SW Washington Regional Transportation Council

Regional Active Transportation Plan for Clark County, WA

September 2021

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Chapter 1. Introduction

Benefits of Active Transportation

The purpose of this plan is to establish a framework for the SW Washington Regional Transportation Council (RTC) to better understand active transportation in Clark County, Washington, and establish recommendations for improvement. RTC serves as the metropolitan planning organization (MPO) for Clark County, responsible for providing federal funding for local transportation projects and programs, including active transportation projects.

Active transportation refers to any form of human-powered transportation, including people walking or rolling and people riding or biking. This terminology refers to a wide array of transportation modes such as wheelchairs, assisted mobility devices, two-wheel bikes, cargo bikes, e-bikes, in-line skates, scooters, and skateboards, among others. In addition to providing a low-cost and accessible form of transportation, active transportation offers many additional benefits to communities that choose to create an environment where these forms of transportation are convenient, safe, and normal. Some of the key benefits to active transportation are outlined below.

Connectivity

Given that more than 60% of all driving drips made in the U.S. are shorter than five miles, active transportation modes such as walking and traveling by bike have the potential to replace short motor vehicle trips, especially in urban areas, Active transportation can also promote mobility options for those who do not have access to a car due to age, economic status, disability, temporary impairment, and for those who prefer not to drive. There is also the potential to connect communities throughout Clark County through inter-municipality trails and by fortifying the active transportation network on existing county corridors.

Economics

Active transportation projects have been demonstrated to deliver a wide array of positive economic benefits in the form of tourism, development and maintenance of facilities, increased property values, commercial activity, and infrastructure savings. Furthermore, the expansion of active transportation infrastructure has the potential to draw more visitors and bicycle tourists to the Southwestern Washington region. This can promote economic revitalization in the rural and urban communities along improved active transportation corridors.

Environment

Active transportation infrastructure that incorporates or preserves nature has the potential to link fragmented habitats and restore or create new habitats for plants and animals. Greenways can act as natural buffer zones for streams, rivers, and lakes and can become a habitat for plants that filters pollutants such as ozone, sulfur dioxide, carbon monoxide, and heavy metals. Greenways that are built on floodplains can prevent development in flood-prone areas. Moreover, providing residents of Clark County with access to the outdoors can spur interest in environmental stewardship and increase awareness of the area's natural endowment.

Equity

The promotion of active transportation modes can reduce burdens on residents of Clark County without access to a motor vehicle. This population relies on safe access to bicycle, pedestrian, and transit facilities to access employment, basic amenities, and also to be engaged members of society. Auto-centric development also can pose a financial burden on lower-income communities, increasing barriers to employment, reducing their ability to partake in the local economy and accrue wealth. Additionally, as housing becomes increasingly expensive in urban centers, low-income populations tend to be displaced to the periphery of urban areas where active transportation infrastructure is sparce and long auto commutes impose significant opportunity costs. Investment in active transportation has the potential to alleviate some of this inequity.

Safety

There are several factors that impact the safety, both perceived and actual, of active transportation users. As more infrastructure becomes available, more users will be drawn to active transportation modes, which may result in "safety in numbers" as drivers become more accustomed to active transportation users. Shifts from driving to active modes tend to reduce total per capita crash rates in an area, providing a safety benefit. Active transportation infrastructure improvements such as installing pedestrian refuge islands and bicycle lanes have been shown to improve safety for active transportation users on the facilities.

Health

Increased access to active transportation facilities can confer health benefits, both physically and mentally. Increased access to active transportation infrastructure gives residents additional opportunities to fulfill the CDC's recommendations for 150 minutes of weekly aerobic activity. Riding a bike and walking can lead to decreases in mortality and morbidity related to obesity and other health conditions. Other community health benefits of increased usage of active transportation facilities include reduced workplace absenteeism, improved academic performance for school age children, and decreased healthcare expenditures on diseases that can be prevented through an active lifestyle.

Vision, Goals, and Objectives

This section includes a proposed overarching vision for the SW Washington RTC Active Transportation plan, as well as particular goals and objectives of this plan.

Vision

Active transportation is a viable transportation option throughout the Clark County region, linking communities to destinations and services both locally and regionally and providing options for healthy and sustainable transportation and recreation for people of all ages and abilities.

Goals & Objectives

GOAL 1: Safety and Comfort

- **Objective:** Work with local agencies to implement the recommendations from the Washington State Strategic Highway Safety Plan (Target Zero Plan).
- **Objective:** Establish minimum design standards for all arterial and collector roads to enable comfortable pedestrian and bicycle travel.

- **Objective:** Identify a regional bicycle network that prioritizes safety and comfort for people biking and addresses existing problem areas or substandard facilities reflecting existing county transportation plans.

- **Objective:** Prioritize the improvement of active transportation facilities around schools and other community destinations through programs such as Safe Routes to School.

- **Objective:** Align public agencies under common goals and foster a collective responsibility for safety through education, encouragement, and traffic safety programs.

GOAL 2: Regional Connectivity

- **Objective:** Identify gaps in the regional pedestrian and bicycling network, and prioritize route connections that serve community destinations such as schools, employment areas, recreational facilities, and transit.

- **Objective:** Adopt guidance on local Complete Streets policies, prioritization of active transportation projects, and development standards that support High Capacity Transit and safe use of active modes.

- **Objective:** Develop an interconnected multi-modal system that serves existing and planned networks including transit, state and local bicycle facilities, and trail systems.

- **Objective:** Provide regional coordination on development of recreational hike and bicycle facilities, especially those with the potential to contribute to open space preservation or regional tourism.

GOAL 3: Equitable and Inclusive Access

- **Objective:** Create an Active Transportation Plan that reflects broad representative engagement throughout the region with specific recommendations based on the distinct needs of each of the County's communities.

- **Objective:** Identify and prioritize the needs of transportation disadvantaged communities with limited access to transportation options. This includes providing safe and convenient access to future high capacity transit (HCT) stops.

- **Objective:** Identify and clearly articulate a network of bicycle routes that will serve people biking at all levels of comfort and ability.

GOAL 4: Economic Vitality

- **Objective:** Identify opportunities to support bicycle-related tourism including regional partnerships/initiatives and prioritizing network connections that service the needs of recreational long-distance cycling.

- **Objective:** Support bicycle-related tourism and economic development in areas where those investments can provide multiple benefits for local residents, with a focus on transportation disadvantaged residents specifically.

GOAL 5: Feasibility

- **Objective:** Balance long-term mobility objectives with low-cost, short-term improvements that will pave the way for larger projects.

- **Objective:** Address the mobility and safety needs of bicyclists and pedestrians when planning and constructing roadway improvements, such as street resurfacing or bridge replacement. Balance the need for controlling long-term pavement maintenance costs with consideration for providing improved road surfaces for biking.

- **Objective:** Prioritize routes that are identified in existing state and local plans, positioning the plan to take advantage of existing funding opportunities and planning processes.

- **Objective:** Provide assistance to local jurisdictions with fewer resources to access Active Transportation funding to improve their networks.

- **Objective:** Articulate the statewide need for increased funding for bicycle infrastructure and work with local, regional, and state agencies and elected officials to leverage state funding for bicycle transportation projects in SW Washington.

Chapter 2. Background Plan and Policy Review

Policy Themes

This plan takes into account existing regional, local, and statewide plans that intersect with Active Transportation, many of which have been adopted by Southwest Washington Regional Transportation Council and its partners. Notably, Clark County's 2010 Bicycle and Pedestrian Plan and more recently Washington State Department of Transportation's 2021 Active Transportation Plan specifically focus on active transportation, both setting an important foundation for this Active Transportation Plan. Several themes were distilled from the planning documents, include safety, connectivity, equity considerations; environmental protection and growth management; and tourism and economic development.

Safety

User safety is an essential component of this Active Transportation Plan. The Washington State DOT Strategic Highway Safety Plan recommends prioritizing projects that reduce traffic speeds, improve the safety and visibility of street crossings, and build comprehensive active transportation networks. Bicycle and pedestrian facilities should be designed according to the most recent federal, state, and local design guidelines and best practices, including ADA standards. Safety also includes education and awareness programs especially in preventing impairment, distraction, or inexperience on the part of drivers.

Connectivity

Improving options for regional and local connectivity through a comfortable and continuous active transportation network is a key goal for the Southwest Washington region. Providing this level of connectivity would make walking or bicycling a viable choice for a greater number of residents. This shift would lead to benefits such as a reduction in traffic congestion, improvements in air quality, and improvements in public health. Some efforts underway in Clark County include encouraging complete streets, closing network gaps, development of High Capacity Transit (HCT), and planning for 20-minute neighborhoods.

Equity Considerations

A consistent theme within the region's plans is an emphasis on providing increased access to convenient, safe, and affordable means of transportation for transportation disadvantaged communities. This includes residents with disabilities, senior citizens, and school-age children, for whom using active modes can be inaccessible without special consideration. Planners should conduct studies of key disadvantaged populations to inform the development of pedestrian and bicycle plans. In some cases, targeted education campaigns may be helpful to reach certain groups.

Environmental Protection & Growth Management

As Southwest Washington's population grows into the undeveloped land around its populated communities, it will be essential to manage the growth while protecting the environment and retaining a high standard of living for its residents. The Washington State Growth Management Act (GMA) of 1990 requires state and local governments to engage in comprehensive planning to limit urban sprawl and protect natural resources and habitats. RTC certifies local comprehensive plans to comply with the GMA focusing on four key issues:

- Guidelines and Principles for certifying the transportation element
- Conformity with GMA

- Consistency with the Regional Transportation Plan
- Requirements of the Level of Service Bill

In addition, the Comprehensive Growth Management Plan for Clark County describes how Clark County, the Metropolitan Planning Organization (MPO), and the Regional Transportation Planning Organization (RTPO), state, bi-state, municipalities, and C-TRAN shall work together to establish a truly regional transportation system which:

- "Reduces reliance on single occupancy vehicle transportation through development of a balanced transportation system which emphasizes transit, high capacity transit, bicycle and pedestrian improvements, and transportation demand management;
- encourages energy efficiency;
- recognizes financial constraints; and
- minimizes environmental impacts of the transportation systems development, operation and maintenance."

Developing and improving active transportation infrastructure can help Clark County make progress on these policies.

Tourism and Economic Development

Active transportation can support regional goals for economic development, especially as it relates to the region's potential as an outdoor recreation and tourism destination. Actionable steps that could advance regional tourism and promote economic development include investing in bike facilities not only in urban areas but also along key routes for bicycle touring, and recreational cycling, and hiking. Facilities could be developed along key corridors such as the Columbia River National Scenic Area and bicycle and pedestrian access could be improved at bridge crossings.

Chapter 3. Existing Conditions

Defining the Regional Active Transportation Network

Existing Bicycle and Pedestrian Facilities

Existing bicycle facilities within Clark County are predominantly located in the Southwestern portion of the county, within the City of Vancouver. The network is made up of a variety of facilities including approximately:

- 177 miles of conventional striped bike lanes
- 123 total miles of multi-use paths (44 miles paved and 79 miles unpaved)
- 415 miles of shared roadway on moderate and higher traffic streets
- 74 miles of shared roadway on lower traffic streets

The majority of bike lanes are located within the City of Vancouver. The streets of smaller communities, such as Battle Ground, Camas, Ridgefield, and some of the unincorporated census designated places north of Vancouver such as Salmon Creek also have some bike lanes. Outside of these areas, dedicated bicycle infrastructure is limited. Beyond bike lanes, there exists scattered trail segments, many of which are unpaved. There is also a network of designated bike routes throughout the county; however, they are primarily on roadways with moderate to high traffic and vehicle speeds making them uncomfortable for most people on bikes.

Transit

Connections to transit are a critical consideration of this plan, because transit enables people walking and biking to travel far greater distances across the County and beyond. Access to transit is often referred to in the context of “first and last mile” connections, recognizing that people can and quite frequently do travel by multiple modes of transportation for many trips, and in most cases begin and end their trips by walking and rolling.

The majority of public transit services within the county are provided by C-TRAN. The agency operates approximately 30 routes concentrated within the city limits of Vancouver, with routes extending out to Camas, Washougal, Battle Ground, Yacolt, and Portland, Oregon. Along the agency’s busiest transit corridor, Fourth Plain Boulevard, C-TRAN added a Bus Rapid Transit (BRT) line called “The Vine” in 2017 which features larger buses and level boarding platforms to reduce travel time, improve reliability, and control costs. The Mill Plain Boulevard BRT line is under contract for construction between 2021 and 2023 and the Highway 99/Main Street BRT Corridor is moving forward toward construction.

Additionally, C-TRAN supports a dial-a-ride service called the Connector, which provides a combination of regular stop service and the ability to schedule a ride by calling the driver. The Connector makes regular stops at Rose Village in Vancouver, in the cities of Camas, La Center, and Ridgefield.

