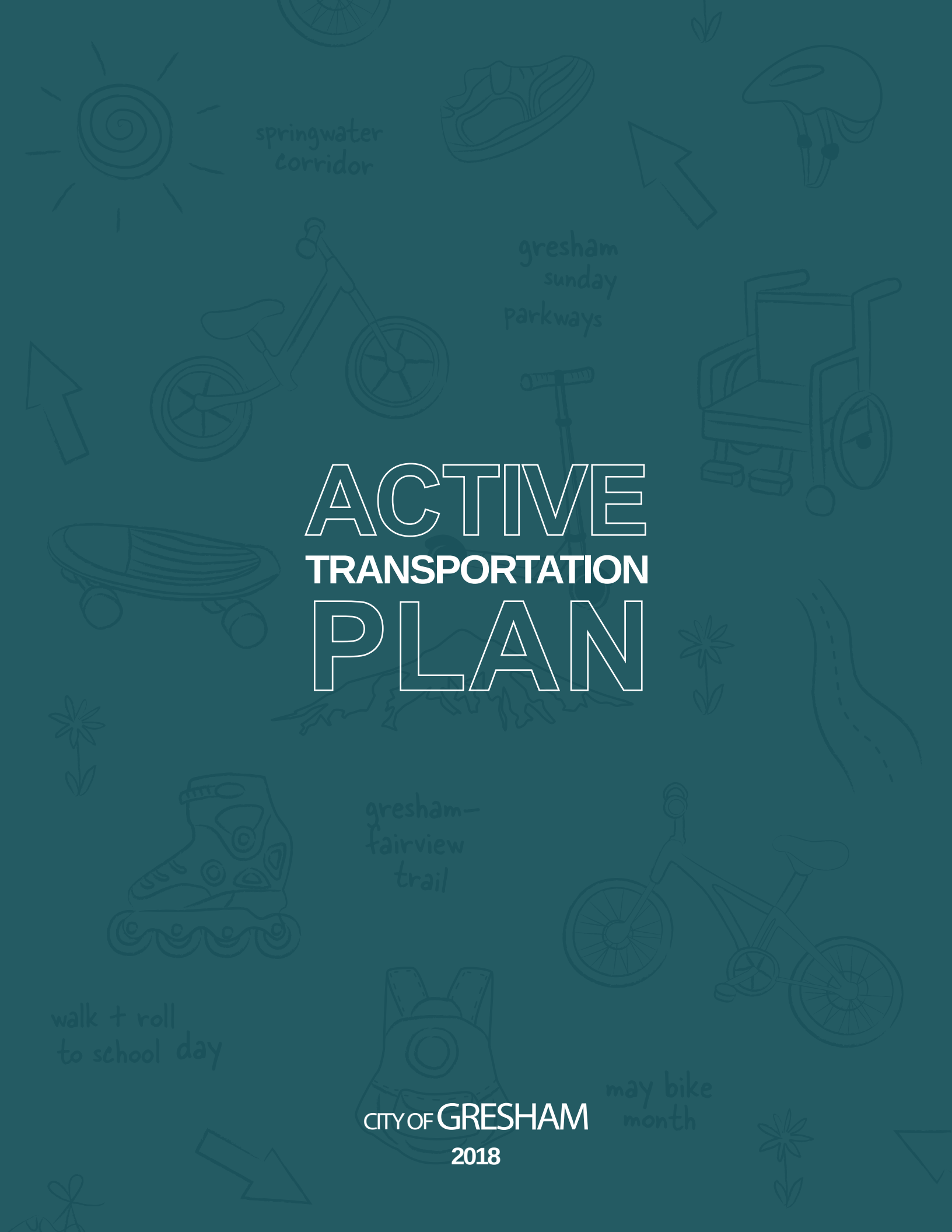

ACTIVE TRANSPORTATION PLAN

CITY OF GRESHAM

2018

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Introduction

What is Active Transportation?

Active transportation is any form of human-powered transportation such as walking, cycling, using a wheelchair, skateboarding or rollerblading. People use active transportation to get places and in combination with other types of transportation, like walking to transit.

Streets with missing sidewalks or sub-standard bike facilities are unsafe and make it uncomfortable for active transportation modes of travel. "Complete Streets", with adequate bike, pedestrian, and amenity features, enable safe access for users of all ages and abilities. Complete Streets make it safer and easier to travel for daily needs and for recreation.

This Active Transportation Plan (ATP) is intended as a road map for defining where and how the City of Gresham might enhance walking and biking.

Why create this plan?

The City of Gresham updated its Transportation System Plan (TSP) in 2015. The TSP defines how the City's transportation network is planned to accommodate all types of transportation including autos, bicyclists, freight vehicles, pedestrians, and transit. An important action item from the TSP was to complete an ATP that further defines design options, criteria for prioritizing locations to enhance walking and biking, creating a prioritized project list, and defining programs plus funding options to support these modes of travel.

The purpose of this work is to enhance livability within Gresham and create safe, welcoming places. While not all of our streets are built with sidewalks or bikeways today, they are all planned to have sidewalks when funding is available and many are planned to have bikeways where they do not yet exist.

Benefits of active transportation

Data shows that active transportation facilities result in numerous community and personal benefits.

Safety

- In the Portland metro region, most serious pedestrian/motor vehicle crashes occur on arterials (67%)[1].
- Adding sidewalks can reduce crashes involving pedestrians walking along roadways by 65–89%[2].
- The "most contributing" factor to automobile/pedestrian crashes is that a motorist failed to yield right-of-way (30%), followed by a motorist's alcohol or drug consumption (23%)[3].
- A 2012 report found that 52% of all fatal and serious bicycle crashes in the region occurred on arterial roadways[4].
- The "most contributing" factors to serious bicycle crashes is a motorist failing to yield right-of-way (48%), followed by a motorist's alcohol or drug consumption (11%)[5].
- Engineering countermeasures improve safety. Traffic-calming measures designed to manage vehicle speeds could decrease pedestrian-motor vehicle crashes by 25%. Refuge islands in the middle of roadways decreased the risk of conflicts by 50 to 67% compared to crossings without refuge islands[6].
- Collision rates between pedestrians or bicyclists and motorists decline as the number of people walking or bicycling increases. This suggests that motorists exhibit greater awareness of vulnerable road users when they see more of them. Therefore, they drive more cautiously to avoid collisions[7].
- The relative risk for bicycling injuries based on infrastructure type was highest for major thoroughfares, less so for neighborhood streets and sidewalks, and lowest for bike paths and unpaved streets. The risk of being a cyclist who had a collision or fall in the past year was 40% lower on bicycle paths and lanes than on roadways[8].

Environment

- The life-cycle emissions of the production and calories needed to power a bicycle are 33g per mile (21g per km) of CO_2 emissions. Meanwhile, buses emit 162g per mile (101g/km) and an average car produces 436g per mile (271g/km)[9].
- Mobile source emissions, including particulate matter, carbon monoxide, ozone, nitrogen dioxide, and benzene, are among the largest contributors to health risks from air pollution in Multnomah County[10].

Economy

- Active transportation facilities support placemaking especially in retail/commercial areas and provide opportunities for tourism-related events.
- According to a 2013 study greater walkability increases commercial real estate property values and their developers' return on investment. The study found that a 10% increase in walkability increased property values by 1 to 9%[11].
- A 2006 University of Minnesota study found that, in the Minneapolis/St. Paul area, for every 1,312 feet closer a median-priced home is to an off-street bicycle facility, its value increases by $510[12].
- Travel-generated expenditures in Oregon with bicycle activity amounted to over $325 million in 2012. Of the 17.4 million people who visited Oregon that year, 4.5 million rode a bicycle while in the state[13].
- A study of travel choices and consumer spending across 89 businesses in the Portland metropolitan area found that when trip frequency is accounted for, bicyclists, pedestrians, and transit riders, spend more than those who drive for all businesses except supermarkets[14].

Personal economics

- In the 2013 Rockwood Community Food Assessment, 40% of people reported that transportation makes it difficult to get groceries; 1/3 use public transportation, bike or walk to their grocery store[15].
- The annual cost of maintaining a bicycle is approximately $308 a year, less than the average monthly car payment[16].

Improved access

- Regional surveys show that more than 60% of people are interested in riding a bicycle as a mode of transportation more often[17].
- When cities invest in non-auto infrastructure, the amount of miles traveled by walking or bicycling increases between 22 and 49%[18].
- Nearly 45% of trips made by car are under 3 miles in length and 15% are under one mile in length[19].

Health

- Physical inactivity is a serious risk factor in over 5 million premature deaths worldwide[20].
- About 3 in 4 Multnomah County adults do not meet national physical activity recommendations[21]. Active transportation is an easy way to add physical activity to a person's day.
- People who live in neighborhoods with sidewalks on most streets are 47% more likely to be active at least 30 minutes a day[22].
- In the San Francisco Bay area, increasing daily walking and bicycling from 4 to 22 minutes reduced the burden of cardiovascular disease and diabetes by 14 percent, premature deaths by 4.8%, and years living with a disability by 2.9%[23].

How this plan was developed

In 2014, the Multnomah County Health Department received grant funding through a program adminstered by the Centers for Disease Control and Prevention. That program, Racial and Ethnic Approaches to Community Health (REACH), funds programs to reduce racial and ethnic disparities. The County passed a portion of the grant funds to Gresham to develop this Active Transportation Plan.

The intent of the REACH grant is to improve health equity, particularly for the local African American/Black community, through policy, systems and environmental changes. Key goals related to the grant intent are:

1. *Conduct community engagement activities to include communities most impacted by barriers to healthy food.*
2. *Adopt policies that support equitable access to healthy, affordable food.*
3. *Identify gaps in walking and biking networks.*
4. *Create a list of projects to make it easier to walk and bike in Gresham.*
5. *Prioritize projects to increase access to important destinations, including schools, parks, transit, and healthy food.*
6. *Develop a funding/financing strategy to implement projects.*

By looking at how transportation projects support enhanced access to recreation, alternative commute options, and more destinations with healthy food options, Gresham and the Health Department sought to strengthen transportation policies to improve local health outcomes.

REACH is a national program administered by the Centers for Disease Control and Prevention (CDC) to reduce racial and ethnic health disparities.

Local implementation of the REACH grant is informed by the ACHIEVE Coalition, a cross-sector coalition of organizations committed to improving chronic disease prevention for Multnomah County's African American/ Black community.

Strategies focus on proper nutrition, less tobacco use and exposure, increased physical activity, chronic disease prevention, and risk reduction management.

An equity analysis is the intentional, systematic review of how different ethnic groups, or other demographic groups, will be affected by a decision. It is used to identify existing inequities and to eliminate, reduce, and prevent continued or future inequities and discrimination. An equity analysis can lead to fair outcomes.

equity

health

low-stress environment

Actions to support equity

As this Plan was developed there was consideration for how racial and ethnic disparities might be accounted for. The following actions helped to make the planning process more equitable and can also make implementation of the future network more equitable.

- ***A robust process for community engagement***

Input from diverse communities was a primary goal in developing the ATP. In addition to traditional engagement methods, a new approach was used which involved hiring community members directly from hard-to-reach communities and training them to gather community input. The efforts of these **Community Liaisons**, along with City staff, resulted in hundreds of comments from across the City, including input from communities rarely heard from.

- ***A revised policy specific to equitable investment***

Ten revised policies were adopted to support walking and biking in Gresham. Two of the policies specifically address equity by considering where projects are built and who has access to projects.

- ***Analysis of benefits and burdens of the existing and future active transportation network***

After mapping where populations of minority, low-income, youth and elderly live, the existing and planned networks were analyzed to ensure equitable access to low-stress bike routes and infill sidewalks.

- ***An equity criterion included in the prioritization process***

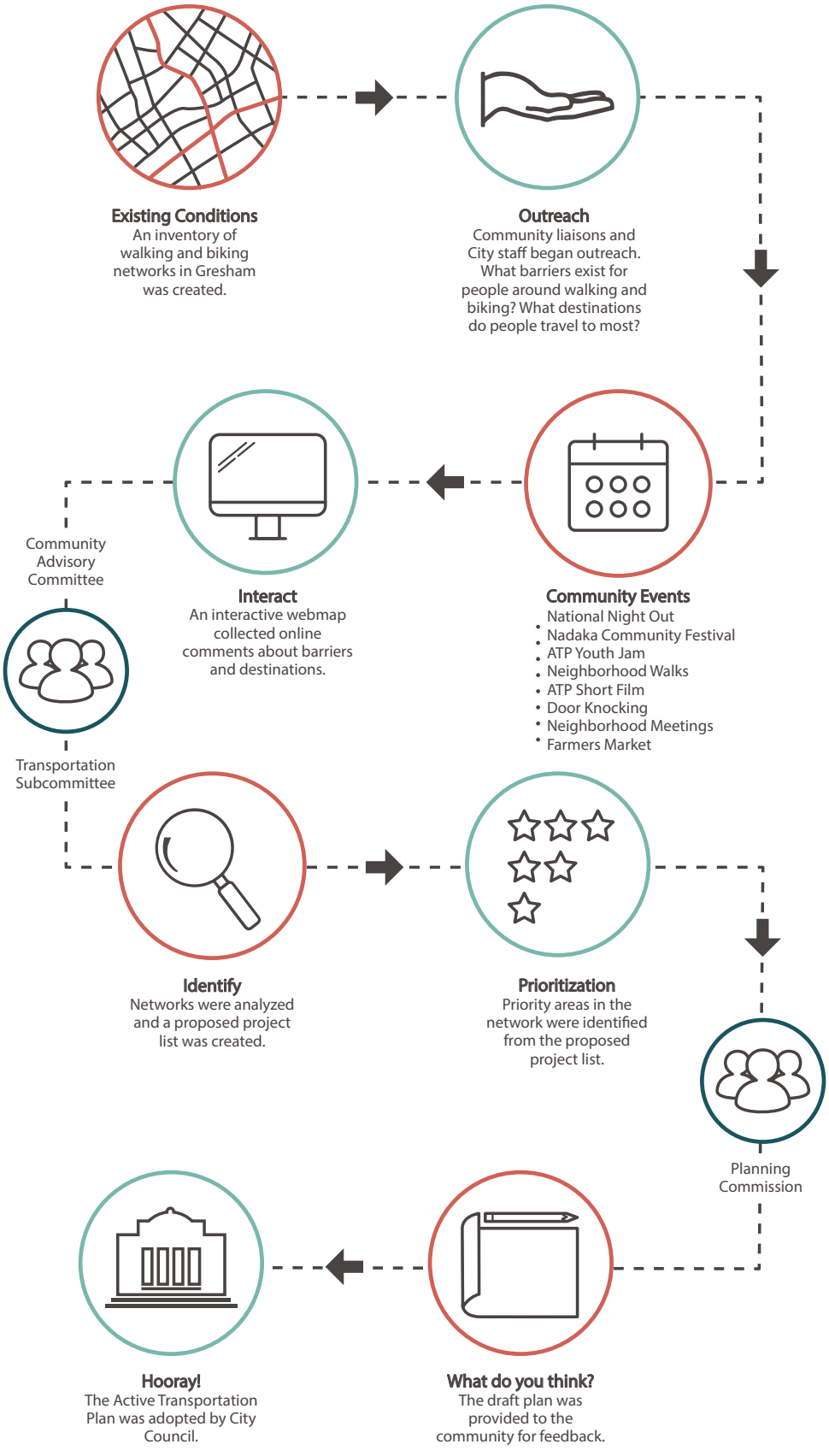
During the prioritization process a specific criterion related the identified projects to the location of minority, low-income, youth and elderly. Projects in these "high" equity areas received a higher score for that criterion.

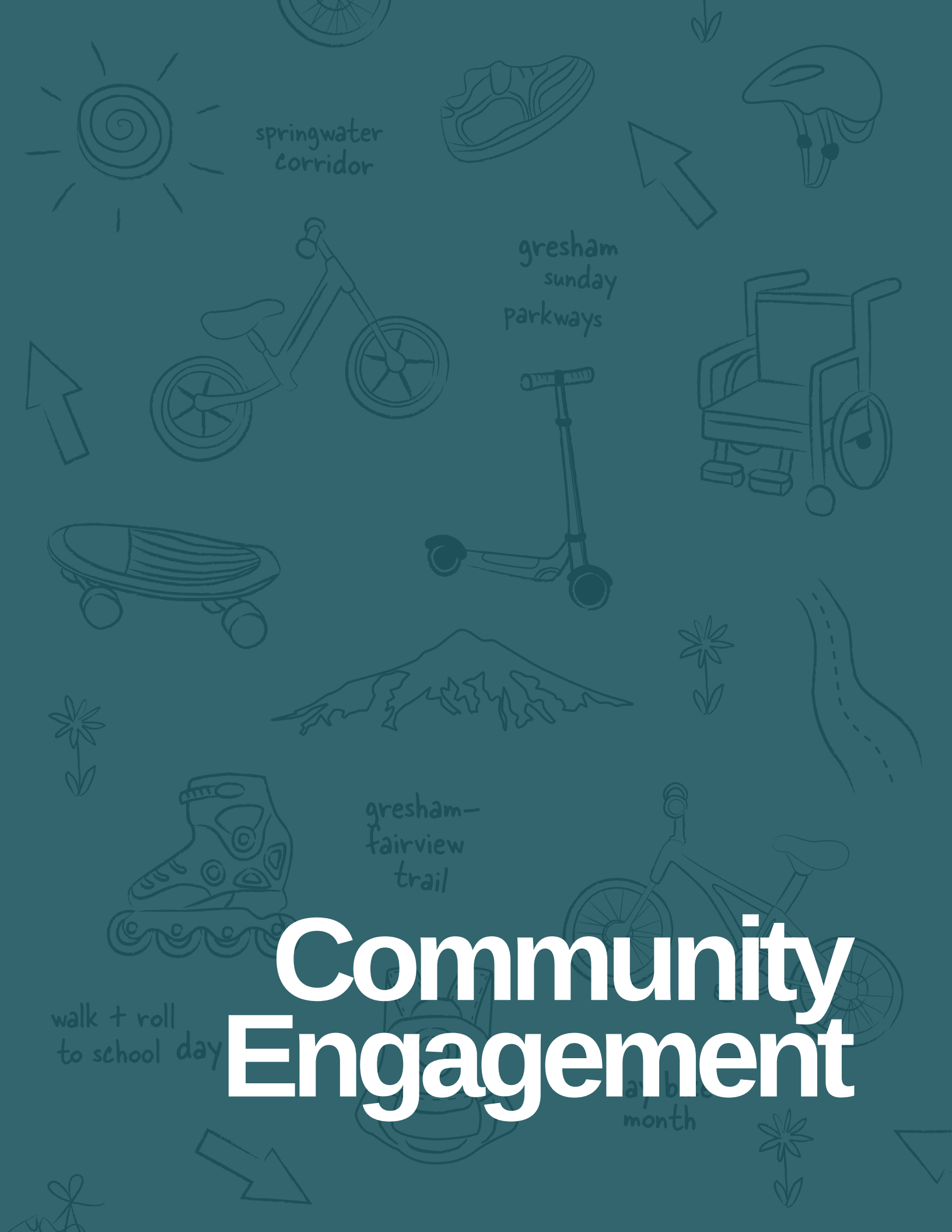
- ***A performance measure for infrastructure in underserved communities to ensure the future network is built equitably across the city***

As infrastructure projects are built across Gresham the Plan will measure which projects are in underserved communities and how they compare to projects across the City.

Process

This graphic outlines the process used to create and adopt the Active Transportation Plan. Lots of analysis, public engagement, and coordination went into making it as effective--in theory and practice--as it can be.





Community Engagement

Community Engagement

Extensive community engagement was conducted to develop this Active Transportation Plan (ATP). The engagement happened in two primary phases: 1) summer and fall of 2016 and 2) spring of 2017. Community input was collected from across the city. The first round of engagement was to receive input on barriers to walking and biking within the city. The second round was to identify types of projects to address areas of concern, identify key locations for these projects, and prioritize projects across the city.

A **Stakeholder Advisory Committee** comprised of stakeholders representing Multnomah County Health Department, Rosewood Initiative, the Gresham Transportation Subcommittee, Rockwood Neighborhood Association, and Centennial School District helped form the project's engagement plan and revised policies to be amended into the City's Transportation System Plan.

City staff collected input from the community at the Gresham Farmer's Market and at Neighborhood Association meetings. In addition, maps and questionnaires were posted online, which resulted in 333 comments from across the city about desired active transportation enhancements.

City staff periodically briefed the **ACHIEVE Coalition** on plan development and actively solicited feedback from members. The coalition, a cross-sector group of public and private organizations from throughout the region committed to improving chronic disease prevention for minority communities, was a valuable partner.

A new approach

Regional data shows that communities of color and low-income people are the most likely to use walking and biking. A health equity analysis also identified historically underserved communities as essential voices to seek out in the engagement process. The ATP approach involved hiring local community members as **Community Liaisons** to plan outreach events and talk to their communities about walking and biking. The REACH grant funding enabled Gresham to implement this new approach to community engagement, which requires time, money, and effort to make connections to local community networks.

The hiring of Community Liaisons had many benefits. It brought community members into the planning process so staff could learn from them about community needs and concerns from a variety of cultural and socioeconomic groups. It helped get input from communities that are hard to reach with traditional engagement methods such as open houses and neighborhood meetings. It also shifted the dynamic from being an effort led by the City to one led by community members. The Liaisons became the face of the ATP for the community. In addition, the process of finding and training liaisons helped create relationships and strengthen trust between City staff, the community organization Rosewood Initiative, and the Community Liaisons.

Community Liaisons

Working with the consulting firm **Design + Culture Lab** and the community-based organization **Rosewood Initiative**, six community liaisons were hired in the summer of 2016. Design + Culture Lab works to transform the urban built environment through cultural research, participatory methods, and collaborative design strategies. Rosewood Initiative is a neighborhood space that builds capacity in the community by helping people learn useful skills and by connecting them to one another. Design + Culture Lab led weekly training sessions to help the Community Liaisons learn about transportation planning issues, community-based participatory practices, and leadership skills. The liaisons then applied those skills by planning community events and gathering community input. Over three months the Community Liaisons led neighborhood walks, conducted surveys, talked with community members door to door, organized the ATP Youth Jam event and created a short documentary film about residents' transportation experiences.

The Community Liaisons conducted interviews with 77 people over the course of 3 months, at 3 major events, during street sampling, and through one-on-one interviews.

Major concerns from first round of engagement:

- Many difficult or unsafe crossings (particularly on routes that connect key destinations such as grocery stores, schools, transit, and the library)
- Dangerous crossings lead to pedestrian deaths
- Insufficient sidewalks
- Need for better lighting at transit stops
- The time cost of walking greater distances
- Cultural barriers to understanding cyclists' "rules of the road"
- Desire to see culturally-specific healthy food in the area
- Discomfort due to harassment or "cat calling" while walking and biking
- Police behavior and racial profiling
- Neighborhood change and the impacts of housing stability
- Pride as Gresham residents and the desire to help build a stronger community together

Second round of engagement

In the Spring of 2017 five liaisons were hired to conduct additional community engagement. Working with the Rosewood Initiative, the liaisons were trained to assemble focus groups within the community and get feedback on prioritization of the types and locations of projects identified in the prior round of community engagement.

Some liaisons focused on their cultural community while others organized meetings recruiting community members from their neighborhood. The input was used to influence the prioritization ratings of the individual projects.

