

7. PEDESTRIAN SYSTEM

Pedestrian System Overview

Gresham is committed to providing pedestrian facilities that ensure safety and convenience for all users. Accommodating and enhancing pedestrian needs promotes a more desirable and livable community; the personal health, environmental, and economic benefits are well documented. In addition, a pedestrian friendly environment supports the use of other modes such as transit, ridesharing and bicycling by making these modes easier to access. Walking may be one of the most cost effective pollution reduction strategies because it displaces shorter automobile trips – the most polluting on a per mile basis. The objective is to enhance Gresham’s pedestrian network so that it is inviting for all users.

The goal of Gresham’s pedestrian plan is to encourage walking as a viable mode of transportation by increasing awareness and establishing a framework to improve and maintain the city’s pedestrian facilities.

Inventory of Existing Pedestrian System

Gresham’s inventory of existing pedestrian facilities includes the City’s network of sidewalks and multi-use paths as well as the other elements that enhance the pedestrian experience. These elements are: lighting, street and rail crossing signals, corner ramps, traffic calming devices, planter strips that separate pedestrian from auto and bike traffic, street trees, decorative sidewalk paving, waste receptacles and benches. Map 9 is the current inventory of Gresham’s sidewalks, paths.

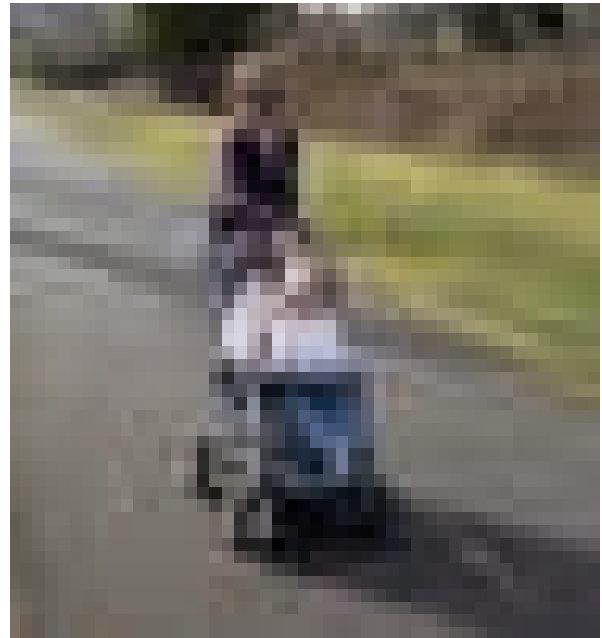
Sidewalks and multi-use paths

Gresham’s pedestrian facilities are made up of both sidewalks and a multi-use path network. The topography of the city is relatively flat, with the exception of Gresham and Jenne Buttes, making walking a very viable transportation option. Gresham has approximately 392 miles of existing sidewalk on one or both sides of streets. The City’s minimum preferred sidewalk width is 6 feet, exclusive of curb and obstructions. This width allows two pedestrians (including wheelchair users) to walk side by side, or pass each other comfortably.

This TSP and Gresham’s Development Code require sidewalks on both sides of major, standard and minor arterials and major, standard and minor collector streets. Sidewalks are also required on industrial, commercial, transitional and queuing local streets. Code also requires them to be consistent with federal Americans with Disabilities Act regulations, which establishes requirements related to features such as width and grade.

Multi-use paths are a vital piece of the pedestrian network. Gresham’s primary paved multi-use paths are the Springwater Corridor Trail, Gresham-Fairview Trail, Wy’East Way and the I-84 Path. The combined mileage of these paths is 18.8 miles. Future planned facilities include the Sandy River to Springwater Multimodal

Corridor, the Kelley Creek Trail and the East Buttes Loop Trail. This system of paths offer an off-street pedestrian experience on 10-12 foot wide, paved facilities. They are a part of the planned regional pedestrian and bicycle system, and Gresham is actively involved in their planning and implementation.



The Springwater Corridor Trail is one of Gresham’s most popular multi-use paths.