Needs Assessment

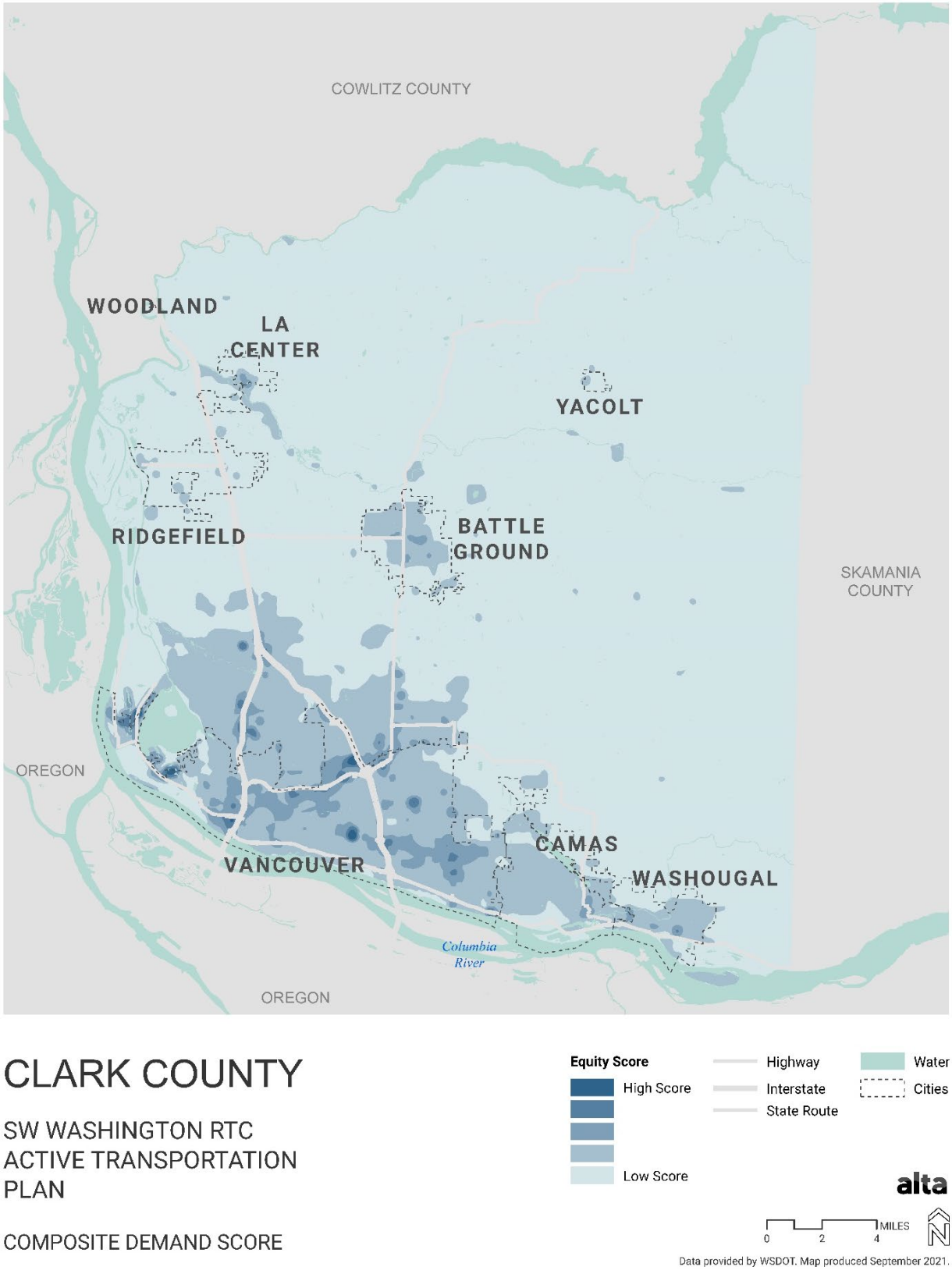
The needs assessment takes into account user demand for active transportation, equity and safety considerations. These analyses can help decision-makers understand where to target resources to have the greatest impact on improving active transportation in Clark County.

Demand

The demand analysis identifies expected walking and biking activity by overlaying the locations where people live, work, play, learn, shop, attend school, and access public transit into a composite sketch of user demand. The results of this analysis can be used to inform development of bike and pedestrian network improvement projects by highlighting areas where there is likely to be high demand for facilities that enable active transportation.

The combined distribution of residents, employment, recreational opportunities, schools, retail/services, and transit is presented below as a composite demand map. The darker shades of blue on this map indicate a high demand for walking and biking trips based on the volume and density of trip generators and attractors.

Figure 1: Composite Demand Score



Key findings from the composite demand map and the overall analysis include the following:

- The southwest area of Clark County accounts for the highest composite demand, with particular pockets in Downtown Vancouver, along SR 500, Mill Plain Blvd, SW 164th Avenue, and the Blurock Landing and Port of Vancouver area.
- There are also consistent areas of demand in Battle Ground.

Equity Analysis

A person's access to transportation options enables or hinders their ability to get to work, buy healthy food, visit a doctor, go to school, or socialize with their community. Uneven distribution of active transportation investments can result in health, safety, mobility, and economic benefits accruing to the most privileged, while increasing hardships for disadvantaged populations.

The equity analysis for Clark County uses the most recent data from the US Census Bureau American Community Survey. The following metrics were analyzed at the census block group level for the county:

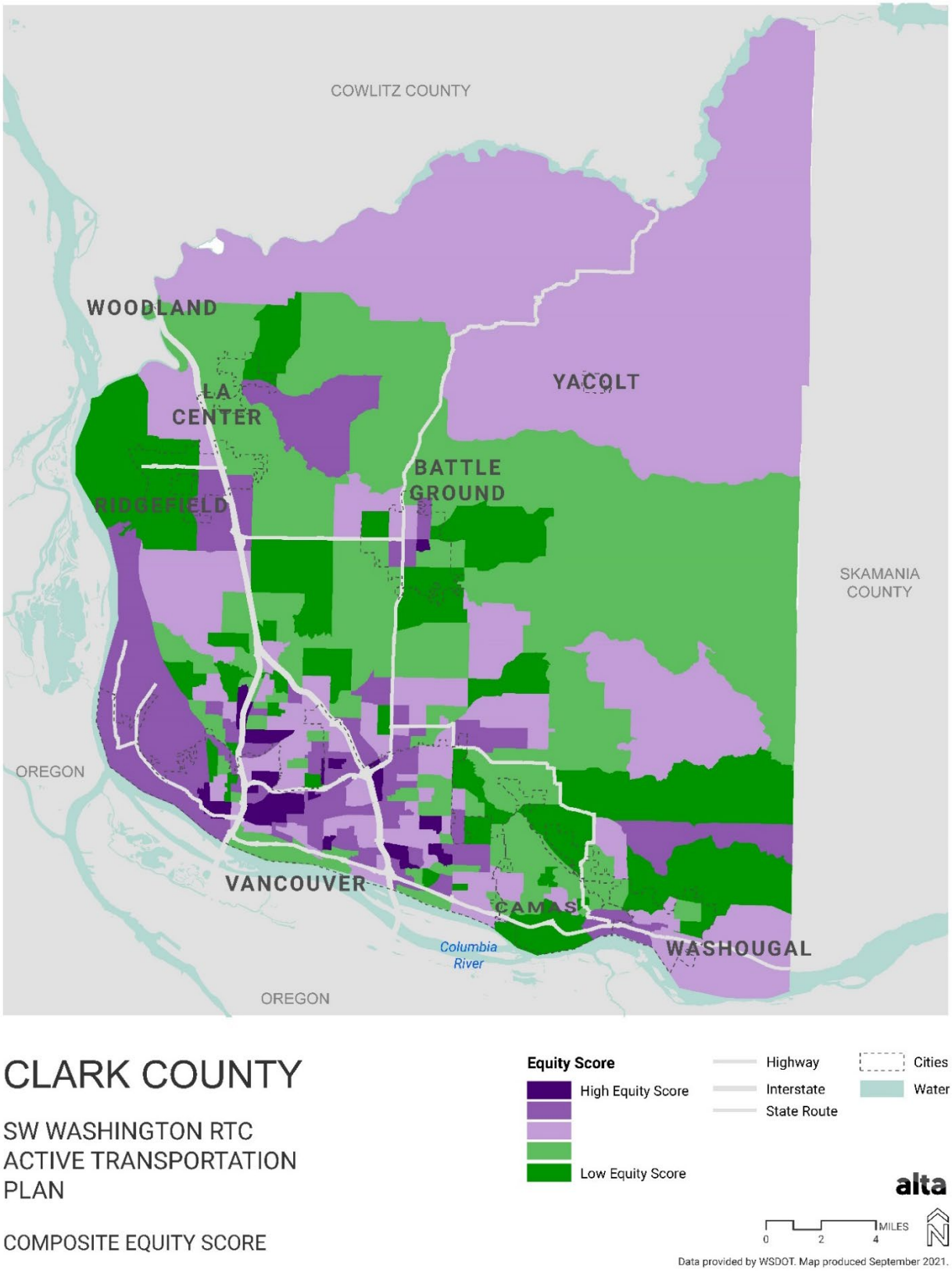
- Race
- Income
- Age
- Educational Attainment
- Access to a vehicle

Each metric was classified into quintiles (five categories by percentile) in order to compare the magnitude of differences across Clark County's census block groups. Each category represents a 20-percentile range.

In this analysis, High equity scores translate to a higher equity need. Lower equity scores reflect a lower need for investment on the basis of equity.

Figure 2 illustrates the composite score of the five key metrics combined across the county.

Figure 2: Composite Equity Score



The final equity composite map (Figure 2) reflects a combined equity score with the five indicators weighted equally. When all the equity metrics are combined into the composite map, a few notable areas stand out. These areas rank as the highest scoring census block groups for the equity factors used in this analysis among all census block groups in Clark County.

1. Clusters of block groups with high equity scores exist in Vancouver. These scores are driven primarily by larger communities of color and lower rates of automobile ownership. These block groups exist primarily east of I-5.

2. Other communities with high equity scores exist in Vancouver outside of those found in the central core. These block groups tend to be located adjacent to the I-5, I-205, and WA-500 triangles.

3. Camas and Washougal also have several block groups with high equity scores, located near the urban cores along the Columbia River and WA-14.

4. In Battle Ground, areas that scored the highest in terms of equity were centrally located neighborhoods bordering WA-502 and SW 10th Ave, and NE 142nd Ave.

5. In Ridgefield, the highest scoring census block groups were located in the southeast quadrant of the town, in the low-density residential areas straddling I-5.

Safety Analysis

Protecting the safety of people walking and biking on Washington roads is a high priority throughout the state. In 2000, Washington State adopted the Target Zero Plan, the goal of ending all traffic deaths and serious injuries by the year 2030. However, there is still much progress to be made given that between 2015 and 2017, 20% of all traffic fatalities and 20% of all serious traffic injuries involved people who were talking or biking, an increase of 41% since the 2012-2014 period (according to the Washington Traffic Safety Commission). Understanding the causes and potential solutions to this problem will help decision-makers better understand needed safety improvements across Clark County.

Collisions Involving a Pedestrian

Between 2010 and July 2019, the Washington State Department of Transportation (WSDOT) reported 793 pedestrian involved collisions occurring on roads within Clark County. Approximately 59% occurred at an intersection, 32% were unrelated to an intersection, and 8% happened at a driveway. Over half of these collisions occurred during the day, while a third happened while it was dark with street lights on. In 10% of cases, it was dark with no street lights.

Approximately 61% of Clark County's pedestrian collisions occurred within the City of Vancouver, most often in neighborhoods such as the area around the Clark College Campus, Downtown Vancouver near the library, Fourth Plain Boulevard, and Mill Plain Boulevard. Areas of particular concern include Fourth Plain Boulevard and SR 501, where collisions were more likely to result in severe or fatal injury.

Other areas of concern include commercial areas where there is often fast-moving traffic, large crossing distances, and few designated crossings, while at the same time serving many on foot. Of the neighboring cities, Battle Ground experienced an elevated number of pedestrian crashes (36) compared to other small cities in the region.

Pedestrian fatalities occurred on City, County, and State roads. Forty-two percent of fatal pedestrian crashes occurred on city streets, almost all within Vancouver, while the remaining were divided between county and state roads.

Collisions involving a Person Biking

Overall, 609 bicycle crashes were reported between 2010 and July 2019 in Clark County. Approximately 8% of collisions resulted in a serious injury, half were suspected to result in minor injury, and 5 fatal bicycle crashes occurred.

During most of these collisions, the vehicle involved was either turning or traveling straight. Almost a third of bicycle-involved collisions involved a vehicle making a right turn, the most common activity at the time of the crash. More than a quarter of collisions (28%) occurred when the driver was traveling straight ahead, and 15% of collisions involved a driver making a left turn.