Major concerns from second round of engagement:

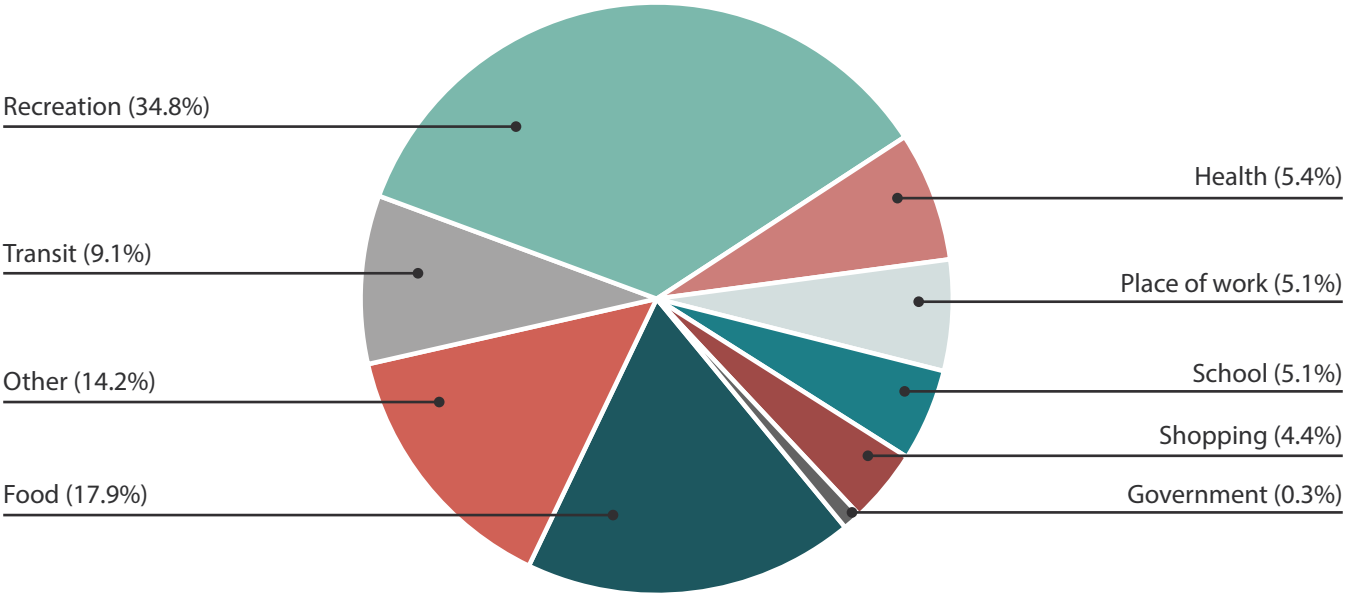
- Workshops on walking and bike safety needed for students, teenagers, and those with low English proficiency
- Sidewalks on streets are too narrow and have too many obstacles
- More visible and safer feeling bike lanes are needed

Community Liaison Survey Results

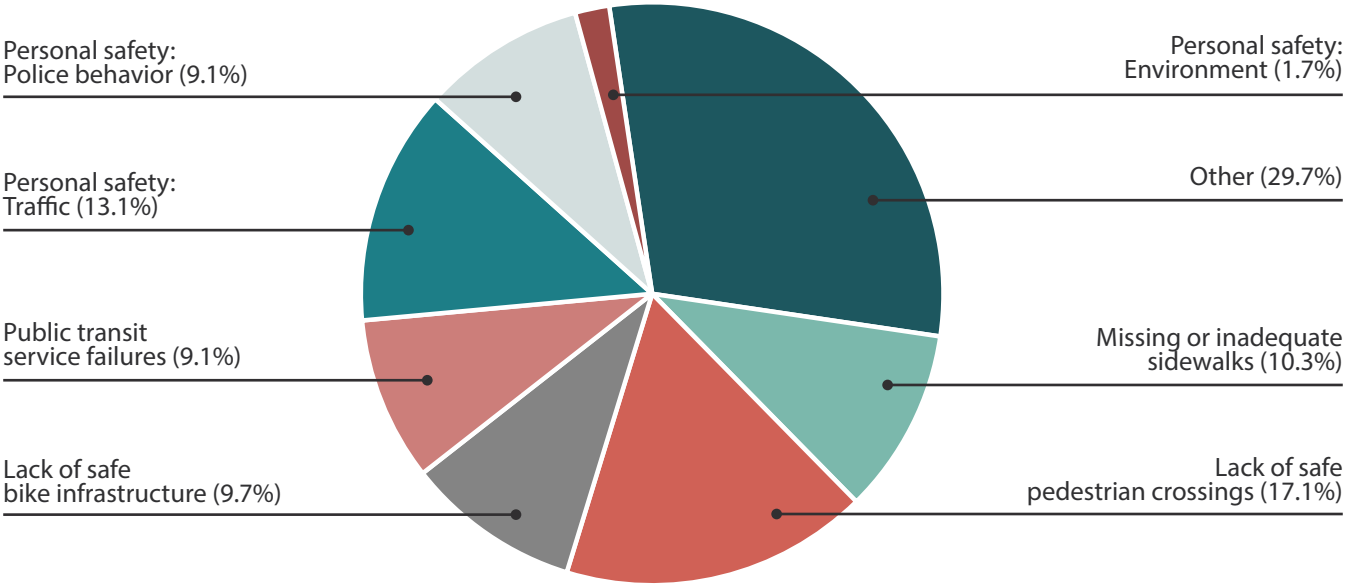
The following graphs show results from a questionnaire developed by the Active Transportation Plan Community Liaison team. During Summer 2016, the team conducted interviews with 77 people over the course of 2 months at 3 major events.

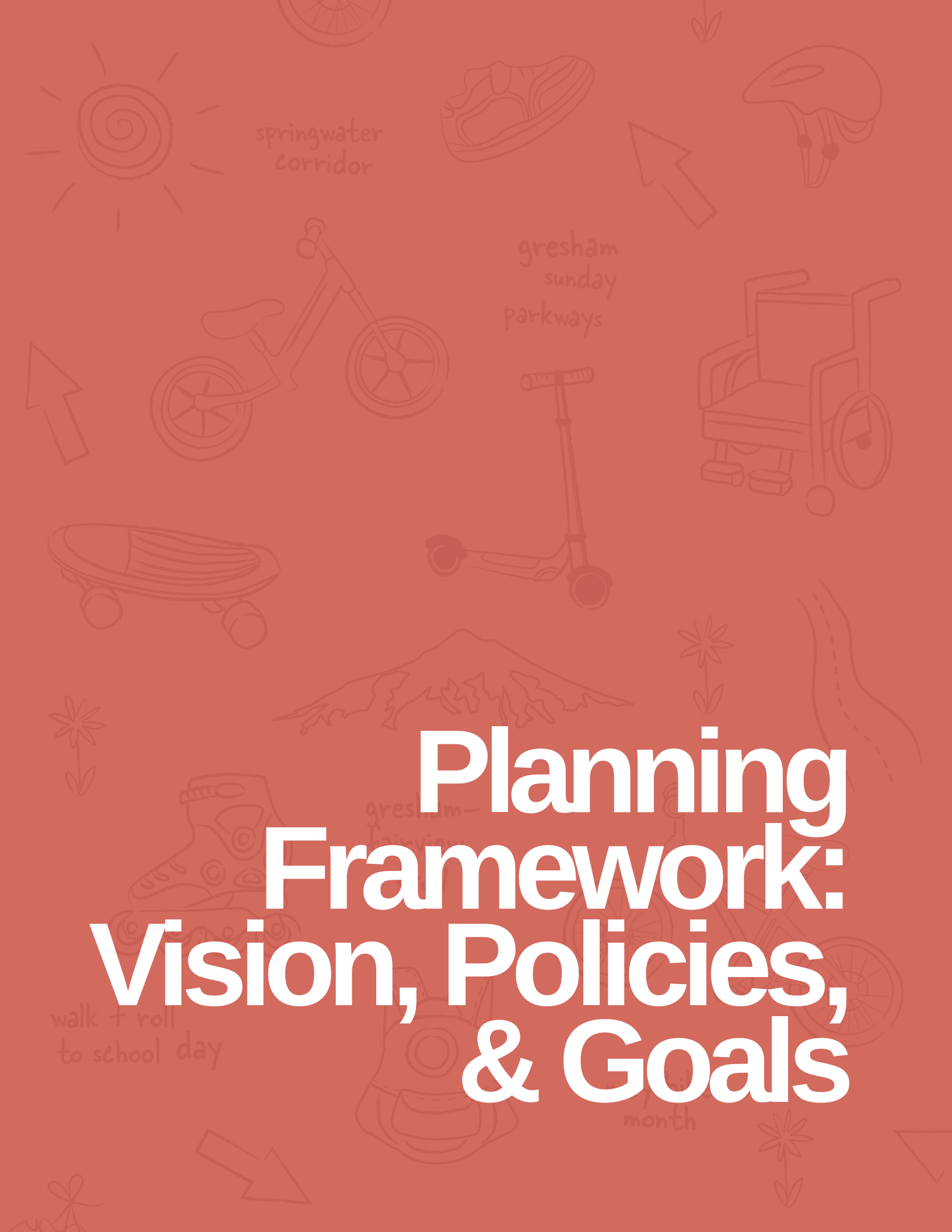
One overarching theme from both sessions of Community Liaison engagement is the need to **pair bike infrastructure with education programs** to correctly and safely use the new infrastructure. This is especially needed for residents new to the United States who are learning the English language.

Where do you go when you walk, bike, or roll in Gresham?



What barriers to walking or biking did you experience?





Planning Framework: Vision, Policies, & Goals

Gresham's Transportation System Plan (TSP)

In addition to responding to community input, this plan needed to be developed in a manner consistent with the City's adopted Transportation System Plan (TSP).

TSP Vision

"Gresham's vision for its transportation system is to *support* growth and development of the city as an **economically viable** and **livable** community by providing its residents and all transportation system users *safe, pleasant*, and *convenient* **access** and travel within, to, and through the city."

TSP Goals

The following are goals adopted in the TSP to support the TSP vision.

Accessibility

The ability to reach desired goods, services, activities, and destinations with relative ease, within a reasonable time, at a reasonable cost, and with reasonable choices.

Economic Development

Constructing and maintaining a transportation system that supports new business as well as business retention, expansion, and relocation.

Efficiency

Constructing and maintaining a transportation system that performs and functions as fluidly as possible.

Environmental Stewardship

Meeting the needs of the present generation without compromising future needs and resources.

Health Equity

Promoting health with adequate biking and walking routes and trails among all transportation system users.

Livability

Tying the quality and location of transportation facilities to broader opportunities such as access to good jobs, affordable housing, quality schools, and safe streets.

Mobility

The ability to move people and goods to destinations efficiently and reliably.

Safety

Minimizing dangers or risks in the transportation system so users feel safe driving, biking, walking, and taking transit.

Sustainable Funding

Ensuring the establishment of funding mechanisms is sufficient to support the continuous and safe operation of the transportation system.

Existing TSP Policies

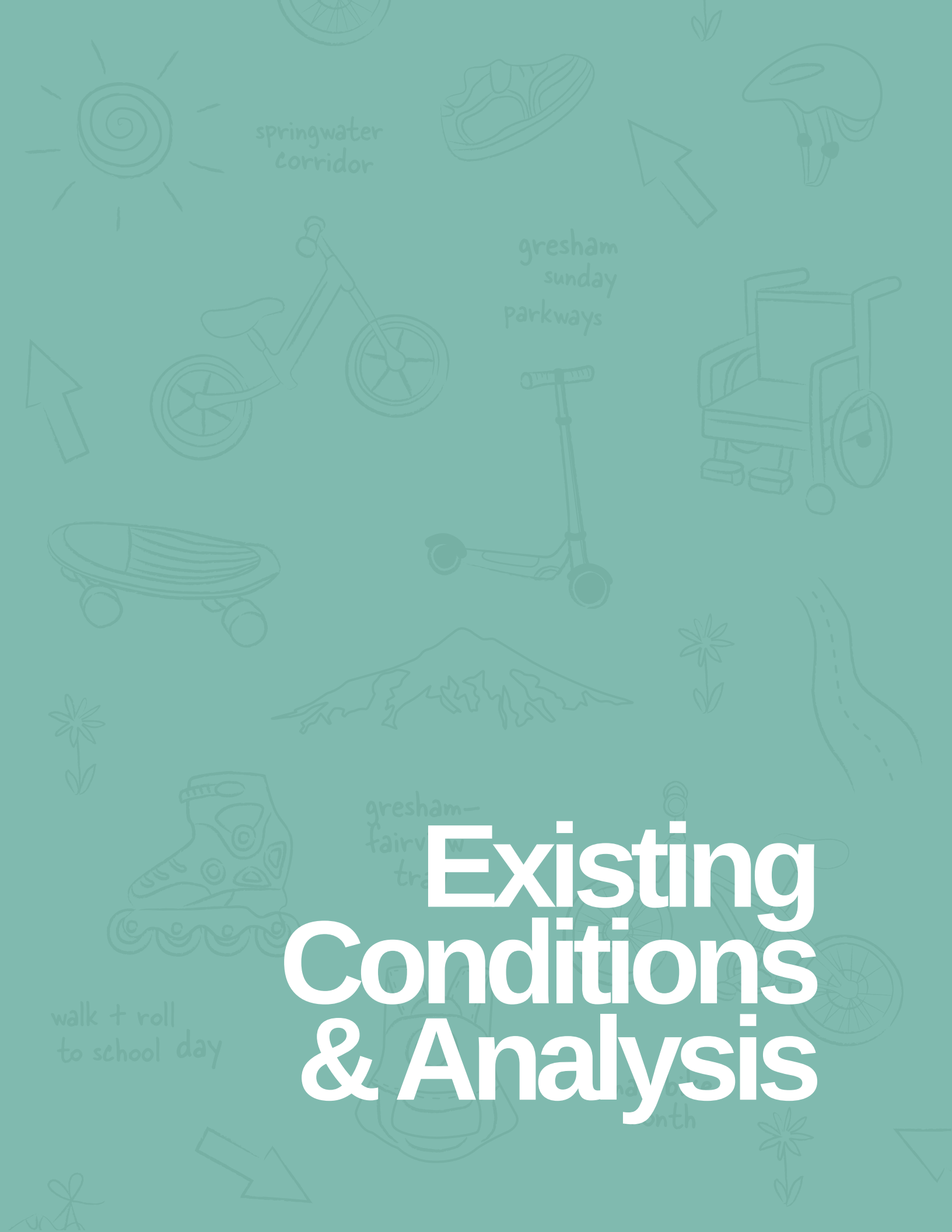
The 2014 TSP (Chapter 4) has five policies related to walking and biking:

1. *Develop a continuous and convenient bicycle network.*
2. *Support programs and projects to improve bicycle safety and reduce the rate of bicycle-related crashes.*
3. *Provide pedestrian facilities that are continuous, accessible, and adaptable to all users.*
4. *Improve pedestrian access to transit from residential, commercial, industrial, and institutional developments.*
5. *Develop and promote safe pedestrian environments.*

Revised TSP Policies for Walking and Biking

A stakeholder advisory committee convened to help develop the Active Transportation Plan. They proposed to enhance and replace existing TSP policies to more explicitly integrate walking and biking--and associated safety and health--into Gresham's transportation landscape. The following are the updated policies that have been endorsed by the advisory committee, the City's Transportation Subcommittee, Planning Commission, and City Council. These goals will be integrated into the next update of the City's TSP.

1. Increase **safety** for people walking and biking in Gresham.
2. Create pedestrian and cycling **networks** that are continuous, easy to use, attractive, and convenient.
3. **Connect** people to important destinations, such as stores that sell healthy food, jobs, schools, parks, natural areas, commercial areas and transit stops.
4. Create walking and biking networks that **encourage physical activity**, social connections, and positive interactions among people.
5. **Promote health** through connections to healthy food stores and opportunities for physical activity.
6. **Educate all users** of Gresham's transportation systems about the benefits of walking and biking.
7. Identify projects that provide walking and biking benefits in a **cost-effective** manner.
8. Increase **economic opportunity** by making it easier for people to use low-cost, human-powered ways to get to work.
9. Increase mobility and accessibility for underserved communities by ensuring the bicycle and pedestrian network is improved through **equitable investments** in infrastructure and programs.
10. Ensure pedestrian and bicycle infrastructure is **accessible** and addresses the **needs of everyone** who uses it, including youth, seniors, and people of all abilities, races, ethnicities and incomes.



Existing Conditions & Analysis

Existing Conditions

This chapter is data-focused and outlines results of analyzing existing socio-demographic, safety and infrastruture data across the city. The data was analyzed to understand where the greatest needs exist and how this relates to communities most likely to experience disparities in access to transortation options and healthy food.

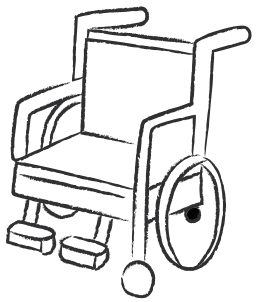
Socio-Demographics

Throughout this plan, socio-demographic factors and their relation to exisiting and planned infrastructure were analyzed to better address health and equity.

Health and equity

Good transportation is vital for access to activities and essential services that are needed for daily life and to support health equity. In automobile-dependent communities those who do not have the ability to drive or do not have access to vehicles can be at a great economic and social disadvantage. People of color, those with low incomes, and younger and older residents often do not have access to vehicles and may have a higher need for transportation options that do not require the purchase of a vehicle.

Additionally, chronic diseases such as diabetes disproportionately impact communities of color. For example, in Multnomah County the African American/Black community has a diabetes rate double that of Whites (13.6% vs. 6.2%). Walking and biking are an effective way of increasing physical activity and preventing or managing chronic disease.



Analysis

To help with the analysis of infrastructure and socio-demographic factors an **Atlas of Current Conditions for Walking and Biking** was developed. The following are presented in the Atlas (see *https://greshamoregon.gov/Active-Transportation-Plan*) and mapped for reference:

Socio-Demographic

- *Senior (over 65) Population*
- *Youth (under 18) Population*
- *Non-White Population*
- *Black Population*
- *Languages Spoken Other Than English*
- *Median Household Income*
- *Residential & Employment Density Index*
- *Top Employer by Number of Employees*
- *Access to Family Wage Jobs*
- *Change in Jobs- 2010 to 2015*
- *Population on Public Assistance Income*
- *Students Eligible for Free or Reduced Lunch Key*
- *Educational Attainment*
- *Destinations*
- *Location of Food Stores*
- *Proximity to Licensed Childcare*
- *Rate of Diabetes*
- *Police Case Reports*
- *Equity Index*

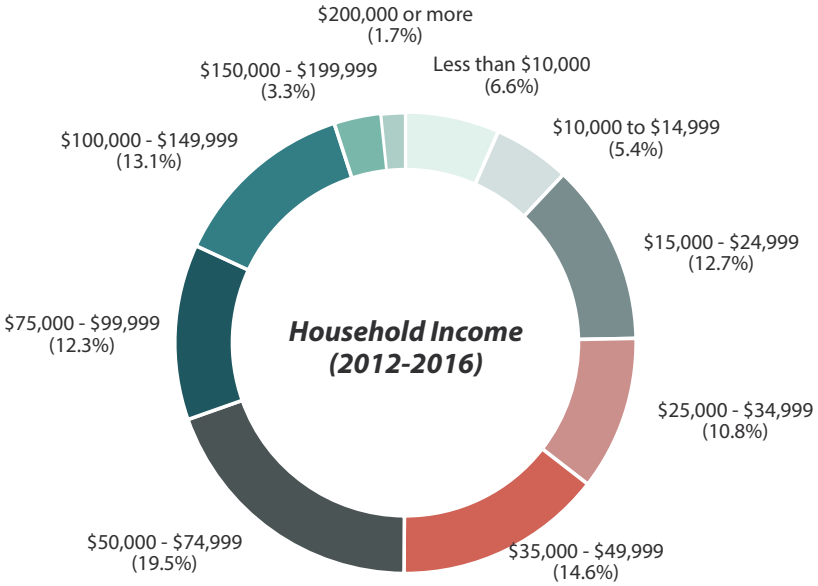
Infrastructure

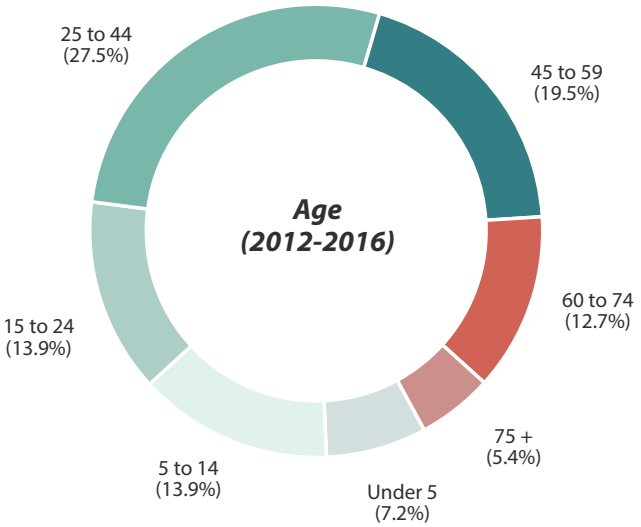
- *Communities of Color with Bike Network Overlay*
- *Communities of Color with Pedestrian Network Overlay*
- *The Current Status of Existing Bike and Pedestrian Infrastructure*
- *Pedestrian Involved Crashes*
- *Existing Pedestrian Network*
- *Transit Network*
- *Bicyclist Involved Crashes*
- *Existing Bicycle Network*
- *Off-Street Bicycle Network*

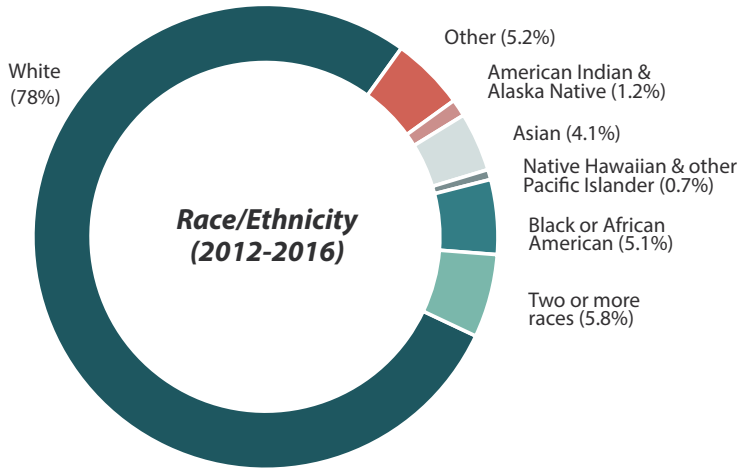
Equity Index Map

A health and equity analysis map was created to show populations most likely to experience disparities in transportation access. The map (Figure 1) on the following page shows a combination of three factors that are equally weighted: Non-White populations, Median Household Income, and the Youth (Under 18) & Seniors (Over 65) population.

Areas in red on the map (Figure 1) have the highest numbers of people with low incomes, people of color, and youth and seniors. Analysis of existing active transportation infrastructure shows a greater proportion of missing sidewalks in the city in areas with high Equity Index values. Investments in active transportation in locations with high values on the Equity Index will have the most impact on expanding travel options for people who do not have access to an automobile or who are at greatest risk of chronic disease.







