Clark County, WA
Bicycle and Pedestrian Master Plan

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CLARK COUNTY, WASHINGTON

alta
PLANNING + DESIGN

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Table of Contents

List of Tables

List of Maps

Introduction

A national surge in interest in alternative modes of transportation has resulted from increasing concerns with health, the cost of gas, or even finding a way to relieve stress. The Clark County Bicycle and Pedestrian Master Plan presents a 20-year vision and implementation strategy that seeks to increase the number of people walking and bicycling while improving walking and bicycling safety throughout the county.

Why Bicycling and Walking?

Bicycling and walking are low-cost means of transportation that are non-polluting, energy-efficient, versatile, healthy, and fun. Everyone is a pedestrian at some point, whether walking a dog, taking a lunch break, or accessing transit. Bicycling is an active choice for transportation that reduces vehicle miles traveled. The many advantages to walking and bicycling include:

- **Bicycling and walking are good for the economy.** Bicycling makes up $133 billion of the US economy, funding 1.1 million jobs.[1]
- **Walkable, bikeable neighborhoods are more liveable and attractive**, increasing home values and resulting in increased wealth for individuals and additional property tax revenue.[2]
- **Walking and bicycling increase spending on local goods and services.** By replacing short car trips, bicycling and walking can help families defray transportation costs.[3]
- **Walking and bicycling are good for public health.** Bicycling for exercise can reduce the cost of spending on health care by as much as $514 a year.[4]
- **More people walking and bicycling increase safety for others.** In a community where twice as many people walk, an individual walking has a 66 percent reduced risk of being injured by a motorist. [5]

Clark County benefits from several popular trails, including the Lewis and Clark Discovery Greenway and the Padden Parkway Trail, as well as a number of planned trails, most notably the Chelatchie Prairie Greenway Trail. In addition, the County has 26 miles of shoulder bikeways and 43 miles of bike lanes developed.

Challenges

The County also faces several challenges to the development of the Bicycle and Pedestrian Master Plan. Interstates 5 and 205 are major barriers to pedestrian and bicycle travel. The existing bikeway, sidewalk and trail networks are discontinuous in places. In addition, the County has completed two bicycle plans but no pedestrian plan, and the County lacks information about existing facilties.

Most roads in Clark County have already been built, requiring bikeways, sidewalks, and trails to be developed within existing right-of-ways. In addition, steep topography and long distances are considerable barriers to increasing the number of county residents bicycling for transportation, exercise, or fun.

When the spirits are low, when the day appears dark, when work becomes monotonous, when hope hardly seems worth having, just mount a bicycle and go out for a spin down the road, without thought on anything but the ride you are taking.

– Arthur Conan Doyle

Walking and bicycling are safe and healthy modes of transportation and recreation, which contribute to quality of life

1 Flusche, Darren for the League of American Bicyclists. (2009). T*he Economic Benefits of Bicycle Infrastructure Investments.*

2 Cortright, Joe for CEOs for Cities. (2009). *Walking the Walk: How Walkability Raises Home Values in U.S. Cities.*

3 Center for Neighborhood Technology. (2005). *Driven to Spend: Pumping Dollars out of Our Households and Communities.*

4 Feifei, W., McDonald, T., Champagne, L.J., and Edington, D.W. (2004). *Relationship of Body Mass Index and Physical Activity to Health Care Costs Among Employees.* Journal of Occupational and Environmental Medicine. 46(5):428-436

5 Jacobsen, P.L. (2003). Safety in numbers: more walkers and bicyclists, safer walking and bicycling. Injury Prevention 9:205-209.

The goals and objectives will guide the way the public improvements are made, where resources are allocated, how programs are operated, how department priorities are determined, and how private development is designed. The Plan goals and objectives will be adopted into the County's Comprehensive Plan when it is updated in 2014.

Goal 1: Developing a Bicycle and Pedestrian Network

Objective 1-1: Implement the Clark County Bicycle and Pedestrian Master Plan to expand travel opportunities for transportation and recreation.

Objective 1-2: Identify county-wide networks of bicycle and pedestrian facilities that augments local networks identified by each city.

Objective 1-3: Encourage large employers, developers, and other organizations to provide secure short and long-term bicycle parking in employment and commercial areas, in multifamily housing, at schools, and at transit facilities, including covered and/or attended parking.

Objective 1-4: Increase the number of bicycle transit trips and pedestrian access to transit.

Objective 1-5: Develop and improve trails within parks.

Goal 2: Jurisdictional Coordination

Objective 2-1: Facilitate coordination and cooperation among local jurisdictions in development of the bikeways and pedestrian facility recommendations.

Plan Organization and Use

The Plan is organized as follows:

- Chapter 1: Introduction provides an overview of this plan and its purpose.
- Chapter 2: Existing Conditions, summarizes the conditions of the county's pedestrian, bicycle, and trail network.
- Chapter 3: Recommended Policies, presents bicycle- and pedestrian-supportive policies and action items.
- Chapter 4: Recommended Prioritized Network, depicts the recommended system of bikeways, walkways, and trails.
- Chapter 5: Bicycle Parking Standards and Guidelines, provides an overview of parking design and policy best practices.
- Chapter 6: Design Program, outlines local, state and national best practices for pedestrian, bicycle, and trail facility types.
- Chapter 7: Education and Outreach Strategies, describes programs the County and/or local agencies could implement to promote walking and bicycling.
- Chapter 8: Implementation Plan, identifies potential funding strategies and supporting policies.

The Bottom Line: Where to Start

The recommended bikeways, walkways, and trails connect key destinations in and around Clark County. Improvements vary from low-cost measures yielding immediate results, such as re-striping of streets to accommodate bike lanes, to longer-term strategies for transforming Clark County into a truly bicycle- and pedestrian-friendly community.

An inventory of existing on-street bikeways was conducted by volunteers for this Plan. The inventory identified locations where roadway shoulders are sufficiently wide to provide bike lanes through low-cost re-striping efforts. Other bikeway recommendations will be implemented through a combination of roadway restriping, road diets (reducing or removing a parking, turn, or travel lane), or through shoulder widening.

Sidewalk project recommendations considered previously-identified, connected (non-cul-de-sac) facilities within the urban growth boundary. The recommended sidewalk project list is limited to previously-conducted inventories and is distinct from the existing sidewalk infill program. As the County accumulates additional data, the projects and priorities will shift.

Bicycle parking can determine whether someone can choose to bicycle to work, the store, or to meet friends for coffee.

Implementation of the Clark County Bicycle and Pedestrian Master Plan will encourage and enable residents of all ages to walk and bicycle.

Priority Infrastructure Projects

This Plan focuses recommendations on walkways, bikeways, and trails that connect key destinations in and around Clark County. Recommendations are designed to overcome barriers to walking and bicycling, providing access where destinations are separated by major highways and thoroughfares. In many of these areas, residents and visitors have no choice but to drive to every destination.

The top-priority projecs provide expanded options for transportation and recreation and are projects that could be implemented in the near future. The map below shows the priority projects identified in this Plan.

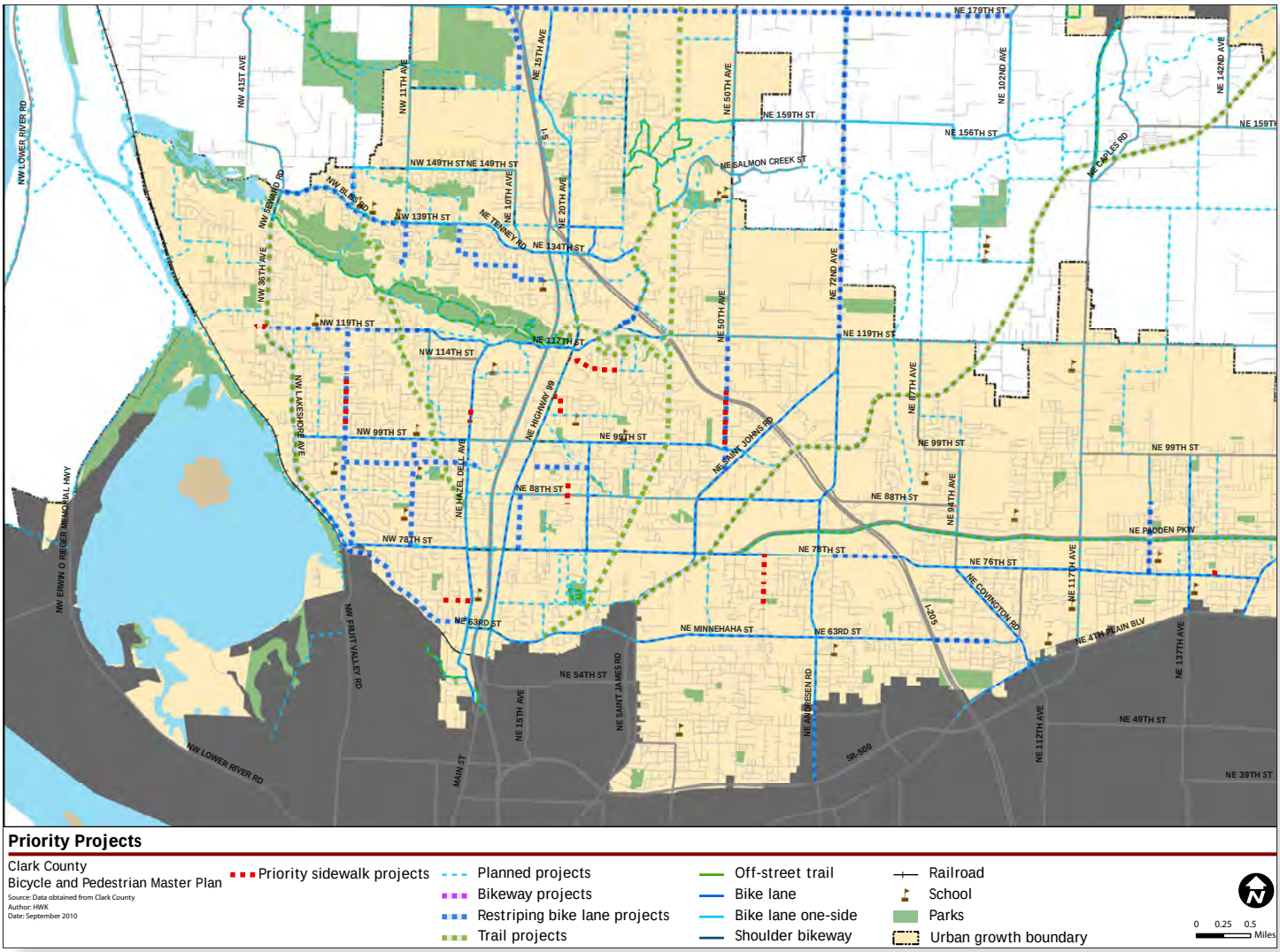
The priority projects fell into four categories:

- Priority sidewalk projects are identified from sidewalk inventories that have been conducted in some sub-areas. This list will be updated as additional information is available.
- Priority road restriping projects are on-street bicycle facilties on roadways with sufficient width to strips bike lanes.
- Priority bikeway projects are on-street bicycle facilties on roadways that would require additional treatments to accomodate bicyclists.
- Priority trail projects are shared-use trails, side paths, and primitive trails that have been identified as priorities by the Vancouver-Clark Parks Department.

Goal 3: Traffic Management/ Demand Management

Objective 3-1: Encourage use of alternative types of transportation, particularly those that reduce mobile emissions (bicycle, walking, carpools, and public transit) by implementing Transportation Demand Management Strategies aimed at reducing the number of drive alone trips.

Objective 3-2: Ensure bicycle and pedestrian facilities are designed to the most recent federal, state and local design guidelines and best practices.



The top-tier projects focus on routes that provide the best connectivity benefits, improving nonmotorized routes to parks, schools, and community centers throughout Clark County.

Goal 4 Education, Encouragement and Safety Programs

Objective 4-1: Promote bicycle and pedestrian safety and increased bicycling and walking through education and encouragement activities.

Objective 4-2: Promote increased bicycling and walking for transportation.

Objective 4-3: Promote bicycle and pedestrian safety and increased bicycling and walking through enforcement activities.

Objective 4-4: Maintain and improve the quality, operation, and integrity of bikeway and walkway network facilities.

Goal 5 Funding

Objective 5-1: Work to fund construction of the bicycle and pedestrian improvements in this Plan and maximize the amount of local, state, and federal funding for bikeway and walkway facilities that can be received by agencies in Clark County.

Objective 5-2: Pursue voluntary and private funding sources for bicycle improvements.

Goal 6 Active Transportation Planning and Bicycle- and Pedestrian-Supportive Land Uses

Objective 6-1: Increase development practices that are supportive of walking and cycling.

Objective 6-2: Improve bicycle and pedestrian access to nutritious food.

Recommended Programs

Partnerships between the County, municipalities, community advocacy/advisory groups and businesses could create and enhance programs to enable pedestrians and cyclists to safely and easily travel through the county.

- Revise the current Bicycle Advisory Committee (BAC) to include pedestrian issues. The BPAC will advise the county and individual jurisdictions on technical issues related to walking and bicycling.
- Create a school education/encouragement program. In partnership with municipalities and community organizations Clark County should build on successful SRTS programs found at both Washington and Daybreak elementary and primary schools.
- Establish a 'Clarklovia' or Ride (and Walk) the Drive. In partnership with neighborhoods, the County could sponsor an event where residents can bike, walk, and run in the streets without auto traffic.

Safe Routes to School and other educational programs improve safety and encourage students to walk and bicycle

Implementation

Most bicycle facilities and sidewalks in the county are developed through capital road projects or private development. Capital road projects are funded by gas tax revenues augmented by multiple state and federal grants, including several SAFTEA-LU programs. County code also requires that development projects upgrade street frontage to current standards. Infill projects or "spot" improvements in the sidewalk network are filled in via an ongoing program that is allocated County Road Fund money during annual updates to the county Transportation Improvement Program (TIP).

Implementation of this Plan will occur through the following strategies:

- Continue funding bicycle and pedestrian projects with the capital budget.
- Leverage local funds to pursue grant opportunities.
- Establish public/private funding opportunities and other partnership ppportunities.
- Work with the Bicycle and Pedestrian Committee to pursue funding opportunities.

The project advisory committees reviewed many funding sources that have been used or proposed for bicycle and pedestrian improvements and maintenance. The newly-formed Bicycle and Pedestrian Advisory Committee will establish a working group to develop partnerships for identifying funding opportunities for bicycle and pedestrian projects. The BPAC also recommended the following funding action items:

- Create a Transportation Benefit District (TBD)
- Establish a volunrary fund for retrofitting streets with bike lanes
- Explore partnerships with the private sector to support the County's Bicycle and Pedestrian Program

Chapter 1. Introduction

Figure 1. The Clark County Bicycle and Pedestrian Master Plan will encourage residents to travel by foot and by bicycle for transportation and recreation.

Increasing interest in alternative modes of transportation originates from concerns with public health, the cost of gas, environmental preservation, and transportation safety. Many people in Clark County choose to bicycle or walk for transportation and recreation, and the County wants to increase the number of people walking and bicycling.

The Clark County Bicycle and Pedestrian Master Plan provides a vision and implementation strategy for how Clark County can improve conditions for bicycling and walking over the next twenty years. The Plan envisions an interconnected bicycle and pedestrian network that provides routes to city centers, schools, transit, parks and recreational facilities. Once achieved, this Plan will improve Clark County residents' health, enhance their quality of life, help improve and protect the County's natural resources, and be a source of pride to the community.

Purpose

Two previous bicycle plans have been completed in Clark County: the 1972 Bicycle Plan and 1996 Clark County Bicycle Commute Plan. The first bicycle plan was a very basic plan addressing the modern trend of bicycling, which started in the early 1970's. The purpose of the 1996 Bicycle Commute Plan was to develop a strategy to encourage more people to use bicycling as a way to ride to work. Unfortunately, the County has never developed a plan to address pedestrians.

Figure 2. Everyone is a pedestrian at some point in the day, whether they take a walk for lunch or walk to transit.

Until now, Clark County did not have a pedestrian and bicycle plan with goals and objectives for promoting bicycling and walking in Clark County. Although several county documents are supportive of bicycling and walking, no single document discusses the overall objectives of promoting bicycling and walking in Clark County.

The *Clark County Bicycle and Pedestrian Master Plan* will not be a comprehensive plan for pedestrians, but it will serve as a beginning. This Plan provides detailed guidelines about how to develop future action items to address pedestrian issues. Future sub-area plans will provide detailed inventories and pedestrian plans for unincorporated Clark County, including the Three Creeks Special Planning Area and areas around Hazel Dell, Felida, Lake Shore, Salmon Creek, and the fairgrounds. In addition, this Plan addresses walking routes to school, as well as establishing benchmarks for increasing the number of people walking in the county.

The Bicycle and Pedestrian Advisory Committee has developed a work program to begin implementation and continue bicycle and pedestrian

planning efforts in the County. The existing sidewalk infill program will be integrated with the criteria and recommendations established in this Plan.

Public Involvement

Initially, the public process for developing the plan was comprised of two separate citizen's groups: the Pedestrian Advisory Committee, and the Clark County Bicycle Advisory Group. To improve efficiency, these committees were combined to form the Bicycle and Pedestrian Advisory Committee. The Technical Advisory Committee included staff from affected jurisdictions as well as a representative of the private development consulting community.

The existing Vancouver-Clark Parks Department's *Regional Trail and Bikeway Systems Plan* serves as a foundation for the Clark County Bicycle and Pedestrian Master Plan planning process by providing regional goals and proposing projects. The Bicycle and Pedestrian Master Plan builds on the *Regional Trail and Bikeway Systems Plan* and other previous planning efforts to provide clear direction to the county, developers, and residents regarding specific pedestrian or bicycle facility location and design.

The public involvement plan facilitated a shared vision of the non-motorized transportation system throughout Clark County. Community endorsement of any plan is critical to the long term success of the recommended system and to the ability of the County to implement the plan. Agencies, stakeholders, and the general public were encouraged to provide input as shown in Table 1.

Table 1. Summary of Public Involvement

Event/ Meeting	Timing
Open Houses	• July 2009, Fisher's Landing Transit Center • July 2009, Public Service Center • July 2010, Battle Ground Community Center • August 2010, Public Health Conference Room
Board of Commissioners Work Session	• July 2009 • August 2010
Planning Commission Work Session	August 2010
Planning Commission Hearing	October 2010
Board of Commissioners Work Session	November 2010
Board of Commissioners Hearing	November 2010

Figure 3. The Plan seeks to enhance alternative mode choice options.

Vision, Goals, and Actions

The Clark County Bicycle and Pedestrian Plan aims to provide a system complementary to the existing/future roadway and trail network for access to major destination points. The system plan promotes alternate mode choice; reduces pedestrian and bicycle travel times; seeks to improve pedestrian and cyclist safety via physical infrastructure, improvement and maintenance, enhanced design treatment; and promotes increases in walking and biking through education, encouragement and enforcement programs. The County partnered with schools, citizen groups, cities, state agencies and other public groups to identify opportunities to enhance non-motorized transportation opportunities throughout Clark County.

Vision

The Clark County Bicycle and Pedestrian Plan envision an interconnected transportation system where:

- People can bicycle or walk safely and conveniently to all destinations within reasonable walking or bicycling distance;
- Schoolchildren will have safe routes to walk and cycle to school;
- People can walk or ride to and from their transit stops and have a comfortable and convenient place to wait or transfer;
- Bicyclists and pedestrians can enjoy Clark County's natural beauty;
- Appropriate transportation choices are available to all;
- Transportation facilities are designed to encourage active transportation; and
- Clark County will promote the economic development opportunities related to bicycling.

Plan Actions

In order to achieve this vision, the *Clark County Bicycle and Pedestrian Master Plan* undertook the following action items:

- Develop a prioritized list of bicycle and pedestrian improvements that provides access to bicycle and pedestrian destinations, including cities, schools, parks, employment centers, transit centers, and regional trails.
- Update existing pedestrian and bicycle design standards, and apply new design standards for pedestrians and bicyclists to provide routes usable by pedestrians and cyclists of all ages and skill levels.
- Encourage active transportation through high-quality design and supporting programs and events.

- Promote economic development opportunities related to bicycling by developing a scenic county route and coordinating with other groups to sponsor events.
- Develop guidelines for secure bicycle storage facilities and racks in activity centers, large employment centers, colleges and universities, and at major transit stops.
- Develop recommendations that provide Clark County, community partners and local agencies the tools and guidance necessary to implement bicycle- and pedestrian-specific improvements within their specific jurisdiction.

Policy Considerations for Non-motorized Future Planning Efforts

The following actions represent concerns that were raised through the *Clark County Bicycle and Pedestrian Plan* process, but that were outside of the purview of this plan. These considerations will be addressed in the future as funding permits.

Figure 4. Bicycling is increasing as an activity for active transportation and recreation.

- Provide plans for "20 minute neighborhoods:" circulation plans that provide walking and bicycling routes for residents within 20 minutes of key attractions.
- Study key populations such as the elderly and low-income individuals and use the information to assist in developing pedestrian and bicycle circulation plans.
- Provide pedestrian amenities, such as benches, mid-block crossing pedestrian refuge islands, and pedestrian illumination.
- Provide bicycle and pedestrian amenities, such as street trees and landscaping, and any other amenities that would increase the perceptions of safety for walking and bicycling.
- Conduct a corridor study to identify semi-continuous, safe, predictable pedestrian and bike routes that parallels the I-5 and I-205 corridors.

Plan Organization and Use

The Clark County Bicycle and Pedestrian Master Plan is organized as follows:

- Chapter 1: Introduction provides an overview of this plan and its purpose.
- Chapter 2: Existing Conditions, provides an overview of Clark County's existing pedestrian, bicycle, and shared-use path network.
- Chapter 3: Recommended Policies presents policies that facilitate development of a bicycle and pedestrian network, jurisdictional

coordination, traffic management, education, encouragement and safety programs, and funding.

- Chapter 4: Recommended Prioritized Network, depicts the recommended system of on-street bikeways and walkways, and off-street shared-use paths.
- Chapter 5: Bicycle Parking Standards and Guidelines, provides an overview of parking design and policy best practices.
- Chapter 6: Design Program, outlines local, state and national best practices for various pedestrian, bicycle, and trail facility types.
- Chapter 7: Education and Outreach Strategies, describes education, encouragement, enforcement and evaluation measures Clark County and/or other local agencies should implement to promote walking and bicycling, increase safety, and increase the awareness of walking and bicycling as viable travel modes.
- Chapter 8: Implementation Plan, identifies potential funding strategies and supporting policies.

Appendices at the end of this document provide additional detailed information as follows:

- Appendix A. Existing Conditions Tables, provides existing conditions for physical infrastructure as well as policies and prioritization guidelines for the individual jurisdictions.
- Appendix B. Prioritization Criteria, outlines the methodology used to identify the recommended network.
- Appendix C. presents information about walk routes to schools.
- Appendix D. County Sidewalk Infill Program outlines the policy used to determine priority for infilling sidewalks in the county.
- Appendix E. Bicycle Planning Maps contains the detailed maps with recommended bicycle, pedestrian and trail projects.
- Appendix F. Rapid Health Impact Assessment, outlines the health impacts of adopting the proposed bicycle and pedestrian plan. The work on the health impact assessment was funded by a grant from the Robert Wood Johnson Foundation.

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Chapter 2. Existing Conditions

This chapter presents an overview of existing pedestrian and bicycle facilities in Clark County, including sidewalks, intersections, shared-use paths, on-street bicycle facilities, and bicycle parking.

Jurisdictional Responsibilities

Clark County is responsible for the planning, construction, maintenance, operations, rehabilitation, and improvements to rural roadways (excluding state highways), urban roadways outside of incorporated cities, and bridges, as well planning and maintenance of urban streets. Clark County also develops policies and guidelines for implementing pedestrian and bicycle improvements, which can aid jurisdictions in development of nonmotorized transportation facilities.

Figure 5. Many Clark County residents currently walk for transportation and recreation.

Pedestrian Infrastructure Overview

Pedestrian travel is accommodated and enhanced by sidewalks, shared use paths, crosswalks, curb ramps and other infrastructure that provides separated space and enhances visibility for pedestrians.

The County's policy is to construct sidewalks on one side of most streets, although several main streets through areas with pedestrian destinations have sidewalks on both sides, such as NE 99th Street and SW Eaton Boulevard. Other roads outside the centers often do not have sidewalks, such as NE 10th Avenue, NE 19th Street, In rural areas, pedestrian travel commonly occurs along the shoulder of the roadway, which is often unpaved. Walking through rural areas of unincorporated Clark County can be challenging, particularly for pedestrian in wheelchairs, and even where sidewalks exist, proximity to major roads leads to an walking uncomfortable environment.

Existing sidewalk conditions were provided from the following inventories:

- Highway 99 Sidewalk Inventory
- Salmon Creek Sidewalk Inventory
- 2010 Walkway Rankings – 2009 Reported Locations

The existing pedestrian network was also guided by the Clark County Citizen ADA Advisory Committee *ADA Transition Plan* (2006).

Existing sidewalks were not mapped; rather, locations with missing, partial, or obstructed sidewalks were mapped in order to apply the selection criteria and make recommendations.

Bicycle Infrastructure Overview

The existing bicycle system within Clark County is currently laid out as part of the *Regional Trail and Bikeway Systems Plan*, which was last updated in 2006. In addition, the Highway 99 bike lane inventory identified existing on-road bikeway facilities in the unincorporated areas in urban growth areas.

Bikeways are distinguished as preferential roadways accommodating bicycle travel. Accommodation primarily takes the form of bicycle route designation (signage) and/or bicycle lane striping. Bicycles are permitted on all roads in Clark County, with two exceptions through the Vancouver area: bicycles are not allowed on Interstate 5 from the Colombia River to the junction with Interstate 205 or on Interstate 205 from state line to SR 14 (exit 27).

While dedicated bicycle facilities are not required to accommodate bicycles, the existing traffic speeds and volumes on roads in Clark County often warrant additional separation. While some dedicated cyclists may feel comfortable riding on any street, the majority of people need bike lanes at a minimum to feel comfortable enough to consider bicycling as a viable mode of transportation. While speed and volume data are not available for every road in Clark County, the street typology indicates the bicycling environment and is described in Appendix B: Existing Conditions.

Figure 6. Shoulder bikeways accommodate cycling on rural roads without curbs and gutters.

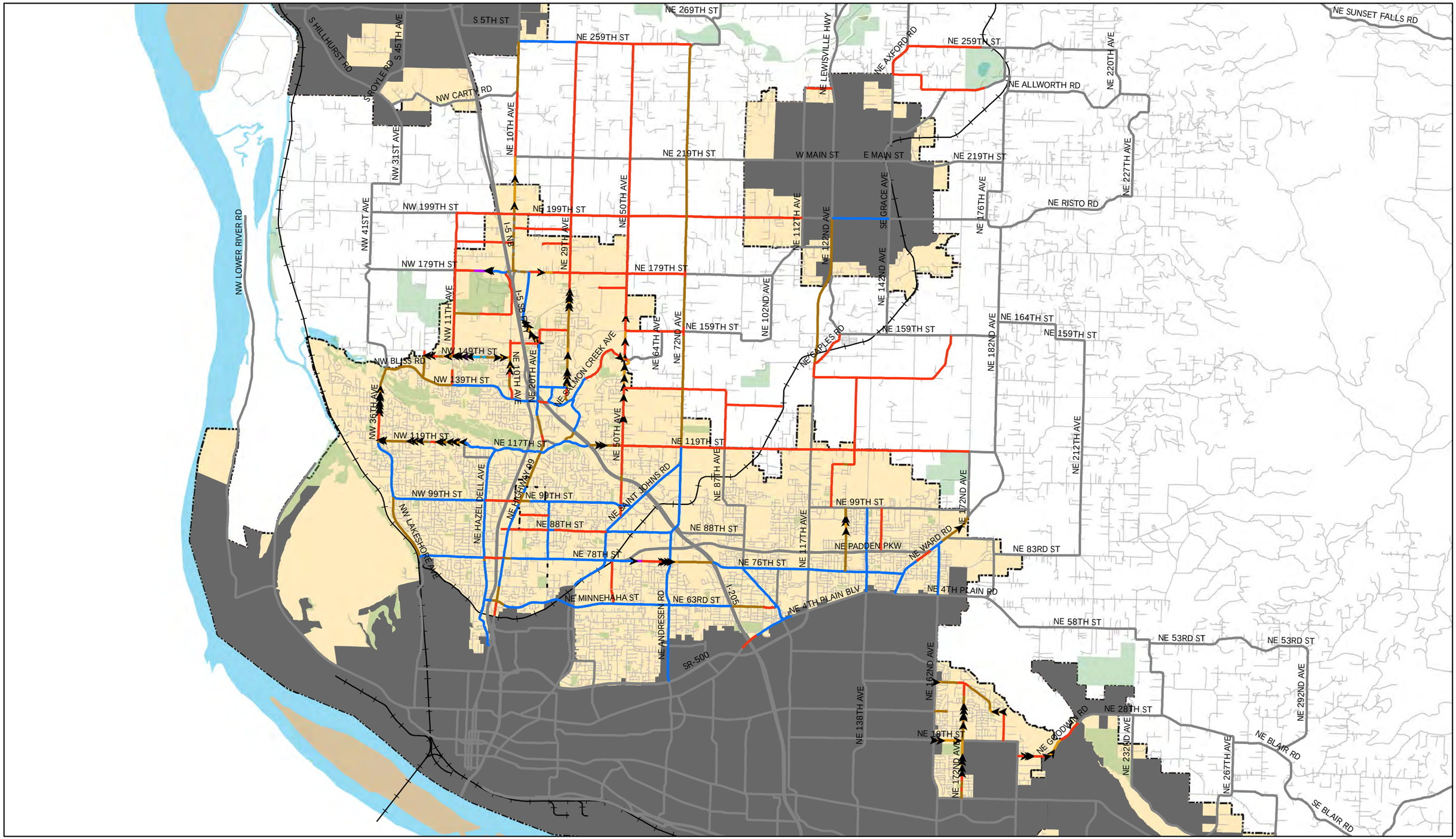
Shoulder Bikeways

Typically found in rural areas, shoulder bikeways are paved roadways with striped shoulders wide enough for bicycle travel (Figure 6). Shoulder bikeways often, but not always, include signage alerting motorists to expect bicycle travel along the roadway. Shoulder bikeways in Clark County exist on portions of SR 500, NE 99th Street, Highway 99, and several others as shown in Table 2.

Table 2. Shoulder Bikeways in Clark County

Route	From_	To	Length (miles)
NE 10th Ave	NE 259th St	NE Carty Rd	0.89
NE 10th Ave	NE 184th St	NE 179th St	0.31
NE 10th Ave	NE Knowles Dr	S of NE 139th St	0.18
SR 503 (NE 117th Ave)*	Battle Ground city line	NE 149th St	1.53
NE 172nd St	NE 35th St	NE 31st St	0.11
NE 172nd St	NE 22nd St	NE 18th St	0.21

* This portion of SR 503 also has a shared-use path along the east side, which is separated from the highway and is also used by bicyclists.



Map 1: On-Street Bikeways Inventory

Clark County
Bicycle and Pedestrian Master Plan
Source: Data obtained from Clark County
Author: HWK
Date: April 2010

- Full Bike Lane
- One-Way Bike Lane
- Shared Lane/Bike Lane
- Shared Lane
- Difficult Shared Lane, Difficult Shared Lane
- One-Way Shared Lane
- No or Difficult Bicycle Facilities
- Proposed Road
- Railroad
- Parks
- Urban Growth Boundary

0 0.5 1 Miles

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Shoulder Bikeways in Clark County (continued)

Route	From	To	Length (miles)
NE 28th St	NE 162nd Ave	NE 166th Pl	0.23
NE 29th Ave	NE 166th St	NE 53rd Cir	0.70
NE 29th Ave	NE 150th St	NE 145th St	0.22
NE 39th St	NE 164th Ave	NE 169th St	0.28
NE 50th Ave	NE 159th St	S of NE 159th St	0.22
NE 50th Ave	NE 137th St	NE 135th St	0.09
NE 63rd St	I-205	NE 102nd Ave	0.55
NE 72nd Ave	NE 259th St	NE 119th St	6.98
NE 78th St	NE Hwy 99	NE 13th Ave	0.14
NE 78th St	NE 72nd Ave	I-205	0.61
NE 78th St	I-5 ramp	NE 13th Ave	0.20
NE 99th St	NE Hwy 99	NE 19th Av	0.18
NE Edmunds Rd	NE 174th Ct	NE 29th St	0.57
NE Hazel Dell Ave	NW 78th St	NE 77th St	0.05
NE Highway 99	NE 129th St	NE 122nd St	0.34
NE Highway 99	NE 68th St	NE Minnehaha St	0.25
NE Hwy 99	NE 119th St	NW 104th St	0.85
NE Hwy 99	NE 102nd St	NE 15th Ave	0.21
NE Minnehaha St	I-5	NE 11th Ave	0.27
NE Salmon Creek Ave	NE 125th St	NE 117th St	0.45
NE Ward Rd	NE 162nd St	City Line	0.13
NE Ward Rd	NE 162nd Ave	NE 162nd Ave	0.09
NW 119th St	NW 36th Ave	NW 21st Ave	0.75
NW 119th St	NW 16th Ave	NW 7th Ave	0.50
NW 149th St	W of NE 2nd Ave	NE 5th Cir	0.19
NW 149th St	NW 16th Ave	NW 11th Ave	0.26
NW 164th St	NW 11th Ave	Vancouver city line	0.44
NW 21st Ave	NE 149th St	NW Bliss Rd	0.37
NW 36th Ave	NW Bliss Rd	NW 138th St	0.33
NW Bliss Rd/NW Hathaway Rd/NW 139th St	NW Seward Rd	NW 11th Ave	1.26
NW Lakeshore Ave	NW 99th St	NW 78th St	1.17
NE 130th Ave	NE 89th St	NE 78th St	0.67
SR 502 (NE 219th St)	E of NE 10th Ave	Battle Ground	0.47
SR 503 (NE Lewisville Hwy)	NE 318th St	NE 269th St	2.84
Total Existing Shoulder Bikeways			26.08

Bicycle Lanes

Designated exclusively for bicycle travel, bicycle lanes are separated from vehicle travel lanes with striping and also include pavement stencils (Figure 7). Bicycle lanes are most appropriate on arterial and collector streets in both urban and rural areas where higher traffic volumes and speeds warrant greater separation. Bike lanes help to define the road space for bicyclists and motorists, reduce the chance that motorists will stray into the cyclists' path, discourage bicyclists from riding on the sidewalk, and remind motorists that cyclists have a right to the road. There are 43 miles of existing bike lanes in Clark County, as shown in Table 2.

Figure 7. Bike lanes provide separated roadway space for cyclists.

Table 3 Existing Bike Lanes in Clark County

Route	From	To	Length (miles)
NE 117th St	NW 7th Ave	NE Hazel Dell Ave	0.58
NE 119th St	NE Hazel Dell Ave	I-205 NB	1.71
NE 134th St	NE 23rd Ave	NE Salmon Creek Ave	0.47
NE 137th Ave	NE 99th St	NE 4th Plain Blvd	1.45
NE 139th St	NE 20th Ave	NE 29th Ave	0.50
NE 139th St/NE Tenney Rd/ NE 134th St	NW 11th Ave	NE 20th Ave	1.59
NE 15th Ave	NE 179th St	NE Union Rd	0.88
NE 162nd Ave	NE Ward Rd	NE 4th Plain Rd	0.87
NE 179th St	NE 10th Ave	W of I-5	0.28
NE 20th Ave	NE 154th St	NE 129th St	1.25
NE 23rd Ave	NE 139th St	NE 134th St	0.28
NE 259th St	NE 10th Ave	NE 41st Ave	0.99
NE 25th Ave	NE 99th St	NE 78th St	1.00
NE 4th Plain Blvd	NE 54th St	NE 112th Ave	0.70
NE 72nd Ave	NE 119th St	SR-500	4.15
NE 76th St	I-204	NE Ward Rd	3.32
NE 78th St	NE 13th Ave	NE 58th Ave	2.27
NE 88th St	NE 25th Ave	NE 26th Ave	0.09
NE 88th St	St. Johns Rd	NE Andresen Rd	1.13
NE 99th St	NE 19th Ave	NE St. Johns Rd	1.77
NE Covington Rd/NE 107th Ave	NE 63rd St/NE 76th St	NE 4th Plain Blvd	1.18
NE Hazel Dell Ave	NE 119th St	NW 99th	0.96
NE Hazel Dell Ave	NW 99th St	NE 78th St	0.99
NE Hazel Dell Ave	NE 77th St	Vancouver City Line	1.42
NE Highway 99	NE 15th Ave	NE 68th St	1.49
NE Hwy 99	NE 104th St	NW 102nd St	0.11
NE Minnehaha St	NE 11th Ave	Vancouver City Line	0.92

Route	From	To	Length (miles)
NE Minnehaha St	NE Hazel Dell Ave	I-5	0.11
NE Minnehaha St/NE 63rd St	NE Saint Johns Rd	I-205	2.76
NE Saint Johns Rd	NE 50th Ave	NE 72nd Ave	1.37
NE Saint Johns Rd	NE 68th St	NE 78th St	0.71
NE Salmon Creek Ave	NE Betts Rd	I-205	0.45
NE Ward Rd	NE 162nd Ave	NE 4th Plain Rd	1.17
NW 78th St	NW Bacon Rd	NW 8th Ave	0.64
NW 78th St	W of NW Anderson Ave	NE Hazel Dell Ave	0.43
NW 99th St	NW Lakeshore St	NW 9th Ave	1.60
NW Lakeshore Ave	NE 119th St	NW 99th St	1.06
Total Existing Bike Lanes			**42.66**

Figure 8. Shared lane markings are used to indicate a bicycle route, and to show cyclists where they should be riding in the road.

Shared Roadways

The most common type of bikeway, shared roadways accommodate vehicles and bicycles in the same travel lane. The most suitable roadways for shared vehicle/bicycle use are those with low posted speeds (25 MPH) or low traffic volumes (3,000 ADT or less). Curb-to-curb widths range between 40' and 50' and the typical street cross-section includes two vehicle travel lanes with on-street parking.

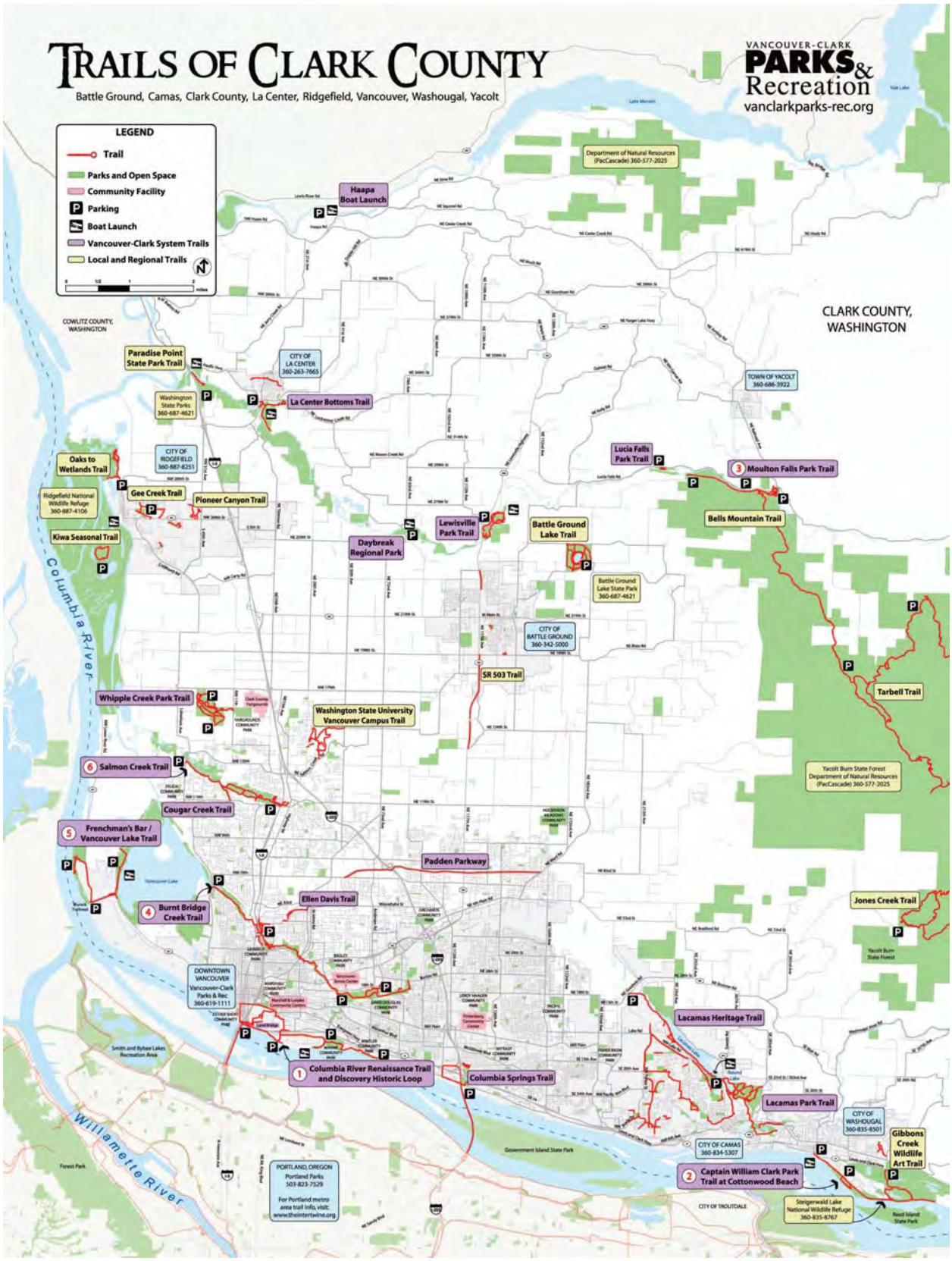
Most of the County's local streets and many neighborhood circulator streets can be classified as shared roadways, as they accommodate bicyclists without the need for separated bicycle facilities (e.g., bicycle lanes). Shared lane marking treatments, also called "sharrows," benefit cyclists by improving visibility (Figure 8).

Trails and Connections

Figure 9. The path along SR 503 receives heavy use from bicyclists and pedestrians alike.

Pathways (also referred to as "trails," "multi-use paths," and shared-use paths) are used by pedestrians, cyclists, in-line skaters, and runners. Pathways are typically paved (asphalt or concrete) but may also consist of an unpaved smooth surface that meets county standards.

In general, pathways are desirable for slower-speed recreational cycling, particularly by families and children. They are also used extensively by commuters for at least part of their commute within Clark County. Every jurisdiction within Clark County has at least one pathway as shown in the Vancouver-Clark Parks Department's Trails of Clark County Map.



Map 2. Vancouver-Clark Park and Recreation Trails of Clark County Map

Figure 10. 'Share the Road' signage can be used along roadways to indicate preferred cycling routes.

While pathways are important to the overall circulation network for non-motorized transportation, the focus of this plan is the on-street network. Using the 2006 adopted *Clark County Trails and Bikeway System Plan*, the *Clark County Bicycle and Pedestrian Master Plan* identifies where new on-street bicycle and pedestrian facilities can connect and leverage with existing and proposed trails.

Signage

Implementing a well-designed, attractive, and functional system of network signage greatly enhances bikeway facilities by promoting their presence to both potential and existing users. Clark County currently indicates bicycle routes through the use of 'Bike Lane' signs (MUTCD sign R3-17) and 'Share the Road' signs (W16-1) with a bicycle sign (W11-1; see Figure 10).

End of Trip Facilities

End of trip facilities include a reasonably secure location and appropriate type of bicycle parking, as well as a location to change from bicycling clothing into to work appropriate clothing.

Bike Racks (Short-Term)

Short-term bicycle parking facilities are best used to accommodate bicycles of visitors, customers, messengers, and others expected to depart within two hours. This parking is provided by bicycle racks, which provide support for the bicycle but do not have locking mechanisms. Within Clark County, bike racks are frequently located at schools, commercial locations, and activity centers such as parks, libraries, and other retail locations.

Bike Lockers (Long Term)

Long-term bicycle parking facilities accommodate bicycles of employees, students, residents, and others expected to park more than two hours. This parking is provided in a secure, weather-protected manner and location, such as a bicycle locker or a secure area like a 'bike corral' that may be accessed only by bicyclists.

According to the Southwest Washington RTC MTP (2008), C-TRAN also provides bicycle lockers and/or racks facilities at Fisher's Landing, 99th Street, and Vancouver Mill Transit Centers. In addition, the Battle Ground, Evergreen and Salmon Creek Park-and-Ride facilities have bicycle lockers or racks. Existing CTRAN bicycle parking facilities in Vancouver are listed in Table 4.

Table 4. CTRAN Bicycle Parking Inventory

Location	Bike Locker*4	Bike Bank	Bike Rack
Administrative Offices	4	2	2
BPA Park & Ride	N/A	2	N/A
Camas (Burgerville)	2	N/A	N/A
Evergreen Park & Ride	4	8	1
Fisher's Landing Transit Center	6	N/A	2
99th Street Transit Center	12	N/A	1
Salmon Creek Park & Ride	6	4	1
Vancouver City Center	5	9	N/A
Vancouver Mall Transit Center	6	6	N/A

* Each bike locker has a capacity for two bicycles.

Changing Facilities

Other end-of-trip facilities for bicyclists include changing areas, clothes lockers, and showers, which allow bicyclists to clean up after riding. These facilities are often located at places of employment, so that an employee can bicycle in, then shower and change before starting work. Shower and locker facilities may exist in some office buildings and other employment centers in Clark County, but they do not appear to be very common. Health and fitness clubs can offer an alternative place to shower/change for commuter cyclists, but only function for commuter cyclists if the facilities are located conveniently close to the place of employment.

Figure 11. Pedestrians and bicyclists of all ages and abilities benefit from a comprehensive system of off-road paths.

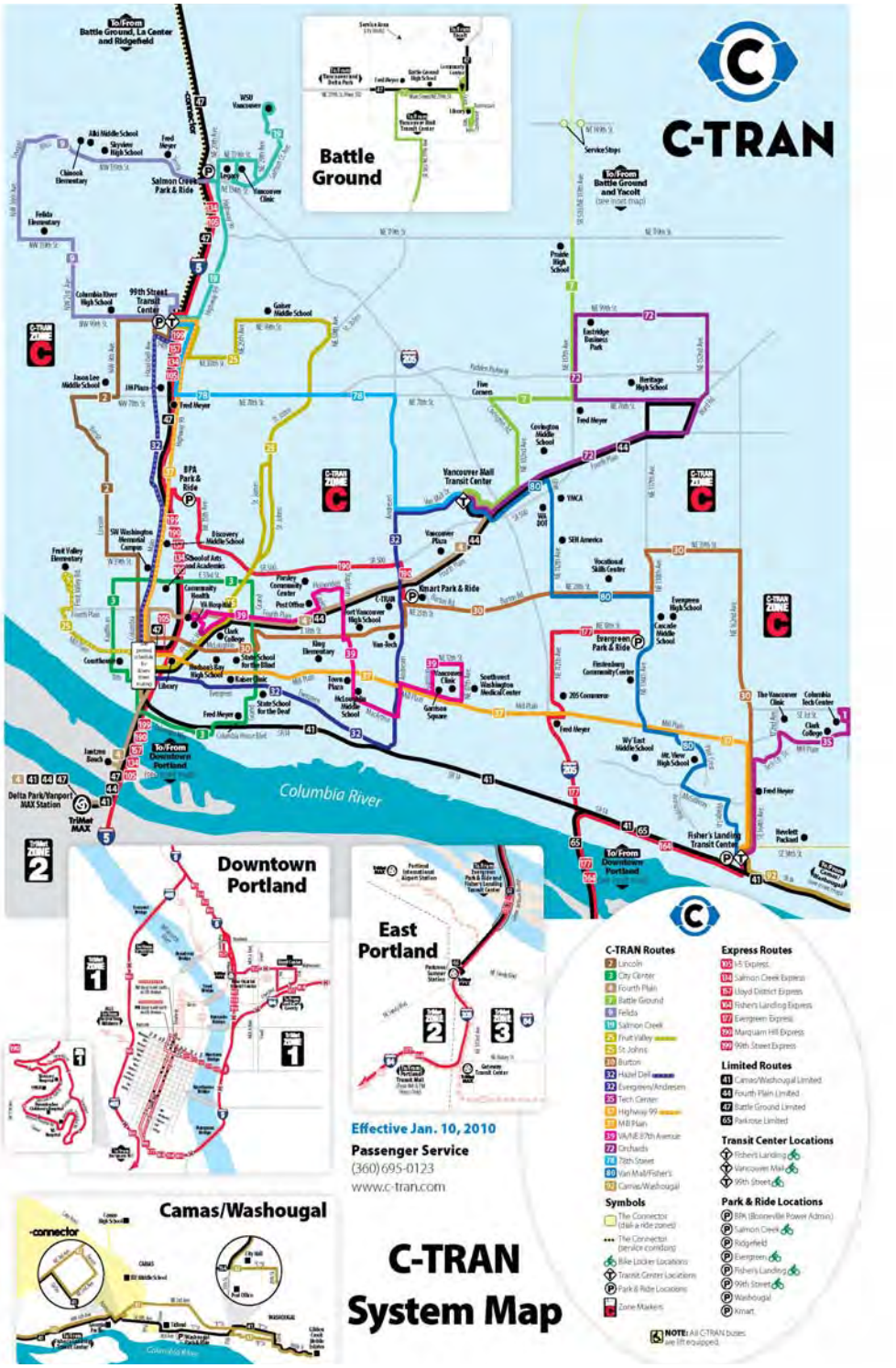
Multi-Modal Connections

Southwest Washington Regional Transportation Council is the regional transportation planning authority for Clark County. C-TRAN is the local transit authority and is based in Vancouver Washington and offers the following public transportation services:

- Bus service includes 18 routes operating in Clark County
- Seven Express commuter routes into downtown Portland
- Four Limited routes with service to downtown Vancouver and MAX light rail
- Three reservation-based Connector routes serving Camas, Ridgefield and La Center

All buses are equipped with a bicycle rack on the front of the bus that will hold two bikes. Bicycles are allowed in the bus at the discretion of the driver, if there is room in the front.

Map 3 shows the existing transit service in Clark County provided by C-TRAN.



Map 3. Existing Transit Service in Clark County (map from C-TRAN)

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Chapter 3. Recommended Policies

Figure 12. Bicyclists enjoying a scenic trail.

This chapter lays out a vision of how to continue and expand improvements to increase and promote walking and bicycling in Clark County. The recommended goals, objectives and actions provided below are based on existing policies relevant to pedestrian and bicycle travel from previously adopted plans in Clark County and the individual jurisdictions, and will be adopted into the County's Comprehensive Plan when it is updated in 2014.

The objectives and actions are designed to guide the way the public improvements are made, where resources are allocated, how programs are operated, how department priorities are determined, and how private development is designed. Policies are organized into the categories of:

- Developing a Bicycle and Pedestrian Network
- Jurisdictional Coordination
- Traffic Management/Demand Management
- Education, Encouragement and Safety Programs
- Funding
- Bicycle- and Pedestrian-Supportive Land Uses

The policies proposed here are not proscriptive and have no fees or specific penalties associated with noncompliance. County level policies do not take the place of individual City bicycle and pedestrian policies. Rather, they should augment the policies of each city and provide appropriate county-level support for cycling and walking.

Goal 1. Developing a Bicycle and Pedestrian Network

Objective 1.1 Implement the Clark County Bicycle and Pedestrian Master Plan to expand travel opportunities for transportation and recreation.

Action 1.1.1 Complete the recommended bikeway and walkway network by closing existing gaps and considering innovative design solutions for constrained locations to provide accessible bicycling and walking corridors throughout Clark County.

Action 1.1.2 Install signage along all local and regional bikeways to assist with wayfinding and to increase awareness of bicyclists.

Action 1.1.3 Integrate bicycle and pedestrian facilities into new construction and reconstruction (including overlays) of roadway projects where bikeways have been designated, using optimum designs and practices.

Action 1.1.4 Provide technical assistance and encouragement to local jurisdictions to implement local bicycle and pedestrian plans and projects.

Action 1.1.5 Design a variety of bikeway facility types that provide transportation and recreation opportunities for all levels of cyclists with a focus on meeting the needs of inexperienced cyclists.

Action 1.1.6 Include health and equity in bicycle and pedestrian project prioritization criteria.

Figure 13. Shared-use trails are used by all types of cyclists, for all types of trips.

Objective 1.2 Identify county-wide networks of bicycle and pedestrian facilities that augment local networks identified by each city.

Action 1.2.1 Implement a continuous network of bike lanes, bicycle boulevards, and bike routes that are integrated with current and future trails that support bicycle use and that serve commuting, recreation, and utilitarian trips.

Action 1.2.2 Provide safe and accessible bicycle and pedestrian facilities that link with local and regional community centers (downtowns, schools, parks, neighborhood centers) and pathway systems, as well as regional facilities and destinations.

Action 1.2.3 Implement a continuous network of sidewalks, pedestrian pathways and shared use facilities that serve all pedestrian user groups, including commuting, recreation and utilitarian trips.

Action 1.2.4 Provide sidewalks on both sides of streets that are within activity centers, as identified as high-priority projects in this Plan.

Action 1.2.5 Complete the recommended bikeway and pedestrian networks by closing existing gaps and by integrating innovative design solutions for constrained locations to provide accessible bicycling corridors – when appropriate - throughout Clark County.

Action 1.2.6 Provide adequate bicycle and pedestrian facilities on county bridges, especially those that pass through urban areas.

Objective 1.3 Encourage large employers, developers, and other organizations to provide secure short- and long-term bicycle parking in employment and commercial areas, in

multifamily housing, at schools, and at transit facilities, including covered and/or attended parking.

Action 1.3.1 Develop bicycle parking standards and minimum quantities of short-term and long-term bicycle parking tied to land uses.

Action 1.3.2 Incentivize the development of bicycle parking by offering reduced automobile parking minimums for developments that include bicycle parking.

Objective 1.4 Increase the number of bicycle-transit trips and pedestrian access to transit.

Action 1.4.1 Provide on-street bicycle and pedestrian connections to transit centers and bus stops.

Objective 1.5 Develop and improve trails within parks.

Action 1.5.1 Provide on-street bicycle and pedestrian connections to trails in parks.

Action 1.5.2 Change Title 40 to include a Park Code which guides development standards for parks and provides specific development guidelines supporting trail construction.

Goal 2. Jurisdictional Coordination

Objective 2.1 Facilitate coordination and cooperation among local jurisdictions in development of the bikeways and pedestrian facility recommendations.

Action 2.1.1 Develop recommendations that provide Clark County community partners and local agencies the tools and guidance necessary to implement bicycle- and pedestrian- specific improvements within their specific jurisdiction.

Action 2.1.2 Establish and maintain regular communications between Clark County, constituent cities, Clark County Bicycle and Pedestrian Advisory Committee, CTRAN, Friends of Clark County-Active Transportation Committee, Vancouver-Clark Parks Department, Southwest Washington Regional Transportation Council (RTC), Washington State Department of Transportation and other affected agencies, and other affected agencies regarding bicycle and pedestrian planning issues.

Figure 14. Dog walking along the Padden Parkway Trail.

Action 2.1.3 Work with jurisdictions to identify bicycle and pedestrian routes throughout the county, and ensure that they connect with city facilities.

Goal 3. Traffic Management/Demand Management

Objective 3.1. Encourage use of alternative types of transportation, particularly those that reduce mobile emissions (bicycle, walking, carpools, and public transit) by implementing Transportation Demand Management Strategies aimed at reducing the number of drive alone trips.

Action 3.1.1 Publicize the availability of bicycling and pedestrian maps and other bicycling resources as well as connections to public transit through the Clark County website, bicycle shops, schools, employers, and other locations.

Objective 3.2 Ensure bicycle and pedestrian facilities are designed to the most recent federal, state and local design guidelines and best practices.

Action 3.2.1 Ensure compliance with the Americans with Disabilities Act (ADA).

Action 3.2.2 Support excellence among staff by ensuring exposure to innovative, tested new designs, such as those documented by the National Association of City Transportation Officials Cities for Cycling project.[1]

Action 3.2.3 Develop and implement a county-wide training program to educate engineers, planners, and public decision-makers about the needs of bicyclists and pedestrians.

Goal 4. Education, Encouragement and Safety Programs

Objective 4.1 Promote bicycle and pedestrian safety and increased bicycling and walking through education and encouragement activities.

Action 4.1.1 Continue existing and pursue new adult and youth bicycle and pedestrian education and safety programs, such as workshops on bicycle commuting and pedestrian safety.

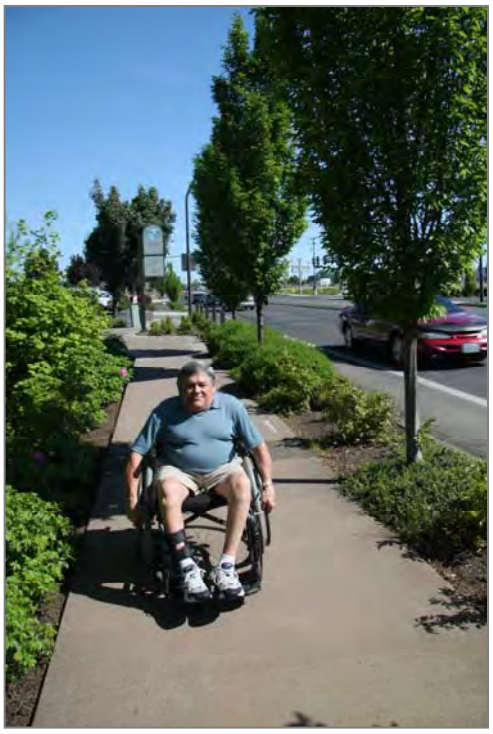

Figure 15. Sidewalks and intersections should be designed to the most recent state and federal accessibility standards.

[1] www.nacto.org/citiesforcycling.html

Action 4.1.2 Collaborate with schools to utilize federal and state transportation funds to provide walking facilities near schools and support educational and incentive programs to encourage more students to bicycle or walk to school.

Action 4.1.3 Include temporary street closures (ciclovias) as an encouragement program proposal.

Objective 4.2 Promote increased bicycling and walking for transportation.

Action 4.2.1 Encourage employers to provide incentives and support facilities for employees that commute by walking or bicycling

Action 4.2.2 Encourage jurisdictions to provide incentives to businesses and residents completing new and re-development of properties that include bicycle- and pedestrian-friendly facilities and design.

Objective 4.3 Promote bicycle and pedestrian safety and increased bicycling and walking through enforcement activities.

Action 4.3.1 Establish and maintain stricter law enforcement of traffic violations by all parties, particularly in high activity zones (urban areas, intersections, near schools and universities, along popular bicycling routes, etc.), and emphasize positive enforcement for safe bicycling and walking behavior by children.

Action 4.3.2 Recognize increasing numbers of cyclists and pedestrians as a safety strategy.

Objective 4.4 Maintain and improve the quality, operation, and integrity of bikeway and walkway network facilities.

Action 4.4.1 Develop and implement a bikeway and walkway maintenance program, including sweeping, pot hole repair, and hazard removal along bicycle routes and sidewalks, as funding and priorities allow.

Action 4.4.2 Install continuous counting devices to track ridership goals.

Action 4.4.3 Establish policies and protocols to ensure that repair and construction of transportation facilities minimizes disruption to the cycling and walking environment to the extent practical.

Figure 16. Children can learn bicycle safety from an early age

Action 4.4.4 Use available crash data to monitor bicycle- and pedestrian-related crash levels related to public transportation or public activities/exercise annually, and target a 10 percent reduction on a per capita basis over the next twenty (20) years.

Figure 17. The Pacific Community Park trail provides a buffer from NE 17nd Ave.

Goal 5. Funding

Objective 5.1 Work to fund construction of the bicycle and pedestrian improvements in this Plan and maximize the amount of local, state, and federal funding for bikeway and walkway facilities that can be received by agencies in Clark County.

Action 5.1.1 Seek funding for bicycle and pedestrian transportation projects through current local, regional, state, and federal funding programs while seeking to form local partnerships to leverage those funds to maximize the use of available dollars.

Action 5.1.2 Include cost of short-term projects in Clark County's Capital Improvement Plan to prioritize future funding.

Action 5.1.3 Aggressively pursue grants to fund the top-priority bicycle and pedestrian projects.

Action 5.1.4 Maintain current information regarding regional, state, and federal funding programs for bikeway, walkway, and trial facilities along with specific funding requirements and deadlines.

Action 5.1.5 Partner with other agencies to pursue funding for bicycle and pedestrian projects as stand-alone grant applications or as part of larger transportation improvements.

Action 5.1.6 Coordinate with all jurisdictions in development of the transportation benefit district to create a source of funding for stand-alone bicycle and pedestrian projects.

Objective 5.2 Pursue voluntary and private funding sources for bicycle improvements.

Action 5.2.1 The newly-created Bicycle and Pedestrian Advisory Committee will pursue options for implementing a voluntary fund.

Action 5.2.2 The Bicycle and Pedestrian Advisory Committee will work to develop partnerships with the private sector to promote this fund.

Goal 6. Active Transportation Planning and Bicycle- and Pedestrian-Supportive Land Uses

Objective 6.1 Increase development practices that are supportive of walking and cycling.

Action 6.1.1 Ensure consistent review of road projects & development proposals in the planning stage by the Bicycle and Pedestrian Advisory Committee.

Action 6.1.2 Include low-speed roadway designs as bicycle and pedestrian projects.

Action 6.1.3 Prioritize projects and adopt policies that increase measures of walkability.

Action 6.1.4 Change title 40 and/or road standards to limit the construction of new cul-de-sacs and connect existing cul-de-sacs with bicycle and/or pedestrian accessways.Action 6.1.4 Change title 40 and/or road standards to promote pedestrian- and bicycle-friendly design through human-scale development and providing comfortable and attractive places.

Figure 18. Pacific Park and 18th Street frontage.

Action 6.1.5 Change title 40 and/or road standards to encourage a dense mix of uses and higher-density residential land uses that include provisions for sidewalk and bicycle routes.

Objective 6.2 Improve bicycle and pedestrian access to nutritious food.