As with pedestrian collisions, the largest number of bicycle collisions also occurred on the higher-speed roads surrounding major commercial areas. A large number of collisions have also occurred in the vicinity of Clark College and in Downtown Vancouver.

Intersections were a major factor in collisions involving people biking. Only 14% of these crashes did not involve an intersection, while 63% occurred at an intersection, and another 23% occurred at a driveway.

Chapter 4. Active Transportation Recommendations

Recommended Bicycle Network

Using the analysis of existing conditions outlined in Chapter 3, the project team designated a system of roads to serve as Clark County's bicycle network. This network reflects information about areas of demand, corridors with high incidence of pedestrian and bicycle crashes, and areas that scored high in terms of equity concern. Other resources the project team considered include the Strava Global Heat Map, which displays recreational bicycling routes according to frequency of use, and Google Earth and Google Streetview, which allowed for closer inspection of road conditions.

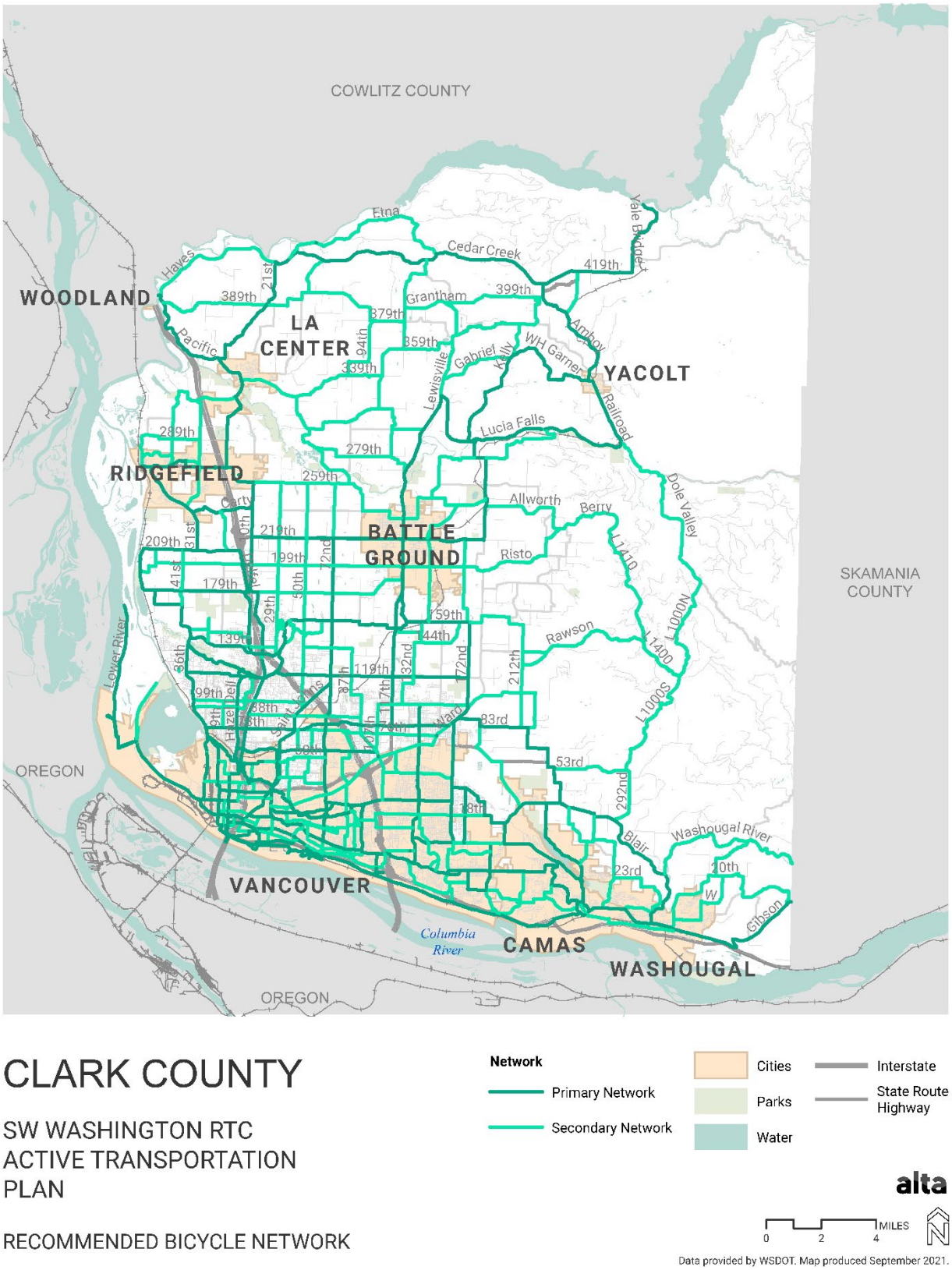
Bike network development centered on connecting the majority of residents with popular and important destinations as safely and comfortably as possible. Where these routes connect to local jurisdictions, they link up with those jurisdictions' existing or planned facilities. The resulting network represent opportunities to connect communities through improved bicycle facilities, which would greatly increase travel options in the region.

The recommended bicycle network is divided into primary and secondary routes, which serve complementary purposes within the system.

- **Primary routes** provide the most direct bicycle routes between jurisdictions, populated areas, and other major destinations within the county. They often provide for long-distance travel, such as between Vancouver and Battle Ground. Where possible they provide more physical separation from traffic than secondary routes, as they are intended to serve bicyclists with different levels of confidence and ability. However, because they follow major corridors, they can be located on larger streets with heavier traffic and faster speeds.
- **Secondary routes** fill in the gaps in the primary network, utilizing less-contiguous streets and traveling shorter distances to provide access to areas not on the primary network. These facilities generally provide less separation from cars and in some cases may be more suitable for recreational riders.

Figure 3 represents the recommended primary and secondary bicycle networks in Clark County.

Figure 3: Recommended Bicycle Network



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SW WASHINGTON RTC ACTIVE TRANSPORTATION PLAN

RECOMMENDED BICYCLE NETWORK

Recommended Facilities

Bicycle facilities that would provide increased safety and comfort were assigned for each segment along primary and secondary routes. These recommendations were based on a combination of several factors:

- Traffic conditions, such as speeds, functional classifications, and traffic volumes, where available
- Road conditions, including surface type, lane width, and existing shoulder width
- Function within the network (primary or secondary, access to destinations)[1]
- Existing adjacent facilities (for example, where routes in unincorporated areas connect to existing bicycle facilities within a local jurisdiction)
- Current recreational ridership (available through Strava's online heat map)
- Physical and geographic constraints, such as steep grades or water bodies

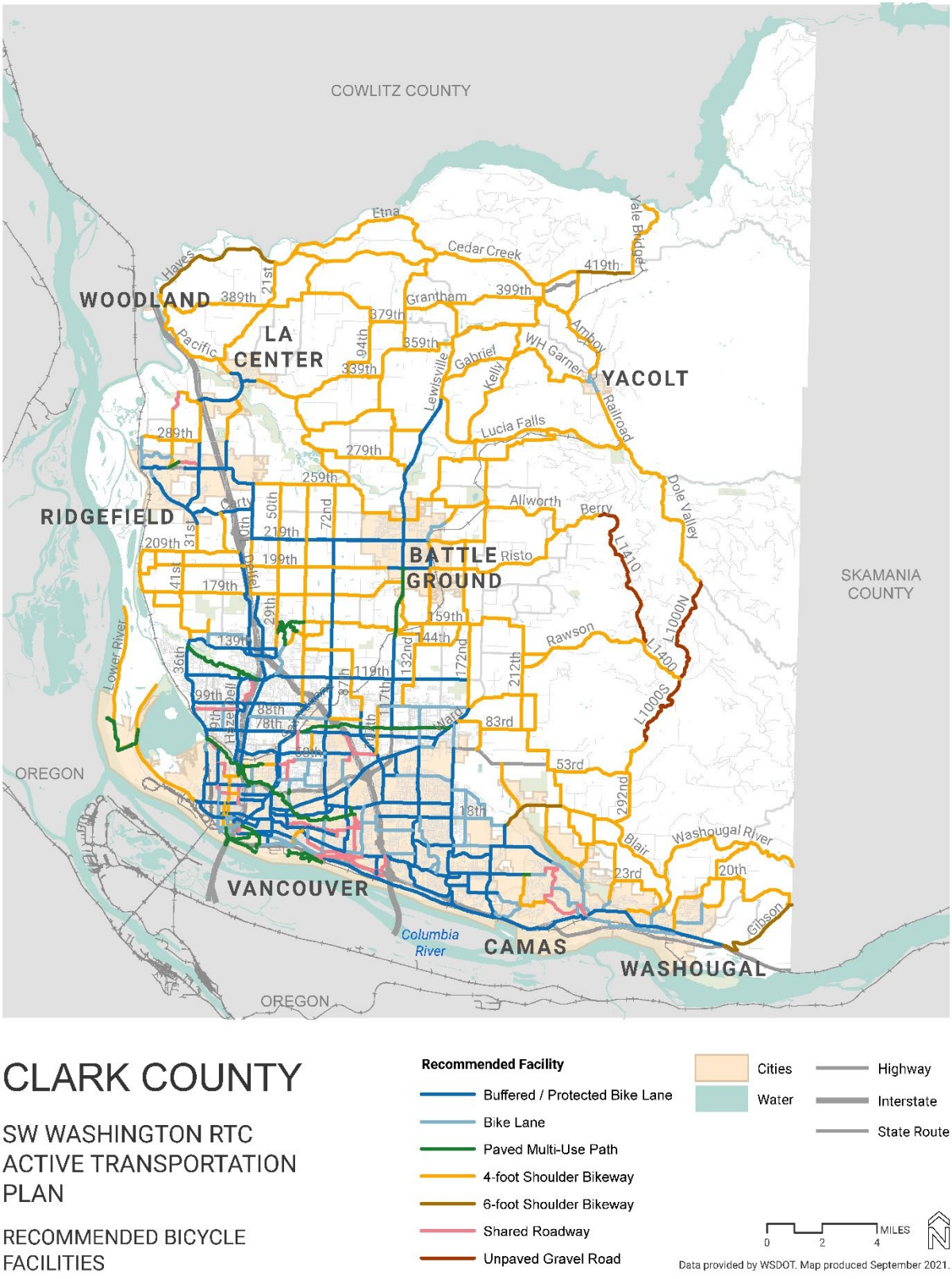
The following facility types were recommended within Clark County:

- **Buffered and Protected Bike Lanes:** Buffered and protected bike lanes are enhanced bike lanes that feature a buffer between the bike lane and the adjacent travel lane. The presence of this buffer provides more physical distance between people biking and driving, and increases the comfort level of the facility. Protected bike lanes feature a raised barrier in the buffer and/or grade separation from the roadway. There are several types of protected bike lane separator types, but they often take the form of flexible delineators, raised curb, bollards, planters, and/or vehicle parking to physically separate the bike lane from the vehicle travel lane. Grade separation of the protected bike lanes involves elevating the bike lane to sidewalk level (or an intermediate height between sidewalk and road) to further separate the bike lane from the vehicle travel lanes.
- **Bike Lanes:** Conventional striped bike lanes are common on many streets within Clark County, providing people on bikes a clearly delineated, exclusive travel space. They may not be suitable on higher volume, higher speed, and/or higher stress roadways.
- **Paved Multi-Use Paths (MUP)**: Multi-Use Paths are paved paths (also often referred to as "trails" or "greenways") that are ADA accessible. MUPs are removed from the roadway and are intended for exclusive use by people walking and biking. Special consideration should be given at locations where MUPs intersect with roads, particularly at unsignalized and uncontrolled crossings.
- **Shoulder Bikeways:** Shoulder bikeways feature wider striped shoulders (4ft and 6t) that can be used by people on bikes. Shoulder bikeways are typically found on lower volume roadways throughout the County where it is not feasible to upgrade the roadway and bike facility. These facilities make up a large percentage of the recommended County bike network, particularly in rural parts of the County.
- **Shared Roadways:** Roadways where the travel space is shared by people driving and biking. These are typically lower volume, and/or lower speed streets where people on bikes can be comfortable riding in mixed traffic. A special type of shared roadway is called a "neighborhood greenway" which is are characterized by the addition of traffic calming design elements and enhanced crossing improvements.
- **Unpaved Gravel Roads:** Some routes on the County network may not be paved, but nonetheless provide a connection between regional or local destinations. In some cases, these routes are sought out by recreational bike riders due to their lower vehicle traffic volumes and speeds, and more scenic riding experience.

[1] Where possible, primary routes were given facility recommendations that provided the highest degree of physical separation between vehicle traffic and bicyclists.