Map 9: Existing Sidewalks, Paths and Crossings 2021



Pedestrian Volumes

Since 2009 Gresham has performed annual pedestrian counts on the regional trail system. The counts help to create a database of pedestrian volumes similar to those readily available for automobiles. They also serve to track facility usage, conditions and future demand. Counts are conducted by volunteers each September at multiple locations on the multi-use paths and include pedestrians and bicyclists. The trail counts for 2009 through 2019 are shown in Table 8 below.

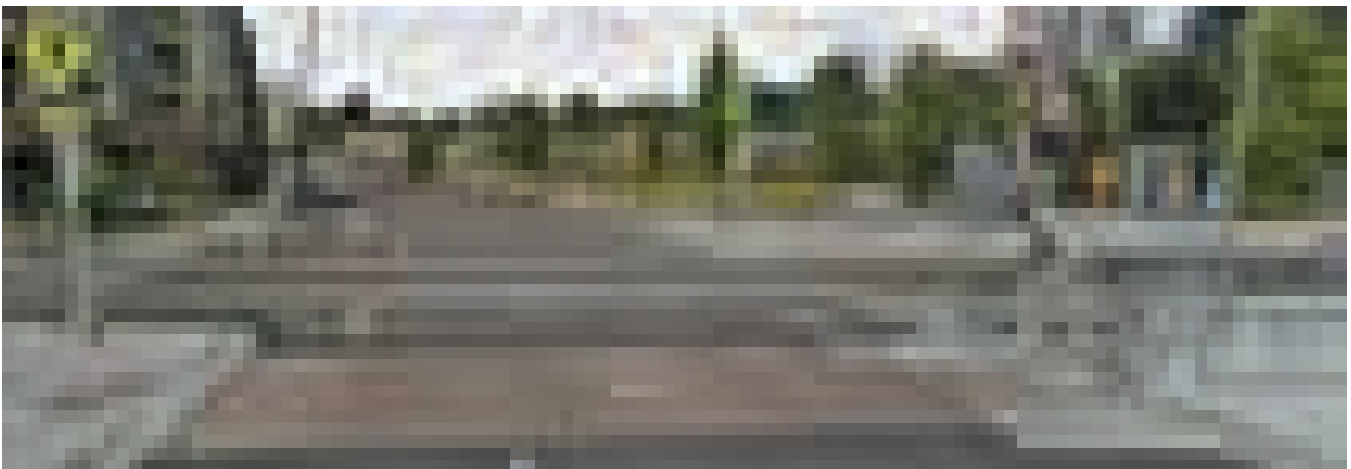
Table 8: Multi-Use Path User Counts



Street and Rail Crossings

Oregon law considers every intersection a crosswalk. Gresham typically stripes crosswalks where warrants are met. The City policy is to stripe a crosswalk where a minimum of 20 pedestrians cross during one hour. Markings are typically a ladder or continental design with longitudinal lines parallel to traffic flow. Two parallel lines spaced at least six feet apart are maintained on legacy location intersections only. Crosswalks may also be delineated with enhanced paver or paint design, particularly within the City's Plan Areas. The photo below shows a pedestrian crossing area created with a paver design within the Civic Neighborhood.

Since 2010 the City has installed mid-block crossings with pedestrian actuated Rectangular Rapid Flashing Beacons. These crossings allow pedestrians to safely cross the street when signalized intersections are widely spaced. Gresham is planning on installing additional mid-block crossings annually.



A pedestrian crossing created with a paver design in Gresham's Civic Neighborhood.

Walking is fundamental. Walking is healthy. Walking is sustainable. Regardless of age, occupation or physical ability; regardless of the time or day of the week; we are all pedestrians.

- Getting Around on Foot Action Plan



Walking on the Gresham-Fairview Trail.

Paths are paved, off-street travel ways designed to serve non-motorized travelers. Trails provide both recreation and transportation routes through natural environments and urban areas. Trails are not necessarily paved and tend to be more recreational in nature, serving a variety of activities including biking and hiking.

- Federal Highway Administration

Crossings also occur at rail intersections. The MAX light rail Blue Line runs through the Rockwood, Civic Neighborhood and Downtown Districts and intersects with the Gresham-Fairview Trail as well as the Wy'East Way path. Gresham coordinates crossing design with TriMet and ODOT to ensure that all safe crossing regulatory standards are met.