Action 6.2.1 Prioritize bicycle and pedestrian improvements that provide routes to grocery stores and farmers' markets.

Action 6.2.2 Encourage grocery stores and farmers' markets to locate along existing bicycle and pedestrian corridors.

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Chapter 4. Recommended Prioritized Network

As discussed in Chapter 2, Clark County has many existing bicycle and pedestrian facilities; however the networks are not complete throughout the county and are often discontinuous. A sidewalk with a gap or without a curb ramp can be inaccessible for a pedestrian in a wheelchair, while a bike lane that ends suddenly can be uncomfortable and challenging for cyclists. Furthermore, several major roads act as barriers to bicycle and pedestrian travel in Clark County; in addition to the interstates, Highways 14, 99, 500, 501, 503, and 509 are multi-lane, fast-moving corridors where limited crossings are provided.

This Plan focuses recommendations on walkways, bikeways, and trails that connect key destinations in and around Clark County. Recommendations are designed to overcome the barriers, providing access where destinations are separated by major highways and thoroughfares. In many of these areas, residents and visitors have no choice but to drive to every destination. These recommendations provide expanded options for transportation and recreation.

Figure 19. The Padden Parkway Trail provides significant connectivity for bicyclists and pedestrians.

The Three Creeks Special Planning Area is made up of the unincorporated urban areas around Hazel Dell, Felida, Lake Shore, Salmon Creek and the fairgrounds and benefits from many pedestrian and bicyclist destinations, but also has many major roads that bar nonmotorized travel. Many of the recommendations in this Plan focus on that area.

Projects have been ranked so that the high-priority projects will substantially improve the bicycling and walking environment within the first five years of plan implementation. The top ten projects from each category that are unlikely to occur as part of a development project were selected as short-term projects to focus implementation on projects that have the highest capacity to improve walking and bicycling. Other projects should occur with road construction or other development projects, or when funding becomes available. The sidewalk project list is not a comprehensive list of all sidewalk gaps in the County; the data is not currently available county-wide, but the sidewalk lists will be updated as sidewalk inventories are completed throughout the county. Pedestrian and bicycle facility design will be subject to relevant design guidelines (e.g. Washington DOT) and also depending on their location.

Many constraints impede the construction of bicycle and pedestrian facilities; topography, right-of-way availability, presence of utilities, traffic and safety issues are among the barriers to development of the bicycle and

pedestrian network. These issues apply to county facilities, as well as state facilities. These concerns can be addressed by implementing bicycle and pedestrian improvements in conjunction with other roadway resurfacing or construction projects. Sidewalks can also be required as part of development applications.

Project Prioritization

The Clark County Bicycle and Pedestrian Master Plan focuses implementation efforts where they will provide the greatest community benefit. While all projects represent important steps for improving Clark County's bicycle and pedestrian environment, limited financial resources require a prioritization mechanism.

The prioritization criteria are shown in Table 5. The criteria were applied to bicycle, pedestrian, and trail projects in the same way. Project prioritization methodology is provided in Appendix B. Projects received a score out of 100 and were subsequently divided into 'High Priority' (score over 50 points) and 'Low Priority' (score below 50 points). The top-10 recommended improvements in each category were the highest-scoring projects for sidewalks, on-street bicycle facilities, and trails.

Table 5. Prioritization Criteria

Criteria	Comments
Closing Gaps	To what degree does the project fill a missing gap or overcome a barrier in the current system? Does it improve significant crossings?
Safety & Comfort	Can the project improve walking and bicycling conditions at locations with perceived or documented safety issues? Does the project make cycling and walking appealing to all users?
Access & Mobility/Land Use	How many user generators does the project connect within a reasonable walking or cycling distance? Are adjacent land uses supportive of walking and bicycling? To what degree will the project generate users?
Multi-modal Connections	To what degree does the project integrate walking and cycling into the existing transit system? Does the project enable the use of multiple active transportation modes?
Implementation	What is the ease of implementation? Is funding available? Is additional right-of-way required? Are negotiations required over parking availability, signage, etc.?
Community Benefit	To what degree does the project offer potential benefits to the regional community by offering opportunities for increased connectivity to parks, natural scenic beauty, and activity centers?
Health Outcomes	To what extent does the project increase physical activity, regardless of travel purpose? To what extent does the project improve other determinants of health?

The Project Team evaluated almost 300 project ideas originating from previous local and regional planning efforts, the bicycle and sidewalk inventories, resident input at community workshops, and other sources. Map 4 shows the top-tier proposed projects.

Recommended Walkway Improvements

Sidewalk projects considered in this analysis include projects from the following inventories:

- Highway 99 Sidewalk Inventory
- Salmon Creek Sidewalk Inventory
- 2010 Walkway Rankings – 2009 Reported Locations

Sidewalks not considered in this analysis include:

- Sidewalk gaps in areas that do not have completed sidewalk inventories
- Sidewalks that would be provided by developers as an area is built out
- County funded roadway projects with sidewalks
- Proposed sidewalks on cul-de-sac streets

As the Clark County Bicycle and Pedestrian Plan covers the entire county, the recommended pedestrian network focuses on pedestrian improvements within unincorporated Clark County. While many of the potential improvements benefitting pedestrians fall under the individual cities' jurisdictions, the recommendations focus on how Clark County can support their actions while providing appropriate regional connectivity.

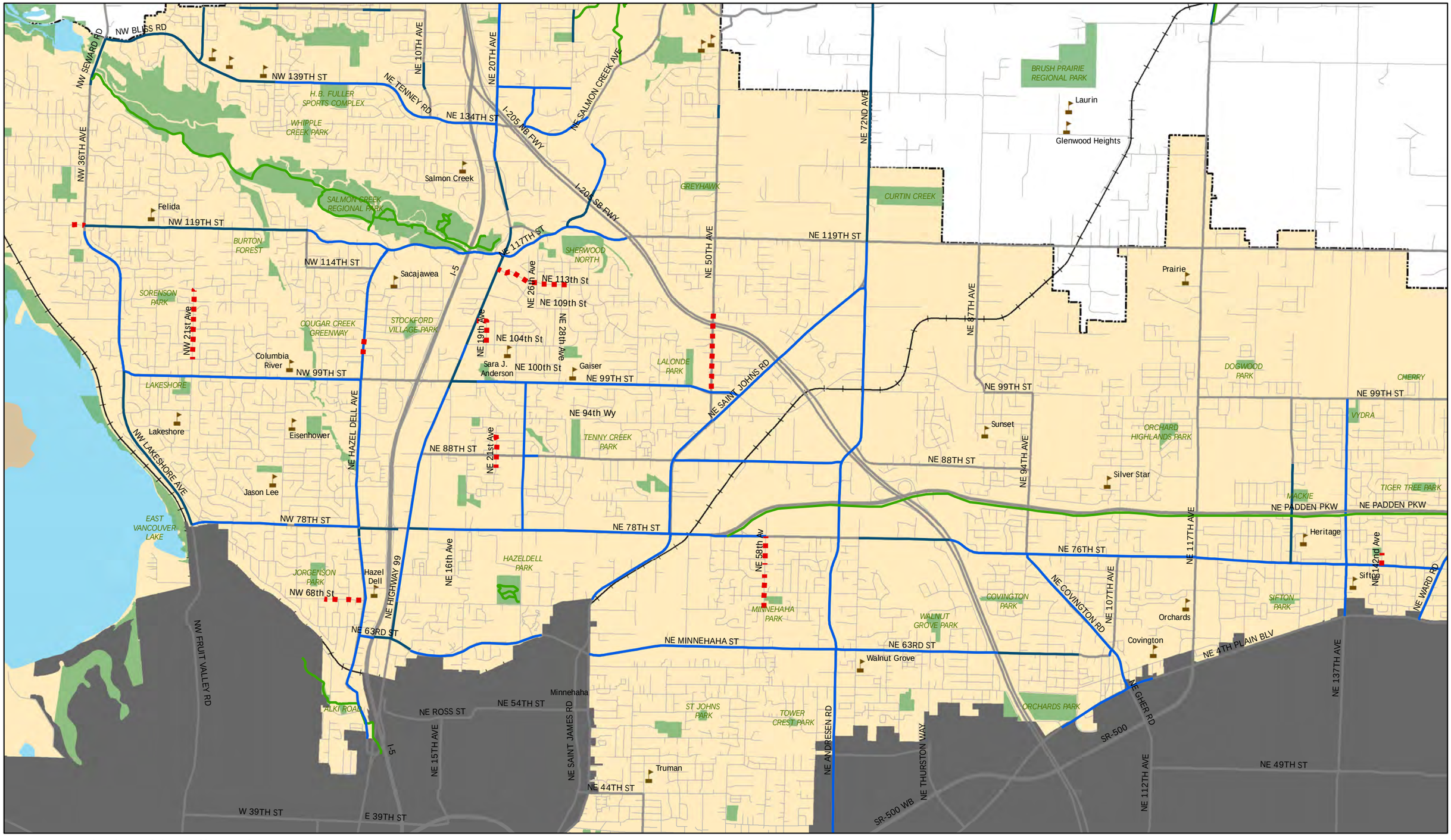
The sidewalk list is incomplete because several areas in the county have not inventoried sidewalk gaps. As the sidewalk inventory of the county is completed, projects will be added to this list. In addition to the corridor recommendations recommended in Table 6 Clark County should focus pedestrian improvements on providing ADA-accessible curb extensions and providing traffic calming.

Table 6 lists the top ten sidewalk projects that were identified through the prioritization analysis. Map 4 shows the project locations, while Table 7 following outlines key connections each of these projects provides.

*Table 6. Priority Identified Sidewalk Projects**

Street	From - To	Length (miles)	Closing Gaps	Land Uses	Safety and Comfort	Community Benefits	Implementation	Multi -Modal	Health Outcomes	Planning-Level Cost Estimate†
Hazel Dell Ave	NE 105th Ave - NE 102nd St	0.12	25	4	6	1	4	15	15	$57,000
NE 142nd Ave	Little Prairie Park - NE 76th St	0.09	25	10	8	10	4	15	10	$43,000
NW 119th St‡	NW 36th Ave - NW 38th Ave	0.23	25	4	6	4	4	15	15	$110,000
NE 19th Ave/ /NE 107th St	NE 104th St – Hwy 99	0.16	25	10	12	4	4	15	10	$76,000
NE 21st Ave	NE 91st St - NE 86th Cit	0.24	25	10	8	8	4	15	10	$115,000
NE 50th Ave	NE 99th St - NE 109th St	0.54	25	10	6	8	4	15	10	$258,000
NE 58th Av	NE 78th St – NE 69th St	0.44	25	10	6	10	4	15	12	$210,000
NE Parkview Dr/ NE 113th St	NE Hwy 99 - NE 30th Ave	0.51	25	10	12	4	4	15	10	$244,000
NW 21st Ave	NW 111th St - NW 101st St	0.47	18	7	6	8	4	15	15	$4225,000
NW 68th St	NW 3rd Ave - Hazel Dell Ave	0.25	25	10	6	8	4	15	10	$119,000
Total Sidewalk Projects		**3.05**								**$1,457,000**

* Note that these projects do not represent the most important sidewalk projects county-wide; rather, they are the previously-inventoried projects that received the highest scoring based on the criteria outlined in Appendix C.
† Sidewalk cost estimates include standard concrete curb and gutter, 6' sidewalk, 12" storm sewer pipe (10' deep), storm manhole, and standard catch basin, as well as a proportion for engineering/construction, mobilization, A and E fees, and contingency. Assumes sidewalk on one side of street only.
‡ To be constructed after pending development.



Map 4. Priority Sidewalk Projects

Clark County
Bicycle and Pedestrian Master Plan
Source: Data obtained from Clark County
Author: HWK
Date: September 2010

Priority Sidewalk Projects
Off-Street Trail
Bike Lane
Shoulder Bikeway
Railroad
School
Parks
Urban Growth Boundary

0 0.25 0.5 Miles

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Table 7. Priority Sidewalk Project Connections

Street	From - To	Schools	Parks	Transit	Other
Hazel Dell Ave	NE 105th Ave to NE 102nd St	• Columbia River	• Cougar Creek Greenway • Stockford Village Park	• NW 99th St • Hazel Dell Ave	• Will connect to sidewalk constructed by developer
NE 142nd Ave	Little Prairie Park - NE 76th St	• Heritage High • Sifton Elem	• Little Prairie Park	• NE 76th St	
NW 119th St*	NW 38th – NE 36th Ave	• Felida Elem	• Felida Park • Erickson Park		
NE 19th Ave/NE 107th St	NE 104th St – Hwy 99	• Sara J. Anderson Elem		• Hwy 99	
NE 21st Ave	NE 91st St - NE 86th Cit		• Tenney Creek Park • Open space	• NE 88th St	
NE 50th Ave	NE 99th St - NE 109th St	• Gaiser Jr. High	• Lalonde Park	• NE 99th St	• I-205 crossing
NE 58th Av	NE 78th St – NE 69th St		• Minnehaha Park	• NE 78th St	•
NE Parkview Dr/ NE 113th St	NE Hwy 99 - NE 30th Ave		• Salmon Creek Park	• Hwy 99	• Few alternative streets
NW 21st Ave	NW 111th St - NW 101st St	• Lakeshore Elem	• Sorenson Park • Lakeshore Park	• NW 21st Ave	
NW 68th St	NW 3rd Ave - Hazel Dell Ave	• Hazel Dell Elem	• Jorgenson Park	• Hazel Dell Ave	• Vancouver

* To be constructed after pending development.

It should be noted that, while young or inexperienced cyclists may ride on sidewalks, the use of sidewalks by bicyclists should be discouraged. Washington State Law does allow riding on sidewalks:

RCW 46.61.755: Traffic laws apply to persons riding bicycles.

(1) Every person riding a bicycle upon a roadway shall be granted all of the rights and shall be subject to all of the duties applicable to the driver of a vehicle by this chapter, except as to special regulations in RCW 46.61.750 through 46.61.780 and except as to those provisions of this chapter which by their nature can have no application.

(2) Every person riding a bicycle upon a sidewalk or crosswalk must be granted all of the rights and is subject to all of the duties applicable to a pedestrian by this chapter.

However, when cyclists travel on the sidewalks, parked cars impede visibility between the cyclist and motorists. In addition, drivers are less likely to expect bicyclists at intersections, and many crashes nationally are caused by sidewalk riding.[2]

Recommended On-Street Bikeways

The recommended bicycle network builds upon the system of previously proposed improvements and projects that connect to existing bikeways. The network has been developed to fill system gaps, continue expansion of the regional trail network, formalize existing routes used by bicyclists, and improve access between residential, employment, civic, and commercial destinations.

Depending on their location and context, Clark County's on-street bikeway network will include the following facilities:

- **Shoulder Bikeways** are paved roadways with striped shoulders wide enough for bicycle travel (four feet or wider). There should be little or no parking allowed on the pavement when the shoulder is intended to be used as a bikeway.
- **Bike Lanes** are separated from vehicle travel lanes with striping and include pavement stencils and signing. Bike lanes are appropriate on streets where higher traffic volumes and speeds indicate a need for greater separation. Bike lanes can be provided in

[2] *Pedestrian and Bicycle Crash Types of the Early 1990's*, Publication No. FHWA-RD-95-163, W.H. Hunter, J.C. Stutts, W.E. Pein, and C.L. Cox, Federal Highway Administration, Washington, DC, June, 1996.

the uphill direction on hilly streets where cyclists can match automobile speeds travelling downhill.

- **Shared Lane Markings** are high-visibility pavement markings that help position bicyclists within a shared travel lane. These markings are typically used on streets where dedicated bike lanes are desirable but are not possible due to physical or other constraints. Shared lane markings may be supplemented by signing.
- **Bicycle Boulevards** are developed through a combination of signing, striping, traffic calming measures and other streetscape treatments, and are intended to slow vehicle traffic while facilitating safe and convenient bicycle travel.

Table 8 lists the top-priority on-street bikeway projects, and Table 9 following provides an overview of the connections provided by the projects.

*Table 8. Top Prioritized On-Street Bikeway Projects**

Street	From - To	Length (miles)	Closing Gaps	Land Uses	Safety and Comfort	Community Benefits	Implementation	Multi -Modal	Health Outcomes	Type	Planning-Level Cost Estimate†
NE 13th Ave	NE 88th St - NE 78th St	0.50	25	10	6	8	4	15	16	Shared Lane Markings	$116,000
NE 179th St	NE 29th Ave - NE 102nd Ave	4.61	25	10	6	8	4	15	16	Bike Lane	$1,071,000
NE 50th Ave	NE 119th St - NE Saint Johns Rd	1.23	25	10	6	10	4	15	16	Bike Lane	$286,000
NE 94th St	NE 15th Ave - NE 25th Ave	0.50	25	10	8	10	4	15	19	Shared Lane Markings	$116,000
NE 94th St	NW 21st Ave - NE 5th Ave	1.28	25	10	6	10	4	15	19	Shared Lane Markings	$297,000
NE Delfel Rd	NE 199th St - NE 179th St	1.02	25	10	6	8	4	15	16	Bike Lane	$237,000
NE/ NW 199th St	NW 11th Ave - NE 112th Ave	6.01	25	10	8	10	4	15	12	Bike Lane	$1,396,000
NW 11th Ave‡	NW 199th St - Salmon Creek Greenway	3.56	25	10	6	10	4	15	16	Bike Lane	$827,000
NW 21st Ave	NW 119th St - NW 78th St	2.01	25	10	6	10	4	15	14	Bike Lane	$467,000
NW 2nd Ave/ NE 132nd St /	NW 139th St - NE 16th Ave	1.28	25	10	6	10	4	15	11	Shared Lane Markings	$297,000

Street	From - To	Length (miles)	Closing Gaps	Land Uses	Safety and Comfort	Community Benefits	Implementation	Multi -Modal	Health Outcomes	Type	Planning-Level Cost Estimate†
NE 129th St											
NW 9th Ave	NW 99th St - NE 78th St	0.98	25	10	6	10	4	15	14	Bike Lane	$228,000
NW Sluman Rd/ NW Overlook Dr/ NW Hazel Dell Way	NW 78th St/ NW Bacon Rd - NE Hazel Dell Ave	1.46	25	10	6	10	4	15	16	Bike Lane	$339,000
NE 10th Ave	NE Carty Rd – NE 179th St	3.11	25	10	6	8	4	15	12	Bike Lane	$723,000
Total On-Street Bikeways		**27.55**									**$6,400,000**

* Although WSDOT facilities are listed on this project list, WSDOT is not obligated to complete these projects.
† Costs for bikeway projects average the typical cost for roadway re-striping and shoulder construction, as the application is undetermined. Costs include striping removal or curb sawcut and aggregate base, striping, pavement markings, and signage, as well as engineering/construction, mobilization, A and E fees
‡ The on-street project would end at NW 131st Way and continue as a trail project, including a creek crossing, to connect with the Salmon Creek Greenway. The County should work with the Parks Department to plan and implement the trail portion of this corridor.

Table 9. Priority On-Street Bikeway Project Connections

Street	From - To	Bikeways	Schools	Parks	Transit	Other
NE 13th Ave	NE 88th St - NE 78th St	NE 78th St NE 88th St Hwy 99		Open space	NE 88th St NW 78th St	• Low-speed street • Alternative to Hwy 99
NE 179th St	NE 29th Ave - NE 102nd Ave	• NE 179th St • NE 15th Ave	• Meadow Glade • Columbia Academy	• Stanon Park • Fairgrounds	• NE 10th Ave	• Access to Battle Ground
NE 50th Ave	NE 119th St - NE Saint Johns Rd	• St. Johns Rd • NE 99th St	• Gaiser Middle School	• Lalonde Park	• NE 99th St • St. Johns Rd	• Connection across I-205
NE 94th St	NE 15th Ave - NE 25th Ave	• NE 15th Ave		• Tenny Creek		
NE 94th St	NW 21st Ave - NE 5th Ave	• NE Hazel Dell Ave	• Eisenhower Elem • Lakeshore Elem	• Lakeshore park • Eisenhower Park	• NW 9th Ave	
NE Delfel Rd	NE 199th St - NE 179th St	• NE 179th St	• Southridge Elem	• Fairgrounds	• NE 10th Ave	• Access along the I-5 corridor
NE/NW 199th St	NW 11th Ave - NE 112th Ave	• NE 72nd Ave	• Southridge Elem		• NE 10th Ave	• Connection across I-5 and NE 10th Ave • Connection to Battle Ground
NW 11th Ave	NW 199th St - Salmon Creek Greenway	• Salmon Creek Greenway	• Skyview High • Southridge Elem • Alki Jr. High • Chinook Elem	• Salmon Creek Greenway	• NW 139th St	• Crossing over Whipple Creek
NW 21st Ave	NW 119th St - NW 78th St	• NW 119th St • NW 99th St • NW 78th St	• Lakeshore Elem	• Lakeshore Park	• NW 21st Ave • NW 78th St	
NW 2nd Ave/NE 132nd St/NE 129th St	NW 139th St - NE 16th Ave		• Skyview High • Salmon Creek Elem	• H.B. Fuller Sports Complex	• NW 139th St • I-5	• Potential future connection to Salmon Creek Greenway
NW 9th Ave	NW 99th St - NE 78th St	• NW 99th St • NW 78th St	• Columbia River High • Eisenhower Elem • Jason Lee Jr. High	• Eisenhower Park		
NW Sluman Rd/ NW Overlook Dr/ NW Hazel Dell Way	NW 78th St/NW Bacon Rd - NE Hazel Dell Ave	• NW 78th St • NE Hazel Dell Ave • NE 63rd St				• Alternative to Hwy 99/NW 78th St
NE 10th Ave	NE Carty Rd – NE 179th St	• NE 179th St • NE 259th St		• Fairgrounds	• I-5 • NE 219th St	

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Map 5. Top Tier Bikeway and Trail Projects

Clark County
Bicycle and Pedestrian Master Plan

Source: Data obtained from Clark County
Author: HWK
Date: September 2010

- Planned projects
- Bikeway projects
- Restriping bike lane projects
- Trail and pathway projects
- Off-Street trails and pathways
- Bike lane
- Bike lane one-side
- Shoulder bikeway
- Railroad
- School
- Parks
- Urban growth boundary

0 0.5 1 Miles

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Determination of appropriate treatments on each street depends on traffic volumes, vehicle and bicycle circulation patterns, street connectivity, street width, physical constraints, and other parameters. In addition to specific locations provided in Table 8, Clark County should seek to improve intersections for bicyclists by calibrating signal loop detectors for actuation by bicycles. Other intersection improvements could include bike boxes and other turn lane treatments.

In addition to bikeway projects that require roadway reconstruction, shoulder widening, travel, parking, or turn lane reduction, some bike lanes can be provided through simple roadway re-striping. The projects in Table 10 were identified in the bike lane inventory as having shoulders with sufficient width to accommodate bicyclists (four feet or wider) on both sides of the road.

Table 10. Top Prioritized Roadway Restriping Projects

Street	From - To	Length (miles)	Closing Gaps	Land Uses	Safety and Comfort	Community Benefits	Implementation	Multi -Modal	Health Outcomes	Planning-Level Cost Estimate*
NE 10th Ave	NE 259th St – NE Carty Rd	0.89	25	10	8	1	5	1	10	$282,000
NE 130th Ave	NE 89th St - NE 78th St	0.67	25	10	8	10	5	15	13	$212,000
NE 63rd St	I-205 - NE 102nd Ave	0.55	25	10	6	4	5	15	16	$174,000
NE 78th St	NE 72nd Ave - I-205	0.61	25	10	6	15	5	4	16	$2,211,000
NE 72nd Ave	NE 259th St - NE 119th St	6.98	25	10	6	10	5	15	10	$193,000
NE Edmunds Rd	NE 174th Ct - NE 29th St	0.57	25	10	12	10	5	15	10	$181,000
NE Salmon Creek Ave	NE 125th St - NE 117th St	0.45	25	10	6	10	5	15	19	$143,000
NW 119th St	NW 36th Ave - NW 21st Ave	1.50	25	10	6	10	5	15	12	$475,000
NW 21st Ave	NE 149th St - NW Bliss Rd	0.37	25	10	6	10	5	15	14	$117,000
NW Bliss Rd/ NW Hathaway Rd/ NW 139th St	NW Seward Rd - NW 11th Ave	1.26	25	10	6	10	5	15	14	$399,000
NW Lakeshore Ave	NW 99th St - NW 78th St	1.17	25	7	6	10	5	15	14	$371,000
Total Roadway Restriping Projects:		**13.31**								**$4,476,000**

* Costs for roadway re-striping projects include striping removal, re-striping, pavement markings, and signage, as well as engineering/construction, mobilization, A and E fees, and contingency.

Table 11. Priority Roadway Restriping Project Connections

Street	From - To	Bikeways	Schools	Parks	Transit	Other
NE 130th Ave	NE 89th St - NE 78th St	• Padden Parkway Trail • NE 76th St	• Heritage High	• Mackie Park	• NE 99th St	• Connection over Padden Parkway
NE 72nd Ave	NE 259th St - NE 119th St		•	• Lower Daybreak Park	• SR 502	• Connection to Vancouver
NE Edmunds Rd	NE 174th Ct - NE 29th St		• Pacific Jr. High • Harmony Elem	• Maple Crest Park		
NE Salmon Creek Ave	NE 125th St - NE 117th St	• NE 117th St				• Connection over I-205
NW 119th St	NW 36th Ave - NW 21st Ave	• Salmon Creek Greenway • NE 117th St	• Felida Elementary	• Salmon Creek Greenway	• NW 36th Ave • NW 21st Ave	
NW 21st Ave	NE 149th St - NW Bliss Rd	• NW 149th St • NW Bliss Rd/ NW Hathaway Rd	• Skyview High • Southridge Elem • Alki Jr. High • Chinook Elem		• NW Bliss Rd/ NW Hathaway Rd	
NW Bliss Rd/NW Hathaway Rd/NW 139th St	NW Seward Rd - NW 11th Ave	• Salmon Creek Greenway	• Skyview High • Alki Jr. High • Chinook Elem	• Salmon Creek Greenway		
NE 63rd St	I-205 - NE 102nd Ave	• NE 63rd St • NE Covington Rd		• Walnut Grove Park • Orchards Park	• NE 63rd St • NE Covington Rd	
NE 78th St	NE 72nd Ave - I-205	• NE 76th St • NE 72nd Ave				• Alternative (more direct) to Padden Parkway
NW Lakeshore Ave	NW 99th St - NW 78th St	• NW 78th St • NW 99th St	• Lakeshore Elem		• NW 78th St	
NE 10th Ave	NE 259th St – NE Carty Rd	• NE 259th St		• Lewis River Greenway	• NE 219th St	• Connection to Ridgefield

Figure 20. Path users combining recreation and working.

Clark County's entire street network is effectively the community's bicycle network, regardless of whether or not a bikeway stripe, stencil, or sign is present. The designation of certain roads as bike routes is not intended to imply that these are the only roadways intended for bicycle use, or that bicyclists should not be riding on other streets. Rather, the designation of a network of on-street bikeways recognizes that certain roadways are preferred bicycle routes for most users, for reasons such as directness or access to significant destinations, allowing the county to focus on building the primary network.

Recommended Regional Pathway Improvements

This Plan incorporates the sixteen regional land trails identified in the adopted 2006 *Clark County Trails and Bikeway System Plan* and the six Greater Clark Parks District trails. These identified trails inform where on-street bicycle and pedestrian improvements can seamlessly connect the proposed on-street system to existing and planned trails throughout unincorporated Clark County. The trails identified in these plans are regional in nature, meaning they extend across and through communities to link local and regional destinations such as schools, commercial areas and parks. As identified by Clark County they can be organized into three categories: shared-use pathways, primitive trails, and side-pathways and are described below to better understand how they function.

This plan evaluated the planned trails identified in the *Clark County Trails and Bikeway System Plan* and the six Greater Clark Parks District trails and prioritized ten that have sections that meet this plan's identified criteria for recommended improvements.

Figure 21. The SR 503 Pathway is a side path that provides a continuous nonmotorized route.

Side Path Parkways

Side paths parkways are directly adjacent to roadways and within the street right-of-way. Examples in Clark County include the Padden Parkway and the SR 503 Pathway. They serve both bicyclists and pedestrians and are wider than a standard sidewalk. Side paths provide commuter routes between residential areas and employment centers, as well as to retail areas.

Recommended side path pathways include:

- Salmon Creek Greenway Trail- the portion between HWY 99 and WSU including improvements to 119th St. and Salmon Creek Ave.
- NW 36th Ave- the portion between 78th St. and Bliss Rd.

Shared-Use Paths

Shared-use paths (also referred to as "trails" and "multi-use paths") are dedicated off-street paved facilities that accommodate walkers, bicyclists

and sometimes equestrians. In Clark County they are primarily located along and within parks, greenways and utility corridors and span three to eight miles.

Recommended shared-use paths include:

- Chelatchie Prairie Rail Trail
  - Vancouver City Line to Battle Ground City Line
  - Battle Ground City Line to Yacolt City Line
  - Yacolt City line to County line
- Salmon Creek Greenway Trail – section between the eastern Klineline pond and Klineline Bridge and 119th St.
- North South Power-line Trail

Figure 22. Paved regional trails accommodate all types of cyclists and pedestrians.

Primitive Trails

Primitive trails identified in this Plan are dedicated off-street non-paved facilities that largely accommodate walkers. Because they are located within close proximity to stream courses, wetlands and other sensitive lands, development is anticipated to be limited to soft surfaces. However they still provide valuable connections within and across neighborhoods.

Recommendations for primitive trails were identified in the Greater Clark Parks District and include the following:

- Cougar Creek Trail
- LaLonde Trail

Figure 23. Cougar Creek Trail at Eisenhower Elementary School.

Figure 24. The LaLonde Creek Trail would be a rustic footpath providing pedestrian access.

*Table 12. Priority Trail Projects**

Trail	From - To	Type	Length (miles)	Closing Gaps	Land Uses	Safety and Comfort	Community Benefits	Implementation	Multi -Modal	Health Outcomes	Planning-Level Cost Estimate† (millions)
NE 119th St/ NE Salmon Creek Ave	Highway 99 - WSU	Side Path	1.7	25	10	10	10	3	15	19	$2.0
NW 36th Ave	Salmon Creek Greenway Trail - NW 88th St	Side Path	2.7	25	10	15	10	1	15	17	$3.3
Chelatchie Prairie Trail	Vancouver City Line - Battle Ground City Line	Shared -use	9.3	25	10	15	8	3	15	20	$11.2
Chelatchie Prairie Trail	Yacolt City Line - Battle Ground City Line	Shared -use	11.5	25	10	15	10	3	1	13	$13.8
Chelatchie Prairie Trail	Yacolt City line - county line	Shared -use	19.5	8	10	15	10	3	1	13	$23.2
Salmon Creek Greenway	Eastern Klineline pond – 119th St	Shared -use	0.3	25	10	15	10	1	15	20	$0.4
North South Powerline Trail	NE Cedar Creek Rd – NE 63rd St	SUP	17.9	25	10	15	10	1	15	16	$8.4
Cougar Creek Trail	NW 139th St - NE Hazel Dell Ave	Trail	3.2	25	10	15	10	1	15	20	$3.8
LaLonde Trail	NE Hwy 99 – North-South Powerline Trail	Trail	1.6	25	10	15	10	1	15	20	$0.7
Total Trail Projects			**66.7**								**$80.1**

* Development of off-street trail projects will be funded primarily by the Vancouver-Clark Parks Department, with the aid of federal grant monies.

† Costs for off-street trails depend on critical areas, topography, wetland, right-of-way acquisition, and other factors. This analysis uses a common cost of $1.2 million per mile of off-street trail, as provided by VCPRD for planning purposes. As development is initiated for each project, the trail will undergo more thorough review and estimates are expected to be refined to reflect the unique environmental conditions and resulting compatible trail profile.

Table 13. Priority Trail Project Connections

Trail	From - To	Bikeways	Schools	Parks	Transit	Other
NE 119th St/ NE Salmon Creek Ave	Highway 99 - WSU	• NE 29th Ave • WSU Trail • Salmon Creek Greenway	• WSU • Pleasant Valley Elem & Jr. High	• Pleasant Valley Park • Salmon Creek Park	• Hwy 99	• Provides on-street connection from regional trail to WSU
NW 36th Ave	Salmon Creek Greenway Trail - NW 88th St	• NW Lakeshore Ave • NW 119th St • NW 99th St	• Felida Elem • Lakeshore Elem		• NW 199th St	
Chelatchie Prairie Trail	Vancouver City Line -Battle Ground City Line	• NE St. Johns Rd • NE 72nd Ave • SR 509 Trail	• Laurin Elem	• Brush Prairie	• NE St. James Rd • NE 78th St • NE 117th Ave/NE Caples	• Connection to Vancouver, Battle Ground,
Chelatchie Prairie Trail	Yacolt City Line - Battle Ground City Line	• Battle Ground Lake trails	• Yacolt Elem	• Battle Ground Lake • Lucia Falls Park • Moulton Falls Park		• Connection to Battle Ground, Yacolt
Chelatchie Prairie Trail	Yacolt City line - county line		• Yacolt Elem	• Siouxon Regional Park		• Connection to Yacolt
Salmon Creek Greenway	Eastern Klineline pond – 119th St	• Salmon Creek Greenway			• Salmon Creek Greenway	• Across Hwy 99
North South Powerline Trail	NE Cedar Creek Rd – NE 63rd St	• NE Minnehaha St • NE 88th St, NE 99th St, NE 119th St	• Gaiser Jr. High • Pleasant Valley Jr. HIgh	• East Fork Lewis River Greenway	• NE 99th St	• Provides north-south connectivity across the county
Cougar Creek Trail	NW 139th St - NE Hazel Dell Ave	• Salmon Creek Greenway	• Columbia River High • Eisenhower Elem	• Salmon Creek Greenway	• Transit station on Hazel Dell Ave	• crossing over Salmon Creek
LaLonde Trail	NE Hwy 99 – North-South Powerline Trail	• NE 117th St • Salmon River Greenway		• Sherwood North Park • Salmon Creek	• NE Hwy 99	• Will connect to proposed North-South Powerline Trail

Active Transportation and Regional Trails Network: The Intertwine

In addition to improving bicycle and pedestrian mobility throughout Clark County, the plan also contributes to the ever-growing regional parks, active transportation, natural areas, and conservation coalition, coined The Intertwine in 2009. The *Clark County Bicycle and Pedestrian Plan* provides a vested regional planning document that can be leveraged as part of the Intertwine to develop partnerships, seek funding and provide weight to advocate for realizing the walking and bicycling facilities and programs recommended in this plan.[3]

Consideration for Trails and Railroads

Clark County purchased the Chelatchie Prairie railroad right-of-way in 1985. Also known as the Lewis and Clark Railroad, the existing rail line extends thirty-three miles diagonally through the county from Burnt Bridge Creek at Interstate 5, to the site of an old paper mill a few miles from Yale Reservoir. Clark County acquired the right-of-way both for commercial transportation use and as a trail corridor. The county is currently leasing the rail corridor to several rail operators who are using the corridor for light-industrial rail commerce and passenger excursion trips. Clark County acquired the corridor to maintain commercial freight and passenger rail service and to establish a non-motorized trail across the county. The Chelatchie Prairie Rail-with-Trail (RWT) is envisioned as a 33-mile multi-use trail within the railroad right-of-way where possible. In some areas the trail alignment will use existing trails

In 2008 the Clark County Board of Commissioners adopted the Chelatchie Rail with Trail Feasibility Study to guide future development of the rail with trail. The following highlights identified in the feasibility study specifically address railroad and trail compatibility considerations for the future trail.

- New at-grade crossing are prohibited and new trails that may cross the railroad will need to be designed to utilize existing crossings.
- Planning and engineering of the trail should involve close collaboration with railroad operations and maintenance staff and the Washington Utilities and Transportation Commission (WUTC) to achieve a suitable rail with trail design.

[3] Additional information about the Intertwine project available at: www.theintertwine.org/

- The trail development should reflect standards set by adjacent railroads for crossings and other design elements with emphasis on signage to reflect behavior around the tracks.
- The trail must be designed to meet both the operational needs of the railroad and the safety of the trail users.

Chapter 5. Bicycle Parking Standards and Guidelines

Bicycle parking is an important component in planning bicycle facilities and encouraging people to use their bicycles for everyday transportation. Bicycles are one of the top stolen items in most communities, with components often being stolen even when the bicycle frame is securely locked to a rack. Because many of today's bicycles are often high-cost and valuable items, many people will not use a bicycle unless they are sure that there is secure parking available at their destinations.

This chapter outlines bicycle parking facility types and the requirements of short- and long-term parking, as well as other types of end-of-trip facility options. It outlines the existing policies addressing the development of bicycle parking within Clark County and the six cities. Best practices of supportive policies, both locally and internationally, are then discussed, and changes are recommended to ensure that Clark County policy is supportive of developing the most appropriate bicycle parking facilities possible.

Bicycle parking facilities that are conveniently located and adequate in both quantity and quality can help to reduce bicycle theft and to eliminate inappropriate parking, benefiting everyone. Bicycle parking is highly cost-effective compared to automobile parking. One way to incentivize the development of bicycle parking is to offer reduced automobile parking minimums for developments that include bicycle parking.

Bicycle Parking Facility Types

Bicyclists need parking options that can provide security against theft, vandalism, and weather. Like automobile parking, bicycle parking is most effective when it is located close to trip destinations, is easy to access, and is easy to find. Where quality bicycle parking facilities are not provided, determined bicyclists lock their bicycles to street signs, parking meters, lampposts, benches, or trees. These alternatives are undesirable as they are usually not secure, may interfere with pedestrian movement, and can create liability or damage street furniture or trees.

In a nationwide Harris Poll conducted in 1991, almost half the respondents stated that they would sometimes commute to work by bicycle, or commute more often, if there were showers, lockers, and secure bicycle storage at work. Cyclists' needs for bicycle parking range from simply a convenient piece of street furniture, to storage in a bicycle locker that affords weather, theft and vandalism protection, gear storage space, and 24-hour personal access. Most bicycles today cost 350 dollars to over 2,000 dollars and are

one of the top stolen items in all communities, with components being stolen even when a bicycle is securely locked. Theft can be a serious deterrent to riding, especially for low-income riders or those with particularly expensive or rare bicycles. Where a cyclist's needs falls on this spectrum is determined by several factors:

Bicycle parking can be broadly defined as either short-term or long-term parking:

- Short-term parking: Bicycle parking meant to accommodate visitors, customers, messengers and others expected to depart within two hours; requires approved standard rack, appropriate location and placement, and weather protection.
- Long-term parking: Bicycle parking meant to accommodate employees, students, residents, commuters, and others expected to park more than two hours. This parking is to be provided in a secure, weather-protected manner and location.

Short-Term Bicycle Parking

Short-term bicycle parking facilities are intended to provide short-term (under 2 hours) bicycle parking, and include racks which permit the locking of the bicycle frame and one wheel to the rack and support the bicycle in a stable position without damage to wheels, frame or components (Figure 25). Wherever possible, bicycle parking should be covered to protect the bike from rain, snow and other elements. Covered parking areas should have at least six or seven feet of clearance, but not so high as to allow rain and snow to easily blow under the roof. Short-term bicycle parking is currently provided at no charge at most locations. Such facilities should continue to be free, as they provide minimal security, but encourage cycling and promote proper bicycle parking.

Figure 25. On-street bicycle parking 'corrals' have been used in downtown Vancouver to increase parking capacity.

Recommendations for short-term bicycle parking include the following:

- Bicycle parking spaces should be at least six feet long and two-and-a-half feet wide, and overhead clearance for covered spaces should be at least seven feet.
- A five-foot aisle for bicycle maneuvering should be provided and maintained beside or between each row of bicycle parking.
- Bicycle racks or lockers should be securely anchored to the surface or structure.

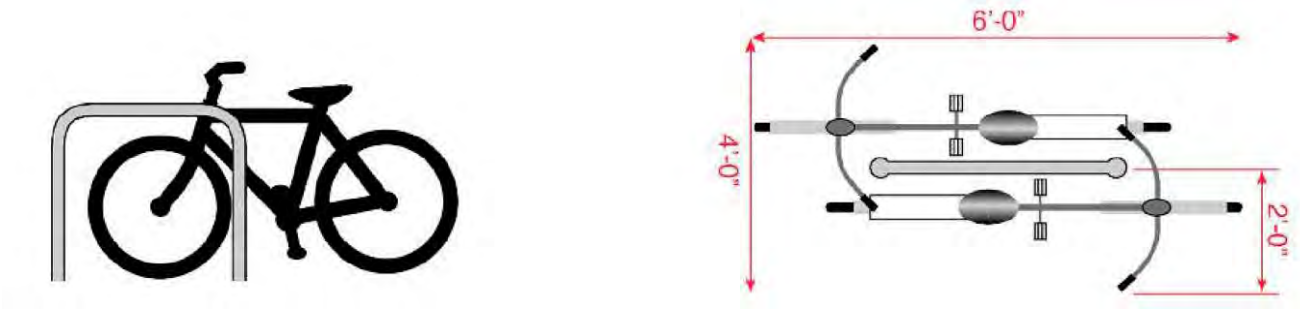

Figure 26. Inverted 'U' rack.

Where sidewalks are too narrow or obstructed, bicycle parking can be placed in the street in lieu of on-street vehicle parking. Clustered racks can be installed in a car parking space protected by bollards or curbs (Figure 25). Alternatively, racks can be installed on sidewalk curb extensions where adequate sight distance can be provided. Installing bicycle parking directly in a car parking space incurs only the cost of the racks and bollards or other protective devices.

A curb extension is more expensive to install, and can be prohibitively expensive if substantial drainage and/or utility work is necessary. Costs may be less if the curb extension is installed as part of a larger street or pedestrian improvement project.

While on-street bicycle parking may reduce automobile parking, auto parking loss can be mitigated by: adding auto parking spaces by consolidating driveways, moving fire hydrants, or otherwise finding places where auto parking can be allowed where it is currently prohibited. Bicycle and motorcycle parking can also be combined.

On-street bicycle parking may be installed at intersection corners or at mid-block locations. Mid-block on-street parking may be closer to cyclists' destinations, although it could force cyclists to dismount and walk to the parking site if access from the street is difficult or dangerous. Combining a mid-block pedestrian crossing with mid-block on-street parking facilities could mitigate this situation.

Figure 27. A local bicycle advocacy group, Bike Me!, provides bicycle parking at public events in Vancouver.

Table 14. Short-Term Bicycle Rack Placement Guidelines

Design Issue	Recommended Guidance
Minimum Rack Height	To increase visibility to pedestrians, racks should have a minimum height of 33 inches or be indicated or cordoned off by visible markers.
Signing	Where bicycle parking areas are not clearly visible to approaching cyclists, signs at least 12 inches square should direct them to the facility. The sign should give the name, phone number, and location of the person in charge of the facility, where applicable.
Lighting	Lighting of not less than one foot-candle illumination at ground level should be provided in all bicycle parking areas.
Frequency of Racks on Streets	In popular retail areas, two or more racks should be installed on each side of each block. This does not eliminate the inclusion of requests from the public which do not fall in these areas. Areas officially designated or used as bicycle routes may warrant the consideration of more racks.
Location and Access	Access to facilities should be convenient; where access is by sidewalk or walkway, curb ramps should be provided where appropriate and ADA compliant. Parking facilities intended for employees should be located near the employee entrance, and those for customers or visitors near the main public entrances. (Convenience should be balanced against the need for security if the employee entrance is not in a well traveled area). Bicycle parking should be clustered in lots not to exceed 16 spaces each. Large expanses of bicycle parking make it easier for thieves to operate undetected.
Locations within Buildings	Provide bike racks within 50 feet of the entrance. Where a security guard is present, provide racks behind or within view of a security guard. The location should be outside the normal flow of pedestrian traffic.
Locations near Transit Stops	To prevent bicyclists from locking bikes to bus stop poles - which can create access problems for transit users, particularly those who are disabled - racks should be placed in close proximity to transit stops where there is a demand for short-term bike parking.
Locations within a Campus-Type Setting	Racks are useful in a campus-type setting at locations where the user is likely to spend less than two hours, such as classroom buildings. Racks should be located near the entrance to each building. Where racks are clustered in a single location, they should be surrounded by a fence and watched by an attendant. The attendant can often share this duty with other duties to reduce or eliminate the cost of labor being applied to the bike parking duties; a cheaper alternative to an attendant may be to site the fenced bicycle compound in a highly visible location on the campus. For the long-term parking needs of employees and students, attendant parking and/or bike lockers are recommended.
Retrofit Program	In established locations, such as schools, employment centers, and shopping centers, the City should conduct bicycle parking audits to assess the bicycle parking availability and access, and add in additional bicycle racks where necessary.

Long-Term Bicycle Parking

Long-term bicycle parking facilities are intended to provide secure long-term bicycle storage. Long-term facilities protect the entire bicycle, its components and accessories against theft and against inclement weather, including snow and wind-driven rain (Figure 28). Wherever possible, bicycle parking should be covered to protect the bike from rain, snow and other elements. Examples include lockers, check-in facilities, monitored parking, restricted access parking, and personal storage.

Figure 28. Bike lockers, such as this one in downtown Vancouver, are a standard form of long term bicycle parking.

Long-term parking facilities are more expensive to provide than short-term facilities, but are also significantly more secure. Although many bicycle commuters would be willing to pay a nominal fee to guarantee the improved safety of their bicycle, long-term bicycle parking should be free wherever automobile parking is free. Potential locations for long-term bicycle parking include large employers and institutions where people use their bikes for commuting, and not consistently throughout the day. An advantage of lockers is that they can be configured to more easily accommodate different styles of bicycles, such as recumbent bicycles.

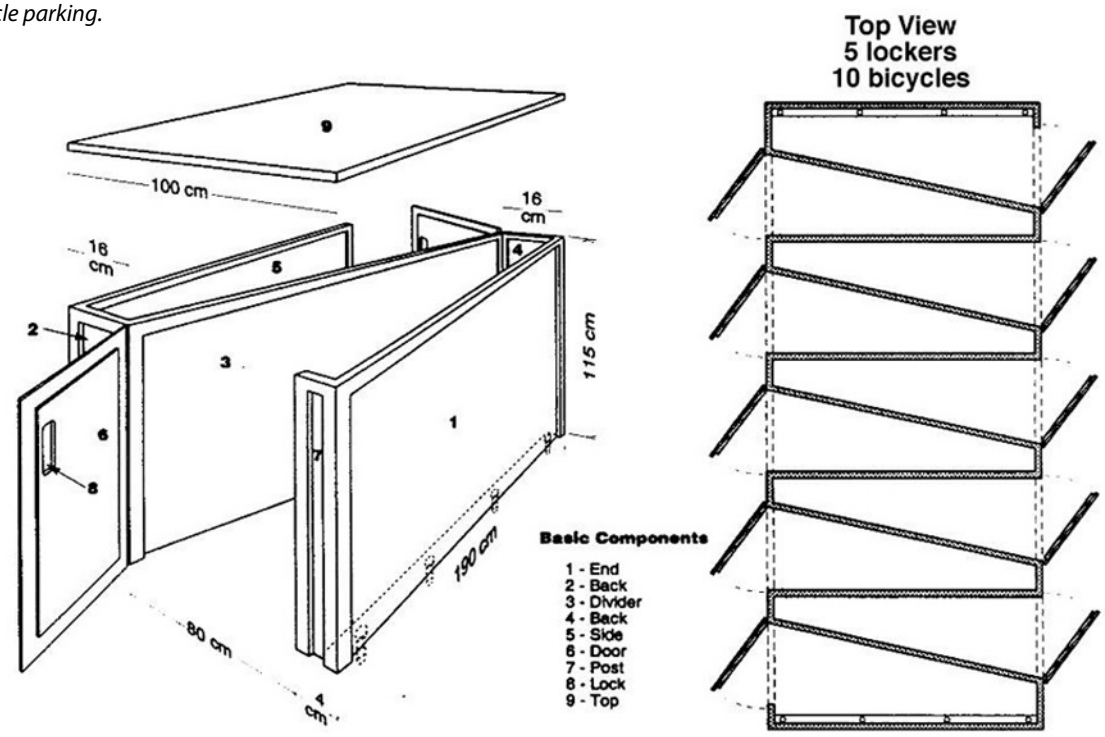

Figure 29. Cycle Safe Lockers

Attendant Bicycle Parking

Attendant parking is practical where there is a heavy demand for secure bicycle parking. College campuses and high schools are obvious locations, as are employment locations with a large commuter bicycling population. Bicycle attendant duties become more cost-effective when shared with other duties, such as garage attendant, security guard, or private bicycle maintenance and repair operator (Figure 30). Attendant parking should be particularly considered for locations with heavy demand for bike parking but no existing bike parking facilities.

Figure 30. Racks in Bikestation, Freiburg (Germany)

Bikestations

A Bikestation offers secure, attended bicycle parking in a centrally-located hub of transit-oriented activity. Bikestations allow cyclists to park their bicycle while they shop or commute nearby. The look, location, and design details differ from city to city and station to station; some Bike stations are located in their own buildings, offering a café atmosphere to cyclists, while others are located within a transit station, offering free overnight bike storage (Figure 31).

Figure 31. Bikestation in Long Beach (CA)

Bikestation operating costs include staffing, data processing (such as a computer system to track bikes), security, marketing, materials, utilities, business fees, and other overhead. Funding sources can include the usual local, state and federal non-motorized transportation funds, as well as user fees, local development fees, and income from associated retail establishments.

Changing Facilities

Aside from bicycle parking, other end-of-trip facilities for bicyclist include changing areas, clothes lockers and showers, which allow bicyclists to clean up after riding. For encouraging cycle commuting by more middle- and upper-income residents, who are likely to have professional office jobs, there will need to be a place for them to quickly change into work clothes. In order to best encourage bicycle commuting, these facilities need to be located at places of employment, so that an employee could bicycle in, then shower and change before starting work. Shower and locker facilities may exist in some office buildings and other employment centers in Clark County, but they do not appear to be very common. Health and fitness clubs can offer an alternative place to shower/change for commuter cyclists, but only function for commuter cyclists if the facilities are located conveniently close to the place of employment. In encouraging the new demographic of riders to try cycle commuting, facilities such as showers, lockers, and bike parking becomes nearly as important as providing the bicycle facilities themselves. Clark County can support local efforts to

strengthen development ordinances that require shower and locker facilities based on employment densities.

Bicycle Parking Supportive Policies

This section outlines existing policies that guide the development of bicycle parking. It considers best practices of short-term and long-term parking, both locally and internationally. Finally, specific recommendations are provided for Clark County to support the development of bicycle parking.

Bicycle Parking Standards in Clark County

The 2008 Washington State Bicycle Facilities and Pedestrian Walkways Plan states that approximately $80,000 of unfunded bicycle parking needs have been identified in local transportation improvement plans. With the exception of Vancouver, none of the Comprehensive Plans for the local jurisdictions mention bicycle parking as a consideration for encouraging bicycling in the communities.

The City of Vancouver published Bicycle Parking Standards and Guidelines, which provides information about desired quantity and requirements for bicycle parking facilities. It outlines what are unacceptable styles of racks, and provides diagrams and examples. The City of Vancouver maintains all bicycle parking facilities within the public right-of-way.

Table 15 shows the parking standards recommended by the City of Vancouver for minimum recommended number of bicycle parking spaces on differing land uses. The term "Class I" is for short-term and "Class II" for long-term parking facilities. It is recommended to provide sheltered parking if more than ten Class II spaces are available. These standards are based on Vancouver's Parking Standards.

Table 15. Vancouver Bicycle Parking Recommended Standards

Use	Recommended Bicycle Parking	Class and Percent of Bicycle Parking
Multi-Dwelling Units	1 space per 2 units except elderly, which is 1 space per 20 units	100% Class II
Emergency Services	1 space per 3,000 sq. ft. of floor area	20% Class I; 80% Class II
Human Services Facilities	1 space per 3,000 sq. ft. of floor area	20% Class I; 80% Class II
Neighborhood Parks	4 spaces per acre	100% Class II
Community Parks	5% of auto spaces	20% Class I; 80% Class II
Elementary Schools	1 space per 25 students	20% Class I; 80% Class II
Middle Schools	1 space per 40 students	20% Class I; 80% Class II
High Schools	1 space per 60 students	20% Class I; 80% Class II
Commercial Lodging	1 space per 20 rooms	100% Class I
Restaurants with drive-thru	1 space per 1,000 sq. ft. of floor area	20% Class I; 80% Class II
Restaurants without drive thru	1 space per 1,000 sq. ft. of floor area	20% Class I; 80% Class II
General Retail Sales	1 space per 4,000 sq. ft. of floor area	20% Class I; 80% Class II
Office Campus	1 space per 3,000 sq. ft. of floor area	20% Class I; 80% Class II
Light Industrial	1 space per 10,000 sq. ft. of floor area	20% Class I; 80% Class II
Heavy Industrial	1 space per 10,000 sq. ft. of floor area	20% Class I; 80% Class II

City of Vancouver Municipal Code 20.945.050 states that bicycle parking must meet the following standards:

- Bicycle parking must be provided at the ground level, and may be provided in floor, or wall racks that must hold bicycles securely by the means of the frame. Bicycles may be tipped vertically for storage, but not hung above the ground. If the bicycle parking is placed in the public right-of-way, it shall not obstruct pedestrian walkways and shall meet all of the requirements outlined in obtainment of the street use permit.
- Where required bicycle parking is provided with racks, the racks must meet the following standards:
    - The parking spaces shall be at least 2' wide and 6' long with an overhead clearance of at least 7', and with a 5' access aisle
    - The rack must hold the bicycle securely by means of the frame. The frame must be able to be supported so that the bicycle cannot be pushed or fall to one side in a manner that will damage the wheels

    - The bicycle frame and one wheel can be locked to the rack with a high-security, U-shaped shackle lock if both wheels are left on the bicycle; and
    - The rack must be securely anchored with theft resistant hardware
- Where bicycle parking is provided with lockers, such lockers must meet the following standards:
    - An area of at least 6' of horizontal distance shall be provided around the entrance of each locker that is free from obstructions, an overhead clearance of at least 7', and with a 5' access aisle; and
    - The lockers must be securely anchored

The City of Vancouver Comprehensive Plan also outlines bicycle parking guidelines under the Community Design heading. Policy 12.2.4 reads, "Establish development standards for higher densities and intensities of development along priority and high capacity transit corridors that encourage pedestrian, bicycle, and public transit usage."

Bicycle Parking Standards Best Practices

Best practices in bicycle parking standards outline specific guidelines for minimum quantities of parking spaces at different land uses. An example is from the Oregon Department of Land Conservation and Development (DLCD) guidelines, shown in Table 16.

Table 16. Minimum Required Bicycle Parking Spaces, DLCD

Use Categories	Specific Uses	Long-Term Spaces	Short-Term Spaces
Residential Categories			
Household Living	Multifamily	1 per 4 units	2, or 1 per 20 units
Group Living		2, or 1 per 20 bedrooms	None
	Dormitory	1 per 8 bedrooms	None
Commercial Categories			
Retail Sales and Service		2, or 1 per 12,000 sq. ft. of floor area	2, or 1 per 5,000 sq. ft. of floor area
	Lodging	2, or 1 per 20 rentable rooms	2, or 1 per 20 rentable rooms
Office		2, or 1 per 10,000 sq. ft. of floor area	2, or 1 per 40,000 sq. ft. of floor area
Commercial Outdoor Recreation		8, or 1 per 20 auto spaces	None
Major Event Entertainment		8, or 1 per 40 seats or per CU review	None
Industrial Categories			
Manufacturing and Production		2, or 1 per 15,00 sq. ft. of floor area	None
Warehouse and Freight Movement		2, or 1 per 40,000 sq. ft. of floor area	None
Institutional Categories			
Basic Utilities	Bus transit center	8	None
Community Service		2, or 1 per 10,000 sq. ft. of floor area	or 1 per 10,000 sq. ft. of floor area
	Park and ride	8, or 5 per acre	None
Parks (active recreation areas only)		None	8, or per CU review
Schools	Grades 2-5	1 per classroom, or per CU review	1 per classroom, or per CU review
	Grades 6-12	2 per classroom, or per CU review	2 per classroom, or per CU review

Chapter 6. Design Program

Clark County has been working for the past decade to implement on-street bikeway, sidewalk, and trail projects in order to encourage walking and cycling, improve safety, and improve the quality of active transportation so that it becomes an integral part of daily life. While Clark County is growing rapidly, it also contains a built urban environment, so many future projects will involve retrofitting existing streets and intersections. The county has significant changes in topography, a high demand for on-street parking, a roadway system heavily reliant on arterial roadways, and many other complex situations.

The Clark County Bicycle and Pedestrian Master Plan design program is based on current federal and state bikeway and walkway design guidelines for typical bikeway situations provided in the Washington Department of Transportation *Design Manual*, American Association of State Highway and Transportation Officials (AASHTO) *Guide for the Development of Bicycle Facilities*, the *Manual of Uniform Traffic Control Devices* (MUTCD): Part 9 Traffic Controls for Bicycle Facilities, and United States Access Board *Public Rights-of-Way Accessibility Guidelines* (PROWAG), 2007. The Clark County Bicycle and Pedestrian Master Plan guidelines use these documents as a baseline for minimum conditions, and are intended to find creative solutions to a wide range of bicycle facility types. These treatments draw upon creative solutions in use in other states as well as European cities. Some of these designs are conceptual at this stage, and must be reviewed further before being applied to actual situations.

Strong design guidelines will allow Clark County to improve the quality of the bicycle network by identifying the highest standard of bicycle safety, comfort, and convenience. This design program also can be used by bicycle and pedestrian committees as a reference when reviewing road and development plans, to ensure adequate consideration of bicycle and pedestrian accommodation.

The following are key principles for this program:

- All roads in Clark County are legal for the use of bicyclists, except limited access interstates which specifically prohibit bicyclists, including I-5 through Vancouver and part of the Lewis and Clark Highway.
- Bicyclists have a range of skill levels, from "Type B/C" inexperienced / recreational bicyclists (especially children and seniors) to "Type A" experienced cyclists (adults who are capable of sharing the road with motor vehicles). These groups are not always

exclusive – some elite level athletes still like to ride on shared-use paths with their families, and some recreational bicyclists will sometimes use their bicycles for utilitarian travel.

- Facilities will be designed for the use of Type "A" cyclists and for Type "B" cyclists to the greatest extent possible. In areas where specific needs have been identified (for example, near schools) the needs of appropriate types of bicyclists will be accommodated.
- Design guidelines are intended to be flexible and can be applied with professional judgment by designers. Specific national and state guidelines are identified in this document, as well as design treatments that may exceed these guidelines.
- Clark County will have a complete network of on-street bicycling facilities to connect seamlessly to the existing and proposed off-street pathways.

National and State Guidelines / Best Practices

The following is a list of references and sources utilized to develop design guidelines for the Roadways to Bikeways Supplemental Design Guidelines. Many of these documents are available online and are a wealth of information and resources available to the public.

- *AASHTO Guide for the Development of Bicycle Facilities*, 1999. American Association of State Highway and Transportation Officials, Washington, DC. www.transportation.org
- *AASHTO Policy on Geometric Design of Streets and Highways*, 2001. American Association of State Highway and Transportation Officials, Washington, DC. www.transportation.org
- *Manual on Uniform Traffic Control Devices* (MUTCD), latest edition. Federal Highway Administration, Washington, DC. mutcd.fhwa.dot.gov
- WSDOT Design Manual, Division 15, latest edition. http://www.wsdot.wa.gov/Publications/Manuals/M22-01.htm
- *Bicycle Facility Selection: A Comparison of Approaches.* Michael King, for the Pedestrian and Bicycle Information Center. Highway Safety Research Center, University of North Carolina – Chapel Hill, August 2002 www.bicyclinginfo.org/pdf/bikeguide.pdf
- *Bicycle Parking Design Guidelines.* www.bicyclinginfo.org/pdf/bikepark.pdf
- *City of Chicago Bike Lane Design Guide.* www.bicyclinginfo.org/pdf/bike_lane.pdf
- *The North Carolina Bicycle Facilities Planning and Design Guidelines*, 1994. NCDOT Division of Bicycle and Pedestrian Transportation.

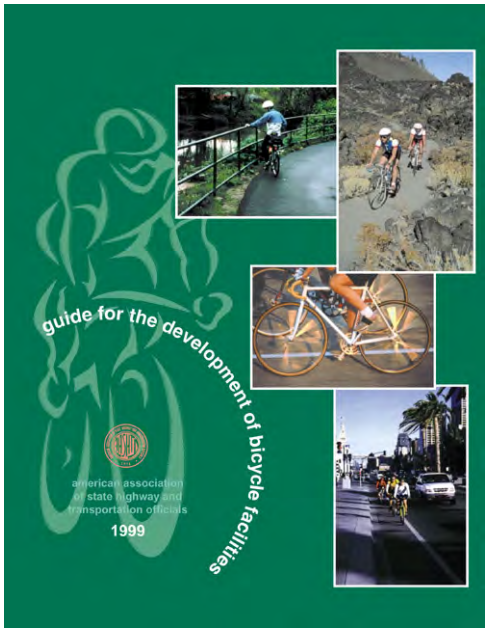

Figure 32. The AASHTO Guide for the Development of Bicycle Facilities

www.ncdot.org/transit/bicycle/projects/resources/projects_facilitydesign.html

- *Wisconsin Bicycle Facility Design Handbook*. 2004. Wisconsin Department of Transportation. www.dot.wisconsin.gov/projects/bike.htm
- *Florida Bicycle Facilities Planning and Design Handbook*. 1999. Florida Department of Transportation. www.dot.state.fl.us/safety/ped_bike/ped_bike_standards.htm#Florida%20Bike%20Handbook
- *Oregon Bicycle and Pedestrian Plan*. 1995 Oregon Department of Transportation. www.oregon.gov/ODOT/HWY/BIKEPED/planproc.shtml
- City of Portland (OR) *Bicycle Master Plan*. 1998. City of Portland (OR) Office of Transportation. www.portlandonline.com/shared/cfm/image.cfm?id=40414
- ITD Manual
- *Public Rights-of-Way Accessibility Guidelines* (PROWAG), 2007. United States Access Board, Washington, D.C. http://www.access-board.gov/PROWAC/alterations/guide.htm

Bicycle Facility Selection Criteria

The appropriate bicycle facility for any particular roadway whether new or existing should be primarily dictated by vehicle volume and speed of the roadway. However, there are no 'hard and fast' rules for determining the most appropriate type of facility for a particular location; engineering judgment and planning skills are critical elements of this decision.