Figure 4 illustrates the recommended facility designations for the Clark County bicycle network.

Figure 4: Recommended Bicycle Facilities



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SW WASHINGTON RTC ACTIVE TRANSPORTATION PLAN

RECOMMENDED BICYCLE FACILITIES

Project Evaluation Criteria

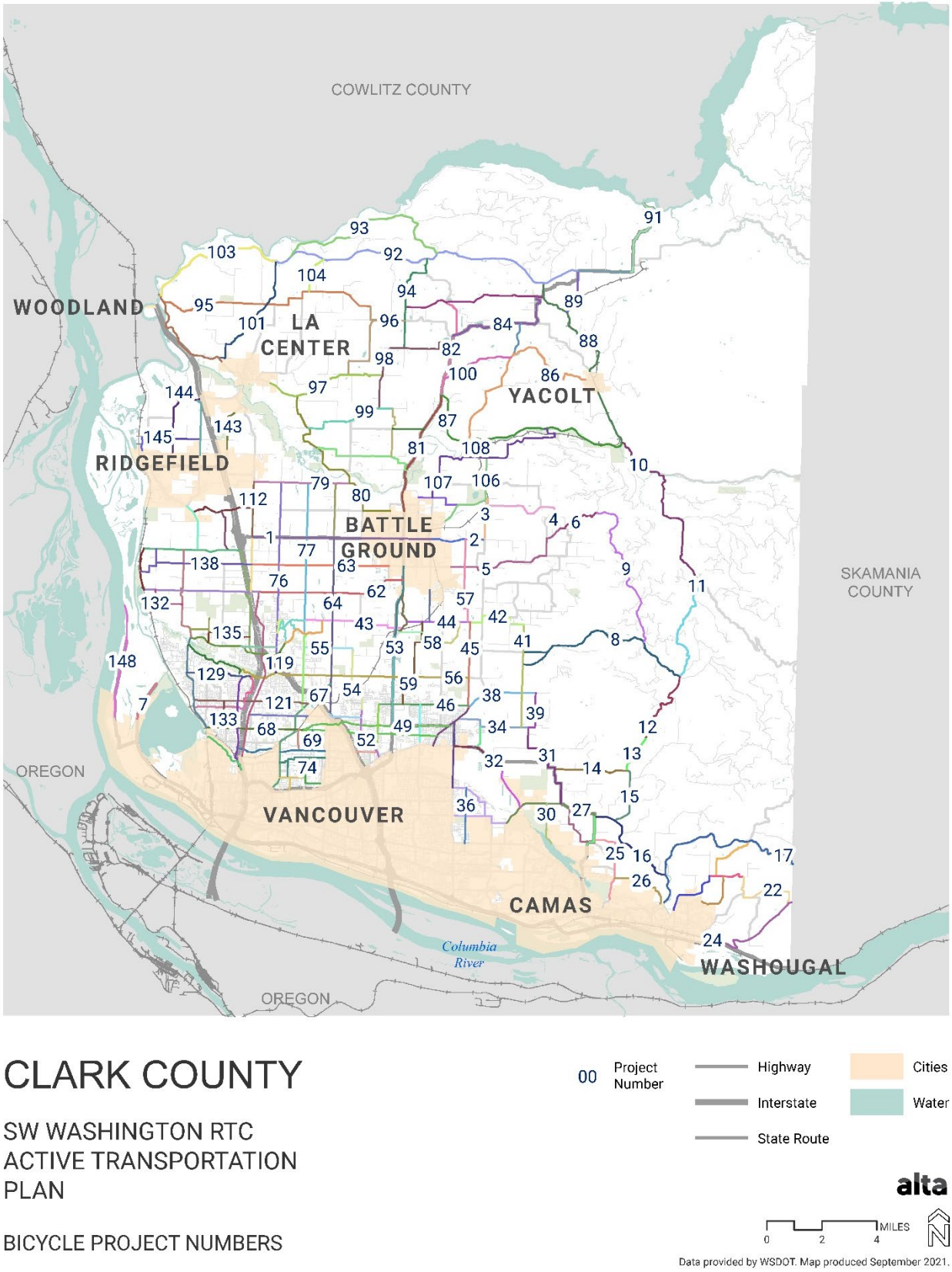
The project team divided the recommended network into project segments to determine priority projects countywide. At this stage, the prioritized bike network only considered corridors outside city jurisdictions. While primary and secondary routes (as well as recommended facilities) were assigned within local jurisdictions, these will need to be confirmed and/or updated as cities update their local transportation system plans, i.e., TSPs, and/or bike networks. For this reason, the RATP focuses on prioritized project segments located in unincorporated Clark County. This RATP will be updated to reflect the local bike networks as concurrent planning efforts, such as the Vancouver Transportation System Plan, are further developed. Close coordination with local, regional, and statewide bike planning efforts will be key to the success of the Clark County bike network.

Where possible, individual projects followed these criteria:

- Projects should have only one facility recommendation.
- Projects should be on either the primary or secondary network.
- Project segments can contain multiple roads, but these segments should be as directional as possible (East-West, NW-SE).
- Projects should terminate at jurisdiction limits unless the corridor continues through the jurisdiction.
- Projects can be up to 6 miles long.
- Projects should not consist of tiny segments. Small segments were joined to another segment to avoid an excessive number of projects. In some cases, this meant that there were multiple facility recommendations or both primary and secondary routes within the same segment.

Figure 5 represents the resulting 151 project segments within the network.

Figure 5: Bicycle Project Numbers



The project team then analyzed each of these project segments according to six criteria:

- **Demand** takes into account areas of the county that people most need to access: where they live, work, play, access transit, work, and attend school. Through the demand analysis (see Chapter 3), project staff were able to determine high-priority areas of the county that people needed to be able to reach.
- **Safety** measures which project routes have been the site of bicycle-involved collisions. An elevated number of crashes indicates that even though bicyclists are using those corridors, the level of safety is not adequate and requires improvement. These might include interventions such as traffic calming, speed reduction, separation from vehicle traffic, or signage drawing attention to the presence of bicyclists along the route.
- **Equity** analysis draws attention to areas of the county with a higher population of groups historically disadvantaged when it comes to accessing safe and convenient transportation options. These groups include people of color, senior citizens, low-wealth families, people with limited educational attainment, and people without access to a private vehicle. The goal of including equity as a factor is to ensure that the benefits of active transportation facilities are not only enjoyed by the most privileged.
- **Transit access** is a major reason why people may choose to bike. Ensuring that bicycle routes reach transit stops allows residents to make multi-modal trips that increase their access to more areas of the county. As a prioritization factor, Transit Access measures whether a route provides links to C-Tran stops or demand-responsive transit service areas.
- **Plan concurrence** considers whether the route is also being prioritized by the state as a potential active transportation route. Routes that also reflect state priorities are given higher point values.
- **Inclusive access** means that bicyclists of all ages, abilities, and levels of confidence can feel comfortable using a facility. While not all corridors can be improved to this level, additional consideration should be given to those projects that can create inclusive access by installing buffered or protected bike lanes or paved multi-use paths.

Table 1 outlines the data used to measure each of these criteria and the source of the data. A more detailed outline of the scoring methodology for each of these factors is included in Appendix A.

Table 1: Bicycle Project Prioritization Factors

Criteria	Data	Source
Demand	Maximum composite Demand score	Existing Conditions Analysis
Safety	Sum of bike crashes within a half mile	Existing Conditions Analysis
Equity	Maximum Equity Analysis score	Existing Conditions Analysis
Transit Access	C-Tran Stops and Demand-Responsive Transit Service Areas	Existing Conditions Analysis
Plan Concurrence	Projects identified by WSDOT	WSDOT
Inclusive Access	Recommended Facility Type	Recommended Facility Type

Adding up the scores for each of the six criteria created the overall prioritization score. All of the prioritization scores were then categorized using natural breaks into three levels: **High Priority, Medium Priority, and Low Priority.**

- **Near-term:** These projects have the highest potential to increase the number of people able to walk and roll safely within Clark County. Road jurisdictions should actively pursue funding to complete these projects in the near future.
- **Medium-term:** These projects are important to improving Clark County's pedestrian network but have a lower potential to increase comfort and safety than High Priority projects. Improvements should be planned for the future, which will allow funding opportunities to be pursued as they arise.
- **Long-term:** These projects help complete a robust bicycle network for Clark County and should eventually be funded and completed but are not considered top priorities for upcoming budget cycles.

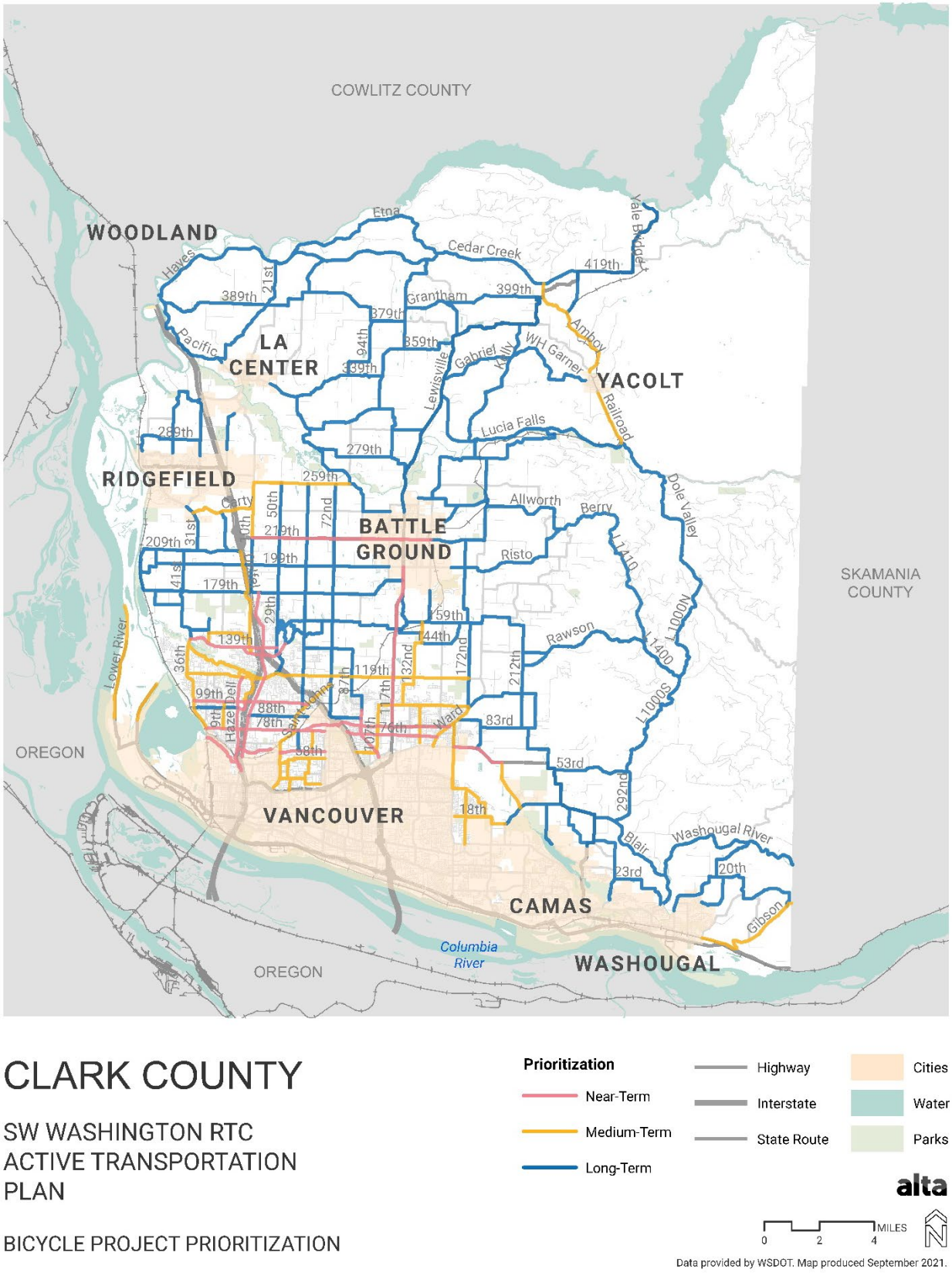
Priority Network Connections

Figure 6 depicts the project segments within the network represented as near-, medium-, and long-term recommendations. Table 2 and Table 3 list the near-term bicycle projects that resulted from this analysis, separated into primary and secondary routes, respectively. (Medium-term and long-term bicycle projects are listed in Appendix B.)

The projects that scored the highest are all buffered or protected bike lanes or paved multi-use paths, which receive points for providing more inclusive access.