Lighting and Traffic Calming

Street lighting, safer street and rail crossings and traffic calming devices promote higher levels of walking.

Gresham maintains 7,500 street lights and requires all new developments to provide adequate lighting for all adjacent street frontages.

Gresham also employs traffic calming strategies and devices which serve to slow traffic and create a more pedestrian-friendly environment. Such strategies and devices include:

- ✦ Curb extensions and median islands, which narrow traffic lanes and reduce pedestrian crossing distances.
- ✦ Speed humps spaced to slow traffic while allowing fire-rescue vehicles to pass without slowing.
- ✦ Pavement treatments including special pavers intended to create a sense of place through design and textures to slow traffic.
- ✦ Street trees planted in the landscape strip, which create a sense of enclosure and enhance the pedestrian experience.
- ✦ Woonerfs, or streets with mixed vehicle and pedestrian traffic, where vehicles are required to drive very slow speeds. Beech Street is Gresham's one constructed woonerf.
- ✦ Speed display devices that provide oncoming motorists' their speeds.

Landscape Strips

Landscape strips provide a buffer between a street and sidewalk, providing a physical and psychological separation between pedestrians and adjacent auto traffic. This space also accommodates stormwater management systems, street trees, street furniture, pedestrian amenities and utility structures such as street lights, signal poles, fire hydrants and street signs.

Landscape strips are currently required on all arterials and collectors. They are also required on industrial, commercial, transitional and queuing local streets.

Pedestrian Districts

Pedestrian districts are areas where special emphasis is placed on improving the pedestrian environment through physical improvements and development requirements that promote pedestrian orientation. The City has identified two pedestrian districts: the Gresham Regional Center (made up of both the Downtown and Civic Neighborhood) and the Rockwood Town Center. Future development and City investment will build a majority of improvements in these districts.



The Civic Drive MAX station serves the pedestrian district in the Gresham Regional Center.

Transit Connections

Every transit rider is also a pedestrian

Investments in pedestrian improvements to access transit not only promote walking but also increase the cost effectiveness of large public investments in transit systems.

Gresham is working to improve its pedestrian connections to light rail and primary bus routes through the Pedestrian-to-MAX program.

Right-of-Way Management

Demands for right-of-way access are increasing as development and land use activity increase. In the past, utilities, signs, fire hydrants and more have been placed in sidewalk areas to provide maximum travel lane capacity. However, this practice creates dangerous pedestrian obstructions.

The right-of-way management program is an ongoing effort to mitigate pedestrian hazards citywide and establish a management program for future right-of-way improvements. Gresham Development Code design standards prioritize pedestrian facilities within the existing right-of-way with stricter standards within the pedestrian districts and transit station areas. The right-of-way management program will identify and catalog the many obstacles to pedestrians and a final list of projects to correct those deficiencies will be incorporated into the City's Capital Improvement Program (CIP) for implementation.

Accommodating the Disabled

The Americans with Disabilities Act (ADA) requires transportation facilities accommodate the disabled. The ADA requires a minimum sidewalk width of 4'. Those standards are anticipated to change to a minimum of 5' and thus Gresham has adopted a standard 5' foot width minimum. Gresham requires 6' wide sidewalks on all arterials and 5' wide sidewalks on all collector and local streets. The City has an on-going CIP to retrofit existing sidewalks with curb ramps. Those areas prioritized first include schools, parks, transit corridors and high pedestrian activity generators.

Pedestrian Accessways

A direct, well-connected street system provides the most desirable pedestrian system. However, where a street connection is not feasible, pedestrian accessways are a reasonable alternative. Pedestrian accessways can connect cul-de-sacs, link residential and commercial areas and provide essential access to parks, schools, transit stops and neighborhood centers. Gresham's development code requires these connections to retain pedestrian access where a through street is not feasible.

Pedestrian Crashes

For the Active Transportation Plan pedestrian crash data was updated to the latest year available and analyzed for spatial patterns. The analysis shows that the vast majority of pedestrian crashes occur on the arterial street network, as shown in Map 11.