A study by the Pedestrian and Bicycle Information Center and Highway Safety Research Center at the University of North Carolina surveyed the various requirements available and provided a best practices approach for providing bicycle facilities. Figure 33 shows a summary of their results, combining bikeway dimension standards for ten different communities in North America.

Average daily traffic (ADT) is presented along the left side of the figure and along the bottom is the speed of travel lane. The different colors represent the type of bikeway facility prescribed given the volume and speed of the travel lane. Depending on the speed and volume characteristics of the roadway, this table indicates the level of separation required for bicycle travel. However, the graphic accounts for only bike lane/shoulders, wide lanes, and normal lanes, which does not cover the range of bikeway facility types currently used throughout the country. Cycle tracks, shared lane markings, and bicycle boulevards are frequently used, and bike lanes can be improved through coloration, buffering, or additional striping.

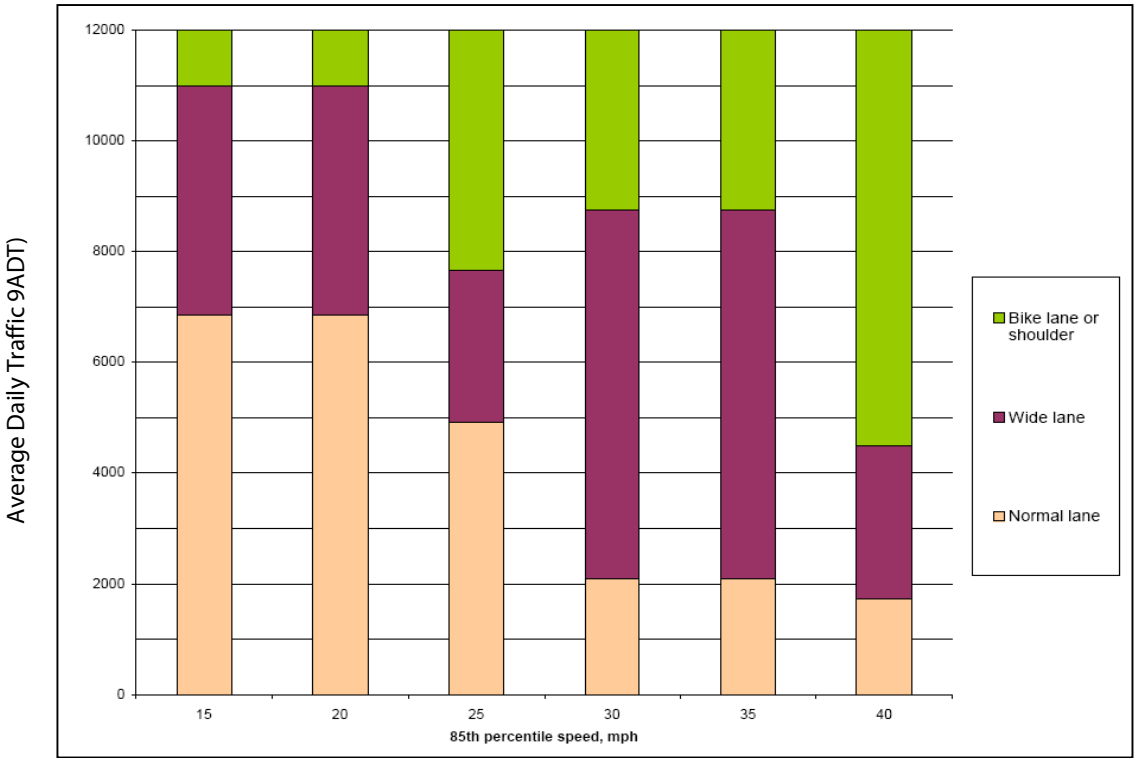

Figure 33.Bicycle Facility Selection Based on Roadway Speeds and Volumes
Source: Michael King for the UNC-HSRC Pedestrian and Bicycle Information Center

Factors that would increase the need for bike lanes, rather than shoulder bikeways, are shown in Table 17.

Table 17. Factors that Affect the Use of Bike Lanes or Shoulder Bikeways

Increases Need for Bike Lanes	Decreases Need for Bike Lanes
1. Land Use indicators	
Suburban	Urban Center, CBD
Buildings set back from roadway (parking lots front street)	Buildings at back of sidewalk
Long block length	On Street Parking
2. Traffic speed/volume indicators	
Signal coordination timed at higher than posted speeds	Signal coordination timed at lower than posted speeds
Peak Hourly Traffic Volume > 10%	
3. Roadway characteristics	
Wide roadway / multiple travel lanes	Steep grades: downhill
Steep grades: uphill	
4. Bicycling demand indicators	
Popular Route to School	
Provides continuity of bike lanes, routing or trail	

Source: *Oregon Bicycle and Pedestrian Plan, 2008 Draft Update*

Matrix of Best Practices

The following section presents a series of matrixes that outline best practices related to bicycle and pedestrian facility standards and related facilities and design guidelines. These are intended to be developed into actual guidelines by Clark County staff in coordination with the Bicycle and Pedestrian Advisory Committee and individual jurisdictions.

Pedestrian Design Program

Table 18. Sidewalk Issues

Issue	Solution	Source/Example
Sidewalk Obstructions		
Structural obstructions	Place obstructions between sidewalk and roadway to create a buffer	Can include sign posts, utility and signal poles, mailboxes, fire hydrants and street furniture
Parked vehicles overhanging sidewalk	Place wheelstops in parking area	
Sidewalks not feasible/appropriate (due to site conditions, e.g. trees, walls, hillsides etc.)	Soft Paths Colored Shoulders Install a retaining wall along a hillside	
Street Corners		
Cluttered/low visibility street corner	Define an Obstruction-Free Area "No Private Use" Area	Prohibit private temporary uses including street vendors, sidewalk cafes, A-boards, newspaper vending machines, 1.5 m (5'-0") back from extension of property line
Inadequate Pedestrian Area at Street Corners	Reduce the curb radius Use a lane for parking or bicycles that reduces the "effective" curb radius	
Cost/operational conditions preclude the use of perpendicular curb ramps	Construct diagonal Curb Ramps	

Table 19. Pedestrian Crossing Issues

Issue	Solution	Source/Example
Accessibility		
Sidewalk inaccessible from the roadway level of the crosswalk	Curb Ramps	
Wheelchair has difficulty accessing curb ramp	Perpendicular Curb Ramps	
Visually-impaired pedestrian entering the street or intersection	Tactile warnings (Truncated Domes)	Complex intersections, roundabouts, wide intersections, open plazas are areas where raised tactile devices could be considered
Visually-impaired pedestrian entering the street or intersection	Grooves	Indentations at the top of curb ramps that can be detected by canes in contact with the sidewalk.
	Audible Pedestrian Traffic Signals	
	Crosswalk Pavement Markings	
Safety/Visibility		
Parked cars blocking sightlines	Parking control	
Vehicles entering the pedestrian right of way	Safety Barrels and Bollards	
Pedestrians difficult to see at a crossing	Curb Extensions	
Not clear where pedestrians should cross traffic	Crosswalk Pavement Markings	
Motorists not yielding at crosswalk	Crosswalk Pavement Markings	
	Raised Crosswalk	
	In-Street Yield to Pedestrian Signs	
	In-Pavement Crosswalk Lights	
	Flashing Yellow Beacons	
Mid-Block Crossings		
High pedestrian volume at a mid-block location	Pedestrian-activated pedestrian-only traffic control signal	Manual on Uniform Traffic Control Devices (4C-5)
Pedestrians crossing mid-block	Median Refuge Island	
	Mid-block Crosswalk	Always indicated with pavement markings and warning signs
	Pelican Signal	Pedestrian Light Control Activated crossing
	Puffin Signal	Pedestrian User Friendly Intelligent
	Hawk Signal	High-Intensity Activated Crosswalk

Issue	Solution	Source/Example
Dangerous Intersections		
Long crossing distance for pedestrians	Curb Extensions Median Refuge Island Porkchop Refuge Island Pedestrian Countdown Signals	Use with right turn slip lanes, modern roundabouts, "T" intersections between right-turning and left-turning travel lanes, etc.
Especially dangerous pedestrian crossing	Grade separated crossing No pedestrian crossing	Examples include crossing freeway /waterway
Conflicting movements of pedestrians and vehicles	Leading Pedestrian Interval	Dedicated pedestrian-only phase of the signal
Vehicles encroaching into pedestrian crossing area	Stop and Yield Lines	
School-Zone Crossings		
Need for increased safety	School Zone Yellow Crosswalks Flashing Yellow Beacons Grade-Separated Overcrossings	
Other Pedestrian Crossing Issues		
Infrequent pedestrian crossings at a signalized intersection	Pedestrian Push Buttons	
High volume of pedestrians	Pedestrian Countdown Signals	
Grade changes from a pedestrian path	Raised Crosswalk or Raised Intersection	
Lack of information during pedestrian signal phase	Pedestrian Signal Indication ("Ped Head")	
Long pedestrian delay at crosswalk	Adjust signals at nearby intersections Lighted call button to reassure pedestrians their call has been received	

Table 20. Bike Lanes

Issue	Solution	Source/Example
Installing Bike Lanes		
Insufficient space to stripe bike lanes on both sides of the street	Uphill bike lanes - lanes added to uphill side only	Portland, OR, Seattle, WA, and Madison, WI
Inadequate space for bike lanes	Shoulder Widening	Most feasible on streets lacking adjacent curbs or corridors with limited development immediately adjacent to the street.
	Reducing Travel Lane or On-Street Parking Lane Widths	Prior to implementing this measure, conduct a traffic analysis to identify overall transportation impacts, including transit and emergency vehicle circulation issues.
	Road Diet	Removing Travel Lanes: SF(Valencia Street), Santa Monica (Main St)
	Removing On-Street Parking	gauge demand with study
	Wide Curb Lanes	In addition to adjacent vehicle traffic, curb gutter pans, raised reflectors and drainage grates influence the usable width for bicyclists. Wide curb lanes should be at least 14 feet wide but no wider than 16 feet. They are less desirable due to motorists passing bicyclists in the same travel lane.
	Shared Lane Markings ("Sharrows")	San Francisco, CA, Denver, CO, Paris, France, Gainesville, FL
Peak hour parking restrictions prevent bike lanes on arterials	Floating or Off-Peak Bicycle Lanes	Designates a single lane (14-16 feet wide) to function as a parking lane, a designated bike lane, and then both, depending on the time of day. E.g. San Francisco, CA (Embarcadero)
Bike Lane Conflicts		
Transition from a left side bike lane to a right side bike lane.	Bike Box	Eugene, OR, Cambridge, MA, European cities
	Two Bike Lane Transition Option	Portland, OR
Allowing bicycles to access a bicycle boulevard or a designated bike route	Bike-Only Left-Turn Pockets: Scenario 1	Portland, OR
Direct access needed to a key destination	Contraflow Bicycle Lanes	Portland, OR, Madison, WI, San Francisco, CA and Cambridge, MA
Infrequent driveways on the bike lane side	Contraflow Bicycle Lanes	Portland, OR, Madison, WI, San Francisco, CA and Cambridge, MA
Conflicts with parked cars	Minimize parking lane width.	Research suggests that vehicles park closer to the curb in narrower parking lanes. Parking lanes can be reduced to 2.1 m (7 ft), and in some cases, to 1.9 m (6.5 ft).
	Marked parking spaces with cross hatches	indicating the parking lane limits may help guide drivers closer to the curb

Issue	Solution	Source/Example
	Bike route stencils	Educate drivers on narrow roadways with on-street parking to expect bicyclists in travel lane.
Conflicts with parked cars	Avoid angled parking	Require back-in parking; e.g. Seattle, WA
	Shared Lane Markings ("Sharrows")	Treatment to ensure that bicyclists ride outside of the "door zone" of parked cars
	Diagonal Striping Buffer	Minneapolis, MN
Parked cars "dooring" bicyclists	Left Side Bike Lanes (on one-way streets)	
Cars driving in bicycle lanes	Raised Bike Lanes	The height of the raise should not be substantial, and the edge should be clearly marked and gradual, to prevent accidents
	Additional striping treatments	To minimize confusion and clearly depict the lane for bicycle travel
Motor vehicle and bicycle conflict points	Colored Bike Lanes	
Desire to separate bicycles from pedestrians and motorists	One-way Bike Paths (Cycle Tracks)	Work best along roadways with few street and driveway intersections (minimizing occurrences of parked or standing vehicles blocking the bikeway), when adequate intersection treatments exist to address bicyclist/motorist conflicts,
	Optimize low volume streets .for bicycles	Bicycle Boulevards

Table 21. Bicycle Boulevards

Issue	Solution	Source/Example
Installing Bicycle Boulevards		
High volume of bike and auto traffic	"Share the road" warning signage	
Cyclists or motorists unaware that a street is a bicycle boulevard	Directional Pavement Markings Wayfinding signage	Portland, OR Signage
Frequency of stop signs limits ease of use	Place stop signs on cross-streets approaching a bicycle boulevard.	This treatment should be used judiciously to minimize the potential for increasing vehicle speeds on the bicycle boulevard.
Bicycle Boulevard Crossings		
Bicycle boulevard crossing signalized intersection	In-pavement bicycle loop detectors, with a bicycle stencil indicating where the cyclist should place their bike. Bicyclist activation buttons	
Bicycle boulevard crossing a major street at an unsignalized intersection	Half Signals Medians/Refuge Islands	Include pedestrian and bicycle activation buttons, bicycle loop detectors Can be used to simplify bicyclist and pedestrian crossings on major street.

Table 22. Crossing/Intersection Issues

Issue	Solution	Source/Example
Left Turns		
Difficult left turn movement	Bicycle Boxes Bicycle Left-turn Pocket Lane	Cambridge, MA, Portland and Eugene, OR Standard-width bicycle lane adjacent to the left-hand turn lane in order to reduce conflicts with turning vehicles. The Bicyclists Merging sign may be placed on the right side of the road before the left-side turn pocket. Potential applications include low-moderate speeds, on lower volume arterials and collectors, and heavy vehicular left-hand turning movements. e.g. San Francisco, CA and Flagstaff, AZ
High demand for bicycle left turn movements	Left Side Bike Lanes (on one-way streets)	Sacramento, San Francisco Minneapolis, Madison, Wisconsin and New York City
Bike lane or route jogs across a large street	Mid-Block Bicycle Turning Lane	

Issue	Solution	Source/Example
Crossing Right-Turn Lane		
Cars making a right hand turn at an intersection not seeing cyclists	Bicycle Boxes	Cambridge, MA, Portland and Eugene, OR
Bike lane crossing a right-turn-only lane	Drop all delineation of the bike lane at the approach of the right-turn lane	
	Shared bicycle/right-turn lane, with the bike lane to the left of the right-hand turn lane	San Francisco, Eugene, Oregon, and Kona, Hawaii
Double right-turn lanes	Shared Bicycle/ Double Right-Turn Lane, with the bike lane to the left of the right-hand turn lane, coloration optional.	Uses pavement markings and signage to encourage bicyclists to maneuver away from curb lane and into through/right-turn lane. Portland, OR places blue bike lane between the curb lane and second right-turn lane, and continues the blue bike lane through the intersection conflict area.
Lane merging from the right	The bike lane should turn and encourage the cyclist to cross at an angle, minimizing their exposure.	
Other Bicyclist Crossing Issues		
Complex intersection	Bike Lane through a Complex Intersection	Paris, France
Railroad crossings	90-degree crossings	Prevent the wheels of bicycles, wheelchairs, strollers and other devices from becoming trapped in the flangeway.
	Additional shoulder width	Enables a cyclist to cross at a safer angle. train speeds are low,
	Commercially-available compressible flangeway fillers	Where train speeds are low and other treatments are not feasible
Need for increased visibility of cyclists at busy intersection	Bicycle Boxes	Cambridge, MA, Portland, OR and Eugene, OR
Cyclist Safety Considerations		
Rumble strips endangering cyclists	Shoulder rumble strips should not be used	
Bicyclists breathing exhaust at intersection	Bicycle Boxes	
Drivers unaware of cyclists	Signage	
Providing for bikes in rural areas	Shoulder bikeways	Paved roadways with striped shoulders wide enough for bicycle travel, shoulder bikeways often, but not always, include signage alerting motorists to expect bicycle travel along the roadway.

Table 23. Safety Design Guidelines

Issue	Solution	Source/Example
High traffic speeds	Chicanes	A series of curb extensions or narrowings that create an S-shaped route, causing traffic to slow down; e.g. Milvia Street in North Berkeley
	Speed Humps	SE Lincoln Street in Portland
	Traffic Calming Circles	SE Lincoln Street in Portland
	Curb Extensions	Create a visual "pinch point" for approaching motorists. Curb extensions should be designed with sufficient radii to accommodate the turning movements of snow plows, school buses and emergency vehicles.
	Medians/Refuge Islands	Create a visual "pinch point" for approaching motorists.
	Mini Traffic Circles	Raised or delineated islands placed at intersections, reducing vehicle speeds through tighter turning radii and narrowed vehicle travel lanes. Mini traffic circles can also include a paved apron to accommodate the turning radii of larger vehicles like fire trucks or school buses.
	Speed Humps	Bike
	Speed Feedback Signs	Set to activate only during select times of day, such as during a school commuter period, to maximize effectiveness
Shared bikeway with high auto traffic volume	Warning Signs	Should advise motorists to the presence of cyclists.
Want to discourage through vehicle travel on a street when a parallel through route exists	Speed Humps	
	Choker Entrances	Intersection curb extensions or raised islands allowing full bicycle passage while restricting vehicle access to and from a bicycle boulevard.
	Traffic Diverters	Similar to choker entrances, traffic diverters are raised features directing vehicle traffic off the bicycle boulevard while permitting through bicycle travel.
	Street Closures/Diverters	

Table 24. Bicycle Parking Design Guidelines

Issue	Solution	Source/Example
Accommodating visitors, customers, messengers and others expected to depart within two hours	Short-term bicycle parking	Should be at least 6' by 2.5' with 7' overhead clearance, and securely anchored to the surface or structure.
Accommodating employees, students, residents, commuters, and others expected to park more than two hours	Long-Term Bicycle Parking	This parking is to be provided in a secure, weather-protected manner and location. Examples include lockers, check-in facilities, monitored parking, restricted access parking, and personal storage.
No sidewalk space for racks	clustered racks in a car parking space	Should be protected by bollards or curbs
	racks installed on sidewalk curb extensions	where adequate sight distance can be provided
Bicycle rack visibility	minimum height of 33 inches	To increase visibility to pedestrians
	indicated or cordoned off by visible markers	To increase visibility to pedestrians
	signs at least 12 inches square	The sign should give the name, phone number, and location of the person in charge of the facility, where applicable.
	Lighting	Not less than one foot-candle illumination at ground level.
Frequency of Bike Racks	Two or more racks should be installed on each side of each block.	Popular retail areas. This does not eliminate the inclusion of requests from the public which do not fall in these areas. Areas officially designated or used as bicycle routes may warrant the consideration of more racks.
Accessibility	Curb Ramps	Where access is by sidewalk or walkway, curb ramps should be provided where appropriate and ADA compliant.
	Parking facilities intended for employees	Locate near employee entrance. Convenience should be balanced against the need for security if the employee entrance is not in a well traveled area.
	Parking facilities for customers or visitors	Locate near the main public entrances.
	Location of Bike Racks within Buildings	Provide bike racks within 50 feet of the entrance. Where a security guard is present, provide racks behind/within view of a security guard. Location should be outside the normal flow of pedestrian traffic.

Issue	Solution	Source/Example
	Location of Bike Racks near Transit Stops	To prevent bicyclists from locking bikes to bus stop poles, creating access problems for transit users, racks should be placed in close proximity to transit stops in locations where there is a demand for short-term bike parking.
Need for additional security	Surround clustered racks by a fence Place racks in a locked room Place racks within view or within 100' of attendant or security guard Place racks in a location that is visible from employee work areas. Place racks in an area that is monitored by a security camera	The attendant can often share this duty with other duties to reduce or eliminate the cost of labor being applied to the bike parking duties.
Old/Inadequate existing racks	Bike Rack Retrofit Program	Conduct bicycle parking audits to assess the bicycle parking availability and access and add additional bicycle racks where necessary. Use bicycle and pedestrian counters to track bicycle parking use.

Table 25. Trail Design Guidelines

Issue	Solution	Source/Example
Accessibility		
Improve access to a trail	Trailheads	Provide essential access to the trail system and include amenities like parking for vehicles and bicycles, restrooms (at major trailheads), and posted maps. A central information installation also helps users find their way and acknowledge the rules of the path. See Vancouver-Clark Parks Bicycle and Trail Plan and Vancouver Comprehensive Plan.
Provision of amenities on a path	Interpretive Installations	
	Water Fountains and Bicycle Parking	
	Pedestrian-Scale Lighting and Furniture	Providing benches at key rest areas and viewpoints encourages people of all ages to use the pathway by ensuring that they have a place to rest along the way.
	Maps and Signage	Informational kiosks with maps at trailheads and other pedestrian generators can provide enough information for someone to use the network with little introduction – perfect for areas with high out-of-area visitation rates as well as the local citizens.
	Art Installations	Many pathway art installations are functional as well as aesthetic, as they may provide places to sit and play on.
	Landscaping	Trees can provide shade from heat and also provide protection from rain.
	Restrooms	
Access Management		
Unwanted vehicle access on path	Utilize landscaping to define the corridor edge and path, including earth berms and large boulders.	
	Use bollards at intersections	
	Pass a motorized vehicle prohibited ordinance and sign the path.	
	Create a Path Watch Program and encourage citizens to photograph report illegal vehicle use of the corridor.	
	Lay the trail out with curves that allow bike/ped passage, but are uncomfortably tight for automobile passage.	

Issue	Solution	Source/Example
Trespassing on path	Clearly distinguish public path right-of-way from private property through the use of vegetative buffers and the use of good neighbor type fencing. Post path rules that encourage respect for private property.	
Private use of corridor	Attempt to negotiate win/win solutions with property owners. Eliminate where detrimental impact to path cannot be reasonably ameliorated.	
Crime		
Litter and dumping	Post path rules encouraging pack-it-in/pack-it-out etiquette. Place garbage receptacles at trailheads. Strategically-placed lighting, utilizing light shields to minimize unwanted light in adjacent homes. Manage vegetation within the right-of-way to allow good visual surveillance of the path from adjacent properties and from roadway/path intersections. Encourage local residents to report incidents as soon as they occur. Remove dumpsites as soon as possible.	
Crime	Manage vegetation so that corridor can be visually surveyed from adjacent streets and residences. Select shrubs that grow below 3 ft in height and trees that branch out greater than 6 ft in height. Place lights strategically and as necessary. Place benches and other path amenities at locations with good visual surveillance and high activity. Provide mileage markers at quarter-mile increments and clear directional signage for orientation. Create a "Path Watch Program" involving local residents. Proactive law enforcement. Utilize the corridor for mounted patrol training.	
Vandalism	Select benches, bollards, signage and other site amenities that are durable, low maintenance and vandal resistant. Respond through removal or replacement in rapid manner. Keep a photo record of all vandalism and turn over to local law enforcement.	

Issue	Solution	Source/Example
	Encourage local residents to report vandalism.	
	Create a Trail Watch Program; maintain good surveillance of the corridor.	
	Involve neighbors in path projects to build a sense of ownership.	
	Place amenities (benches, etc.) in well used and highly visible areas.	
Safety		
Safety on Path	The most effective and most visible deterrent to illegal activity on Clark County's path system will be the presence of legitimate path users. Getting as many "eyes on the corridor" as possible is a key deterrent to undesirable activity.	
	Provide good access to the path	
	Good visibility from adjacent neighbors	
	High level of maintenance	
	Programmed events	
	Community projects- Ideas for community projects include volunteer planting events, art projects, interpretive research projects, or even bridge building events. These community projects are the strongest means of creating a sense of ownership along the path that is perhaps the strongest single deterrent to undesirable activity along the path.	
	Encourage safe sharing of the path by multiple users by posting etiquette and behavior guidelines.	
	Adopt-a-Path Program	
	Path Watch Program	
Path crossing a street	Marked/Unsignalized Crossings	
	Route Users to Existing Signalized Intersection - perhaps with the use of loop detectors	
	Signalized/Controlled	
	Grade-separated crossings - Grade-separated crossings may be needed where existing bicycle/pedestrian crossings do not exist, where ADT exceeds 25,000 vehicles, and 85th percentile speeds exceed 45 MPH. Safety is a major concern with both overcrossings and undercrossings. In both cases, trail users may be temporarily out of sight from public view and may have poor visibility themselves.	
Trailhead safety	Clearly identify trailhead access areas.	

Issue	Solution	Source/Example
Maintenance		
Amenities	Trail inspections	Seasonal –beginning and end of summer
	Trail signage replacement	1-3 years
	Trail site furnishings; replace damaged components	As needed
	Trail fencing repair	Inspect monthly for holes and damage, repair immediately
	Trail pavement markings replacement	1-3 years
	Trail lighting repair	Annually
Pavement	Trail pavement sweeping/blowing	As needed; before high use season
	Trail pavement sealing; pothole repair	5-15 years
	Trail major damage response (fallen trees, flooding)	Schedule based on priorities
Landscaping	Trail introduced tree and shrub plantings, trimming	1-3 years
	Trail shrub/tree irrigation for introduced planting areas	Weekly during summer months until plants are established
	Trail shoulder plant trimming (weeds, trees, branches)	Twice a year; middle of growing season
Culverts	Trail culvert inspection	Before rainy season; after major storms
	Trail culvert inlet maintenance	Inspect before onset of wet season
	Trail waterbar maintenance (earthen trails)	Annually
Trash/graffiti	Trail trash disposal	Weekly during high use; twice monthly during low use
	Trail litter pick-up	Weekly during high use; twice monthly during low use
	Trail graffiti removal	Weekly; as needed
Other Trail Issues		
Privacy of property owners adjacent to path	Encourage the use of neighborhood friendly fencing and also planting of landscape buffers.	
	Clearly mark path access points.	
	Post path rules that encourage respect for private property.	
	Strategically placed lighting.	
Local on-street parking near a path	Post local residential streets as parking for local residents only to discourage path user parking. Place "no outlet" and "no parking" signs prior to path access points.	

Table 26. Maintenance and Street Closures Design Guidelines

Issue	Solution	Example
Traffic Diversion or street closures on sidewalks	Pedestrians should not be led into conflicts with work site vehicles, equipment, moving vehicles, or temporary construction signage.	
	Provide safe, accessible, convenient path for pedestrians	Should replicate as nearly as practical the most desirable characteristics of the existing sidewalk(s) or a footpath(s).
	Provide alternate circulation path	Should be parallel to the disrupted pedestrian access route, be located on the same side of the street, and accommodate the disabled. It should also include warning signage and a protective barricade if necessary.
Bike travel through construction zones	Efforts shall be made to re-create the bike lane to the left of the construction zone	The recommended minimum width of a bike lane in a construction zone is 5-feet.
	Provide standard wide travel lane through construction area	If insufficient space exists to provide a bike lane adjacent to the construction zone.
	Steel plating used in the roadway must have a non-skid surface.	
Construction Zone Signage	The following MUTCD signs should be used: W21-4A Road Work Ahead; W20-5 Right Lane Closed; W4-2 Lane Shift, Left Sign; W11-1 Bicycle Warning Sign; W16-1 Share The Road	
	Place signage where it does not obstruct the path of bicycles or pedestrians, including bicycle lanes, wide curb lanes, or sidewalks.	
	Sign may be placed at the edge of sidewalks	In areas where there are grades, so as not to encroach onto a bike lane facility
	Signage related to bicycle travel shall be included on all bikeways where construction activities occur.	Signage shall also be provided on all other roadways.
Cyclists riding in street to avoid debris in bike lane or shoulder	Establish a seasonal sweeping schedule that prioritizes roadways with major bicycle facilities and routes	
	Sweeping walkways and bikeways whenever there is an accumulation of debris on the facility	

Issue	Solution	Example
Cyclists riding in street to avoid debris in bike lane or shoulder	In curbed sections, sweepers should pick up debris; on open shoulders, debris can be swept onto gravel shoulders Paving gravel driveway approaches to reduce loose gravel on paved roadway shoulders Providing extra sweeping in the fall in areas where leaves accumulate in bike lanes	
Cyclists avoiding roads with uneven surfaces	On all routes identified in the Plan, the smallest possible chip should be used for chipsealing the bike lanes and shoulders On new construction, the finished surface of bikeways should not vary more than ¼ inch from the lower edge of an 8' long straight edge when laid on the surface in any direction. The surface of a roadway open to bicycle travel should be smooth, free of potholes, and the pavement edge uniform. Pavement shall be maintained so ridge buildup does not occur at the gutter-to-pavement transition or adjacent to railway crossings. Inspect the pavement 2-4 months after trenching construction activities are completed to ensure that excessive settlement did not occur.	
Trenching and plate use disrupting cycling	Steel plates used as a temporary measure during construction activities shall not have a vertical edge greater than ¼ inch without a temporary asphalt lip Consider using non-skid steel plates with no raised steel bar on top. Wherever possible, use in-laid steel plates that are flush with the surrounding pavement surface Steel plates shall be used only as a temporary measure during construction and shall not be used for extended periods of time.	To accommodate bicyclists riding over them. In order to minimize or eliminate the vertical transition between plates and the pavement for bicyclists.
Potholes and other uneven surfaces around gutters	Gutter-to-pavement transitions should have no more than a ¼ inch vertical transition.	

Issue	Solution	Example
disrupting cycling	Pavement transitions should be examined during every roadway project for new construction, maintenance activities, and construction project activities that occur in streets.	
Raised items on a roadway presenting a hazard to bicyclists	Require that all new drainage grates be bicycle-friendly.	These include grates that have horizontal slats on them so that bicycle tires do not fall through the vertical slats.
	Temporary correction of welding thin metal straps across the grates perpendicular to the drainage slots	(four to six inches apart, center-to-center spacing) should be considered is grate bicycle-unfriendly
	A program to inventory all existing drainage grates should be implemented.	Grates that are not bicycle-friendly should be replaced or reset countywide.
	Utility covers should be adjusted flush with the street surface	
	Raised pavement markings (e.g., reflectors and truncated domes) should not be used to delineate bicycle lanes	
Pavement overlay project disrupts cycling	Extend the overlay over the entire roadway surface to avoid leaving an abrupt edge	
	May be appropriate to stop at the shoulder or bike lane stripe, provided no abrupt ridge remains	If extending the overlay is not possible, and there is adequate shoulder or bike lane width
	After overlays, raise inlet grates, manhole and valve covers to within ¼ inch of the pavement surface	
	In curbed sections, maintain a 7 inch (min. 5 inch) curb exposure for pedestrian safety	
	Where the existing roadway surface is ground out, grind the entire surface	To avoid an exaggerated crown and a steep slope at crosswalks, creating difficulties for the disabled
	Pave gravel driveways and approaches 15 feet from the edge of pavement	To prevent gravel from spilling onto shoulders or bike lanes
	Sweep the project area after overlay.	
Regulatory and wayfinding signage maintenance	Check at beginning and end of summer for signs of vandalism, graffiti, or normal wear.	
	Signage should be replaced along the network on an as-needed basis.	Often 1-3 years

Issue	Solution	Example
	A regularly scheduled check on the status of signage should be performed with follow-up as necessary.	
Other regular maintenance	Fencing repair	Inspect monthly for holes and damage, repair immediately
	Pavement markings replacement	1-3 years
	Lighting repair	Annually
	Introduced tree and shrub plantings, trimming	1-3 years
	Shrub/tree irrigation for introduced planting areas	Weekly during summer months until plants are established
	Shoulder plant trimming (weeds, trees, branches)	Twice a year; middle of growing season
	Major damage response (fallen trees, washouts, flooding)	Schedule based on priorities
	Culvert inspection	Before rainy season; after major storms
	Maintaining culvert inlets	Inspect before onset of wet season
	Waterbar maintenance (earthen trails)	Annually
	Trash disposal	Weekly during high use; twice monthly during low use
	Litter pick-up	Weekly during high use; twice monthly during low use

Chapter 7. Education and Outreach Strategies

This chapter outlines the education and outreach strategies to encourage walking and bicycling in Clark County and its cities. It describes recommendations for potential encouragement, education and enforcement programs that have been successful in other communities.

Existing Education and Outreach Efforts

Education and Outreach programs in Clark County are designed to raise awareness of walking and bicycling; connecting current and future users to existing resources; educating them about their rights and responsibilities; and encourage residents to walk and bicycle more often. Key target audiences include drivers; current and potential (interested) cyclists and pedestrians; students, children and families; school personnel; and employees (through employer programs). While many of the recommended actions in this section are not directly under Clark County's purview, it is helpful for the County to recognize the importance of support programs for bicyclists and pedestrians. Education, encouragement and enforcement programs enable pedestrians and cyclists to safely and easily use the bicycle network.

Existing Clubs, Organizations, and Racing Teams

Several clubs have activities aimed at encouraging women riders and young racers. A few of these classes and rides are aimed at inexperienced riders, but most are designed for experienced road riders. For example, the Vancouver Bicycle Club holds several bicycle rides a week. Once a week they hold bicycle rides for women who are beginners at cycling.

Several of these clubs and organizations are based in Portland, Oregon, but also serve residents. Many organizations are available within Clark County that promote walking for health, transportation, and recreation. These advocacy groups can provide valuable support for education, encouragement, and enforcement programs targeting pedestrians.

Bicycling Organizations

- Clark County Bicycle Advisory Committee
- Bicycle Alliance of Washington: www.bicyclealliance.org/
- Bike Buddy Program: www.bicyclealliance.org/commute/bikebuddy.html
- Bicycle Transportation Alliance: www.bta4bikes.org/
- League of American Bicyclists: http://www.bikeleague.org/

- Bike Me!: http://bikemevancouver.blogspot.com/

Bicycling Clubs and Racing Teams

- Vancouver Bicycle Club: http://www.vancouverbicycleclub.com/
- Ride Around Clark County (RACC) annual ride
- North River Racing Team: http://www.northriverracing.com/
- Shift: http://www.shift2bikes.org/
- Portland Wheelmen Touring Club: http://www.pwtc.com/
- Clark College Bike Club: http://www.clark.edu/student_life/clubs/list.php

Figure 34. The Clark College Bicycle Club, circa 2009.

Pedestrian Organizations

- Volksmarchers/International Discovery Walk: http://www.discoverywalk.org/
- Vancouver-Clark Parks and Recreation: http://www.cityofvancouver.us/parks-recreation/index.asp
- Washington State Center for Safe Routes to School: http://www.saferoutes-wa.org/
- Friends of Clark County Active Transportation: http://www.clarkfriends.org/
- Transportation Choices: http://www.transportationchoices.org
- City of Vancouver Transportation Services: http://www.cityofvancouver.us/departments.asp?deptID=10431
- Feet First – http://www.feetfirst.org
- National Center for Safe Routes to School: http://www.saferoutesinfo.org/index.cfm
- America Walks: http://www.americawalks.org
- Feet First: http://feetfirst.info

Existing Resources

The City of Vancouver has a website devoted to bicycling, which provides information about Vancouver's designation as a Bronze-level Bicycle Friendly Community, as well as a Vancouver bike map and a Vancouver bicycle resource card, which has contact information for emergency and maintenance phone numbers, and transit information.[4] It also provides information about the bicycle planning and bicycle parking programs.

In addition, the Clark County Smart Commuter web site provides information about bicycling in the County, including tips for bicycle commuting such as appropriate gear, lighting, and route choice. Several

[4] http://www.cityofvancouver.us/bike.asp?menuid=10466&submenuid=23027

maps are available on this site, and it provides information about combining bicycle trips with transit in the County.

Other resources include the following:

- Clark County Bicycle Map: http://www.clark.wa.gov/public-works/bikepath/Bike2007.pdf
- Carpool Match NW: http://www.carpoolmatchnw.org/
- Bike & Bus and Bike & Lock...It's a travel combination that makes sense! http://www.c-tran.com/bike-friendly.html
- Wheel Options: http://wheeloptions.org/
- Drive Less. Save More. Website: http://www.drivelesssavemore.com/
- Washington State Ridesharing Organization: http://www.wsro.net/
- WSU Vancouver cougar trails map of jogging and paved trails through the campus: http://www.vancouver.wsu.edu/adm/fo/psafety/WSUV%20Campus%20Trail%20Map.pdf
- Clark County Walkaround Guide (published by Friends of Clark County Active Transportation)
- Walk There! 50 Treks in and Around Portland and Vancouver (published by Metro)
- Safe Routes to School: www.saferoutes-wa.org/
- C-TRAN: http://www.c-tran.com/

Program Recommendations

During the plan update process, staff reviewed 17 outreach programs used throughout the country and internationally to support walking and bicycling. The project advisory committee endorsed staff recommendations for priorities that would most benefit pedestrian and bicyclists in Clark County and encourage nonmotorized trips. Recommended programs include:

- Revising the Bicycle and Pedestrian Advisory Committee
- Create a School Education/Encouragement Program
- Establish 'Clarklovia' or Ride (and Walk) the Drive
- Develop an East County Scenic Tour
- Improve communications between Community Planning, Engineering, and Operations

These recommended programs are discussed in greater detail following.

Revising the Bicycle and Pedestrian Advisory Committee

Official Bicycle and Pedestrian Advisory Committees (BPAC) advise cities, counties and states on technical issues related to walking and bicycling. Clark County currently has a bicycle-only committee.

A BPAC usually is composed of citizen volunteers appointed by the mayor or council. In some jurisdictions, one committee is formed that considers bicycle, pedestrian and/or traffic safety issues. A bicycle/pedestrian advisory committee is a strategic body dedicated to understanding the specific needs and issues of bicycles and pedestrians. The committee comments on transportation planning policy from a unique perspective. The creation of an official committee will make decision makers immediately aware of the importance of bicycle and pedestrian issues

Common charges of BPACs include some or all of the following:

- Review and provide citizen input on capital project planning and design as it affects bicycling and walking (e.g., corridor plans, street improvement projects, signing or signal projects, and parking facilities)
- Review and comment on changes to zoning, development code, comprehensive plans, and other long-term planning and policy documents
- Participate in the development, implementation and evaluation of Bicycle and Pedestrian Master Plans and standards
- Provide a formal liaison between city government, staff, and the public
- Develop and monitor goals and indices related to walking and bicycling in the jurisdiction
- Promote bicycling and walking, including bicycle and pedestrian safety and education

Because BPAC members are volunteers, it is essential to have strong staffing supporting the committee in order for it to be successful. An agency staff person (ideally a Bicycle and Pedestrian Coordinator) should be formally assigned to the BPAC, and who should take charge of managing the application process, facilitating agendas and minutes, scheduling meetings, bringing agency issues to the BAC, and reporting back to the agency and governing body (such as Council) about the BAC's recommendations and findings.

Figure 35. Students participate in a walkabout to evaluate pedestrian conditions.

Create a School Education/Encouragement Program

Helping children walk and bicycle to school is good for children's health and can reduce congestion, traffic dangers and air pollution caused by parents driving children to school. Robust Walk Routes to School programs address all of the "Five E's" (Engineering, Education, Encouragement, Enforcement, and Evaluation).

Clark County should build on successful SR2S programs found at both Washington and Daybreak elementary and primary schools. The county should work with school districts to implement the first phase of a school education and encouragement program. This phase will use a walkabout (also known as a **bicycle and pedestrian audit**) to assess walking and biking conditions of streets adjacent to elementary schools. Parents, students, neighbors, and city planners and/or traffic engineers should be invited to join in the walkabout. Safety concerns, issues, and ideas should be recorded.

After the bicycle and pedestrian audit is conducted, **parent maps for each elementary school** showing recommended routes to reach school, along with high-traffic intersections and routes to avoid, should be produced and distributed.

As a final step, an **initial infrastructure improvement plan** should be produced for each elementary school, including cost estimates and a prioritized project list. This infrastructure improvement plan will serve as a blueprint for future investments, and can be used to apply for further grant funding.

The Portland Safer Routes to School Program is a model program that provides good resources on its website:
www.trans.ci.portland.or.us/saferoutes/

Figure 36. Portland's Sunday Parkways events draws cyclists of all ages and abilities.

Establish a 'Clarklovia' or Ride (and Walk) the Drive

The Ciclovia or Sunday Parkway is a great opportunity to engage residents of all ages by closing a loop of streets to cars so that people can bike, walk, run and skate in the streets without auto traffic. Many cities in the U.S. are establishing similar events as a way to promote health and activity, build community in neighborhoods, increase rates of bicycling and walking, raise awareness of the role of transportation in global warming, and for many other reasons. Communities from El Paso, Texas to Wayne County, Michigan are closing off sections of roadway to create temporary linear park spaces to promote walking and cycling.

Streets should be selected to create a seven- to ten-mile loop that links residential areas with scenic destinations. The County could use

the route developed for the Ride Around Clark County or County staff can explore options to partner with neighborhoods and schools to hold Ciclovias. Examples of successful Ciclovia/Sunday Parkway events include:

- Portland Sunday Parkways: portlandsundayparkways.com/
- New York City's Summer Streets: www.nyc.gov/html/dot/summerstreets/html/home/home.shtml
- Chicago's Open Streets: www.activetrans.org/openstreets
- Seattle Carfree Days: www.seattle.gov/transportation/carfreedays.htm

Develop an East County Scenic Tour

Clark County should identify a continuous loop through the East County area, which would provide a route for longer recreational rides. The County could include parts of the proposed Chelatchie Prairie Trail, as well as on-street portions, to focus bicycle and pedestrian improvements. The tour should be an on-going effort, with the County designating it through signage and pavement markings at key intersections, with the long-term goal of providing a continuous off-street facility to accommodate families and bicyclists less comfortable riding in traffic.

Improve Communications between Community Planning, Engineering, and Operations

In order to facilitate a focus on non-motorized transportation planning and projects, Clark County should convene a group of planners and staff from the Public Works department. The group would identify where streets could be re-striped to accommodate cyclists. Community Planning and Engineering should coordinate with Operations regarding where to re-stripe. The group should also coordinate with staff from the other jurisdictions, Vancouver-Clark Parks Department, C-TRAN, and the Washington Department of Transportation regarding bicycle and pedestrian infrastructure.

The group should meet quarterly to discuss projects related to bicycle and pedestrian planning in the county. The meetings should be open to staff at all jurisdictions in Clark County, and the group should provide support to jurisdictions interested in accommodating bicyclists and pedestrians through planning and construction efforts.

Chapter 8. Implementation Plan

Clark County's recommended pedestrian and bicycle system consists of a comprehensive network of sidewalks, on-street bikeways, shared-use paths, and various programmatic measures. This chapter proposes an implementation strategy that targets the best way to implement projects and programs under different funding scenarios.

Grant funding sources are identified on federal, state and local levels. Finally, the chapter closes with a discussion of supportive policies that can bolster and institutionalize the development of a high-quality walkway and bikeway network.

Implementation Strategies

Chapter 3 of this Plan presents a set of goals, policies, and actions for developing and bicycle and pedestrian network in the County, as well as encouraging walking and bicycling through supportive development and programs. The action items provide an overview of key strategies for encouraging development of bicycle and pedestrian infrastructure on a policy level. The implementation strategies presented below are targeted actions for the County and the Bicycle and Pedestrian Advisory Committee to focus their efforts on. These strategies are the first step toward implementing this Plan.

Strategy 1: Continue Funding Bicycle and Pedestrian Projects with the Capital Budget

As previously noted, the recommended infrastructure projects have been prioritized to identify projects which provide the highest benefits for the least cost. Therefore, Clark County undertake the following action items:

- Pursue implementation of high priority improvements first.
- Incorporate sidewalk and bicycle projects into upcoming public works projects, such as re-striping a street for bike lanes when it is repaved, regardless of the priority the bicycle or pedestrian project.
- Be prepared to work quickly when a fast-moving improvement project is identified (e.g., due to safety concerns, etc.) to integrate bicycle and pedestrian elements where possible.

Strategy 2: Leverage Local Funds to Pursue Grant Opportunities

It is important to recognize that bicycle and pedestrian projects are less likely to be completed if they rely exclusively on County Budget capital. In addition, County staff should undertake the following actions related to grant funding:

- Pursue grant funding and partnerships to provide the infrastructure and programmatic recommendations.
- If promising grant programs or partnership opportunities are identified, or construction of another roadway project makes construction of a lower priority project possible, then the County should pursue that project regardless of priority.
- Work with government agencies (such as Vancouver-Clark Parks Department) to leverage grant funding.

Strategy 3: Establish Public/Private Funding Opportunities and other Partnership Opportunities

Several opportunities exist to partner with schools, CTRAN, and other organizations to develop programs and implement construction projects in conjunction with development. Action items include:

- Ensure that identified pedestrian and bicycle facilities are constructed when development occurs, rather than utilizing County resources.
- Work with partner organizations to identify opportunities for public/private funding.
- Pursue partnerships with utilities for green streets.

Strategy 4: Work with the Bicycle and Pedestrian Committee to Pursue Funding Opportunities

As noted above, relying exclusively on County Road Fund is insufficient to develop the programs and infrastructure recommended in this Plan. The Bicycle and Pedestrian Committee (PBAC) made the following recommendations and statements:

- The PBAC will support any effort the County and cities make to establish a transportation benefit district if a portion of the funds from the district were dedicated to establishing a program for supporting non-motorized forms of transportation.
- Any Transportation Benefit District created should incorporate all municipalities in the County and that those municipalities should receive funding in proportion to their respective population sizes.

- The Committee will not support bicycle licensing fees or bicycle sales tax, nor any funding strategy that discourages bicycling and/or walking.

Strategy 5: Integrate Bicycle and Pedestrian Planning into Clark County's Planning Process

This plan presents a vision for the future of bicycling and walking in Clark County. To ensure that the vision is implemented, the Plan must become a living document that is incorporated into the day-to-day activities of planning, design, funding, construction, and maintenance in the community.

Action items include:

- Update the Bicycle and Pedestrian Plan as necessary, minimum of every five years.
- Require that all new road projects are reviewed in the planning phase by the Bicycle and Pedestrian Advisory Committee. Require all new road projects to be bicycle and pedestrian friendly.
- Ensure consideration for bicycle and pedestrian travel through construction zones.
- Require development projects to construct sidewalk on all streets, except as per Clark County's Arterial Atlas..
- Collaborate with other jurisdictions on bicycle and pedestrian projects when possible.
- Support the U.S. Department of Transportation's efforts to treat Bicycle and Pedestrian projects equally with projects for the automobile. The future Surface Transportation Act may include a proposed Metropolitan Mobility Program that could drastically change the way investments in transportation are made in the next transportation bill.

Strategy 6: Benchmark Bicycle and Pedestian Growth

In order to evaluate the impact of the County's Bicycle and Pedestrian Program, the County should track progress in development of the bicycle and pedestrian networks, as well as tracking the state of cycling and walking in the county. Actions include:

- Annually publish the amount of sidewalks and bike lanes constructed by Public Works. The list will be broken down by sidewalk and bike lane constructed as part of a road project, in addition to showing sidewalk and bike lane constructed as stand alone, "retrofitting" projects. This will help meet the benchmarking goal of this plan.

Figure 37. The National Bicycle and Pedestrian Documentation Project provides resources and guidance for counting bicyclists and pedestrians. Bikepedcocumentation.org

- Collect data regarding crashes involving bicyclists and pedestrians. This information will be drafted in an annual report on bicycling and walking in Clark County. Present the annual state of bicycling and walking in Clark County at an annual joint meeting between the Board of County Commissioners and the Bicycle and Pedestrian Advisory Committee.

Current Clark County Bicycle and Pedestrian Program Funding

Most bicycle facilities and sidewalks in the county result are developed in conjunction with capital road projects or private development projects. Most communities that construct bicycle facilities leverage local money as a match for outside funding sources. Capital road projects are funded by gas tax revenues augmented by multiple state and federal grants, including several SAFTEA-LU programs. County code also requires that development projects upgrade street frontage to current standards specified in the county Arterial Atlas.

Infill projects or "spot" improvements in the sidewalk network are filled in via the Sidewalk Infill Program, an ongoing program that is allocated County Road Fund money during annual updates to the county Transportation Improvement Program (TIP). The program was allocated approximately $200,000 in 2010, and is expected to receive a comparable amount in the future. An average of 19.6 miles of new walkway have been added to the county network each year as a result of these projects, as shown in Table 27. Some sidewalk projects may also be constructed with new park development.

Table 27. Clark County Sidewalk Network

Year	Jan 1 Miles	Miles Added
2009	471	N/A
2008	455	15.57
2007	436	18.34
2006	410	26.40
2005	392	18.25

Data from Mobility road log database via County Road Admin Board (CRAB)

Comparison of Spending on Bicycle and Pedestrian Facilities

Most construction of bicycle and pedestrian facilities is accomplished by including this construction in capital-funded road reconstruction projects. As a result, the relative funding for both types of facilities has been similar in recent years, as major arterials with both sidewalk and dedicated bike lanes are reconstructed to current standards.

Between 8% and 13% of capital road construction dollars has been expended adding bicycle lanes to projects. The range of annual expenditures for sidewalk projects has been 1% to 15% of total construction phase funding, as shown in Table 28.

Table 28. Pedestrian and Bicycle Construction Funding

Year	Bicycle Lane Project			Sidewalk Projects			Total Construction*	Total
	Capital†	Individual‡	Percent	Capital	Individual	Percent		
2010	$872,250	$ -	13%	$872,250	$994,000	15%	$6,609,000	28%
2009	$1,660,800	$ -	8%	$1,660,800	$260,000	1%	$21,043,000	9%
2008	$4,965,800	$ -	12%	$4,965,800	$500,00	1%	$40,096,000	14%
2007		$ -			$100,000			

* Total Construction: Annual sum of capital and stand alone projects including bike lanes and/or sidewalks.
† Capital: Percentage of road cross section dedicated to bike lanes or sidewalks multiplied by total cost of project including design, right-of-way and construction phases
‡ Individual: Projects not part of larger capital road construction.

Table 29. Sidewalk Infill Program

Year	Budget
2007	$150,000
2008	$350,000
2009	$200,000
2010	$450,000
2011	$650,000

Sidewalk Infill Program

Infill projects or "spot" improvements in the sidewalk network are filled in via an ongoing program that is allocated County Road Fund during annual updates to the county Transportation Improvement Program (TIP).

The Annual Sidewalk Program has been/is currently allocated the funding shown below, and reflects a Board of Clark County emphasis on increased sidewalk funding in 2008. Future funding levels shown are subject to change in future year TIP updates.

Sidewalk proposals for the infill program come from multiple sources including citizen requests. Proposals are evaluated for safety, proximity to destinations and connection to other transportation modes (i.e.: bus routes) among other factors. Projects with the highest scores undergo a detailed

examination including construction estimates to insure that the maximum number of most beneficial projects is constructed each year.

Cost Examples:

Full Bikeway Treatment on 7.7 miles of county is approximately $6,600.

Table 30. Bikeway Treatments

Travel Direction	Feet	Miles	Treatment	Number	Cost
Northbound	20.221	3.8	Striping		$574
			Bicycle Lane Symbols	10.1	$1,365
			Signs	10.1	$1,365
			Total	20.2	$3,304
Southbound	20,221	3.8	Striping		$574
			Bike Lane Symbols	10.1	$1,365
			Signs	10.1	$1,365
			Total	20.2	$3,304
Northbound & Southbound			Striping		$1,149
			Bike Lane Symbols	20.2	$2,730
			Signs	20.2	$2,730
			Total	40.4	$6,609

Source: Clark County Public Works

Sidewalk construction for one mile of sidewalk is about $125.00 per foot, or $660,000 based on the 2008 Pedestrian / Bicycle construction funding ($500,000) and added sidewalk (15.57 miles) as shown above. This estimate includes developer-paid and other walkways that were added at no cost to the County.

Potential Funding Sources

The project advisory committees reviewed many funding sources that have been used or proposed for bicycle and pedestrian improvements and maintenance. These sources are listed in Appendix F. The Bicycle and Pedestrian Advisory Committee (BPAC) recommended that Clark County consider instituting a dedicated source of funding for bicycle and pedestrian projects. The BPAC will support any efforts the cities and County make to establish a transportation benefit district, if a portion of the funds from this district were dedicated to establishing a program for supporting non-motorized forms of transportation.

The BPAC also agreed that, if this non-motorized fund were established, some of the fund could be used for grant matching money. The committee recommended that any Transportation Benefit District created should

incorporate all municipalities in the County and that those municipalities should receive funding in proportion to their respective population sizes.

In addition, the BPAC will work to establish funding partnerships with private businesses and also to establish a voluntary fund to support bicycle programs.

Funding Implementation – Transportation Benefit District

Several of the potential funding sources would require the development of a Transportation Benefit District (TBD). A TBD is a quasi-municipal corporation and independent taxing district created for the sole purpose of acquiring, constructing, improving, providing, and funding transportation improvements within the district. The legislative authority of a county or city creates a TBD by ordinance following the procedures set forth in RCW Chapter 36.73. The county may form inter-local agreements to include other counties, cities, port districts, or transit districts.

The County would be required to develop a plan that specifies the transportation improvements to be provided or funded by the TBD. As part of this plan, the TBD's governing board can indicate if the funds will be used immediately, or if they will be collected for a specified period. Typically, funds that are collected for a specified period before being expended are used to fully fund large projects, when bonding, or serve as a match for state or federal funds that may only become available in a specified time frame.

A TBD can fund any transportation improvement contained in any existing state or regional transportation plan that is necessitated by existing or reasonably foreseeable congestion levels. This can include maintenance and improvements to city streets, county roads, state highways, investments in high capacity transportation, public transportation, transportation demand management and other transportation projects identified in a regional transportation planning organization plan or state plan. TBD's have several revenue options subject to voter approval:

1. Property taxes – a 1-year excess levy or an excess levy for capital purposes;
2. Up to 0.2% sales and use tax;
3. Up to $100 annual vehicle fee per vehicle registered in the district; and
4. Vehicle tolls.

TBD's have two revenue options not subject to voter approval, but subject to additional conditions:

1. Annual vehicle fee up to $20. This fee is collected at the time of vehicle renewal and cannot be used to fund passenger only ferry-service improvements.
2. Transportation impact fees on commercial and industrial buildings. Residential buildings are excluded.

In addition, the county must provide a credit for a commercial or industrial transportation impact if the county has already imposed a transportation impact fee. The boundaries of a TBD must be countywide, or citywide if the TBD chooses to exercise the tax authority that does not require a public vote (e.g. vehicle and impact fees).

Local Funding Options Considered

The Bicycle and Pedestrian Advisory Committee considered a range of local funding options. Table 31 is a summary of the benefits and drawbacks of these options. Additional information on these opportunities is provided in Appendix F.

- A **Local Option Gas Tax** uses an efficient collection system that already is in place and would divert a very high percentage of revenue collected to projects. The local maximum is $0.034/gallon and would require a vote.
- **Vehicle Licensing Fees** are collected when owners register their vehicles. Clark County could form a TBD to charge a local fee above the $43.73 currently charged, $3 of which goes to the County.
- A **Commercial Parking Tax** may be imposed by a county on unincorporated areas on and may be applied to the gross commercial parking proceeds or number of parking spaces offered to tenants or patrons.
- A **fee-in-lieu** of a tax could be charged for the privilege of parking a motor vehicle in a facility operated by a commercial parking business. The fee would be in the form of a flat charge added to a vendor's parking charge. This option was determined to be infeasible in Clark County as no significant parking facility exists.
- **Street User Maintenance Fees/Transportation Utility Fees** are collected to offset the impact that various land uses such as industrial uses with heavy trucks have on the road system; a proxy measure (e.g. average daily trip measures) is used to determine an impact rate and assess the fee.
- **Utility Taxes** apply to gross revenue generated by the utility in exchange for the privilege of using public rights of way for extending services to customers. The tax may be imposed on all entities that use public rights of way to deliver services to customers, whether they are municipal or private utilities.

- A portion of the existing **Local Sales Tax** could be used to improve pedestrian and bicycle infrastructure.
- A **Bike Tax** would apply to the sale of all new bicycles sold within the county with proceeds dedicated to improving bicycle infrastructure.
- A **Bicycle Licensing Fee** would charge a fee for riding in the county. Registration fees tend to deter bicycling and are difficult to enforce, particularly with cyclists coming from other jurisdictions. In addition, registration fees seldom provide more revenue than they cost. [5]
- **Property Tax Levy/Local Ad Valorem Measures** assess a tax rate on the value of real and personal property. Currently, the largest source of money for roadways in Clark County is from property taxes – the owner of a $200,000 home pays $311 per year in road taxes.[6] Given the relatively small cost of bike and pedestrian system improvements in comparison the County's overall budget or total transportation budget, and the ability to phase construction of these improvements, a debt-free approach may have more appeal with voters.
- **Local Improvement Districts** (LIDs) are most often used by cities to construct localized projects such as streets, sidewalks or bikeways. Through the LID process, the costs of local improvements are generally spread out among a group of property owners within a specified area. The cost can be allocated based on property frontage or other methods such as traffic trip generation.

[5] The city manager in Tucson, Arizona found that, for a $10 bicycle registration fee, the cost of implementation would be higher than the revenue generated. streetsblog.net/2010/03/24/revisiting-the-idea-of-a-bicycle-tax/

[6] www.columbian.com/news/2010/jun/16/mielke-urges-higher-vehicle-fees-to-fund-road-proj/

Table 31. Summary of Funding Options

Financing Mechanism	Advantages	Disadvantages	Actions Needed to Implement
Local Fuel Tax	• Collection system is in place • Significant potential revenue • Low implementation and overhead costs • Can be enacted by County	• Significant effort to enact	• Adoption by County • Coordination with other entities, if desired • Amendment of regional plans • Possible voter approval
Vehicle License Fee	• Can be enacted by County • Significant potential revenue • No voter approval required for lower fee ($20)	• Voter approval required for higher fee ($100)	• Preparation of fee calculations, collection mechanism • Adoption by County
Commercial Parking Tax Authority	• No state or voter approval required • Significant potential revenue	• Potential equity concerns associated with fee • Implementation and monitoring costs could be high	• Establish basis for fee or tax, including dedication to bike/ped facilities • Adopt by local ordinance
Street User/Maintenance Fee	• Could collect through existing billing systems	• Potential equity issues • Revenue potential lower than other tools	• Establish basis for fee and dedication requirements • Adopt by ordinance
Utility Tax - Electricity, Natural Gas & Telephone	• Would be an expansion of an existing fee • Good revenue potential for modest fee increase	• Potentially harder to dedicate proceeds to specific purpose • Will require voter approval	• Establish basis for fee and dedication requirements • Adopt by ordinance
Local Sales Tax (0.2%)	• Significant revenue potential depending on how much dedicated to bike/ped projects	• No voter approval required if applied for less than 10 years • Linkage between source and use of tax is tenuous	• Gauge public support
Bicycle Sales Tax ($5)	• Clear nexus between who pays and who benefits	• Collection and enforcement costs vary, often leaving little tax revenue for improvements • May result in bike sale shifting to adjacent jurisdictions	• Inventory bike sales outlets to better assess the collection/enforcement costs • Research existing ordinances • Gauge public support
Property Tax Levy	• Significant revenue potential	• Voter approval	• Gauge public support
Local Bond Measures	• Significant revenue potential	• Voter approval	• Gauge public support
Local Improvement Districts (LID)	• May permit non-ad valorem basis for assessing the tax	• Time consuming and expensive to administer • Legality questionable • Voter approval	• Gauge public support

Table 32. ***Potential Local Funding Sources***

Potential Funding Source	New Authority Required	Commission Approval Required	Voter Approval Req'd	State Approval Req'd	Potential Funding Amount
Vehicle License Fee Up to $20	Transportation Benefit District	Yes	No	No	Up to $3.5 million annually *(1)
Vehicle License Fee $20 to $100	Transportation Benefit District	Yes	Yes	No	Up to $17.5 million annually *(1)
Commercial Parking Tax Authority	None	Yes	No	No	$230,000+ annually *(8)
Street User/Maintenance Fee	None	Yes	No	No	$380,000 annually *(7)
Utility Tax -Electricity, Natural Gas & Telephone	None	Yes	Yes *(6)	No	$3.7+ million annually per 1% tax *(9)
Local Sales Tax (0.2%)	Transportation Benefit District	Yes	No *(4)	No	Max. of $8.2 million annually *(5)
Property Tax Levy	None	Yes	Yes	No	Variable
Bicycle Sales Tax ($5)	None	Yes	No	No	$130,000 annually *(2)
Local Bond Measures	None	Yes	Yes	No	Variable
Local Improvement Districts (LID)	Local Improvement District	Yes	No	No	$4 million one-time assessment *(3)

Notes:

**(1) Figure from Thayer Rorabraugh, as quoted in The Columbian on June 16, 2010. Projected revenue and number of vehicles registered in city may decline if vehicle owners begin registering vehicles in neighboring areas to avoid fees.*

**(2) Assumes $5 tax per bicycle sold. Assumes rate of bicycles sold per capita in Clark County is same as national rate.*

**(3) Example amount from Broadway Street LID in Tacoma, WA. Total project cost was $12 million, $3,915,000 of which was generated by property tax assessment. Actual revenue will vary by project.*

**(4) Tax may be imposed for ten years without voter approval. After ten years, voter approval is required to extend the tax by a maximum length of ten years.*

**(5) Maximum allowable rate is 0.2%. Rough estimate based on 2009 taxable sales of $4.1B in Clark County from Washington Department of Revenue; sales tax revenues will vary year to year.*

**(6) Use tax may be imposed up to a rate of 6% without voter approval. Voter approval is required for any rate exceeding 6%. Clark County's tax rate is currently at the 6% maximum for all utilities, so any further increase would require voter approval.*

**(7) Assessed through water bill. Rough estimate uses proposed Portland, OR 2007 street user fee as example rate ($4.50/household/year); uses $250/year as example business rate. Assessed business rate could vary based on estimated street use/impact per business. Estimated revenues are for Clark County Public Utilities customer base ONLY (approximately 30,000 household and businesses). Additional water utilities within incorporated areas of Clark County must be calculated separately.*

**(8) Assumes 10% tax on total revenue. Estimate applies to Vancouver Municipal Parking Garages ONLY. Figures for privately-owned lots and other locations in Clark County were unavailable. Estimate assumes minimum annual revenue of $1,800 per stall.*

**(9) Assumes utility customer base of 172,000 households.*

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Appendix A. Public Outreach Comments

The Clark County Bicycle and Pedestrian Master Plan process involved several open houses in 2009 and 2010. Table 33 and Table 34 show the written comments received from the open houses in 2010. Figure 38 is a map that was provided as public comment in July 2010. Map 6 and Map 7 show the responses from the open houses in 2009, where respondents were asked to mark preferred bicycling routes and to identify difficult intersections. Table 35 following is a comprehensive list of the comments received on the two draft plans. The comments from the open houses were incorporated into this list, which was used to develop the final plan.