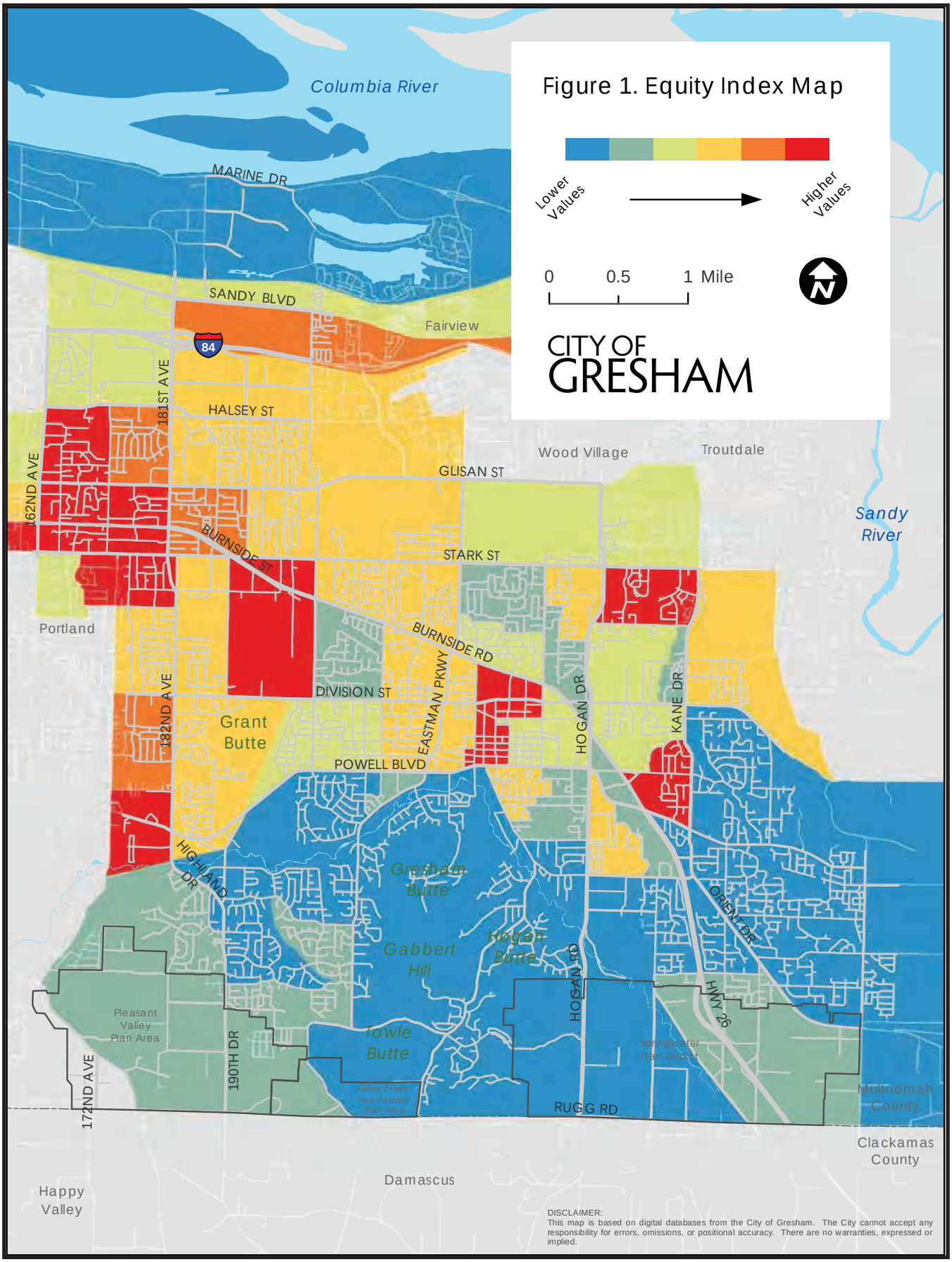
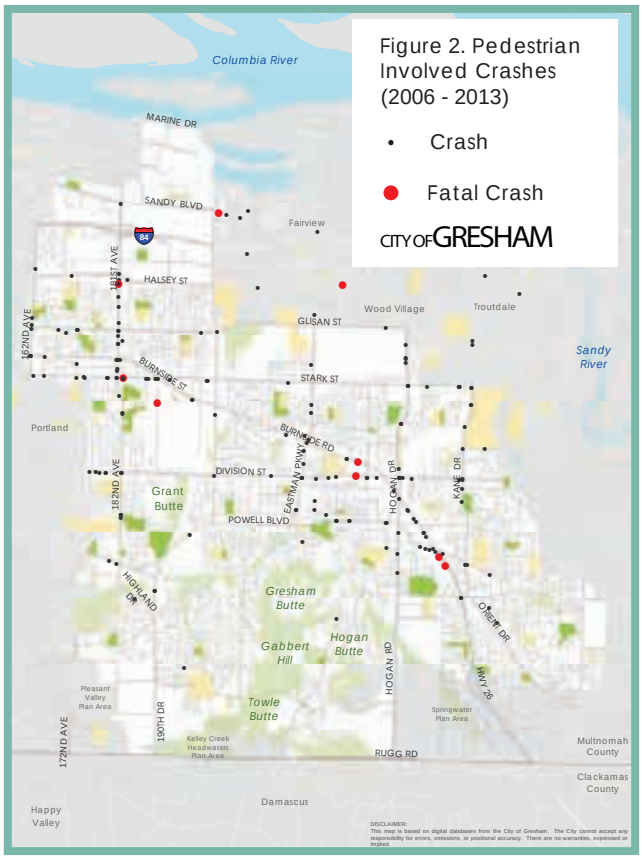


Figure 1. Equity Index Map
Lower Values
Higher Values
0
0.5
1 Mile
CITY OF GRESHAM
Columbia River
MARINE DR
SANDY BLVD
Fairview
84
181ST AVE
162ND AVE
HALSEY ST
Wood Village
Troutdale
GLISAN ST
Sandy River
BURNSIDE ST
STARK ST
Portland
BURNSIDE RD
DIVISION ST
182ND AVE
Grant Butte
EASTMAN PKWY
HOGAN DR
KANE DR
POWELL BLVD
HIGHLAND DR
Gresham Butte
Gabbert Hill
Hogan Butte
ORIENT DR
HOGAN RD
HWY 26
Pleasant Valley Plan Area
190TH DR
Towle Butte
Springwater Plan District
Kelley Creek Headwaters Plan Area
RUGG RD
Multnomah County
172ND AVE
Clackamas County
Damascus
Happy Valley
DISCLAIMER:
This map is based on digital databases from the City of Gresham. The City cannot accept any responsibility for errors, omissions, or positional accuracy. There are no warranties, expressed or implied.

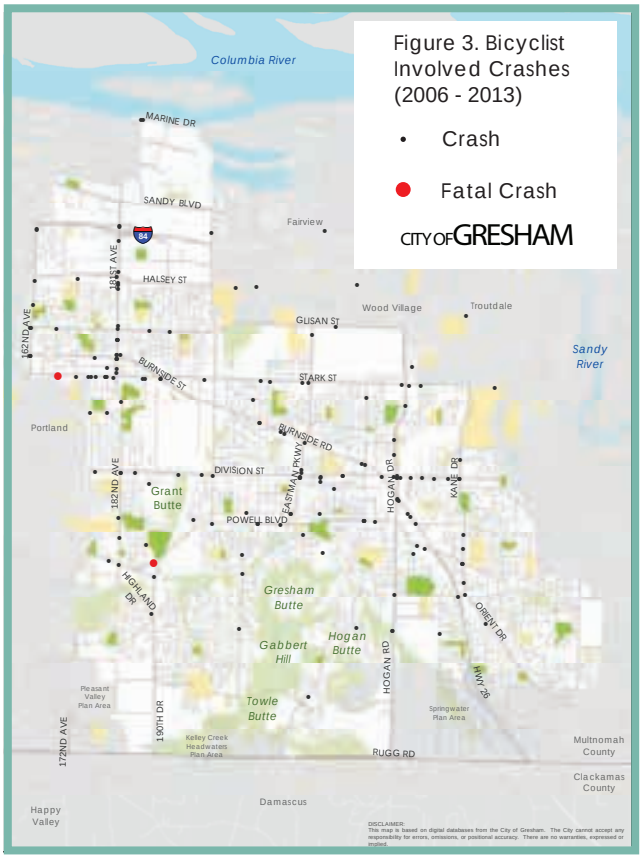
Safety

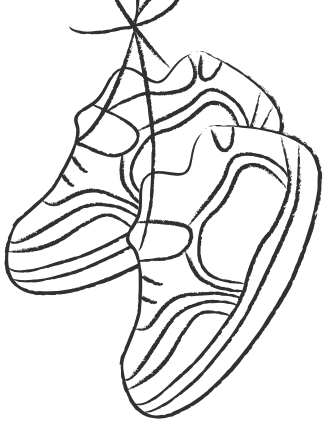
In addition to socio-demographic data, safety and infrastructure was analyzed. If infrastructure is unsafe people won't use it. Through this plan process pedestrian and bicycle crash data was analyzed to determine unsafe places on the street network (Figures 2 and 3). This analysis revealed high risks for injuries and fatal crashes on the arterial street network.

Pedestrian Involved Crashes



Bicyclist Involved Crashes





Existing Infrastructure

Pedestrian networks

Walking is the most basic form of transportation. It connects schools, parks, transit stops, and our private vehicles Crossings, especially on busy streets, can be enhanced to make pedestrians more visible to motorists.

An analysis of the existing pedestrian network and infrastructure are shown on the following pages. The analysis shows the existing pedestrian network, including built sidewalks and multi-use paths (Figure 4).

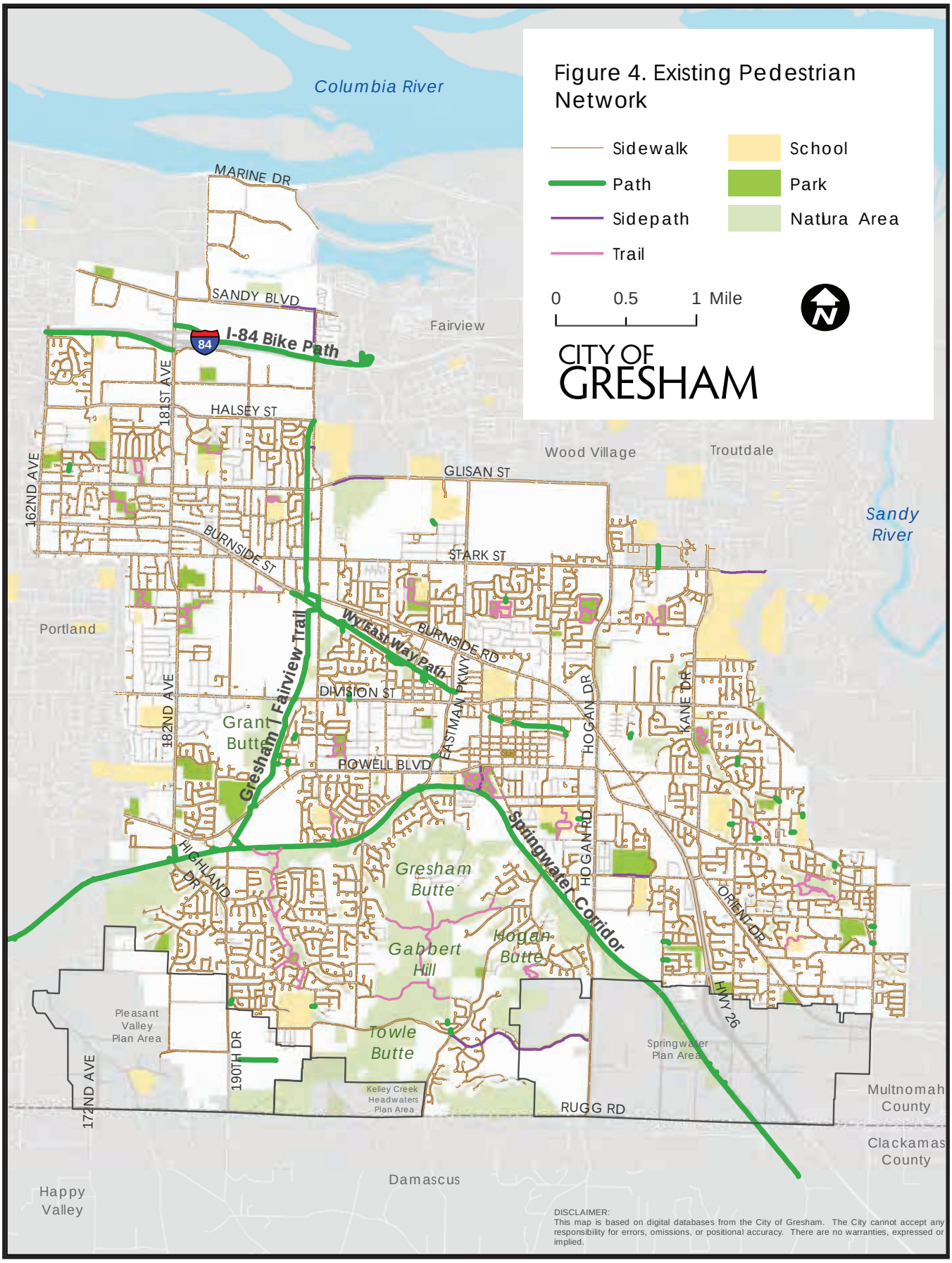


Figure 4. Existing Pedestrian Network
Sidewalk
Path
Sidepath
Trail
School
Park
Natura Area
0
0.5
1 Mile
CITY OF GRESHAM
Columbia River
MARINE DR
SANDY BLVD
I-84 Bike Path
84
Fairview
181ST AVE
HALSEY ST
162ND AVE
Wood Village
Troutdale
GLISAN ST
Sandy River
BURNSIDE ST
STARK ST
Portland
Gresham Fairview Trail
Wy'East Way Path
BURNSIDE RD
DIVISION ST
182ND AVE
Grant Butte
EASTMAN PKWY
HOGAN DR
KANE DR
POWELL BLVD
Springwater Corridor
HOGAN RD
HIGHLAND DR
Gresham Butte
ORIENT DR
Gabbert Hill
Hogan Butte
HWY 26
Pleasant Valley Plan Area
190TH DR
Towle Butte
Springwater Plan Area
172ND AVE
Kelley Creek Headwaters Plan Area
RUGG RD
Multnomah County
Clackamas County
Damascus
Happy Valley
DISCLAIMER:
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Pedestrian level of comfort:

Sidewalk corridors

To encourage people to walk more, the sidewalk network must be *perceived* as comfortable. Comfort for pedestrians can be assessed through four factors relating to the street design:

- Posted speed limit
- Number of travel lanes
- Presence of on-street parking or bicycle lanes
- Presence of sidewalks.

These four factors create a *Pedestrian Level of Service* which evaluates a level of comfort for pedestrians. Gresham's network was evaluated on a scale of 1 to 5 with 1 being the most comfortable and 5 being the least comfortable.

A score of 5 represents the most stressful pedestrian environment, with intersection crossings at high speed, high volume streets, and inadequate infrastructure to facilitate a comfortable pedestrian crossing.

In general, more pedestrian space on a lower speed roadway segment correlates to higher comfort (level 1 or 2). An incomplete sidewalk network, higher speeds, and a greater number of lanes correlate to a lower comfort (level 4 or 5).

Figure 5 on the following page shows results of a Pedestrian Level of Comfort analysis based on posted speed limit, number of travel lanes, and presence of on-street parking, bicycle lanes, or sidewalks.

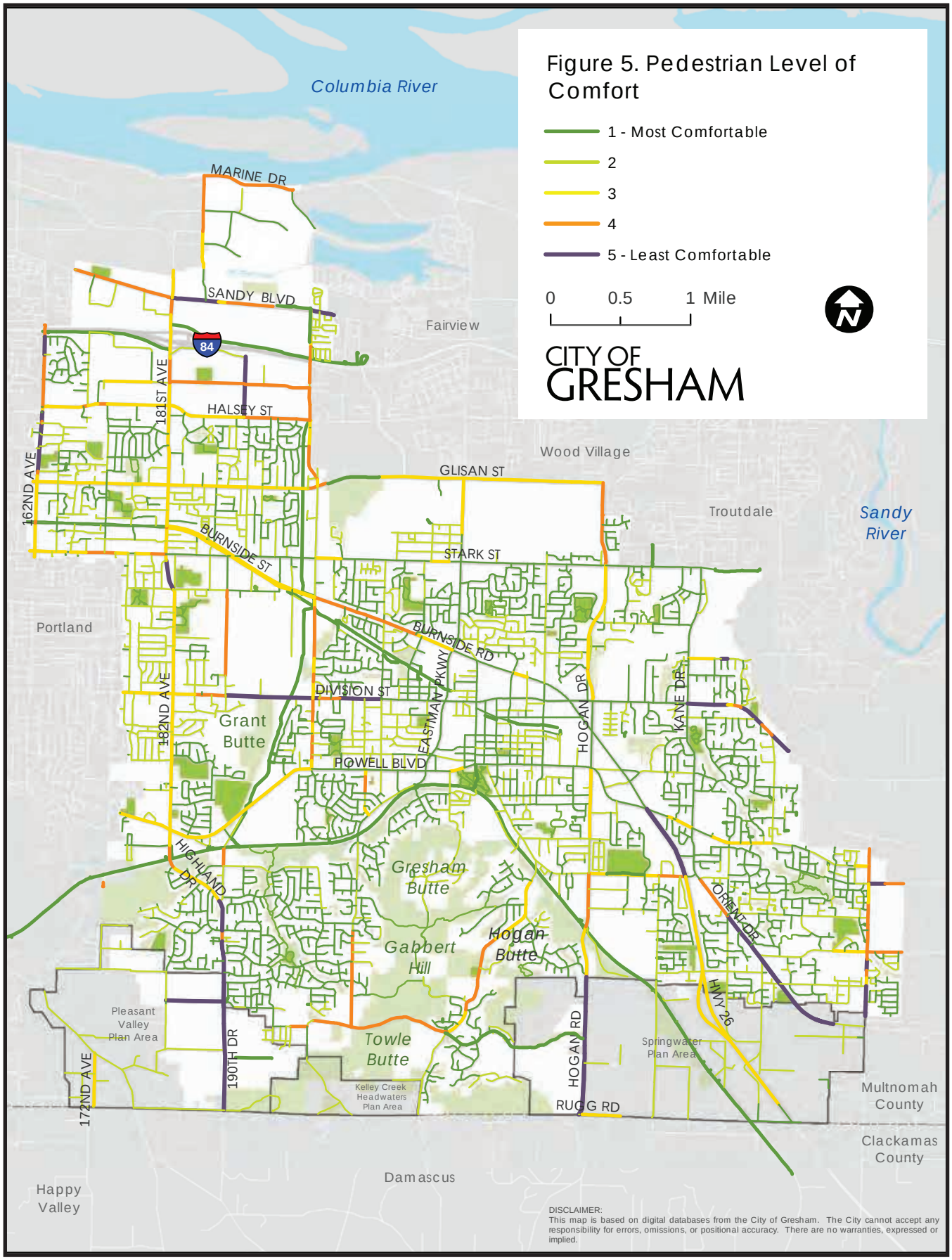
Figure 5. Pedestrian Level of Comfort
1 - Most Comfortable
2
3
4
5 - Least Comfortable
0
0.5
1 Mile
CITY OF GRESHAM
Columbia River
MARINE DR
SANDY BLVD
84
Fairview
181ST AVE
HALSEY ST
162ND AVE
Wood Village
GLISAN ST
Troutdale
Sandy River
BURNSIDE ST
STARK ST
Portland
BURNSIDE RD
EASTMAN PKWY
HOGAN DR
KANE DR
DIVISION ST
182ND AVE
Grant Butte
POWELL BLVD
HIGHLAND DR
Gresham Butte
Gabbert Hill
Hogan Butte
ORIENT DR
HWY 26
Pleasant Valley Plan Area
190TH DR
Towle Butte
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HOGAN RD
Kelley Creek Headwaters Plan Area
RUGG RD
172ND AVE
Multnomah County
Clackamas County
Damascus
Happy Valley
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Pedestrian level of comfort:

Intersection crossings

Similar to the Pedestrian Level of Comfort analysis along corridors, intersection crossings were evaluated to assess level of comfort at crossing locations.

Signalized and un-signalized intersections were examined along roadways with a functional classification of 'collector' or 'arterial'. Each intersection leg was scored based on four factors of the crossing's design:

- Posted speed limit
- Number of lanes
- Marked crosswalk
- Stop controlled or uncontrolled crossing

Intersection scoring is additive--scores start at 1 or 2 depending on speed and then increase with missing infrastructure. Stop-sign controlled or uncontrolled crossings receive additional points since pedestrians must find gaps in traffic.

Similar to the segment-based Pedestrian Level of Comfort analysis, the most stressful intersections are located on busy arterial roadways, such as Glisan Street, Division Street, 162nd Avenue, 182nd Avenue, Hogan Drive and Orient Drive. The least stressful crossings are at locations with improved pedestrian crossing treatments and at locations with lower vehicle speeds and volumes.

Figure 6 illustrates pedestrian comfort on roadway crossings throughout Gresham.