The top-scoring projects included several major corridors within the Vancouver Urban Growth Boundary (UGB), such as 78th St, 99th St, Minnehaha St, Hazel Dell Ave, and Hwy 99. These routes connect significant areas of demand located north of Vancouver. Many of these corridors have also been the location of a large number of bicycle-involved collisions. Further north, Projects #118 and #141 (which include Bliss Rd, Hathaway Rd, 139th St, Tenney Rd, 134th St, and Salmon Creek Ave) create a connection from east to west, crossing under the 205 / I-5 interchange. Another near-term recommendation is for an improved connection between Battle Ground and Vancouver along 117th Ave (Project #53). A buffered bike lane along 219th St between Battle Ground and Ridgefield also scored high. Finally, a multi-use path on Fourth Plain between 162nd St and 199th St (Project #151) also scores as a near-term project.

Figure 6: Bicycle Project Prioritization



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BICYCLE PROJECT PRIORITIZATION

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Table 2: Near-Term Bicycle Project Recommendations (Primary Network)

Project Number	Name	Main Facility Designation	Demand	Safety	Equity	Transit Access	Plan Concurrence	Inclusive Access
1	Main	Buffered /Protected Bike Lane	Med	Med	High	High	No	Yes
53	117th	Buffered /Protected Bike Lane	Med	Med	Low	High	Yes	Yes
68	78th	Buffered /Protected Bike Lane	High	Med	Med	High	No	Yes
71	Minnehaha	Buffered /Protected Bike Lane	Med	Med	High	High	No	Yes
75	Union	Buffered /Protected Bike Lane	High	High	Low	High	No	Yes
125	Hazel Dell	Buffered /Protected Bike Lane	High	High	Low	High	No	Yes
49	Multi-Use Path	Paved Multi-Use Path	Med	Med	Med	High	No	Yes
118	Bliss	Buffered /Protected Bike Lane	High	Med	Low	High	Yes	Yes
60	Multi-Use Path	Paved Multi-Use Path	Low	Low	Low	High	Yes	Yes
126	Multi-Use Path	Paved Multi-Use Path	Low	Low	High	High	No	Yes

Table 3: Near-Term Bicycle Project Recommendations (Secondary Network)

Project Number	Name	Main Facility Designation	Demand	Safety	Equity	Transit Access	Plan Concurrence	Inclusive Access
121	99th	Buffered /Protected Bike Lane	High	High	Med	High	No	Yes
123	7th	Buffered /Protected Bike Lane	High	Med	High	High	No	Yes
151	Fourth Plan	Multi-Use Path	Low	Med	High	High	Yes	Yes
48	76th	Buffered /Protected Bike Lane	Med	Med	Med	High	No	Yes
52	94th	Buffered /Protected Bike Lane	Med	Med	Med	High	No	Yes
141	139th	Buffered /Protected Bike Lane	High	Low	Med	High	No	Yes

Recommended Pedestrian Network

A well-connected and robust pedestrian network supports residents, employees, and visitors as they walk or use an assisted mobility device in Clark County. The recommended regional pedestrian network differs from the regional bike network in that pedestrians are in many cases travelling significantly shorter distances by walking or rolling, as compared to riding a bike. These pedestrian trips are concentrated between origins and destinations that are generally located in more urbanized centers throughout the region, and in and around recreational destinations outside of the cities and towns in Clark County. Due to the nature of these shorter walking and rolling trips, the recommended pedestrian network consists of route segments that are of a distance of one mile or less.

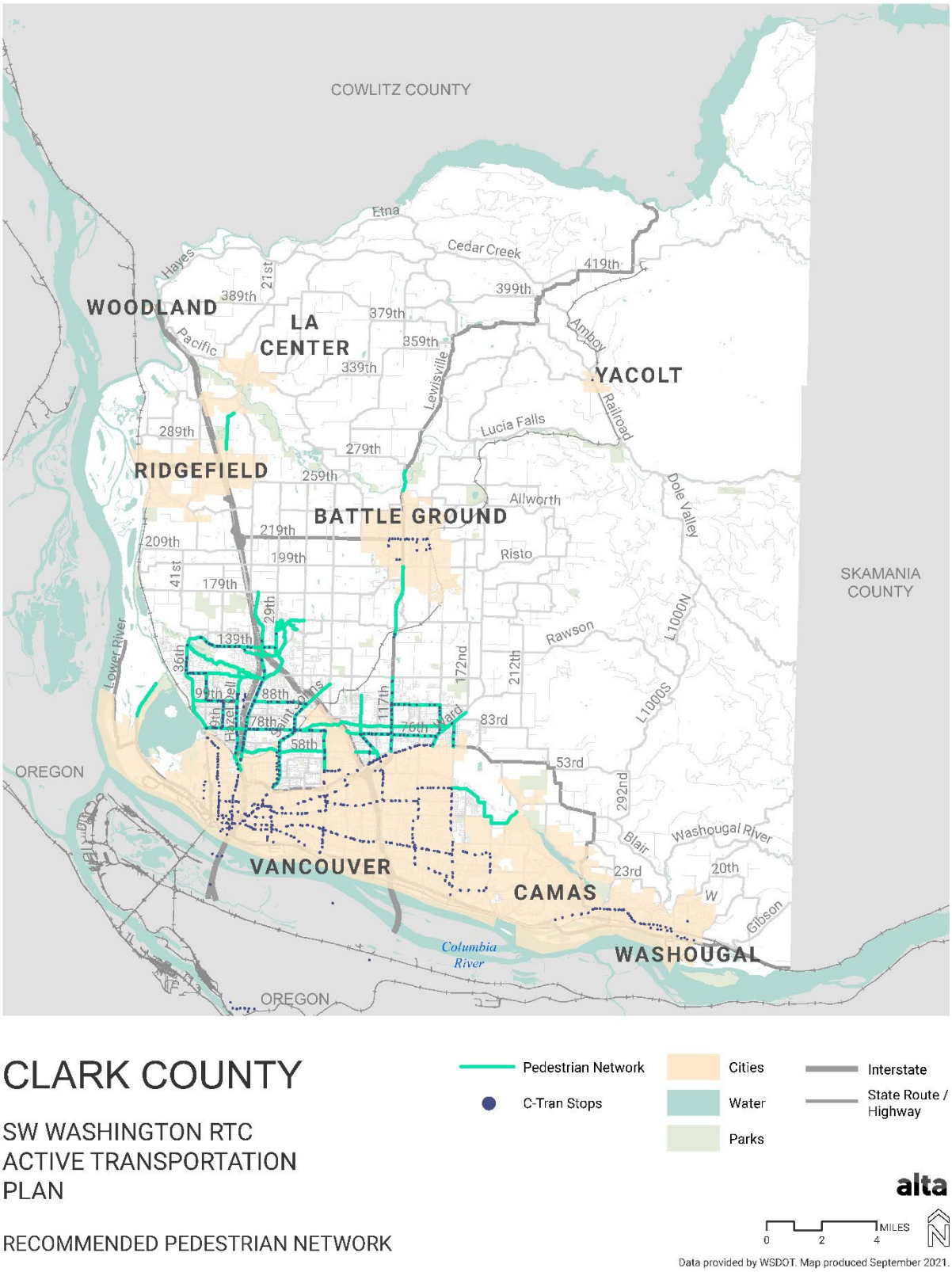
The recommended pedestrian network therefore includes connections between walking routes that connect the places where people live, work, go to school, or take transit outside of urban centers, and along or to regional transit routes and facilities.

In selecting pedestrian routes, roads were considered part of the recommended pedestrian network in the following cases:

- The road connects two areas within a local jurisdiction but is not contained by that jurisdiction. (For example, the road connects two areas of Vancouver through the unincorporated area.)
- Pedestrians would need to use the road to access transit stops or C-Tran demand-responsive transit service areas.
- Segments should not be more than a mile long.

Figure 7 illustrates the recommended pedestrian network, as well as the locations of C-Tran stops, which are a critical part of this network.

Figure 7: Recommended Pedestrian Network



Recommended Facilities

Sidewalks: An accessible, dedicated, facility for exclusive use by pedestrians that is physically separated from the road. They can be on one or both sides of the streets.

Paved Multi-Use Paths (MUP): Multi-Use Paths are paved paths (also often referred to as "trails" or "greenways") that are ADA accessible. MUPs are removed from the roadway and are intended for exclusive use by people walking and biking. Special consideration should be given at locations where MUPs intersect with roads, particularly at unsignalized and uncontrolled crossings.

Pedestrian lanes: Pedestrian lanes are interim pedestrian facilities that often resemble in-street bike lanes or shoulder bikeways, but are for the exclusive use of people walking and rolling to make a short connection between nearby destinations. They are only appropriate on roads with lower traffic speeds and volumes. The use of physical separation between the pedestrian lane and vehicle travel lanes is recommended.

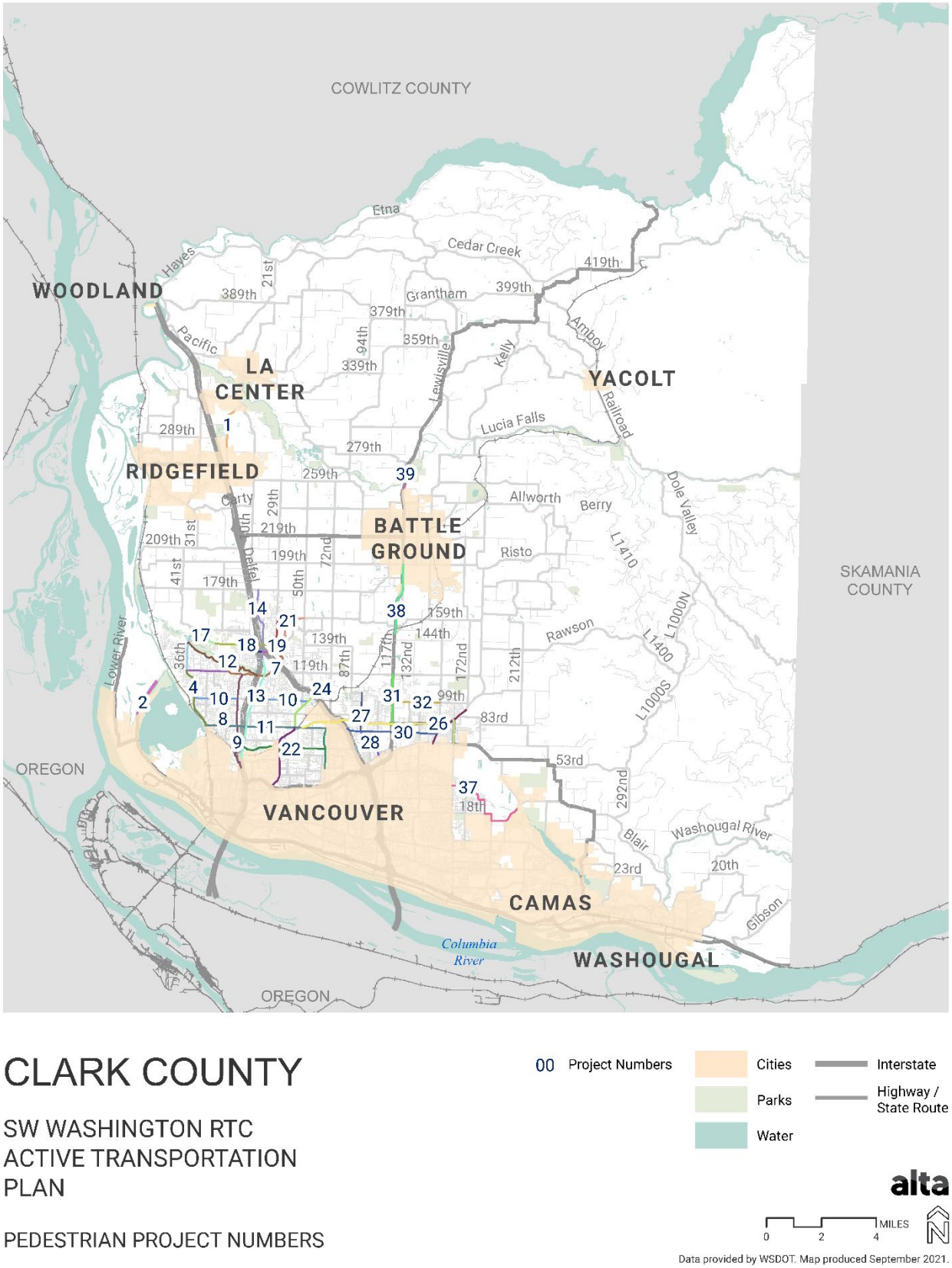
Project Evaluation Criteria

The project team divided the recommended network into project segments in order to determine priority routes for improvement of bicycle facilities. Where possible, individual projects followed these criteria:

- Projects should generally be located within areas with a demand score of at least 2. Where they extend into areas with lower demand, they should connect to another area with a demand score of at least 2 within a mile. (Most pedestrian travel is within this one-mile threshold.)
- Projects should be located along bus routes, where pedestrians would be using them to access transit.
- Paved Multi-Use Paths should be included as projects.
- Routes that facilitate access to Paved Multi-Use Paths should also be included as projects.