Table 33 July 2010 Open House Comments

Name	Comment
None given.	Bike tax: Most buy in Portland now. This will drive more retail away. Update maps: 152nd from Ward to 159th should be in RED - very unsafe road to bike. 172nd should be marked safe alternative. Bike lane should not dump people in the middle of a high traffic area without an alternative route. Make Padden as a road with bike lane on 1 side! UBC helped? They ride many roads not marked as safe.
None given.	Safe bike route to Lewisville Park from Battle Ground.
Ken Burgstahler, WSDOT	The list of top projects displayed at the Battle Ground Open House included a multi-use trail on SR 503 from NE 199th Street (aka Eaton Blvd) to Caples Road (NE 149th Street). There is an existing multi-use path along the entire length of this portion of SR 503. It is along the east side of the highway.
Ken Burgstahler, WSDOT	A suggestion has been made to provide some sort of bike lane or path along the east side of SR 503 from approx. NE 122nd St., near Winco, to NE 149th Street/Caples Road, connecting with the existing multi –use path, described above. There are a number of concerns with this. This portion of SR 503 currently is curbed with an attached sidewalk on both sides. We can't stripe a bike lane within the existing roadway section, because we can't narrow the lanes. Constructing a multi-use path along the east side of the highway would be difficult. There are right-of-way constraints along much of this area. Many of the houses and appurtenances are close to the highway, and a multi-use path would essentially go through front yards. The path would cross several driveways, creating conflict points with vehicles entering and leaving the highway. There numerous utilities in this area, including a concrete-encased fiber optic line, that has been found to be close to the surface, and very expensive to move.

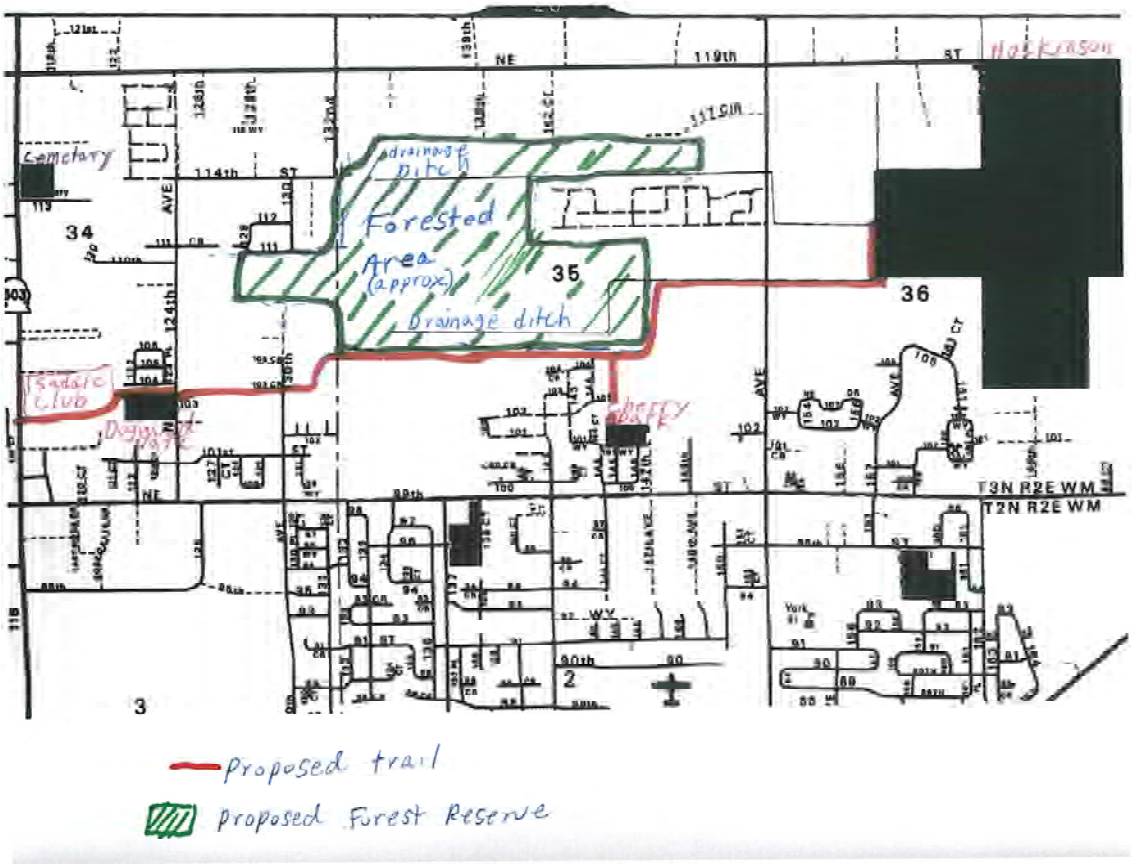
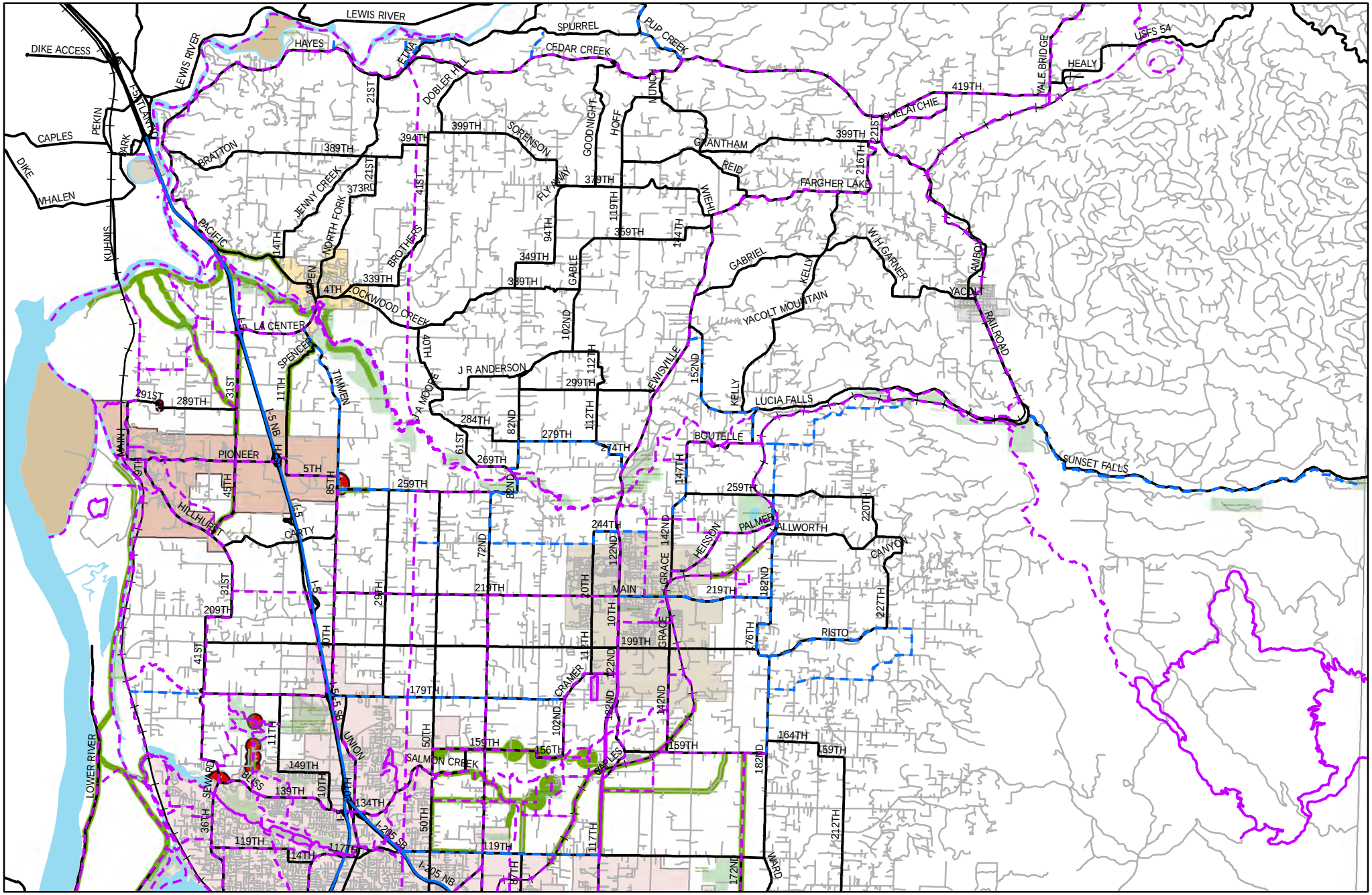


Figure 38. July 2010 Open House Comment

Table 34. August 2010 Comments

Name	Comment
None given.	Establish a bike lane infill fund.
None given.	Please consider posting speed limits for bikes on multi-use trails. It gives a reference of what people should do even if it cannot be enforced.
None given.	Start bringing a representative from C-Tran. Have them provide more bike storage at their sites and charge like a parking meter style so avid riders can use them and they are not booked and empty. Give the rent money to bike programs. Make the state revenue department give the sales tax collected back to the community for bike programs.
Madeleine von Lane	Most of my cycling is in Central Vancouver area as transportation so I'm not that familiar with county issues. But I greatly appreciate the hard work, patience and persistence of planning staff. Thank you!
None given.	Thank you for doing this effort. I think it has great value. You mentioned funding would include applying for grants and creating a district. I think those are the two most likely means.



Map 6. Aggregated Public Meeting Feedback, North

Clark County
Bicycle and Pedestrian Master Plan
Source: Clark County
Author: HK
Date: October 2009

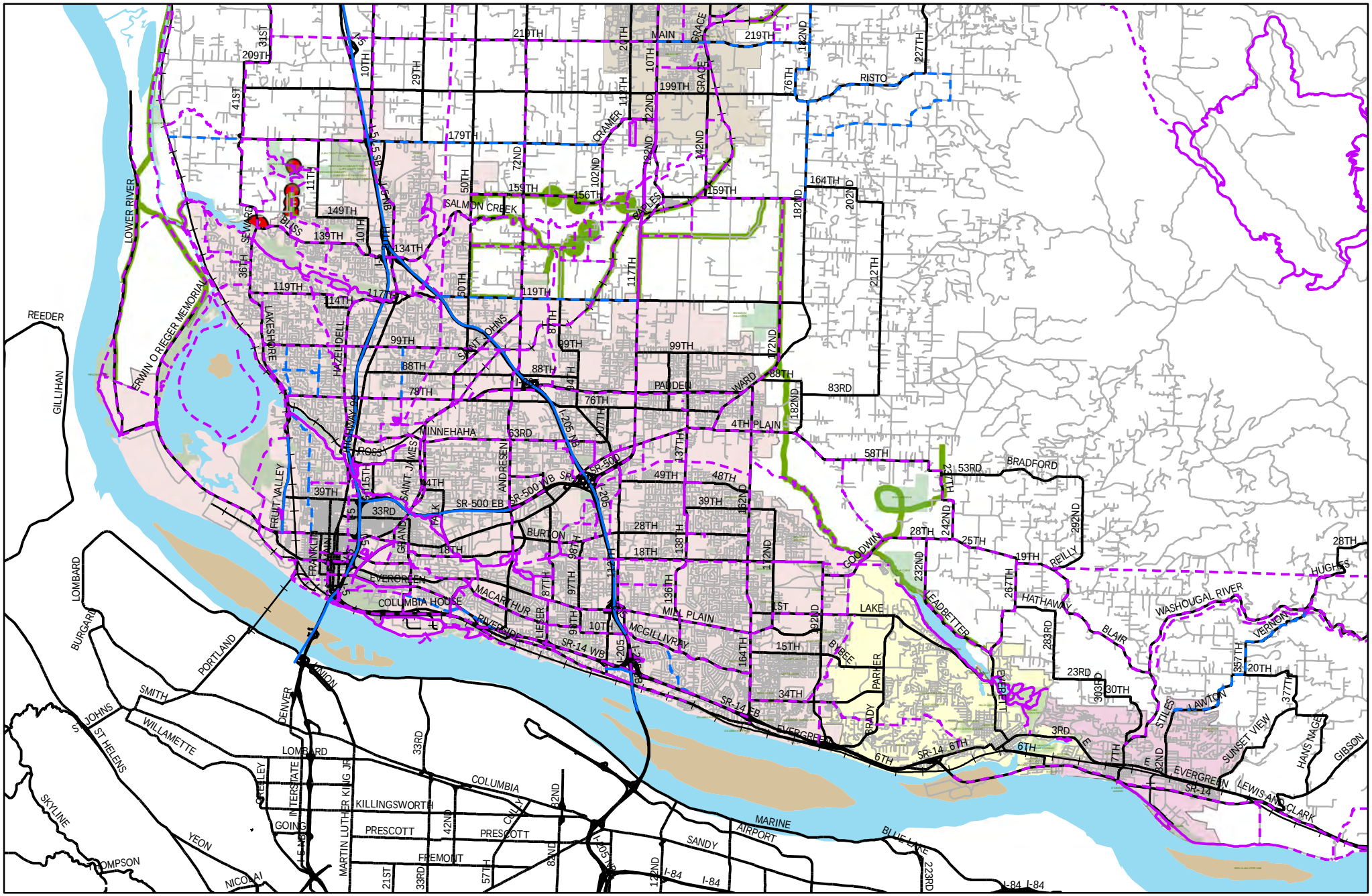
- Existing Shared Use Path
- Previously Proposed Shared Use Path
- Existing Bike Lane
- Previously Proposed Bike Lane
- Railroad
- Parks
- PreferredIntersections
- PreferredRoutes

ChallengingIntersections

- 1
- 2
- 3
- 4

N

0 1 2 Miles



Map 7. Aggregated Public Meeting Feedback, South

Clark County
Bicycle and Pedestrian Master Plan
Source: Clark County
Author: HK
Date: October 2009

Table 35. Draft Plan Comments

Ch.	Topic	Comment	Response
	0	Organizational Structure – The plan is still very difficult to following, digest and use. Although there are goals and objectives they are not tied back to implementation plans or strategies. Additionally benchmarks and how we know we are making progress are lacking. I know that there is a balancing act about not promising things that can't happen with a tight budget, but this is a 20 year plan.	Clarified relationship between goals, objectives, and implementation strategies. Added benchmarks.
		Signage, especially where it concerns the railroad is crucial. We also need to be clear the railroad operator nor Clark County wants to be responsible for the bike folks in any manner. If they use a bike trail near our railroad we would need to make them aware it is at their own risk.	Added text.
		If any bike trail encounters the railroad in any way, our Operator Eric Temple must be engaged fully and be able to comment for the ability to give approval based on his lease with the County. Also WUTC would need to be involved if the bikes are to cross the tracks.	Added text.
		We do not want any additional at grade crossings beyond what is already in place.	Added text.
		Establish a bike lane infill fund.	The Plan identifies a variey of dedicted funding sources which will be pursued to determine an appropriate fund for Clark County.
		Please consider posting speed limits for bikes on multi-use trails. It gives a reference of what people should do even if it cannot be enforced.	Speed limits are difficult to enforce; added language about trail courtesy.
		Start bringing a representative from C-Tran. Have them provide more bike storage at their sites and charge like a parking meter style so avid riders can use them and they are not booked and empty. Give the rent money to bike programs. Make the state revenue department give the sales tax collected back to the community for bike programs.	The plan was developed in coordination with C-Tran staff, and the bicycle parking chapter addresses bicycle parking at transit. The plan also addresses a variety of funding options.
		Most of my cycling is in Central Vancouver area as transportation so I'm not that familiar with county issues. But I greatly appreciate the hard work, patience and persistence of planning staff. Thank you!	No change.
		Thank you for doing this effort. I think it has great value. You mentioned funding would include applying for grants and creating a district. I think those are the two most likely means.	No change.

Ch.	Topic	Comment	Response
		The BPMP should reference the work plan that will follow, especially the process for integrating the existing sidewalk infill program with the criteria and plan established here.	Done.
		There is no section on process - we should document the impetus and evolution of the plan.	Done.
		Ensure that comments from meetings are addressed in some way. For example, at the 4/12 meeting, Ken suggested a requirement for dedication of ROW for bike/ped facilities by development outside of rural centers, which was not referenced in the draft.	We reviewed the meeting notes available online and incorporated relevant information.
		There is a lot of repetitive "fluff" in some sections. Reducing the length of the plan can help make it more accessible and effective. An executive summary pointing out key findings and recommendations would be helpful.	The executive summary was written.
		Search and replace "Safe" routes to schools with "Suggested" routes to schools except when referencing the SR2S grant.	Done.
		Consider whether to delete the term "encouragement" throughout the document where it is used to describe encouragement, education and enforcement programs unless the Board directs that this is a role the County intends to play.	At the work session, the board supported a role of encouragement.
		Overall, this looks like a fairly complete collection of policy, design and funding resources and recommendations. It would benefit from a clearer sense of whether approval of this plan means that the Board agrees with the general direction but the implementing Code and Comp Plan changes will follow or this is the final action.	Clarified that the next steps are outlines by the work program included in Appendix H.
		Consider changing the font throughout. It's very hard to read in Californian .	changed to Century Schoolbook

Ch.	Topic	Comment	Response
		The WSDOT disclaimer, as it appears as a footnote to Table 8 on Page 28 reads, "Although WSDOT facilities are listed on this project list, WSDOT is not obligated to complete these projects." Although this is correct, we feel this note should be expanded, so it doesn't appear that WSDOT is opposed to bike/ped facilities on our highways. Please change the disclaimer to the following: "Some of the bicycle and pedestrian projects listed in this table are located on state highways, under the jurisdiction of the Washington State Department of Transportation (WSDOT). Numerous constraints, such as limited right of way, topographical constraints, and other physical limitations often make it difficult to construct the bicycle and pedestrian facilities recommended in this plan. In addition, funding is limited, and there are restrictions on how WSDOT may use the funding that is available. Therefore, although projects along WSDOT facilities are included on these project lists, WSDOT is not obligated to construct these projects."	Changed.
		Can the plan include a timeline for updates? i.e. "This 20-year plan will be updated in 6 years…"	Changed.
		The only comments I have are in regard to the Policy Considerations for Design of Bicycle & Pedestrian Facilities. Bullet #3 which talks about collector and arterial streets shall have a minimum 4' width… What are the situations where wider bicycle lanes are needed? I have a couple thoughts: 1) While I don't think kids should have to ride their bikes on arterials to get to school, they may need to use collectors. Requiring a 5' or 6' lane on collectors within 1 mile of schools might be appropriate. In addition, if there are local roads that collect significant numbers kids biking to school we could require sharrows along that road. 2) In regards to requiring 4' shoulders on rural arterials, another option may be to provide a path on the other side of a ditch from the road. I have attached a detail of a street section we are planning on using starting next year on some of our older residential roads near downtown. The roads are currently only 18-20' of paved width with ditches on both sides. We are looking to widen them only to 22', continue to have ditches on both sides of the road, but then provide pedestrian and bike access with a 6' path separated from the road. Parking would be located on the other side of the road from the path. The idea is this would keep speeds down in this residential area that people might speed through if it is widened and replaced with curb and gutter. This also is easier in terms of meeting stormwater code. With a 6' path instead of shoulders, you would have safer access for bikes and roads on an off-road path	This text was removed from the Plan.

Ch.	Topic	Comment	Response
		and the same or less amount of overall pavement.	
Exec Sum	General	An executive summary might be helpful, so that decision-makers can quickly understand what they are being asked to approve. Clarify whether the adoption of the plan means that the recommended policies are added to the Comprehensive Plan, whether the bike parking and design guidelines will come back as proposed Code changes later, etc.	Done.
Exec Sum	General	Remove Alta logo- the only place that should have the Alta logo is under acknowlegements	Done.
Exec Sum	General	pls. number ES	Done.
Exec Sum	General	Check Table of Contents-- Executive Summary and Chapter 1 has the page number.	Done.
Exec Sum	2	Design Guidelines isn't a good description because what you are describing are more than design guidelines. In the Design Guidelines chapter itself, it has very little in the way of design guidelines; consider using another term such as program	Changed to "Design Program"
Exec Sum	3	Emphasize the limited set of sidewalk projects. The sidewalk inventory of the County is not complete. As the County accumulates more data, the list will be re-done and priorities will change as the project list shuffles.	Added, "The recommended sidewalk project list is limited to previously-conducted inventories. As the County accumulates additional data, the projects and priorities will shift."
Exec Sum	3	Make clear the difference between the sidewalk list produced from the Bicycle and Pedestrian Plan v. the existing sidewalk infill program.	Done.
Exec Sum	Intro	In the background it states that the plan will not be a comprehensive plan --why is not?	The Plan does not consider all aspects of the pedestrian environment, which would include crossings, curb ramps, etc. This information is not currently available county-wide, so this Plan focuses on sidewalk gaps.
Exec Sum	Intro	In the same section it talks about future sub-area plan and work program to begin implementation. I would prefer the executive summary focus on opportunities that exists today, challenges, and physical improvements that are needed to existing and future roadways throughout the County. I will like to see some discussion focusing on a variety of reasons bicycling and walking issues are important to County residents. Such discussion could identify economic benefits, transportation, environmental, recreation and health, and quality of life benefits.	Added benefits & citations.

Ch.	Topic	Comment	Response
Exec Sum	Intro	please footnote source of information of first and second sentences to demonstrate this data isn't anecdotal.	Text was modified to address more general trends, and citations added.
Exec Sum	map	replace trail priorities	Updated.
Exec Sum	Programs	Revising committee; typo with an extra letter at the end of the paragraph	Done.
Exec Sum	Programs	Recommended program; instead of "it is helpful for the County to recognize" I suggested it is "important" for the County to recognize. Also, since the paragraph is discussing the fact that County is not responsible, I would suggest we add some language talking about the value of partnerships. Something like; Partnerships between the County, other municipalities, community advisory and advocacy groups and business need to be explored to create needed education, encouragement and enforcement programs.	Done.
Exec Sum	Programs	On another note, it gets confusing in this area. On the one hand it seems like Clark County is sometimes taking about government and in other instances it seems like Clark County is more inclusive of everyone in the County. Is there a way to clean that up. For example, under the creating school programs, it seems to say that the collective County/all entities/residents should work on this issue. If that is not what is meant there and it really is referring to governmental Clark County – then I again suggest that we add some language about partnerships.	Done.
Exec Sum	Funding	The funding strategies list seems out of order. First it talks about dedicating some of a newly created fund to certain activities and then it says to this fund should be created? Should switch these two for ease of the reader.	Done.
Exec Sum	Programs	Finally, the recommended programs should be presented as summary of recommendations.	Changed.
Ack	2	Mis-spelled my name. Should be DURSPEK.	Done.
1	Intro	grammatically error - surge in interest …… such as, bicycling AND walking	Done.
1	Public Outreach	Weren't there additional open houses much earlier in the process? My records show that open houses were held July 28, 2009 at Fisher's Landing Transit Center and July 30, 2009 at the Public Service Center. However, I recall that the July 28 Open House was cancelled or postponed, due to an air conditioning failure at the Transit Center.	Done.
1	Public Outreach	Weren't there other public involvement efforts in summer 2009?	Done.

Ch.	Topic	Comment	Response
1	Vision	Vision paragaph is entered twice, which is not necessary and is redundant also the heading is vision goals and objectives but there are no objectives in this section, the heading is actions	Done.
1	Vision	Vision is different from the one adopted at Feb 9th meeting	Done.
1	Goals	ALL Goals and objectives should have the following: 1.) Numeric objectives that define a desireable level of service, 2.) Which government agency is responsible for implementation and when, 3.) Benchmarks and performance measures for assessing progress. They should also be explicitly related to the vision.	Goals were modified to be more measureable where appropriate. We didn't want to make these too prescriptive and potentially controversial.
1	Goals	How do these goals relate to the goals listed in Chapt.3?	Changed the goals to reflect that they were actions undertaken by this planning effort
1	Goals	Why is there now a new set of goals, they are not exactly the same, this is VERY confusing. How would the committee and governmental bodies use these two sets.	Changed the goals to reflect that they were actions undertaken by this planning effort
1	Goals	Yet again, another place where we see goals and objectives. Although the narrative tries to describe the differences, it is not helpful or clear enough. I like the expansion into the more detailed potential actions. But this disconnect throughout the document needs to be cleaned up and fixed in some way to set the tone for implementation and next steps.	Changed the goals to reflect that they were actions undertaken by this planning effort
1	Goals	Are these goals different from those in Chapter 3?	Changed the goals to reflect that they were actions undertaken by this planning effort
1	Goals	Under Vision, Goals, and Actions last sentence says that "this Plan will be integrated into the County's 2014 Comprehensive Plan Update". Will this plan be a stand alone document or will some goals and policies be part of the Transportation Element? If it's a stand alone document then the statement above is not necessary. If the later is the case, then staff will need to identify which policies will be part of the updated plan in the future.	These policies will be integrated into the 2014 TE update when that process occurs.
1	Goals	Goals & actions are not numbered, do not match executive summary. Clarify the difference between these goals and those in Chapter 3	Changed the goals to reflect that they were actions undertaken by this planning effort
1	Goal 1	Another suggestion for clarificaiton ….Encourage Clark County residents ….by	Done.
1	Goal 1	publicizing routes and PROVIDING proper facility	Done.

Ch.	Topic	Comment	Response
		maintenance	
1	Goal 1	Strike "possibly", as design guidelines are included in the plan. Change language to inlcude implementation/application of design guidelines.	Changed to, "Update existing pedestrian and bicycle design standards, and apply new design standards for pedestrians and bicyclists."
1	Goal 1	Bicycle detection will be installed at every traffic signal eventually, and it will be done when a traffic signal is upgraded (State Law says signals must detect bicycles + detection can be made without loops)	Removed.
1	Goal 1	WSDOT signal loops are calibrated to be sensitive to bikes. Is this not also true of the county? If so, is this comment necessary? Or should it be modified to say something like, "Verify that all signal loops on the county roadway system are calibrated for actuation by bicycles"	Removed.
1	Goal 1	bullet item talks about sidewalk maintenance - this is actually adjacent property owner responsibility, so this may be a code enforcement issue	Added 'code enforcement of'
1	Goal 1	For installing signs along all roads, this will take lots of $$ at about $100 - $150 per sign assembly so we would have to pursue grants for this type of work I would assume	Yes, the implementation chapter addresses funding.
1	Goal 1	Change to "Establish policies and protocols for mitigating construction impacts to bicycle and pedestrian routes."	Done.
1	Goal 2	bullet 4 is worded funny. Should it read "encourage construction…. THAT minimizes disruption to…	Done.
1	Goal 2	Include action to add a budget item place holder to eventually be funded	Done.
1	Goal 2	Reads "Include Plan cost in Clark County's budget to prioritize future funding." Does this refer to the cost of the planning effort, or to the cost of infrastructure projects and encouragement programs?	Changed to "include cost of short-term projects in Capital Improvement Plan"
1	Goal 2	Alternatives to the AASHTO guide and MUTCD are being developed, and we should stay on top of innovations. Consider adding "Support excellence among staff by ensuring exposure to innovative, tested new designs, such as those documented by the National Association of City Transportation Officials Cities for Cycling project (See http://www.nacto.org/citiesforcycling.html)"	Done.
1	Goal 2	this is 4th bullet. In practice, what is addressed are those requirements shown in the WSDOT Design Manual. I know we are required to address ADA for overlays, but we are not required to add bike lanes, for example. From a practical standpoint, I wouldn't see us adding bike lanes to overlay projects but we could	Added, "where bikeways have been designated"

Ch.	Topic	Comment	Response
		work on ensuring that markings are added when appropriate.	
1	Goal 2	Purpose of double-underline for Action 2.2 and 2.3?	Done.
1	Goal 2	Who provides the bicycle storage and other amenties mentioned? Suggest using the word "encourage" rather than "provide"	The recommendation is related to guidelines - changed to "Develop"
1	Goal 2	Include action to ensure consistent review of road projects & development proposals by bike and ped advisory committees	Done.
1	Goal 2	Change to "Ensure consistent review of road projects & development proposals in the planning stage..."	Done.
1	Goal 3	Replace "Encourage" with "Establish and maintain". Wherever possible and appropriate, remove soft language (encourage, promote, support, etc.) with verbs that express commitment and obligate action (Implement, establish, adopt, etc.)	Done.
1	Goal 3	(last bullet) Not a clear difference between this education action and the one above reading "Establish or expand bicycle and pedestrian safety education programs…" Combine the two or clarify the difference.	Deleted bullet.
1	Goal 3	Goal: Promote bicycle and pedestrian safety through increased bike and ped education……This goal and associated bullets seem to duplicate next major Action bullet on page 10 (Encourage measures that improve safety for peds and bikes). Consider moving specific goal bullets to page 9 major action	Done.
1	Goal 5	Include the actions from Brendon's existing conditions and benefits of the bicycle and pedestrian plan in the plan goals.	Done.
1	Goal 6	Health Focus – I know that there was a suggestion from Lisa about adding a health goal – which I totally support. I believe that Brendon provided material – I would suggest this addition in the final draft.	Done.
1	Future considerations	It's not clear what future policy considerations are for. When is the future? What will kind of follow-up can be expected? Why are these policies for future consideration?	Heading changed to "Policy Considerations for non-motorized Future Planning Efforts". Future means not this year – but incorporated into work program. Will be addressed as funding permits. These were raised as concerns during this planning process but fell out of the purview of the established SOW.
1	Future considerations	Third bullet under "Future Policy Considerations" should read "…mid-block crossing pedestrian	Done.

Ch.	Topic	Comment	Response
		refuge…"	
1	Contents	Change "Contents of the Plan" to "Plan Organization and Use"	Done.
2	General	This chapter does not accomplish what the outline on page 5 implies. It is filled with normative "should" statements and general descriptions of facility types, rather than description of what actually exists and related problems. The entire rest of the plan is devoted to "what should be"; this is where we should expect a description of "what is". The outline on page 5 led me to expect this chapter to detail existing facilities, policies, partnerships, programs, etc There is very little detail on any of these, with the exception of transit connections. At a MINIMUM, this section should include a map of the inventory conducted by our hard-working volunteers. Some additional exisitng conditions are documented in other chapters - perhaps those could be moved to this chapter. Questions that remain include: Where are existing facilities? What is their quality? What are the difficult crossings? What are critical gaps? What is the current and forecasted demand for cycling and walking?	Done.
2	Jurisdictional Responsibilities	"respoinsible for some planning and maintenance of urban streets within the county" wrong/poorly worded. Clark County is responsible for all planning, maintenance of roads rural and urban outside incorporated cities.	Done.
2	Jurisdictional Responsibilities	"Clark County provides oversight to the individual jurisdictions, establishing policies and guidelines for implementing…" Not true. Clark County has little to no oversight or ability to "steer" the policies/guidelines of municipalities (Vancouver, Camas etc). We do collaborate on joint projects, but municipalities determine their own practices which may or may not conform to county recommendations.	Done.
2	Ped. Infrastructure	"As the Clark County Bicycle and Pedestrian Plan covers the entire county, this analysis will focus pedestrian recommendations on streets within a half-mile of schools and transit cneters as well as downtown areas generally." My understanding is that the plan only covers unincorporated areas, as evident on the maps in this plan. The statement about the analysis seems inaccurate, as I didn't notice any special attention to all schools, transit centers, or downtowns.	Done.
2	Ped. Infrastructure	The section on pedestrian infrastructure existing conditions makes no reference to any physical infrastructure in Clark County (although Des Moines is mentioned). This would be good place to include the inventories that have been completed and to identify areas still in need of attention	Done.

Ch.	Topic	Comment	Response
2	Ped.Infrastructure	Unexplained reference to Des Moines - cut and paste error?	Done.
2	Ped.Infrastructure	I would like to change these bullet items and make them more specific. All of the bullets listed are considerations, but even if all of the three criteria would be met we would probably not install a marked crosswalk. Here are three specific times we would install a marked crosswalk other than at a traffic signal: 1- for a school crosswalk if and only if hte school provides a school flagger patrol; 2 - at a midblock crosswalk as the markings are the only thing that would make the crossing a legal crossing; 3 - an engineering study indicates that crosswalk markings and/or other features should be installed.	This section was removed
2	Ped.Infrastructure	At signalized intersections, all crosswalks shall be marked or signs prohibiting pedestrian crossing shall be posted. Also, note that every location where there is an intersection of two public roads creates legal crosswalks per State Law.	Added text.
2	Ped.Infrastructure	Even though we didn't map sidewalks, we should provide a more in-depth picture of existing conditions. Is it easy to walk in unincorporated Clark County? Can you reach destinations? Is it safe? Is it comfortable?	Added text.
2	Ped.Infrastructure	We only use the ladder type crosswalk which is 24 inch wide by 8 foot long markings perpendicular to the pedestrian walking path.	Added text.
2	Bike Lanes	SR 503 does not run between NW 7th Ave & NE Hazel Dell Ave. Maybe this is referring to NW/NE 117th Street.	Changed.
2	Shoulder Bikeways	Although this portion of SR 503 (NE 117th Ave) has full shoulders, it also has a mixed use path along the east side. This path is separated from the highway, and is not a part of the shoulder. Should it be called out as such?	Added.
2	Shared roadways	You mention that the most suitable is for 25 mph or less. I will note that the only time we have less than 25 mph is temporarily around schools when the children are walking to and from school, so defacto, we only have 25 mph posted roads. Also, our local roads can only go up to 3000 ADT so we are essentially talking only residential streets. Any road with a posted speed above 25 mph or has volume higher than 3000 ADT is most likely not a local access road or is mischaracterized as local when it really functions as a collector (McCann is a good example of a 25 mph road with >3000 ADT that is a defacto collector, but is called a neighborhood circulator.)	Removed "minor collector" and replaced with "many neighborhood circulator streets."
2	Trails and	Add a section for Trails and Connections - currently a subsection but it should be called out as its own	Done.

Ch.	Topic	Comment	Response
	Connections	section.	
2	Trails and Connections	last sentence- relpace with new Clark County Trails Map- back side graphic- LISA will send it to you. Can be viewed now at http://www.cityofvancouver.us/parks-recreation/parks_trails/trails/index.htm The current list is based on the planning document and is not a reflection of what is actually built.	Added.
2	Trails and Connections	last sentence- relpace with " Using the 2006 adopted Clark County Trails and Bikeway System Plan this plan will identify where new on-street bicycle and pedestrian facilities can connect and leverage with existing and proposed trails." May want to have the complete 2006 trails plan graphic here rather than the table that dosn't mean much unless you know the trails plan well (and there are only 9 of the 17 trails shown). This is the map I'm referring to- I can send it over too page 9 of 46: http://www.cityofvancouver.us/parks-recreation/parks_trails/trails/pdf/2aTrailNetwork.pdf	Added.
2	Signage	Change "city" to "county" in the sentence beginning with "Placing signs throughout"	Changed.
2	End of Trip	Much of the description in the "End of Trip Facilities" section is verbatim repetition of the chapter on bike parking. While these paragraphs may be relevant to both chapters, this is indicative of a significant overlap and suggests reorganization.	Changed.
2	End of Trip	Correct punctuation "…clothes lockers, and showers,…"	Changed.
2	Multimodal	First paragraph says C-TRANS with an s	Changed.
2	Multimodal	C-TRAN's routes changed some with reductions implemented in January 2010. The transit map included on page 16 of the draft plan was obtained from C-TRAN prior to January and does not match current service.	Changed.
Chapt. 3	General	Again Don't like use of the term "Design Guidelines" because there are few design guidelines. Use term program or another ter.	Changed to "Design Program"
3	General	These goals are only partially consistent with the goals enumerated in the introduction. Either they should be made consistent (why not use the same numebering system all the way through?), or an explanation should be provided for why they are different.	Moved 'next steps' action items from Ch. 1 into this set of goals/actions.
3	General	These goals should be labeled as goals and explicitly related to the vision. See comment above on Ch 1, page 2, paragraph 3.	Added text.
3	General	The categories listed in this paragraph do not match the goals outlined below. There are no goals or	Added text.

Ch.	Topic	Comment	Response
		objectives listed for parks or trails	
3	Intro	Why recommend policies previously adopted? Are you forcing on implementation…please revise.	Changed "incorporate" to "are based on." Laurie to follow up.
3	Intro	1st sentence does not match with bold headers in the remaining chapter.	Changed.
3	all	Include a policy to improve bike/ped access to nutritious food	Added text.
3		If the intent is that approval of this plan will result in recommended policies being added to the policies in Chapter 5 of the Comprehensive Plan, then the same format should be used.	These policies will not be added to the Comp. Plan.
3	1.2.1	Rewrite: Implement a continusous network of bikes lanes, bike boulevrds, and bike routes that are integrated with current and future trails that support bicycle use.	Changed.
3	1.2.4	Two actions are numbered 1.2.4, none are numbered 1.2.5	Changed.
3	1.5.2	Great that this is in here- please add to it so it says "Change Title 40 to include a Park Code which guides develoment standards for trails, so that there are specific development guidelines which would support the development of trails."	Added text.
3	2.1	Objective 2.1 Action 2.1 After "bicylce specific" add "and pedestrian specific"	Done.
3	2.2	Objective 2.1 Action 2.2 After "bicylce" add "and pedestrian"	Done.
3	2.2	Replace "Encourage" with "Establish and maintain".	Added text.
3	4.1	Objective 4.1 Action 4.6 after "monitor bicycle…" add and pedestrian. Then after "levels" add "related to public transportation or public activities/exercise"	Done.
4	4.1	Add "Improve safety by increasing the number of cyclists and pedestrians"	We don't want to make direct statements about safety, did not include.
3	4.1.6	In all cases, change "accidents" to "crashes". Is the reduction target just in unincorporated Clark County? May need to refine measure.	Done.
3	4.1.6	Regarding Action 4.6, it would be good if we could summarize Phil's findings in the appendix regarding the number of pedestrian and bicycle accidents over the last 5 years. Maybe include the number of these types of accidents in this bullet and suggest that this number be reviewed and specific locations be identified for improvement it is determined to be a high bicycle accident location or a high pedestrian accident location.	Regular benchmarking of crashes involving bicycliasts and pedestrians is included in the Implementation Strategies.

Ch.	Topic	Comment	Response
3	4.2.1	Remove last part so it reads:"Undertake routine maintenance of bikeway and walkway network facilities, such as sweeping, pot hole repair, and hazard removal in bicycle lanes and sidewalks.	Done.
3	4.3	Action 4.3: Are we referring to the specific "Safe Routes to School' program (incorrect title), or general encouragement? Could loose the specific program reference and leave it with "Collaborate with schools to provide walking facilities near schools and [e]ncourage educational and incentive programs to encourage students to bicycle or walk to school,	Added text.
3	4.4	Should read "…walking or bicycling"	Done.
3	4.7	Could we add a paragraph Action 4.7 to encourage the installation of continuous counting devices to count bicycle use on roadways? This way we can actually track, over time, if we are achieving our goal.	Added, "Action 4.2.2 Install continuous counting devices to track ridership goals."
3	5.1	Objective 7.1 "The county should work to fund construction of the bicycle…" add "pederstrian" …improvements…	Done.
3	5.1	Funding action 7.x ….unlike previous action points that mentioned bicycling and pedestirans, this section mentions only bicycles. Leaves impression that sidewalks are adequately funded. Recommend adding sidewalk/pedestrian reference to Objective 7.1 and actions 7.1 and 7.3	Done.
3	6	Acknolwedge the interaction of tranpsortation and land use by including policies that increase development supportive of walking and cycling. These include: limit construction of new cul-de-sacs, connect existing cul-de-sacs, limit block size, design for imageability, enclosure, human scale, transparency, and complexity, encourage a dense mix of uses, and encourage higher density housing.	Added text.
3	6.1	For all actions, add "when possible, change title 40 and/or road standards to codify this policy"	Added, "Change title 40 and/or road standards to..."
2	Goal 6	There are two Goal 6-1. I personally like and support the new Goal 6 1 & 2.	Fixed.
3	6.1.2	Rewrite to language be more inclusive of non-planners and more specific about meaning. Imagability, indeed!	Changed to, "Promote pedestrian- and bicycle-friendly design through human-scale development and providing comfortable and attractive places."
4	Priority Projs (old)	If identification and prioritization of off-street shared paths is not the focus of this plan, why are the off-street facilities listed in Table 2? Table 1 is so long, maybe only the high priority sidewalk projects should be listed.	Clarified Ch.2 text, moved table

Ch.	Topic	Comment	Response
4	Priority Projs (old)	Could we include in this table the type of facility? It's not clear whether on-road means bike lane, bike boulevard, traffic calming, etc. That said, see Rapid HIA recs on implementing various facility types.	Done.
4	Priority Projs (old)	The listed recommended improvements in Tables 1 7 2 are way too long. Consider moving the Low priority projects into an appendix or deleting them altogether. Also, consider rating the High priority projects again so that there is some sense of what needs to be done first.	Done.
Chapt. 4	Table 7 Top Ten Sidewalk Projects	Provide description in the paragraph before the table that this list is not complete because the sidewalk inventory is not complete and is subject to change as the sidewalk inventory of the County is complete, and projects will be added to the list.	Added, "The sidewalk list is incomplete because several areas in the county have not inventoried sidewalk gaps. As the sidewalk inventory of the county is completed, projects will be added to this list. "
4	Priority Sidewalks	Fix Table	Done.
4	Priority Sidewalks	Prioritized sidewalk list also still emphasizes very quiet residential streets. The committee urged sidewalks that connect destinations and would have a high amount of likely users. Residential streets with nothing nearby (Sylvan terrace, Parkview, Summit Ridge, etc) do not fit that criteria.	Prioritization criteria identify sidewalks closer to activity centers, and top-tier list was verified by staff.
4	Priority Sidewalks	Highway 99 (NE 99th St to NE 63rd) is complete. S2S all the way down, although admittedly some of the sidewalk isn't great. I saw no gaps. Probably should not be Top 10, IMO at least.	Removed.
4	Priority Sidewalks	Highway 99 (NE 122nd St to NE 129th St) is listed twice. Positions 1 and 7. Probably should not be Top 10, IMO at least.	Removed.
4	Priority Sidewalks	There will be sidewalks and bike lanes on NE 10th Avenue.	Removed.
4	Priority Sidewalks	NE 78th St (16th Ave to H99) is complete. S2S all the way down, although there is a 200' length just east of NE 13th that isn't ADA. Probably should not be Top 10, IMO at least.	Removed.
4	Priority Sidewalks	NE 95th St (NE 30th Ave to NE 32nd Ave) Exists. S1S or better throughout the Maplegate subdivision, across from Gaiser Elementary where this segment is located. (And how did this one make top 10 to begin with….buried 5 blocks deep in a residential subdivision? How did Alta score this relative to all the segments on Highway 99). Probably should not be Top 10, IMO at least.	Removed. Chosen because of proximity (<1/4 mile) to Gaiser JR High and 99th St.
4	Priority Sidewalks	NE 104th St: Highway 99 to NE 23rd Ave: S1S exists along all but the western 200 feet. Intermittent areas of S1S along north side too. Probably should not be	Removed.

Ch.	Topic	Comment	Response
		Top 10, IMO at least.	
4	Priority Sidewalks	Table 1 heading for Type (both sides / one side) Unclear that intent is to indicate where sidewalks are needed. Type could be interpeted as "some streets will get one side, some both sides". Also…county standard has been one side only, with rare exceptions for unusual circumstances. Is there a 'both sides' recommendation (ie: change county practice) elsewhere in document? We're potentially setting ourselves up to seriously disappoint people expecting s2s as the default everywhere as shown.	Removed sidewalk recommendations on sidewalks that were completed on one side.
4	Priority Sidewalks	Prioritized sidewalk list still needs some cleaning. On the first page, NE Pup Creek and Grinnell Rd….seriously? That's way out in rural county where we don't do sidewalks period. The first segment listed (SE Evergreen at 354th) locates 1,600 feet EAST of Washougal city limits, also where sidewalk is unlikely to ever be built by the county.	Removed sidewalk recommendations outside the UGB and within 1/4 mile of city limits
4		Recommended bikeway improvements – I think you mean to say “previously proposed improvements and CONNECTIONS?	Changed to, "previously proposed improvements and projects that connect to existing bikeways. "
4	Priority On-Street Bikeways	Don't see what kind of connection NW 28th Ave/NW 26th Avenue provides; look at connection on NW 36th Avenue from NW 119th Street to NW Bliss Road	Removed NW 28th/NW 26th Ave project; NW 36th/Seward Rd is a priority trail project that provides a connection to the Salmon Creek Trail.
4	Priority On-Street Bikeways	NW 36th Avenue is a better connection than NW 164th Street	Removed NW 36th Ave; have NW 36th/Seward Rd as a priority trail project.
4	Priority On-Street Bikeways	NW 21st Avenue-the off-street path project (Trail 35-NW 139th Street to NE Hazel Dell Avenue) may be a better choice. Also, check for creek crossing for either Salmon Creek Greenway or NW 139th Street-either connection may require a bridge crossing which would be very expensive	Changed project to off-street trail, would require new crossing of Salmon Creek, removed from priority list. Replaced with NW 11th Ave bike lane project.
4	Priority On-Street Bikeways	Safe bike route to Lewisville Park from Battle Ground.	An off-street trail is recommended for this connection
4	Priority On-Street Bikeways	The WSDOT disclaimer is on this table, but there are no WSDOT facilities on this list. I don’t believe that the disclaimer is anywhere else in this document. This comment should be placed at tables that have projects, such as Table 10 on Page 32, Table 36 on Pages 107-108, and Table 48 on Pages 154-158. Please see the note below regarding rewording of the disclaimer.	Added updated disclaimer to the specified tables
4	Priority On-Street Bikeways	Consider a project connection NE 10th Avenue from NE 179th Street to NE Union Ridge Parkway in	Would include restriping project from NE 259th to

Ch.	Topic	Comment	Response
		Ridgefield	Carty Rd and bike lane south to 179th; added to priority project lists.
4	Priority Sidewalks	There will be sidewalks and bike lanes on NE 10th Avenue.	Changed.
4	Paragraph 1	Talks about improving intersections and calibrating signal loops – does this show up somewhere in goal/objectives and actions – seems like it should and I don't think it does.	This is more of design guidance than implementation. WASHDOT also has a policy on this.
4	Priority Trails	Burnt Bridge/Ellen Davis and whatever else connects are long stretches of trails important to bikers. They provide an excellent car free corridor from east to west and should be included. Although perhaps you were trying to call out only trails outside of city limits?	Yes, the analysis was considered only trails outside of city limits.
4	Shared-use paths	pathways as identified on page 23 were going to be moved to a new section called Recommended Regional Pathway Improvements. Then under that I would expect something like the following: Shared use paths are the foundation of a comprehensive bicycling and walking system. The terms shared use paths and trails can be used interchangeably to describe shared facilities that are physically separated off the roadway and designed exclusively for non-motorized usage by walkers, bicyclists and in some cases equestrians. 2006 CC Trails and Bikeway System Plan pp. 1-2 through 1-3. and. . . A regional trail is a 10- to 12-foot wide, off-street path. The design depends on the type of trail and environment. Existing streets and roads may be included as part of a trail segment. Regional trails are usually larger in scope than neighborhood trails, crossing community lines and linking cities. They also form connections between parks, natural areas and other trails. These trails can be destinations in themselves or provide users access to the places they live, work, shop and play. Regional trails are unique in that they provide a myriad of benefits for individuals, neighborhoods and whole regions. 2010 Bi-State Trail plan p.2	Done.
4	Priority Trails	The list of top projects displayed at the Battle Ground Open House included a multi-use trail on SR 503 from NE 199th Street (aka Eaton Blvd) to Caples Road (NE 149th Street). There is an existing multi-use path along the entire length of this portion of SR 503. It is along the east side of the highway.	We have the trail as existing, no trails are proposed along SR 503/NW 117th.
4	Priority Trails	A suggestion has been made to provide some sort of bike lane or path along the east side of SR 503 from approx. NE 122nd St., near Winco, to NE 149th Street/Caples Road, connecting with the	Removed project per Ken comments.

Ch.	Topic	Comment	Response
		existing multi –use path, described above. There are a number of concerns with this. This portion of SR 503 currently is curbed with an attached sidewalk on both sides. We can't stripe a bike lane within the existing roadway section, because we can't narrow the lanes. Constructing a multi-use path along the east side of the highway would be difficult. There are right-of-way constraints along much of this area. Many of the houses and appurtenances are close to the highway, and a multi-use path would essentially go through front yards. The path would cross several driveways, creating conflict points with vehicles entering and leaving the highway. There numerous utilities in this area, including a concrete-encased fiber optic line, that has been found to be close to the surface, and very expensive to move.	
4	Priority Trails	DELETE WHOLE SECTION	Done.
4	ADD	attached word doc- if you have questions let me know- 360-619-1134	Added text, we retained the prioritized list as defined by this plan process.
4	Priority Trails	It would be difficult to construct these projects within the right of way of I-205, due to topography, environmental concerns, right of way constraints, etc.	Added a note that if the project isn't feasible a parallel route could potentially be developed.
4	Priority Trails	The WSDOT disclaimer should be placed on this list. Please see the note below regarding rewording of the disclaimer.	Added updated disclaimer.
5	General	Lots of great information about parking but we only have very general goals/objectives to provide parking. There are not even any potential action steps in the larger set of goals/objectives. So how would this get on anyone's radar screen. How would we implement this, even if it isn't now or part of the top tier, where does it fit in future work priorities.	Added implementation strategies/Ch 3 policies that address bicycle parking.
5	General	This chapter looks like a cut-and-paste hodepodge. If Table 4 shows the recommended standards for Clark County, what is the point of Table 6. Shouldn't Table 5 be in the existing conditions section (Chapter 2)?	Moved, revised text.
5	Intro	"Clark County could offer a 10% reduction of the minimum…" is a vague statement and seems slightly out of place here. If this is a policy we're advocating, we should add it to the policy goals (it would fit very nicely under TDM). Otherwise, we should change the phrasing to: "One way to incentivize the development of bicycle parking is to offer reduced automobile parking minimums for developments that include bicycle parking."	Changed. Also added to policies
5	Table 4.2	Table 4.2 is not clearly connected to adjacent narrative, but is very important. Perhaps changing the preceding heading to "Proposed..." rather than	Changed.

Ch.	Topic	Comment	Response
		"existing bicycle parking standards in Clark County".	
5	Table 5	C-Tran bike locker inventory is incomplete	Changed.
5	Table 5	C Tran bike parking inventory list not completed	Changed.
5	1st	The first paragraph seems out of context. The previous paragaphs don't talk about CRC PBAC and it in unclear what these initials mean	Changed.
6	Intro	What Bicycle and Pedestrian Design Guidelines as stated appears to give impression the county has such a guideline. In the section it talks about the county's pedestrian master plan guidelines.	Clarified that the County does not have guidelines; referenced state and federal documents that contributed to the proposed guidelines.
6	Intro	Include Washington State Dept of Transportation (WSDOT) design manual as a guidance document. Probably primary or secondary (behind MUTCD) in terms of whose sometimes contradictory rules get followed when designing project.	Done.
6	Intro	Starts with "Strong design guidelines will"...I will submit that guidelines are not standards. Please review and re-write bullet #1. The second sentence makes no sense.	Changed "applying" to "identifying" to clairify that the guidelines are not standards.
6	Intro	Please review and re-write bullet #1. The second sentence makes no sense.	Changed to, "All roads in Clark County are legal for the use of bicyclists, except limited access interstates which specifically prohibit bicyclists, including I-5 through Vancouver and part of the Lewis and Clark Highway. "
6		More of formatting issue. Do you want the citations in the body of the chapter or in an appendix.	We felt that putting the citations in the body of the chapter helps planners or engineers using this document identify resources.
6		Matrix of best practices. This indicates this section is intended to be used by County staff to develop guidelines. What about working with the bike/ped committee. Also, what about the goals of working cooperatively with other jurisdictions. It seems like there needs to be clearer statements about working collaboratively to develop and implement guidelines.	Added, "in coordination with the Bicycle and Pedestrian Advisory Committee and individual jurisdictions."
6	Bullet 4	The WSDOT Design Manual addressing Pedestrian and Bicycle Facilities is Division (not Chapter) 15. It was last updated July, 2010. You might consider not putting a date on this, as it is occasionally updated. Maybe you should say, “Latest edition”.	Changed
6	Bullet 3	The MUTCD was last updated in 2009. You might consider not putting a date on this, as it is occasionally	Added, "latest edition"

Ch.	Topic	Comment	Response
		updated. Maybe you should say, "Latest edition."	
6	1	The opening paragraph refers extensively to bicycles and bikeways but not pedestrians and sidewalks. The design guidelines and best practices extend to sidewalks - include a more accurate description of the scope of design guidelines	Fixed
6	3	Perhaps we can include language that these design guidelines can be used by bike/ped advisory committees as a reference when reviewing road and development plans	Added
6	5	Strengthen language to provide for Type C cyclists in areas of sensitive populations (senior housing & schools)	Added
6	3	Include reference link to WSDOT Design Manual, Chapter 15 at http://www.wsdot.wa.gov/Publications/Manuals/M22-01.htm This is the go-to standard reference we must follow for many federal and state-dollar funded projects.	Added
Chapt. 6	Figure 21	Don't like graphic; not very understandable; X-axis is not labelled	Changed table title, added explanatory text and axis label.
6	right turn lanes	We have talked a lot about moving the bike lane to the left of right hand turn, I do not clearly see that in any of the solutions??	Added clarification to 'Crossing Right-Turn Lane'
7	General	More of formatting issue. Do you want the citations in the body of the chapter or in an appendix.	We felt that placing the citations in the body aid planners and advocates using this document.
7		For all programs, we should modify the wording to have more assertive phrasing. Phrasing such as "The group could meet quarterly" sounds more like a brainstorm than a proposal. Instead, it should read, "A planning & public works team should meet at least quarterly..."	Strengthened language throughout the chapter.
7	Existing	Clark County education and outreach activities. Another example of where it is not clear if you are talking about Clark County government or Clark County as a whole	Added text to clarify.
7	Bicycling Orgs	Organizations; Many of these organizations have web sites that have not been listed.	Added websites
7	Bicycling Orgs	Additional organizations; National Center for Safe Routes to Schools - p://www.saferoutesinfo.org/index.cfm.	Added websites
7	Bicycling Orgs	America Walks http://www.americawalks.org Feet First http://feetfirst.info	Added websites
7	Bicycling Orgs	Under Bicycle Organizations - Remove Safe Routes to	Moved

Ch.	Topic	Comment	Response
		Schools as it is not an organization and put it under "Existing Resources" on page 88	
7	Ped Orgs	I am not certain we should list Community Choices as a pedestrian organization - you should check with Sharon Pesut	Removed Community Choices
7	Ped Orgs	Under Pedestrian Organziations Replace Community Choices Active Transportation Team with "Friends of Clark County Active Transportation" and remove website reference.	Added
7	Ped Orgs	Under Pedestrian Organziations: Add Community Choices	Added
7	Ped Orgs	Mentions Community Choices Active transportation group again, change to Friends of Clark County	Done
7	Existing resources	Bike Me not listed, Active transportation committee now Friends, not Community Choices	Added
7	Existing resources	says CTRANS again	Changed
7	Existing resources	ctrans - also add active transportation and bike clubs/organizations as partners - they helped to rally volunteers	Added
7	Program Recs	Program recommendations; this narrative indicates that the committee reviewed 17 programs and prioritized those below. I do not think that is a fair representation of the process. The prioritization was done by staff. I am not sure what the committee would have prioritized. So perhaps it would be more appropriate to say the committee endorsed staff recommendations for priorities?	Changed
7	School Ed	Portland Safer Routes to School Program reference seems out of place/unexplained. It should be referenced in the narrative or called out in the side bar as a resource/model program.	Done
7	Clarklovia	References to other cities' programs should be discussed in the narrative or called out as resources/model programs in the side bar.	Done
8	General	This chapter should be rearranged. Shift the Funding Sources section to an appendix and replace it with the committee's recommendation that we form a TBD. The implementation strategies should be prominent. Review all objectives in Chapter 3 to ensure they are addressed in the implementation chapter.	Reorganized chapter and referenced action items in Ch. 3 as related to Plan implementation; these are next steps strategies.
8	General	Review all objectives in Chapter 3 to ensure they are addressed in implementation strategies.	Reorganized chapter and referenced action items in Ch. 3 as related to Plan implementation; these are next steps strategies.
8	General	Expand benchmarking to refer to each of the goals in	Reorganized chapter and

Ch.	Topic	Comment	Response
		Chapter 3.	referenced action items in Ch. 3 as related to Plan implementation; these are next steps strategies.
8		Need to identify the most common method for funding pedestrian and bicycle projects. Address how most communities involved with bicycle implementation are choosing to leverage local money as a match for outside funding sources, in essence multiplying their resources. This approach to me sets the stage to identify funding opportunities.	Added text.
8		You can start by suggesting that the county continue its tradition of funding sidewalks and bikeways through the Capital Budget. This can be presented as funding actions.. Including "regular" roadway improvement projects and maintenance schedules. Action or Option #2 may include competitive local matches, Option 3 may be more public/private partnerships, then followed by compendium of funding sources and strategies as presented.	Added text.
8	1	Please add that park development is funding and developing sidewalks as a component of new park development. I can get you a break out if you want- but it's probably rolled into the existing numbers provided by MD.	Added, "Development of sidewalks is also a component of new park development. "
7		Implementation strategies – this covers only portions of the plan it does not go back and really link the goals/objectives and action items to any sense of implementation. Why is this the implementation strategy for the whole plan? It seems very sparse in content. As mentioned before, implementation seems disconnected from goals and objectives.	Reorganized chapter and referenced action items in Ch. 3 as related to Plan implementation; these are next steps strategies.
8		under TIGER II Discretionary Grants, it notes that pre-applications are due July 16, 2010. Since that date is this Thursday, it doesn't appear likely that the county will be able to apply by that time, unless you already have something in the works. Therefore, since we're probably too late for this program, maybe the entire section on TIGER II Grants should be removed.	Tiger is continuing; until we have another Transportation Act, it's what we've got
8	1	Do we really want to include grant programs like Tiger whose application deadline will have passed (as written July 16, 2010) and whose continuation is far from guaranteed? Sounds like instant obsolescence which calls into question what else is (already) outdated in a new document.	Tiger is likely to continue until we have another Transportation Act, updated text
8	Safety Grants	He recommends that the contact be changed from Kathleen Davis to Ian Macek, State Bicycle & Pedestrian Coordinator at (360) 705-7596 or Paula Reeves, Community Design Assistance Branch Manager at (360) 705-7258.	Done

Ch.	Topic	Comment	Response
8	1	The method of allocating modal costs by % of ROW may be misleading.	Info from ClarkCo
8	4	Final paragraph: Incorrect statistic on construction cost of one mile of sidewalk. Current costs are aproximately $125.00 per foot, or $660,000, not including right of way or other necessary non-construciton expenses. Your figures are including developer paid and other walkways added at no cost to county.	Changed
8	2	Second bullet ends abruptly (missing some text?) ". . .construction of such projects is dependent upon<ends>.	Done
8	8 & 11	Duplicate. Both say county will publish amount of bike lanes and sidewalks constructed each year. Combine.	Done
8	Tables 24 and 25	The tables are confusing. Can't read them.	Construction funding; Laurie provided
	Sidewalk Infill	$200k this year I'm betting on about $200k next year, although the very draft TIP currently shows more.	Added funding.
C	Table 46	What are poverty BGs?	Clarified "block groups"
C	Prioritization	The prioritization method appendix does not describe the threshold or reasoning for "high" vs. "low" priority. Also, it does not explicitly state whether the criteria were applied only to bicycle projects or to both bike & ped projects.	Done
		Remove all walking route maps to schools. Replace with County map outlining schools districts with their general front desk number to call for suggested walking route to their childs elementary school.	Added
D	2	Should probably say "Below are examples of walk route maps created and maintained by school districts, providing student directions…. It looks now like we created the maps, and we didn't.	Maps removed
D		Public Health would like to propose the following changes to appendix C. In talking with Jennifer previously she communicated to me that the information on page 99 of the current draft plan was acceptable to the school district, so we have offered no suggested changes based on that perception. Please keep us in the loop as you discuss these changes and how we can make this portion and the plan a document that helps us move active transportation issues forward in the community.	Added
D		Replace map with a more legible one.	Updated
E		To make this appendix useful, we should explain what the county will do with it. For example, "The projects	Added

Ch.	Topic	Comment	Response
		not included on the prioritized list will be the basis for ad hoc improvements and for improvements beyond the 6 year time horizon associated with the prioritized list."	
E	Table 48, Line 23	NW 139th St from NE Tenney Rd to NE 20th Ave.: This should say NE 139th St. NOTE: This portion is a part of the Salmon Creek Interchange Project, currently under design. Under this project, NE 139th Street will be widened to two lanes in each direction with bike lanes and sidewalks.	Changed; added note
E	Table 48, last line	NE 63rd St from NE 120th Ave. to NE 107th Ave: Should this be from NE 102nd Ave. instead of NE 120th Ave?	Changed
E	Table 48, Line 1	Should the name of this be NE 87th Ave/NE 105th St/NE 94th Ave?	Changed
E	Table 48, Line 6	This portion of NE 10th Ave is part of the Salmon Creek Interchange Project, currently in design. I believe that Clark County is responsible for this part of the project. I suggest that the Public Works designers be contacted to determine what they plan for this road, and make sure that they include this bike facility in their design.	The project includes bike lanes and sidewalks; removed these recommendations from the priority list.
E	Table 48, Line 13	I think that this should end at NE 72nd Ave, not St.	Changed
E	Table 48, Line 15	I assume that this means NE 156th St/NE 112th Ave/NE 154th St. There is no crossing of SR 503 in that location. SR 503 is limited access. NE 154th St is fenced on the east right of way of SR 503.	Changed, correct on map
E	Table 48, Line 22	SR 503 (Lewisville Hwy) has full-width shoulders on both sides available for bikes. An on-street bikeway is not likely in this location.	These projects are just identifying a need and not a project that will be built over the next 20 years
E	Table 48, Line 23	NW/NE 219th Street is currently not constructed between NW 21st Place and the new interchange at I-5. The portion of SR 502 (NE 219th St) from the new interchange to a point just east of NE 10th Ave has recently been constructed with shoulders on both sides available to bikes. No additional bike facilities are proposed. WSDOT plans a widening project from this point to Battle Ground. This project will have 10' wide shoulders for bicycles and pedestrians on both sides of the highway. Sidewalks and bike lanes will be provided in the Dollars Corner Rural Center. No additional bike facilities are proposed.	Edited project extent.
E	Table 48, Line 2	I think that this should be NE 172nd Ave.	Changed
E	Table 48, Line 21	Regarding the portion on SR 503 (NE 117th St), this portion has an existing curb and attached sidewalk on both sides, but no bike lanes. The travel lanes can't be narrowed. Right of way restrictions prohibit pushing the curbs out. Therefore, an on-street bikeway is not	These projects are basically part of the inventory and are just identifying a need and not a project that will be built

Ch.	Topic	Comment	Response
		likely in this location.	over the next 20 years
E	Table 48, Line 5	The existing roadway section of SR 500 (NE 4th Plain Rd/NE 58th Street) leaves no room for any bike facilities. There are no projects planned for this area. Therefore, an on-street bikeway is not likely in this location.	These projects are basically part of the inventory and are just identifying a need and not a project that will be built over the next 20 years
E	Table 48, Line 7	There is an existing shoulder on both sides SR 14 (SE Lewis and Clark Hwy) west of Milepost 19.7±, that is available for bikes. There are narrow shoulders from there to the east. Travel lanes can't be narrowed. Topographic constraints make widening the roadway section for on-street bikeways in this location highly unlikely.	These projects are basically part of the inventory and are just identifying a need and not a project that will be built over the next 20 years
E	Table 48, Line 15	SR 503 (NE Lewisville Hwy) has existing shoulders south of NE Rock Creek Road that are available for bikes. Numerous topographic constraints north of there make widening the roadway section for on-street bikeways highly unlikely.	These projects are basically part of the inventory and are just identifying a need and not a project that will be built over the next 20 years
E	Table 48, Line 17	SR 503 (NE Yale Bridge Rd) has little or no shoulders in most of this area. Numerous topographic constraints make widening the roadway section for on-street bikeways highly unlikely.	These projects are basically part of the inventory and are just identifying a need and not a project that will be built over the next 20 years
E	Table 48, Line 20	SR 503 (NE Chelatchie Rd) has little or no shoulders in most of this area. Numerous topographic constraints make widening the roadway section for on-street bikeways highly unlikely.	These projects are basically part of the inventory and are just identifying a need and not a project that will be built over the next 20 years
E	Table 49, Lines 2, 7, 8 & 9	Other state routes are called out in this table. There is not enough information given to comment. As these are off-street projects, it is assumed that they are on parallel streets, or some other off-highway facility.	Clarified that "As many of these previously-proposed projects are unnamed, the closest parallel street name was used to distinguish the project."
E	Table 47	Under "Type", there is a 2-3 letter abbreviation. There should be a legend explaining what those letters stand for.	Changed
E	Table 48	The WSDOT disclaimer should be placed on this list. Please see the note below regarding rewording of the disclaimer.	Added updated disclaimer
F	Pedestrian and Bicycle Safety Grants	recommends that the contact be changed from Kathleen Davis to Ian Macek, State Bicycle & Pedestrian Coordinator at (360) 705-7596 or Paula Reeves, Community Design Assistance Branch Manager at (360) 705-7258.	Changed
F	1	The website for the Transportation Enhancements Program doesn't work. The correct website is http://www.wsdot.wa.gov/.../TransEnhancement.htm	Provided the correct url

Ch.	Topic	Comment	Response
G	Counts	I would like you to consider changing the first paragraph to indicate that we are now beginning to install count stations that will provide some good data overtime. That way it looks like we are aware of this issue and we are working on it.	Changed
G	Bike light program	I have been advocating for connecting a program like this to social service providers and others. Right now it reads only partnership with bike orgs - it should be much broader. Suggest changing it to read partnership with local cycling groups, neighborhood associations, non-profit and social service organizations working with youth and low-income individuals and other local jurisdictions and service groups.	Added
G	WSU	Why just WSU, Clark College has significant parking issues and they currently have a student bike organization that could be tapped for these efforts.	Done
G	share the path	This could be combined with the annual trail count lots of volunteers already gathered for that event and would entice more people to participate in the survey portion of the count	Added
G	1	Timeframe refers to Spring 2009. Timeframes should have months, seasons, or intervals to avoid such issues.	Changed
G	bike to work month	We already have events in June and September that are local; seems like adding this in May takes away from the other events that we can share with Portland metro area	Changed
G	Complete streets	Complete Streets is a major policy decision, not an education program. IMHO, it doesn't belong here.	Moved to appendix
G		Include offering this resource to other jurisdictions to use with citizens - such as Vancouver office of neighborhoods, etc.	Added
H		Revise. Much of this appendix is not different from the actions identified in the plan. The work plan should identify next steps for each of the goals, objectives, and actions in Chapter 3. It should also identify responsible parties, an estimated start date, estimated end date, performance measures, and overall timeline (is this for the next 6 years or the next twenty?).	Inserted County-provided updated work plan.
H		Work Plan – I don't understand how this is a work plan. This is just a listing of some of the discussions/recommendations with no sense of any structure or prioritization. It does not in my mind constitute a work plan.	Inserted County-provided updated work plan.
I		Include Rapid HIA as appendix or discuss in Chapters 3 & 4	Done

Bike & Pedestrian Plan-August 2010 Edit

Default Report + Add Report

Response Summary

Total Started Survey: 6
Total Completed Survey: 6 (100%)

PAGE: PLEASE TAKE A FEW MOMENTS AND SHARE YOUR OPINIONS WITH US.