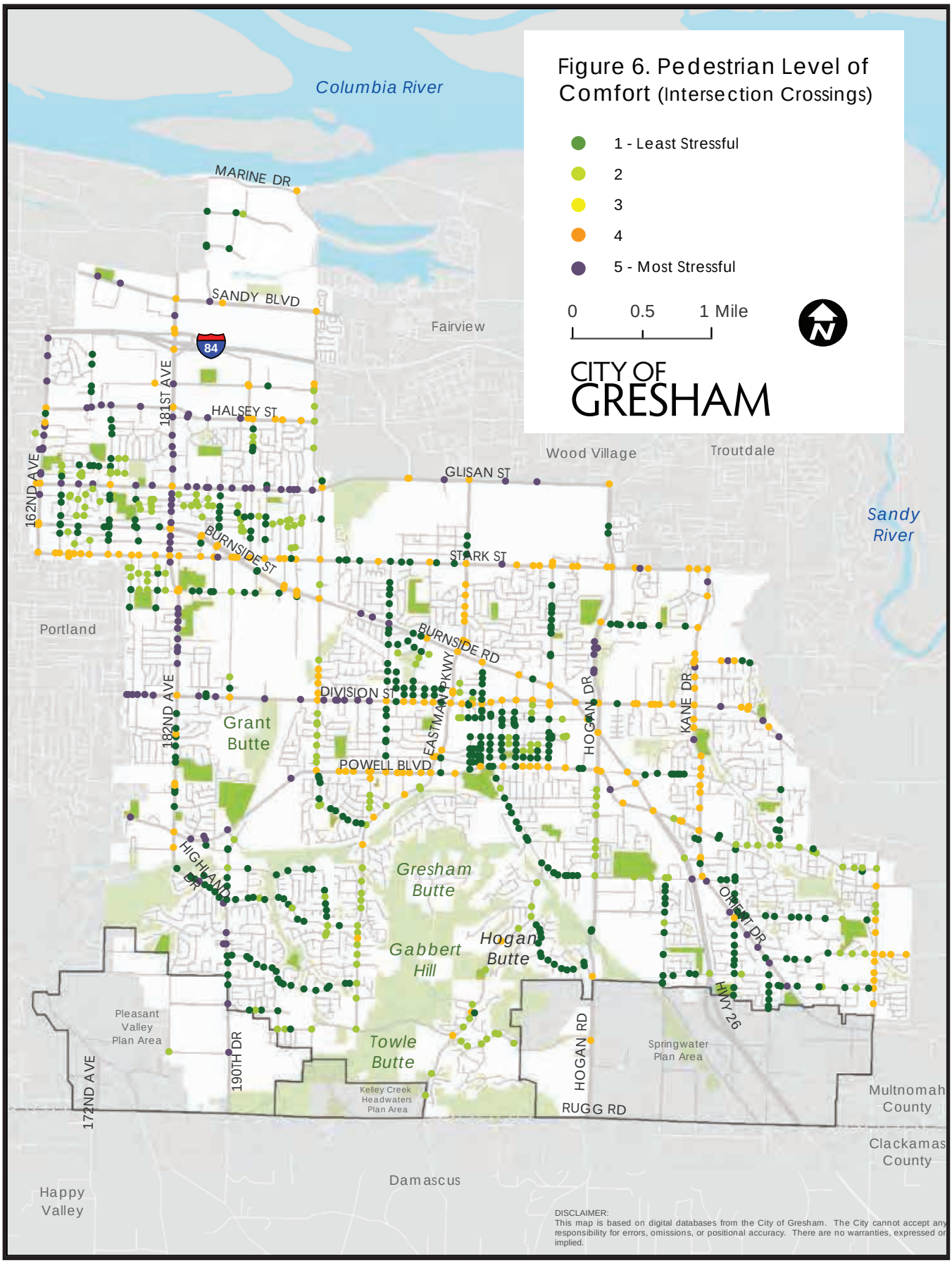
Figure 6. Pedestrian Level of Comfort (Intersection Crossings)
1 - Least Stressful
2
3
4
5 - Most Stressful
0
0.5
1 Mile
CITY OF GRESHAM
Columbia River
MARINE DR
SANDY BLVD
Fairview
84
181ST AVE
HALSEY ST
162ND AVE
Wood Village
Troutdale
GLISAN ST
Sandy River
BURNSIDE ST
STARK ST
Portland
BURNSIDE RD
DIVISION ST
182ND AVE
EASTMAN PKWY
HOGAN DR
KANE DR
Grant Butte
POWELL BLVD
HIGHLAND DR
Gresham Butte
ORIENT DR
Gabbert Hill
Hogan Butte
HWY 26
Pleasant Valley Plan Area
190TH DR
Towle Butte
HOGAN RD
Springwater Plan Area
Kelley Creek Headwaters Plan Area
RUGG RD
Multnomah County
172ND AVE
Clackamas County
Damascus
Happy Valley
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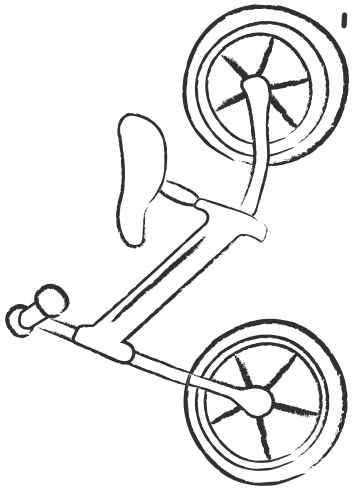
Existing Infrastructure

Bicycle networks

Bicycling provides a healthy, economical and fun travel option to key destinations around the city. Gresham has a range of bicycle infrastructure, including on-street bike lanes, off-street multi-use paths, and shared roadways. Safe, comfortable facilities are needed to promote bicycling as a transportation option to all people. An analysis of existing bikeways, their connectivity and levels of comfort, are shown on the following pages.

Figure 4 on the following page shows Gresham's existing bike network.



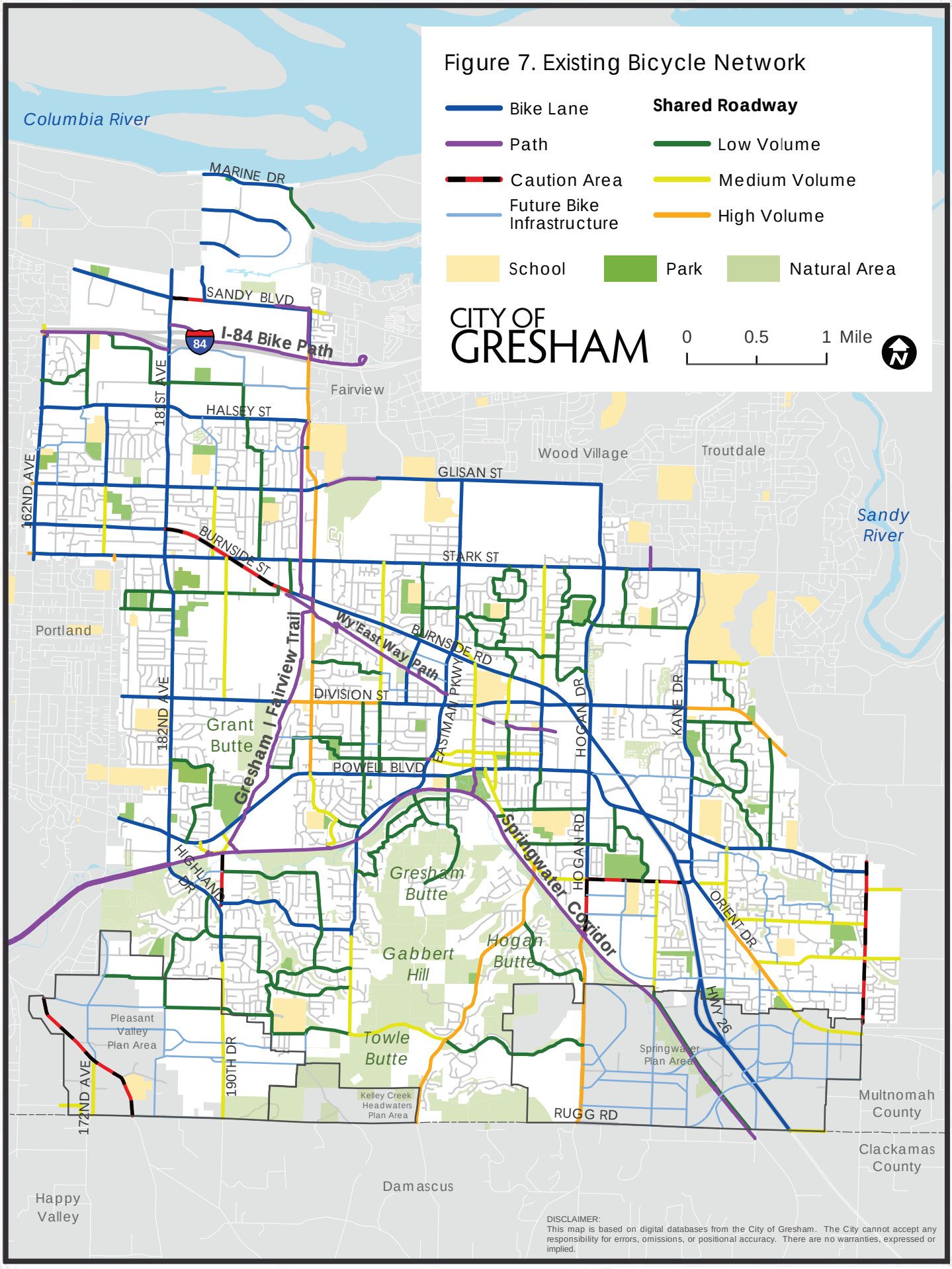


Figure 7. Existing Bicycle Network
Bike Lane
Path
Caution Area
Future Bike Infrastructure
Shared Roadway
Low Volume
Medium Volume
High Volume
School
Park
Natural Area
CITY OF GRESHAM
0 0.5 1 Mile
Columbia River
MARINE DR
SANDY BLVD
I-84 Bike Path
84
181ST AVE
HALSEY ST
Fairview
Wood Village
Troutdale
162ND AVE
GLISAN ST
Sandy River
BURNSIDE ST
STARK ST
Portland
Wy'East Way Path
BURNSIDE RD
Gresham Fairview Trail
182ND AVE
DIVISION ST
Grant Butte
EASTMAN PKWY
HOGAN DR
KANE DR
POWELL BLVD
HIGHLAND DR
Springwater Corridor
HOGAN RD
Gresham Butte
ORIENT DR
Gabbert Hill
Hogan Butte
HWY 26
Pleasant Valley Plan Area
Towle Butte
Springwater Plan Area
190TH DR
172ND AVE
Kelley Creek Headwaters Plan Area
RUGG RD
Multnomah County
Clackamas County
Damascus
Happy Valley
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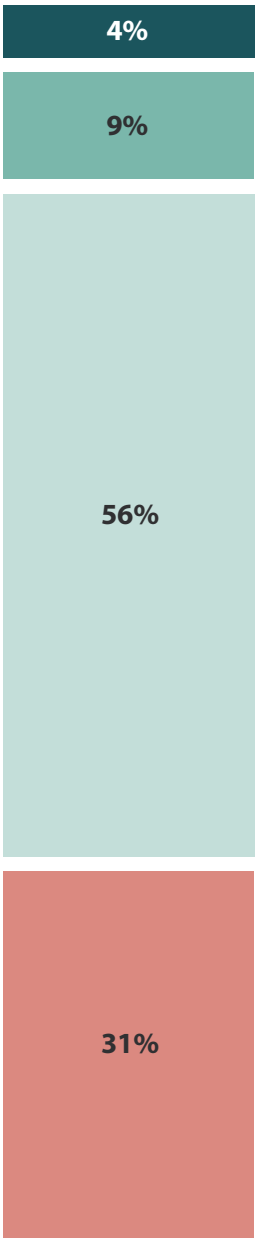
Types of Riders

A common typology breaks cyclists into four categories depending on the type of street they feel confident using when bicycling for everyday transportation. These categories are: Strong and the Fearless, Enthused and the Confident, Interested but Concerned, and No Way No How.

People in the Strong and Fearless category are willing to ride on any street, no matter the traffic speed or volume. The Enthused and Confident are very comfortable cycling on high traffic streets when there are bike lanes present. The Interested but Concerned are not very comfortable on high traffic streets with bike lanes. The No Way No How group is not interested in cycling on the street, but do cycle for recreation on off-street paths.



Strong + Fearless

This person is very comfortable without bike lanes. Winding roads with no shoulder are no problem. In the region, a small percentage identify as strong and fearless bikers.

Enthused + Confident

This person feels comfortable riding when they have designated bike lanes.

Interested but Concerned

This person only rides occationally for transportation. They see people biking on the road and are interested in biking more, but not feeling safe on bike routes is a concern. Most people in the region fall under this category.

No Way No How

This person is not interested in bicycling for transportation, but they do bike recreationally.

Bicycle Level of Comfort

To encourage more people to bicycle key components of the network must be comfortable for all users. The Bicycle Level of Comfort analysis defines comfort for cyclists based on four factors of the street's design:

- Posted speed limit
- Number of travel lanes
- Presence of bike lanes
- Width of buffer between parked vehicles

Road segments are classified into one of four levels of traffic stress based on these factors.
Bicycle Level 1 network represents roadways that bicyclists of all ages and abilities would feel comfortable riding on, while Level 2 represents slightly less comfortable roads, where most adults would be comfortable bicycling. Many streets in Gresham are categorized as Levels 1 and 2, the most comfortable environment for bicyclists. These roadways tend to be residential neighborhood streets, with low motor vehicle speeds and volumes. Bicycle facilities that are completely separated from motor vehicle traffic, such as multi-use paths and trails, are also categorized as Level 1.

Arterial roadways, typically multi-lane roads with high vehicle speeds that may or may not have bicycle facilities, are categorized as least comfortable for bicyclists. Levels 3 and 4 are roadways that would only be comfortable for experienced or strong and fearless bicyclists. Roadways in Gresham that are categorized as PLOS 5 include 190th Drive, the southern portion of Hogan Road, portions of Highway 26, Orient Drive and portions of Division Street.

Comfort Level	Length (miles)	Percent
1	216	62%
2	41	12%
3	38	11%
4	56	16%

Bicycle Routes for Everyone

The Level of Comfort analysis shows that many parts of Gresham have low-stress streets for bicycling, but these streets do not connect well. Areas of low-stress streets, mostly residential neighborhoods, are cut off from other low-stress streets by arterials. This break in low-stress connectivity keeps most people from accessing key destinations by bicycle. In order to create a network of low-stress streets and multi-use paths that reach key destinations Bicycle Routes for Everyone was developed (see Figure 8).

Bicycle Routes for Everyone are proposed bikeways that will be comfortable for all people, not just experienced bicyclists. Most of these routes will be on streets with low volumes of slow moving cars. On roadways with high speeds and/or high volumes, there will be physical separation between people bicycling and motor vehicles. the Bicycle Routes for Everyone network is designed for easy access to key destinations such as food stores, schools, parks and commercial areas. It also provides a specific set of routes for investment in bicycling infrastructure.

What We Learned

From the analysis of existing conditions several key challenges:

- *Walking and bicycling infrastructure is not evenly spread across the City. People in red areas of the equity index map have less sidewalks and less access to low-stress bike routes than other parts of the CIty.*
- *The highest safety risk for pedestrians and bicyclists is along arterial streets with high speeds and multiple lanes. This corresponds to the places with the least comfort for both pedestrians and bicyclists.*
- *Not every bicyclist will feel comfortable with the existing bike lanes on arterial and collector streets.*
- *Comfortable streets for bicyclists of all ages exist in Gresham, but they are not connected to each other or to key destinations.*

In the next chapter these key challenges are addressed by identifying areas of need and specific projects that will build Gresham's pedestrian and bicycle networks.

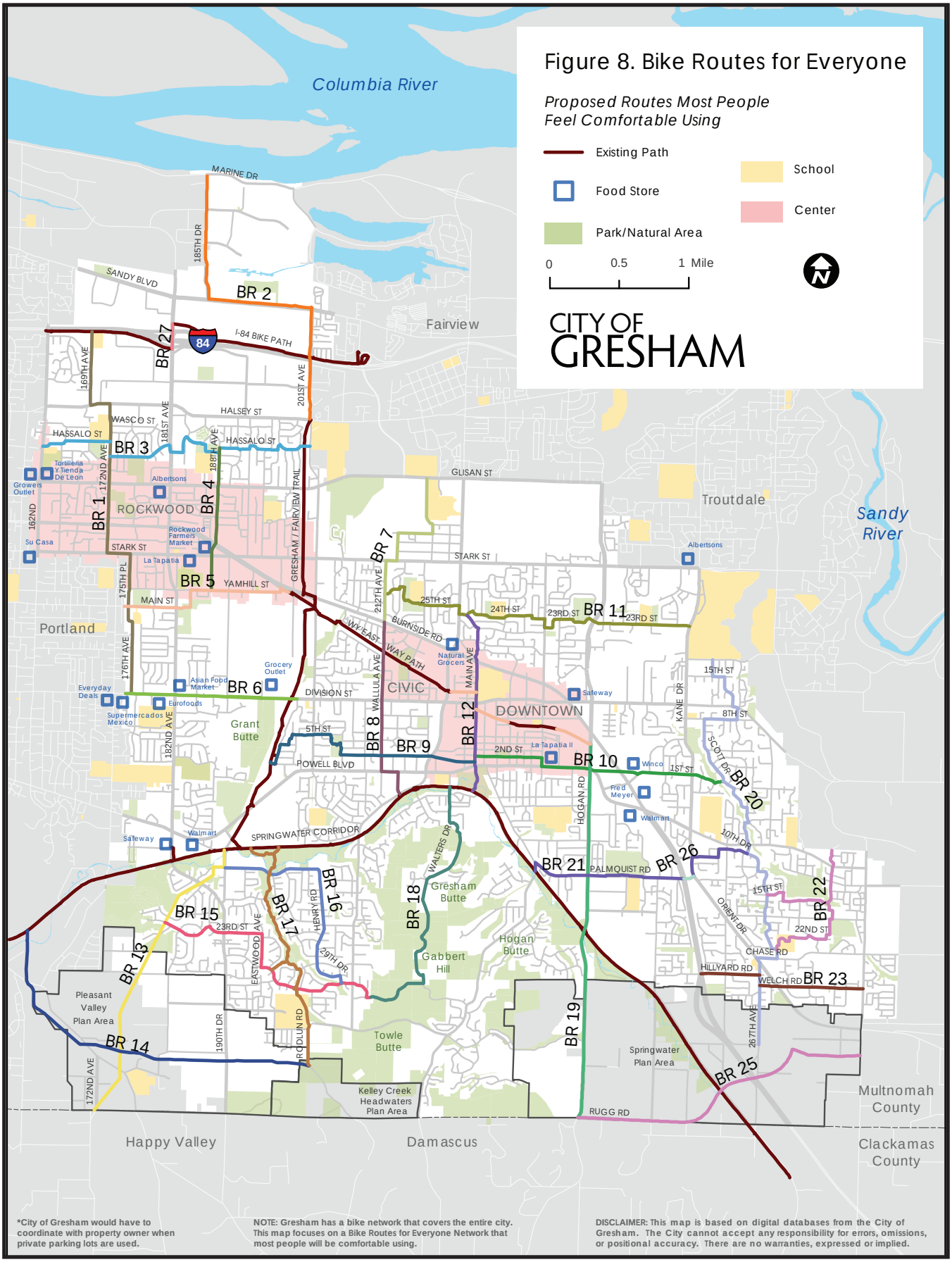


Figure 8. Bike Routes for Everyone
Proposed Routes Most People Feel Comfortable Using
Existing Path
Food Store
Park/Natural Area
School
Center
0
0.5
1 Mile
CITY OF GRESHAM
Columbia River
Sandy River
Fairview
Troutdale
Portland
Gresham
Happy Valley
Damascus
Multnomah County
Clackamas County
Pleasant Valley Plan Area
Springwater Plan Area
Kelley Creek Headwaters Plan Area
Grant Butte
Gresham Butte
Hogan Butte
Towle Butte
Gabbert Hill
ROCKWOOD
CIVIC
DOWNTOWN
MARINE DR
SANDY BLVD
I-84 BIKE PATH
HALSEY ST
WASCO ST
HASSALO ST
GLISAN ST
STARK ST
MAIN ST
YAMHILL ST
BURNSIDE RD
DIVISION ST
POWELL BLVD
SPRINGWATER CORRIDOR
PALMQUIST RD
HOGAN RD
RUGG RD
BR 1
BR 2
BR 3
BR 4
BR 5
BR 6
BR 7
BR 8
BR 9
BR 10
BR 11
BR 12
BR 13
BR 14
BR 15
BR 17
BR 18
BR 19
BR 20
BR 21
BR 22
BR 23
BR 25
BR 26
BR 27
Albertsons
Safeway
Walmart
Fred Meyer
Winco
Grocery Outlet
Natural Grocers
Rockwood Farmers Market
Asian Food Market
Eurofoods
Supermercados Mexico
Everyday Deals
Tortilleria y Tienda De Leon
Growers Outlet
Su Casa
La Tapatia
La Tapatia II
*City of Gresham would have to coordinate with property owner when private parking lots are used.
NOTE: Gresham has a bike network that covers the entire city. This map focuses on a Bike Routes for Everyone Network that most people will be comfortable using.
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springwater
corridor
gresham
sunday
parkways
gresham–
fairview
trail
walk + roll
to school day
month

Projects

Project Identification

Project Areas

One goal of the Active Transportation Plan was to identify projects needed to make walking and biking better in Gresham. To create a list of potential projects, first locations were identified as "project areas". These areas identify where walking and biking is difficult and uncomfortable. They represent an area in need of an infrastructure solution to make them safer and more usable.

Project areas were compiled from several sources. Community members were asked about the barriers to walking and biking and their common destinations during the community engagement discussed in Chapter 3.

The results of community engagement were used to identify project areas for either pedestrian or biking projects. Requests for sidewalk infill from community members over a number of years were included in the project areas list. Additionally, results of the Pedestrian Level of Comfort analysis and the Bicycle Level of Comfort analysis were included to highlight project areas based on physical street characteristics.

Project Lists

After compiling public feedback and technical data from the multiple sources noted earlier, two project lists were created--one for pedestrian infrastructure and one for bicycle infrastructure. The **pedestrian project list** is comprised of two types of projects, Sidewalk Infill and Street Crossing Projects.

Sidewalk infill projects provide new sidewalks where they are currently missing or inadequate. Street Crossing projects, while identified by a specific cross- street, represent a broader area or street segment identified as uncomfortable or difficult to cross. Further engineering review will determine the best crossing location based on proximity to destinations, density of residences, and safety considerations.

The bicycle project list includes Bicycle Routes for Everyone. These are routes on low-volume, low-speed streets. They support riders who are not comfortable riding on arterial or collector roads. Multi-use paths like the Springwater Corridor, Gresham-Fairview Trail, and Wy'East Way Path provide a low-stress spine connecting destinations across the city. Areas of the city not directly connected to these multi-use paths will be connected by the Bicycle Routes for Everyone to create a more complete, connected bicycle network for all types of riders.

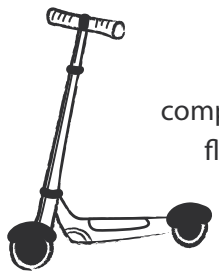
Prioritization

The project's Community Advisory Committee developed criteria to rank the pedestrian and bicycle project lists. Criteria were based on the goals of the Active Transportation Plan and centered around six key themes: Serve Key Destinations, Promote Safety, Transit Access, Promote Health, Equity, Pedestrian Level of Comfort and Promote Bike Network Connectivity.

The plan's policies directed the project team to identify and prioritize projects intended to increase access to healthy food, physical activity and reduce disparities in mobility and access for minority, low-income, youth and elderly households. Several steps were taken to ensure these considerations were included in the prioritization process:

- *A "Promote Health" criterion was included to emphasize food destinations and health outcomes related to chronic disease.*
- *Health clinics and hospitals were included as key destinations.*
- *An equity criterion was included to address the indicators of income, race, and age.*

Each project was rated and scored based on the criteria to create the prioritized project lists. The prioritized project lists were then shared with the community for input to ensure that the project rankings were compatible with community desires. To reflect the number of comments from the community engagement process an additional criterion was added, called Public Support. Each project list was again prioritized, this time using all seven criteria. This generated the final Pedestrian Project List and Bicycle Routes for Everyone Project List (on pages 44 and 45).



Each prioritized project list is intended as a menu of projects that need to be completed, not a sequential "to-do list". This flexibility allows matching the right top-scored project to a funding source.

Project Prioritization Methodology

1. Each project is rated against the following criteria:
   - Destinations
   - Transit access
   - Public priority
   - Pedestrian level of comfort
   - Safety
   - Health
   - Equity
   - Bike network connectivity
2. For each criterion, high priority projects were given a score of 10 points, medium priority projects received 5 points, and low priority received no points.
3. The "public priority" criterion reflects feedback received on project prioritization from the project focus groups, survey, and online map comments.
4. A project is deemed to be a "high priority" if it was prioritized by at least two focus groups and mentioned at least one additional time in a focus group, online map comment, or survey.
5. Medium priority projects were prioritized at least once in a focus group or mentioned as an important project in the online map comments, survey, or focus group.
6. Low priority projects were not mentioned at all during the prioritization comment process.