Pedestrian Comfort - Streets

In order to encourage more walking trips, sidewalks and crossings must be safe, connect to common destinations and be perceived as comfortable by users. During the Active Transportation Plan a Pedestrian Level of Comfort analysis was conducted on streets to determine where a good environment for pedestrians exists and where investment is needed. The analysis used four factors of the street's design that influence pedestrian perception of safety:

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

The analysis shows that arterial streets have the least comfortable environment for pedestrians, Map 11. With high speeds, high volumes, and often curb tight sidewalks with little separation from vehicles, arterial streets offer the best investment for improving the pedestrian experience in Gresham.

Pedestrian Comfort - Crossings

One of the key indicators of the quality of the pedestrian environment is the degree to which one may safely and comfortably cross a street. Providing adequate crossing opportunities is a high priority for the City because of the many arterial streets that traverse Gresham. Most arterial streets are a minimum of five lanes wide, some with rights-of-way more than 90 feet.

The Active Transportation Plan analyzed the comfort of crossings on arterial and collector streets. 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

Similar to the segment-based Pedestrian Level of Comfort analysis, the most stressful intersections are located on busy arterial roadways, as seen on Map 11.

Several design measures can be implemented to improve pedestrian safety at crosswalks. The primary objectives are to shorten the crossing distance for pedestrians to reduce their exposure to traffic and make pedestrians more visible to traffic. Raised medians benefit pedestrians by allowing them to cross only one direction of traffic at a time. Curb extensions are another design feature that reduces the crossing distance and improves the visibility of pedestrians by motorists. Mid-block pedestrian-activated signals with flashing lights can be located at strategic locations such as a transit stop or in core commercial areas.

Map 10: Pedestrian Crashes



Map 11: Pedestrian Level of Comfort



Safe Routes to School

Safe Routes to School (SRTS) programs use a blend of engineering and education to make routes safer for children to walk and bicycle to school. The program also encourages more children to use these safer routes.

The City has conducted a variety of SRTS programming over the past decade including encouragement events, creating action plans for schools and installing safer crossings and traffic calming measures. 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. SRTS partners include Metro, Multnomah County and staff from the three school districts in Gresham: Centennial, Gresham-Barlow, and Reynolds.

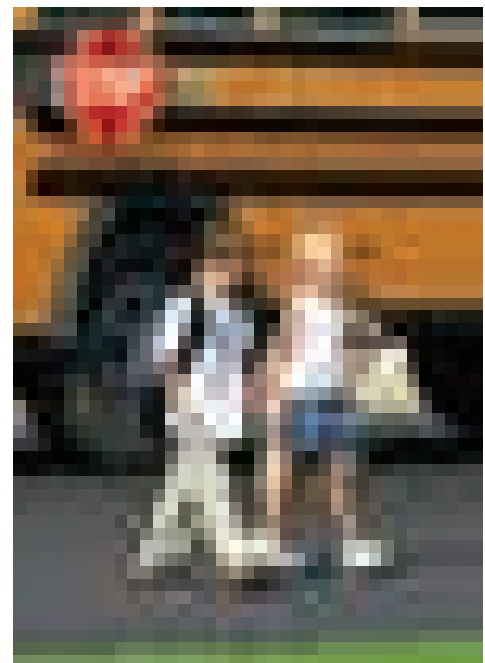
Walk and Bike to School Events

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 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:

- Construct missing link sidewalks in common routes to school.
- 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 make signage visible.
- Reduce 'stranger danger' concerns along identified routes to schools.



Safe Routes to School pedestrian planning can encourage more walking to school.

8. BICYCLE SYSTEM



Bicycle System Overview

Bicycling is a healthy, economical and non-polluting transportation option. Gresham has a range of bicycle infrastructure, including on-street bike lanes, off-street multi-use paths, and shared roadways called Gresham Greenways. Safe, comfortable facilities are needed to promote bicycling to people of all skill levels as a transportation option.

Existing Bicycle System & Bicycle Map

The Active Transportation Plan updated the Gresham Bicycle Guide, which represents the existing Bicycle System. As shown on Map 12 below, bike routes are comprised of on-street bike lanes, shared use streets called Gresham Greenways and off-street multi-use paths. The map also provides information about caution areas, traffic lights, elevation, light rail stops, park and amenity locations points of interest and bicycle safety.