1. There are multiple ways to fund Bicycle and Pedestrian planning and expansion of the system. Please vote for the top two sources you would most support:

Create Chart Download

	Response Percent	Response Count
LOCAL OPTION GAS TAX - Maximum 10% of state gas tax rate.	66.7%	4
MOTOR VEHICLE LICENSE FEE - Requires creation of Transportation Benefit District. Up to $20 without voter approval.	33.3%	2
STREET USER/UTILITY/MAINTENANCE FEE - Administer through water or other utility bills. Requires vote.	0.0%	0
SALES TAX - Use portion of local sales tax as dedicated funding	16.7%	1
PROPERTY TAX LEVY - Use for specific improvement(s). Must be voter approved.	0.0%	0
BIKE TAX - Additional sales tax on bicycles with an annual fee. Requires voter approval.	16.7%	1
BICYCLE LICENSING FEE - Fee & registration of bicycles. ~$15?	33.3%	2
LOCAL BOND MEASURE - Use to fund improvements to spread cost over life of bond.	16.7%	1
LOCAL/BUSINESS IMPROVEMENT DISTRICTS - Fee allocated on property frontage or traffic trip generation in a specified area.	0.0%	0
TRANSPORTATION BENEFIT DISTRICT - Independent taxing district to improve & construct improvements within that district only.	0.0%	0
Other Suggestions? (please specify)	0.0%	0
	answered question	6
	skipped question	0

2. There are many ways for us to continue with outreach on the Bicycle and Pedestrian plan. Please vote for the strategy that you most support:

Create Chart Download

	Response Percent	Response Count

Bike & Pedestrian Plan-August 2010 Edit

Default Report + Add Report

Response Summary

Total Started Survey: 6
Total Completed Survey: 6 (100%)

PAGE: PLEASE TAKE A FEW MOMENTS AND SHARE YOUR OPINIONS WITH US.

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PROPERTY TAX LEVY - Use for specific improvement(s). Must be voter approved.	0.0%	0
BIKE TAX - Additional sales tax on bicycles with an annual fee. Requires voter approval.	16.7%	1
BICYCLE LICENSING FEE - Fee & registration of bicycles. ~$15?	33.3%	2
LOCAL BOND MEASURE - Use to fund improvements to spread cost over life of bond.	16.7%	1
LOCAL/BUSINESS IMPROVEMENT DISTRICTS - Fee allocated on property frontage or traffic trip generation in a specified area.	0.0%	0
TRANSPORTATION BENEFIT DISTRICT - Independent taxing district to improve & construct improvements within that district only.	0.0%	0
Other Suggestions? (please specify)	0.0%	0
	answered question	6
	skipped question	0

2. There are many ways for us to continue with outreach on the Bicycle and Pedestrian plan. Please vote for the strategy that you most support:

Create Chart Download

	Response Percent	Response Count

REVISE THE BICYCLE & PEDESTRIAN ADVISORY COMMITTEE - Clark County currently has a bicycle-only advisory committee and is proposing the creation of a Bicycle & Pedestrian Advisory Committee to advise the county on issues related to biking and walking issues in the county.		0.0%	0
CREATE A SCHOOL EDUCATION /ENCOURAGEMENT PROGRAM - Robust Walk Routes to School programs address all of the "Five E's" (Engineering, Education, Encouragement, Enforcement, ad Evaluation). The program would also educate students about bicycle/pedestrian safety & laws.		16.7%	1
ESTABLISH "CLARKLOVIA" EVENT - The Clarklovia or Sunday Parkway is a great opportunity to engage residents of all ages by closing a loop of streets to cars so that residents can bike, walk, run & skate in the streets without auto traffic.		0.0%	0
DEVELOP AN EAST COUNTY SCENIC TOUR - Clark County should identify a continuous loop through the East County area, which would provide a route for longer recreational rides. This could include parts of the proposed Chelatchie Prairie Trail, as well as on-street portions, to focus bicycle and pedestrian improvements.		33.3%	2
IMPROVE COMMUNICATIONS WITHIN CLARK COUNTY - Clark County should convene a group of planners and staff from the Public Works department to meet quarterly and discuss projects related to bicycle & pedestrian planning in the county.		16.7%	1
Hide replies Other Suggestions? (please specify)		33.3%	2

1. We're dying out here; nothing that costs money or stops business.	Mon, Aug 30, 2010 6:08 PM	Find
2. YOu need a good website and use email blasts to communicate. This is cheaper and easier.	Mon, Aug 30, 2010 4:36 PM	Find

answered question	6
skipped question	0

3. Have you reviewed our new draft Bicycle & Pedestrian Plan that is available on our website at http://www.clark.wa.gov/planning/bikeandped/docs.html?

Create Chart Download

	Response Percent	Response Count
Yes	66.7%	4
No	33.3%	2
answered question		6
skipped question		0

4. If you have reviewed the latest plan, do you have any comments for us to consider? Download

	Response Count
Show replies	5
answered question	**5**
skipped question	**1**

Hide replies 5

1.	Wish plan included an executive summary since the 217 page long plan seems overwhelming if one has very little time, one suggestion from an avid bike commuter to my worksite and avid recreation cyclist is to install post mounted signal buttons at intersections with traffic lights or in-pavement traffic warning lights so cyclists can activate the light without having to dismount or drag your bike up onto the sidewalk to get to the post that's only convenient for pedestrians	Thu, Sep 23, 2010 11:50 AM	Find
2.	As a cyclist, I do not appreciate folks who ride on sidewalks. We need more bike lanes, wider shoulders that are swept periodically of debris. Something needs to be done to encourage vehicle drivers to respect cyclists. Portland drivers are a lot more aware and courteous as they interface with cyclists.. more so than Vancouver driviers.	Wed, Sep 15, 2010 9:27 PM	Find
3.	Make an updated draft of the current Clark County bicycle map with all of these improvements for an easy frame of reference.	Thu, Sep 2, 2010 8:44 PM	Find
4.	It's a "make work" project to keep County staff employed and not a bare bones "need" demanded by the County at large.	Mon, Aug 30, 2010 6:08 PM	Find
5.	It was way too long and lacked a consise executive summary. I was bored by the end of over 200 pages. You need to get crisper. Think CNN- GMA Fox News!!	Mon, Aug 30, 2010 4:36 PM	Find

answered question	**5**
skipped question	**1**

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Appendix B. Existing Conditions Tables

Roadway Functional Classifications

A review of the roadway classifications provides the basis for applying the differing types of bicycle facilities; knowledge of the various functional classifications of the roadways within Clark County allows for the identification of the appropriate bicycle facilities for a particular road. The following definitions are taken from the Clark County Code.

Urban Roads

Access Roads

1. "Neighborhood circulator" serves to distribute traffic from collectors and provides direct access for abutting properties. Through trips are discouraged and parking is allowed. In general, these streets connect to collectors.
2. "Local residential access" streets provide direct access to adjoining properties within a neighborhood. Through trips are discouraged and parking is allowed. In general, these streets do not directly connect to arterials or collectors.
3. "Residential loop" streets are a special category of local residential access streets with outlets that begin and end on the same street or on different streets but orientated in such a way that they would only be used for access to residences on that loop. They are less than one thousand two hundred (1,200) feet in length. Through trips are discouraged and parking is allowed.
4. "Cul-de-sac" streets provide an outlet at one (1) end only and are constructed with a turnaround at the other. They are a maximum of six hundred (600) feet in length. Parking is allowed.
5. "Short cul-de-sac" streets have a two (2) foot narrower roadway than cul-de-sacs. They are a maximum one hundred fifty (150) feet in length and serve no more than eighteen (18) dwelling units. Parking is allowed.
6. "Alley" streets are secondary accesses to the back side of lots. This allows streets at the front of properties not to be encumbered with driveways and is an alternative to frontage access. Parking is not allowed.
7. "Infill A roadway" is a twenty (20) foot public or private roadway within a minimum twenty-five (25) foot easement used to serve up to eight (8) lots in an infill development. Parking is not allowed.

8. (“Infill B private roadway” is a twelve (12) foot roadway within a minimum twenty (20) foot private easement for a maximum of one hundred fifty (150) feet in length used to serve a maximum four (4) lots. Parking is not allowed.
9. “Urban industrial” streets serve to distribute traffic from arterials and provide direct access to abutting industrial properties. Primary industrial streets have three (3) or five (5) lanes. Secondary industrial streets have two (2) lanes. Through trips are discouraged and parking is allowed.

Collector Streets

“Urban collector” provides for land access and traffic circulation within and between residential neighborhoods, and commercial and industrial areas. Direct access to adjacent land uses, however, is still subordinate to traffic movement. Access to abutting properties is controlled through the use of raised channelization, driveway spacing and pavement markings. Typically, collectors are not continuous for any great length, nor do they form a connected network by themselves. Parking is allowed only on two-lane urban collectors (see the Standard Details Manual) where bike lanes are not specified.

Arterials

1. “Parkway arterial” (the principal arterial parkway referred to in the Arterial Atlas) is the highest classification within the county’s functional classification system. The purpose of this county road is to carry high volumes of traffic through the urban area and between major activity centers of regional impact. This class of road is of great importance in the regional transportation system as it carries a high proportion of the total urban-area travel. Access is normally limited to intersections with other arterials. Direct land access is prohibited.
2. “Principal arterial” is the basic element of the county’s road system. All other functional classifications supplement the principal arterial network. Access is generally limited to intersections with other arterials and collectors. Direct land access is minimal and controlled, but less restrictive than access from parkway arterial.
3. “Minor arterial” collects and distributes traffic from principal arterials to streets of lower classifications and may allow for traffic to directly access destinations.

Rural Roads

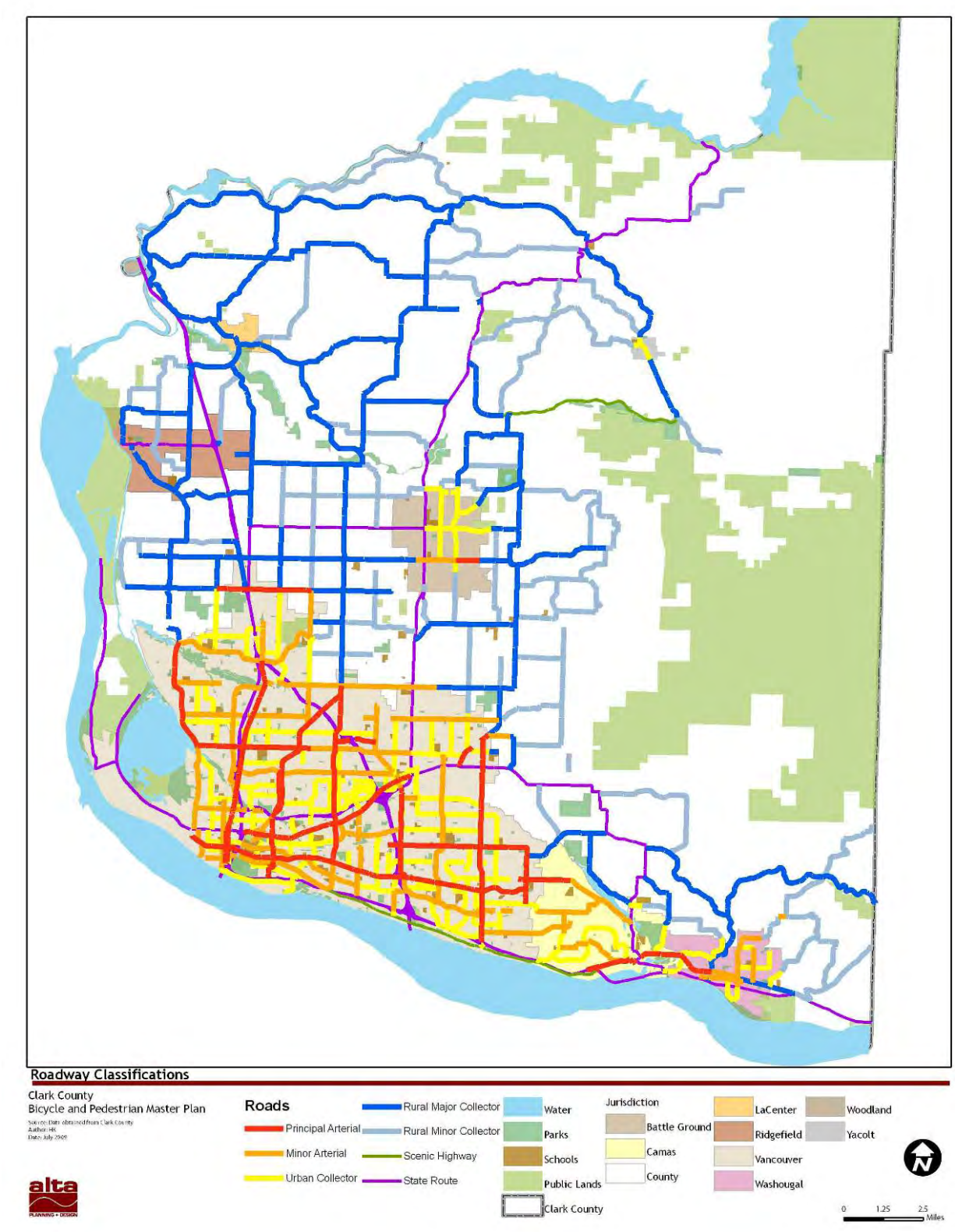
Access Roads

1. "Local access" roads provide access from parcels to the rural collector system. Parking is not allowed unless an extra eight (8) foot wide paved area is provided.
2. "Loop" roads are local access roads with outlets that begin and end on the same road. Parking is not allowed unless an extra eight (8) foot wide paved area is provided.
3. "Cul-de-sac" roads are local access roads with an outlet at one (1) end only and are constructed with a turnaround at the other end. Parking is not allowed unless an extra eight (8) foot wide paved area is provided.

Arterials

- "Rural arterial" roads are rural extensions of urban principal arterials and some urban minor arterials. Their primary purpose is to provide adequate right-of-way for future urban arterial routes. The provision of land access remains subordinate to providing for traffic movement. Parking is not allowed.
- "Rural major collector" roads are rural extensions of urban minor arterials and some urban collectors. Their primary purpose is to link rural centers with larger towns nearby and to state arterial routes. The provision of land access remains subordinate to providing for traffic movement. Parking is not allowed.
- "Rural minor collector" roads serve the remaining rural area. They connect local traffic to rural major collectors and state arterial routes and may be rural extensions of urban minor arterials or urban collectors. They are spaced so as to be accessible to all developed areas within the county. The provision of land access is given the same priority as the provision of traffic movement. Parking is not allowed.

Major streets in Clark County are shown in Map 8.



Map 8. Clark County Major Roadway Classifications

Existing Policies

This section lays out a vision of how to continue and expand improvements to increase walking and bicycling in Clark County. Goals are principles that guide the development and implementation of the Bicycle and Pedestrian Master Plan for years to come. Objectives and actions guide the way the public improvements are made, where resources are allocated, how programs are operated, how department priorities are determined, and how private development is designed.

Policies in Clark County and its six cities are organized into the categories of bicycle and pedestrian network development, traffic management, supporting programs, parks, trails, funding, and jurisdictional coordination.

The recommended goals, objectives and actions for each policy area incorporate those relevant to pedestrian and bicycle travel from previously adopted plans in Clark County and the individual jurisdictions. The policies proposed here are not proscriptive and have no fees or specific penalties associated with noncompliance. County level policies do not take the place of individual City bicycle and pedestrian policies. Rather, they should augment the policies of each city and provide appropriate county-level support for cycling and walking.

The purpose of this exercise is to create a framework of County Policies that support increased walking and biking, balanced and complete development of the non-motorized transportation network, increased safety and knowledge of cycling and walking, equal allocation of countywide funding, and foster increased cooperation among the jurisdictions of Clark County. As significant variation exists from one jurisdiction to the next in terms of the number and detail of bicycle and pedestrian supportive policies within the county jurisdiction the secondary purpose of this exercise is to:

- Ensure that bicycle and pedestrian supportive policies of each jurisdiction within the county do not conflict with new County policies
- Ensure that bicycle and pedestrian policies do not conflict from one jurisdiction to the next
- Provide a set of standard policies that jurisdictions may choose to adopt to augment their own existing policies in lieu of conducting their own extensive analysis and policy adoption.

Project Prioritization

Operating under limited budgets, Clark County and the local jurisdictions have developed methodologies for prioritizing transportation projects. This

analysis will allow Clark County to identify projects that consistently score highly from a variety of prioritization methods.

Washington State

The 2008 Washington State Bicycle Facilities and Pedestrian Walkways Plan prioritizes projects within cities and urbanizing areas, "particularly where housing and employment mix. " It states that, "Based on analysis of the data and information available, the greatest opportunity for improving bicycle and pedestrian safety and mobility is improving crossings, connections, and trail systems within cities and urbanizing areas. Higher speed, higher volume arterials within cities often act as barriers to bicycling and walking."

Clark County

Clark County's Transportation Improvement Plan lays out specific guidelines for prioritizing transportation projects. It is designed to be an objective measure, based on the following criteria:

- Safety (considering both collision data and exposure measures);
- Comparison to the Arterial Atlas;
- Concurrency;
- Multimodal;
- Route Connectivity;
- Environmental Impacts;
- Public/Agency Support;
- Support for Economic Development; and
- Leveraging of Outside (non-County) Funding

Project lists are developed every other year, along with a public involvement process. Project may bypass this ranking process in the case of an emergency or to develop a regionally significant project in conjunction with another agency.

In addition to the TIP, the Clark County Comprehensive plan provides guidance for project prioritization. Policy 5.5.2 reads, "Pedestrian safety shall be given priority in the design and capital facilities planning process." In addition, policy 5.2.6 states that, "Priority will be given to right-of-way acquisition for the non-motorized routes recommended in the adopted Clark County Trails and Bikeway System Plan. Developer contributions will be required where appropriate."

The public comments for the Highway 99 Corridor Concept Plan also established community concerns for bicycle and pedestrian facilities in Clark County. Comments regarding illustrated drawings included a request for more street trees, 12' sidewalks, bike lanes and bicycle-safe stormwater grates. Projects in this Plan were inventoried by Clark County Community Planning Staff and Clark County Public Works staff, in coordination with

the Bicycle Advisory Committee. The analysis prioritized bicycle mobility and safety when considering projects.

Existing Policies Comparison

Table 36. Bicycle and Pedestrian Network Development Policies

Jurisdiction	Source	Policy
Balanced Transportation System/Transportation Options		
Clark County	Metropolitan Transportation Plan	Provide an efficient, balanced, multi-modal regional transportation system including highway, bus transit, high capacity transit, rail, aviation, marine, bicycle and pedestrian modes as well as transportation demand management and transportation system ma
	Regional Trails and Bikeways System Plan	C. Provide a balanced, multi-modal transportation system for Clark County that supports safe, efficient movement of people and goods
	Comp Plan Framework Plan	Encourage transportation systems that provide a variety of options (light rail, high-occupancy vehicles, buses, autos, bicycles or walking) within and between rural centers
		5.1.6 Establish connections between Urban and Rural Centers through a variety of transportation options.
Battleground	Comprehensive Plan – Transportation Element (TE)	… "a transportation system with a variety of transportation options"
		Objective TO5.8 The City will seek to balance motor vehicle mobility with pedestrian, bicycle and transit accessibility
		Objective TO3.2 The City will work to provide a complete pedestrian network
		Objective TO3.3 The City will work to provide a complete bicycle network
		A transportation system that balances accessibility and mobility
Camas	Comprehensive Plan – Transportation Element	Balanced Transportation: Provide a balanced transportation system that supports the land use vision for industrial, commercial, and residential uses.
		Develop a safe and accessible pedestrian and bicycle system that includes shared roadways, multi-use paths, and sidewalks
La Center	Comprehensive Plan	2.1.14 The City shall provide bike lanes on all major roadways

Jurisdiction	Source	Policy
Ridgefield	Transportation Capital Facilities Plan	Future bicycle improvements identified in conjunction with street improvements are intended to provide bicyclists with full accessibility on the city's major street system. These facilities will provide for circulation for the destination-oriented bicyclist, including travel between residential areas and schools/work, routes between local social and environmental features for the recreational bicyclist, and result in a more balanced transportation system providing direct routes for all users in the City of Ridgefield.
	Comprehensive Plan	Consider traffic calming devices, such as specially-design speed bumps and traffic circles, as methods of discouraging or slowing through traffic on local streets
		Livable streets: Design streets and sidewalks and manage vehicular traffic to encourage livability, interaction, and sense of neighborhood or district ownership in linkage with adjacent land uses.
		Transportation options: Develop and maintain an interconnected and overlapping transportation system with excellent roadways for automobiles and freight, pedestrian walkways, bicycle facilities, and transit service. Include support programs such as traffic operations, transportation demand management, neighborhood traffic management, and the regional trails program. Work toward completing and sustaining individual components and programs to ensure success of the entire system.
Vancouver	Community Framework Plan and GMA Goals	Encourage transportation systems that provide a variety of options (light rail, high-occupancy vehicles, buses, autos, bicycles or walking) within and between rural centers
	Comprehensive Plan	Transportation system: Develop and maintain an interconnected and overlapping transportation system grid of pedestrian walkways, bicycle facilities, roadways for automobiles and freight, transit and high-capacity transit service. Include support programs such as traffic operations, transportation demand management, neighborhood traffic management, and the regional trails program. Work towards completing and sustaining individual components and programs to ensure success of the entire system.
		System balance: Allocate resources to balance transportation choices. Promote development of a broader range of transportation options including pedestrian, bike, and transit systems, rather than focusing all resources on satisfying peak commuting demand with roadway capacity alone.
		PFS-11 Transportation accessibility: Build an accessible transportation system focused on inter-model connectivity and removal of barriers to personal physical mobility.
		PFS-10 Livable streets: Design streets and sidewalks and manage vehicular traffic to encourage livability, interaction, and sense of neighborhood or district ownership in linkage with adjacent land uses. Encourage multi-modal travel, and provide accessible, human scale opportunities for transferring between travel modes.
		Build a walkable community for high quality of life. Vancouver's streets need to be more accessible and safer for pedestrians. Especially important are downtown and neighborhood streets, minor neighborhood arterials, and routes along major bus lines."

Jurisdiction	Source	Policy
Vancouver	Comprehensive Plan	Support all travel modes. This will require planning and providing facilities for automobile, bus transit, high-capacity transit, pedestrian, and bicycle travel.
		Create livable streets. Most people who live in Vancouver view the community's streets as more than simply concrete and asphalt. Streets affect the way people live, work, and play. Streets should be viewed as part of a dynamic, integrated land use and transportation system. Street treatments (paving type, sidewalks, lighting, street trees, signs, and furniture such as benches and trash cans) should address the needs of regular users and the surrounding area.
Washougal	Comp Plan	Broader range of transportation options including pedestrian, bike, and transit systems, rather than focusing all resources on satisfying peak commuting demand with roadway capacity alone.
	Comp Plan	To establish an efficient circulation system which, by design, integrates the full range of land uses in a way that accommodates and encourages a variety of transportation alternatives such as carpooling, public transit, bicycles, and walking.
Network Connectivity		
Washougal	Comp Plan	Transportation systems will utilize present east/west corridors and expand north/south connections between residential areas and downtown. The system will be multi-modal with provision for pedestrians, bicyclists, and public transit, as well as automobiles. Traffic—auto, truck, and rail—serving industrial areas will be preserved and enhanced where possible.
	Comp Plan	Policy 3B Develop a network of roads and paths that improve connectivity between the downtown core and neighborhoods within the city.
Network Development		
Clark County	Comp Plan - TE	5.2.1 Roadway improvements which provide for additional capacity for the automobile shall also include design accommodations for alternative travel modes.
Vancouver	Community Framework Plan and GMS Goals	5. Establish residential, commercial and industrial development standards including road and parking standards, to support the use of alternative transportation modes.
System Design and Safety		
Camas	Comp Plan - TE	Maintain access management standards for streets consistent with City, County, and State requirements to reduce conflicts among trucks, vehicles, bicycles, and pedestrians
	Comp Plan - TE	Coordinate with schools and the community to designate safe pedestrian and bicycle routes between residential areas, schools, and public facilities (e.g. parks).
	Comp Plan - TE	Provide for Americans with Disabilities Act (ADA) upgrades and future design requirements.
	Comp Plan - TE	Safety and Livability: Design and construct safe transportation facilities that meet applicable requirements and that enhance the livability of Camas.

Jurisdiction	Source	Policy
	Comp Plan - TE	Provide attractive streetscapes through design standards that encourage appropriate traffic volumes, speeds, and pedestrian safety.
	Comp Plan - TE	Implement public street standards that support the multi-use nature of the street right-of-way for utility, pedestrian, bicycle, transit, truck, and auto use.

Table 37. Policies Related to Jurisdictional Cooperation

Jurisdiction	Source	Policy
Clark County	Regional Trails and Bikeways System Plan	F. Coordinate with all transportation providing agencies to ensure trails are included within their plans
	Regional Trails and Bikeways System Plan	G. Coordinate with surrounding counties and cities to create a connecting system.
	Regional Trails and Bikeways System Plan	Work closely with corporate business, private developers and public agencies to incorporate trails and bikeways where feasible
Camas	Comprehensive Plan - TE	Continue to coordinate with Clark County Bicycle Advisory Group on routes. Rank missing multi-modal links on the six year plan for implementation.
	Comprehensive Plan - TE	Continue to coordinate with CTRAN to improve transit service, pedestrian facilities leading to bus stop waiting areas, and signal priority.
	Trails and Open Space Comprehensive Plan	7C. Encourage and pursue mutual cooperation and a "good neighbor" policy with residents and businesses located adjacent to park facilities, trails, and natural open space areas.
La Center	Comprehensive Plan	2.1.1 La Center shall coordinate with the Regional Transportation Council, Clark County, Washington State Department of Transportation, C-TRAN and other carriers to ensure that La Center transportation facilities, services and policies function as part of a cohesive regional system.
Ridgefield	Comprehensive Plan	TR-20 Coordinate with Clark County in developing and implementing bicycle and recreational trail plans and systems, through public acquisition, dedication, transferable development rights, development exactions and other appropriate means
	Comprehensive Park and Recreation Plan	4-B: Connect the City's pedestrian and bicycle system with regional systems.
Washougal	Comprehensive Plan	Policy 6-A: The City will coordinate its transportation system with those of neighboring communities, Clark County, and the State of Washington.
Vancouver	Urban Parks, Recreation, and Open Space Plan	Establish a county-wide system of trails and bicycle paths both within and between jurisdictions for recreational and commuter trips. Coordinate this trail system with those of adjacent counties and Oregon jurisdictions.
	Comprehensive Plan	PFS-14 Transportation regional and metropolitan coordination: Coordinate Vancouver's transportation plans, policies, and programs with those of other jurisdictions serving the greater Metropolitan area to ensure a seamless transportation system. Focus particular

Table 38. Traffic Management and Demand Management Policies

Jurisdiction	Source	Policy
Demand Management		
Clark County	Comprehensive Framework Plan	5.1.4 Encourage use of alternative types of transportation, particularly those that reduce mobile emissions (bicycle, walking, carpools, and public transit).
	Comprehensive Framework Plan	5.1.8 Encourage a balanced transportation system and can be maintained at acceptable levels of service.
Battleground	Comprehensive Plan - TE	Objective TO3.5 The City will seek alternative means of meeting travel demand.
Camas	Comprehensive Plan - TE	Performance and Coordination: Create an efficient transportation system that limits congestion, reduces the percentage of trips by single occupant vehicles, and reduces the number and length of vehicle trips.
	Comprehensive Plan - TE	Implement trip reduction strategies.
	Comprehensive Plan - TE	Encourage existing employers, business groups, and residents to develop, implement, and participate in travel demand management programs.
La Center	Urban Area Comprehensive Plan	2.1.12 The City shall develop transportation concurrency regulations consistent with RCW 36.70A.070 (6) (b) and shall evaluate the need for transportation demand management strategies as an element of its transportation capital facilities plan.
Ridgefield	Comprehensive Plan	Transportation demand management: Work with major employers, Clark County and other jurisdictions to establish traffic demand reduction programs, including the Commute Trip Reduction Program, and park and rides which decrease reliance on private automobile transportation, through the development of a balanced system which emphasizes adequate roads, transit (bus service), and bicycle and pedestrian improvements.
	Comprehensive Plan	Vehicle miles traveled: When economically feasible, given the population density, use transportation and land use measures to maintain or reduce single occupant motor vehicle miles traveled per capita to increase system efficiency and lower overall environmental impacts.
Vancouver	Comprehensive Plan	Transportation system efficiency: Invest in and improve efficiency of the transportation system with multi-modal design, advanced traffic management and operations technologies, demand management strategies and high-frequency transit service.
	Comprehensive Plan	PFS-17 Vehicle miles traveled: Use transportation and land use measures to maintain or reduce single occupant motor vehicle miles traveled per capita to increase system efficiency and lower overall environmental impacts.
	Community Framework Plan and GMA Goals	3. To reduce vehicle trips, encourage mixed land use and locate as many other activities as possible to be located within easy walking and bicycling distances from public transit stops.
Level of Service		
La Center	Urban Area Comprehensive	4.1.3 La Center shall adopt and annually review Level of Service (LOS) standards for certain public facilities and services. LOS policies concerning roads and pedestrian ways, water service, and park and recreation facilities are presented

Jurisdiction	Source	Policy
	Plan	in this plan. The City shall reassess the land use element of this plan if probable funding falls short of meeting existing needs and shall evaluate reasonable measures to ensure that the land use element, capital facilities element, and financing plan within the capital facilities plan are coordinated and consistent.
Ridgefield	Comprehensive Plan	Service standards: Maintain LOS "D", except at unsignalized intersections that do not meet the requirements for use of signals or where a signal is not desired, where the planned LOS is "E". For Pioneer Street/SR 501, maintain LOS D or a mutually-agreed upon LOS between the City of Ridgefield and WSDOT.
Vancouver	Community Framework Plan and GMA Goals	7. Establish regional level-of-service (LOS) standards for arterials and public transportation that ensure preservation of the region's (rural and urban) mobility while balancing the financial, social and environmental impacts.

Table 39. Policies Related to Supporting Programs

Jurisdiction	Source	Policy
Education and Encouragement		
Camas	Comprehensive Plan – Parks, Recreation, Open Space & Trails Element	Objective: The city should encourage or conduct a series of recreational public walking events along selected natural open space travel corridors. Such events should blend fitness and enjoyment with some organized interpretation and public participation activities.
	Trails and Open Space Comprehensive Plan	8E: Encourage or conduct programming that encourages use of the City's trail system and open space network. These programs or events can blend fitness and enjoyment with some organized interpretation and public participation activities and increase awareness of Camas' assets.
Ridgefield	Comprehensive Plan	TR-9 Neighborhood traffic: Protect and enhance neighborhoods with an active program that focuses on safety, safe routes to school, traffic calming, education, and law enforcement.
Vancouver	Urban Parks, Recreation, and Open Space Plan	Encourage the establishment of special interest organizations to help promote and program specific activities, such as walking clubs, wellness events and bicycle clubs.
	Comprehensive Plan	PFS-13 Neighborhood traffic: Protect and enhance neighborhoods with an active program that focuses on safety, safe routes to school, traffic calming, education, and enforcement.
	Community Framework Plan and GMA Goals	2.5.2 Transportation Policies 4. Encourage use of alternative types of transportation, particularly those that reduce mobile emissions (bicycle, walking, carpools, and public transit).

Jurisdiction	Source	Policy
Environment		
Camas	Comprehensive Plan - TE	Environmental: Minimize the impacts of the transportation system on the city's environment.
	Comprehensive Plan - TE	Provide a mix of land uses and, where feasible, decrease the dependency on automobiles thereby reducing the impacts on the environment.
	Comprehensive Plan - TE	Locate and design multi-use paths to have the lowest level of impact on the environment.
	Comprehensive Plan - TE	Participate in regional transportation, growth management, and air quality improvement efforts.
	Comprehensive Plan - TE	Where avoidance is not possible, explore mitigating the impacts of street and multi-use path construction through the use of a wetland banking system, using Best Management Practices (BMP's) in storm design and treatment.
System Safety		
Clark County	Comprehensive Plan - TE	5.2.7. A safe and secure walkway network shall be established within urban areas and rural centers.
	Comprehensive Plan - TE	5.5.1. High safety standards will be maintained for motorists, pedestrians and bicyclists through the development, design and capital improvement process.
Vancouver	Comprehensive Plan	Transportation safety: Ensure high safety standards for motorists, pedestrians, and bicyclists through the development and capital improvement processes. Allocate city capital resources to high risk and collision locations for motorists, bicyclists, and pedestrians.
Battleground	Comprehensive Plan - TE	A transportation system that is safe
	Comprehensive Plan - TE	Objective TO2.1: The City will work to enhance the safety of the pedestrian system
	Comprehensive Plan - TE	Objective TO2.2: The City will work to enhance the safety of the bicycle system

Table 40. Policies Related to Parks

Jurisdiction	Source/Status	Policy
Park Access		
Battleground		Access [to Neighborhood Parks] is primarily pedestrian. Persons within the service area should not have to cross major arterials to get to the site.
		Access [to Community Parks] is by car, bicycle, or on foot Development typically includes landscaping, irrigation, picnic shelters and tables, tennis courts, covered activity areas, soccer and baseball fields, bike and pedestrian trails, restrooms and parking lots.
Camas	Trails and Open Space Comprehensive Plan	2A Locate neighborhood parks convenient to all residents of Camas. Residents should have a neighborhood park or connection to the trail system available within about ½ mile of their homes.
Vancouver	Urban Parks, Recreation, and Open Space Plan	These parks are intended to serve residential areas within walking distance (1/3 to 1/2 mile radius) of the park site. Access is mostly pedestrian, and park sites should be located so that persons living within the service area will not have to cross a major arterial street to get to the site.
	Urban Parks, Recreation, and Open Space Plan	These parks serve groups of neighborhoods within a one- to three-mile radius of the park site. Access to community parks may be by car, bicycle or on foot.
Washougal	Comprehensive Plan	5.1.2.2.2 Community Parks: These parks serve groups of neighborhoods within a 1-5 mile radius. Access to community parks is by car, bicycle or foot. The range of facilities provided is greater than for neighborhood parks and generally appeals to more diverse user groups. Access is by arterial or collector streets which accommodate pedestrians, bicycles, and autos.
Recreation		
Clark County	Regional Trails and Bikeways System Plan	Utilize and leverage the recreational opportunities within Clark County's open spaces and parks by connecting citizens to their homes, parks, schools, businesses and work.
Camas	Comprehensive Plan - Parks, Recreation, Open Space & Trails Element	Provide a convenient and pleasant trail and bikeway network for pedestrian and bicycle recreation throughout the city.
	Comprehensive Plan - Parks, Recreation, Open Space & Trails Element	Objective: The primary focus of recreation trails should be leisure use in nature rather than a transportation emphasis. Recreation trails should make minimal use of streets as much as possible, but still allow for additional use from commuter bicyclists who are looking for safe routes.

Table 6. Policies Related to Trails

Jurisdiction	Source/Status	Policy
Trail System		
Clark County	Regional Trails and Bikeways System Plan	A. Provide a comprehensive trail system that will interconnect the regional trail systems and the transportation systems of sidewalks and bike lanes.
	Regional Trails and Bikeways System Plan	Develop and maintain a comprehensive trail and bikeway system to link with other providers
Camas	Trails and Open Space Comprehensive Plan	PROST Goal 1: Preserve and enhance the quality of life in Camas through provision of parks, recreational facilities, trails, and open spaces.
	Trails and Open Space Comprehensive Plan	1D. Provide a comprehensive network of trails that is environmentally responsive and compatible with adjoining property.
	Trails and Open Space Comprehensive Plan	PROST Goal 4: Provide a convenient and pleasant pedestrian and bicyclist trail network that links parks, schools, and community destinations throughout the City.
La Center	Urban Area Comprehensive Plan	2.1.15 The City shall promote pedestrian and bicycle trails which provide transportation utility. Where practical, trail design should accommodate emergency vehicles.
	Urban Area Comprehensive Plan	6.1.5 La Center shall encourage and promote the acquisition and development of a citywide pedestrian and bicycle trail system to connect schools, parks, neighborhoods, and other features and facilities.
Ridgefield	Comprehensive Plan	Recreational trails shall be provided to connect neighborhoods and to provide public access to the Ridgefield National Wildlife Refuge, the Gee Creek, and the Allen Creek Basins
	Comprehensive Park and Recreation Plan	Provide opportunities for walking and biking by connecting parks, open space, schools, neighborhoods, downtown, and regional destinations.
	Comprehensive Park and Recreation Plan	4-A: Develop an interconnected pedestrian and bicycle system that connects the community.
	Comprehensive Park and Recreation Plan	4-C: Develop a network of off-street trails using natural open space areas, parks, utility corridors, and other features. This network can be supplemented with on-street connections where needed.
Vancouver	Community Framework Plan and GMA Goals	Parks, Recreation and Open Space: Establish a county-wide system of trails and bicycle paths both within and between jurisdictions for recreational and commuter trips. Coordinate this trail system with those of adjacent counties and Oregon jurisdictions.
	Urban Parks, Recreation, and Open Space Plan	Establish a system of separate trails for non-motorized vehicles, pedestrians and equestrians linking urban centers, public and private open space, and park and recreational resources within and between jurisdictions.
	Urban Parks, Recreation, and Open Space Plan	Create bicycle and walking trails linking historic sites in the area. Create equestrian trails to those sites in appropriate areas.
	Urban Parks, Recreation, and Open Space Plan	Promote street, pedestrian paths and bike paths as part of a system of fully connected and scenic routes to all destinations.
	Comprehensive Plan	PFS-31 Trails: Provide a system of trails linking public and private open spaces, parks, recreational uses and transportation facilities within and between jurisdictions. Encourage use of greenspaces and riparian corridors as pedestrian and non auto-

Jurisdiction	Source/Status	Policy
		oriented linkages within the urban area, in balance with habitat protection.
Washougal	Comprehensive Plan	Policy 2-D The City shall develop a citywide bicycle and pedestrian trail system.
Trail Access		
Clark County	Regional Trails and Bikeways System Plan	B. Provide a system that will support the development of shared-use paths within one mile of every home within the urban area
	Regional Trails and Bikeways System Plan	Provide a system of shared-use paths within one mile of every school.
Ridgefield	Comprehensive Park and Recreation Plan	Provide a minimum of 0.75 miles of off-street trails per 1,000 residents in Ridgefield.
Trail Planning and Design		
Clark County	Comprehensive Plan Framework Plan	5.1.2 Streets, pedestrian paths and bike paths are to be a part of a system of fully connected and scenic routes to all destinations. Establish design standards for development to promote these options, and work cooperatively with C-TRAN to ensure that programs for improvements in transit service and facilities as well as roadway and pedestrian facilities are coordinated with these standards.
	Comprehensive Plan Framework Plan	Whenever possible, the trails depicted on the Trails Plan should not be a part of a street roadway. Where routes use existing streets, the pathway should be designed to minimize potential conflicts between motorists and trail users through the use of both physical separation distance and landscaping.
	Comprehensive Plan Framework Plan	The trail network should be looped and interconnected to provide a variety of trail lengths and destinations. The trails should link various parts of the community, as well as existing park sites.
Camas	Comprehensive Plan - TE	Construct multi-use paths where they can be developed with design components that address pedestrian and bicycle safety.
	Comprehensive Plan - TE	Objective: The planning, design, and development of recreation trails should seek to reduce potential conflicts between different trail users and seek to enhance the enjoyment of natural open space and the safety of users.
	Comprehensive Plan - TE	Objective: Bicycle traffic should be encouraged to utilize designated trails or roadways rather than pedestrian oriented trails.
	Comprehensive Plan - TE	Objective: Whenever possible, trail facilities should be designed to accommodate users with disabilities.
	Trails and Open Space Comprehensive Plan	4A. Develop a trail network that provides recreation opportunities as well as transportation. Recreation trails should be off-street as much as possible, but still allow for commuter bicyclist or pedestrian use.
	Trails and Open Space Comprehensive Plan	4B. Reduce conflicts among users through the planning, design, and development of recreation trails. Trail design and location should enhance enjoyment of natural open space and provide safety for users
	Trails and Open Space Comprehensive Plan	4C. Meet accessibility guidelines for trail development. Incorporate information about trail difficulty into the trail system's signage.

Jurisdiction	Source/Status	Policy
Washougal	Comprehensive Plan	5.4.2 Regional Trails: Clark County has adopted a comprehensive Trails and Bikeway System Plan that identifies a countywide trail system, including trails for biking, hiking, and horseback riding. As defined in the plan, trails include any "path, route, way, right-of-way, or corridor posted, signed or designated as open for (non-motorized) travel or passage by the general public." Trails serve all county residents. Three types of trails are planned within the City of Washougal: • Regional multi-use trails provide the major access networks across the County for pedestrian and bicycle use, with equestrian use on the shoulder, where feasible. • Local trails, whose function is to provide access from neighborhoods to regional multi-use trails or bike lanes. • Bike lanes and pedestrian walkways, which are located on city, county, and state road rights-of-way.
Ridgefield	Comprehensive Park and Recreation Plan	Develop a signage plan for the trail system, and implement it. The signage plan should include kiosks with system maps, trailhead signs indicating distance and difficulty, and trail signs posted along the route.
	Comprehensive Park and Recreation Plan	Maximize the use of utility corridors and other linear features for trail corridors to achieve multiple benefits, where feasible.
	Comprehensive Park and Recreation Plan	During the land development approval process, dedication of right-of-way for recreational trails shown on the Trails, Pathways, and Greenways map should be required.
	Comprehensive Park and Recreation Plan	Whenever possible, recreation pathways and trails should be separated from the roadway.
	Comprehensive Park and Recreation Plan	Additional trail easements or dedications should be sought to complete missing trail segments, link parks, and expand the overall trail network into areas that are already developed. If no other means can be found to provide missing links, on-street trail
	Comprehensive Park and Recreation Plan	Local trails should be required in residential subdivision planning and should connect to the City's trail system and neighboring local trails. Trail locations can be determined during the land use review process.
	Comprehensive Park and Recreation Plan	Multi-use trails are the preferred trail type for Ridgefield, because they have the potential to serve the broadest spectrum of the public, including walkers, hikers, runners, and cyclists. Multi-use trails can even serve equestrian users. Trails should b
	Comprehensive Park and Recreation Plan	Centralized and effective trailhead areas should be provided for trail access. These sites should include parking, orientation and information signs, and any necessary specialized unloading features. Primary trailheads should have restrooms and trash receptacles.
	Comprehensive Park and Recreation Plan	4. Accept only park land and trail rights-of-way (R.O.W.) consistent with this plan. Accept only those sites consistent with this Plan. The City should acquire parks in the locations indicated on the Park Plan map, and ensure that the sites are adequately

Table 41. Policies Related to Funding

Jurisdiction	Source	Policy
Funding Priorities		
Clark County	Comprehensive Plan - TE	5.5.3 Interim safety improvements should be implemented where a significant safety problem has been identified and the financing is not yet available for full improvements in conformance with adopted design standards.
Ridgefield	Comprehensive Plan	TR-3 Transportation safety: Ensure high safety standards for motorists, pedestrians, and bicyclists through the development and capital improvement processes. Allocate City capital resources to high risk and collision locations for motorists, bicyclists, and pedestrians.
Camas	Trails and Open Space Comprehensive Plan	1F. Actively seek funds for the acquisition and development of park land, recreation facilities, and trails to meet recreation needs.
Funding		
Clark County	Comprehensive Plan - TE	5.6.4 A portion of road funds shall be dedicated to sidewalk and bicycle facilities consistent with state law.
Camas	Comprehensive Plan - TE Comprehensive Plan - TE Comprehensive Plan - TE Comprehensive Plan - Parks, Recreation, Open Space & Trails Element	Pursue grant opportunities for pedestrian and bicycle enhancements. Financing: Maximize the use of state and federal funds for transportation capital, operating, service, and demand-oriented improvements. Deficient systems may be funded through a combination of general fund monies and any available grants. These would include substandard local and collector streets, pavement management, bike facilities, ADA compliance, and pedestrian ways. Objective: The city should take advantage of any available traffic safety, transportation, and trail development funding to develop the bike and trail network.
Ridgefield	Comprehensive Plan	TR-2 System balance: Allocate resources using a cost-benefit approach to improve the transportation system. Focus most resources on satisfying peak commuting demand with roadway capacity and consider other transportation and options as funding allows.
Vancouver	Comprehensive Plan	PFS-6 Transportation safety: Ensure high safety standards for motorists, pedestrians, and bicyclists through the development and capital improvement processes. Allocate city capital resources to high risk and collision locations for motorists, bicyclists, and pedestrians.

Current and Proposed Bicycle and Pedestrian Facilties

The following tables outline existing, planned, and previously-proposed shared-use path and bicycle projects in Clark County and the jurisdictions. The tables are a complete list of bicycle and shared use path projects from comprehensive plans, CIPs and other documents; however, they do not exhaustively list sidewalks or sidewalk gaps.

*Table 42. Regional Bicycle Facilities and Shared Use Paths**

Location	From-to	Facility Type	Length	Status
Livingston Mountain/Dole Valley Trail	Lacamas Lake Park to East Fork of the Lewis Trail	Shared use path		Planned
Camp Bonneville Trail	Heritage Trail to eastern terminus of Salmon Creek Trail	Shared use path		Planned
Battle Ground/Fisher's Landing Trail	Columbia River to Chelatchie Prairie Railroad Trail	Shared use path	16.1	Partially constructed (3 miles built)
Padden Parkway Trail	Lakeshore Road to China Ditch and BG-Fisher's Landing trail	Shared use path	10	Partially constructed
Ellen Davis Trail	NE Minnehaha St to Kiggins Bowl	Shared use path		Existing
SR 502/NE 219th Street	Duluth to Battle Ground, except Dollars Corner Rural Center	Shoulder walkway/bikeway		Planned
SR 502/NE 219th Street	Dollars Corner Rural Center	Bike lanes		Planned
Salmon Creek Greenway Trail	Columbia River to Bells Mountain	Shared use path	24.9	Partially constructed
East Fork of the Lewis River Trail	Lewis River confluence to Sunset Campground	Shared use path	28.4	Partially constructed (4 miles built)
Whipple Creek Trail	Lake River to I-5	Shared use path		Planned
Washougal River Trail	South end Lacamas Lake Park to Washougal River Road	Shared use path		Planned
Lewis and Clark Discovery Greenway Trail	Ridgefield to Washougal along Columbia River	Shared use path	46.1	Partially constructed
Chelatchie Prairie Railroad Regional Trail	Vancouver Lake to Yale Reservoir	Shared use path	34.2	Partially constructed
Lake to Lake Regional Trail	Port of Vancouver to Lacamas Lake Park	Shared use path	22.3	Partially constructed
I-5 Corridor Regional Trail	Along I-5 corridor	Shared use path	22	Partially constructed (1 mile built)
Highway 99	Chelatchie Prairie Railroad bridge crossing to County line	Bike lanes		Existing, upgrades planned

Location	From-to	Facility Type	Length	Status
NE 78th Street	West of NE Hazel Dell Ave and east of NE 25th	Bike lane		Existing
NE 78th Street	NE Hazel Dell Ave to NE 25th St	Bike lane		Proposed
NE 99th Street	West of NE Hazel Dell Ave and east of NE 25th	Bike lane		Existing
NE 99th Street	NE Hazel Dell Ave to NE 25th St	Bike lane		Proposed
NE 23rd and NE 104th	To Sarah J. Anderson Elementary School	Bike lane		Proposed
NE 15th Ave	NE 88th to NE 99th	Bike lane		Proposed
Chelatchie Prairie Railroad Bridge improvements	Highway 99	Bike lane		Proposed
NE 88th Street	Hwy 99 to BPA Right-of-Way	Bike lane	1.2	Planned
Highway 99	NE 119th St to NE 104th St	Bike lane	0.8	Planned
NE Salmon Creek Ave	I-205 to NE 199th St	Bike lane	0.2	Planned
Highway 99	NE 63rd St to NE 129th St	Bike lane		Proposed
Highway 99	NE Minnehaha St to City Limits	Bike lanes		Proposed
NE Hazel Dell Ave	NE 77th St to NE 78th St	Bike lane		Proposed
NE 104th St	Hwy 99 to NE 23rd St	Bike lane		Proposed
NE 23rd Street	NE 104th St to NE 99th St	Bike lane		Proposed

* Some of the bicycle and pedestrian projects listed in this table are located on state highways, under the jurisdiction of the Washington State Department of Transportation (WSDOT). Numerous constraints, such as limited right of way, topographical constraints, and other physical limitations often make it difficult to construct the bicycle and pedestrian facilities recommended in this plan. In addition, funding is limited, and there are restrictions on how WSDOT may use the funding that is available. Therefore, although projects along WSDOT facilities are included on these project lists, WSDOT is not obligated to construct these projects.

Table 43. Battle Ground Bicycle Facilities and Shared Use Paths

Location	From-to	Facility Type	Length	Status
Lewis and Clark Railroad Trail Corridor	Vancouver Lake to Chelatchie Prairie	Shared use path	26	Existing
Bells Mountain Trail	NE Lucia Falls Road to 5 miles east of Heisson Bridge	Shared use path	7.5	Existing
Columbia River Renaissance Trail		Shared use path Shared use path		Existing
Burnt Bridge Creek Greenway				Existing
SE Grace Avenue	E Main Street to NE 199th Street	Sidewalks/bike facilities	1.0	2007-2012 TIP
S Parkway Avenue	S 10th Street to NE 199th Street	Sidewalks/bike lanes	0.5	2007-2012 TIP
N Parkway Avenue	N 5th Street to N Onsdorff Boulevard	Sidewalks/bike lanes	0.5	2007-2012 TIP
SW Rassmussen Boulevard	SR 503 to S Parkway Avenue	Sidewalks/bike lane	0.5	2007-2012 TIP
NW 15th Avenue	NW 9th Street to NW 4th Street	Sidewalks/bike lane	0.13	2007-2012 TIP
NW 15th Avenue	W Main Street to NW 2nd Street	Bicycle and pedestrian facilities	0.13	2007-2012 TIP
SW 6th Avenue	SW Scotton Way to NE 199th Street	Sidewalks/bike lane	0.25	2007-2012 TIP
SR 503		Bike lane		Existing
North Grace Avenue		Bike lane		Existing
N Parkway Avenue		Bike lane		Existing
S Parkway Avenue		Bike lane		Existing
SR 502/main Street		Bike lane		Existing
North Onsdorff Boulevard		Bike lane		Existing
NE 199th Street		Bike lane		Existing
South Grace Avenue		Wide shoulders		Existing
S 7th Avenue		Wide shoulders		Existing
NE 244th Street		Wide Shoulders		Existing
SR 503	South of NE 199th St	Sidepath		Existing

Table 44. Camas Bicycle Facilities and Shared Use Paths

Location	From-to	Facility Type	Length	Status
Heritage Trail	Camas Heritage Park to Lacamas Lake	Unpaved shared use trail	3.51	Existing
Lacamas Park Trails	Lacamas park area	Paved shared use trail Unpaved shared use trail	0.14 4.48	Existing Existing
Washougal River Greenway Trail	Washougal river area	Partially paved shared use path	0.57	Existing
City and Homeowners' Associations Trails	various	Shared use path	14.05	Existing
West Camas Regional Trail (T-1)	Prune Hill Park to T-3/T-4	Shared use path	4.9	Partially constructed
Columbia River Regional Trail (T-2)	Clark County regional trail system to Washougal	Shared use path	6.6	Proposed
East Camas Regional Trail T-3)	Lacamas Park to Green Mountain Trail	Shared use path	7.9	Proposed
Heritage Trail (T-4)	Lacamas Park to Camp Currie/T-3	Shared use path	6.3	Partially constructed
Camas Neighborhood Loop Trail (T-5)	Lake Road through Open Space Network to Ash Creek Park	Shared use path	6.2	Partially constructed
Lake Road Connector Trail T-6 (Lake Road)	T-1 to T-5	Shared use path	1.3	Partially constructed
West Camas Connector Trail (T-7)	T-5 toward west boundary of Camas along NW 38th Avenue	Shared use path	2.0	Partially constructed
Prune Hill Connector Trail (T-8)	Open Space Network to Dorothy Fox Park	Shared use path	2.1	Partially constructed
Downtown Connector Trail (T-9)	T-3/T-4 to T-8/Dorothy Fox Park	Shared use path	2.8	Partially constructed
Deer Creek Connector Trail (T-10)	Klickitat Park to Prune Hill Sports Park, T-1 and T-5	Shared use path	1.1	Partially constructed
View Ridge Connector Trail (T-11)	Klickitat Park to Open Space Network	Shared use path	0.6	Partially constructed
East Hilltop Connector Trail (T-12)	T-5/Fallen Leaf Lake to proposed neighborhood park	Shared use path	0.2	Proposed
Fallen Leaf Lake Trail (T-13)	Fallen Leaf Park to T-4/T-5	Shared use path	1.8	Partially constructed
Lacamas Heights Connector Trail (T-14)	T-3/Lacamas Park to planned neighborhood park/Lacamas Heights Elem/Camas High School	Shared use path	0.5	Proposed
Lacamas Park Trail (T-15)	T-3 to T-4	Shared use path	3.4	Completed
Louis Bloch Connector	Louis Bloch Park to	Shared use path	0.4	Proposed

Location	From-to	Facility Type	Length	Status
Trail (T-16)	Washougal River Greenway			
South Camas River Loop (T-17)	Washougal River Greenway to river corridor	Shared use path	2.5	Proposed
Washougal Connection (T-18)	Washougal to T-4/Washougal River Greenway	Shared use path	1.5	Completed
Washougal Connection 2 (T-19)	Lacamas Park trails to T-18	Shared use path	0.6	Completed
Northwest Connector (T-20)	T-1 to T-21	Shared use path	0.8	Proposed
Westside Route (T-21)	T-4 to T-1	Shared use path	3.1	Proposed
Leadbetter Corridor (T-22)	T-6 to T-21	Shared use path	0.5	Proposed
Westside Natural Trail (T-23)	T-1/T-22 to T-21	Shared use path	2.8	Proposed
Prune Hill West Trail (T-24)	T-23 to Prune Hill Sports Park and T-1	Shared use path	0.6	Proposed
Columbia Viewpoint Trail (T-25)	Klickitat Park to proposed Columbia viewpoint/trailhead	Shared use path	1.0	Proposed
Grass Valley Link (T-26)	T-8 to Grass Valley Park	Shared use path	0.9	Proposed

Table 45. La Center Bicycle Facilities and Shared Use Paths

Location	From-to	Facility Type	Length	Status
Sternwheeler Park	Parking Lot to Bridge	Shared Use	0.16	Existing
Sternwheeler Park	Within Park	Ped Path	0.25	Existing
La Center Road		Shoulders		Existing
Community Park		Shared Use Path	0.46	Existing
Heritage Trail East	Heritage Loop to Heritage Park	Shared Use Path	0.56	Existing
Heritage Trail West	Aspen Ave to Hanna's Farm	Type 2	0.30	Existing
E. 4th Street	Middle School to Community Park	Bike Lanes	0.15	Existing
Breeze Creek Trail		Type 2	0.56	Proposed

NOTE: La Center's Park Master Plan lists 24 miles of proposed paths to be built in addition to the list above.