Prioritization Criteria for Pedestrian Network

Criterion	Brief description	Input	Rank	Measurement
Serve Key Destinations	Is the project located in an area with high demand for walking?	The pedestrian network should serve locations of high potential demand. Areas with higher levels of potential walking activity should have higher priorities for installing sidewalks.	High	Project is located in a regional/town Center, or within an area zoned for high density residential (more than 16 units per acre), or within 1/4 mile of a hospital or health clinic.
			Medium	Project is within 1/4 mile of a school, library, or park.
			Low	Does not connect to a major destination.
Transit Access	Does this project improve pedestrian access to the transit network?	Transit ridership by stop (boardings)	High	Project is within 1/2 mile of a transit stop with more than 100 boardings a day.
			Medium	Project is within 1/4 mile of a transit stop with 20 to 100 boardings a day.
			Low	Project is within 1/4 mile of a transit stop with less than 20 boardings a day.
Promote Safety	Does this project provide an immediate safety improvement at a location with a recorded safety concern?	Collision analysis shows intersections and street corridors with highest crash rates. Crashes are included if they are within 100 feet of the project.	High	Two or more pedestrian crashes have occurred along the segment or intersection in the last five years for which there is data.
			Medium	A pedestrian crash has occurred along the segment or intersection in the last five years for which there is data.
			Low	No reported crash occurred
Level of Comfort for Pedestrians	Does the segment provide a comfortable walking environment?	Pedestrian Level of Service score; prioritize segments with a higher score for filling gaps and improvements to improve comfort on the most challenging sections first.	High	Pedestrian Level of Service score of 5
			Medium	Pedestrian Level of Service score of 3 or 4
			Low	Pedestrian Level of Service score 1 or 2
Promote Health	Does the segment provide options for healthy food in areas with higher incidence of diabetes?	Health score with a 1/4-mile proximity to stores with healthy food and/or proximity to block groups of higher incidence of diabetes.	High	Project is within 1/4 mile of a healthy food store and in a census tract with a diabetes rate of over 10%.
			Medium	Project is within 1/4 mile of a healthy food store or in a census tract with a diabetes rate of over 10%.
			Low	Project is not within 1/4 mile of a healthy food store or in a census tract with a diabetes rate over 10%.
Equity	Does the project benefit underserved communities?	Equity composite measure showing geographies (block groups) where pedestrian improvements could benefit under-served, vulnerable populations.	High	Block group scored in top tier in the Equity Index.
			Medium	Block group scored in the middle tier in the Equity Index.
			Low	Block group scored in the lowest tier in the Equity Index.
Public Priority	Do Gresham community members prioritize this project?	Aggregated community prioritization from focus groups, survey, and online map comments.	High	Project was prioritized by at least two focus groups and mentioned at once in a focus group, online map comment, or survey.
			Medium	Project was prioritized or mentioned at least once in the outreach.
			Low	Project was not prioritized or mentioned during the outreach.

Prioritized Project List: *Pedestrian*

ID	Main Facility Type	Location	Cross Street	Length (feet)	Destinations	Transit Access	Pedestrian LOS	Promote Safety	Promote Health	Equity	Public Priority	Overall Score
C12	Crossing enhancement	181st Ave	Stark St	N/A	10	10	10	10	10	10	10	70
C6	Crossing enhancement	181st Ave	Glisan St	N/A	10	10	10	10	10	10	10	70
C15	Crossing enhancement	Division St	182nd Ave	N/A	10	10	10	10	5	10	10	65
S1	Sidewalk infill	162nd Ave	Glisan St to Halsey St	2400	10	10	10	10	5	10	10	65
C10	Crossing enhancement	Stark St	165th Ave	N/A	10	10	5	10	10	10	10	65
C17	Crossing enhancement	182nd Ave	Powell Blvd	N/A	10	10	5	10	10	10	10	65
S10	Sidewalk infill	Division St	Gresham Fairview Trail to Wallula Ave	3200	10	10	10	10	10	5	5	60
C13	Crossing enhancement	Stark St	Burnside St	N/A	10	10	5	10	10	10	5	60
C28	Crossing enhancement	Stark St	Kane Dr	N/A	10	10	5	10	10	10	5	60
C31	Crossing enhancement	Division St	Hogan Dr	N/A	10	10	5	10	10	10	5	60
S13	Sidewalk infill	Highland Dr	11th St to Springwater Corridor	500	10	10	5	10	10	10	0	55
S12	Sidewalk infill	US 26	Powell Blvd to Palmquist Dr	7000	10	5	10	10	10	5	5	55
S5	Sidewalk infill	176th Ave	Division St to Yamhill St	4100	10	10	0	10	10	10	5	55
S9	Sidewalk infill	Division St	Kane Dr to Centurion Dr	1500	10	5	10	10	5	10	5	55
C14	Crossing enhancement	182nd Ave	Stephens St	N/A	10	10	10	0	10	10	5	55
C23	Crossing enhancement	Burnside Rd	Eastman Pkwy	N/A	10	10	5	10	10	5	5	55
C26	Crossing enhancement	Powell Blvd	Cleveland Ave	N/A	10	10	5	5	10	10	5	55
C5	Crossing enhancement	162nd Ave	Glisan St	N/A	10	10	10	5	5	10	5	55
C7	Crossing enhancement	Glisan St	188th Ave	N/A	10	10	10	0	5	10	10	55
C16	Crossing enhancement	182nd Ave	Brooklyn St	N/A	10	10	5	0	10	10	5	50
C18	Crossing enhancement	Powell Blvd	Duniway Ave	N/A	10	10	10	0	10	5	5	50
C4	Crossing enhancement	181st Ave	Wasco St	N/A	10	5	10	5	5	10	5	50
C21	Crossing enhancement	Burnside Rd	208th Ave	N/A	10	10	10	5	5	5	5	50
S16	Sidewalk infill	17th St	La Mesa Pl	200	5	10	10	5	5	10	0	45
S6	Sidewalk infill	176th Pl	Division St to Marie St	4100	5	10	0	5	10	10	5	45
C25	Crossing enhancement	Kelly Ave	8th St	N/A	10	10	0	10	5	10	0	45

Prioritized Project List: *Pedestrian* (Continued)

ID	Main Facility Type	Location	Cross Street	Length (feet)	Destinations	Transit Access	Pedestrian LOS	Promote Safety	Promote Health	Equity	Public Priority	Overall Score
C30	Crossing enhancement	Division St	Cochran Dr	N/A	10	10	5	5	5	10	10	45
C33	Crossing enhancement	Kane Dr	Powell Valley Rd	N/A	10	5	5	10	5	10	0	45
S7	Sidewalk infill	190th Ave	North of Division St	2000	10	10	5	0	5	10	5	45
C11	Crossing enhancement	Stark St	175th Pl	N/A	10	10	5	0	5	10	5	45
C32	Crossing enhancement	1st St	Kane Dr	N/A	10	5	5	0	10	10	5	45
C2	Crossing enhancement	Halsey St	169th Ave	N/A	10	5	10	0	0	10	10	45
C29	Crossing enhancement	17th St	La Mesa Pl	N/A	5	10	5	5	5	10	0	40
S8	Sidewalk infill	Birdsdale Ave	North & South of Division S	1600	10	10	5	0	5	10	0	40
C24	Crossing enhancement	Powell Blvd	Eastman Pkwy	N/A	10	5	5	5	5	5	5	40
S4	Sidewalk infill	Burnside Rd	West of Eastman Pkwy	2000	10	10	5	0	5	5	0	35
C22	Crossing enhancement	223rd Ave	Morrison St	N/A	10	5	5	5	0	5	5	35
C34	Crossing enhancement	US26	Palmquist Rd	N/A	10	0	10	5	0	5	5	35
C1	Crossing enhancement	181st Ave	San Rafael St	N/A	10	5	5	0	5	5	5	35
C3	Crossing enhancement	Halsey St	192nd St	N/A	10	0	10	0	5	5	5	35
S2	Sidewalk infill	Halsey St	201st Ave	2700	10	5	5	0	5	5	0	30
C9	Crossing enhancement	Glisan St	219th Ave	N/A	10	5	10	0	0	5	0	30
C8	Crossing enhancement	Glisan St	202nd Ave	N/A	10	0	5	0	5	5	5	30
S3	Sidewalk infill	201st Ave	Glisan St to Holladay St	1400	5	5	5	0	5	5	0	25
S11	Sidewalk infill	Powell Valley Rd	Williams Rd	3500	5	0	5	0	5	5	5	25
C35	Crossing enhancement	Hogan Rd	Roberts Rd	N/A	10	0	0	0	0	10	5	25
C36	Crossing enhancement	Orient Dr	Hillyard Rd	N/A	10	0	10	0	0	0	5	25
C27	Crossing enhancement	Cleveland Ave	25th St	N/A	5	5	0	0	0	10	0	20
S14	Sidewalk infill	Butler Rd	Towle Ave to Binford Ave	2100	5	0	5	0	0	5	5	20
S15	Sidewalk infill	Orient Dr	Salquist Dr to Welch Rd	5300	10	0	10	0	0	0	0	20
C19	Crossing enhancement	Pleasantview Dr	23rd St	N/A	5	0	10	0	0	5	0	20
C20	Crossing enhancement	Towle Ave	33rd St	N/A	5	0	0	0	0	5	0	10

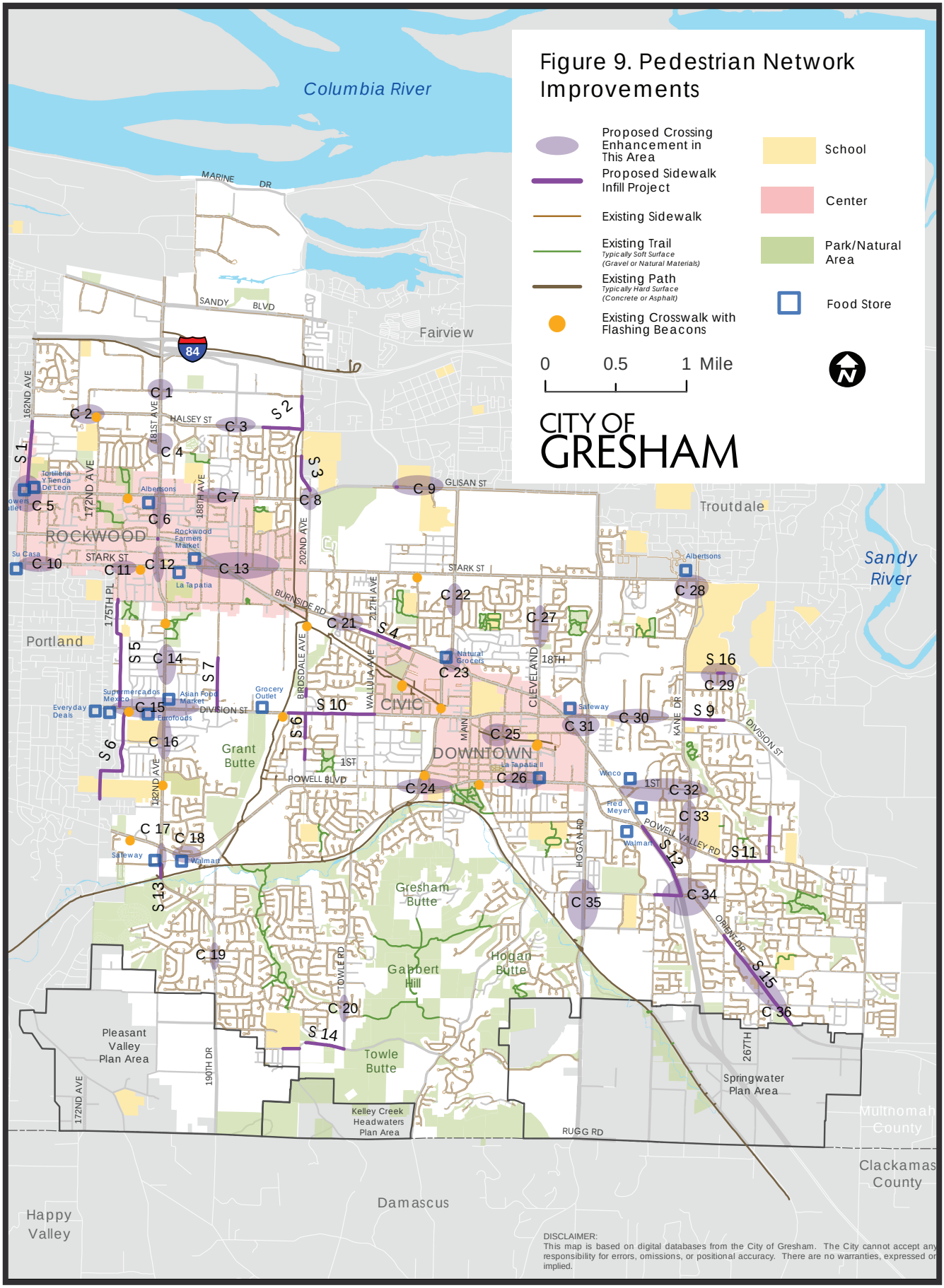


Figure 9. Pedestrian Network Improvements
Proposed Crossing Enhancement in This Area
Proposed Sidewalk Infill Project
Existing Sidewalk
Existing Trail
Typically Soft Surface (Gravel or Natural Materials)
Existing Path
Typically Hard Surface (Concrete or Asphalt)
Existing Crosswalk with Flashing Beacons
School
Center
Park/Natural Area
Food Store
0 0.5 1 Mile
CITY OF GRESHAM
Columbia River
Sandy River
Fairview
Troutdale
Portland
Gresham
Happy Valley
Damascus
Multnomah County
Clackamas County
ROCKWOOD
CIVIC
DOWNTOWN
Grant Butte
Gresham Butte
Gabbert Hill
Hogan Butte
Towle Butte
Pleasant Valley Plan Area
Springwater Plan Area
Kelley Creek Headwaters Plan Area
MARINE DR
SANDY BLVD
HALSEY ST
GLISAN ST
STARK ST
BURNSIDE RD
DIVISION ST
POWELL BLVD
1ST
181ST AVE
162ND AVE
172ND AVE
182ND AVE
188TH AVE
202ND AVE
212TH AVE
175TH PL
BIRDSDALE AVE
WALLULA AVE
CLEVELAND
MAIN
18TH
KANE DR
HOGAN RD
TOWLE RD
190TH DR
267TH
ORIENT DR
POWELL VALLEY RD
RUGG RD
84
C 1
C 2
C 3
C 4
C 5
C 6
C 7
C 8
C 9
C 10
C 11
C 12
C 13
C 14
C 15
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C 29
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C 33
C 34
C 35
C 36
S 1
S 2
S 3
S 4
S 5
S 6
S 7
S 9
S 10
S 11
S 12
S 13
S 14
S 15
S 16
Albertsons
Rockwood Farmers Market
La Tapatia
Natural Grocers
Safeway
Grocery Outlet
Asian Food Market
Eurofoods
Supermercados Mexico
Everyday Deals
Su Casa
Jovillena y Tienda De Leon
Winco
Red Meyer
Walmart
La Tapatia II
DISCLAIMER:
This map is based on digital databases from the City of Gresham. The City cannot accept any responsibility for errors, omissions, or positional accuracy. There are no warranties, expressed or implied.

Prioritized Project List: *Bicycle*

ID	Main Facility Type	Start (S or W)	Finish (N or E)	Length (miles)	Destinations	Transit Access	Connectivity	Promote Safety	Promote Health	Equity	Public Priority	Overall Score
BR1	Bike boulevard	NW Division St	I-84	2.9	10	10	5	10	10	10	10	65
BR5	Bike boulevard	SE Main St	NE Hogan Dr	2.1	10	10	5	10	10	10	10	65
BR6 Trail	Separated bike lane	SE 176th Ave	Gresham-Fairview	1.5	10	10	5	10	10	10	10	65
BR10	Bike boulevard	N Main Ave	NE Scott Dr	1.9	10	10	0	10	10	10	5	55
BR4	Bike boulevard	SE Yamhill St	NE Hassalo St	1.0	10	10	0	5	10	10	10	55
BR8	Bike boulevard	Springwater Corridor Trail	NW Burnside Rd	1.4	10	10	5	10	5	5	5	50
BR12	Bike boulevard	Springwater Corridor Trail	SE Salmon Ct	1.3	10	10	5	5	10	5	5	50
BR2	Trail	NE Halsey St	NE Marine Dr	2.5	10	5	5	5	5	10	10	50
BR3	Bike boulevard	NE 162nd Ave	NE 201st Ave	2.3	10	5	5	0	10	10	10	50
BR9	Bike boulevard	Gresham-Fairview Trail	N Main Ave	1.8	10	10	5	5	5	5	10	50
BR11	Bike boulevard	SE 212th Ave	NE Kane Dr	2.6	10	10	0	5	10	5	5	45
BR27	Separated bike lane jog	I-84 bike path	I-84 bike path	0.2	10	5	10	0	5	5	10	45
BR19	Separated bike lane	NE Burnside Rd	City limits (South)	2.7	10	10	5	10	5	0	0	40
BR7	Bike boulevard	NW Burnside Rd	NE Glisan St	1.4	10	10	0	5	5	5	5	40
BR21	Bike boulevard	Springwater Corridor Trail	SE Wendy Ave	1.8	10	5	5	10	0	5	0	35
BR13	Trail	City limits (South) Corridor Trail	Springwater	2.3	10	10	0	0	5	5	5	35
BR20	Bike boulevard	SE Callister Rd	NE 17th	3.7	10	10	0	5	0	5	5	35
BR17	Trail	Kelley Creek Trail	Springwater Corridor Trai	2.2	5	10	5	0	0	0	5	25
BR18	Trail	SW 33rd St	Springwater Corridor Trail	2.1	10	5	5	0	0	0	5	25
BR14	Trail	Springwater Corridor Trail	Kelley Creek Trail end	2.7	10	5	5	0	0	0	5	25
BR23	Bike boulevard	Hwy 16	SE 282nd Ave	1.2	10	0	0	5	0	0	0	15
BR25	Trail	SE 242nd Ave	SE 282nd Ave	2.3	10	0	5	0	0	0	0	15
BR22	Bike boulevard	SE Williams Ave & SE Baker Way	SE Old Woods Loop	1.7	5	0	0	0	0	5	5	15
BR16	Bike boulevard	SW Pleasant View Dr	SW 33rd St	1.7	10	0	0	0	0	0	5	15
BR26	Overpass	SE Palmquist Rd	SE Kane Dr	0.1	10	0	0	0	0	0	5	15
BR15	Bike boulevard	Powerline Trail	SW 33rd St	2.0	5	0	0	0	0	0	5	10

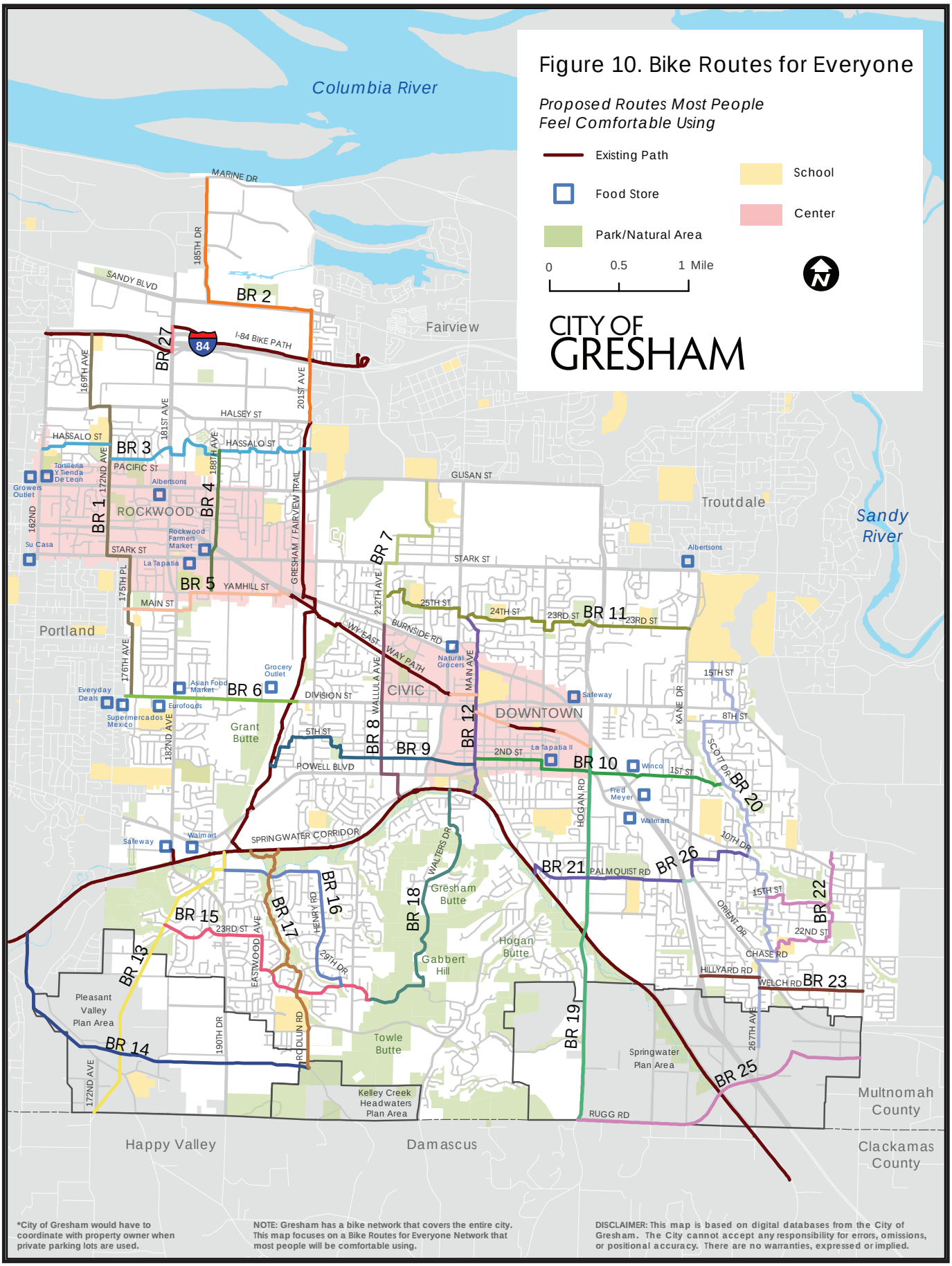


Figure 10. Bike Routes for Everyone
Proposed Routes Most People Feel Comfortable Using
Existing Path
Food Store
Park/Natural Area
School
Center
0
0.5
1 Mile
CITY OF GRESHAM
Columbia River
Sandy River
Fairview
Troutdale
Portland
Happy Valley
Damascus
Multnomah County
Clackamas County
ROCKWOOD
CIVIC
DOWNTOWN
Grant Butte
Gresham Butte
Hogan Butte
Gabbert Hill
Towle Butte
Pleasant Valley Plan Area
Springwater Plan Area
Kelley Creek Headwaters Plan Area
BR 1
BR 2
BR 3
BR 4
BR 5
BR 6
BR 7
BR 8
BR 9
BR 10
BR 11
BR 12
BR 13
BR 14
BR 15
BR 16
BR 17
BR 18
BR 19
BR 20
BR 21
BR 22
BR 23
BR 25
BR 26
BR 27
MARINE DR
SANDY BLVD
I-84 BIKE PATH
HALSEY ST
HASSALO ST
PACIFIC ST
STARK ST
MAIN ST
YAMHILL ST
GLISAN ST
BURNSIDE RD
DIVISION ST
POWELL BLVD
SPRINGWATER CORRIDOR
PALMQUIST RD
RUGG RD
GRESHAM / FAIRVIEW TRAIL
WY'EAST WAY PATH
Albertsons
Safeway
Walmart
Fred Meyer
Winco
Natural Grocers
Grocery Outlet
Asian Food Market
Eurofoods
Supermercados Mexico
Everyday Deals
Rockwood Farmers Market
La Tapatia
La Tapatia II
Tortilleria Y Tienda De Leon
Growers Outlet
Su Casa
*City of Gresham would have to coordinate with property owner when private parking lots are used.
NOTE: Gresham has a bike network that covers the entire city. This map focuses on a Bike Routes for Everyone Network that most people will be comfortable using.
DISCLAIMER: This map is based on digital databases from the City of Gresham. The City cannot accept any responsibility for errors, omissions, or positional accuracy. There are no warranties, expressed or implied.


springwater
corridor
gresham
sunday
parkways
gresham–
fairview
trail
walk + roll
to school day
month

Design

Design of Priority Areas in Gresham

There are many types of infrastructure to help improve the safety and comfort of pedestrians and cyclists in the identified project areas. The following pages are filled with design options for pedestrian and bicycle facilities, from creative crosswalks to urban cycle tracks.