Directional Signage

More than 100 wayfinding signs providing directional information are located throughout the city based on the Bicycle Guide routes and key destinations within the city. Destinations include Gresham's Regional and Town Centers, major employment areas, transit stops, recreation areas, schools, government offices and multi-use paths.

The wayfinding signage indicates the direction to each destination with an arrow pointing toward the destination, as well as mileage and the number of estimated minutes to arrive at the destination, based upon a rider traveling at 10 miles per hour.



Bike racks at the Center for the Arts Plaza in historic downtown Gresham.

Bicycle Parking Facilities

Gresham's Development Code includes requirements for bicycle parking based upon land use types. The purpose is to encourage the use of bicycles by providing safe and convenient parking places. Design requirements "ensure that bicycle parking is visible from the street, is convenient to cyclists in its location, and provides sufficient security from theft and damage" (Gresham Development Code, Section 9.0830). The City's inventory of bicycle parking will increase as new development and redevelopment occurs.

TriMet provides a bike and ride facility at its Gresham Central Transit Center. The Park and Ride Garage facility is accessible via a keycard purchased through TriMet or bicycles may park within for a nominal hourly fee.

Bicycle Volumes

Gresham has conducted annual counts on the Springwater Trail and Gresham-Fairview Trail multi-use paths since 2009. Bicyclists are incorporated into the hourly users presented in Table 8 above. More data about bicyclist routes and facility use off the multi-use paths could help better identify where bicycle investment is needed.

Map 12: Gresham Bicycle Map



Bicycles and Transit

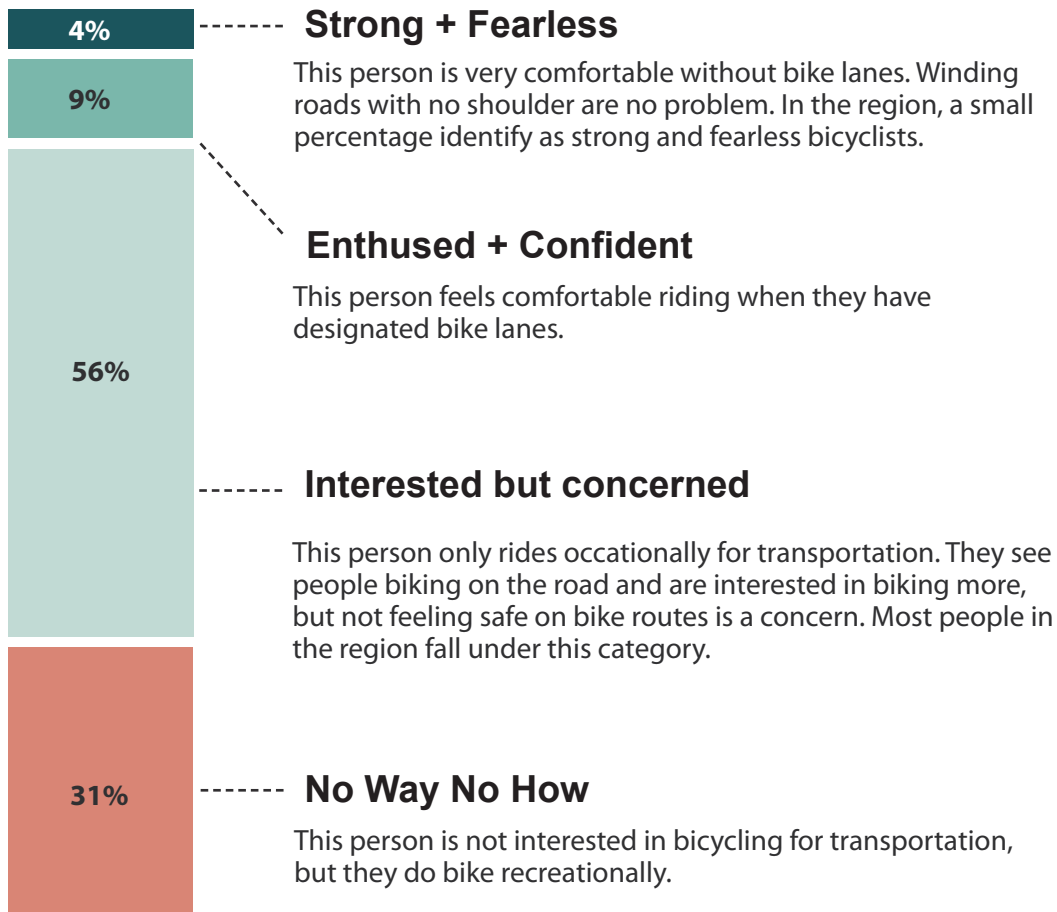
TriMet allows bicycles on MAX trains and on the front of all buses. Linking bicycles with public transit (both bus and light rail) helps overcome barriers such as lengthy trips, riding at night, poor weather, or severe terrain. How the Bicycle System links to important transit nodes and transit streets is a main consideration during system planning. Bicycle lanes, multi-use paths and Gresham Greenways all cross major transit streets or travel along transit streets and MAX corridors.