Table 46. Ridgefield Bicycle Facilities and Shared Use Paths

Location	From-to	Facility Type	Length	Status
Abrahams Park		Pedestrian trail		Existing
SR-501		Striped shoulders		Existing
Heron Drive	East of Main Avenue	Bike lanes		
Reiman Road	City limits – N 5th Street	Bike lanes		
S 5th Street	East of I-5	Bike lanes		
Union Ridge Parkway		Bike lanes		
S 11th Street		Bike lanes		
S 85th Street near S 5th Street		Bike lanes		
SR-501		Shared use path		Proposed
Pioneer Street-S 5th Avenue Pathway	Entire length	Sidepath	4.5	Proposed
Royle Road		Shared use path		Proposed
S Hillhurst Avenue Pathway	Pioneer Street south	Sidepath	3.3	Proposed
Main Street Pathway	Entire length	Sidewalks/bike lane	1.0	Proposed
Division Street Trail	Abrahams Park to Main Street	Sidewalks/bike lane	0.4	Proposed
W Mill Street Pathway	Downtown to Lake River	Sidewalks/bike lane	0.25	Proposed
S Refuge Road Pathway	Hillhurst Avenue to Ridgefield National Wildlife refuge	Sidewalks/bike lane	0.5	Proposed
NW 291st Street-NW 289th Street Pathway	Main Street to NW 51st Avenue	Sidepath	1.2	Proposed
NW 61st Avenue Pathway	NW 289th Street to Bellwood Heights development	Sidepath	0.75	Proposed
NW 45th Avenue Parkway	La Center to S Hillhurst Road	Sidepath	3.1	Proposed
N 36th Court Pathway	Proposed community park to Pioneer Street	Sidewalks/bike lane	0.25	Proposed
Ridge Crest North-South Pathway	Along proposed north-south arterial in Ridge Crest development	Sidewalks/bike lane	0.7	Proposed
Ridge Crest East-West Pathway	Along proposed east-west arterial in Ridge Crest development	Sidewalks/bike lane	0.5	Proposed
NW Carty Road Pathway	Proposed community park to Gee Creek Trail	Sidepath	1.7	Proposed
NW 219th Street Pathway	Southern edge of planning area	Sidepath		Proposed
Interstate-5 Regional Pathway	Ridgefield to Vancouver-Clark Parks and Recreation trail network	Sidepath		Proposed
NE Timmen Road-NE 10th Avenue Pathway	Eastern edge of planning area	Sidepath	1.5	Proposed
NE 259th Road Pathway	East of City to Ridgefield	Sidewalks/bike lane	0.5	Proposed
NW Carty Road to NW 219th	Connects two proposed pathways	Sidewalks/bike lane		Proposed

Location	From-to	Facility Type	Length	Status
Street Pathway				
Ridgefield National Wildlife Refuge Connector Trail	Ridgefield to Ridgefield National Wildlife Refuge	Shared use path – 10-12′ paved	0.25	Proposed
Gee Creek Trail	Main Street to NW 219th Street	Shared use path – 8-12′	5.2	Proposed
Bellwood Heights-Neighborhood Park 3 Connector Trail	Bellwood Heights/Pioneer Street existing trail to proposed neighborhood trails	Shared use path – 8-12′	1.6	Proposed
Reiman Road –NW 31st Avenue Connector Trail	Bellwood Heights/Pioneer Street existing trail to NW 31st Avenue	Shared use path – 6-8′	1.4	Proposed
Interstate 5-La Center Connector Trail	La Center and proposed neighborhood park to I-5/SR 501 and proposed Gee Creek Trail	Shared use path – 10-12′ paved	4.5	Proposed
Hillhurst-Lake River Connector Trail	Hillhurst Road to Lake river	Shared use path - 8-	1.0	Proposed
Hillhurst-Ridgefield HS-Gee Creek Connector Trail	Hillhurst Road to Gee Creek trail	Shared use path - 8-	0.4	Proposed
Bellwood Heights-Gee Creek Connector Trail	Bellwood Heights development to Gee Creek	Shared use path 8-10′	0.9	Proposed
Lake River Regional Connector Trail	Lake River to the Vancouver-Clark Parks and Recreation trail network	Shared use path – 10-12′ paved	2.4	Proposed
CP-2 Connector Trail	New community park to Abrams park and Gee Creek Trail	Shared use path – 8-10′		Proposed

Table 47. Vancouver Bicycle Facilities and Shared Use Paths

Location	From-to	Facility Type	Status
Lower River Road	NW Erwin O Rieger Memorial Highway to NW Fruit Valley Road	Bike lane	Proposed
La Frambois	Vancouver Lake to Fruit Valley Road	Shared Roadway	Existing
NW Fruit Valley Road	W Fourth Plain Road to NW 20th Ct	Bike lane	In Design
NW Fruit Valley Road/NE Lakeshore Avenue	NW Bernie Drive to NW Sluman Road	Bike Lane	Proposed
NW Bernie Drive/ NW Lincoln Way	NW Fruit Valley Road/NE Lakeshore Avenue to W 39th Street	Bike Lane	Proposed
W 39th Street	NW Fruit Valley Road to F Street	Bike Lane	Proposed
39th Street	F Street to		
Franklin Street/ 45th Street	NW Lincoln Avenue to Main Street	Bike Route	Proposed
Main Street	NE North Road to W Fourth Plain Boulevard	Bike Lane	Proposed
E 33rd Street	Kauffman Avenue to Main Street	Bike Route	Proposed
E 33rd Street	Main Street to Grand Boulevard	Bike Lane	Proposed
E 29th Street	Kauffman Avenue to Bunt Bridge Creek Greenway	Bike route	Proposed
NW Lower River Road	W of NW Fruit Valley Road to Kauffman Avenue	Bike route	Proposed
F Street	39th Street to 29th Street	Bike route	Proposed
F Street Bikeway		Bike lane	2009-2014 TIP
Evergreen Highway Trail		Shared use path	"Priority Unfunded Project"

Table 48. Vancouver Pedestrian Facilities

Location	From-to	Facility Type	Status
NW Fruit Valley Rd	NW 78th Ave to NW 20th Ct	Pedestrian Improvement	Proposed
NW Bernie Dr	NW Lakeshore Ave to NW 65th St	Pedestrian Improvement	Proposed
NW Lincoln Ave	NW Bernie Dr to W 39th St	Pedestrian Improvement	Proposed
NW 58th St	NW Lincoln Ave to NW Franklin St	Pedestrian Improvement	Proposed
NW Franklin St	NW 58th St to NW 46th St	Pedestrian Improvement	Proposed
Columbia St	NW 46th St to E McLoughlin Blvd	Pedestrian Improvement	Proposed
W Fourth Plain Blvd	Kaufmann Ave to Simpson Ave	Pedestrian Improvement	Proposed
Markle Ave/King St	W Fourth Plain Blvd to W 13th St	Pedestrian Improvement	Proposed
W 11th St	Jefferson St to Lincoln St	Pedestrian Improvement	Proposed
W 8th St	Jefferson St to Port Way	Pedestrian Improvement	Proposed

Location	From-to	Facility Type	Status
Port Way	W 8th St to W Mill Plain Rd	Pedestrian Improvement	Proposed
W 39th St	Lincoln St to Leverich Park Way	Pedestrian Improvement	Proposed
H St	E 39th St to E 40th St	Pedestrian Improvement	Proposed
Main St/Hwy 99	NE Hazel Dell Ave to NE 61st St	Pedestrian Improvement	Proposed
NE Ross St	Hwy 99 to NE 54th St	Pedestrian Improvement	Proposed
NE 54th St	NE Ross St to NE 30th Ave	Pedestrian Improvement	Proposed
NE 49th St	NE 15th Ave to NE St James Rd	Pedestrian Improvement	Proposed
NE James Rd	NE St Johns Rd to NE St Johns Rd	Pedestrian Improvement	Proposed
NE St Johns Rd	NE 68th Ave to E Fourth Plain Blvd	Pedestrian Improvement	Proposed
Q St	E 39th St to E Fourth Plain Blvd	Pedestrian Improvement	Proposed
E 33rd St	I-5 to Grand Blvd	Pedestrian Improvement	Proposed
Grand Blvd	E 33rd St to E Mill Plain Blvd	Pedestrian Improvement	Proposed
E Mill Plain Blvd	E Reserve St to Brandt Rd	Pedestrian Improvement	Proposed
E Reserve Rd	Waterworks Park to E 16th Ave	Pedestrian Improvement	Proposed
E Reserve Rd	E Mill Plain Rd to E Evergreen Blvd	Pedestrian Improvement	Proposed
Brandt Rd	E Fourth Plain Blvd to E 185th St	Pedestrian Improvement	Proposed
Plomondon St	Caples Ave to NE 54th Ave	Pedestrian Improvement	Proposed
Columbia House Blvd	N Blandford Dr to Grand Ave	Pedestrian Improvement	Proposed
E 5th St	E Evergreen Blvd to E Grove St	Pedestrian Improvement	Proposed
E Evergreen Blvd	SE 73rd Ave to N Blandford Dr	Pedestrian Improvement	Proposed
MacArthur Blvd	E Mill Plain Blvd to S Lieser Rd	Pedestrian Improvement	Proposed
St Helens Ave	S Lieser Rd to SE 58th Ave	Pedestrian Improvement	Proposed
Riverside Dr	Lewis and Clark Hwy to end	Pedestrian Improvement	Proposed
N Devine Rd	E 18th St to E Mill Plain Blvd	Pedestrian Improvement	Proposed
E 18th St	General Andersen Rd to E Fourth Plain Blvd	Pedestrian Improvement	Proposed
NE Campus Dr	NE Stapleton Rd to NE 65th Ave	Pedestrian Improvement	Proposed
NE 65th Ave	NE Fourth Plain Blvd to E 18th St	Pedestrian Improvement	Proposed
NE 66th Ave	NE Fourth Plain Rd to end	Pedestrian Improvement	Proposed
Andersen Rd	NE 40th St to E Evergreen Blvd	Pedestrian Improvement	Proposed
N Garrison Rd	NE Mill Plain Blvd to end	Pedestrian Improvement	Proposed
NE 66th Ave	NE 40th St to NE 55th St	Pedestrian Improvement	Proposed
NE 51st St	NE 72nd Ave to NE 82nd Ave	Pedestrian Improvement	Proposed
NE Vancouver Mall Dr	NE 72nd Ave to NE Vancouver Mall Loop	Pedestrian Improvement	Proposed

Location	From-to	Facility Type	Status
NE Vancouver Mall Loop	All of it	Pedestrian Improvement	Proposed
NE 82nd Ave	NE Vancouver Mall Dr to NE 54th St	Pedestrian Improvement	Proposed
NE 54th St	NE 82nd Ave to NE 94th Ave	Pedestrian Improvement	Proposed
NE 94th Ave	NE 54th St to NE Vancouver Mall Loop	Pedestrian Improvement	Proposed
E Mill Plain Blvd	N Lieser to SE 107th Ave	Pedestrian Improvement	Proposed
NE 92nd Ave	NE 11th St to E Mill Plain Blvd	Pedestrian Improvement	Proposed
NE 104th Ave	SE Mill Plain Blvd to NE 14th St	Pedestrian Improvement	Proposed
NE 7th St	NE 104th Ave to NE 106th Ave	Pedestrian Improvement	Proposed
NE 106th Ave	NE 7th St to NE 9th St	Pedestrian Improvement	Proposed
SE 98th Ave	SE 10th St to NE 18th St	Pedestrian Improvement	Proposed
SE 10th St	SE 98th Ave to SE McGillivray Blvd	Pedestrian Improvement	Proposed
SE McGillivray Blvd	I-205 to SE Park Crest Dr	Pedestrian Improvement	Proposed
SE 7th St	SE Chkalov Dr to SE 136th Ave	Pedestrian Improvement	Proposed
NE 112th Ave	NE 28th St to NE Chkalov Dr	Pedestrian Improvement	Proposed
NE 9th St	NE 112th Ave to NE 132nd Ave	Pedestrian Improvement	Proposed
SE 132nd Ave	SE 7th St to SE McGillivray Blvd	Pedestrian Improvement	Proposed
SE Talton Ave	SE McGillivray Blvd to SE Cascade Park Dr	Pedestrian Improvement	Proposed
SE Cascade Park Dr	SE Talton Ave to SE 164th Ave	Pedestrian Improvement	Proposed
SE Bella Vista Rd	SE McGillivray Blvd to SE Cascade Park Dr	Pedestrian Improvement	Proposed
SE Briarwood Dr	SE Blairmont Dr to Lewis and Clark Hwy	Pedestrian Improvement	Proposed
SE 20th Ave	SE 164th Ave to SE 176th Ave	Pedestrian Improvement	Proposed
SE 15th St	SE 164th Ave to SE 171st Ave	Pedestrian Improvement	Proposed
SE 15th St	SE Single Tree Dr to SE 196th Ave	Pedestrian Improvement	Proposed
SE 1st St	SE 192nd Ave to NE 202nd Ave	Pedestrian Improvement	Proposed
NE 49th St	NE 122nd Ave to NE 128th Ave	Pedestrian Improvement	Proposed
NE 49th St	NE 133rd Ave to NE 143rd Ave	Pedestrian Improvement	Proposed
NE 44th St	NE 122nd Ave to NE 137th Ave	Pedestrian Improvement	Proposed
NE 39th Ave	NE 137th Ave to NE 157th Ave	Pedestrian Improvement	Proposed
NE 39th Ave	NE 129th Ave to NE 122nd Ave	Pedestrian Improvement	Proposed
NE 122nd Ave	NE 39th St to NE 42nd St	Pedestrian Improvement	Proposed
NE 9th St	NE 150th Ave to NE 162nd Ave	Pedestrian Improvement	Proposed
SE Heartwood Blvd	NE 9th St to SE Mill Plain Blvd	Pedestrian Improvement	Proposed
SE 1st Ave	SE Heartwood Blvd to NE 159th Ave	Pedestrian Improvement	Proposed

Location	From-to	Facility Type	Status
NW Fruit Valley Rd	NW 20th Ct to W 34th St	Pedestrian Improvement	Ped Projects in Design
NE Burton Rd	NE 85th Ave to NE 112th Ave	Pedestrian Improvement	Ped Projects in Design
NE 28th St	NE 112th Ave to NE 162nd Ave	Pedestrian Improvement	Ped Projects in Design
NE 18th St	NE 125th Ave to NE 162nd Ave	Pedestrian Improvement	Ped Projects in Design
SE 192nd Ave	SE 34th St to Lewis and Clark Hwy.	Pedestrian Improvement	Ped Projects in Design

Washougal Bicycle Facilities

The City of Washougal should plan for bike lanes to be provided on all arterials and non-Industrial and non-Residential collectors within the next 20 years. In addition, bike lanes should be striped on other streets where existing pavement widths allow. These improvements could be gained at relatively low cost. On local streets, traffic volumes and speeds are expected to be relatively low, so that cyclists can ride safely and comfortably in the vehicular travel lanes, so provision of bike lanes is not appropriate on these facilities. On Industrial/Residential collectors, adequate width is provided for a shared parking lane/bike lane in each direction.

Future bicycle improvements identified in conjunction with street improvements are intended to provide bicyclists with full accessibility on the city's major street system. These facilities will provide for circulation for the destination-oriented bicyclist, including travel between residential areas and schools/work, routes between local social and environmental features for the recreational bicyclist, and result in a more balanced transportation system providing direct routes for all users in the City of Washougal.

Project Prioritization

Battle Ground

Guidance for the development of Bicycle and Pedestrian Facilities in the City of Battle Ground can be found in the Transportation Element of the Comprehensive Plan. In Battle Ground, the development of a bikeway network is focused on arterial and collector streets, as well as off-street trails. The Plan states that, "an ideal bicycling environment would include some type of bicycle facilities on all arterial and collector streets," while "an ideal pedestrian environment would include facilities for foot traffic on all

streets." In Battle Ground, off-street trails are designed to serve both bicyclists and pedestrians, and should be located only where street connections are difficult or not planned.

Additional guidance is provided in the City of Battle Ground Parks Improvement Plan (2003). Committee members allocated a limited amount of funds in an exercise, which determined that implementing projects throughout the community was more important than spending money on any single park or trail facility.

Camas

The Capital Facilities Element of Camas' Comprehensive Plan provides guidance for the City regarding bicycle and pedestrian project prioritization. Policy CFP-7 states that, "Priority should be provided to those projects that support the core businesses of the city." In addition, the Plan states that capitol facilities projects should incorporate the following:

If debt funded, the term of debt will not exceed the useful life of the project.

Capital projects should be built in a manner, which enables them to be self-sustaining whenever possible and have quality materials and design that reasonably minimize long-term maintenance costs.

To optimize investments, the city should explore alternative solutions to construction of capital improvements by the utilization of technology or partnerships.

Where possible, the sequencing of facilities should respect the schedule and scope of specific adopted plans (e.g., Parks and Open Space Comprehensive Plan, Sewer Facility Plan, Transportation Improvement Plan).

Improvement planning should consider the number and degree to which citizens benefit from the improvement in relationship to the dollars invested.

La Center

The City of La Center uses the regional transportation planning model that was developed and maintained by the Southwest Washington Regional Transportation Council to identify existing road conditions and to predict future demand. The City identified future bicycle improvements, in conjunction with street improvements, to "provide bicyclists with full accessibility on the city's major street system. These facilities will provide for circulation for the destination-oriented bicyclist, including travel between residential areas and schools/work, routes between local, social and environmental features for the recreational bicyclist, and result in a more balanced transportation system providing direct routes for all users."

Ridgefield

The Comprehensive Park and Recreation Plan for Ridgefield specifies that trail alignments should be "determined based on development patterns, topography, and other considerations." This document also lays out a strategy for developing Ridgefield's proposed trail network and interim strategies. These include providing signage, Type 3 trails and a map of existing routes.

The majority of proposed pedestrian and bicycle facilities in Ridgefield are off-street. The Plan explains that, "Multi-use trails are the preferred trail type for Ridgefield, because they have the potential to serve the broadest spectrum of the public, including walkers, hikers, runners, and cyclists. Multi-use trails can even serve equestrian users. Trails should be planned, sized, and designed for multiple uses, except where environmental or other constraints preclude this goal." Projects were chosen based on connectivity to downtown, schools, neighborhoods and parks, providing recreational opportunities and non-motorized transportation needs. The on-street system is designed to accommodate multimodal access where an off-street trail is not feasible.

Vancouver

Policy PFS-6 of the Vancouver Comprehensive Plan promotes safety as the most important consideration for project prioritization. The policy reads, "Ensure high safety standards for motorists, pedestrians, and bicyclists through the development and capital improvement processes. Allocate city capital resources to high risk and collision locations for motorists, bicyclists, and pedestrians."

Traffic operations in the City of Vancouver are evaluated on the basis of corridor travel time, average signalized intersection performance standard/mobility index, and critical intersection performance standard. Developments failing any of these criteria are priorities for improvements.

The 2009-2014 Transportation Improvement Plan provides a list of factors that influence project evaluation:

- Safety: Safety issues include collision/crash history and risk factors such as sight distance, road width, & obstructions.
- Capacity / Concurrency: Projects which address existing or imminent capacity or concurrency failure.
- Multimodal/Inter-modal: Projects which enhance facilities for non-auto modes or that ease safe/efficient modal transfer.
- Economic-Community Development: Projects which contribute substantially to the economic development goals of the city.

- Environment: Projects are evaluated with regard to environmental and community impact.
- Operational/Efficiency Improvement: Projects which add substantially to existing system capacity or efficiency, but do not necessarily involve capital expansion.
- Freight Mobility: Projects which improve existing or future truck routes or access to commercial/industrial centers.
- Land Use Center Support: The extent to which a project helps to implement the land use goals of the comprehensive plan.
- System Impact/Corridor Completion: Projects which are part of a long term strategy to maintain system integrity and efficient pavement life cycle maintenance.
- Annexation: Projects may also be added to the TIP through annexation. Capital improvement projects for newly annexed areas are included in the city capital development program as the city implements Vancouver's annexation blueprint.

Washougal

Goal 6 of the City of Washougal Comprehensive Plan is, "To establish an efficient circulation system which, by design, integrates the full range of land uses in a way that accommodates and encourages a variety of transportation alternatives such as carpooling, public transit, bicycles, and walking."

Coordination with neighboring communities, Clark County and Washington State is a high priority cited in the Comprehensive Plan. Policy 6-B states that, "Washougal should improve north-south movement within the city in order to improve access to and encourage the use of downtown services by city residents." Finally, Policy 6-C states that, "The City should improve facilities and circulation patterns for all modes of transportation among residences, places of employment, commercial places, and public services."

Table 49. Project Prioritization Elements

	Projects in urban area	Improving circulation/ route connectivity	Improving crossings/ reducing barriers	Developing trail system	Encouraging multimodal trips	Improving safety	Implementing projects concurrently	Publicly supported	Leveraged funding	Access to downtown	Access to recreation opportunities, parks
Washington State	x	x	x	x							
Battle Ground											
Camas	x										
Clark County		x			x	x	x	x	x		
La Center		x		x						x	x
Ridgefield		x		x						x	x
Vancouver		x				x	x	x			
Washougal		x			x					x	

Appendix C. Prioritization Criteria

This appendix provides the revised prioritization used in the existing Clark County sidewalk infill program, and the Plan prioritization.

Project Prioritization Used in the Plan

The Bicycle and Pedestrian Advisory Committee developed evaluation criteria for bicycle and pedestrian projects that are connected to the plan's vision statement. Additionally, Clark County Public Health suggested that additional criteria on health and equity be included. This recommendation was drafted as part of a Health Impact Assessment of the plan, and will be revisited later in the HIA process. Based on committee input and health concerns, Public Health recommends that the criteria shown in Table 50 be considered for adoption.

It should be noted that the purpose of this exercise is to understand the relative priority of the projects so that the County may apportion available funding to the highest priority projects. Medium- and long-term projects are also important, and may be implemented at any point in time as part of a development or public works project. The ranked lists should be considered a "living document" and should be frequently reviewed to ensure they reflect current Clark County priorities.

Table 50. Project Criteria

Criteria	Comments
Closing Gaps	To what degree does the project fill a missing gap or overcome a barrier in the current system? Does it improve significant crossings?
Safety & Comfort	Can the project improve walking and bicycling conditions at locations with perceived or documented safety issues? Does the project make cycling and walking appealing to all users?
Access & Mobility/Land Use	How many user generators does the project connect within a reasonable walking or cycling distance? Are adjacent land uses supportive of walking and bicycling? To what degree will the project generate users?
Multi-modal Connections	To what degree does the project integrate walking and cycling into the existing transit system? Does the project enable the use of multiple active transportation modes?
Implementation	What is the ease of implementation? Is funding available? Is additional right-of-way required? Are negotiations required over parking availability, signage, etc.?
Community Benefit	To what degree does the project offer potential benefits to the regional community by offering opportunities for increased connectivity to parks, natural scenic beauty, and activity centers?
Health Outcomes	To what extent does the project increase physical activity, regardless of travel purpose? To what extent does the project improve other determinants of health?

Criteria Measurement

Each evaluation criterion was assigned a range of points, with the number of potential points reflecting the criterion's relative importance (based on input from County staff and the public). Objective measurements of each criterion were developed as shown in

Table 51.

Table 51. Project Criteria and Scoring

Criteria	Possible Scores	Measurement
Closing Gaps	25	Project within a 1/8 mile of existing bicycle or pedestrian facilities
	18	Project within a 1/4 mile of existing bicycle or pedestrian facilities
	15	Project within a 1/2 mile of existing bicycle or pedestrian facilities
	12	Project provides partial connection where no other facilities exist
	1	Project does not connect to the existing system or provide network coverage
Safety & Comfort	15	Off-street facilities separated from roadways
	10	Off-street facilities within the roadway right-of-way
	12	On-street lower order roadway
	8	On-street, urban collector, rural collector, or state route
	6	On-street, minor or major arterial roadway
Access & Mobility/ Land Use	10	Within 1/8 of retail (city center, community/ neighborhood/ regional commercial, employment campus, mixed-use, or rural centers), a school, or high-density residential (MF 18 units/acre, R1-5, or R1-6) lands.
	7	Project within ¼ mile of supportive land uses
	4	Project within ½ mile of supportive land uses
	1	Project not close to supportive land uses
Multi-modal Connections	15	Project within 1/8 mile of C-TRAN service area and existing trail
	10	Project within ¼ mile of C- TRAN service area or existing trail
	5	Project within ½ mile of C- TRAN service area or existing trail
	1	Project not close to C- TRAN service area or existing trail
Implementation	5	Bike lane inventory identified sufficient space for a bike route
	4	Other on-street facility (additional review required)
	3	Off-street facility, county-owned right-of-way
	1	Other off-street facility
Community Benefit*	10	Project within 1/8 mile of schools, parks and open space
	8	Project within ¼ mile of schools, parks and open space
	4	Project within ½ mile of schools, parks and open space
	1	Project not close to schools, parks and open space
Health Outcomes	20	Project is in block group with unfavorable social determinants of health and high walkability potential, project improves connectivity, and project involves low-speed/low-traffic designs
	Less than 20	See discussion of Health Outcomes criterion scoring following

* Commercial and downtown centers considered in Access & Mobility/Land Use criterion.

Health Outcomes Criterion Scoring

The 20 points allocated for the "Health Outcomes" criteria were distributed using the following methodology, as recommended by Public Health. The methodology assigns point values based on the project's ability to improve health outcomes, particularly through encouraging physical activity. The strength of evidence supporting the criteria was also considered, with more weight given to strategies that are supported by extensive evidence.

Table 52. Summary of Health Outcomes Points

Factor	Possible Score
Socioeconomic status	10 points
Walkability potential	4 points
Connectivity	5 points
Low-stress facilities	1 point

Socioeconomic Status: 10 points

Description: Project is located in a block group with unfavorable social determinants of health

Measure: Percent of block group population living in poverty based on census data.

Points: See Table 53.

Table 53. Socioeconomic Status Points

Quintile	Points
1 (Lowest poverty block groups)	0
2	2
3	5
4	7
5 (Highest poverty block groups)	10

Evidence: Health outcomes improve as socioeconomic status increases (Commission on Social Determinants of Health, 2008). Availability of physical activity increases with socioeconomic status, while risk of obesity decreases (Powell, Frank, & Chaloupka, 2004).

Walkability Potential: 4 points

Description: Project adds infrastructure in areas with high walkability potential

Measure: The walkability index is based on connectivity, land use mix (destinations), retail FAR, and density. Projects in locations at or above the

60th percentile in county-wide walkability measured at the block group level received a full score.

Points: All 4 points awarded if conditions are met.

Evidence: Walkability is linked with physical activity, independently of income or self-selection (Sallis et al., 2009). Neighborhoods with higher walkability facilitate physical activity (Transportation Research Board and Institute of Medicine, 2005).

Connectivity: 5 points

Description: Project improves connectivity for active transportation modes

Measure: Eligible projects provide a new connection, improving the effective connected node ratio for active transportation modes. Additional points are available for projects in areas at or below the 40th percentile in walkability county-wide.

Points: Two points if a new connection is provided, five points if in an area with poor connectivity (walkability in the lowest two quintiles) or within one mile of a school.

Evidence: Connectivity is a strong predictor of physical activity (Sallis et al. 2009; Dill, 2004).

Low-stress facilities: 1 point

Description: Project involves low-speed/low-traffic designs

Measure: Eligible projects include off-street paths not adjacent to roadways, sidewalks on lower-order streets (collectors or local streets), and on-street projects on local roadways.

Points: Awarded if conditions are met.

Evidence: Cyclists go out of their way to use these facilities, indicating that they have potential to attract new users (Dill, 2009). Low speed designs are safer for users (Pucher and Dijkstra, 2003).

PROPOSED 2010 Sidewalk Rating Criteria

Clark County's Sidewalk Program facilitates construction of small infill or 'gap' projects not associated with new development or capital road projects. The following criteria are used to evaluate the potential benefits of a suggested sidewalk and prioritize projects for construction.

Total Points Available: 95

Safety— 25 points:

1. Pedestrian accidents 10 points for any *preventable* pedestrian accident within the last 5 years. Maximum 10 points.
2. Walkable Shoulder. 5 points if no paved shoulder exists. Deduct 1 point for each foot of paved shoulder beyond 12' travel lane. Maximum 5 points.
3. Impaired visibility: 5 points if sight distance is impaired by vertical hills or horizontal curves. Maximum 5 points.
4. Road Classification: 5 points if road is functionally classified as a principal arterial. 4 points: minor arterial. 3 points: collector. 2 points: neighborhood circulator. 1 point: local access.

Access and Mobility— 40 points

Points are available if proposed sidewalk is adjacent to or connected to public accommodations below by an ADA-accessible path. Pedestrians are not blocked by railroads, arterials, freeways, waterways or other barriers within ½ mile or distance stated.

1. Transit: 5 points: **Both** C-Tran and school bus stops. 2.5 points for C-Tran **or** School bus stops. Maximum 5 points
2. Household density: 1 point for every 100 households within ½ mile walking distance of-proposed sidewalk. Maximum 5 points.
3. Parks / Recreation: 2.5 points per park, sports field or other outdoor recreation area (including construction-funded future parks). Maximum 5 points.
4. Schools: 2.5 points per school within 1 mile of proposed walkway. Maximum 5 points.
5. Safe Walk designation: 5 points if proposed walkway follows a school district-recommended walkway route.
6. Healthcare: (e.g. medical office) 2.5 points per facility within ½ mile. Maximum 5 points.
7. Shopping: 1 point for each location or business within ½ mile. Multi-tenant buildings count as 1 business/location. Maximum 5 points.

8. Community/Government facilities: 2.5 points per facility not already counted. (e.g., government office, library, recreational center, theater. Excludes parks, schools, healthcare, shopping). Maximum 5 points.

Feasibility— 30 pts.

1. Gap Project: 10 points if the proposed sidewalk is less than 100 linear feet. Deduct 1 point for every additional 100 linear feet to 0 points if proposal exceeds 1,000 feet.
2. Right-of-Way (ROW): 10 points if ROW is adequate for project. Deduct 1 pt for each 10% (by length) where additional property must be obtained.
3. Environmental Constraints: 5 points if no environmental impacts (i.e.: storm water) are likely. May be reduced to possible 0 points if potential impacts are severe.
4. Potential Development: 5 points if adjacent parcels are unlikely to be redeveloped within 5 years. May be reduced to possible 0 if development is pending or judged likely

Total Points Available—95 points.

Appendix D. Walk Routes to School

A goal of the Clark County Bicycle and Pedestrian Plan is to encourage Clark County residents to walk and bike as an alternative mode of travel for both local and commuter trips by publicizing routes. A second goal of the plan is to promote bicycle and pedestrian safety through increased bicycling and pedestrian education, encouragement and enforcement activities.

For several decades there has been a dramatic decrease in the percent of children walking and cycling to school, from 42% in 1969 to only 13% in 2001[7]. During the roughly the same period, obesity rates among children quadrupled to 17%[8]. The relatively low rates of walking and cycling to school are reflected in Clark County, as shown in Figure 39.

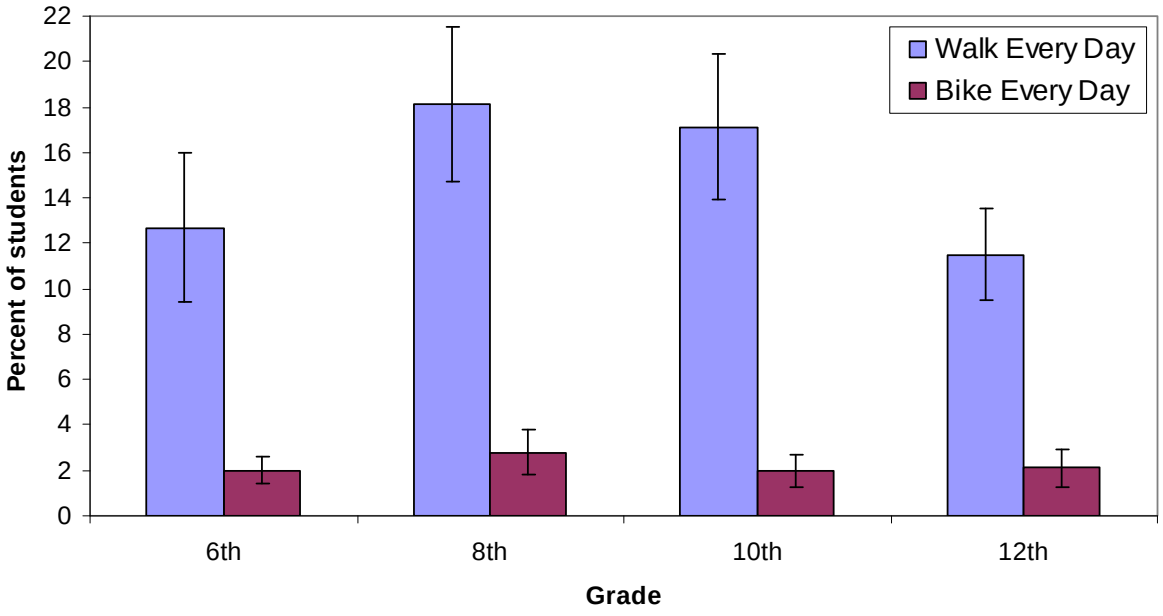


Figure 39. Walking and Cycling to School in Clark County, 2008

[7]U.S. Department of Transportation, Federal Highway Administration (2001). 2001 National Personal Transportation Survey. (No authors given.) Available at www.fhwa.dot.gov/policy/ohpi/nhts/index.htm Washington: U.S. Department of Transportation, Federal Highway Administration

[8] Ogden CL, Carroll MD and Flegal KM, (2008). "High Body Mass Index for Age Among US Children and Adolescents, 2003-2006." *Journal of the American Medical Association*, 299(20): 2401–2405

In Clark County, active transportation to school appears to be highest among 8th graders - about 20 percent use active transportation modes to get to school[9]. Over one-half of Clark County children are not getting the recommended amounts of daily physical activity for good health and walking or biking to school could help children meet their daily physical activity needs. And a growing body of research continues to find a positive relationship between physical activity and indicators of academic achievement. Additionally, an estimated 20-30% of morning peak-hour traffic is associated with trips to school. Increasing active transportation to school would not only offer opportunities for physical activity, but will also help to reduce congestion and improve local air quality[10].

Current Efforts

All school districts provide parents and children with recommended walk routes for a one mile distance around primary and middle schools. Figure 40 following presents an example of a recommended walking route map. Parents and caregivers can request these walk route maps by contacting their school or school district.

Several Clark County schools have implemented programs such as a walking school bus to encourage and assist children walking to school. These programs can be very successful and are especially important to consider for low-income schools and communities. These schools and communities typically experience greater physical and environmental barriers, have higher rates of childhood obesity and have limited resources. Programs such as a Walking School Bus require resources and support which can come from community leaders, business, health and government partners.

[9] Washington State Department of Health (2008). *Healthy Youth Survey, 2008*. [Data files]. Olympia, WA.

[10] Dubay A (2003). "See Dick and Jane Sit in Traffic," The Press Democrat, September 7, 2003 cited in Travel and Environmental Implications of School Siting. U.S. Environmental Protection Agency EPA 231-R-03-004. October 2003 Available: http://www.epa.gov/smartgrowth/pdf/school_travel.pdf. Accessed January 20, 2006.

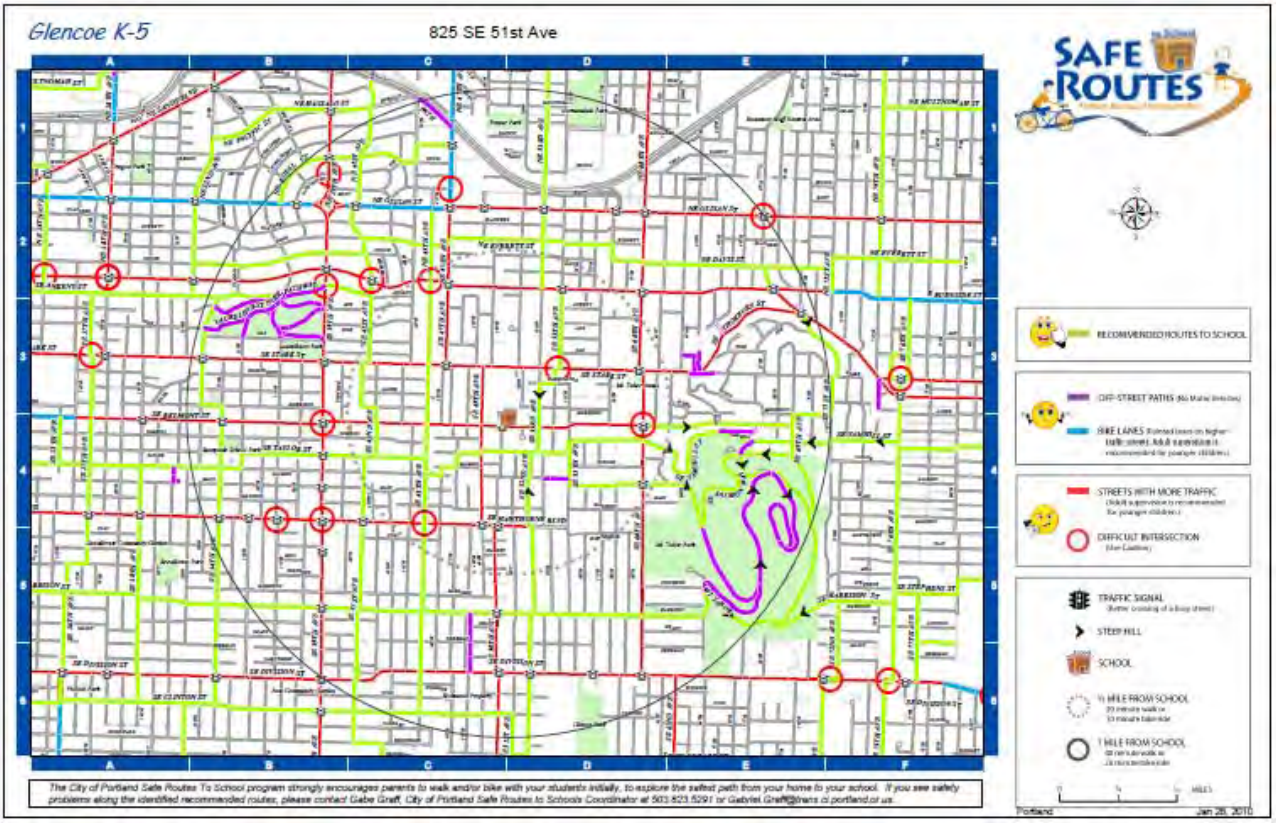


Figure 40. Sample Recommended Walking Route to School

School District Contacts

- Battleground School District - www.bgsd.k12.wa.us 360-885-5300
- Camas School District - www.camas.wednet.edu 360-335-3000
- Evergreen School District - www.evergreenps.org 360-604-4000

- Green Mountain School District - www.greenmountainschool.us 360-225-7366
- Hockinson School District - www.hock.k12.wa.us 360-448-6400
- La Center School District - www.lacenterschools.org 360-263-2131
- Ridgefield School District - www.ridge.k12.wa.us 360-619-1301
- Vancouver School District - www.vansd.org 360-313-1000
- Washougal School District - www.washougal.k12.wa.us 360.954.3000

Proposed Enhancements

Increasing the percentage of children walking and biking to school involves identifying and addressing the challenges faced by parents, students and schools to change current transportation habits. Schools and community partners can work together using the "five E's" strategies for healthy kids

and safe streets; Education, Encouragement, Enforcement, Engineering and Evaluation. There are many state and national resources are available to assist community and school partnerships in addressing this issue.

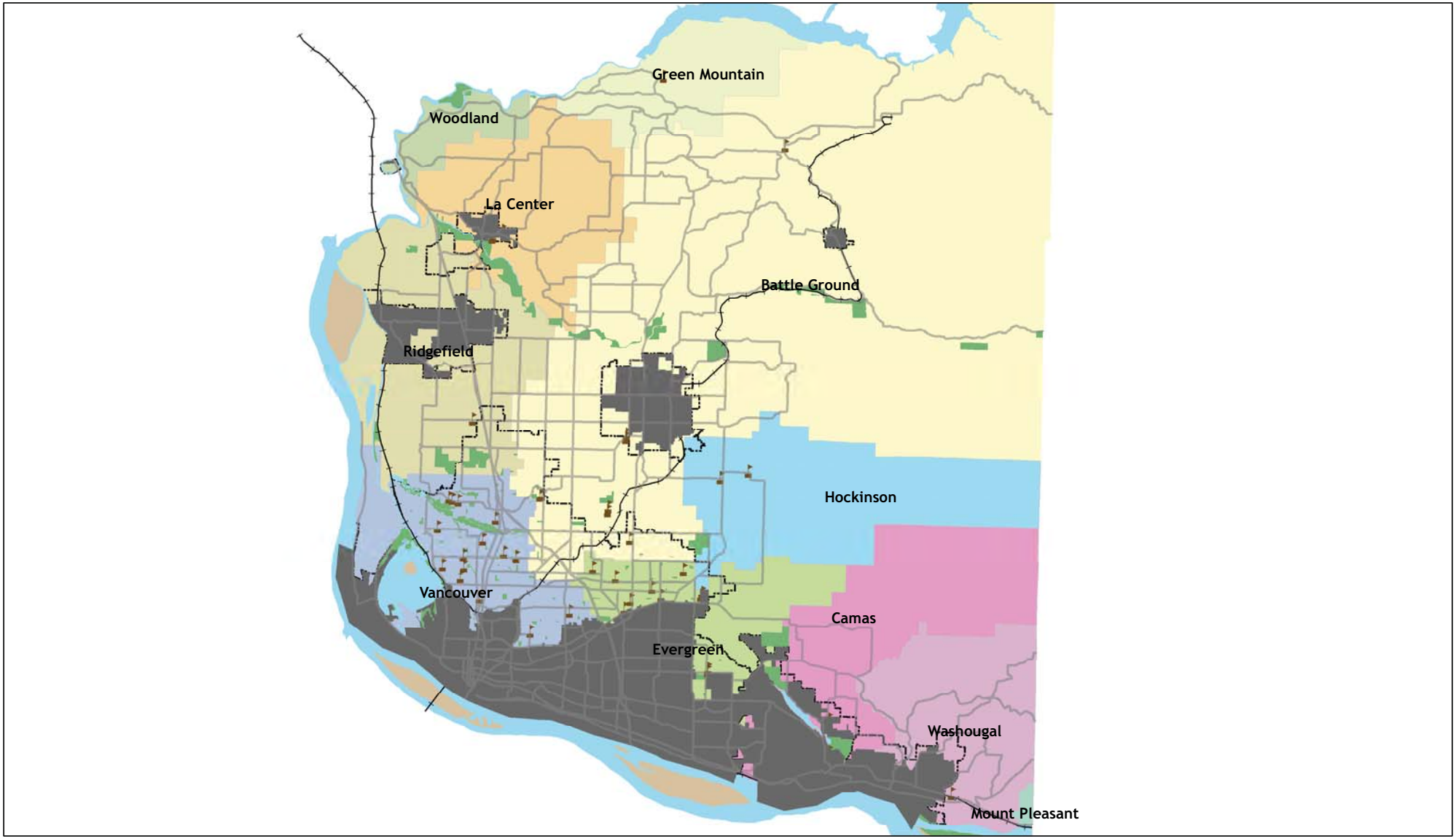
To increase active transportation among youth, communities have implemented a variety of programs. These demonstrated and effective strategies have been shown to improve cycling and walking conditions as well as overall physical activity. However, these efforts require resources that are not readily available within the county or school districts. The county and schools can compete for grant funding under the federal safe routes to school program administered through WSDOT by building stronger partnerships and including more community partners such as neighborhood associations, business, faith-based and government partners. To make our county and schools more competitive for these grants, the county will take the following actions:

1. Support building collaborative relationships among community groups with an interest in biking and walking to school.
2. Support current Public Health grant activities focused on developing safe routes to school opportunities in identified low-income schools.
3. Prioritize and pay special attention to opportunities to improve bicycle and pedestrian facilities near schools
4. Contribute data and expertise to grant applications, including participating in activities that build capacity and competitiveness, such as walking audits or other assessment processes.
5. Work with all stakeholders to clearly identify the appropriate role for each, especially the county, in the effort to increase cycling and walking among students.

One of the goals in the Clark County Bicycle and Pedestrian Plan is to encourage Clark County residents to walk as an alternative mode of travel for both local and commuter trips by publicizing routes. The following four questions can be used by schools for surveys encouraging students to walk to school.

1. Do you have Routes to School identified within the walking boundaries of your school?
2. If yes, are children walking to school utilizing the identified routes?
3. If No, why are the children walking to school not utilizing the routes to school?
4. Are there areas where students walking to school could be increased, by creating new or improving/extending existing Walk routes?

Map 9 shows school district boundaries; contact districts to receive a suggested walking route map.



Map 9. School District Boundary Map

Clark County
Bicycle and Pedestrian Master Plan

Source: Data obtained from Clark County
Author: HWK
Date: September 2010

Railroad
School
Parks
Urban Growth Boundary

0 1.25 2.5 Miles

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Appendix E. Complete Project Lists

The following tables are a complete list of the bikeway, sidewalk, and trail projects identified in this Plan. These projects were prioritized according to the criteria listed in Appendix C. Projects receiving a combined score above 60 were considered "medium" priority, while projects receiving a score below 60 were considered "low" priority. The priority projects identified in Chapter 4 are high priority, and were chosen from the highest-scoring projects.

The projects not included in the prioritized lists will be the basis for ad hoc improvements and for improvements beyond the six-year time horizon associated with the prioritized list.

Table 54. Medium and Low Sidewalk Project List

Street	From - To	Length (miles)	Tier
Highway 99*	NE 122nd St - NE 129th St	0.36	Medium
Highway 99*	NE 117th St - NE 110th St	0.29	Medium
Highway 99*	NE 107th St - NE 104th St	0.17	Medium
NE 100th St	NE 23rd Ave - NE 28th Pl	0.30	Medium
NE 102nd St	NE 23rd Ave - NE 25th Pl	0.13	Medium
NE 104th Loop	NE 104th St - NE 104th St	0.21	Medium
NE 106th St	Highway 99 - I-5	0.29	Medium
NE 109th St	NE 26th Ave - NE 29th Ave	0.17	Medium
NE 10th Ave	200' N of NE 139th St - NE 136th St	0.20	Medium
NE 10th Ave	NE 68th St - NE 65th St	0.15	Medium
NE 110th St	NE 27th Ave - NE 29th Ave	0.11	Medium
NE 111th St	NE 26th Ave - NE 27th Ave	0.05	Medium
NE 112th St	Highway 99 - I-5	0.19	Medium
NE 114th St	NE 28th Ave - NE 29th Ave	0.33	Medium
NE 116th St	NE 26th Ave - NE 29th Ave	0.16	Medium
NE 125th St	NE 25th Ave - NE 27th Ave	0.11	Medium
NE 130th Ave	NE 86th St - 100' N of NE 83th Ave	0.16	Medium
NE 13th Ave	NE 88th St - 300' S NE 82nd St	0.35	Medium
NE 14th Ave	NE 66th St - NE 65th St	0.06	Medium
NE 142nd Ave	Little Prairie Park - NE 76th St	0.09	Medium
NE 150th St	NE 29th Ave - NE 25th Ct	0.22	Medium
NE 15th Ave	NE 94th St - Highway 99	0.21	Medium

Street	From - To	Length (miles)	Tier
NE 16th Ave	NE 76th St - NE 72nd St	0.18	Medium
NE 179th St	NE Delfel Rd - I-5 SB	0.03	Medium
NE 179th St	NE New Delfel Rd - NE Old Delfel Ct	0.07	Medium
NE 18th Ave	NE 129th St - Cassidy Ct	0.27	Medium
NE 18th Ave	NE 84th Wy - NE 88th St	0.14	Medium
NE 23rd Ave	NE 91st St - NE 94th St	0.10	Medium
NE 24th Ave	NE 90th St - NE 88th St	0.10	Medium
NE 24th Ave	NE 117th St - NE 119th St	0.14	Medium
NE 25th Ave	NE 129th St - NE 125th St	0.19	Medium
NE 26th Ave	NE 119th St - NE 109th St	0.32	Medium
NE 27th Ave	NE 109th St - NE 111th St	0.10	Medium
NE 28th Ave	NE 104th St - NE 109th St	0.25	Medium
NE 29th Ave	NE 139th St - NE 136th St	0.15	Medium
NE 29th Ave	150' S of NE 150th St - NE 150th St	0.03	Medium
NE 29th Ave	NE 84th St - NE 88th St	0.12	Medium
NE 29th Ave	NE 116th St - NE 109th St	0.32	Medium
NE 39th Ave	NE 107th St - NE 110th St	0.16	Medium
NE 39th St	100' E of NE 167th Ave - NE 174th Ct	0.48	Medium
NE 50th Ave	NE 119th St - NE 135th St	0.81	Medium
NE 50th Ave	NE St. Johns Rd - NE 99th St	0.19	Medium
NE 58th Av	120' N of NE Issler St - NE 69th St	0.75	Medium
NE 58th St	150' E of NE 76th Ave - 350' W of NE 81st Ave	0.14	Medium
NE 58th St	Andresen Rd - NE 72nd Ave	0.14	Medium
NE 58th St	NE 56th Ave - NE Andresen Rd	0.59	Medium
NE 68th St	NE 20th Ave - 265' E of NE 20th Ave	0.05	Medium
NE 68th St	Highway 99 - NE 17th Ave	0.45	Medium
NE 68th St	530' E NE 20th Ave - NE St. Johns Rd	0.64	Medium
NE 72nd St	Highway 99 - NE 14th Ct	0.24	Medium
NE 78th St	150' E of NE 154th Ct - 16' W of NE 156th Ct	0.03	Medium
NE 86th St	NE 29th Ave - NE 30th Ave	0.04	Medium
NE 86th St	NE 18th Ave - NE 19th Ave	0.05	Medium
NE 88th St	Highway 99 - 615' E of NE 13th Ave	0.12	Medium
NE 88th St	150' W of NE 28th Ct - 260' E of NE 32nd Ave	0.22	Medium
NE 90th St	NE 25th Ave - NE 21st Ave	0.18	Medium
NE 91th St	NE 21st Ave - NE 25th Ave	0.19	Medium

Street	From - To	Length (miles)	Tier
NE 94th St	NE 15th Ave - 1,300' E of NE 20th Pl	0.25	Medium
NE 94th Wy	NE 95th Way - NE 32nd Ave/Tenny Creek Park	0.09	Medium
NE 97th St	NE 15th Ave - NE 19th Ave	0.17	Medium
NE Andresen Rd	200' N of NE 78 St - NE 78th St	0.04	Medium
NE Brookview Dr	NE Parkview Dr - NE Sylvan Terrace Dr	0.18	Medium
NE Summit Ridge	Highway 99 - NE Sylvan Terrace Dr	0.07	Medium
NE Sylvan Ter	NE 110th St - NE Summit Ridge Dr	0.29	Medium
NW 11th Ave	NW 109th St - NW 99th St	0.50	Medium
NW 11th Ave	NW 149th St - NW 164th St	0.75	Medium
NW 21st Ave	NW 124th St - 100' N NW 119th St	0.19	Medium
NW 21st Ave	NW 119th St - NW 115th St	0.24	Medium
NW 26th Ave	235' N of 108th St - 175' N of 106th St	0.15	Medium
NW 94th St	240' E of NW 14th Ave - NW 20th Ave	0.34	Medium
NE 10th Ave	150' S of NE 146th St - NE 149th St	0.17	Low
NE 129th St	NE Rockwell Dr - NE 29th Ave	0.11	Low
NE 144th St	NE 26th Ave - NE 29th Ave	0.15	Low
NE 14th Ave	NE 68th St - NE 66th St	0.08	Low
NE 152nd Ave	NE 99th St - 350' S of NE 99th St	0.07	Low
NE 153rd St	NE 26th Ave - NE 27th Ave	0.06	Low
NE 155th St	NE 25th Ave - NE 20th Ave	0.11	Low
NE 155th Wy	NE 22nd Ave - NE 26th Ave	0.13	Low
NE 157th St	NE 29th Ave - NE 31st Ave	0.11	Low
NE 159th St	Hockinson HS - Fire Station	0.34	Low
NE 161nd St	NE 33rd Ave - NE 35th Ave	0.12	Low
NE 163rd St	NE 33rd Ave - NE 29th Ave	0.18	Low
NE 164th St	NE 182nd Ave - NE 187th Ct	0.25	Low
NE 165th Cir	NE 40th Ave - NE 37th Ave	0.13	Low
NE 16th Ave	NE 68th St - NE 65th St	0.18	Low
NE 170th St	NE 29th Ave - NE 30th Ave	0.03	Low
NE 174th St	NE 50th Ave - NE 40th Ave	0.43	Low
NE 22nd Ave	NE 155th Wy - NE 155th St	0.03	Low
NE 22nd Ave	NE 159th St - NE 157th St	0.11	Low
NE 25th Ave	NE 157th St - NE 155th St	0.07	Low
NE 25th Ave	NE 157th St - NE 159th St	0.16	Low
NE 26th Ave	NE 153rd St - NE 157th St	0.18	Low

Street	From - To	Length (miles)	Tier
NE 27th Ave	NE 150th St - NE 28th Ave	0.17	Low
NE 28th Ave	NE 27th Ave - NE 157th St	0.22	Low
NE 29th Ave	NE 170th St - NE 172nd St	0.08	Low
NE 29th Ave	NE 179th St - NE 188th Cir	0.44	Low
NE 33rd Ave	NE 163rd St - WSU entrance	0.20	Low
NE 35th Ave	NE 143rd St - NE Salmon Creek Ave	0.11	Low
NE 40th Ave	NE 174th St - NE 165th Cir	0.43	Low
NE 44th St	NE 45th Av - NE 54th Ave	0.39	Low
NE 50th Ave	200' N. of 137 - NE 139th St	0.06	Low
NE 50th Ave	NE 111th Ct - NE 119th St	0.40	Low
NE 50th Ave	Salmon Creek Ave - NE 179th St	1.49	Low
NE 56th Ave	NE 58th St - NE 47th St	0.54	Low
NE 78th St	120' E of NE 156th Ave - 130' E of NE 158th Ave	0.09	Low
NE 95th St	91st Ave - 150' E of NE 93rd Pl	0.11	Low
NE Grinnell Rd	NE Pup Creek Rd - 2,550' E NE Pup Creek Rd	0.48	Low
NE Minnehaha St	1,000' W of NE 53rd Ave - NE 53rd Ave	0.09	Low
NE Pup Creek	Spurrel Rd - Grinnell Rd	0.87	Low
NE Rockwell Dr	NE 29th Ave - NE 134th St	0.06	Low
NE Salmon Creek Ave	NE Corbin Rd - NE 28th St	0.01	Low
NW 119th St	NW 9th Ave - 350' E of 9th Ave	0.07	Low
NW 21st Ave	NW 88th St - NW 91st St	0.11	Low
SE Evergreen Blvd	SE 354th Ave - SR-14	0.47	Low

*Table 55. Medium and Low On-Street Bikeway Projects**

Name	From - To	Length (miles)	Tier
Chinook Park Trail	Chinook Park - NW 139th St	0.50	Medium
Green Mountain Route	Goodwin to NE 232nd Ave - NE 54th St	0.51	Medium
Hayes Rd	NE Etna Rd - W of I-5	10.44	Medium
LaCamas River/NE 172nd Ave	Goodwin to NE 159th St - Trail 14	2.39	Medium
Lockwood Creek Rd/NE 40th Ave/NE Charity	La Center City Line - NE 82nd Ave	5.36	Medium
NE 102nd Ave/NE 159th St	NE 179th St - NE 72nd Ave	2.74	Medium
NE 10th Ave	NE 149th St - NE 164th St	0.45	Medium
NE 10th Ave	NE 155th Cir - NE Knowles Dr	0.65	Medium
NE 10th Ave	S of NE 139th St - NE 134th St	0.20	Medium
NE 10th Ave	La Center City Line - NE 259th St	3.15	Medium
NE 10th Ave/Delful Rd	NW 179th St - City Line	0.77	Medium
NE 119th St	I-205 - 172nd St	6.60	Medium
NE 129th St	NE16th Ave - NE Salmon Creek Ave	0.90	Medium
NE 130th Ave	NE 99th St - NE 89th St	0.44	Medium
NE 132nd Ave	NE 144th St - NE 119th St	2.64	Medium
NE 134th St	NE 20th Ave - NE 23rd Ave	0.19	Medium
NE 139th St	NE 50th Ave - NE 87th Ave	1.78	Medium
NE 13th St/NEGoodwin Rd	NE 192nd Ave - NW Alexandra Ln	0.89	Medium
NE 142nd Ave	NE 99th St - NE Padden Pkwy	0.74	Medium
NE 144th St/NE Parkinen Rd	NE 117th Ave - NE 159th St	2.92	Medium
NE 147th Ave/NE Axford Rd	NE 272nd Way - NE 249th St	1.25	Medium
NE 152nd Ave	Padden Parkway - NE Ward Rd	0.23	Medium
NE 152nd Ave/NE Lucia Falls Rd	NE Lewisville Hwy - NE 279th St	3.90	Medium
NE 154th St	NE 10th Ave - I-5	0.19	Medium
NE 154th St	E of I-5 - NE 20th Ave	0.24	Medium
NE 156th St/NE 112th Ave/NE 154th St	NE 102nd Ave - NE Caples Rd	1.16	Medium
NE 164th St	NW 179th St - NE 10th Ave/Delful Rd	0.55	Medium
NE 172nd Ave	NE 18th St - SE 1st St	1.00	Medium
NE 172nd Ave	NE Edmunds Rd - NE 35th St	0.22	Medium
NE 172nd Ave	NE 31st Wy - NE 22nd St	0.46	Medium
NE 174th St	Proposed Trail - NE 50th Ave	0.49	Medium
NE 179th St	NW 11th Ave - E of NW 11th Ave	0.32	Medium
NE 179th St	E of NW 11th Ave - W of I-5	0.30	Medium

Name	From - To	Length (miles)	Tier
NE 182nd Ave	NE 279th St - NE 159th St	6.54	Medium
NE 189th St	W of NE 29th Ave - NE 29th Ave	0.50	Medium
NE 189th St	I-5 - NE 10th Ave	0.14	Medium
NE 18th St*	NE 162nd Ave - NE 172nd Ave	0.50	Medium
NE 194th St	Vancouver City Line - NE 29th Ave	0.74	Medium
NE 194th St	NE 10th Ave - City Line	0.25	Medium
NE 199th Ave/NE Ingle Rd	NE 58th St - NE Goodwin Rd	1.85	Medium
NE 20th Ave/NE 159th St	NE Union Rd - NE 29th Ave	0.71	Medium
NE 21st Ave/NE Jenny Creek Rd	NE Hayes Rd - La Center City Line	4.45	Medium
NE 232nd/238th/242nd Ave	NE 58th St - NE Dresser Rd	1.94	Medium
NE 239th St/NE 112th ave/NE 244th St	NE 29th Ave - NE Lewisville Hwy	4.71	Medium
NE 259th St/NE 85th Ave	NE 29th Ave - NE 264th ST	2.73	Medium
NE 29th Ave	NE 259th St - NE 166th St	4.64	Medium
NE 29th Ave	NE 259th St - NE 136th St	0.46	Medium
NE 29th Ave	NE 136th St - NE Salmon Creek Ave	0.11	Medium
NE 39th St	NE 162nd Ave - NE 164th Ave	0.11	Medium
NE 39th St/NE Edmunds Rd	NE 169th Ave - NE 174th Ct	0.23	Medium
NE 47th Ave	NE 78th St - NE Minnehaha St	0.74	Medium
NE 4th Plain Blv	NE 54th St - NE Vancouver Mall Dr	0.34	Medium
NE 50th Ave	NE 259th St - NE 179th St	3.96	Medium
NE 50th Ave	NE 135th St - NE 119th ST	0.81	Medium
NE 50th Ave	NE Salmon Creek St - NE 139th St	0.53	Medium
NE 50th Ave	NE 139th St - NE 137th St	0.10	Medium
NE 63rd St	NE 102nd Ave - NE 107th Ave	0.21	Medium
NE 78th St	NE Hazel Dell Ave - NE Hwy 99	0.26	Medium
NE 78th St	NE 58th Ave - NE 72nd Ave	0.62	Medium
NE 82nd Ave/NE 279th St	NE Lewisville Hwy - NE Daybreak Rd	3.17	Medium
NE 87th Ave/NE 105th St/NE 9th Ave	NE 139th St - NE Padden Pkwy	3.12	Medium
NE 88th St*	E of I-5 - NE 25th St	0.81	Medium
NE 88th St*	NE 26th Ave - NE St. Johns Rd	0.91	Medium
NE 99th St*	NE Hazel Dell Ave - NE Hwy 99	0.60	Medium
NE Axford Rd/NE 249th St/NE 244th St	NE 259th St - NE 174th Ct	2.44	Medium
NE Caples Rd/NE 117th Ave	NE 159th St - NE 144th St	0.71	Medium
NE Chelatchie Rd	NE 221st Ave - NE 419th St	1.68	Medium

Name	From - To	Length (miles)	Tier
NE Edmunds Rd/NE 187th Ave	NE 28th St - NE 18th St	0.76	Medium
NE Grinnell Rd	NE 453rd St - 2000' E of NE 453rd st	0.42	Medium
NE Grist Mill Rd	3200' North of NE Cedar Creek Rd - NE Cedar Creek Rd	0.61	Medium
NE Happa Rd	Dead end - NE Etard Rd	0.46	Medium
NE HIghway 99	NE Minnehaha St - Vancouver City Line	0.25	Medium
NE Hwy 99*	NE 122nd St - NE 120th St	0.12	Medium
NE Risto Rd/NE 189th St	NE 182nd Ave - NE 182nd Ave	6.66	Medium
NE Sunset Falls Rd	NE Railroad Ave - East	7.37	Medium
NE Union Rd	E of I-5 - NE 20th Ave	0.57	Medium
NE Ward Rd	NE 172nd Ave - Vancouver city line	0.50	Medium
NE Ward Rd	NE 152nd Ave - NE 162nd Ave	0.59	Medium
NE Yale Bridge Rd	County Line - NE 419th St	4.00	Medium
NE/SE Blair Rd	NE 267th Ave - SE Washougal River Rd	3.92	Medium
NW 11th Ave/NW Spencer Rd	N 20th St/Ridgefield city line - NW La Center Rd	2.49	Medium
NW 139th	NE Tenney Rd - NE 20th Ave	0.77	Medium
NW 149th St	NE 5th Cir - NE 10th Ave	0.24	Medium
NW 149th St	E of NW 19th Ave - NW 16th Ave	0.09	Medium
NW 179th St	NW Krieger Rd - NW 31st Ave	1.93	Medium
NW 21st Ave	NW 151st St - NW 149th St	0.09	Medium
NW 36th Ave	NW 138th St - S of NW 119th St	0.98	Medium
NW 78th St	NW 8th Ave - W of NW Anderson Ave	0.05	Medium
NW 7th Ave	NW 119th St - NW 99th St	1.07	Medium
NW 88th St*	NW 9th Ave - NW Lakeshore Ave	0.95	Medium
NW Hillhurst Rd/NW 41st Ave	S Royle Rd - NW 151st St	5.41	Medium
NW Pacific Hwy/NW La Center Rd	I-5 - La Center City Line	2.01	Medium
SE Everett/NE 267th Ave	NE 19th St - Camas City line	1.79	Medium
SE Vernon Rd	N of NE Balcony Dr - Washougal city line	3.19	Medium
SR 502 (NE 219th St)	E of NE 10th Ave - NE 102nd Ave	4.43	Medium
NW 28th Ave/NW 26th Ave	NW 119th St - NW 99th St	1.12	Medium
NE 134th St	NE 87th Ave - NE Laurin Rd	0.99	Low
NE 159th St	NE 50th Ave - NE 72nd Ave	1.01	Low
NE 259th St	NE Axford Rd - Battle Ground Lake	1.28	Low
NE 25th Ave/NE 163rd Sr	NE 25th Ave - NE 29th Ave	0.26	Low
NE 279th St/NE Basket Flat Rd	NE 176th Pl - NE Hantwick Rd	3.41	Low

Name	From - To	Length (miles)	Tier
NE 29th Ave	NE 153rd Cir - NE 150th St	0.15	Low
NE 4th Plain Rd/NE 58th St	Vancouver city line - NE 232nd Ave	3.13	Low
NE 50th Ave	S of NE 159th St - NE Salmon Creek St	0.28	Low
NE 50th Ave	NE 164th St - NE 159th St	0.25	Low
NE 72nd Ave	NE 199th St - NE Ward Dr	1.14	Low
NE Amboy Rd	NE 399th St - NE 241st Ct	1.37	Low
NE Buncombe Hollow Rd	NE Cedar Creek Rd - Dead end	8.30	Low
NE Cedar Creek Rd	W of NE Happa Rd - NE Yale Bridge Rd	13.51	Low
NE Goodwin Rd/NE 28th St/NE Dresser Rd	NW Alexandra Ln - NE 19th St	3.36	Low
NE Lewisville Hwy	NE Cedar Creek Rd - NE 269th St	7.72	Low
NE Salmon Creek St	NE 50th Ave - NE 50th Ave	0.06	Low
NW 189th St	NW 11th Ave - Vancouver city line	0.48	Low
NW Allen Canyon Rd	NW 71st Ave - I-5	3.07	Low
NW Lancaster Rd	Lewis River/East Fork Lewise River route - NW Main Ave	2.44	Low
NW189th St	Vancouver UGB - I-5	0.33	Low
Salmon Creek Greenway	Erwin O Rieger Memorial Hwy to 36th Ave - Trail 18	1.05	Low
SE Lewis and Clark Hwy	Washougal city line - County line	3.42	Low

* Some of the bicycle and pedestrian projects listed in this table are located on state highways, under the jurisdiction of the Washington State Department of Transportation (WSDOT). Numerous constraints, such as limited right of way, topographical constraints, and other physical limitations often make it difficult to construct the bicycle and pedestrian facilities recommended in this plan. In addition, funding is limited, and there are restrictions on how WSDOT may use the funding that is available. Therefore, although projects along WSDOT facilities are included on these project lists, WSDOT is not obligated to construct these projects.