Alta Planning + Design, a firm that specializes in active transportation, helped develop these Gresham-specific design options. The designs are based on National Association of City Transportation Officials (NACTO) guidelines, which offer creative and feasible options.

Pedestrian infrastructure is primarily comprised of crossing treatments and sidewalk infill. These are shown in the Pedestrian Facility Design Options below and would be built to existing City standards.

Priority Project Example Sheets (Figures 11 to 20) show alternatives for specific bike routes in Gresham using some of these design options. Some of the designs have never been constructed in the City. These would need extra education to show bicycle and vehicle users how to use the infrastructure and how it makes the street safer for bicyclists.

A protected bike lane creates a physical separation between cyclists and vehicles, making users feel safe even on busy streets.

Pedestrian Facility Design Options

Versatile Sidewalks Sidewalk design can be adapted to highlight an area's natural features.

Materials A variety of sidewalk materials can be used and combined to create a unique, appealing design.

Sidewalk Planters Planters integrated with sidewalks mitigate stormwater while providing a pleasant user experience throughout the neighborhood.

Pedestrian Facility Design Options

Crosswalk Visual reminder to drivers that pedestrians have the right of way at legal street crossings.

Refuge Island A concrete island placed in the middle of the street to give pedestrians a safe place to wait during lengthy crossings.

Rapid Flash Beacon Flashing lights that alert drivers to a pedestrian's intention to cross the street.

Bicycle Facility Design Options

Off Street Multi-use Paths Shared-use paths designed for both transportation and recreation, used by pedestrians, cyclists, and other non-motorized users. They are typically surrounded by open space.

Buffered Bike Lane A bike lane with an additional painted stripe to separate vehicles from bicyclists.

Protected Bike Lane A bike lane with additional vertical buffer to separate bicyclists from vehicles, such as bollards, planters, curb, or vehicle parking.

Cycle Track Exclusive bike facility that combines the user experience of a separated path with the on-street infrastructure of a conventional bike lane.

Sharrow A shared-lane street marking to remind vehicles they are sharing the road with bicyclists. They are also useful for wayfinding.

Bike Box A painted area at an intersection that provides a visible place for bicyclists to wait ahead of traffic.

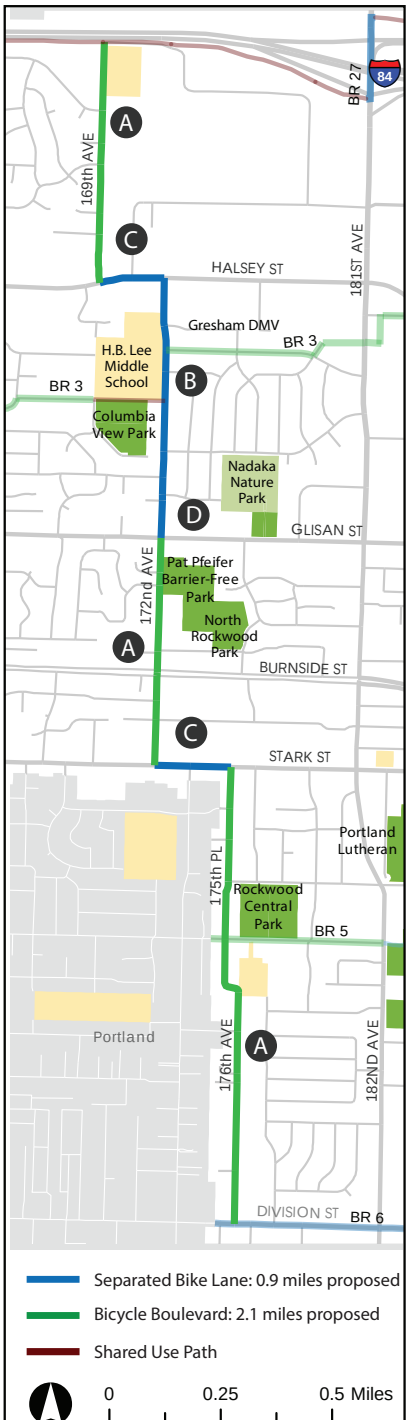
Priority Project Example Sheets

The following Priority Project Example Sheets (Figures 11 to 20) show alternatives for specific bike routes in Gresham.

CITY OF GRESHAM

Figure 11. Project BR 1

West Gresham Connector



PLANNED IMPROVEMENTS

This route connects I-84 to SE Division St along NE 169th Ave, NE 172nd Ave, and SE 176th Ave. Facility types vary from bike boulevards to separated bike lanes. To provide low-stress connections, jogged intersections at NE Halsey St and SE Stark St require short separated bike lanes and crossing enhancements.

Wayfinding

Wayfinding signs will help people navigate the jogs and turns along the route and connect with other Bike Routes for Everyone.

A Bike Boulevard

With few vehicles traveling at low speeds, these streets are a good fit for shared use streets. To create low-stress bike boulevards, signs, pavement markings (sharrows), and traffic calming measures should be added.

NACTO Urban Bikeway Design Guide

B Separated Bike Lane

People biking on NE Halsey St, NE 172nd Ave, and on SE Stark St need separation from the roadway because of fast speeds and high numbers of vehicles. Separated bike lanes, protected by bollards, posts, concrete barriers or planters, should be added to provide this protection.

FHA Separated Bike Lane Design Guide

C Separated Bike Lane Intersection Jog

At the jogged intersections on NE 169th Ave/NE Halsey St/NE 172nd Ave and SE 172nd Ave/SE Stark St/SE 175th Pl, separated bike lanes and enhanced crossings should be added to provide safe connections accross busy roads.

NACTO Urban Bikeway Design Guide

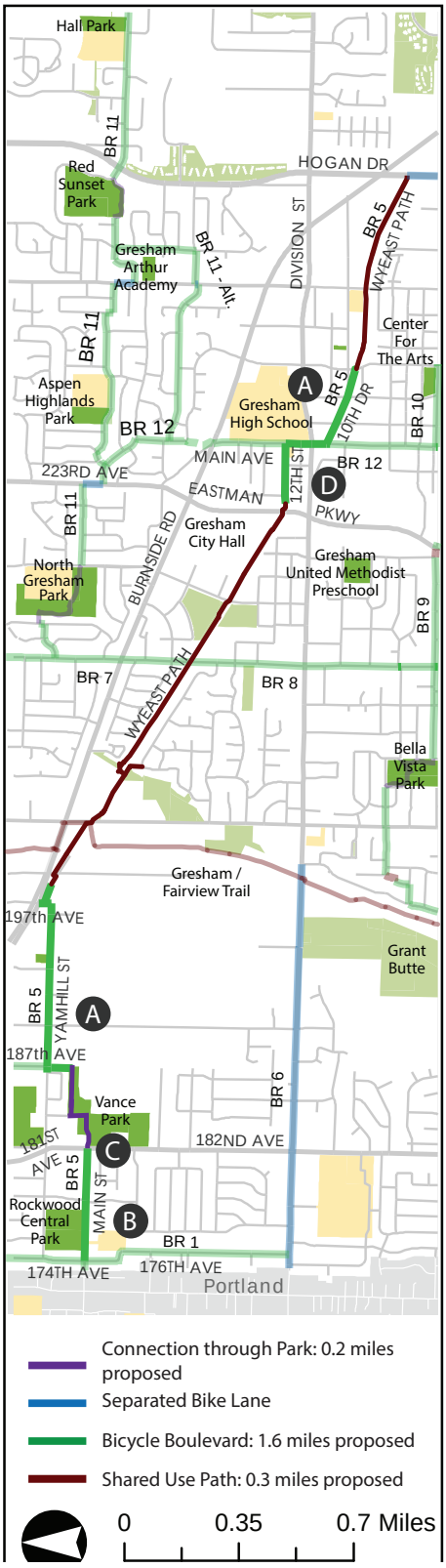
D Enhanced Crossing

At the busy intersection at NE 172nd Ave and NE Glisan St the route will transition between a separated bike lane and a bike boulevard. People biking will need an enhanced crossing with signs and a bike box to safely cross the

CITY OF GRESHAM

Figure 12. Project BR 5

Wy'East Crosstown Bike Route



PLANNED IMPROVEMENTS

This route connects NE Hogan Dr to SE 174th Ave. It will close longstanding gaps along the Wyeast Path, connect to six important north/south bike routes, and link Gresham to the planned Portland 4M Neighborhood Greenway. The Wyeast Crosstown Bike Route will generally be comprised of shared space streets linking segments of the Wyeast Trail.

A Bike Boulevard

Due to the low volume of cars traveling at low speeds, these streets are a good fit for shared use streets. To create low-stress bike boulevards, signs, pavement markings (sharrows), and traffic calming measures should be added.

NACTO Urban Bikeway Design Guide

B Connection to Portland 4M Neighborhood Greenway

The western end of the Wyeast Crosstown Bike Route will connect with the planned Portland 4M Neighborhood Greenway via SE Main St, providing a key link to the City of Portland bike network.

C Connection through Park

An existing path through Vance Park connects two bike boulevards on neighborhood streets. The existing enhanced crossing at SE 182nd Ave provides access to the park from SE Main St.

Google Maps

D Enhanced Crossings

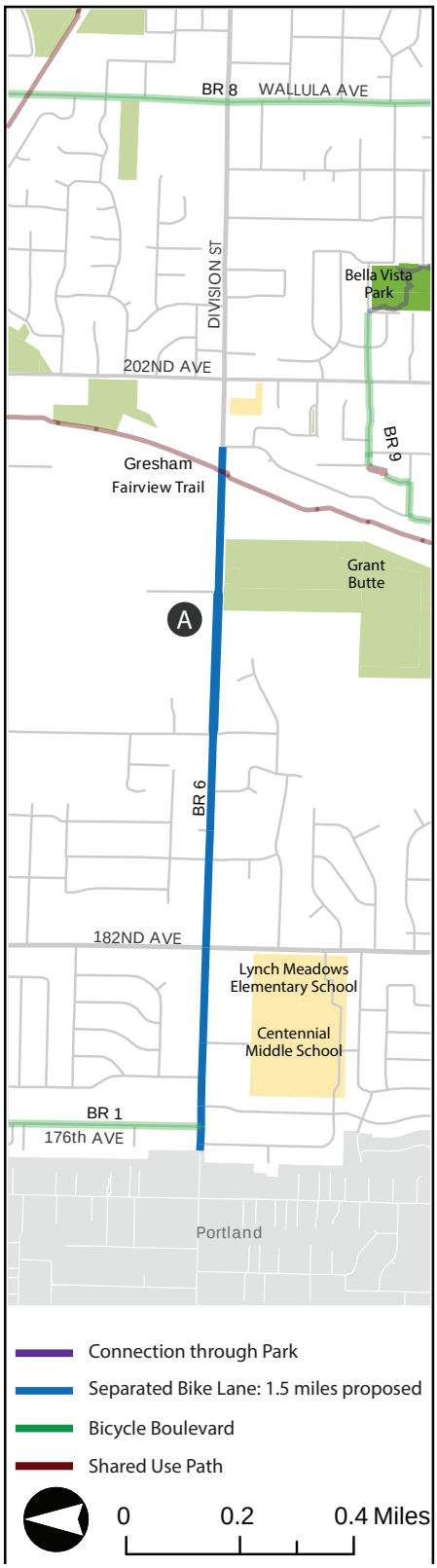
The crossing at NW 12th St and N Main Ave already has some traffic calming, but is still challenging for people walking and biking to navigate. A raised crosswalk would slow traffic and make people crossing more visible.
Narrowing the traffic lanes and reducing the curb radii at NW 10th and Main Streets would improve crossing conditions. Raising the intersection across NW Main would further reduce auto speeds.

Fundamentals of Bike Boulevard Planning and Design Guidebook

Figure 13. Project BR 6

Division St Separated Bike Lane

CITY OF GRESHAM



PLANNED IMPROVEMENTS

This route would upgrade the current buffered bike lanes on SE Division St to separated bike lanes. Fast speeds and high volumes of cars require more protection for people on bikes. The Division St Separated Bike Lane would connect west Gresham neighborhoods to the Gresham Fairview Trail and provide access to several grocery stores and other local businesses. NW Division St, east of NW Birdsdale, appears to be a good candidate for a road diet, given Average Annual Daily Traffic (AADT) of less than 25,000. Depending on the final design of TriMet's Division BRT project, traffic volumes may be reduced in coming years. Implementation should be a one-way separated bike lane on each side of the street. The street has too many driveways for a two-way separated bike lane.

A One-Way Separated Bike Lane

This route should upgrade the current bike lane buffer to include physical protection and a treatment to address the many driveways along the street. Both can be accomplished by raising the bike lane to above the street grade, up to the height of the sidewalk. If the bike facility remains at street level, sharrows or green paint skip lines should be added to warn bicyclists and motorists at driveway conflict zones.

NACTO Urban Bikeway Design Guide

At intersections, people biking are at risk from both right- and left-turning motorists. To address this issue, the separated bike lane facility should include two-stage bike turn boxes at signalized intersections, signal changes, physical protection (e.g. median refuge islands), and/or reduced corner radii to limit vehicle speeds while turning.

NACTO Urban Bikeway Design Guide

Materials and Maintenance

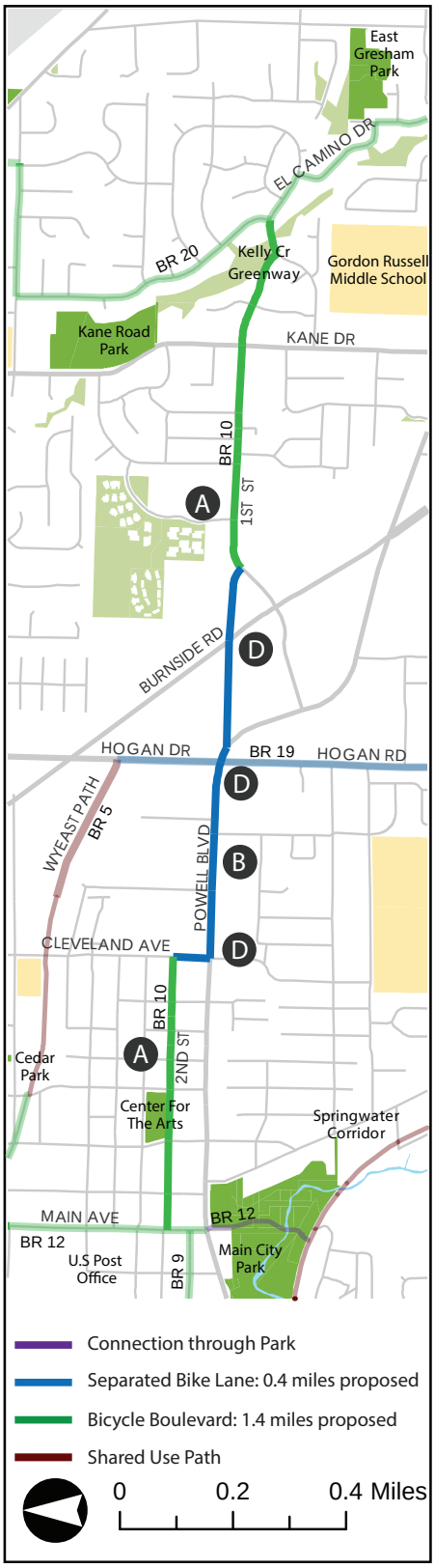
Flexible delineators are a good option for providing a minimum level of protection when spaced out appropriately, relative to the speed of vehicle traffic. Other protection options include a raised concrete median, parking bumpers, plastic bumpers, and planters. Separated bike lanes require routine maintenance, including debris removal. Routine sweeping to remove debris, such as leaves and other obstructions, can be done with smaller street sweepers.

Bike lane street sweeper in L.A. Gizmodo

Figure 14. Project BR 10

East Gresham Connector

CITY OF GRESHAM



PLANNED IMPROVEMENTS

The East Gresham Connector Route connects downtown Gresham to SE El Camino Dr along the Powell Blvd corridor, following NE 2nd St/E Powell Blvd/SE 1st St. This connection is important because it provides a low stress route from East Gresham neighborhoods into downtown and the Civic District. This route will include bicycle boulevards along low stress neighborhood streets, separated bike lanes as the route joins Powell Blvd for several blocks, and enhanced crossings of several busy arterial streets.

A Bike Boulevard

A low volume of cars traveling at low speeds make NE 2nd St and SE 1st St, west of SE 3rd St, a good fit for signs, pavement markings, and speed and volume management measures to create low-stress bicycle routes.

NACTO Urban Bikeway Design Guide

B Two-Way Separated Bike Lane

A two-way separated bike lane on the west side NE Cleveland Ave and north side of E Powell Blvd will connect NE 2nd St and SE 1st St. The two-way separated bike lane will continue on the south side of SE 1st St to SE 3rd St. Driveway consolidation will be necessary to protect people biking.

NACTO Urban Bikeway Design Guide

Types of Protection

For a two-way separated bike lane, the minimum protection needs to be more substantial than for a one-way facility. Options for providing protection include raised concrete medians, concrete planters, parking bumpers, plastic bumpers, etc. Driveways should be eliminated or consolidated wherever possible to reduce the number of conflict areas.

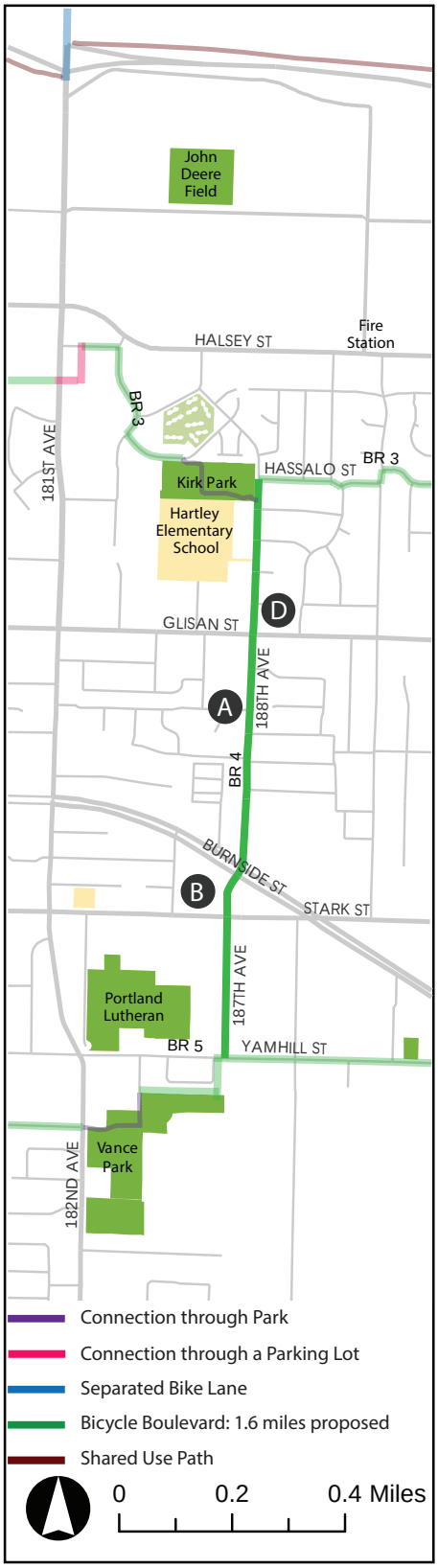
D Signalized Intersections

The signalized intersections at NE Cleveland, NE Hogan, and SE Burnside should be modified to create protected signal phases via push button request or automatic detection of bicycles. If intersection efficiency is unacceptably impacted, through movements of vehicles can be allowed during the protected phase for bicyclists.

NACTO Urban Bikeway Design Guide

Figure 15. Project BR 4
Rockwood Bike Route

CITY OF GRESHAM



PLANNED IMPROVEMENTS

The Rockwood Bike Route connects two east/west routes that are north and south of the Rockwood neighborhood, which currently lacks safe, low stress access for people biking. The route will link SE Yamhill St to NE Hassalo St along bike boulevards on NE 187th Ave/NE 188th Ave and navigate several large arterial crossings.

A Bike Boulevard

This route takes advantage of one of the few through streets in Rockwood with low traffic volumes and speeds to create bike boulevard facilities. Few vehicles and low traffic speeds make these streets a good fit for signs, pavement markings, and speed and volume management measures to create low-stress bicycle routes.

NACTO Urban Bikeway Design Guide

B Existing Crossing

At SE 187th St and SE Stark Ave, people riding will use the existing traffic signal to cross SE Stark St and continue on the bike boulevard.

Google Maps

D Enhanced Crossing

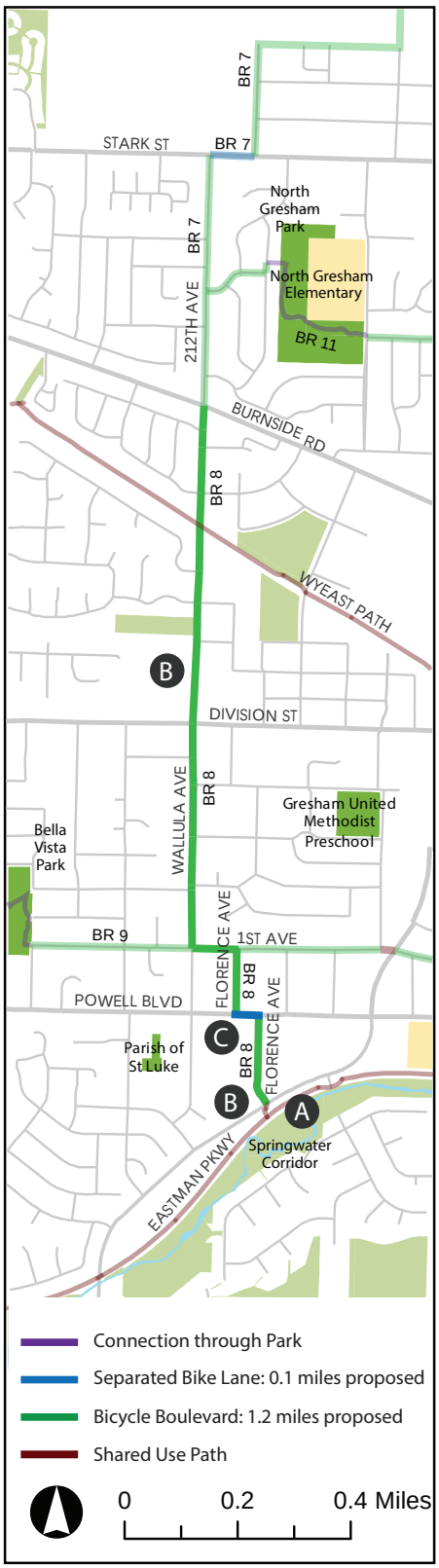
At NE 188th St and NE Glisan St the bike boulevard crosses NE Glisan St, a five-lane arterial. This crossing requires significant safety enhancement. Install Rectangular Rapid Flashing Beacons (RRFBs) per the FHWA Interim Approval IA-11, or Pedestrian Hybrid Beacons (PHBs) per MUTCD Chapter 4F, with corresponding signs and pavement markings. Given the posted speed limit of 40 MPH, Average Annual Daily Traffic (AADT) between 15,001 – 25,000, a crossing length of 65 feet, and the variability of motorist compliance rate to RRFBs, a PHB is recommended. A refuge median island should also be installed.