Figure 8 shows the resulting 39 project segments within the network.

Figure 8: Pedestrian Project Numbers



CLARK COUNTY

SW WASHINGTON RTC ACTIVE TRANSPORTATION PLAN

PEDESTRIAN PROJECT NUMBERS

00 Project Numbers

Cities

Parks

Water

Interstate

Highway / State Route

alta

The project team then analyzed each of these project segments according to six criteria:

- **Demand** takes into account areas of the county that people most need to access: where they live, work, play, access transit, work, and attend school. Through the Demand analysis (see Chapter 3), project staff were able to determine high-priority areas of the county that people needed to be able to reach.
- **Safety** measures determine which project routes have been the site of pedestrian-involved collisions. An elevated number of crashes indicates that while pedestrians are using those corridors, the level of safety is not adequate and requires improvement. These might include interventions such as traffic calming, speed reduction, separation from vehicle traffic, or signage drawing attention to the presence of pedestrians along the route.
- **Equity** analysis draws attention to areas of the county with a higher population of groups historically disadvantaged when it comes to accessing safe and convenient transportation options. These groups include people of color, senior citizens, low-wealth families, people with limited educational attainment, and people without access to a private vehicle. The goal of including equity as a criterion is to ensure that the benefits of active transportation facilities are not only enjoyed by the most privileged.
- **Transit access** is a major reason why people may choose to walk or roll. Ensuring that pedestrian routes reach transit stops allows residents to make multi-modal trips that increase their access to more areas of the county. As a prioritization factor, Transit Access measures whether a route provides links to C-Tran stops or demand-responsive transit service areas.
- **Plan concurrence** considers whether the route is also being prioritized by the state as a potential active transportation route. Routes that also reflect state priorities are given higher point values.

Table 4 outlines the data used to measure each of these criteria and the source of the data. A more detailed outline of the scoring methodology for each of these factors is included in Appendix A.

Table 4: Pedestrian Project Prioritization Factors

Criteria	Data	Source
Demand	Maximum composite Demand score	Existing Conditions Analysis
Safety	Sum of pedestrian crashes within a half mile	Existing Conditions Analysis
Equity	Maximum Equity Analysis score	Existing Conditions Analysis
Transit Access	C-Tran Stops and Demand-Responsive Transit Service Areas	Existing Conditions Analysis
Plan Concurrence	Projects identified by WSDOT	WSDOT

Adding up the scores for each of the six criteria created the overall prioritization score. All of the prioritization scores were then categorized using natural breaks into three time horizons: near-term, medium-term, and long-term.

- **Near-term:** These projects have the highest potential to increase the number of people able to walk and roll safely within Clark County. Road jurisdictions should actively pursue funding to complete these projects in the near future.

- **Medium-term:** These projects are important to improving Clark County's pedestrian network but have a lower potential to increase comfort and safety than near-term projects. Improvements should be planned for the future, which will allow funding opportunities to be pursued as they arise.
- **Long-term:** These projects help complete a robust pedestrian network for Clark County and should eventually be funded and completed but are not considered top priorities for upcoming budget cycles.

Priority Network Connections

Figure 9 depicts the project segments within the pedestrian network represented as near-, medium-, and long-term recommendations. Table 5 lists the near-term pedestrian projects that resulted from this analysis. Medium-term and long-term projects are listed in Appendix B.

The top-scoring projects included several major corridors within the Vancouver Urban Growth Boundary (UGB), such as 78th St, 99th St, Minnehaha St, 72nd Ave / Andresen Rd, Hazel Dell Ave, and Hwy 99, all of which were also near-term recommendations for the county's bicycle network.

Another near-term recommendation is for a path extending north from Vancouver along 117th Ave (Project #31).

Figure 9: Pedestrian Prioritization

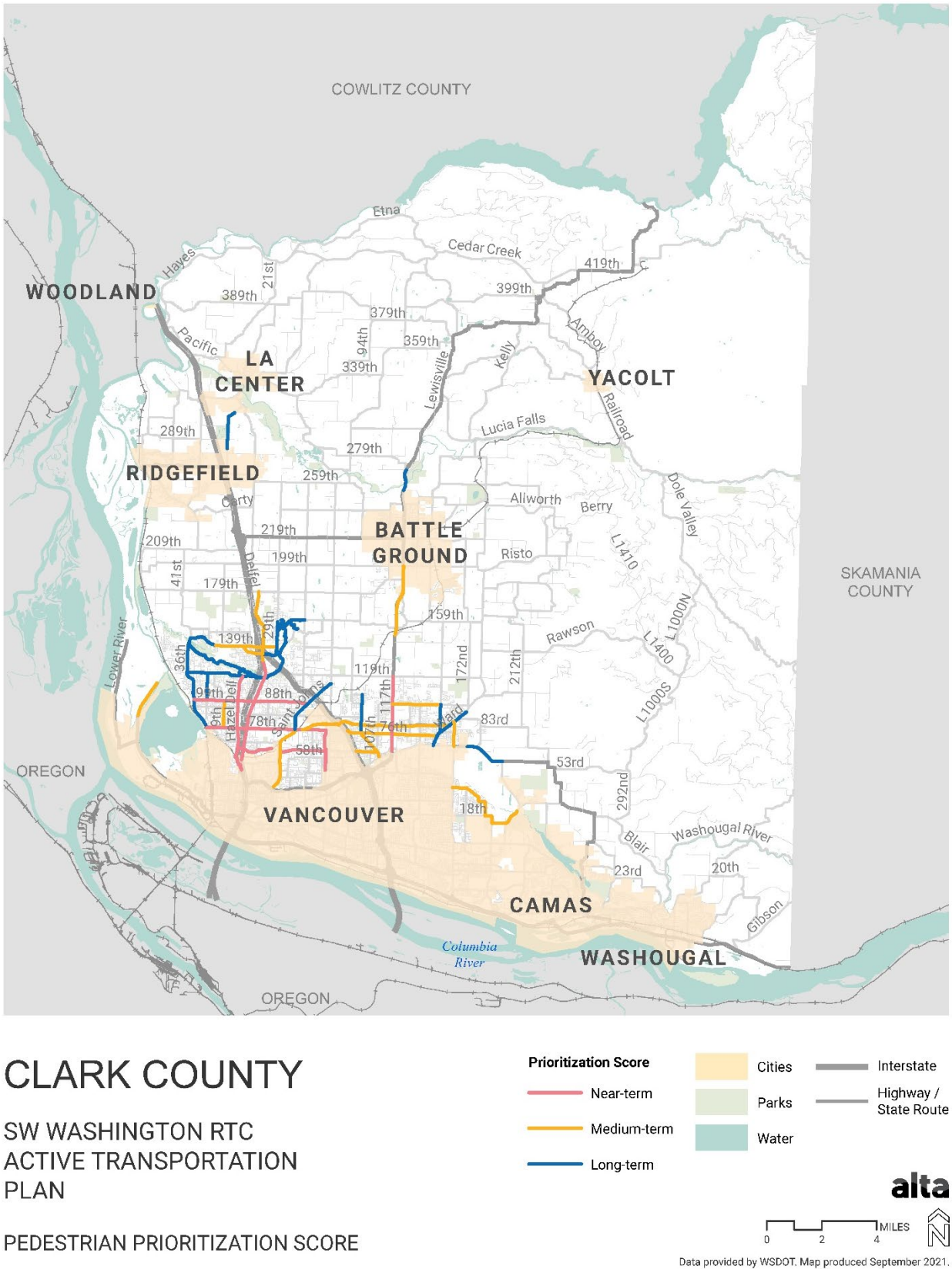


Table 5: Near-term Pedestrian Project Recommendations

Project Number	Name	Demand	Safety	Equity	Transit Access	Plan Concurrence
9	Hazel Dell	High	High	High	High	No
13	Highway 99	High	High	High	High	No
10	99th	High	Med	High	High	No
11	78th	High	Med	High	High	No
31	117th	Med	Med	Med	High	Yes
22	Minnehaha	Med	Med	High	High	No
25	Andresen	Med	Med	High	High	No

Recommended Programs and Policies

The program and policy recommendations in this chapter focus on attracting new active transportation users as well as tourists from outside the region while creating a safer environment for all. The region can play a guiding role in strengthening programs that facilitate active transportation use. Active transportation infrastructure can certainly attract more people to those facilities; however, it is just as important to develop programs and instill policies that promote their safe and proper use. This can be achieved through **education**, **encouragement**, **enforcement, and engineering** initiatives. Together these initiatives have the potential to bolster the ability of all road users to safely interact so that everyone can benefit.

Education

Strategy One: Ongoing Cycling and Pedestrian Programs

- **Purpose**: To educate Clark County residents on the rules of the road and how to walk, ride, share the road safely. The county can foster ongoing programs to educate people of ages and ability levels.
- **Audience:** Road users of all ages; motorists
- **Partners:** Schools, recreation departments, bicycle clubs, civic organizations, youth-oriented groups
- **For Young Children**: Bike rodeos and pedestrian education in schools can introduce children to riding and walking skills, but children need more practice for the skills to become automatic. Teaching children proper bicycling and navigation skills when they're young and learning to walk and ride establishes a solid foundation for their enjoyment and safety. It also prepares them for eventually learning to drive a motor vehicle. Riding a bike and walking not only develop motor skills but also trains young brains in spatial reasoning and how to constantly monitor and adjust to surroundings.
- **For Older Children**: Programs that covers both the basics walking and riding while broadening the lessons to include bicycle mechanics and maintenance can empower older children to become more independent and responsible on the roads. This curriculum can be offered in physical education classes or through other organizations serving older children.
- **For Adults**: Since adults are more dispersed and thus more difficult to reach, different approaches are needed for their education about active transportation. Education for this group will focus on the

responsibilities and rules of the road for all road users as well as how drivers should safely interact with more vulnerable road users. Programmatic recommendations include:

- **Printing materials about bicycling and walking**: Brochures about active transportation safety and interacting with motorists can inform citizens and improve safety. These brochures should be made available on city/county/regional websites with printed versions available.
- **Courses for adult bicycling:** Courses that are taught by certified bicycle safety instructors can be offered in local parks or at area schools. These courses can target active transportation users at different levels and can place particular emphasis on communities that experience transportation barriers.
- **Community Walks and Education Events:** As Clark County works to improve the physical infrastructure throughout its communities, promoting a culture of walking can occur through community walks and other educational events. Community walk scan be organized throughout the year and demonstrate to community members how walking can be a viable option of getting to key countywide destinations. Clark County should partner with local and regional groups to identify opportunities for new community events.
- **Printing material for motorists:** Various organizations such as the League of American Bicyclists also offer print materials about driver safety when interacting with people biking. There may be a charge for these materials.

Strategy Two: Active Transportation Information Online

- **Purpose**: A regional website to provide information to residents and visitors to Clark County
- **Audience**: General Public
- **Partners:** Component communities and relevant agencies
- This website should be the one stop source of information regarding active transportation facilities throughout the region as well as future plans. Information on the website should include the following:
  - An interactive map of trails and active transportation facilities that should also denote sidewalk completeness, parking, restrooms, access points to public transportation
  - Availability of downloadable maps of trails and routes
  - Descriptions of nearby attractions or points of interest
  - List of campgrounds, parks, picnic areas and accommodations
  - A region-wide calendar of events that can be easily updated on a regular basis or link to a similar website with information for the region
  - Safety information that can be downloaded/printed from the website
  - How to report any issues or problems or make suggestions about improvements to active transportation in the region

<u>Encouragement</u>

Strategy One: Open Street Events

- **Purpose:** To encourage Clark County residents to experience the fun of bicycling and be physically active through Open Street events in different locations within the county.
- **Audience:** Bicyclists, pedestrians, and the general public

- **Partners; Local governments**-especially parks and recreation departments, civic organizations, bike clubs, health and environmental organizations
- The term "open streets" means closing streets to motor vehicle traffic so that the streets are open to bicyclists, pedestrians, skaters and others so that they can experience the area without having to worry about motorized traffic. Organizers can invite community organizations to set up displays and host games and other activities that will attract families. Bike shop owners will sometimes be on hand to check out bikes and pump-up tires or set up a display to allow people to try different types of bikes. Displays can also be set up that highlight the importance of walking and the different ways people can walk around Clark County. Vendors offering food and beverages-restaurants or food trucks are helpful. Depending on the time of the year it can be helpful to set up shady areas for people to rest and be out of the sun.
- Benefits of Open Streets Event
    - **Health:** Most children and adults do not achieve the regular physical activity recommended to maintain health. For children it's 60 minutes per day.
    - **Environment:** Removing motor vehicles from the area, even for a short duration, can reduce particulates and unhealthy gases from the air in the area.
    - **Economy:** A well-publicized open streets event can attract participants from outside the host community along with local residents. These people will patronize food vendors and restaurants and, depending on the event location, shop at local stores. These events also have the potential to generate interest in local businesses even after the event is completed.
    - **Community:** Bringing people together from different parts of the town/region can create positive connections that benefit the region.
- Suggested Activities
    - Food and beverage vendors such as food trucks
    - Activities and displays from community health organizations, the local health department, educational organizations, libraries, bike shops, fire departments, rescue organizations, and local museums
    - Bike parade for young children
    - Bike valet parking
    - Display of transit bus with bike rack on front
    - Bike rodeos
    - Helmet fitting