*Table 56. Prioritized Off-Street Trail Projects**

Name	From - To	Length (miles)	Tier
10 Rd	IP 100 - County Line	0.50	Medium
Brush Prairie Park Trail	Trail 10.2 - NE 134th St	0.73	Medium
Buncombe Hollow Rd Connection	NE Buncombe Hollow Rd - North County Trail	1.58	Medium
Community Fairgrounds Traill	NE Union Rd - Whipple Creek Park Trails	1.24	Medium
Green Mountain Route	Goodwin Rd - NE 232nd Ave	3.15	Medium
Hazel Dell Park Connector 1	Hazeldell Park - Trail 30	0.11	Medium
Hazel Dell Park Connector 2	Hazeldell Park - NE 68th St	0.06	Medium
Hazel Dell Park Route	Open space N of NE 78th St - Hazel Dell Park	0.88	Medium
Hwy 99 Trail	NE Hwy 99 - Trail 30	1.88	Medium
Hwy 99 Trail Connector	NE 116th St - NE 30th Ave	0.28	Medium
Hwy 99 Trail Connector	Hwy 99 Trail - NE Sherwood Dr	0.36	Medium
I-5	Ridgefield city line - NE 17th Ave	5.37	Medium
I-5	NE 17th Ave - Vancouver city line	4.36	Medium
IP 100 Extension	IP 100 - County Line	0.43	Medium
La Center Bottoms route	NE Highland St - E 4th St	0.70	Medium
Lewis River Trail	NE 264th St - NE 272nd Way	3.69	Medium
Lewis River/East Fork Lewis River	NW of Ridgefield - La Center Rd/La Center Line	5.58	Medium
Livingston Mtn - Dole Valley Trail	NE Sunset Falls Rd - SE 30th Circle	18.32	Medium
Mud Lake Circle	Lewis River - Mud Lake Park	2.91	Medium
N Parkway Ave	NE 244th St - E Main St	1.26	Medium
NE 112th St/Hazel Dell Ave	NE 117th St - NE Bassel Rd	1.24	Medium
NE 117th Ave	NE 119th St - Vancouver city line	2.71	Medium
NE 119th St	NW 9th Ave - NE Strutz Rd	1.11	Medium
NE 134th St	I-5 Fwy - NE Salmon Creek Ave	0.84	Medium
NE 137th Ave	S of NE 159th St - NE 144th St	0.69	Medium
NE 142nd Ave	Battle Ground UGB - UPRR	0.58	Medium
NE 149th St	Trail 12 - Trail 2	0.50	Medium
NE 159th St	E of NE 137th Ave - NE 182nd Ave	2.11	Medium
NE 159th St/NE 156th St	NE 72nd Ave - NE 112th Ave	2.16	Medium
NE 162nd Ave	NE Ward Rd - NE 4th Plain Blve	0.89	Medium
NE 167th Ave	UPRR - NE 219th St	1.09	Medium
NE 17th Ave/NE 68th St	Powerline Trail - NE 63rd St	1.15	Medium
NE 189th St	NE 112th Ave - NE 122nd Ave	0.50	Medium
NE 18th St Trail	NE Blair Rd - NE 162nd Ave	5.88	Medium

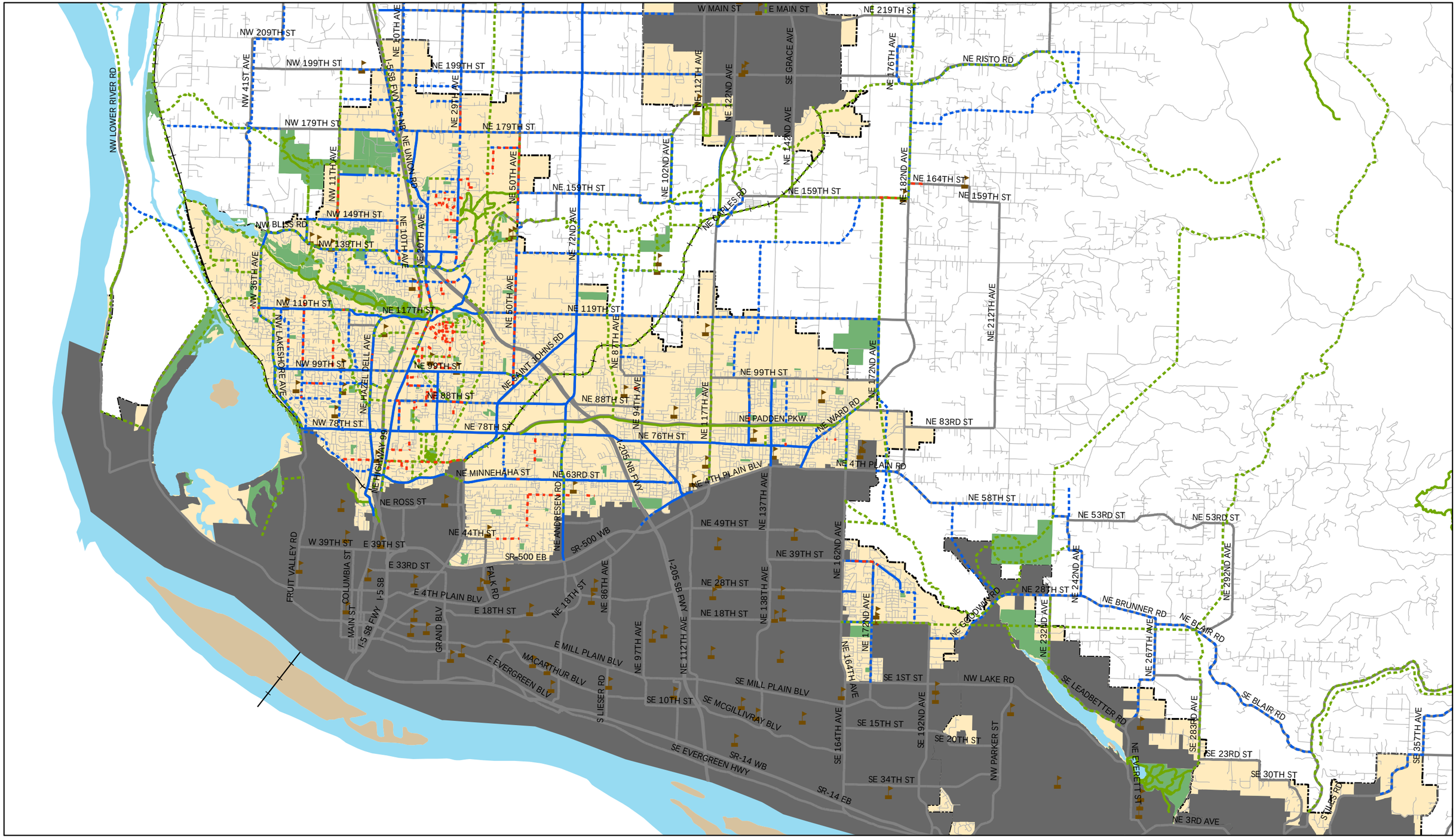
Name	From - To	Length (miles)	Tier
NE 232nd Ave/NE Leadbetter Rd	NE 28th St - Camas city line	2.80	Medium
NE 249th St	NE 132nd Ave - NE142nd Ave	0.50	Medium
NE 254th St/NE 132nd Ave	NE Lewisville Hwy - NE 244th St	0.99	Medium
NE 259th St	Trail 56 - E of NE 45th Ave	0.28	Medium
NE 25th Ave Extension	NE 78th Ave - NW Lakeshore Drive	0.50	Medium
NE 269th St/NE Daybreak Rd	NE Bennett Rd - Daybreak Park	1.28	Medium
NE 41st Ave	NE 259th St - NE 219th St	2.01	Medium
NE 41st Ave Extension	NE 219th St - NE 159th St Trail	3.02	Medium
NE 68th St	NE 25th Ave Extension - Trail 30	0.03	Medium
NE 94th St/NE Hazel Dell Ave	NE 99th St - NE 85th St	0.93	Medium
NE 97th Ave	Brush Prairie Regional Park - NE 134th St	0.32	Medium
NE 99th St/ Hwy 99 loop*	Powerline Trail - NE 99th Ave	0.97	Medium
NE 99th St/ Hwy 99 loop*	Lewis & Clark RR to Lalonde Park - NE St. Johns Rd	0.65	Medium
NE Andersen Rd	I-205 Fwy - Vancouver city line	1.57	Medium
NE Belvins Rd Trail Spur	IP 100 - Southeast	2.19	Medium
NE Blair Rd Connection	SE 192nd Ave - Heritage Trail	0.39	Medium
NE Caples Rd	Battle Ground City line - NE 159th St	0.96	Medium
NE Cramer Rd/NE 102nd Ave	Battle Ground city line - NE 156th St	1.88	Medium
NE Etard Rd	NE Happa Rd - East	1.03	Medium
NE Hazel Dell Ave	NW 99th St - Unnamed roadway north of Alki Ave	2.23	Medium
NE Highway 99	NE 134th St - NE Salmon Creek Ave	0.69	Medium
NE Hwy 99/NE 104th St	NE121st St - NE 31st Ave	1.65	Medium
NE Hwy 99/NE 88th St	NE Hwy 99 - NE 68th St	0.96	Medium
NE Lewisville Hwy	NE Potter Rd - NE 244th St	1.27	Medium
NE Minnehaha St	NE Saint Names Rd - NE Hazel Dell Ave	1.67	Medium
NE Salmon Creek Ave	I-205 FWY - NE Highway 99	0.66	Medium
NE Salmon Creek Avenue Trail	Trail 46 - Trail 30	1.67	Medium
NE Tenney Rd	Trail 33 - I-5	1.12	Medium
NE Ward Rd	NE Padden Pkw - NE 172nd Ave	0.96	Medium
NE/SE Washougal River Rd	Washougal City line - SE 412th Ave	7.80	Medium
NW 122nd St	NW 36th Ave - Trail 32	0.62	Medium
NW 21st Ave	Whipple Creek Reg Park - NW 151st St	0.41	Medium
NW 21st Ave	NW 149th St - Trail 35	0.54	Medium
NW 21st Ave	Whipple Creek Reg Park - NW 151st St	0.41	Medium
NW 31st Ave	I-5 - N 10th St	2.01	Medium

Name	From - To	Length (miles)	Tier
NW 31st Ave	NW 119th St - NW Lakeshore Ave	0.32	Medium
NW Bliss Rd	NW Seward Rd - Trail 33	1.48	Medium
NW La Center Rd	I-5 - LaCenter city line	1.78	Medium
NW Lakeshore Ave	NW 88th St - NW 78th St	0.56	Medium
NW Lower River Rd	Lake River Greenway - Vancouver City Line	3.16	Medium
NW McCann Rd Sidepath	Trail 31 - NW 36th Ave	2.25	Medium
NW Pekin Ferry Rd	Lewis River Trail - NW 324th St	1.08	Medium
NW Seward Rd	NW 151st St - NW Bliss Rd	0.33	Medium
Salmon Creek Crossing	NW Hathaway Rd - Salmon Creek Greenway	0.52	Medium
Salmon Creek Greenway Trail	Trail 46 - NE 50th Ave	1.09	Medium
South Couger Creek Greenway	Hazel Dell Ave to NW 9th Ave - Eisenhower Park	0.28	Medium
Sunset Falls Road Trail	Sunset Campground - 1900' W of NE Railroad Ave	7.65	Medium
SW WA Experimental Station Trail	NE 78th St - NE 68th St	1.24	Medium
Tenny Creek Park Trail	NE Hwy 99 - NE 99th St	1.66	Medium
Trail 1	NE 156th St - Battle Ground City Line	2.62	Medium
Trail 10.2	NE 72nd Ave - Trail 11	1.32	Medium
Trail 12	NE 156th St - Brush Prairie Regional Park	0.95	Medium
Trail 14	NE 162nd Ave - NE Goodwin Rd	3.72	Medium
Trail 15	Columbia River Trail - County Line	1.05	Medium
Trail 16	Fitzgerald Rd - County Line	1.63	Medium
Trail 18	Trail 10 - Buckmire Slough	1.91	Medium
Trail 19	NE 139th St - NE 119th St	1.15	Medium
Trail 20	I-5 - West River Road Trail	3.07	Medium
Trail 24	NE 272nd Way - NE 172nd Ave	3.16	Medium
Trail 25	NW Krieger Rd - NW 179th St	1.80	Medium
Trail 28	IP 100 - E of County line	4.46	Medium
Trail 3	Ridgefield City line - Vancouver City line	4.36	Medium
Trail 30/Powerline Trail	WSU Trail - NE 63rd Street	4.49	Medium
Trail 31	Trail 18 - NW Seward Rd	1.67	Medium
Trail 32	Trail 18 - NW 69th St	3.05	Medium
Trail 33	NW 149th St - Trail 34	1.75	Medium
Trail 37	NE 119th St - I-205 FWY	1.73	Medium
Trail 41	NW Erwin O Reiger Memorial Hwy - Vancouver	0.50	Medium
Trail 43	NE Salmon Creek St - Trail 30	0.75	Medium
Trail 44	NE 81st St - NE 76th St	0.21	Medium

Name	From - To	Length (miles)	Tier
Trail 47	NW 47th Ct - Whipple Creek Park	0.87	Medium
Trail 48	Lake River Greenway - Vancouver city limits	1.78	Medium
Trail 49	NW Erwin O Reiger Hwy - NW Lower River Rd	0.88	Medium
Trail 5	Chelatchie Prairie Trail - Trail 4	1.39	Medium
Trail 50	NW Pacific Hwy - I-5	2.38	Medium
Trail 51	NE 249th St - Trail 14	10.48	Medium
Trail 55	SE Washougal River Rd - SE 412th Ave	6.20	Medium
Trail 56	Trail 9 - NE 259th St	1.33	Medium
Trail 57	La Center city line - Trail 9	0.83	Medium
Trail 58	NW 389th St - Trail 20	2.89	Medium
Trail 7	NW Pekin Ferry Rd - Mud Lake Circle Trail	0.31	Medium
Trail 8	NE Cedar Creek Rd - Trail 9	7.04	Medium
Trail 9	La Center City Line - NE 269th St	5.26	Medium
Whipple Creek Park Trails	NW 21st Ave - NW 11th Ave	1.44	Medium
WSU Connector	Salmon Creek Ave - NE 50th Ave	0.62	Medium
WSU Trail	NE 50th Ave - WSU Trail	1.17	Medium
99th St Transit Center Connector	NE Hazel Dell Ave - NE 88th Cir	0.30	Low
Camp Bonneville Trail	Salmon Creek Greenway Trail - Trail 14	11.01	Low
Columbia River Trail	E of I-205 Bridge - Trail 15	1.12	Low
Dugan Open Space Trail	NW Fruit Valley Rd - La Frambois Rd	1.36	Low
I-5	Island Aire Dr - Ridgefield city line	6.05	Low
NE 134th St	NE 82nd Ave - NE Laurin Rd	1.49	Low
NE 139th St	NE 87th Ave - Brush Prarie Park Trail	0.26	Low
NE 172nd Ave	NE 159th St - NE Ward Rd	3.14	Low
NE 249th St	Battle Ground Lake Park - NE 182nd Ave	0.26	Low
NE 279th St	W of NE 147th Ave - NE 176th Pl	2.14	Low
NE 50th Ave	NE 179th St - NE 164th St	0.75	Low
NE 72nd Ave/NE 139th St	North of NE 144th St - East of NE 82nd Ave	0.79	Low
NE 82nd Ave	Trail 10.2 - NE 139th St	0.57	Low
NE Heisson Rd	NE 244th St - Battle Gound City line	0.84	Low
NE Lucia Falls Rd	NE 228th St - UPRR	1.98	Low
NE Palmer Rd	NE 249th St - NE 174th Ct	0.42	Low
NE Salmon Creek St	NE 50th Ave - NE 64th Ave	0.62	Low
North County Trail	NE Buncombe Hollow Rd - NE Yale Bridge Rd	9.21	Low
North Fork of the Lewis River Trail	NE Etna Rd - NE Buncombe Hollow Rd	23.22	Low

Name	From - To	Length (miles)	Tier
NW 31st Ave	Trail 15 - NW La Center Rd	2.01	Low
NW East West Rd	NW Tour Route Rd - Ridgefield city line	0.67	Low
NW Main Ave Trails	NW Main Ave - NW Main Ave	0.22	Low
S Royle Rd	North - NW Hillhurst Rd	0.65	Low
Salmon Creek Community Club Trail	Salmon Creek Community Club - NE 163rd St	0.27	Low
Salmon Creek Greenway Trail	2000' W of Camp Bonneville Trail - NE 142nd Ave	9.91	Low
Trail 10.1	NE 64th Ave - NE 72nd Ave	0.64	Low
Trail 11	Trail 10.2 - Trail 12	1.09	Low
Trail 13	NW Lower River Rd - Vancouver City Line	4.15	Low
Trail 14 Connector	NE 162nd Ave - Trail 14	0.53	Low
Trail 17	SR-14 - Columbia River	0.88	Low
Trail 2	Trail 1 - Trail 3	0.57	Low
Trail 22	Lewis River Trail - NW La Center Rd	0.80	Low
Trail 26	Trail 10.2 - NE 139th St	0.46	Low
Trail 29	NE Lucia Falls Rd - Wormald State Park Trail	7.03	Low
Trail 29	NE Lucia Falls Rd - Wormald State Park Trail	7.03	Low
Trail 60	West of NE 50th Ave - NE 50th Ave	0.07	Low
Trail 72	N 5th Ave - S Hillhurst Rd	2.64	Low
Vancouver Lake Park	Vancouver Lake Park - Vancouver Lake Park Trail	0.99	Low
West River Road Trail	I-5 - NW Lower River Rd	11.12	Low

* As many of these previously-proposed projects are unnamed, the closest parallel street name was used to distinguish the project.



Map 10. Existing and Recommended Bicycle, Pedestrian, and Trail Facilities, Southwest

Clark County
Bicycle and Pedestrian Master Plan
Source: Data obtained from Clark County
Author: HWK
Date: October 2010

Existing Trails
Proposed Trails
Existing On-Street Bikeway
Proposed On-Street Bikeway
Sidewalk Projects
Pedestrian Crossing
School
Railroad
Urban Growth Boundary

0 0.5 1 Miles

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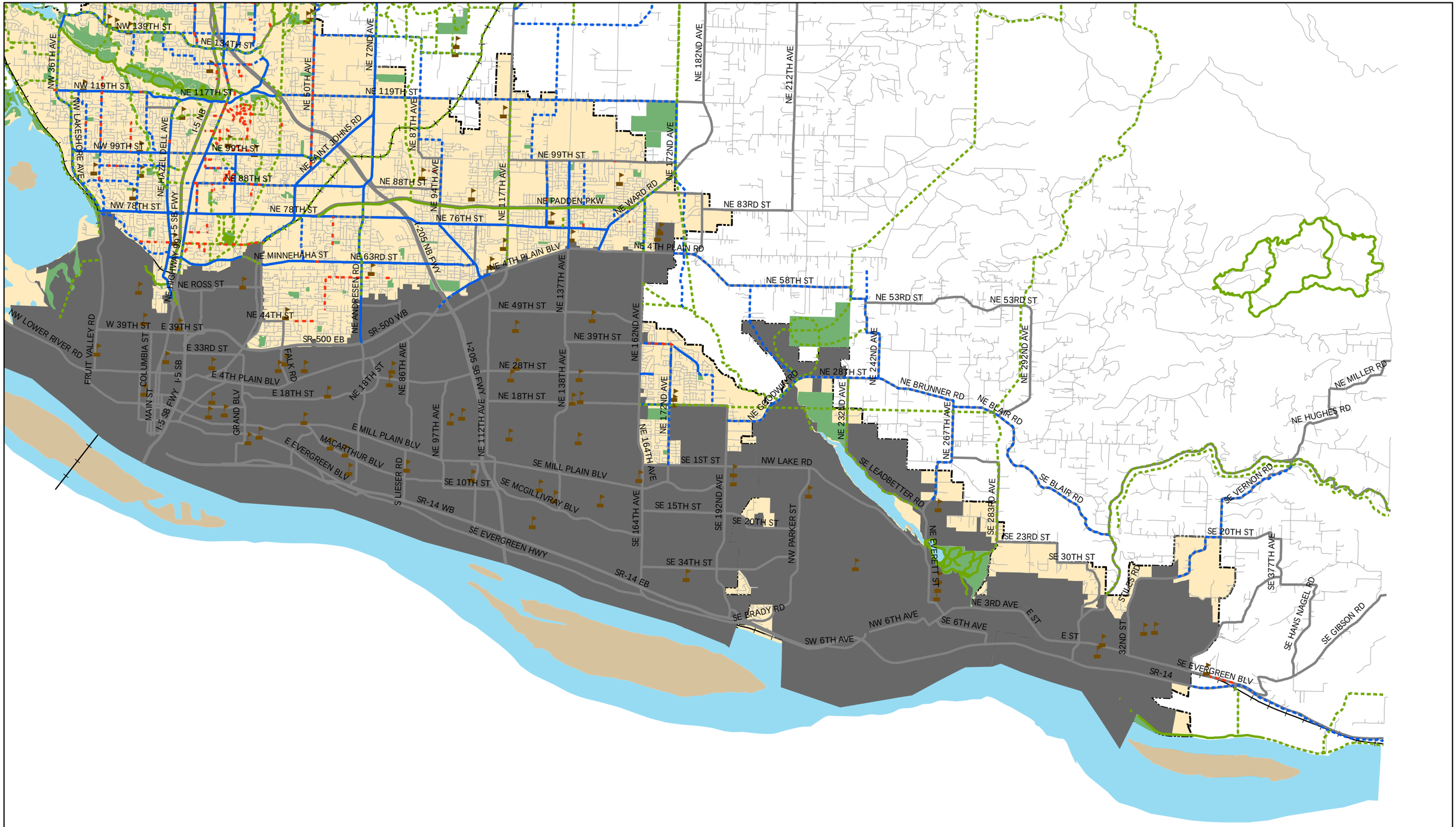

Map 11. Existing and Recommended Bicycle, Pedestrian, and Trail Facilities, Southeast

Clark County
Bicycle and Pedestrian Master Plan
Source: Data obtained from Clark County
Author: HWK
Date: October 2010

- Existing Trails
- Proposed Trails
- Existing On-Street Bikeway
- Proposed On-Street Bikeway
- Sidewalk Projects
- Pedestrian Crossing
- School
- Railroad
- Urban Growth Boundary

0 0.5 1 Miles

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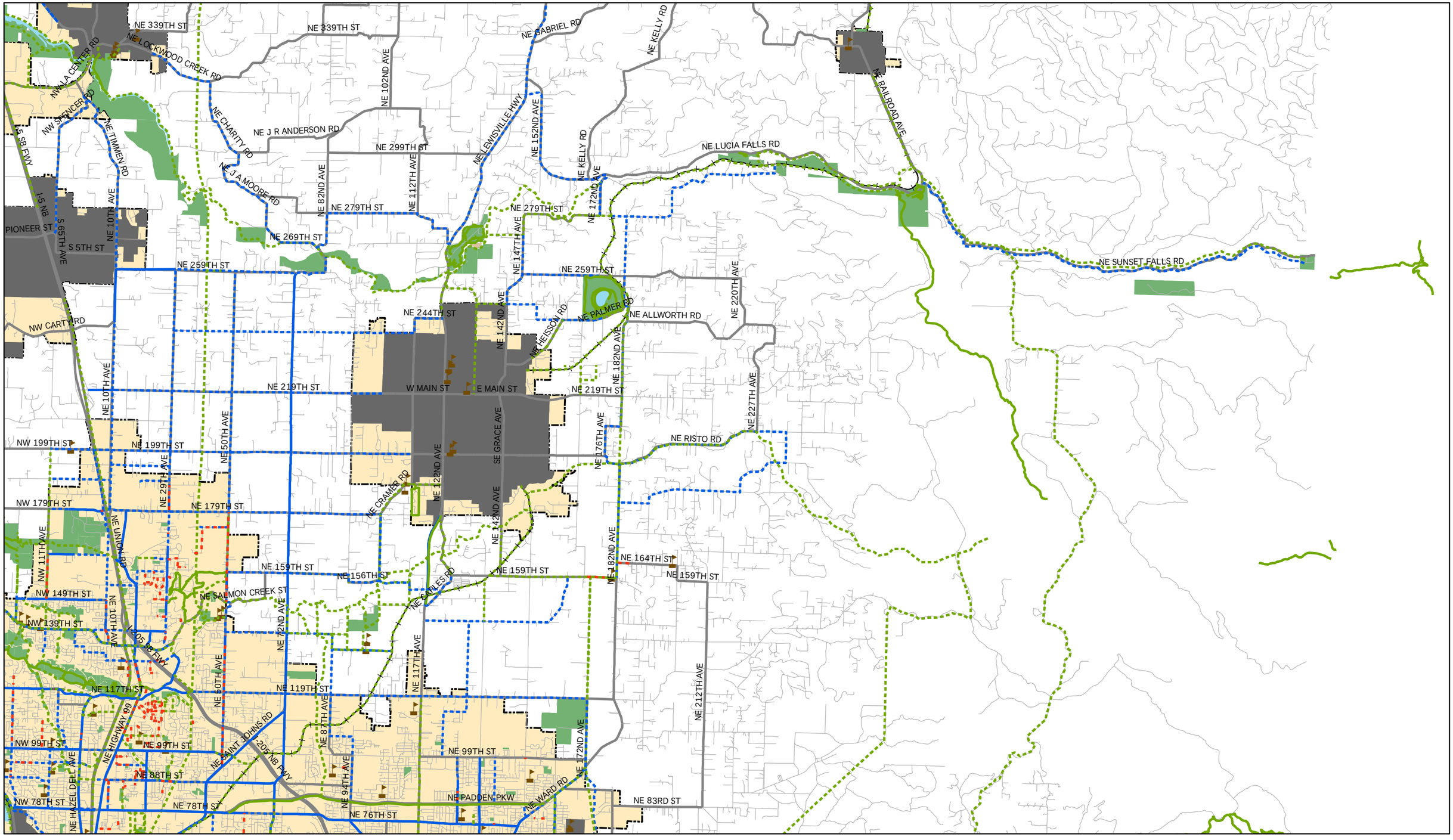

Map 12. Existing and Recommended Bicycle, Pedestrian, and Trail Facilities, East

Clark County
Bicycle and Pedestrian Master Plan
Source: Data obtained from Clark County
Author: HWK
Date: October 2010

Existing Trails
Proposed Trails
Existing On-Street Bikeway
Proposed On-Street Bikeway
Sidewalk Projects
Pedestrian Crossing
School
Railroad
Urban Growth Boundary

0 0.5 1 Miles

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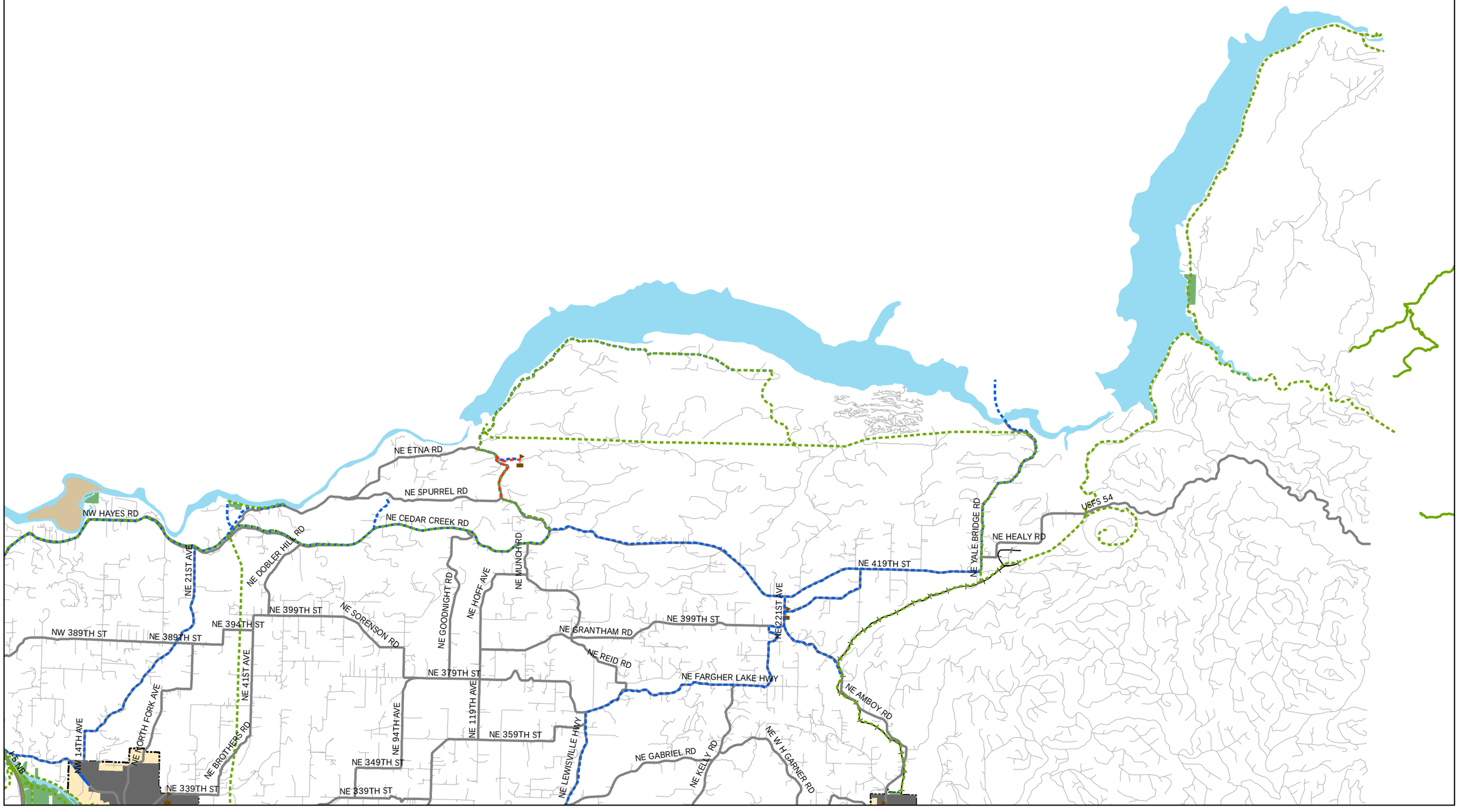

Map 13. Existing and Recommended Bicycle, Pedestrian, and Trail Facilities, Northeast

Clark County
Bicycle and Pedestrian Master Plan
Source: Data obtained from Clark County
Author: HWK
Date: October 2010

Existing Trails
Proposed Trails
Existing On-Street Bikeway
Proposed On-Street Bikeway
Sidewalk Projects
Pedestrian Crossing
School
Railroad
Urban Growth Boundary

0 0.5 1 Miles

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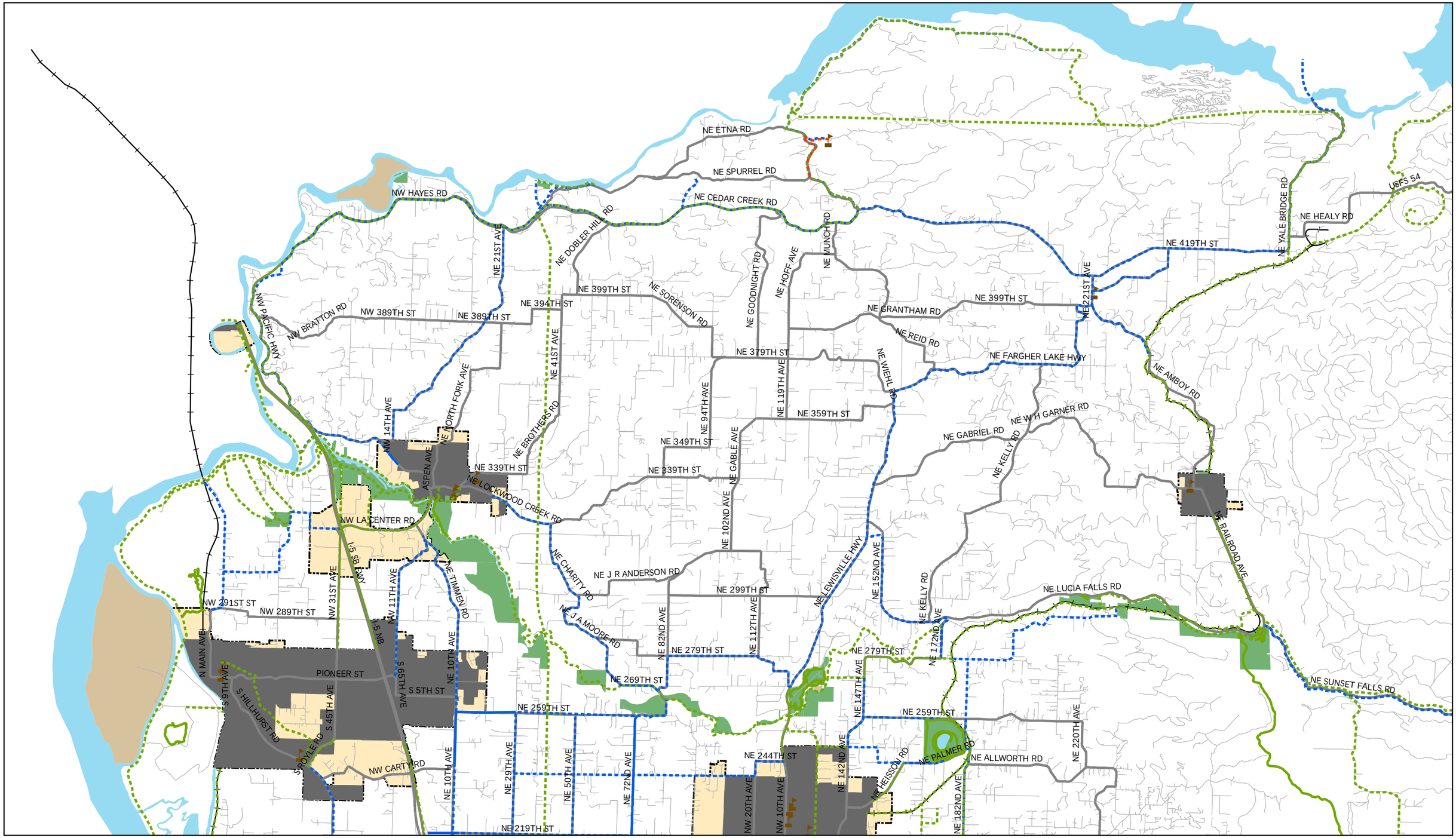

Map 14. Existing and Recommended Bicycle, Pedestrian, and Trail Facilities, Northwest

Clark County
Bicycle and Pedestrian Master Plan
Source: Data obtained from Clark County
Author: HWK
Date: October 2010

- Existing Trails
- Proposed Trails
- Existing On-Street Bikeway
- Proposed On-Street Bikeway
- Sidewalk Projects
- Pedestrian Crossing
- School
- Railroad
- Urban Growth Boundary

0 0.5 1 Miles

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Appendix F. Funding Sources

Acquiring funding for projects and programs is considerably more likely if it can be leveraged with a variety of local, state, federal and public and private sources. This section identifies potential matching and major funding sources available for bicycle and pedestrian projects and programs as well as their associated need and criteria.

Federal Programs

TIGER II Discretionary Grants

The Transportation Investment Generating Economic Recovery (TIGER) discretionary grant program is a new opportunity for federal funding of non-motorized transportation projects. Initially created under the American Recovery and Reinvestment Act of 2009 (also known as the Stimulus Bill), TIGER grants are an innovative strategy for local governments to fund a variety of transportation projects, and selection criteria prioritize innovative multi-modal projects. While the program is not officially annual, it is possible that the grant program will be re-established annually, at least until the official federal transportation bill is updated.

A unit of government must apply for the TIGER grant for a capital investment or planning project of independent utility (a stand-alone project). U.S. Department of Transportation (DOT) is authorized to award $600 million in TIGER II Discretionary Grants. Grants may be used for up to 80 percent of the costs of the project, but the competitive process rewards substantial non-Federal financial contribution. Funds for the TIGER II program will be awarded on a competitive basis for projects that will have a significant impact on the Nation, a metropolitan area or a region.[11]

SAFETEA-LU

Federal funding is primarily distributed through a number of different programs established by the Safe, Accountable, Flexible, Efficient Transportation Equity Act – a Legacy for Users (SAFETEA-LU). SAFETEA-LU authorizes the Federal surface transportation programs for highways, highway safety, and transit for the 5-year period 2005-2009.

[11] Additional information is available at:: www.dot.gov/recovery/ost/tigerii/index.html

Federal funding is administered through the state (Washington State Department of Transportation) and regional planning agencies. www.fhwa.dot.gov/safetealu/

There are a number of programs identified within SAFETEA-LU that provide for the funding of bicycle projects. The specific types of eligible projects and required funding match by the local jurisdiction are discussed further below.

National Highway System (NHS)

This program funds improvements to rural and urban roads that are part of the National Highway System (NHS), including the interstate system. Bicycle facilities within NHS corridors are eligible activities for NHS funds. www.fhwa.dot.gov/planning/nhs/

Surface Transportation Program (STP)

The Surface Transportation Program (STP) provides states with flexible funds which may be used for a wide variety of projects on any Federal-aid Highway including the National Highway System, bridges on any public road, and transit facilities. Eligible bicycle improvements include on-street facilities, off-road trails, sidewalks, crosswalks, bicycle and pedestrian signals, parking, and other ancillary facilities. Additionally, bicycle-related non-construction projects, such as maps, coordinator positions, and encouragement programs, are eligible for STP funds.

www.wsdot.wa.gov/localprograms/ProgramMgmt/STP.htm

Highway Safety Improvement Program

This program funds projects designed to achieve significant reductions in traffic fatalities and serious injuries on all public roads, bikeways and walkways. This program includes the Railway-Highway Crossings Program and the High Risk Rural Roads Program. This program replaces the Hazard Elimination Program from TEA-21.

www.fhwa.dot.gov/safetealu/factsheets/hsip.htm

Railway-Highway Crossing Program (RHC)

Administered by the Washington Department of Transportation (WSDOT), this program is funded by a set-aside of STP funds and is designated for improvements to highway-rail grade crossings to eliminate safety hazards. Eligible projects include installation of new crossing protection devices, passive crossing protection devices, upgrades of existing signal devices, railroad crossing closures, and pedestrian crossing improvements. Funding for this program comes out of Highway Safety Improvement Program funds.

Recreational Trails Program (RTP)

The Recreational Trails Program of the Federal Transportation Bill provides funds to states to develop and maintain recreational trails and trail-related facilities for both non-motorized and motorized recreational trail uses. In Washington, The National Recreational Trails Program is administered by the Recreation and Conservation Office. These funds are available for both paved and unpaved trails, but may not be used to improve roads for general passenger vehicle use or to provide shoulders or sidewalks along roads. www.rco.wa.gov/grants/rtp.shtml

Safe Routes to School (SR2S)

The purpose of the Safe Routes to Schools program is to provide children a safe, healthy alternative to riding the bus or being driven to school. The SR2S Grants were established to address pedestrian and bicycle mobility and safety near schools. The Washington State Department of Transportation's (WSDOT) Federal Highways and Local Programs Division is responsible for administration of SR2S funding. www.wsdot.wa.gov/LocalPrograms/SafeRoutes/funding.htm

Community Development Block Grants

The Community Development Block Grants program provides money for streetscape revitalization, which may be largely comprised of pedestrian improvements.

www.hud.gov/offices/cpd/communitydevelopment/programs/

Rivers, Trails and Conservation Assistance program

The Rivers, Trails and Conservation Assistance Program is a National Parks Service program which provides technical assistance via direct staff involvement, to establish and restore greenways, rivers, trails, watersheds and open space.

www.nps.gov/ncrc/programs/rtca/contactus/cu_apply.html

Land and Water Conservation Fund (LWCF)

Land and Water Conservation Fund is a federally funded program that provides grants for planning and acquiring outdoor recreation areas and facilities, including trails. Funds can be used for ROW acquisition and construction. These funds are administered by the Washington State Recreation and Conservation Office.

www.rco.wa.gov/grants/lwcf.shtml

Transportation, Community and System Preservation Program

The Transportation, Community and System Preservation Program provides federal funding for transit oriented development, traffic calming and other

projects that improve the efficiency of the transportation system, reduce the impact on the environment, and provide efficient access to jobs, services and trade centers. The program is intended to provide communities with the resources to explore the integration of their transportation system with community preservation and environmental activities. The Transportation, Community and System Preservation Program funds require a 20 percent match.

www.fhwa.dot.gov/tcsp/

Congestion Mitigation/Air Quality Improvement Program

The Congestion Mitigation/Air Quality Improvement Program (CMAQ) provides funding for projects and programs in air quality non-attainment and maintenance areas for ozone, carbon monoxide, and particulate matter which reduce transportation related emissions. These federal funds can be used to build bicycle and pedestrian facilities that reduce travel by automobile.

www.wsdot.wa.gov/LocalPrograms/ProgramMgmt/CMAQ.htm

Washington State Programs

Transportation Benefit Districts

Allow city or county governments to create local transportation benefit districts and impose a local vehicle registration fee to fund local transportation projects. Once a local transportation benefit district is set up, the district's board of directors may vote to charge a local vehicle licensing fee due when a vehicle owner buys new tabs. The transportation benefit district board has the authority to impose a fee of up to $20 per vehicle without voter approval. A transportation benefit district may impose a vehicle renewal fee of up to $100 per vehicle or seek other sources of funding if approved by voters. www.dol.wa.gov/vehicleregistration/localfees.html

Pedestrian and Bicycle Safety Grants

In 2005, the Washington State Legislature began offering grants to support pedestrian and bicycle safety projects such as pedestrian and bicycle paths, sidewalks, safe routes to school and transit. The Pedestrian and Bicycle Safety Grants were established to address the nearly 400 statewide fatal and injury collisions involving pedestrians and bicycles each year. Contact Ian Macek, State Bicycle & Pedestrian Coordinator (360) 705-7596 or Paula Reeves, Community Design Assistance Branch Manager (360) 705-7258. www.wsdot.wa.gov/bike/Funding.htm

Transportation Improvement Board Sidewalk Program

The Sidewalk Program is intended to provide safe sidewalks for transportation on federally classified routes (principal, minor or collector). Projects should aim to improve safety, access, connectivity and continuity while conforming to standards created by the Americans with Disabilities Act (ADA). A minimum 20 percent match is required on all urban Sidewalk Program projects. While this project does not directly fund bicycle facilities, a successful application would allow a greater allocation of existing city funds to be applied to the construction of bicycle facilities. www.tib.wa.gov/grants/urban/SP.cfm

Washington Wildlife and Recreation Program

The Interagency Committee for Outdoor Recreation provides state funds for acquisition and development of local and state parks, water access sites, trails, critical wildlife habitat, natural areas, and urban wildlife habitat. www.rco.wa.gov/grants/find_grants.shtml

Traffic Safety Grants

Washington Traffic Safety Commission provides state funding for programs, projects, services and strategies to reduce the number of deaths and serious injuries that result from traffic crashes. Funds may be used for pedestrian and bicycle improvements.

www.wsdot.wa.gov/LocalPrograms/Traffic/FedSafety.htm

Intersection and Corridor Safety Program

WSDOT provides federal funding to safety improvement projects that eliminate or reduce fatal or injury accidents by identifying and correcting hazardous locations, sections and/or elements. Corridors are selected for designation based on statistical evidence of a significant crash problem in one or more locations. The problems identified must have the potential low-cost, near term solutions.

www.wsdot.wa.gov/LocalPrograms/Traffic/FedSafety.htm

Transportation Enhancements (TE)

Administered by WSDOT, this program is funded by a set-aside of STP funds. Projects must serve a transportation need. These funds can be used to build a variety of pedestrian, bicycle, streetscape and other improvements that enhance the cultural, aesthetic, or environmental value of transportation systems.

www.wsdot.wa.gov/LocalPrograms/ProgramMgmt/TransEnhancement.htm

Potential Local Funding Sources

Gas Tax

Federal and state gas taxes are currently split between capital improvement and maintenance programs. Gas tax funds can be used as the local match to leverage grant monies. In addition, Clark County could use revenues from a local gasoline tax to fund on-street bikeways and shared-use path improvements. Such a tax would require the state legislature to give the County the authority to use a local option gas tax, and would require voter approval. Gaining approval can be challenging, especially with the changing cost of gas and ever-increasing maintenance needs. However, once established the tax would be a relatively stable funding source for improvements.

General Fund

The General Fund is often used to pay for maintenance expenses and limited capital improvement projects. Projects identified for reconstruction or re-pavement as part of the Capital Improvements list should also implement recommendations for bicycle or pedestrian improvements in order to reduce additional costs. A fund for Bicycle Improvements could be established, similar to the County's existing Sidewalk Infill Program.

Local Improvement Districts (LIDs)

Local Improvement Districts (LIDs) are most often used by cities to construct localized projects such as streets, sidewalks or bikeways. Through the LID process, the costs of local improvements are generally spread out among a group of property owners within a specified area. The cost can be allocated based on property frontage or other methods such as traffic trip generation.

Business Improvement Area (BIA)

Pedestrian and bicycle improvements can often be included as part of larger efforts aimed at business improvement and retail district beautification. Business Improvement Areas collect levies on businesses in order to fund area-wide improvements that benefit businesses and improve access for customers. These districts may include provisions for pedestrian and bicycle improvements, such as wider sidewalks, landscaping, and ADA compliance.

Transportation User Fees

Transportation user fees are any group of additional fees that could be used to fund maintenance and improvement projects for non-motorized uses. Properties would be assessed fees based on the traffic generation by land use

or business activity as published in the Institute of Transportation Engineers (ITE) Trip Generation Manual.

The fee could be a Street Maintenance Fee, to fund maintenance of the existing roadway system to free up dollars from the state gasoline tax for capital projects.

Local Bond Measures

The county could issue bonds to fund bicycle and/or pedestrian improvements. This would spread the cost of the improvements over the life of the bonds. Certain types of bonds would require voter approval. The debt would have to be retired, so funding for repayment on the bond and the interest would be required.

A bond issued in Denver, Colorado funded $5 million for trail development and also funded the city's bike planner for several years. The City of Albuquerque, New Mexico and Bernalillo County have a 5 percent set-aside of street bond funds for trails and bikeways. This has amounted to approximately $1.2 million for the City every two years.

Tax Increment Financing/Urban Renewal Funds

Tax Increment Financing (TIF) is a tool to use future gains in taxes to finance the current improvements that will create those gains. When a public project (e.g., shared-use path) is constructed, surrounding property values generally increase and encourage surrounding development or redevelopment. The increased tax revenues are then dedicated to finance the debt created by the original public improvement project. Tax Increment Financing typically occurs within designated Urban Renewal Areas (URA) that meet certain economic criteria and approved by a local governing body. To be eligible for this financing, a project (or a portion of it) must be located within the URA.

Sales Taxes

Bicycle and pedestrian projects can be funded by a portion of local sales tax revenue or from a voter-approved sales tax increase. The City of Colorado Springs implemented a TOPS tax (Trails, Open Space and Parks) to administer the ordinance passed by voters in April of 1997. The sales tax, 1/10th of one percent, generates about $6 million annually for trails, open space and parks.

Property Tax Levy

Seattle, Washington is receiving $5 million a year for nine years for bicycle and pedestrian projects as a result of a levy (property tax) approved by voters in 2006.

Bike Tax

The City of Colorado Springs has a $4.00 per bike tax to provide funding for bikeway improvements. The tax generates nearly $100,000 annually and has been used for both on- and off-street projects. It is used primarily to provide a local match for other grants such as the Colorado State Trails Program or SAFETEA-LU grants. A bike tax is an annual fee; implementation would require a public vote.

> *RCW Chapter 35.75 of Washington State law clarifies legal interpretation and uses of such funds: RCW 35.75.030 - Every city and town by ordinance may establish and collect reasonable license fees from all persons riding a bicycle or other similar vehicle within its respective corporate limits, and may enforce the payment thereof by reasonable fines and penalties.*
>
> *RCW 35.75.050 - The city or town council shall by ordinance provide that the whole amount or any amount not less than seventy- five percent of all license fees, penalties or other moneys collected under the authority of this chapter shall be paid into and placed to the credit of a special fund to be known as the "bicycle road fund." The moneys in the bicycle road fund shall not be transferred to any other fund and shall be paid out for the sole purpose of building and maintaining bicycle paths and roadways authorized to be constructed and maintained by this chapter or for special police officers, bicycle tags, stationery and other expenses growing out of the regulating and licensing of the riding of bicycles and other vehicles and the construction, maintenance and regulation of the use of bicycle paths and roadways.*

Developer Impact Fees

Another potential local source of funding is developer impact fees, typically tied to trip generation rates and traffic impacts produced by a proposed project. A developer may reduce the number of trips (and hence impacts and cost) by paying for on- and off-site bikeway improvements that will encourage residents to bicycle rather than drive. Establishing a clear nexus or connection between the impact fee and the project's impacts is critical in avoiding a potential lawsuit.

Private Sector Funding Sources

Adopt a Bikeway, Sidewalk or Trail Program

A challenge grant program with local businesses may be a good source of local funding, where corporations 'adopt' a bikeway, sidewalk or trail and help maintain the facility. Foundation grants, volunteer work, and donations of in-kind services, equipment, labor or materials are other sources of support that can play a supporting role in gathering resources to design and build new bicycle and pedestrian facilities.

Local Businesses

There is increasing corporate and business involvement in trail and conservation projects. Employers recognize that creating places to bike and walk is one way to build community and attract a quality work force. Bicycling and outdoor recreation businesses often support local projects and programs.

Land Trusts

Many environmental land trust organizations have raised funds to purchase land where trails are built, especially rail-trails. Columbia Land Trust works to permanently conserve restore, and manage signature landscapes, vital habitats, and working farms and forests in Oregon and Washington from east of the Cascade Mountains to the Pacific Ocean. http://www.columbialandtrust.org/

Community Fundraising and Creative Partnerships

Community fundraising and creative partnerships are plentiful. A common approach is to find creative ways to break a large project into small pieces that can be "purchased" by the public. Some examples:

- In Ashtabula, Ohio the local trail organization raised one-third of the money they needed to buy the land for the trail, by forming a "300 Club." Three hundred acres were needed for the trail and they set a goal of finding 300 folks who would finance one acre each. The land price was $400 an acre and they found just over 100 people to buy an honorary acre, raising over $40,000.
- Jackson County, Oregon had a "Yard Sale." The Bear Creek Greenway Foundation sold symbolic "yards" of the trail and placed donor's names on permanent markers that are located at each trailhead. At $40 a yard, the organization raised enough in private cash donations to help match their $690,000 Transportation Enhancements program award for the 18-mile Bear Creek trail linking Medford, Talent, Phoenix and Ashland.
- In Colorado Springs, the Rock Island Rail-Trail is being partly funded by the Rustic Hills Improvement Association, a group of local home-owners living adjacent to the trail. Also, ten miles of the trail was cleared of railroad ties by a local Boy Scout troop.

Foundations

A wide range of foundations have provided funding for bicycling and walking. A few national and large regional foundations have supported the national organizations involved in pedestrian and bicycle policy advocacy. However it is usually regional and local foundations that get involved in funding particular bicycle, pedestrian or trail projects. These same

foundations may also fund statewide and local advocacy efforts as well. The best way to find such foundations is through the research and information services provided by the national Foundation Center. They maintain a huge store of information including the guidelines and application procedures for most foundations, and their past funding records.

Non-Traditional Grant Funding Sources

American Greenways Program

Administered by The Conservation Fund, the American Greenways Program provides funding for the planning and design of greenways. Applications for funds can be made by local regional or state-wide non-profit organizations and public agencies. The maximum award is $2,500, but most range from $500 to $1,500. American Greenways Program monies may be used to fund unpaved trail development.

http://www.conservationfund.org/kodak_awards

Bikes Belong Grant Program

The Bikes Belong Coalition of bicycle suppliers and retailers has awarded $1.2 million and leveraged an additional $470 million since its inception in 1999. The program funds corridor improvements, mountain bike trails, BMX parks, trails, and park access. It is funded by the Bikes Belong Employee Pro Purchase Program.

http://www.bikesbelong.org/node/42

Opportunities on the Horizon

Active Communities Transportation Act of 2010 H.R. 4722

Oregon Congressman Earl Blumenauer's Active Community Transportation Act ("ACT Act") of 2010, a marker bill to be incorporated into the federal transportation reauthorization, would create a $2 billion national competitive grant program for active transportation projects.

Healthcare Act of 2010

The Healthcare Act of 2010 includes a grant program for active transportation. These grants are called Community Transformation Aid. It will receive $5 billion in funding by 2015.

Climate Change Legislation

Any potential Climate Change legislation passed by the federal government will most likely include funding for transportation projects that reduce greenhouse gases.

Sustainability Grants

Federal and state priorities are moving towards a focus on sustainability that could translate into more funding for projects such as non-motorized transportation.

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Appendix G. Education and Encouragement Programs

This appendix provides additional details about education and enforcement programs that could be implemented in Clark County.

Bike to Work Month	
Target	Current and potential cyclists
Primary agency	Clark County Smart Commuter, Washington State Ridesharing Organization
Partners	Washington State Bicycle Association, Bicycle Alliance of Washington, City of Vancouver and Clark County Commute Trip Reduction Program
Key elements	Publicize Bike to Work Month. Offer classes, rides and events.
Time frame	May, or September to correspond with the BTA Bike Commute Challenge annually
Cost	$$ - $$$ (depending on scope and length of program)
Potential funding sources	Local businesses and bike shops (in-kind or cash support); hospitals and insurance companies; local jurisdictions
Sample programs	Bay Area Bike to Work Day: www.bayareabikes.org/btwd/index.php Bike Commute Challenge (Oregon): www.bikecommutechallenge.com/

The Clarkcommute.org Web site was developed and is maintained by the City of Vancouver, Washington, who is the responsible agency for administering the Washington State Commute Trip Reduction Program for Clark County, Washington.

It is recommended that Clark County continue to work with the Clark County Smart Commuter, Clarkcommute.org, and other Washington State Ridesharing Organizations, as well as the Washington State Bicycle Association and the Bicycle Alliance of Washington to support activities throughout the month of May, in recognition of National Bike to Work month. Clark County can support Bike to Work Week activities by becoming an event sponsor, assisting with publicity, tabling, and providing materials (maps, brochures, and resource stickers). The Oregon Bicycle Transportation Alliance (BTA) runs the Bike Commute Challenge in September every year, and Clark County cyclists are welcome to participate. Clark County can support this campaign by providing staff support as well as materials including bike maps, information, advertising and outreach.

"Lights On" Campaign	
Target	Cyclists (especially students and low-income bicycle commuters)
Primary agency	Clark County
Partners	Police departments, local cycling groups, neighborhood associations, non-profit and social service organizations working with youth and low-income individuals and other local jurisdictions and service groups.
Key elements	Media outreach, enforcement, bike light giveaways or subsidies
Time frame	Fall, annually
Cost	$$ - $$$ (depends on scope of program)
Potential funding sources	Bike shops (in-kind donations); transit agencies and local news outlets (donated ad space); traffic safety foundations and grant programs; hospitals and insurance companies
Sample programs	Portland's "See & Be Seen" campaign: www.portlandonline.com/traNsportation/index.cfm?&c=deibb&a=bebfjh Dutch "Lights On" campaign: http://www.fietslichtaan.nl/

While Washington state law requires bicyclists to use a front light and rear reflector at night (RCW 46.61.780), cyclists riding without lights are common in Clark County. Many cyclists, especially students, are unaware that lights are required by law, or they have simply not taken the trouble to purchase or repair lights. Research shows that cyclists who do not use lights at night are at much greater risk of being involved in bike-car crashes. For these reasons increasing bicycle light usage is a top priority for Clark County, and a successful effort will reduce crash risk for bicyclists.

Every fall in the Netherlands, as days get shorter, a national "lights on" campaign reminds cyclists to use bicycle lights. This "lights on" campaign focuses several complementary strategies into a short time frame for maximum impact, pairing media messages (ads, posters, radio spots, and TV ads) with police enforcement of 'fix it' tickets.

A similar Lights On campaign is recommended for Clark County. This multi-pronged outreach effort should take place every September, as the days are getting shorter and as kids and university students are returning to school.

The Clark County Lights On campaign should include the following elements:

- Well-designed **graphic ads**, to be placed on transit shelters, transit vehicles, and local newspapers, as well as around Washington State University and Vancouver (WSU), Clark College. Ad space may be

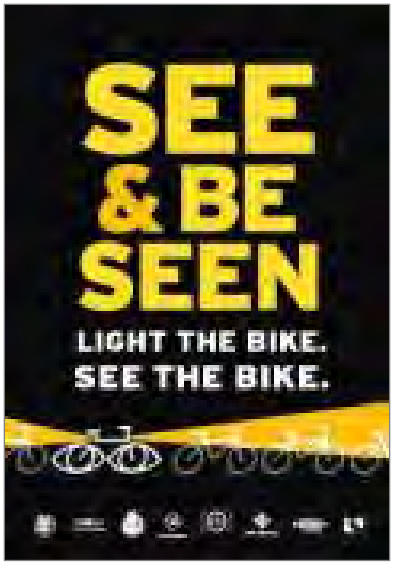

Figure 41. This poster from Portland, OR uses simple graphics to communicate the importance of using bicycle lights

Figure 42. Every fall, Dutch cyclists receive many messages to use lights, including these bike hangers

purchased or donated. Small-format ads can be placed on bike handlebars as well if desired.

- Police **enforcement of bike light laws**. This enforcement will be most likely to result in behavior change if the cyclist is able to avoid penalty if they obtain a bike light. Ideally, the police would give a warning, explain the law, and then install a bike light on the spot. If this is not possible, the cyclist should receive a 'fix it ticket' along with a coupon for a free or discounted light at a local bike shop; once the cyclist shows proof that they have purchased a bike light, their fine will be waived.
- **Partnership with local cycling groups** to get the word out to their members and partners. These groups can be counted as campaign partners at no cost to them, enhancing the campaign's credibility and community exposure. Groups should be supplied with key campaign messages to distribute with their constituents along with coupons for free or discounted bike lights.
- **Earned media outreach**: Clark County should distribute media releases with statistics about the importance of using bike lights, relevant legal statutes, and the campaign's goal, timing, activities, and partners. If possible, a meeting with local media editorial boards should be sought.

Depending on partners, volunteer capacity and interest, the *Clark County Lights On* campaign may also include the following:

- **In-school presentations** about bike lights, including reflective material giveaways
- A **community bike light parade** with prizes
- **Discounts on bike lights** and reflective gear at local bike shops during September (publicized through the campaign outreach)
- Volunteers stationed at key intersections", trails, and on the WSU campus **who thank bicyclists using bike lights** and reward them with a small gift

Clark County Bike/Walk Central Website

Target	Current and potential cyclists and pedestrians
Primary agency	Clark County
Partners	Clark County Bicycle Advisory Committee, Pedestrian advocates
Key elements	Resources, maps and map orders, safety, events, groups
Time frame	Ongoing
Cost	$ - $$ (depending on design and scope)
Potential funding sources	Low cost; may not require outside funding
Sample programs	Vélo Québec website: www.velo.qc.ca/english/home.lasso

Clark County already has numerous resources for cyclists and pedestrians, and more services and resources are planned for the future. Many cyclists and pedestrians or potential cyclists and pedestrians do not know where to turn to find out about laws, events, maps, tips, and biking groups. Clark County should develop a "one-stop shopping" website aimed at pedestrians and bicyclists. A potential name is Clark County Bike/Walk Central, though other names could be used.