NACTO Urban Bikeway Design Guide

Figure 16. Project BR 8

Civic District Bike Route

CITY OF GRESHAM



PLANNED IMPROVEMENTS

The Civic District Bike Route connects the Civic District, a major employment and commercial hub, with key east/west bike routes and the Springwater Corridor. The route will go from NW Burnside Rd to SW Eastman Pkwy/Springwater Corridor Path, primarily along NW Wallula Ave and SE 212th Ave. The route will primarily be comprised of bike boulevards along calm streets, with a separated bike lane intersection jog at W Powell Blvd.

A Enhanced Crossing

The SW Eastman Pkwy crossing from the Springwater Corridor to SW Florence Ave requires safety enhancements for people biking to access the path. Given the 35 MPH posted speed limit and the 5,001 to 15,000 AADT volumes on SW Eastman Pkwy, an RRFB installation per the FHWA Interim Approval IA-11 is recommended along with an extension of the south side sidewalk and a full crosswalk treatment for the intersection.

NACTO Urban Bikeway Design Guide

B Bike Boulevard

NW Wallula Ave and SE 212th Ave are good candidates for bike boulevards because speed humps and other traffic calming measures already exist. A potential treatment is to apply sharrows on the downhill direction and bike lanes on the uphill direction, due to the speed differential between cars and people biking.

NACTO Urban Bikeway Design Guide

C Separated Bike Lane Intersection Jog

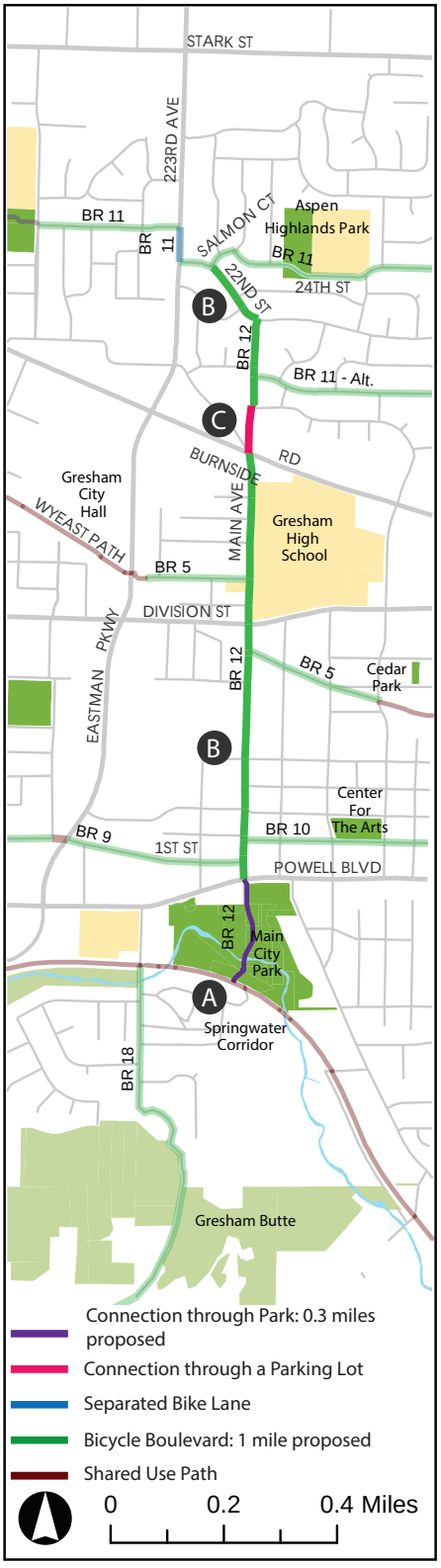
The route jogs at SW Florence Ave/ W Powell Blvd/NW Florence Ave/ NW 1st St/NW Wallula Ave. Due to the traffic volumes on Powell Blvd, a separated bike lane is necessary for this half block. Due to the right-of-way limitations, the separated facility could take the form of a shared use path on the south side of Powell, in place of the existing bike lane. An enhanced crossing at the west side of SW Florence will provide a safe crossing of W Powell Blvd for people walking and biking.

NACTO Urban Bikeway Design Guide

Figure 17. Project BR 12

Downtown Gresham Bike Route

CITY OF GRESHAM



PLANNED IMPROVEMENTS

The Downtown Gresham Bike Route will connect the Springwater Corridor to BR 11 (at SE Salmon Ct), primarily along N Main Ave. This route will provide access to many jobs, amenities, and important institutions, such as Gresham High School. N Main Ave already includes some traffic calming measures, but additional access and speed management measures will be required for this route to serve as the central low stress downtown bike route. This route's unique downtown context may require a custom design approach.

A Connection through Park

The route will use existing paths through Main City Park to connect N Main Ave with the Springwater Corridor.

Google Maps

B Shared Use Roadway

From E Powell Blvd to NE Burnside Rd, N Main Ave is already designated as a shared roadway with sharrow markings. However, this segment needs significant speed and volume management to create a low-stress facility. Such management would benefit the neighborhood and increase safety for people accessing the school. Further study is needed to find the best solution for the corridor, while maintaining access to Gresham High School.

NACTO Urban Bikeway Design Guide

North of NE Burnside Rd, the route will use neighborhood streets, N Main Ave, NW 22nd St, and SE Salmon Ct, that are suitable for bike boulevard treatment.

N. Main Ave & NE 3rd St. Google Maps

C Connection through Parking Lot

In order to cross NE Burnside Rd and continue north/south, the route cuts through a large commercial shopping center parking lot. It will be necessary to negotiate with the owners for public and well-signed access through the site. A design which calms traffic and creates an obvious, well-marked path for bicyclists is needed. Stop signs may be necessary to reduce conflict.

Google Maps

Figure 18. Project BR 2

Gresham Fairview Trail Extension

CITY OF GRESHAM

DESIGN SUGGESTIONS FOR KEY INTERSECTIONS

Railroad Underpass South of Hwy 84 on NE 201st Ave

This railroad underpass is very constrained and difficult to change. Current AADT is around 5,000 vehicles and the speed limit is 35 MPH. Due to this context, bike boulevard or advisory bike lane treatments are not a good fit. There are two options to create a safe, comfortable crossing for people walking and biking on the Gresham Fairview Trail.

A Shared Use Path

Build a separated shared-use path on one side of NE 201st Ave, under the overpass. Travel lane widths would need to be reduced to make room for the path. Due to the limited space, this path would need to be accompanied by traffic calming, which could include speed bumps and/or roundabouts at the closest intersections (on NE Thompson St and NE Sacramento St. The speed limit should be reduced to 25 MPH

Small Town and Rural Multimodal Networks Guide

B Widen Public Right-of-Way

If the overpass is renovated or re-built, the City of Gresham should negotiate for a wider right-of-way with the railroad company. It is possible the bridge abutments are already in the existing public right-of-way. If this is so, the City could require the railroad to move the abutments back to create more space for the road and shared use path.

Current Railway Underpass Google Maps

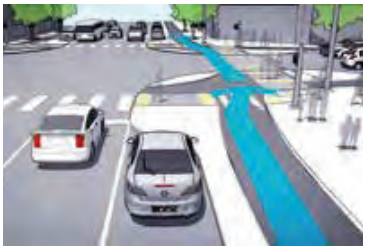
NE 185th Ave & NE Riverside Pkwy
NE 185th Ave & NE Portal Way

These two intersections require a similar approach to make them easier to navigate on foot and by bike. Both roadways must accommodate large, heavy freight trucks traveling to distribution centers in the neighborhood. Currently, the large radius corners at the intersections allow trucks to travel at fast speeds and increase the chance of right and left hook crashes. For both intersections, the following design options would make the crossing safer and more comfortable for people walking and biking. If possible, the dedicated turn lanes should be removed to reduce the crossing distance.

An additional consideration for both intersections are the numerous parking lot entrances and exits along NE 185th Ave. To navigate these parking lot entrances, the path should be raised to level of sidewalk with short vertical ramps from the path to the street and parking lot. Thermoplastic colored markings and yield signs for vehicles should be added to indicate that people will be walking and biking in the area.

A 4-Way Stop

Add a 4-way stop at each intersection, with crossing signs and medians on NE Riverside Pkwy and NE Portal Way to reduce the crossing distance. This option would bring traffic to a stop and create safe gaps for people to cross the road.



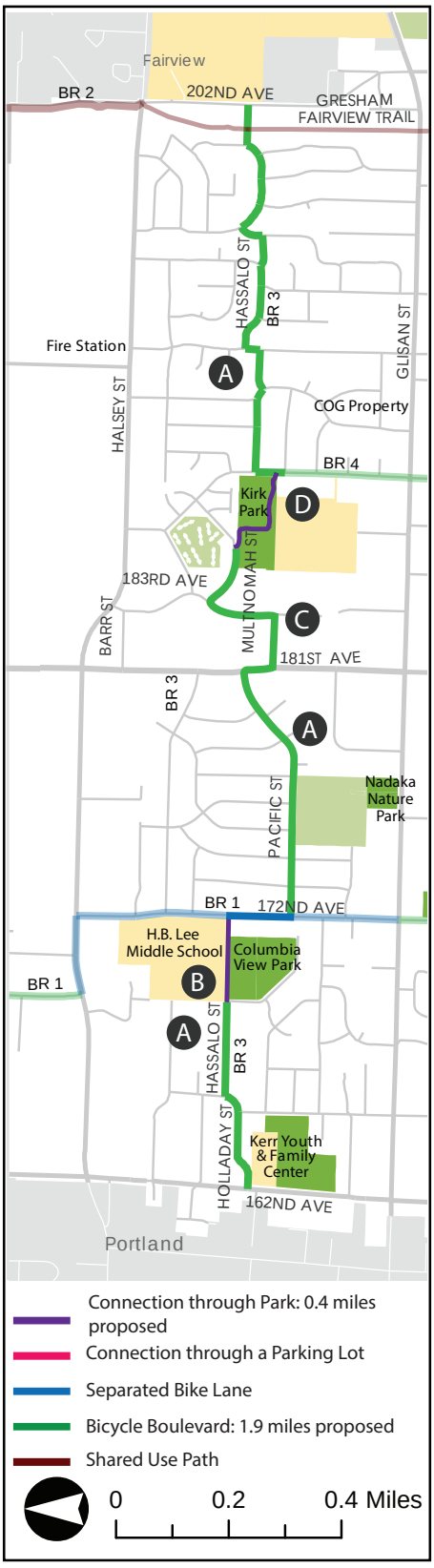
B Half-Protected Intersection

Add a half-protected intersection (with or without a raised crossing) with two protection islands on the east side of the intersection. The crossing should use thermoplastic markings and signage. This option

Figure 19. Project BR 3

North Gresham Bike Route

CITY OF GRESHAM



PLANNED IMPROVEMENTS

The North Gresham Bike Route is an east/west route through north Gresham, linking NE 162nd Ave to NE 202nd Ave via NE Hassalo St and NE Wasco St. To navigate the suburban roadways, cul-de-sacs, and park cut throughs will provide direct access for people riding bikes to avoid traveling on major arterials. This route relies on the implementation of a separated bike lane on 172nd Ave, which a part of the BR 1 West Gresham Connector project. Implementation may require access management and speed management to create low-stress shared roadway conditions.

A Bike Boulevard

Most of this route is on low-traffic neighborhood streets. A bike boulevard treatment with signs, pavement markings, and speed and volume management measures will create a low-stress environment. NE Hassalo St, NE Pacific St, and NE Holladay St will all be bike boulevards.

NACTO Urban Bikeway Design Guide

B Connection through Parking Lot and School

This route will use the start of an existing path between Columbia View Park and H.B. Lee Middle School then traverses the school drop-off zone to connect back to the separated bike lane on 172nd Ave (BR 1). Signage and shared lane markings should be installed in the school driveway to alert drivers to the presence of bikes.

Google Maps

C Enhanced Crossing and Parking Lot Cut Through

This route would have an enhanced crossing to safely travel across NE 181st using NE Pacific St. This crossing would require safety improvements, such as a raised crosswalk and Rapid Flashing Beacon.

NACTO Urban Bikeway Design Guide

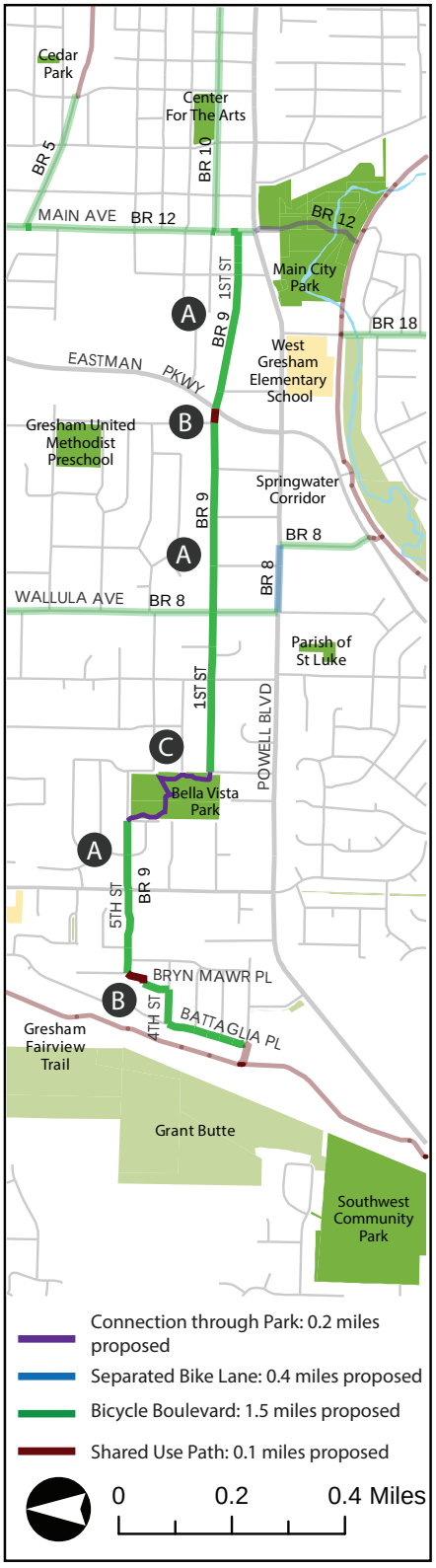
D Connection through Park

The route passes through Kirk Park on existing paths. Wayfinding signs will be important to help people walking and biking find their way through the park and back to the on-street route.

Figure 20. Project BR 9

Gresham Fairview Trail Connector

CITY OF GRESHAM



PLANNED IMPROVEMENTS

The Gresham Fairview Trail Connector Route connects the Gresham/Fairview Trail to Downtown via NW 1st St and other neighborhood streets. The route will primarily be a bicycle boulevard with connections through Bella Vista Park and existing cul-de-sac cut throughs.

A Bike Boulevard

Most of this route is on low-traffic neighborhood streets. A bike boulevard treatment with signs, pavement markings, and speed and volume management measures will create a low-stress environment. NW 1st St, NW 5th St, NW 4th St, NW Battaglia Pl will all be bike boulevards.

NACTO Urban Bikeway Design Guide

B Existing Cul-de-Sac Cut Throughs

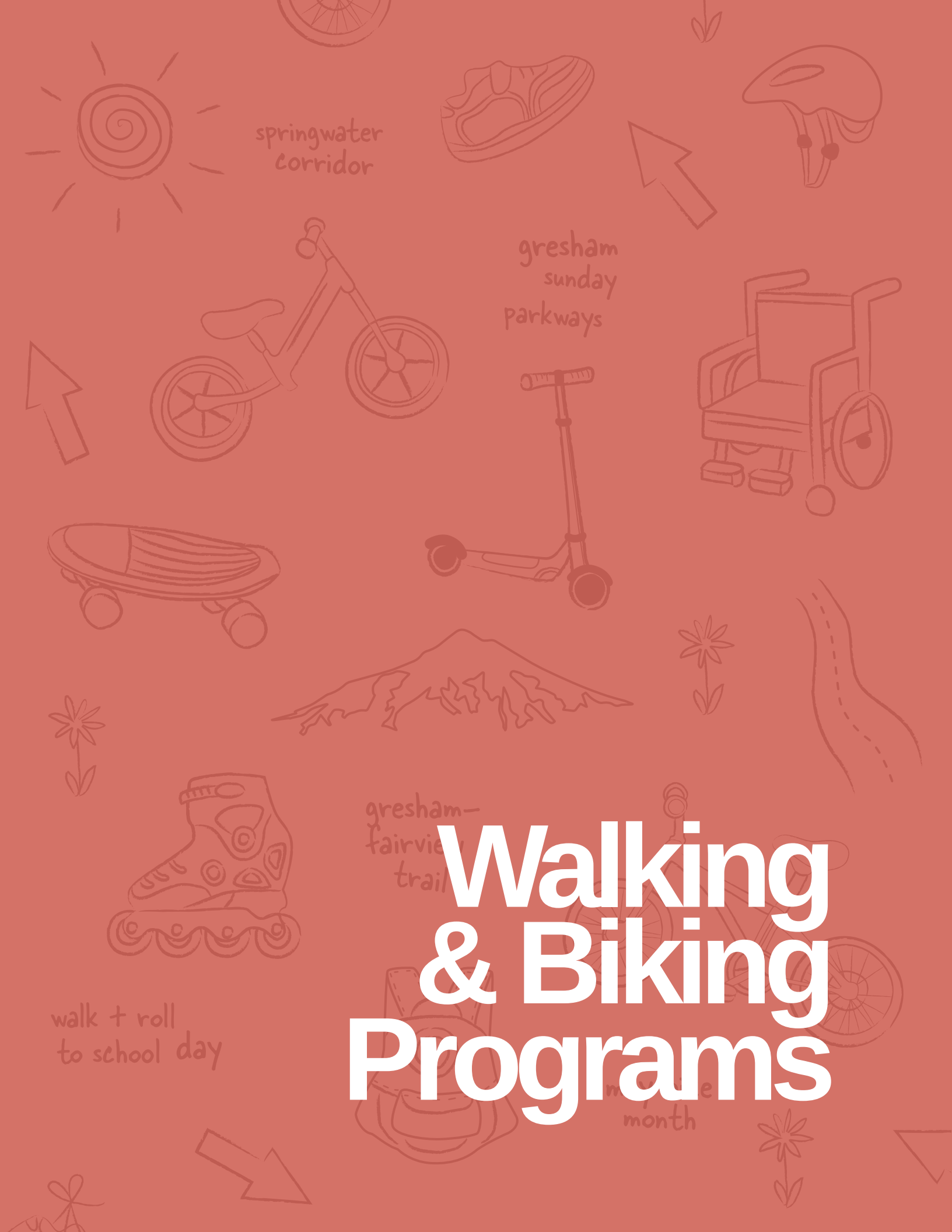
At two places along the route, existing, short multi-use paths cut through the end of cul-de-sacs to provide neighborhood connectivity for people walking and biking. These cut throughs are located between NW 5th St and NW Bryn Mawr Pl and between NW 1st St and Eastman Parkway.

NW Bryn Mawr Cut Through Google Maps

C Connection through Park

The route will pass through Bella Vista Park on existing paths to connect NW 1st St with NW 5th St. Wayfinding signs will be important to help people walking and biking find their way through the park and back to the on-street route.

Google Maps



Walking & Biking Programs

Walking and Biking Programs

A key component to a stronger culture around walking and biking in Gresham is a variety of programs to both encourage and educate he community on the benefits of active transportation. This chapter highlights the programs the City currently provides and additional opportunities for future programming.

City of Gresham Bike Month

The City promotes and participates in "May Bike Month," which celebrates both National Bike Month and the Portland Metro region's Bike Commute Challenge. The City, in coordination with The Street Trust (formerly the Bicycle Transportation Alliance), Metro, and Multnomah County, hosts the annual, month-long event that includes group bike rides, an online commute challenge, bike promotion events, and more.

While targeted primarily at adult commuters, the City uses the bike-focused month to promote active living for cyclists of all ages through multiple events, including:

- A Transportation Safety Fair promotes bicycle safety and educates the community about bikes on public transit.
- Bike-to-Work day celebration with local employers.
- Helmet giveaways partnership with the Oregon Nurses Association. To date, over 1,000 helmets have been given away.
- Information booths with bike route tips and trip planning services for walking and biking at community events.
- A bike rodeo teaching the "rules of the road" to children.
- Group bike rides through downtown Gresham and Springwater and Gresham-Fairview Trails

League of American Bicyclists

In 2014 Gresham was awarded a Bicycle Friendly Community rating of Silver by the League of American Bicyclists. This score is based on Gresham's number of bicycle facilities, education and encouragement activities and safety statistics.

The League of American Bicyclists also provides a score card to highlight information about Gresham's rating and steps the City can take to get to next level, Gold. The Active Transportation Plan helps Gresham's rating by:

- Being a current and implemented plan.
- Planning a bicycle network that covers a majority of public streets.
- Encouring cycling through education and events.
- Improving bicyclist safety.

In 2018, Gresham will reapply for a Bicycle Friendly Community rating.

Gresham Parkways

In 2012, the Gresham Area Chamber-of-Commerce received grant funds to promote bicycle tourism in the greater Gresham area. They established a Bike Friendly Business program and created the East Multnomah Cycling Hub website (*www.bikeemc.com*) and a collection of bicycle rides across East County for riders of all skill levels.

The Chamber's efforts culminated with Gresham Parkways, a citywide event to encourage cycling along Gresham's multi-use paths. This event was based on "Ciclovia" bicycle events that have become popular around the world for closing streets to vehicles and celebrating walking and bicycling. Vendors from local businesses filled three pit stops along the Gresham-Fairview Trail, Wy'East Way Path and Springwater Trail. Over 800 cyclists of all ages participated.

Safe Routes to School

Safe Routes to School (SRTS) is a national effort to encourage students to walk and bicycle to school by improving transportation safety through the "six E's":

Safe Routes to School (SRTS) in Gresham

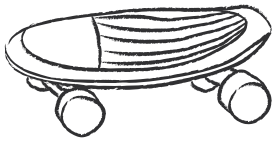
Primarily through grant funding, the City has conducted a variety of SRTS programming over the past decade. While the City does not have dedicated funding for a full time SRTS program, it does provide staff time from its operational budget to support SRTS activities. The City has a part-time SRTS Program Manager and other staff in the Urban Design & Planning Department who assist schools and work with partners on SRTS programs. The City partners with Metro, Multnomah County and staff from the three school districts in Gresham: Centennial, Gresham-Barlow, and Reynolds to support the program. The following sections highlight the City's past and ongoing events that support Safe Routes to School.

Why create Safe Routes to School?

- Over the past 40 years, rates of obesity have soared among children of all ages in the United States, and approximately 25 million children and adolescents (more than 33%) are now overweight or obese or at risk of becoming so.
- Walking one mile to and from school each day is 2/3 of the recommended 60 minutes of physical activity a day. Plus, children who walk to school have higher levels of physical activity throughout the day.
- Private vehicles still account for half of school trips between 1/4 and 1/2 mile--a distance easily covered on foot or bike.
- A study of more than 800 schools found that Safe Routes to School interventions resulted in an average 31% increase in walking and bicycling to school over a five-year period.

Walk and Bike to School Events

The City partners with local schools to provide support for making walking, biking and rolling to school a fun and safe experience. Past events have included organizing events at schools for International Walk and Bike to School Day and National Bike to School Day, plus in-school skills trainings through The Street Trust's (formerly Bicycle Transportation Alliance) Jump Start program. The City has developed and led walk and bike routes in coordination with school administration, police, and elected officials as well as providing raffle items (bike helmets, scooters, bike safety lights, etc.).