Strategy Two: Safe Routes to School and After-School Bike Clubs

- **Purpose:** To increase the number of Clark County residents who meet the physical activity recommendations by the Centers of Disease Control and prevention by using Safe Routes to School to encourage more elementary and middle school students to bike or walk to school or participate in after-school bike clubs.
- **Audience:** Parents and students as well as school personnel
- **Partners:** School system leaders, principals, teachers, parents, civic organizations, and community volunteers

- Healthy students are better learners with improved academic achievement. Schools are an ideal setting to teach and provide students with opportunities to improve their dietary and physical activity behaviors and manage their chronic health conditions (asthma, diabetes, epilepsy, food allergies, and poor oral health). When policies and practices are put in place to support healthy school environments, healthy students can grow to be healthy and successful adults. Most physical education classes are not offered daily in elementary schools, leaving children to find activities after school. Encouraging children to walk or bike to and from school is an easy and inexpensive solution. Common Safe Routes to School strategies include;
    - If children live close enough and have a safe route, they can ride their bikes or walk to school, traveling with parents, friends, or others in their neighborhood. Of course, the school needs to provide bike racks for students to safely lock their bikes while they are in class.
    - Another option is a bike train or a walking school bus, led by parents or school staff. Students can gather with or without their bikes at a designated location and travel in a "bus" or "train" with a parent or other trusted adult leading the group to a school in the morning and home again in the afternoon.
    - For students who live too far away, a drop off location within walking or cycling distance of the school can be used as the meeting location. Churches are often willing to host these meet-ups. The students would then walk or ride together, preferably with an adult, to and from the school.

Strategy Three: Build a Bike Programs

- **Purpose:** Enabling lower income residents of Clark County to obtain a bicycle through a Build a Bike Program and encouraging them to use the bike for transportation.
- **Audience:** People of all ages but particularly those in lower-income neighborhoods, many of whom rely on transit
- **Partners:** Local bike shops and bike clubs, major retailers who sell bikes, and nonprofit agencies
- **Bike Clark County** is a bike advocacy organization that runs a bike shop in Vancouver and also has a workshop for high school kids called "BIKE2LEADERSHIP" which teaches youths different bike-related and life skills such as CPR/First Aid, bike mechanics, and community outreach. While this program is great for children, there is ample opportunity to expand this genre of education to adults and to other parts of the county outside of Vancouver. Lower income residents could also benefit from this type of program, especially when the residents learn how and help repair the bikes. In return for a certain time commitment and effort repairing bikes, a resident could be eligible to receive a bike, which could help with transportation to a job among other quality of life benefits.

Strategy Four: Ribbon Cutting Events

- **Purpose:** Creating awareness of safe places to ride and walk through special active transportation events when new facilities in Clark County are inaugurated
- **Audience:** All people walking and biking
- **Partners:** Local governments, bike clubs, and schools
- Ribbon-cuttings are traditional for opening new facilities and would also work for trails and bike routes. The opening event can also be expanded to include nature talks, historical background of

the area, a tour of nearby neighborhood of interest. The mayor or other local office could lead an inaugural bike ride or community walk along the new facility. Publicity through local newspapers and other media outlets can draw people from throughout Clark County.

Strategy Five: Interscholastic Mountain Biking League

- **Purpose:** Involve middle and high school students throughout Clark County in mountain biking competitions
- **Audience:** Students in grade 6-12
- **Partners:** PE teachers, parents, schools, local mountain bike racers, local bike shops
- Current local efforts to promote mountain biking in Clark County are spearheaded by the Southwest Washington Chapter of the Evergreen Mountain Bike Alliance, a statewide organization dedicated to maintaining, improving, and expanding mountain bike opportunities for state residents. Competitive mountain biking is facilitated through the Washington Student Cycling League. Currently, there are no registered teams in the Clark County area, but efforts can be made to strengthen competitive biking for youths in Clark County and once interest is established, teams can be registered with the league.

Strategy Six: Celebrating Biking and Walking Holidays

- **Purpose:** Celebrating Bike Month in May/Bike to Work Week and Walk to Work Day in April to call attention to active transportation and encourage people of all ages to bike or walk
- **Audience:** All people walking and biking, local businesses
- **Partners:** Local governments, bike clubs, schools, local businesses
- Established in 1956 by the League of American Bicyclists, National Bike Month provides an opportunity to showcase the many benefits of bicycling and encourage people to adopt the practice. The first Walk to Work Day was observed on April 2, 2004. Cities and organizations across the country organize a variety of events to celebrate and encourage active transportation for residents of all ages. The following are some suggested events
    - **National Bike/Walk to School Days**: The National Center for Safe Routes to School now organizes an annual Bike to School Day during the first week of Bike month. Encourage parents and school officials to organize a bike pool or walking school bus for parents at local schools and engage the next generation of active transportation users!
    - **Car vs. Bus vs. Bike Commuter Race**: The city of Dallas, Texas has played host to several Car vs. Bus vs. Bike Commuter Races. Motorist, bus driver and cyclist all start and end the morning rush hour at the same sports, but may take distinctly different routes. The bicyclist always wins! This is a sure-fire media event to run on Bike to Work Day to encourage people to give bicycle commuting a try.
    - **Active Transportation Commuting Incentives**: Work with local vendors to provide prizes for Bike to Work Day and Walk to Work Day participants. Possible prizes include: bikes, accessories, lights, racks, bags, airline tickets, and gift certificates to local businesses. If sponsorship permits, have T-shifts or reflective commuter vests produced promoting the sponsors.
    - **Ride or walk with the mayor (or other official):** Getting local elected officials involved shows important support for Bike Month and Walk to School Day. Use this opportunity

to highlight good bike facilities in the area, tour the local trail system, and show the elected official how important it is to maintain them.

- **Bike Rodeos**: Both entertaining and educational, bike rodeos teach kids bicycle handling and safety skills, while also sharing the rules of the road in a safe environment. A great idea for Bike to School Day!
- **Proclamation of May as National Bike Month and the first Wednesday in April as National Walking Day**: Mayors, City Councils or County Councilors could officially proclaim May as National Bike Month and the first Wednesday in April as National Walking Day while publicizing the events, trails and routes available across the region.

Strategy Seven: Bicycle Tourism

- **Purpose:** To foster the growth of bicycle tourism in Clark County with consistent policies and promotion of Clark County communities as fun, friendly, bike-friendly places to travel.
- **Audience:** Local businesses and bicycle tourists
- **Partners:** Local businesses, local governments, bike shops
- Clark County and the local jurisdictions within it are in a position to benefit from the region's natural beauty and popularity among bicyclists. Clark County's abundant parks and undeveloped land, the recent popularity of gravel cycling and bikepacking, and the proximity to the Columbia River Gorge National Scenic Area create opportunities for Clark County as a recreational cycling destination.
- Promoting cycle tourism in a region can create meaningful economic impact, as multiple studies and analyses have demonstrated. A recent example is the $137 million dollar impact to Northwest Arkansas from cycling. The region was not known previously for cycling prior to significant investment in cycling and promotion of the region as a brant to bicycle tourists. There are 48 million people in the U.S. that ride a bicycle recreationally and many bicyclists organize their vacations and day trips around their plans to ride their bike at a specific destination (and spend an estimated $83 billion in trip-related expenses each year). Ways that communities in Clark County can encourage bicycle tourists to visit the region include:
    - **Brand and promote the existing bicycle tourism assets within the county**: Directly supporting, encouraging, and volunteering for existing cycling events in the Clark County region will help the development of cycling tourism. Attracting participants to these events will bring money to the local economy and support the hosting of the event into the future.
    - **Choose Points of Interest within the County and Create a Way to Highlight These existing bicycle tourism assets:** Certain locations in Clark County can be promoted by the county for bicycle tourists to visit. These locations may be ideal for bicycle tourists because of the scenic route to get there or may have amenities that bicyclists enjoy after completing a ride. These locations could include farm-to-table experiences, pubs/wineries, or historic venues.
    - **Create a cycling tourism map:** Whether they are riding in their own town or visiting a new area, people who ride bicycles often don't know how to identify a good route to follow. Many do not feel confident in their skills to find suitable routes or do not have

time to explore. A map provided of Clark County could include bicycle routes of various lengths and skills levels throughout the region along with points of interest.

Enforcement

Strategy One: Clear Paths

- **Purpose:** To encourage everyone to keep bike lanes clear to improve safety for bicyclists and motorists.
- **Audience:** Residents, businesses, and property owners
- **Partners:** Neighborhood and business associations and local government
- Enforcement involves more than enforcing speed limits and traffic laws. Once pedestrian and bicycle facilities are in place, an enforcement program is necessary to ensure that these facilities are cleared of debris regularly, that property owners/residents do not place trash and other containers in that space and that the facilities are not used for parking. Volunteers can help by reporting problems on routes they ride. The initial phase of this type of enforcement should be educational in nature to increase awareness of the purpose of the facilities and how all community members can work to keep these facilities clear for active transportation users. If problems persist, then citations are warranted when residents/businesses continue to block pedestrian and bike facilities.

Strategy Two: Rules of the Road

- **Purpose:** To encourage motorists and active transportation users to operate safely and obey the rules of the road
- **Audience:** Motorists and bicyclists who ride on the road
- **Partners:** Businesses, schools, law enforcement, and civic organizations
- Even the best education program cannot reach everyone, so enforcement will be needed. Given the limited resources of most law enforcement agencies, the best approach involves targeting problem areas or those where crashes have occurred involving motorists and other road users, but for a designated time period, usually three-four weeks, with a three-step process. During the first week or two, officers stop the offender and provide an educational card reminding the person of the rights and responsibilities of bicyclists. The second step is to issue a formal warning. If the person continues to violate the law, then the officer issues a citation.

Strategy Three: Refresher Course for Police Officers

- **Purpose:** To provide comprehensive and up-to-date information on laws pertaining to bicycles and pedestrians for law enforcement bureaus throughout Clark County.
- **Audience:** Law enforcement
- **Partners:** Civic organizations, bicycle advocacy organizations, and police unions
- Some law enforcement departments have spent little time and resources educating their officers on the law as it applies to cyclists and pedestrians. This lack of education may result in police officers erroneously stopping or ticketing cyclists and pedestrians. A refresher course on laws pertaining to people walking and bicycling would help deliver the necessary information to officers so that they can fairly and efficiently perform their role as it relates to bicyclists and pedestrians. Ultimately, when police officers are informed, they can ensure safer conditions on the street and help prevent crashes. Additional training could be helpful that helps police

officers spot dangerous behavior from motorists. The National Highway Traffic Safety Administration has a training on bicycle and pedestrian safety for law enforcement that focuses on issues such as:

- Understanding bicycle crashes;
- applying traffic laws to people bicycling;
- specific laws for people bicycling;
- enforcement techniques; and
- crash investigation and reporting.

Strategy Four: Bike Lights

- **Purpose:** To ensure that bicyclists riding at night or in dim light have proper lighting on their bikes
- **Audience:** Any cyclist riding without lights when visibility is poor
- **Partners:** Bicycle shops, bicycle clubs, civic organizations, and law enforcement
- Washington law requires cyclists riding at night to have a white front light (not a reflector) visible for 500 feet and a red rear reflector. The easiest way to ensure people bicycling can be seen is to install bike lights for them. Putting small but bright front and rear lights on the bicycles of stopped for this violation can prevent crashes. These lights can be inexpensive when bought in bulk and are relatively easy to install. Installing the lights takes less time than writing a citation, saves administrative costs, and provides immediate safety for the cyclist.

Engineering

Strategy One: Complete Streets Policies

- **Purpose:** To encourage jurisdictions within Clark County to adopt Complete Streets ordinances.
- **Audience:** General Public
- **Partners:** Planners, traffic engineers, and local governments
- Clark County, and the cities of Vancouver, Battle Ground and Ridgefield have adopted Complete Streets ordinances in recent years. Other communities support some of the principles of the policy and need to legally formalize this commitment with an approved and vetted Complete Streets ordinance. Locally adopted Complete Streets policies and ordinances ensure a consistent approach to street design that can endure changes in administration. In addition to standard elements, these policies and ordinances should include national accessibility and design standards, such as PROWAG, MUTCD, and AASHTO. Local jurisdictions in Clark County can join the state agencies, regional organizations, and municipalities to adopt a Complete Streets policy or ordinance.