The overlap of bicycle routes and bus routes allows for easy access between these modes, but also can create a less comfortable environment for bicyclists, as buses are loud and often pull into bicycle lanes to service bus stops. Bicycle and bus conflicts should be assessed based on bus frequency, with better separation for bicyclists on the most frequent routes. One design solution is 'island stops', where the bus stop is on a curb island next to the travel lane and the bicycle lane is between the 'island stop' and the curb. The bus services the stop in the travel lane, which removes the bicyclist and bus conflict.

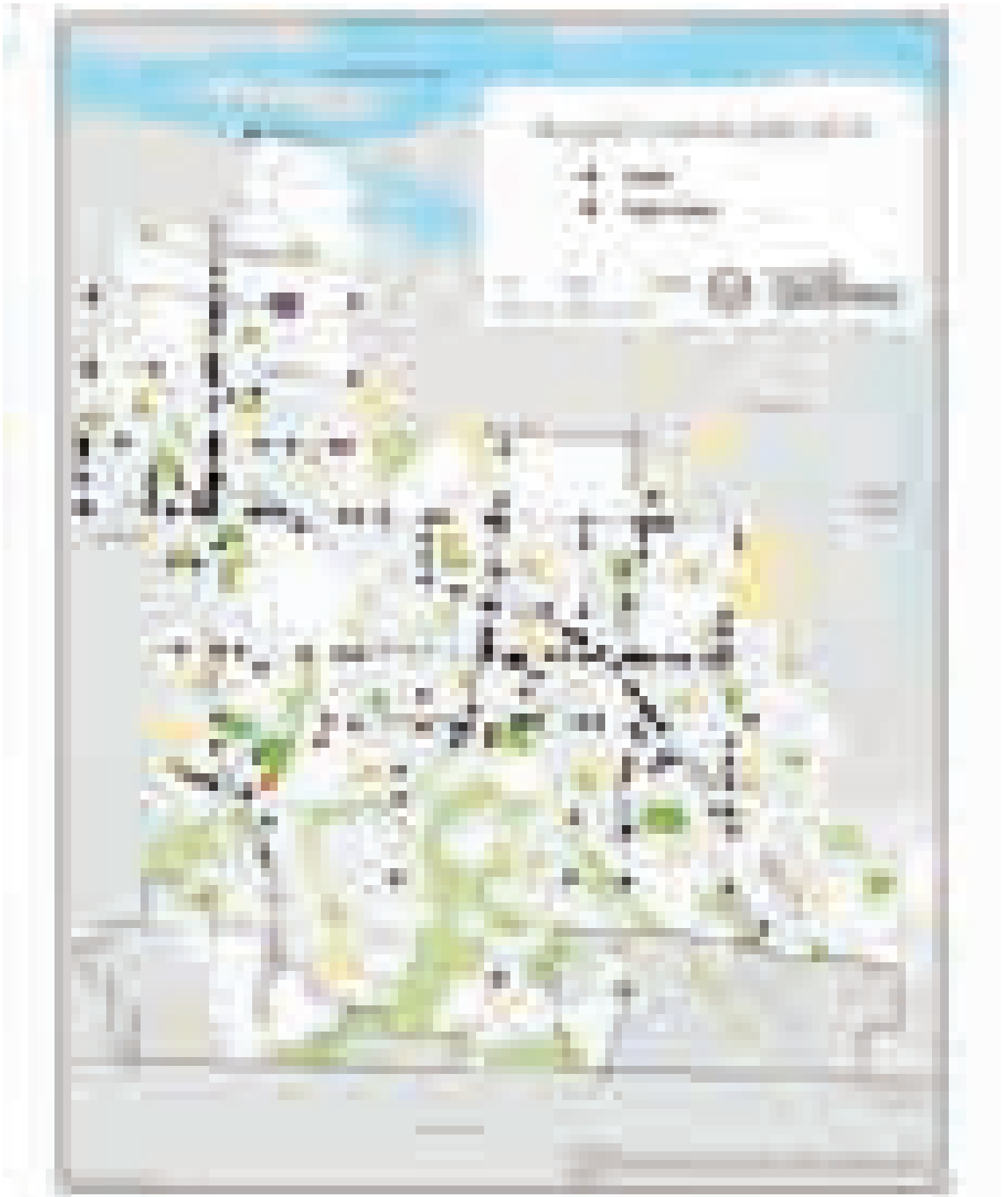
Types of Riders

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 Fearless, Enthused and 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 comfortable on high traffic streets with only 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.



Map 13: Bicycle Crashes



Bicycle Crashes

For the Active Transportation Plan bicycle crash data was updated to the latest year available and analyzed for spatial patterns. The analysis shows that the vast majority of bicycle crashes occur on the arterial street network, as shown in Map 13.

Bicycle Level of Comfort

The Active Transportation Plan did a level of comfort analysis for bicylists based on four factors of the street's design:

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

Road segments are classified into one of four levels of traffic stress based on the type of bicyclist that would feel comfortable using the street. 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 streets, which are multi-lane with high vehicle speeds, are categorized as Level 3 and 4, the least comfortable for bicyclists. Levels 3 and 4 roadways are only comfortable for experienced or strong and fearless bicyclists.

The Level of Comfort analysis (Map 14) 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.

Multi-Use Paths

Gresham's network of multi-use paths are the backbone of the bicycle network, providing a safe place separate from vehicles for bicyclists of all ages. The multi-use paths also help connect Gresham to regional destinations and are part of Metro's Regional Trail Network. Where these paths cross busy streets they must have the highest level of crossing treatment to help pedestrians and bicyclists feel safe and comfortable.