Action Plans

In 2009, the City of Gresham received a Transportation Growth Management (TGM) grant from the Oregon Department of Transportation (ODOT) to organize meetings with parents and school administration to develop School Action Plans for six schools. The Action Plans identified key routes to schools and necessary infrastructure improvements such as missing sidewalks and bikeways, and prioritized those needs.

In addition, the following recommendations from the six existing School Action Plans are likely relevant to other schools in the district:

- Install more covered bicycle parking and bicycle racks.
- Install gates that are bicycle-friendly (i.e. wide enough for students with bicycles to pass).
- Install lighting to enhance safety and security where it is currently insufficient.
- Continue to enforce code provisions that require the pruning of trees and mowing of vegetation to allow better sign viewing experienceand reduce 'stranger danger' concerns along identified routes to schools.

Enforcement Programs

The City of Gresham was awarded grant funding from the Oregon Department of Transportation's (ODOT) SRTS program in 2013 and 2016 for enforcement missions near schools. Gresham Police Department conducted the missions, issuing warnings for drivers who did not follow rules about stopping or driving safely in school zones and for pedestrians/bicyclists not crossing safely or in a designated crossing area.

In March 2014, the Gresham Police Department implemented a series of enforcement missions at Hall Elementary School. Educational material was distributed to all 36 individuals who were stopped. Further missions in April, May and June on selected days resulted in 104 warnings and citations being issued, including 31 for excessive speed.

In 2017 the Gresham Police Department conducted five enforcement missions at four schools; North Gresham Elementary, Hall Elementary, East Gresham Elementary, and West Gresham Elementary. The missions focused on crosswalk enforcement, speeding and distracted driving within a mile of each school. The following are results of those missions:

Month	School	Traffic warnings	Violations
May 2017	North Gresham Elementary	4	29
May 2017	Hall Elementary	5	25
June 2017	East Gresham Elementary	24	20
September 2017	West Gresham Elementary	8	14
September 2017	Hall Elementary	16	10

Implementation

Implementation

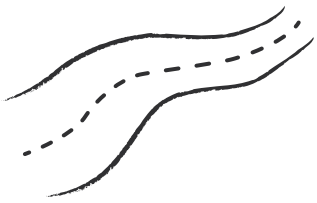
Implementing the Active Transportation Plan requires both infrastructure projects and programs for walking and biking. Both approaches are needed to make walking and bicycling safer and more comfortable in the city. Better infrastructure provides separation for pedestrians and cyclists, providing enough space to be visible and feel safe. Programs also improve safety; studies show that as more people bicycle, it is safer to be a bicyclist. Programs to encourage and educate people about walking and bicycling help to normalize active transportation in our auto-oriented culture.

This chapter outlines estimated projects and program costs, strategies to leverage limited dollars, funding levels and opportunities, and recommended actions the City could take. It closes with how the City can monitor progress in building out the proposed project list. With the right infrastructure and programs, everyone can enjoy the benefits of active transportation.

Project Feasibility & Cost

Pedestrian

Planning-level costs were developed for the top priority pedestrian and bike projects. For the pedestrian projects, four of the top priority projects are **new mid-block crossings with flashing beacons** (C6, C15, C13, C31). These will be the easiest pedestrian projects to implement and cost approximately $125,000 each.



Another priority project is a **new signalized intersection at 181st and Pine** (C12). This will provide a safe crossing between Stark and Burnside along the 181st Avenue corridor in the heart of the Rockwood Neighborhood. That new signal is estimated to cost $655,000.

The final priority pedestrian project is for 2,500-feet of **sidewalk infill on NE 162nd Avenue** (S1). This project would require building NE 162nd to its full cross section as a standard arterial roadway, which includes a sidewalk, planter strip, bike lane, and asphalt widening, estimated at $7,100,000.

Bicycle

Bicycle Routes for Everyone on the example sheets on pages 50 to 59 were evaluated for feasibility and to determine planning-level costs. These top priority bicycle project costs range from $250,000 (BR9) to $3,300,000 (BR1).

One project was not evaluated for cost at this time (BR 2), as further engineering analysis is required. There are two railroad bridge undercrossings that require coordination with the railroad company to determine feasibility. That work has not yet been completed. One design under consideration is to realign roadway striping and construct a minimal multi-use path under the bridges. The cost of this design is estimated at $2,000,000.

Priority Project Costs

To determine cost estimates preliminary scopes of work for the priority pedestrian and bicycle projects were developed. The following tables (Figures 21 & 22) give further detail.

Figure 21. Priority Pedestrian Project Costs

Project ID	Location	Estimated costs	Scope of work / Notes
C12	181st & Stark	$655,000	• Construct new traffic signal at 181st & Pine. • Reconstruct ADA ramps, curbs, and some sidewalks associated wtih signal installation.
C6	181st & Glisan	$110,000	• Construct new RRFB/enhanced crosswalk at 181st & Everett.
C15	Division & 182nd	$124,000	• Construct new RRFB/enhanced crosswalk on Division between 185th & 186th.
S1	162nd North of Glisan	$2,750,000	• Construct new RRFB/enhanced crosswalk at Holladay & 162nd. • Assumes 2500' length of project for estimation purposes. • Construction of full roadway improvements is not included in the cost. The following elements would need to be completed for sidewalk construction with additional funding of $4,500,000: 50' of roadway widening to standard arterial (8/16 ac/rock), 24' of ROW acquisition throughout the length of the project, 135 lb/cf for aggregate and 157 lb/cf for AC.
C13	Stark & Burnside	$125,000	• Construct new RRFB/enhanced crosswalk on Stark between 192nd & 194th.
C31	Division & Hogan	$125,000	• Construct new RRFB/enhanced crosswalk on Burnside & 8th.
TOTAL		**$3,889,000**	

Figure 22. Priority Bicycle Project Costs

Project	Cost	Location	Scope of work / Notes
BR1	$3,300,000	SE 176th, SE 172nd and NE 169th - from SE Division to I-84	• New enhanced bike crossing at 172nd or 174th and Halsey. • New sharrows on bike boulevards. • Bi-directional bike lanes on Halsey between 172nd & 169th. • Bi-directional bike lanes on Stark between 174th and 172nd.
BR 5	$3,300,000	SW Main, SW Yamhill and NE 10th - from SE 175th to NE Hogan	• New 12' wide multi-use path from Cleveland Station to Hogan (.3 miles). • Assumes specialty security fencing and access gates adjacent to PGE property • Extend existing multi-use path to Vance Park at west end of Wy'East Way Path.
BR6	$300,000	SE Division - from City Border to Gresham Fairview Trail	• Buffered bike lanes with driveway crossing paint and flexible delineators. • Bike boxes at major intersections and enhanced striping at right turn approaches.
BR10	$3,000,000	NW 2nd, E Powell and SE 1st - from N Main to NE Scott	• Traffic signal modification at Powell & Cleveland and Powell & Hogan. • Construct bi-directional bike lanes on Powell between Cleveland & 1st. Includes removal of existing curb extensions and planter areas. Physically separated from travel lanes with curb and delineator posts.
BR4	$1,000,000	SE 187th and NE 188th - from SE Yamhill to NE Hassalo	• New traffic signal or HAWK at Glisan & 188th, which includes ROW acquisition. • New sharrows on 188th from Hassalo to Yamhill on bike boulevards.
BR8	$1,100,000	SW Florence and SW Wallulla - from Springwater Coordor to NW Burnside	• Install enhanced crosswalk at Eastman & Florence; traffic signal or midblock HAWK at Florence & Powell; widened 10' sidewalk on Powell between Florence. • Re-stripe for new bike lanes between Burnside and Shattuck/Clay. • Assumes ROW acquisition for widened sidewalk.
BR12	$800,000	N Main and NW Salmon - from W Powell to SE Salmon	• Traffic signal modification at Burnside & Main to add bike signal. • Install sharrows as needed on bike boulevards. • Construct multi-use path through private parking lot between Burnside & 18th.
BR2	$2,000,000	Gresham Fairview Trail - from NE Halsey to NE Marine Drive	• Planning level estimate. Scope undefined due to coordination needs for two RR bridges.
BR3	$1,200,000	NE Hassalo and NE Wasco - from NE 162nd to NE 201st	• Consider alternate crossing of 181st, install traffic signal/HAWK at 181st & Pacific. • Sharrows as needed on bike boulevards. • Construct 12' multi-use path through Columbia View Park.
BR9	$350,000	NW 5th and NW 1st - from Gresham Fairview Trail to N Main	• ADA ramp upgrades around existing multi-use paths. • Install sharrows as needed on bike boulevards.
TOTAL	**$16,350,000**		

Implementation Strategies

Constructing the priority project list is costly. Three strategies for leveraging funding opportunities are Project Phasing, Project Bundling, and Demonstration Projects. All three strategies will be considered by the City in project implementation.

Project Phasing

Some projects can be implemented in phases by **focusing on a section of the corridor** before there is full funding for the entire project. Good candidates for phasing include longer corridor projects that pass through different areas. For example, BR3: North Gresham Bike Route could be split. A first phase of construction could be on Hassalo Street, from the existing Kirk Park trail to the existing Gresham Fairview Trail, where the City could add sharrow pavement markings, signs and evaluate traffic calming to create a low-stress bicycling environment. The remaining portion of this project has more substantial right-of-way needs and could be completed in a later phase.

Another way of phasing projects is by **implementing a component of the project along the corridor**, such as striping and signage, traffic calming, or signal improvements. Several of the priority corridors could benefit from a wayfinding signage program in the short term.

Project Bundling

Implementing some of the projects--or portions of the projects--on the priority list could happen when reconstruction, resurfacing, or utility projects are underway. This reduces administrative overhead if resources are mobilized in the vicinity of an identified ATP project.

When considering grant funding, bundling small projects into larger projects can make a more compelling story about the improvements. The pedestrian priority projects are relatively smaller individual projects that can be combined into larger projects. The bundling should be based on a theme of improved access to a school, transit stops, or a neighborhood to help tell a cohesive story.

Demonstration Projects

An opportunity to leverage a small amount of funding is to do pilot or demonstration projects. These are **prototypes of future infrastructure** which can help determine final designs. The use of spray chalk, temporary delineators, straw bales, etc. to trial proposed improvements is becoming more common as jurisdictions look to support multimodality quickly and cheaply. A demonstration project's success can show the City's commitment to potential funders and increase chances for funding.

Pedestrian & Bicycle Programs

The City currently dedicates a portion of staff time and applies for grant funding to provide pedestrian and bicycle programs to the community. The City has seen a decline in participation in traditional bicycle events, such as the city's annual "transportation safety fair" and community bike rides. Participation in Safe Routes to School events have generally been growing but we can do better.

A new approach is needed to re-energize the community around active transportation. Pursuing community events with community-based organizations as partners can lead to better results. The City often partners with schools and community-based organizations to reach a broader audience. Over the past few years, close relationships have been built with Gresham-Barlow School District, Greater Gresham Area Chamber of Commerce, Rosewood Initiative, and Bikes for Humanity.

This approach brings programming out to where people live and provides opportunities to shape events to the community's prefences. By building a culture of cycling through smaller community events, the City can also build support for larger city-wide events, such as Gresham Parkways.

It takes significant effort to spread the word about education and encouragement activities. While working with partners helps get the word out, a dedicated budget for encouragement and education would bolster staff efforts and allow an increase in the size, frequency, and impact of programming around health and active transportation.

Funding Sources

Gas Tax Revenues

Gresham receives approximately $10,000,000 in gas tax revenue annually (2018). This funding is primarily used for maintenance of Gresham's streets. The state requires a minimum 1% gas tax revenue be used for pedestrian and bicycle projects. In the 2017/2018 fiscal year, this amounted to $120,000 in Gresham, approximately the cost of installing flashing beacons at one mid-block street crossing. While this is a dependable source of funding for pedestrian and bicycle projects, it is far below the amount needed to make an impact on the proposed project lists.

System Development Charges (SDCs)

SDCs are a one-time charge collected by the City when a development permit is issued. By law, SDCs are limited to use for capacity improvements necessary to accommodate new development. Per the City's Resolution No. 3282, Transportation SDCs can be used for both on and off-street facilities. This funding is a common source of local match for other grant programs and is particularly appropriate for projects that are not good candidates for other funding sources.

Grants

Grants have historically been the primary revenue source for constructing active transportation projects. The City monitors grant programs on a regular basis for funding opportunities. Staff stay current on grant opportunities and match projects with the best chance of success to the right grant opportunity. In recent years, the City has been successful with grants for Safe Routes to School as well as converting streets to "Complete Streets" with pedestrian and bicycle facilities where they do not exist, such as on NE Cleveland St. A challenge with grant funding is that each opportunity has different eligibility requirements and are competitive, which means the funding is unpredictable. In addition, grants are rarely for the full project cost and require matching funds.

Figure 23 on the next page lists some of the major grant programs that can support active transportation projects.

Figure 23. Grant Programs

	Grant program name	What is it about?	Program focus
Mid-Large Capital Projects	**State Transportation Improvement Program (STIP)**	• ODOT's capital improvement program. • Non-highway programs fund bicycle and pedestrian projects.	• Road, pedestrian, and bicycle projects
	Community Development Block Grant (CDBG)	• Funds community development activities directed toward neighborhood revitalization, economic development, and improved community facilities & services.	• Varies
	Metropolitan Transportation Improvement Program (MTIP)/ Regional Flexible Funds	• Funds to spend on active transportation projects that make it easier and safer for people to walk and bike.	• Road, pedestrian, and bicycle projects
	Better Utilizing Investments to Leverage Development (BUILD)	• Supports transportation projects that promise to achieve national objectives. (previouly TIGER)	• Very large • Multimodal • Multi-jurisdictional
	Connect Oregon	• Funded through revenue from the Oregon state lottery.	• Marine, rail, air, and bicycle and pedestrian projects
	All Roads Transportation Safety Program (ARTS)	• Funding is data-driven relative to safety factors and based on cost benefit analysis.	• Safety projects on all public roads in Oregon
Non-Road Projects	**Regional Travel Options (RTO)**	• Supports programs that increase walking, biking, ride sharing, telecommuting, and public transit use.	• Active transportation projects • Education and encouragement programs
	Safe Routes to School (SRTS)	• Dedicated infrastructure funding for bicycle and pedestrian improvements on public right-of-ways within a mile of schools. • Funding will give priority to improvements serving Title 1 schools.	• Safety improvement • Completing routes to access schools
	People For Bikes Community Grants	• Supports bicycle infrastructure projects and targeted advocacy initiatives that make it easier and safer for people of all ages and abilities to ride.	• Bicycling • Active transportation • Community development
Plan	**Community Planning & Development Grants (CPDG)**	• Helps communities implement regional long-range vision, revitalize town centers, reduce barriers, and plan for future infrastructure and development in new urban areas.	• Planning projects
	Transportation Growth Management (TGM)	• Supports planning for transportation and land use in a way that increases opportunities for transit, walking, and bicycling.	• Planning projects

Funding Opportunities

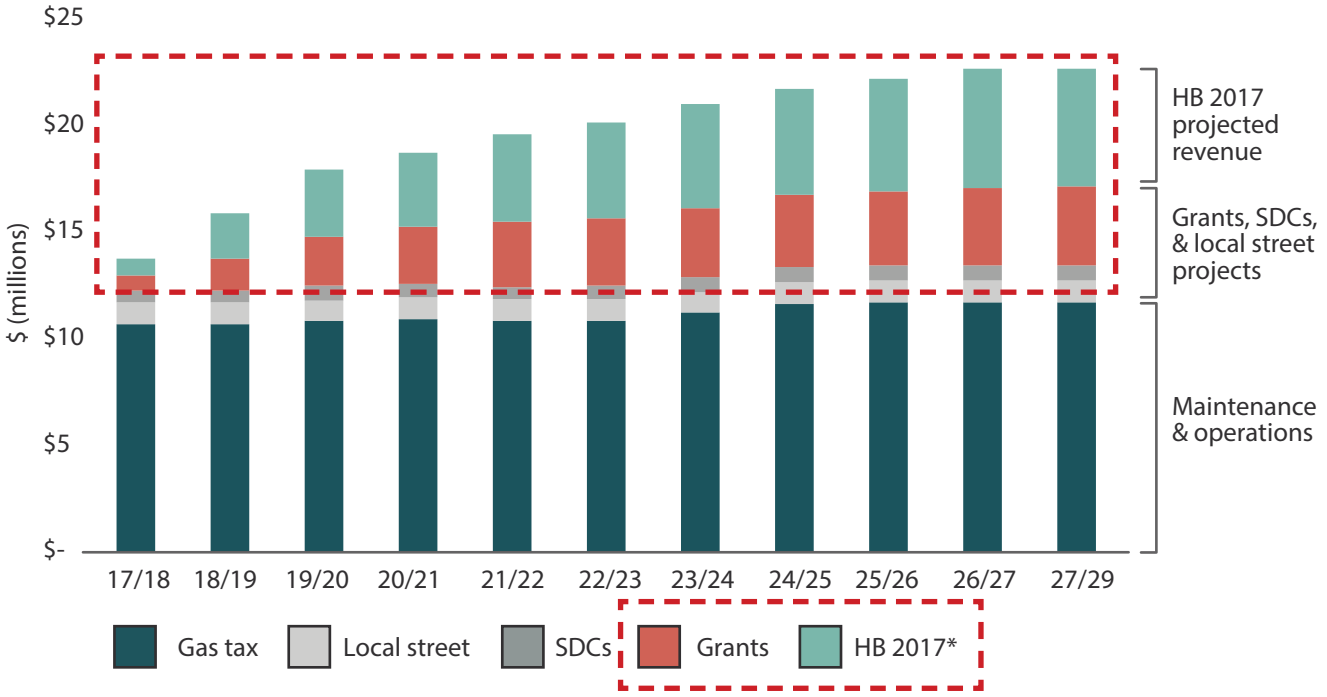
To build all the prioritized pedestrian and bicycle improvements will take many years. New infrastructure is costly and current funding to implement the priority bicycle and pedestrian projects is limited. The cost estimate to build out the priority projects is estimated to be $21,000,000.

The City has used a variety of methods to fund pedestrian and bicycle infrastructure, including grant funds, tax revenue, and requirements on new development. This is an opportunity-based approach, looking for funds where possible.

Staff will continue to seek grant funds and look for opportunities in existing CIP projects to implement pedestrian and bicycle projects. For example several streets on the City's Local Street Reconstruction Program are also on the ATP project lists.

There are new funding sources on the horizon for both projects and programs. In 2017, the Oregon state legislature made a significant investment in transportation--including active transportation--through House Bill 2017, "Keep Oregon Moving". The program increases gas tax revenues for Gresham, which are projected to increase over time from $700,000 in 2018 to $4,000,000 in 2022. These funds can support development of the Active Transportation Plan network.

Potential Funding Sources for Priority Projects



*HB 2017 is new funding approved by the OR legislature in 2017 for transportation.

Recommendations

The following recommendations are needed to make walking and bicycling better in Gresham. Throughout the Active Transportation Plan the equity analysis helped identify how to mitigate or reverse inequities in infrastructure access. Completing the following recommendations will go a long way to making walking and biking better for those who use active transportation to meet their daily needs. Additional dedicated funding would allow the City to increase the reach of programs and construct priority projects in a timely manner.

programs

education

- Partner with schools who want to incorporate pedestrian and bicycle safety education into their curriculum.
- Expand Safe Routes to School (SRTS) programs in Gresham.
- Continue funding a part-time SRTS Coordinator to work with County and district staff and support SRTS efforts.

encouragement

- Seek additional partners to help get the word out.
- Work with community-based organizations, such as Family Leadership Teams at Schools Uniting Neighborhood (SUN) schools, to promote active transportation as part of SRTS efforts.
- Continue to strengthen bike month activities to reach and engage more people.

enforcement

- Develop a pilot program to promote safety and traffic law compliance around schools.

projects

- Seek additional funding in the City's Capital Improvement Plan and align projects that best match other available funding sources.
- Make a plan for maintenance to keep pedestrian and bike investments in good condition.
- Determine infrastructure projects for grant funding, based on documented safety and equity needs around schools.
- Implement bike share in Gresham.

process

- Measure and report progress through performance measures. Make these publicly available on the City's website.
- Incorporate the ATP into the City's Transportation System Plan, formally adopting the ATP recommendations.
- Gather baseline data to better understand the impacts of programs and projects throughout the city.

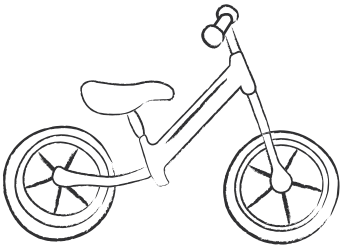
One overarching theme from the Community Liaison engagement is the need to pair bike infrastructure with education programs.

Performance Measures

As the City builds out the pedestrian and bicycle projects it is important to track and show progress compared to City's the overall network. Performance measures show how the City is doing year by year. This information will be posted to the City website to maintain transparency and accountability.

The recommended targets in the table below relate to the ATP policies about Safety, Connectivity, Transit Access, and Equity. They are also similar to Metro Regional Transportation Plan goals, in order to align projects to regional funding opportunities.

Some of the recommended targets for pedestrian and bicycles trips and infrastructure are ambitious. In order to give walking and bicycling appropriate urgency the City should adopt ambitious targets and strive to meet them.



Goals	Recommended Measure	Recommended Target
Active Transportation Mode Share	Commute trip mode share	Triple the share of trips completed by biking, walking, or transit by 2040.
	All trip mode share	Triple the share of trips completed by biking, walking, or transit by 2040.
Connectivity	Network completion	Complete 25% of high priority pedestrian projects by 2040 and complete 50% of the Bike Routes for Everyone Network by 2040.
Safety	Collision reduction	Reduce serious injuries and fatalities of bicyclists and pedestrians by half (50%) between 2017 and 2040.
Equity	Equity project completion	Projects with the top equity score are completed at an equal rate (or higher) as the network as a whole.
Transit access	Routes to transit	50% of major transit stops served by a Bike Route for Everyone by 2040 and 50% of all transit stops are along a comfortable walking route.

Commute trip mode share

Baseline / 2017	2018	2019	Target / 2040
Bicycling: 0.4% Walking: 3.3% Transit: 9.3%	Bicycling: % Walking: % Transit: %	Bicycling: % Walking: % Transit: %	Bicycling: 3% Walking: 13% Transit: 20%

All trip mode share

Baseline / 2017	2018	2019	Target / 2040
City will need to request data from Metro to determine baseline.	TBD	TBD	TBD

Network completion

Baseline / 2017	2018	2019	Target / 2040
0% of the high priority pedestrian network	TBD	TBD	Complete 25% of high priority pedestrian projects.
23% of Bike Routes for Everyone network (15 of 65 miles completed).	TBD	TBD	Complete 50% of the Bike Routes for Everyone network.

Collision reduction

Baseline / 2017	2018	2019	Target / 2040
(2010-2014) • 27 serious pedestrian injuries and 6 fatalities. • 8 serious bicycle injuries and 0 fatalities.	TBD	TBD	Reduce the number of bicycle and pedestrian serious injuries and fatalities by 50%.

Equity project completion

Baseline / 2017	2018	2019	Target / 2040
Projects have been identified in 2017 ATP. Baseline is 0 completed.	TBD	TBD	Top equity projects are completed at an equal or higher rate as others.

Network completion

Baseline / 2017	2018	2019	Target / 2040
Calculate based on Final Network Map from Gresham ATP.	TBD	TBD	50% of major transit stops served by Bike Routes for Everyone.
Calculate based on Final Network Map from Gresham ATP.	TBD	TBD	50% of all transit stops along a comfortable walking route.

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