Strategy Two: Enacting Active Transportation Friendly Development Standards

- **Purpose:** To require new developments to have features that increase pedestrian and bicycle connectivity and allow for more access and support facilities
- **Audience:** General Public
- **Partners:** Planners, developers, traffic engineers, and local governments
- Clark County is a rapidly growing region and local governments have an opportunity to promote development patterns that are inclusive of different transportation modes besides motor

vehicles. These standards can be phased in, giving developers plenty of time to gain familiarity with how they should be implemented. These development standards include:

- **Requiring Pedestrian Connectivity Through the End of Cul-de-sacs**: Cul-de-sacs contribute to increased travel times and distances, putting burdens on active transportation users. Requiring pedestrian connectivity through the ends of cul-de-sacs can shorten trip distances for walking and bicycling.
- **Developing Pedestrian-Friendly Block Length Standards**: Maximum block lengths vary widely among local jurisdictions. Requiring new developments to have block sizes below 400 feet increases the pedestrian and bicycle connectivity. Large block sizes and lower density development do not generally support active transportation, unless they are intentionally made more permeable and attractive for people walking and bicycling.
- **Specific Connectivity Standards for New Development**: Most Clark County communities' development codes do not require the implementation of a highly connected street system. A connectivity index can be used to quantify how well a roadway network connects destinations.

Strategy Three: Regional Wayfinding System

- **Purpose:** Developing a consistent and intuitive on and off-street regional wayfinding system.
- **Audience:** General Public
- **Partners:** Planners, developers, traffic engineers, and local governments
- Much of Clark County lacks adequate wayfinding signage geared toward bicyclists and pedestrians. The inclusion of distance and travel time on wayfinding signage can encourage travel to local destinations or services by non-motorized modes. Signage could help guide active transportation users between and within the different communities throughout Clark County.

Strategy Four: Signal Detection and Actuation

- **Purpose:** To make traffic signals more responsive to bicycles through Signal Detection and Actuation
- **Audience:** People on bikes
- **Partners:** Planners, traffic engineers, bike clubs, bike shops
- Traffic signals that do not change when only people on bikes are present in the lane present a major frustration and can encourage them to ignore the signal. As bicycle routes are designated as part of this plan, planners and engineers should identify locations where bicycle detection should be amplified or changed. Bicyclists familiar with the routes in Clark County could be helpful in pointing out problem intersections.

Strategy Five: Request-a-rack Program

- **Purpose:** To help identify locations where there is a deficiency of bicycle parking
- **Audience:** Businesses, people on bikes, and bike clubs
- **Partners:** Planners, traffic engineers, bike clubs, bike shops
- A "Request-a-rack" program can help address unmet demand for bicycle parking at existing businesses. Bicycle parking is good for businesses because bicycle racks provide additional parking spaces which customers can use to patronize local businesses. This invites not only people on bikes in, but it announces to potential riders and non-cyclist customers alike that the business supports sustainable values, an increasingly important fact for many consumers.

Strategy Six: Bicycle Parking Requirements and Encouragement of End of Trip Facilities

- **Purpose:** To dictate that future growth patterns foster the inclusion of active transportation modes in Clark County.
- **Audience:** Developers, people on bikes Partners: Planners, Developers, traffic engineers, bike clubs, bike shops, and businesses
- Bicycle parking is an important component of the active transportation network. Clark County jurisdictions should consider implementing the Association of Bicycle and Pedestrian Professionals' (APBP) Bicycle Parking Guidelines into their respective development codes. The creation of bicycle parking requirements can ensure that these facilities are present as Clark County communities continue to grow and become increasingly urban. Proper rack placement should include preferential spaces that are visible, well lit, and near entrances. Bike corrals can improve parking capacity in downtown areas with high bike demand as well as commercial shopping centers. Comprehensive guidance on bicycle parking can be found on page 49 of Clark County's Bicycle and Pedestrian Master Plan: https://clark.wa.gov/sites/default/files/dept/files/community-planning/bike-pedestrian-advisory-committee/10-1110_BPMP-Plan-wo-Appendices_PC_approved.pdf.

Chapter 5. Implementation Strategies

Public Outreach and Regional Partnerships

RTC will take the recommendations developed in this plan to the public. To determine Southwestern Washingtonians' active transportation needs, RTC should conduct diverse and inclusive public outreach throughout the planning process. The project team and RTC should commit to an approach that:

- Includes as many people as possible, emphasizing contributions from low-income and minority populations
- Provides ample and early opportunities for stakeholders to raise issues important for them
- Ensure that all comments directly contribute to the planning process
- Continue efforts from and provide consistent and effective coordination with related plans, like the Clark County Bicycle and Pedestrian Master Plan

Public Outreach Methods

- **Pop-Up Meetings:** Meetings that share information and gather input about active transportation efforts in Clark County can take place at local events such as farmer markets, outdoor concerts, etc.
- **Online Survey & Mapping Tools:** Information about different active transportation projects throughout the County can be displayed on a website where community members can provide input. Participants on the website would be able to draw desired facilities and review plan recommendations.
- **Stakeholder Outreach:** The project team should meet frequently with stakeholder groups, local jurisdictions, and other agencies to ensure a collaborative process that reflects the desires of all involved in improving active transportation in Clark County.

Regional Partnerships

Partnerships between the County, municipalities, community advocacy/advisory groups, and businesses could initiate and strengthen programs that allow active transportation users to safely and easily travel through the county. Current and potential partnerships for active transportation projects include:

- **Clark Communities Bicycle and Pedestrian Advisory Committee (PBAC).** The countywide bicycle and pedestrian advisory committee advise the county and individual jurisdictions on technical issues related to bicycling and walking.
- **Bike Clark County**. Southwest Washington's only bicycle education and advocacy organization already performs a number of services that promote cycling in the county and could connect jurisdictions to resources that would help them plan for future active transportation infrastructure.

Maintenance Best Practices and Costs

As the existing system is refined and proposed recommendations are implemented, the cities, Clark County, and WSDOT should establish a multi-departmental maintenance program that involves, at a minimum, Public Works and Parks and Recreation Departments in order to provide a region-wide standard for sweeping, pavement management, and weed abatement and eradication.

The coordination and implementation of bicycling and walking facilities should include vegetation that is compatible with the facility and the climate, reduces the burden on the maintenance program, and reduces water demand.

Bikeway Maintenance

On-street bikeways (i.e., separated bike lanes, buffered bike lanes, bike lanes, and bicycle boulevards) are typically as useful as they are maintained. Bicycles are much more susceptible to flat tires and uncomfortable ride quality when road surfaces and road debris are not adequately maintained. Regular sweeping and resurfacing should ensure that pavement and conditions (bike facilities, shoulders, and sidewalks) are as smooth and clean as possible. Due to the high oil content of asphalt overlays, slurry and chip seals, and seal coats, pavement markings in bike lanes (striping and symbols) can fade prematurely. The bikeway maintenance program should address this need by restriping and repainting symbols every 1-2 years, or as necessary.

Separated Bike Lane Maintenance

Due to their inherent design characteristics, separated bike lanes often require more frequent and different maintenance practices (depending on the degree and type of physical separation) than conventional paint-only bike lanes. Like all bikeway facilities, maintenance of separated bike lanes should be considered during the planning and design phases to ensure that once implemented, the facility can remain clear of debris and functional for bicyclists. Just as proper-functioning signage, lighting, and pavements markings are essential to the safety and operations of motor vehicles, so are bikeway elements for the safe operation of bicycle facilities. Pavement markings and striping need to remain visible. Missing flexible delineators, concrete buttons, or other vertical barriers should be regularly replaced, and separated bike lanes

require regular sweeping. Routine maintenance best practices for separated bike lanes include:

- Maintaining pavement quality through spot repairs, regular overlays, and longer-term repaving
- Sweeping and removal of garbage and debris on a weekly basis
- Vegetation trimming to provide clear access on a monthly basis
- Restriping facilities as needed, usually annually
- Repair of damage due to storms, floods, collisions and other unforeseen events
- Repair and replacement of wayfinding or other signage
- Replacement of damaged flexible delineators, concrete buttons, or other vertical barriers

Costs associated with maintenance can be reduced if existing maintenance vehicles, such as street sweepers, can be used. Two-way separated bike lanes (typically 10' or wider) can be maintained using conventional maintenance vehicles. One-way facilities, which can be narrower, may require specialized vehicles depending on the facility's width. Creating a connected high comfort network reduces maintenance costs by allowing maintenance crews to maintain without extended travel from one unconnected facility to another. When future facilities are planned, the department responsible for maintaining the new facility should be identified, and budget should be allocated to ensure its continued maintenance. Drainage is another factor that should be considered during the planning and design phase for a new separated bike lane facility. Combining

recommendations from the Massachusetts State DOT Separated Bikeway Planning and Design Guide, the following best practices are recommended to ensure proper drainage:

- Street-level separated bike lanes that include flexible posts, concrete buttons, or other discontinuous barriers for physical separation do not require alterations to existing drainage infrastructure
- For street-level separated bike lanes that use a raised median separator, the provision of breaks in the median allows use of the existing drainage system
- For sidewalk and intermediate level facilities, drainage strategies illustrated in Figure 7.22 are recommended depending on the type of facility

Multi-Use Path Maintenance

The cities, County, and other agencies have invested considerable resources in the construction of multi-use paths along washes, through neighborhoods, and along riparian corridors. The physical condition of multi-use paths is an important consideration when residents and visitors consider choosing walking or bicycling for transportation, recreation, or other uses. Typical off-street bicycle and pedestrian facility maintenance activities include sweeping and after-flood cleanup, pavement management, weed abatement, landscaping, and mowing. The following maintenance recommendations seek to establish a uniform approach to maintenance activities for existing and proposed paved, off-street facilities for all jurisdictions. Maintenance activities can generally be categorized into one of two types: routine maintenance, which is done annually or more frequently, and major or capital maintenance, which involves more intensive activity at a less than annual frequency.

Routine Maintenance

Not every multi-use path will have the same needs and levels of expenditure. It is estimated that for routine maintenance approximately $3,000 to $4,000 be budgeted per mile of multi-use path per year.

Capital Maintenance

Major or capital maintenance activities typically involve more intensive maintenance repairs such as pavement seal coating, pavement overlays, pavement reconstruction, or other structural rehabilitations. Needs can vary widely based upon environmental factors, such as soil conditions, flood potential, drainage, and the quality of initial construction.

Any asphalt-paved multi-use path surface will deteriorate over time with asphalt surfaces dropping in quality rapidly after 10 years. Preservation efforts within 5-10 years, such as seal coating, extend the life of asphalt efficiently and at a lower cost than waiting for the surface to fail requiring expensive reconstruction. Overlays may be needed after multiple seal coats or at approximately 30 years after initial construction. A full reconstruction could be required when needed, typically at 50 years if the seal coat and overlay have been provided.

Concrete paths, which are a more significant capital investment, but require significantly less capital maintenance than asphalt, due to a lighter color, may reduce surface temperatures in summer months. This paving method may be considered given the flooding potential of rivers and washes near existing and proposed multi-use paths in the project area. Concrete paths may require isolated jacking or replacement, but generally limited maintenance expenditures should be expected for a life of upwards of 50 years.

Financial planning for major or capital maintenance can be a budgetary challenge. Some jurisdictions stay focused on eventual reconstruction and treat capital maintenance in their maintenance budgets, whereas others treat this as separate capital projects to be considered at a later date. Depending on the existing age and the level of effort, major or capital maintenance can require an average budget of between $2,000 and $7,000 per mile per year. Some years may require more expensive maintenance with others requiring little to none.

Data and Analysis

Collecting and retaining data on active transportation in Clark County is critical for development of a regional network. Data and analysis take the guesswork out of how and why people choose to walk, bike, and roll, throughout the County, and serves as the basis of need for safer, more comfortable walking, biking, and rolling improvements. Pedestrian and bike data helps the agency and its partners to understand where existing facility use and route preference exist, but also whether roadway conditions are improving over time and how trip patterns are changing. For example, by collecting the data and analyzing ridership and crash data before and after a facility improvement is made, we can show the impact that investments have made, for better or worse. This data allows us to measure facility and systemwide performance over time, and can help make the case for project prioritization and future funding. Regional partners need to address the need for data on pedestrian and bicycle usage to support analysis and project funding applications. For example:

- Additional permanent count stations for bicyclists are needed within the region.
- Technology upgrades to traffic signals at intersections offer opportunity for collection of pedestrian and bicycling counts.
- The region should ensure that collected and compiled bicycle and pedestrian data is provided to transportation data portals maintained by WSDOT and Portland State University.

Funding

For information on funding sources, please see Appendix C.