A cyclist passes the Springwater Trailhead at the Main City Park. Gresham conducts annual bicycle volume counts at this location.

Map 15: Bicycle Level of Comfort





A sharrow indicates a roadway that is shared by vehicles and bicyclists.



Bicycling along the Springwater Corridor Trail in Gresham.

Bicycle Lanes

Bicycle lanes on arterial and collector roadways are usually the most direct routes for bicyclists due to Gresham's circuitous local street network. While bicycle lanes provide space for bicycles in the roadway, they do not provide much separation from vehicles and provide no protection. Thus they are not a comfortable option for most riders. To make bicycle lanes more comfortable they need to be buffered with a wider space from vehicles or protected with upright bollards, curb stops or elevated to the height of the sidewalk, like a cycle track.

Gresham Greenways

The Active Transportation Plan identified a network of low-stress, low volume streets that can be accessible to riders of all ages and abilities, now called Gresham Greenways. While Gresham has a few shared streets, more than just a line on a map and a sharrow marking in the street is needed to make these streets comfortable to riders of all skill levels. The Active Transportation Plan provides recommended enhancements for the top ten routes. This includes traffic calming, enhanced crossings and where necessary separated bicycle facilities.

Education

Education is an important element in increasing bicycling and improving safety. Improving the quality of Gresham's bicycle facilities alone cannot change the comfort level of different bicyclists. Education of youth and adult cyclists and motorists helps to increase safe behaviors and sets a culture of safety around bicyclists. In collaboration with the Street Trust and other advocacy groups Gresham has historically offered education and training programs on bike safety annually since 2006. The City currently works with Multnomah County to provide education about bike safety within schools as part of the Safe Routes to School program.