The Clark County Bike/Walk Central website should contain:

- A list of all **walking and bicycling groups**, including clubs, racing teams, and advocacy groups
- Information about specific Boards and Commissions that discuss bicycle and pedestrian issues (how to get involved, meeting times and dates, agendas and minutes)
- Information about **current projects and how to get involved** (e.g., public meetings, comment periods)
- **Maps and brochures** (e.g., links to online maps and brochures, where to find in person, and how to request mailed materials)
- Links to **laws and statutes** relating to walking and bicycling
- Links to all relevant **local jurisdictions and their bicycle and pedestrian contacts**
- Information about **walking and cycling events** (e.g., rides, classes, volunteer opportunities)
- A list of **local bike shops**, including phone number and address
- Relevant **phone numbers** (e.g., contact numbers to request pothole repair, parking enforcement, bike rack installation request, trail maintenance, etc.)

The website may also feature:

- Events calendar
- Request form for route planning assistance
- Message boards
- Blog featuring stories and news
- Photo galleries from events and submitted by readers
- Popular riding and walking routes

Note that these additional features may increase the cost to set up and maintain the website.

A one-stop bike/walk website will not be difficult to set up, but it will only be successful if the site is both easy to use and updated regularly. Corners should not be cut in either design or in maintenance of the site and its information. All Bike/Walk Central website content should be reviewed annually for accuracy.

The bicycle/pedestrian community can assist in keeping the site up to date. Clark County should consider adding a standing agenda item for the applicable municipal committee to discuss the Bike/Walk Central website in order to identify new content that should be added or out-of-date content that should be updated or removed.

Public Service Announcements-Bicycles

Target	General public
Primary agency	Clark County
Partners	None
Key elements	Awareness campaign with TV spots
Time frame	Late spring or early summer, 2011 or 2012
Cost	$ - $$$ (depending on whether airtime is purchased or donated)
Potential funding sources	CVTV (for donated airtime), traffic safety foundations and grant programs; hospitals and insurance companies
Sample programs	Bicycle Transportation Alliance "Decide to Ride" PSAs: www.bta4bikes.org/at_work/decidetoride.php Community Choices-local active transportation group

Public Service Announcements (PSAs) are an important part of creating awareness of bicycling. They are an effective way to reach the general public and reinforce other education and outreach messages.

A well-produced PSA will be memorable and effective, but a producing a good PSA from scratch is an expensive effort. The Bicycle Transportation Alliance (Portland, Oregon) has produced six high-quality PSAs that are available for rebroadcast at a reasonable cost. The 30-second spots were produced on film, not video, and cover the following messages:

"What If?"	Encourages viewers to give bicycling a try
"Look Right, See Right"	Reminds drivers to look over their shoulder before changing lanes
"See and be Seen	Encourages cyclists to use lights at night
"Close Call"	Encourages both drivers and cyclists to stop at stop signs
"Bike Lanes"	Reminds drivers that bike lanes are not for vehicle use
"Wrong Way	Reminds cyclists not to bicycle against traffic
"Share the Road"	Reminds drivers that bicycles have a right to use the road.

Many television stations are willing to donate airtime for public service announcements. This would bring the cost down greatly and should be pursued.

Public Service Announcements-Pedestrians

Target	General public
Primary agency	Clark County
Partners	None
Key elements	Awareness campaign with TV spots
Time frame	Late spring or early summer, 2011 or 2012
Cost	$ - $$$ (depending on whether airtime is purchased or donated)
Potential funding sources	CVTV (for donated airtime), traffic safety foundations and grant programs; hospitals and insurance companies
Sample programs	Bicycle Transportation Alliance "Decide to Ride" PSAs: www.bta4bikes.org/at_work/decidetoride.php Community Choices-local active transportation group

A similar education effort could be done with pedestrians, as could be done with bicyclists. The County could work with CVTV to produce six high quality public service announcements regarding pedestrian safety. These Public Service spots could also educate motorists to be aware of pedestrians, especially at pedestrian crossing spots.

- Volksmarchers/International Discovery Walk
- Vancouver-Clark Parks and Recreation
- Washington State Center for Safe Routes to School
- Community Choices Active Transportation Team- http://www.clarkcommunitychoices.org
- Transportation Choices – http://www.transportationchoices.org
- City of Vancouver Transportation Services
- Feet First – http://www. feetfirst.org

"Your Bike Resources" Sticker	
Target	New bike owners
Primary agency	Clark County
Partners	Local bike shops
Key elements	Bicycle resources sticker to be distributed with every new purchased bike.
Time frame	Ongoing
Cost	$
Potential funding sources	Low cost; additional funding may not be necessary
Sample programs	None

Cyclists often are unaware of resources available to them, and jurisdictions are not sure how to reach these cyclists. The moment a bicyclist purchases a bike is an ideal time to provide them with more information to make cycling easier for them.

Clark County should develop removable sticker listing bike resources and partner with local bike shops to distribute this sticker with every purchased bike. The bike owner can stick the resource sheet on their refrigerator, desk, etc.

The Clark County "Your Biking Resources" stickers should include:

- The URL of the Clark County Bike Central website
- Instructions on how to request maps and brochures
- Phone numbers for local bicycle coordinators
- Relevant phone numbers (hotlines for pothole repair, sweeping, parking enforcement, bike rack installation request, etc.)

If desired, additional stickers may be printed and distributed through other means as well (e.g. at transportation fairs, at public meetings, through local clubs and organizations, etc.).

Figure 43. This removable sticker from Portland, OR lists resources for cyclists

College/University Bike Orientation

Target	WSU and Clark College students, especially incoming freshmen
Primary agency	Clark County, Clark College, and WSU
Partners	Clark County Smart Commuter, Washington State Ridesharing Organization
Key elements	Bicycle safety & promotion orientation for incoming freshmen and returning students. Classes & clinics, materials, social events, rides.
Time frame	September, annually
Cost	$$
Potential funding sources	WSU parking fees, TDM funding sources
Sample programs	Stanford University Bike Program: http://transportation.stanford.edu/alt_transportation/BikingAtStanford.shtml

University students are ideal candidates for bicycling outreach programs; many students live near campus and may not own a car or choose to drive. Clark County should partner with Washington State University and Clark College to promote bicycling to students at the beginning of the school year.

The Bike Orientation should include:

- **Bike maps and information** provided to incoming and returning students at the beginning of the year through school information packets
- **Flat clinics, bike legal clinics, and guided rides**, advertised through flyers, email and bulletin boards, and campus newspaper
- **Information tabling** at campus events and prominent locations (e.g. bookstore, quad) during the first few weeks of school
- A **Bikes at WSU/Clark College web page** with links and more information
- At-cost or low-cost **bike lights** sold at tabling events and through the campus bookstore

If desired, a "bike buddy" program may be implemented to match current cycling students with interested students. This can be a simple program where bicyclists wear a sticker that says "I bike to WSU, ask me how," or a more elaborate program that matches bike buddies with interested students who live in their neighborhood for mentoring. A bike buddy program would increase the cost of the program. This could be set up through the existing campus rideshare website.

Share the Path Campaign

Target	All path users (especially cyclists)
Primary agency	Vancouver-Clark Parks and Recreation
Partners	Local cycling clubs and groups, Cities of Battle Ground, Camas, La Center, Ridgefield, Vancouver, Washougal
Key elements	Bell giveaway; maps and information; media outreach
Time frame	May/June, or annually
Cost	$$
Potential funding sources	Local bike shops (in-kind donations); volunteer time contributions by local cycling groups; in-kind or time contributions
Sample programs	Portland Office of Transportation Share the Path brochure: www.portlandonline.com/shared/cfm/image.cfm?id=161457

Many cities around the country are implementing "share the path" programs in response to concerns about conflicts between pedestrians and cyclists on shared-use paths. Clark County is home to numerous popular paths. A Share the Path program will encourage responsible path usage and creates community goodwill around bicycling. This could be combined with the annual trail count, which already organizes many volunteers.

Figure 44. Path users socialize during a 'Share the Path' giveaway event

It is recommended that Clark County partner with the six jurisdictions to implement a Share the Path campaign. The campaign should include the following steps:

1. Develop a simple, clear **Share the Path brochure**; distribute through local bike shops and wherever bike maps are distributed.
2. Host at least one **bicycle bell giveaway** event on a popular shared-use path. A table should be set up with maps and brochures, and knowledgeable staff should be present to answer questions. |Volunteers and Clark County or jurisdiction staff can partner to hand out bells to cyclists. Signs, pavement chalk, and banners should be used to explain the event and give cyclists warning so they can stop and receive a bell. Volunteers should mount the bells on handlebars.[12]
   If desired, volunteers can walk along the path and give a thank you and a small gift to bicyclists who use their bell when passing.
3. Clark County should do **media outreach** before the event; the bell giveaway will be a positive story about bicycling, and will provide good visual opportunities.

[12] BBB EasyFit bells are recommended because installation requires no tools: www.bbbparts.com/products/accessories/others/bbb12.htm

Youth Bike Safety Education

Target	School-age children
Primary agency	Clark County, school districts
Partners	Parent groups at schools, community volunteers
Key elements	In-school and/or after-school on-bike skills and safety training
Time frame	Ongoing
Cost	$$$
Potential funding sources	Safe Routes to School grant funding; local, state or national health grants (e.g. Robert Wood Johnson Active Living by Design grants)
Sample programs	LAB's Kids I and Kids II curriculum: www.bikeleague.org/programs/education/courses.php#kids1 BTA's Bike Safety Education Program: www.bta4bikes.org/resources/educational.php

Figure 45. Volunteers assist Swiss children through a bicycle skills course

Nearly every child in America can look forward to in-depth training before receiving a driver's license. Bicycles are also vehicles that are used on the roads, but most Americans do not receive any training about the rules of the road, how bicycles work, or how to ride a bicycle on the roadway.

Clark County should launch an on-bike education program for kids. Curriculum should cover:

- Parts of a bicycle
- How a bike works
- Flat fixing
- Rules of the road
- Right of way
- Road positioning
- On-bike skills lessons (braking, turning, steering)
- On-bike community ride

At the time that this program is planned, Clark County should decide whether to start a program from scratch, or modify an existing program. Two excellent model programs are the League of American Bicyclists' Kids I and Kids II classes, and the Bicycle Transportation Alliance's Bike Safety Education Program (see "sample program" links, above, for more information).

Pilot Smart Trips program	
Target	Clark County residents who are interested in biking, walking and transit
Primary agency	Clark County
Partners	C-TRAN, Clark County Smart Commuter community volunteers, active transportation or other bike clubs
Key elements	Outreach to a target geographic area promoting biking, walking and transit usage.
Time frame	Program launch in late spring of selected year
Cost	$$$
Potential funding sources	CMAQ (Congestion Mitigation/Air Quality) funds; federal flexible transportation; public transportation funds; hospitals and insurance companies
Sample programs	Portland Smart Trips program: www.portlandonline.com/traNsportation/index.cfm?c=ediab

Smart Trips programs (also known as social marketing programs) are encouragement program based on saturating geographic area with resources to help residents reduce drive-alone trips and increase biking, walking, transit and carpool trips. Smart Trips programs have demonstrated a lasting reduction in drive-alone trips; for example, in Portland, OR, target areas have experienced a 10% reduction in vehicle traffic.

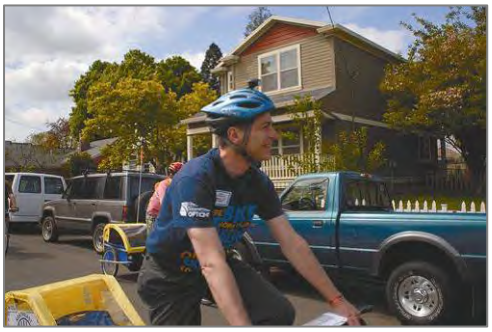

Figure 46. Maps and materials are delivered to interested residents by bike in this Smart Trips program

Programs offer residents maps, brochures and other printed materials, classes, guided rides and walks, and other tools and programs that make bicycling, walking and transit usage a more inviting travel option compared to drive-alone trips.

Compared to infrastructure improvements, these programs are scalable, flexible, inexpensive, and site-independent. Once the program has been established for a specific geographic target area, it can be run with low start-up costs in other target areas.

This model, however, is unlikely to be successful in areas that have failed to make initial infrastructure investments sufficient to provide a functional bicycling, walking and transit network. It is most effective as an approach that leverages investments in infrastructure, not one that replaces those investments.

One of the strengths of the individualized marketing model is that it reaches every resident with an appealing invitation to participate, but then focuses the bulk of resources on those who identify themselves as interested. The many classes, rides, and activities continue to be publicized and open to all, so residents have multiple opportunities to opt into the program. This focus allows for both broad reach and strategic investment.

It is recommended that Clark County implement a pilot Smart Trips program in a limited geographic area in the county (to be selected at time of program planning).

The program may include any of the following:

- Maps and brochures
- Classes, clinics, workshops
- Guided rides and walks
- Fun social events
- Giveaways (coupons, cyclocomputers, etc.)
- Targeted outreach (e.g. Women on Bikes, Senior Strolls)
- Route planning help (bike, walking, or transit)

The exact program components and budget should be determined at time of program planning.

Perform Annual Bicycle and Pedestrian Counts	
Target audience	N/A
Primary agency	Clark County
Partners	C-TRAN, Clark County Smart Commuter, community volunteers
Key elements	Create a count database to track walking and bicycle trends and measure success of Pedestrian and Bicycle Master Plan
Time frame	Annually
Cost	$$ (for data collection and analysis)
Potential funding sources	CMAQ (Congestion Mitigation/Air Quality) funds; federal flexible transportation; public transportation funds; hospitals and insurance companies
Sample programs	National Bicycle & Pedestrian Documentation Project: www.fhwa.dot.gov/environment/bikeped/study)

Clark County has recently begun to install count stations, which will provide a good future dataset. At present, the County does not have a mechanism for tracking ridership and walking trends over time, or for evaluating the impact of projects, policies, and programs.

It is recommended that Clark County and its cities perform and/or coordinate annual counts of bicyclists and pedestrians according to national practices. The National Bicycle and Pedestrian Documentation Project has developed a recommended methodology, survey and count forms, and reporting forms, and this approach may be modified to serve the needs and interests of individual jurisdictions.

Clark County should take the lead role in standardizing a regional approach to counts and surveys. County staff may perform the counts themselves, or assist partner agencies or volunteer groups in performing the counts. Clark County should also handle tracking, analysis, and reporting.

If desired, further bicycle and pedestrian data collection opportunities may be pursued as well, including:

- Include before-and-after bicycle/pedestrian/vehicle data collection on priority roadway projects
- Insert bicycle/pedestrian survey questions into any existing travel mode or city audit survey instrument
- Require counting of bicyclists/pedestrians in all traffic studies
- Purchase National Household Travel Survey add-on

Media Safety Campaign	
Target audience	General public
Primary agency	Clark County
Partners	
Key elements	Bicycling and Pedestrian Safety campaign with billboard, radio and/or TV spots
Time frame	Late spring or early summer, in conjunction with Bike to Work Month or back to school
Cost	$ - $$$ (depending on whether ad space is purchased or donated)
Potential funding sources	Local transit agencies (for donated airtime), traffic safety foundations and grant programs; hospitals and insurance companies
Sample programs	New York City Department of Transportation "Look" Safety Campaign: www.looknyc.org

Figure 47. Example of NYC's LOOK Bicycle Safety Campaign

A marketing campaign that highlights cyclists' safety is an important part of creating awareness of bicycling. They are an effective way to reach the general public and reinforce other education and outreach messages. The messages could be made available as a resource to other jurisdictions to use with citizens, such as the Vancouver Office of Neighborhoods.

A well-produced safety campaign will be memorable and effective. One stellar example is the "LOOK" campaign produced by the New York City Department of Transportation; it combines compelling ads with an easy-to-use website focused at motorists and cyclists.

It is recommended that Clark County create a safety campaign similar to the "LOOK" campaign that places safety messages near high-traffic corridors (e.g., on billboards, in bus shelters, and in print publications). It is also suggested that this campaign be kicked off in conjunction with Bike to Work Month (May) or back to school in the fall.

Apply to become a Bicycle Friendly Community

Target audience	League of American Bicyclists
Primary agency	Clark County
Partners	Local jurisdictions
Key elements	Implement Pedestrian and Bicycle Master Plan, highlight implemented initiatives in the Bicycle Friendly Community Application
Time frame	One-time, with regular updates; can happen at any time
Cost	$
Potential funding sources	Little funding is required to complete application
Sample programs	www.bikeleague.org/programs/bicyclefriendlyamerica

The League of American Bicyclists has a well-respected Bicycle-Friendly Communities award program. Communities fill out a detailed application that covers bike-related facilities, plans, education efforts, promotion initiatives, and evaluation work that has been completed by the jurisdiction. The award is designed to recognize progress that has been made, as well as assist communities in identifying priority projects to improve bicycling conditions. Receiving the award is a media-worthy event, and may give elected officials the opportunity to receive media coverage for the positive work they are doing. Awards are granted for Bronze, Silver, Gold and Platinum bicycle-friendly communities.

It is recommended that the Clark County apply for bicycle-friendly community status after a substantial number of the bicycle improvements recommended in this Plan have been implemented. Clark County staff should obtain a copy of the application and review it annually to determine when the County is ready to apply. The League may also be able to assist with a readiness assessment.

Complete Streets Policy	
Target audience	Clark County planners and engineers
Primary agency	Clark County
Partners	Federal Highway Administration, Washington Department of Transportation
Key elements	Policy language that creates streets to work for all users, including drivers, freight, walkers, cyclists and transit riders
Time frame	One-time; can happen at any time
Cost	Minimal
Potential funding sources	N/A (policy effort)
Sample programs	www.completestreets.org/ contains sample policies and real-life examples

Complete Streets policies direct transportation planners and engineers to consistently design roadways with all users in mind (e.g., motorists, transit riders, pedestrians, bicyclists, older people, children, and people with disabilities). There are many ways for all jurisdictions to implement Complete Streets policies.

Once a policy is in place, training is recommended for professionals whose work will be affected by the policy (e.g., planners and engineers). Guidance from the Complete Streets Coalition is provided below.

The Principle:

- Complete streets are designed and operated to enable safe access for all users. Pedestrians, bicyclists, motorists and transit riders of all ages and abilities must be able to safely move along and across a complete street.
- Creating complete streets means changing the policies and practices of transportation agencies.
- A Complete Streets policy ensures that the entire right-of-way is routinely designed and operated to enable safe access for all users.
- Transportation agencies must ensure that all road projects result in a complete street appropriate to local context and needs.

Elements of a Good Complete Streets Policy

- Specifies that 'all users' includes pedestrians, bicyclists, transit vehicles and users, and motorists, of all ages and abilities.
- Aims to create a comprehensive, integrated, connected network.
- Recognizes the need for flexibility: that all streets are different and user needs will be balanced.
- Is adoptable by all agencies to cover all roads.

- Applies to both new and retrofit projects, including design, planning, maintenance, and operations, for the entire right-of-way.
- Makes any exceptions specific and sets a clear procedure that requires high-level approval of exceptions.
- Directs the use of the latest and best design standards.
- Directs that complete streets solutions fit in with context of the community.
- Establishes performance standards with measurable outcomes

Crosswalk Enforcement Actions

Target audience	Motorists
Primary agency	Clark County
Partners	Local jurisdictions police departments, Clark County Sheriff's Department
Key elements	Plainclothes police officers or selected volunteer decoys attempt to cross streets and marked mid-block crossings. If motorists fail to yield to the pedestrian in a crosswalk, a second police officer issues a ticket.
Time frame	
Cost	$ - $$ (depending on design and scope)
Potential funding sources	Federal Highway Administration safety funding National Highway Traffic Safety Administration
Sample programs	Pedestrian and Bicycle Information Center website: http://www.walkinginfo.org/enforcement/programs-enforcement.cfm

Crosswalk enforcement actions (sometimes known as "pedestrian stings") raise public awareness about the legal obligation of motorists to stop for pedestrians at crosswalks. While crosswalk enforcement actions do result in tickets being distributed, the greater impact comes through media publicity of the event to reinforce the importance of obeying pedestrian crossing laws.

Most crosswalk enforcement sites are selected because they have been identified as locations where pedestrians have trouble crossing, and/or where a large volume of pedestrians (especially vulnerable pedestrians such as children and seniors) is expected. High-crash locations may also be candidates for enforcement actions. If locations near schools are selected, the best timing for an enforcement action is the back-to-school window just after school has begun for the year.

Plainclothes police officers or selected volunteer decoys attempt to cross at corners and marked mid-block crossings. If motorists fail to yield to the pedestrian in a crosswalk, a second police officer issues a ticket. Decoys may also be notable community members (such as the mayor or a well-known business leader) to increase media interest in the event.

Bicycle and Pedestrian Audit Education Program	
Target audience	Citizens and Community leaders
Primary agency	Clark County
Partners	Neighborhood Associations
Key elements	Teach concerned citizens proper methods and procedures for conducting general walkability/bikability audits.
Time frame	
Cost	$ - $$ (depending on design and scope)
Potential funding sources	
Sample programs	Pedestrian and Bicycle Information Center website: www.walkinginfo.org/problems/audits-general.cfm

A variety of general bicycle and pedestrian audits are available from the Pedestrian and Bicycle Information Center that could be conducted by local Clark County residents and neighborhood groups. A series of classes, operated at the local neighborhood level, would give residents hands on experience assessing the wants and needs of their community, in regards to pedestrian and bicycle access and facilities. Compiled audits could be used by the Clark County or local jurisdictions to specifically target the types of improvements that would benefit communities most.

Other program recommendations

During the life of this plan, it is possible that community interest will develop in programs beyond the priority programs listed above. The following table lists some promising additional programs with more information.

Table 57. Additional Education and Encouragement Programs

Description	Link to sample program(s)
Bike-sharing program	www.commissionersam.com/node/2680 www.washingtonpost.com/wp-dyn/content/article/2007/03/23/AR2007032301753.html
Bike kitchen	www.bikekitchen.org/ www.bicyclekitchen.com/
Create-a-Commuter program	www.communitycyclingcenter.org/index.php/programs/create-a-commuter/
Bike parking at events	www.sfbike.org/?valet
Adult skills classes	www.bikeleague.org/programs/education/courses.php www.sfbike.org/?edu
Bicycle Brown Bag events	www.portlandonline.com/traNsportation/index.cfm?a=beicbi&c=deibg
Walking School Buses (stand-alone or part of SR2S program)	www.walkingschoolbus.org/
Bike Buddy program	bicycling.511.org/buddy.htm
Family day/family biking classes	www.sfbike.org/?family_day www.sfbike.org/?freedom
Women on Bikes program	www.portlandonline.com/traNsportation/index.cfm?a=iibhg&c=djdaa
I Share the Road campaign	www.isharetheroad.com/
Seniors on Bikes program (Safe Routes to Senior Centers, Older Adult Three-Wheeled Bicycle Program)	www.portlandonline.com/traNsportation/index.cfm?c=eafeg www.portlandonline.com/traNsportation/index.cfm?a=bffbgh&c=dheab
Breakfast on the Bridges / free bike safety check	www.shift2bikes.org/wiki/doku.php?id=bikefun:breakfast_on_the_bridges bikeportland.org/2006/06/16/bike-gallery-does-free-repairs-for-commuters/
Ciclovias/Sunday parkways	www.healthystreets.org/pages/sunday_parkways.htm
Bicycling Ambassadors	www.bicyclingambassadors.org/

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Appendix H. Bicycle and Pedestrian Advisory Committee Work Program

1. Road standards update will include facility design standards
2. Add to Title 40
    a. Design Guidelines: Bicycle and pedestrian facilities
    b. Recommended Bicycle Parking Standards
3. Method of moving sidewalk inventory into existing sidewalk program list to include:
    a. Review Walkability Checklist
    b. Establish a committee to guide changing the sidewalk program. The group would include staff people as well as citizens.
    c. www.walkinginfo.org/library/details.cfm?id=12
4. Designate an East Clark County Scenic Bicycle Route– RACC?
5. Study the needs of diverse populations such as the elderly, people with disabilities, and low-income individuals and use the information to assist in developing pedestrian and bicycle circulation plans.
6. For the 2011 year, take a docket item through the review and hearing process to amend the County's Capital Facilities Plan to include the top priority projects from the Bicycle and Pedestrian Plan.
7. Amend the Metropolitan Transportation Plan to include the priority projects from the Bicycle and Pedestrian Plan.
8. Ensure coordination with school districts to identify areas where new development will occur and connecting those new residential developments to schools.
9. Integrate bicycle and pedestrian goals and actions into other Clark County Plans, such as those from the departments of Community Planning, Public Works, Community Development, and Public Health.
10. Education actions:
    a. Provide education for walking and bicycling, such as workshops on bike commuting and pedestrian safety.

b. Publicize the availability of bicycling and pedestrian opportunities and other bicycling resources through the Clark County website, bicycle shops, schools, employers, other appropriate citizen groups, and other locations.

c. Develop and implement a county-wide training program to educate engineers, planners, and public decision-makers about the needs of bicyclists and pedestrians.

d. Establish and/or expand bicycle and pedestrian safety education programs and material distribution for all users of the public right-of-way.

e. Develop a maintenance program that adequately accommodates bicycle and pedestrian travel (regular sweeping schedules, pavement repair, sidewalk repair, vegetation trimming/removal, etc.).

f. Work with the school districts to establish a bicycle and pedestrian safety program in the schools.

ll. Safety Actions:

a. Follow established guidelines for construction and maintenance activities, in the public right-of-way, to minimize disruption and ensure continued safety to bicycle and pedestrian traffic.

b. Prioritize non-motorized safety at all times and provide alternate routes if necessary.

c. Develop guidelines for construction and maintenance activities in the public right-of-way to minimize disruption and ensure continued safety to bicycle and pedestrian traffic.

d. County will pursue funding options to meet this implementation goal. Options may include pursuing grants and private partnerships.

e. Provide technical assistance and encouragement to local jurisdictions to implement local bicycle and pedestrian plans and projects.

f. Monitor annually existing bicycle and pedestrian crash data to identify trends and specific problem areas, and remedy those areas.

g. Establish a volunteer program or intern assistance from local college to assist with crash data review.

Determine appropriate location to place data on county website.

12. Engage in regular benchmark reporting system to track the success of the implementation of the bicycle and pedestrian master plan.

13. Create a Standard Operating Procedure and implement a hotline for reporting problems, make it **one** number for both county and city like a central clearing house. Post number all over the community.

14. Funding Actions:

    a. Coordinate and collaborate with school districts to utilize federal and state transportation funds to encourage local jurisdiction's Safe Routes to School programs.

    b. Establish a work group to develop partnerships for identifying funding opportunties for bicycle and pedestrian projects. The group should include Public Works, Community Planning, and the Parks Department.

15. Design Program Actions:

    a. Including the following: make fencing safer for pedestrian paths; develop code language for bike and ped connections between cul-de-sacs

    ~~b.~~ Install signage along all local and regional routes to assist with wayfinding and to increase awareness of non-motorized modes of transportation.

    c. Encourage stricter enforcement of traffic violations for motorists, bicyclists, and pedestrians.

    d. When the County updates its road standards, the following bicycle design issues be considered: bike and stenciling guidelines lane signage, bike lane pavement marking and signs to discourage wrong-way riding, and bike loop detector standards, and Bike lane line width and pavement marking to the left of the right turn lane. Staff recommends that sharrows should also be investigated

    e. Develop recommendations that provide Clark County, community partners and local agencies the tools and guidance necessary to implement bicycle- and pedestrian-specific improvements within their specific jurisdiction. Examples may include but are not limited to the following:

bicycle parking and design standards, guidelines, and best practices etc.

f. Encourage Health Impact Assessments to evaluate and prioritize bicycle and pedestrian plan current and future goals and actions.

g. Complete the recommended bikeway and walkway network by identifying and considering innovative design solutions for constrained locations to provide accessible bicycling and walking corridors throughout Clark County.

h. Encourage a regional plan for a seamless transition between modes of transportation for non-motorized travel.

16. Provide plans for "20 minute neighborhoods:" circulation plans that provide walking and bicycling routes for residents within 20 minutes of key destinations.

17. Provide bicycle and pedestrian amenities, such as street trees and landscaping, benches, pedestrian and bicycle boulevards, and any other amenities that would increase the perceptions of safety for walking and bicycling.

18. Encourage a regional plan ensuring seamless transition for non-motorized modes of transportation.

19. Ensure compliance with the Americans with Disabilities Act (ADA).

20. Provide safe and accessible non-motorized facilities that link with local and regional community centers (downtowns, schools, parks, neighborhood centers, transit facilities) and pathway systems, as well as regional facilities and destinations.

21. Provide secure bicycle parking facilities and racks in activity centers, business centers, schools, and at major transit stops.

22. Encourage measures that improve safety for pedestrians and bicyclists.

23. Integrate bicycle and pedestrian facilities into new construction and reconstruction (including overlays) of roadway projects using optimum designs and practices.

24. Implement regular communications between Clark County, constituent cities, C-Tran, Vancouver-Clark Parks Department, Southwest Washington Regional Transportation Council (RTC), Washington State Department of Transportation and other affected agencies on bicycle and pedestrian related issues, such as creating a

continuous and interconnected bikeway plan, and facilitating connectivity for bicycle and pedestrian facilities between the unincorporated county area and local jurisdictions.

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Appendix I. Rapid Health Impact Assessment

Rapid Health Impact Assessment:

Clark County Bicycle and Pedestrian Master Plan

Prepared by Clark County Public Health
May, 2010

Table of Contents

For further information about this health impact assessment, please contact
Clark County Public Health Assessment & Evaluation:
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Clark County Bicycle and Pedestrian Master Plan
Rapid HIA Summary

- Based on relationships established by research, Public Health finds that all proposed projects, programs, and policies will positively impact physical activity.

- Based on geographic concentrations of people, health outcomes, SES, and built environment characteristics, Public Health recommends that the bicycle and pedestrian master plan focus on the area south of the I-5/I-205 junction, north of Vancouver city limits, and west of 182nd Avenue/ NE Ward Road.

Recommendations

Projects
Include low-speed roadway designs as bicycle and pedestrian projects
Implement a variety of bikeway facility types
Programs
Include temporary street closures (ciclovias) in programs
Add programs that manage automobile parking
Policies
Declare measureable targets for project objectives. The plan should include: • Numeric objectives that define a desirable level of service • Which government agency is responsible for implementation and when • Benchmarks and performance measures for assessing progress
Prioritize projects and adopt policies that increase the following measures of walkability: connectivity, urban design, land use mix, and residential density. Specific proposals for consideration (not mentioned in the plan) include: • limit construction of new cul-de-sacs • connect existing cul-de-sacs • limit block size • design for imageability, enclosure, human scale, transparency, and complexity (See Ewing et al., 2006) • encourage a dense mix of land uses • encourage higher density housing
Create policies to increase bicycle and pedestrian access to nutritious food
Design for inexperienced cyclists
Include health and equity in project evaluation criteria
Recognize increased numbers of bicyclists and pedestrians as a safety strategy

Clark County Bicycle and Pedestrian Master Plan
Rapid Health Impact Assessment

Introduction

Public Health conducted this rapid Health Impact Assessment with the primary goal of offering meaningful input into the Bicycle and Pedestrian Master Plan process. This assessment estimates impacts in terms of health benefits derived from increased opportunity for physical activity. The magnitude of physical activity increase resulting from specific strategies will be explored in greater depth in a subsequent, comprehensive HIA.

This analysis has two areas of concentration. First, we describe existing conditions with particular emphasis on equity, identifying disparities in the social and built environments. Second, the proposals in the draft plan are examined and compared with research findings on the relationship between the built environment and physical activity. The proposals are divided into three categories as follows:

- Projects – Bicycle and pedestrian infrastructure improvements specifically proposed in the plan
- Programs – On-going activities such as encouragement, education, enforcement, and maintenance
- Policies – Guidance for decision making and consistent action

It should be noted that the draft plan being reviewed does not represent a comprehensive or formal draft version of the final document, but rather an exercise in project planning to determine information gaps. This is therefore an assessment of a snapshot of the planning process, and Public Health acknowledges that the plan will continue to improve. Nonetheless, based on analysis of current conditions and a review of the draft plan as it now stands, Public Health has created a set of recommendations that are presented in detail at the conclusion of this report.

Baseline Conditions

Existing conditions are described below based on Census 2000 data; all figures are based on 2000 census data unless otherwise stated. Updated data will be used for the in-depth HIA. To facilitate a rapid analysis, we used income, poverty, and percent racial/ethnic minorities to approximate neighborhood socioeconomic status (SES).

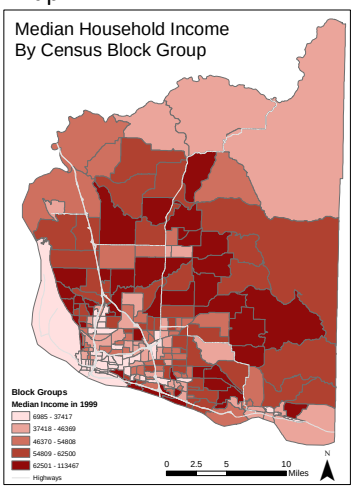
Baseline Social Determinants

Income

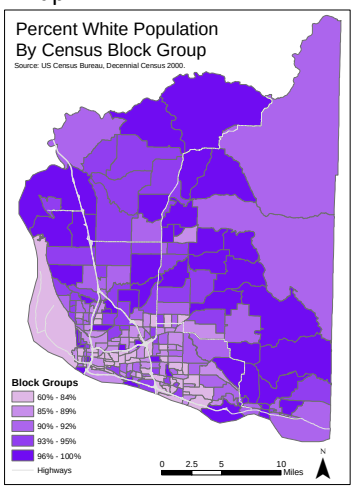
One of the strongest predicators of health outcomes is income. In Clark County, median income is highest in block groups located just outside of cities, as shown in Map 1. Not surprisingly, poverty prevalence is the opposite, with the highest rates in central block groups and outlying areas. In this respect, the county could be said to have bands of interconnected higher income block groups stretching from the northwest to southeast

and from west to east across the center of the county. As of 2000, median income among block groups varied dramatically, from $6,985 to $113,467.

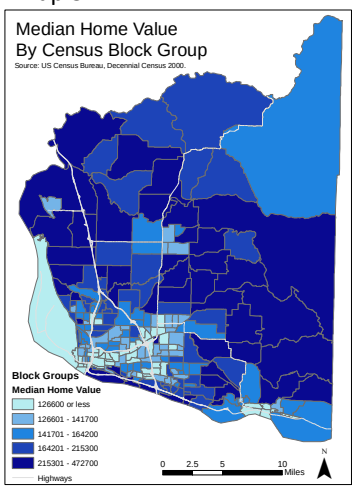
Map 1



Map 2



Map 3



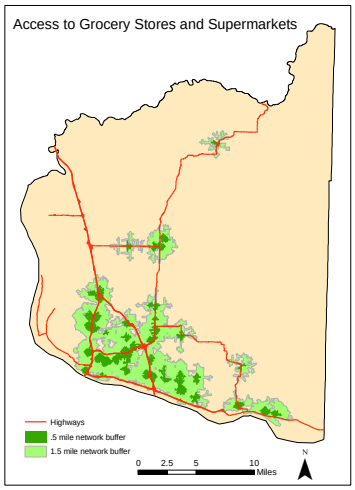
Race/Ethnicity

Map 2 shows the distribution of racial and ethnic minorities in Clark County. The county is homogenous relative to other regions, with only 11.4% of the population described as a racial or ethnic minority. Block groups with the most racially diverse populations are located just south of SR 500 between the interstates, and in the eastern area of Vancouver. Block groups range in percent nonwhite population from 0% to over 40%.

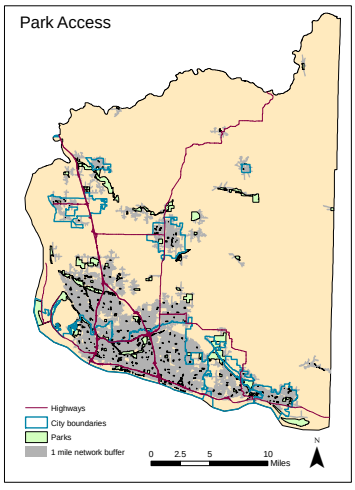
Housing Affordability

As displayed in Map 3, the least expensive housing is found along SR 500 in Vancouver, with pockets of less expensive housing in Battle Ground, Washougal, and Camas. The most expensive housing is found along the Columbia River, north of Washougal and Camas, and in outlying areas beyond city limits.

Map 4



Map 5



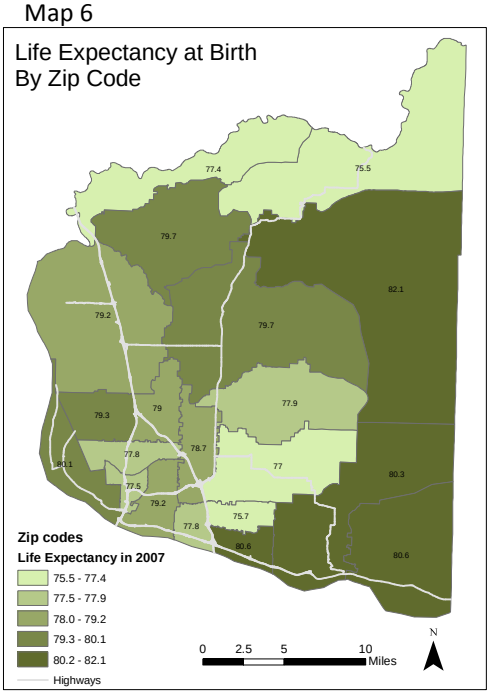
Access

Access to nutritious food requires an automobile in most of the county. The map at left shows 0.5 and 1.5-mile network buffers (walkable via the street network) around supermarkets and grocery stores. Residences within the light green areas could reasonably bicycle to purchase groceries. Similar buffers showing a half-mile walkable service area are shown in dark

green. Only about 4% of the county's land area is within walking distance of a grocery store or supermarket.

Map 5 displays 1-mile network buffers around parks, representing the walkable service area of parks. Access to parks is best within city boundaries and the area north of Vancouver. Outside of these areas, there is very little opportunity to access parks without driving.

Map 6



Baseline Health Outcomes

Data from one private insurance provider describes obesity levels by census tract in 2007. According to this data, the highest rates of obesity are concentrated around the intersection of SR 500 and I-205. Other pockets of higher rates exist in the northeastern and southeastern most census tracts in the county. Rates vary from 21% in downtown Vancouver to 39% east of Camas (Institute of Portland Metropolitan Studies, 2010). Note that these rates are for the insured population covered by a single provider and do not represent actual obesity rates.

As of 2007, life expectancy at birth ranged from 75.5 to 82.1 years within the county. Map 6 shows that life expectancy is lower in central and northern zip codes (Vital Registration System, 2007; Public Health: Seattle & King County, 2007; Washington State Department of Health, 2007). The 6.6 year disparity between zip codes reflects substantial geographic variation in health, a relationship shown to be consistent for various health outcomes.

Baseline Built Environment

Walkability

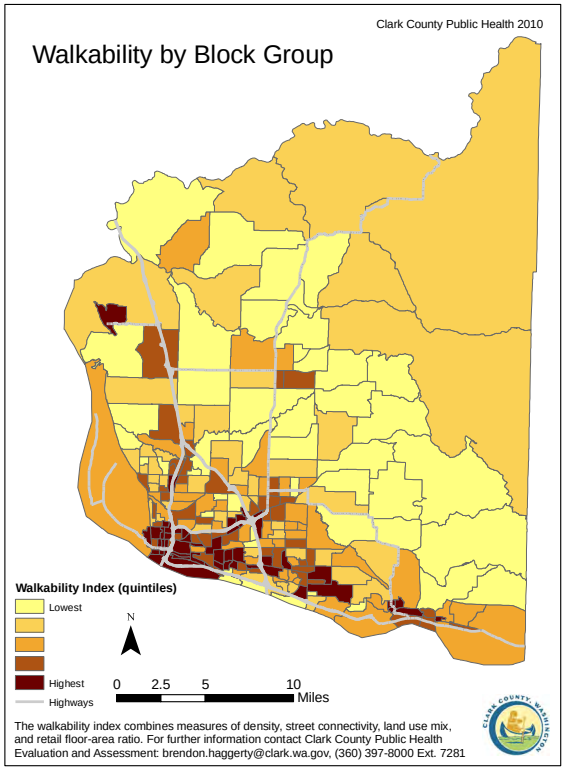
Walkability is measured as a composite of net residential density, road network connectivity, retail floor-area ratio, and land use mix. This index is well established in the literature as a predictor of physical activity (Sallis et al., 2009). Map 7 shows that the block groups with the highest walkability are in Vancouver, south of SR 500 and west of I-205.

Bikeability

For purposes of this analysis, bikeability has been measured in bikeway miles/square miles. It should be noted, however, that most of the measures of walkability are also relevant to bikeability, as walkability accounts for variables such as land use, connectivity, and density. Accordingly, this measure should be considered in the

context of the walkability. Map 8 shows differences in the bikeway miles per square mile between block groups. Table 1 provides a comparison for various geographies. The highest bikeability is found in central and north Vancouver, as well as the Camas area.

Map 7



Map 8

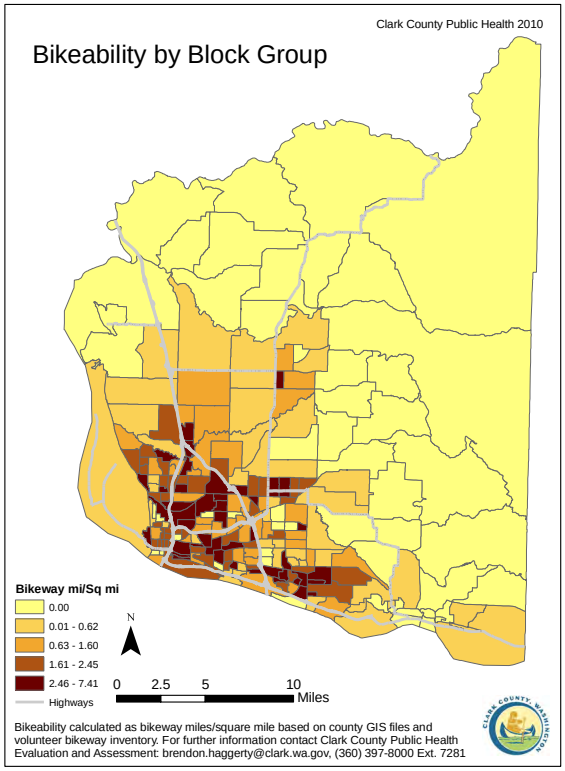


Table 1. Bikeway Network Density

	Clark County	Incorporated Areas (Clark)	Unincorporated Areas (Clark)**	Portland
Bikeway miles	196.3	106.2	90.1	318.0
Gross square miles	656.2	87.7	568.9	145.4
Bikeway miles per square mile	0.3	1.2	0.2	2.2
Average among block groups	1.4	1.6*	1.2*	4.5

* Approximate estimates due to non-coterminous geography
**Includes rural areas outside of Urban Growth Areas

As shown in table 1, Clark County has more bikeway miles in incorporated areas than in unincorporated areas. The block group average roughly adjusts for population density, since there are more block groups in areas that have denser settlement and more bikeway miles. Even in incorporated areas, the county still has less than half the network density of neighboring Portland, which has increased its bicycle mode share through increasing the extent of the bikeway network (Geller, 2010).

These measures of the built environment correlate with measures of socioeconomic status. Table 2 displays correlations between the built environment and socioeconomic

status when measured at the block group level. The data indicate that there is a significant negative correlation between walkability and socioeconomic status; as median income increases, walkability decreases. This reflects the tendency of low-income residents to locate in denser downtown areas where housing stock is older and more affordable. In contrast to walkability, the relationship between bikeability and socioeconomic status is significant, but fairly weak. As evident in the maps above, these relationships are a reflection of higher walkability within central areas and of the tendency of people with higher SES to locate in outlying areas.

Table 2. Correlations between the built environment and SES (2000 Census)

	Bikeway mi/Sq mi	Pct Non-white	Pct below poverty	Pct Unemployed	Med. Home Value	Med. HH Income
Walkability index '09	.263(**)	.254(**)	.584(**)	.295(**)	-.541(**)	-.656(**)
Bikeway mi/Sq mi '09	1	.318(**)	.154(*)	-.019	-.265(**)	-.196(**)

** Correlation is significant at the 0.01 level (2-tailed).
*Correlation is significant at the 0.05 level (2-tailed).
N=233

Impact of Proposed Actions

Summarizing Impacts & Evidence
Strong evidence,
Likely to increase physical activity: ●

Emerging evidence,
Supportive of physical activity: ◉

For each project, program, and policy, proposed in the draft plan, Public Health reviewed relevant research. Proposals included in the draft plan are summarized in table 3. Note that these are general proposals in draft form, and that the final plan will build upon these ideas to produce a more detailed set of proposals. Proposals that are strongly supported by evidence are identified in the table with a filled circle symbol. Research shows that these proposals are likely to increase physical activity. Proposals that represent a best practice based on case studies or emerging evidence are identified with a partially filled circle. These strategies are supported by prior experience or indirectly support an increase in physical activity.[1]

Detailed project lists have not yet been developed and are pending results of inventory efforts. In light of the lack of specific projects, Public Health assessed objectives included in the plan goals, which articulate policies to accomplish the construction of infrastructure projects. These policies were assessed for their potential to increase physical activity and are referenced in the table below.

Based on relationships established by research, Public Health finds that all proposed projects, programs, and policies will positively impact physical activity. The degree of impact varies, and there are additional actions that could be taken to maximize increases in physical activity. Such actions are discussed in the recommendations section.

[1] Symbol system based on New York City Active Design Guidelines (City of New York, 2009). Impact and evidence categorization may be changed or refined in the forthcoming in-depth HIA.

Table 3. Draft Project, Program, and Policy Proposal Impacts

	Proposal	Page (Draft Plan)	Evidence of Phys. Activity Increase
	Projects		
1	Installation of wayfinding signage	4	⦿
2	Complete "recommended bikeway and walkway network"	5	●
3	Provision of secure bike parking at activity centers, business centers, schools, and major transit stops	5	●
	Programs		
4	"Publicize the availability of bicycle and pedestrian opportunities"	4	●
5	Development of a maintenance program for bicycle and pedestrian facilities	4	●
6	Mitigation during construction and maintenance activities	4	⦿
7	Bicycle and pedestrian counting program in order to measure progress	5	⦿
8	Enforcement programs	5	●
9	Safety education programs	5	●
10	Coordinate with schools on SRTS	5	●
11	Monitoring of bicycle and pedestrian crash data	5	⦿
12	Implementation of regular communication between Clark County and other jurisdictions in order to address bicycle and pedestrian issues	5	⦿
13	County-wide training program to educate engineers, planners, and public decision makers about the needs of bicyclists and pedestrians	6	⦿
	Policies		
14	Integrate bicycle and pedestrian facilities into new construction	5	●
15	Provide facilities that link to regional destinations	5	●
16	10% reduction in minimum parking requirement for adding "proportionate bicycle parking"	54	●
17	Bicycle facilities will be designed for "Type B" cyclists	54	●
18	*Bicycle facility selection criteria: Speed-volume chart	56	●
19	*Pedestrian facility selection criteria: Multiple benefit, Safety, Accessibility, Connectivity, Walkability	57	●
20	Design guidelines for bicycle parking	45	⦿
21	Design guidelines for bicycle facilities	62	⦿
22	Design guidelines for safety	67	⦿
23	Design guidelines for maintenance and street closures	75	⦿

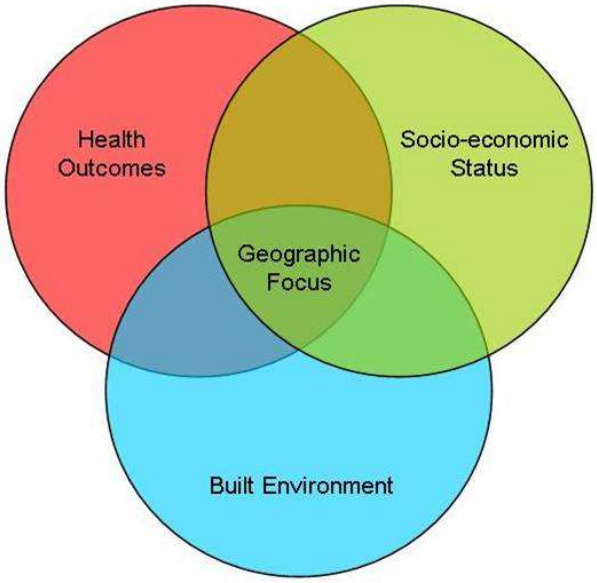
*Revisions to bicycle and pedestrian project evaluation criteria are currently underway. Public Health has submitted separate recommendations on these criteria (see appendix).

Recommendations

Recommended Geographic Focus

Public Health recommends focusing the plan impact on moderate-to-high density geographic areas that:

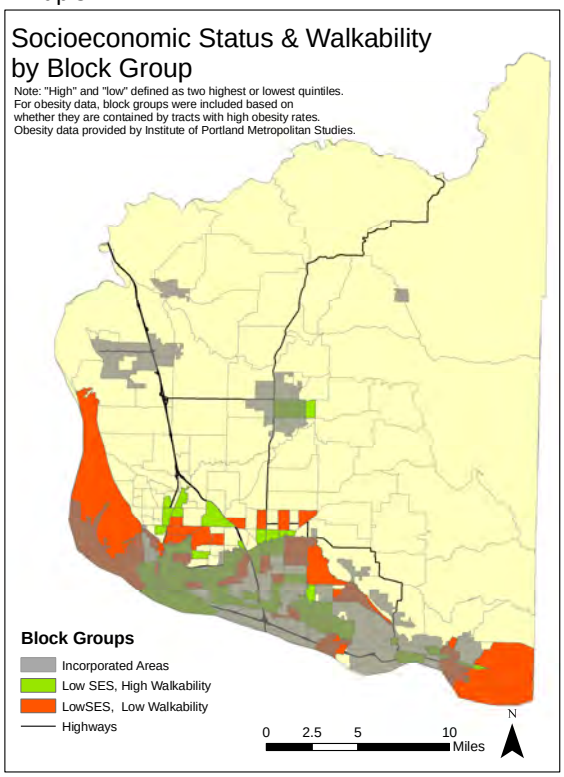
- Are disadvantaged in terms of social determinants of health
- Have unfavorably distributed health outcomes
- Have measures of the built environment that constitute a high need or a high potential for enabling physical activity



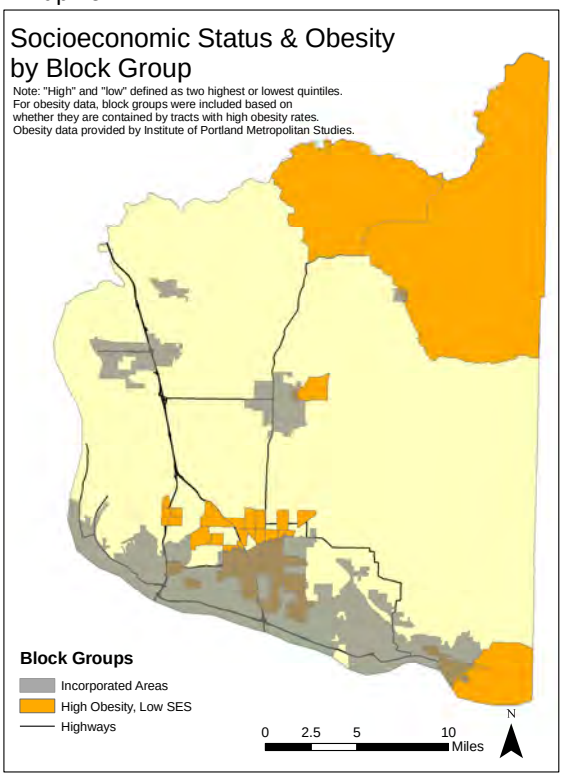
The graphic at left illustrates the conceptual basis for determining a geographic focus. Geographic areas of concern in terms of these three domains have the potential to yield the greatest health benefits from increased physical activity.

For the purposes of this rapid HIA, quintiles are used to determine areas of high need (highest two or lowest two, depending on the variable measured). Additionally, as the scope of the plan includes only unincorporated areas, the recommended geographic focus is limited to areas outside incorporated cities. Despite the limitations of scope, consistent and coordinated bicycle and pedestrian improvements should be implemented throughout the county, as many areas within incorporated areas offer opportunities to increase physical activity through biking and walking.

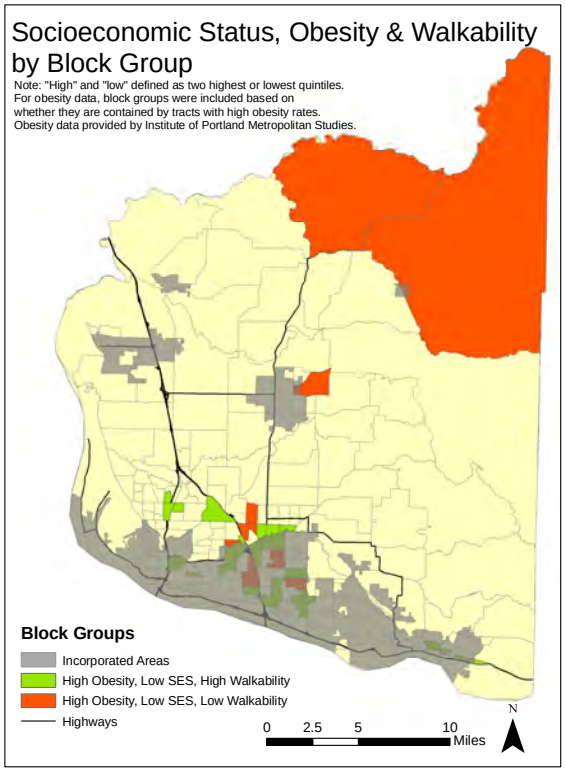
Map 9



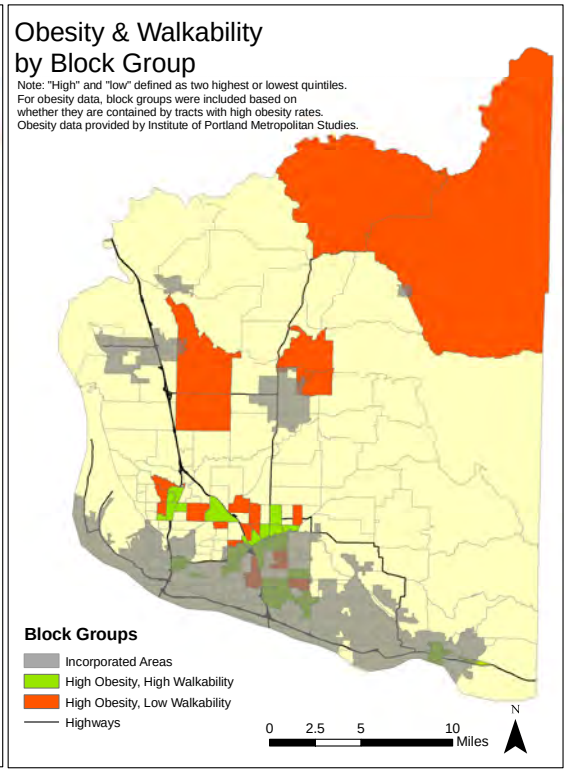
Map 10



Map 11



Map 12



The map set above (maps 9-12) identifies block groups that have low SES, high obesity, and high walkability potential or needs. Red and green areas represent the lowest and highest two quartiles in walkability, respectively.

Green areas have high walkability potential and are ideal candidates for:

- infrastructure improvements (sidewalks & bikeways)
- streetscape improvements (traffic calming, road diets, corridor improvements)
- encouragement programs and individualized marketing

Red areas have high walkability needs and are ideal candidates for:

- infrastructure improvements (sidewalks & bikeways)
- land use changes (more mixed-use, denser development)
- connectivity improvements (fewer cul-de-sacs, more connections)
- improved urban design for walkability (designing at human scale)

Additionally, orange-shaded areas on map 10 identify areas that have low SES and high obesity rates. Based on these measures, the areas surrounding I-205, especially where it meets SR 500, are areas that could benefit from higher priority for bicycle and pedestrian improvements. These areas offer the greatest opportunity to maximize health benefits from physical activity. Areas with higher density are more likely to achieve greater health benefits not only because of greater numbers of people affected, but also because of the higher likelihood of physical activity being facilitated by supporting transit service, mixed use development, and walkable neighborhoods.

Based on geographic concentrations of people, health outcomes, SES, and built environment characteristics, Public Health recommends focusing on the area south of the I-5/I-205 junction, north of Vancouver city limits, and west of 182nd Avenue.

Recommended Additional Actions

The recommendations listed below are based on research and literature on best practices. A summary of evidence can be found in the appendix.

Table 4. Recommended Additional Actions

	Recommendation	Evidence of Phys. Activity Increase
	Projects	
1	Include low-speed roadway designs as bicycle and pedestrian projects	●
2	Implement a variety of bikeway facility types	●
	Programs	
3	Include temporary street closures (ciclovias) in programs	◉
4	Add programs that manage automobile parking	●
	Policies	
5	Declare measureable targets for project objectives. The plan should include: • Numeric objectives that define a desirable level of service • Which government agency is responsible for implementation and when • Benchmarks and performance measures for assessing progress	◉
6	Prioritize projects and adopt policies that increase the following measures of walkability: connectivity, urban design, land use mix, and residential density. Specific proposals for consideration (not mentioned in the plan) include: • limit construction of new cul-de-sacs • connect existing cul-de-sacs • limit block size • design for imageability, enclosure, human scale, transparency, and complexity (See Ewing et al., 2006) • encourage a dense mix of land uses • encourage higher density housing	●
7	Create policies to increase bicycle and pedestrian access to nutritious food	◉
8	Design for inexperienced cyclists	●
9	Include health and equity in project evaluation criteria	●
10	Recognize increased numbers of bicyclists and pedestrians as a safety strategy	●

Acknowledgements

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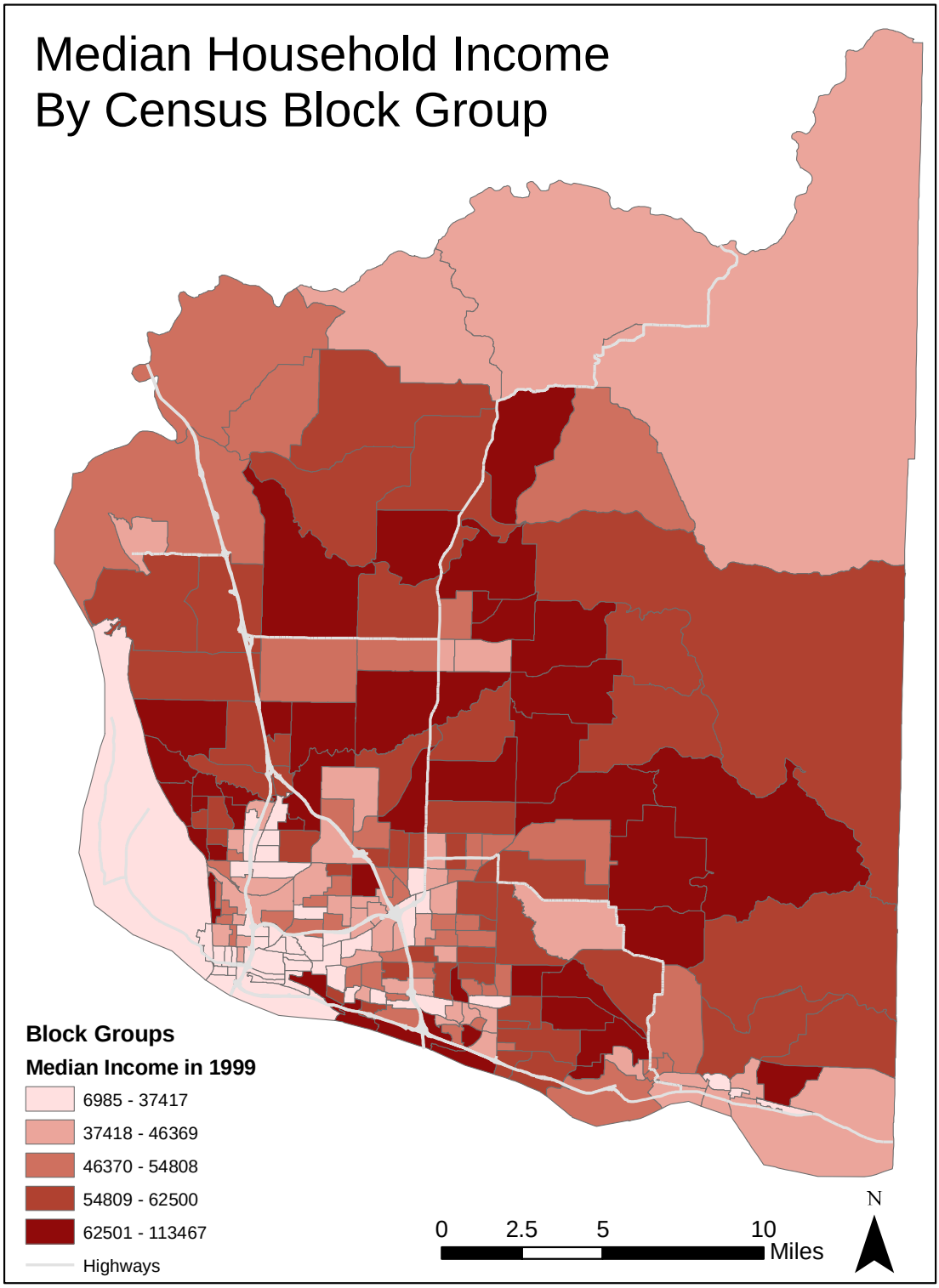
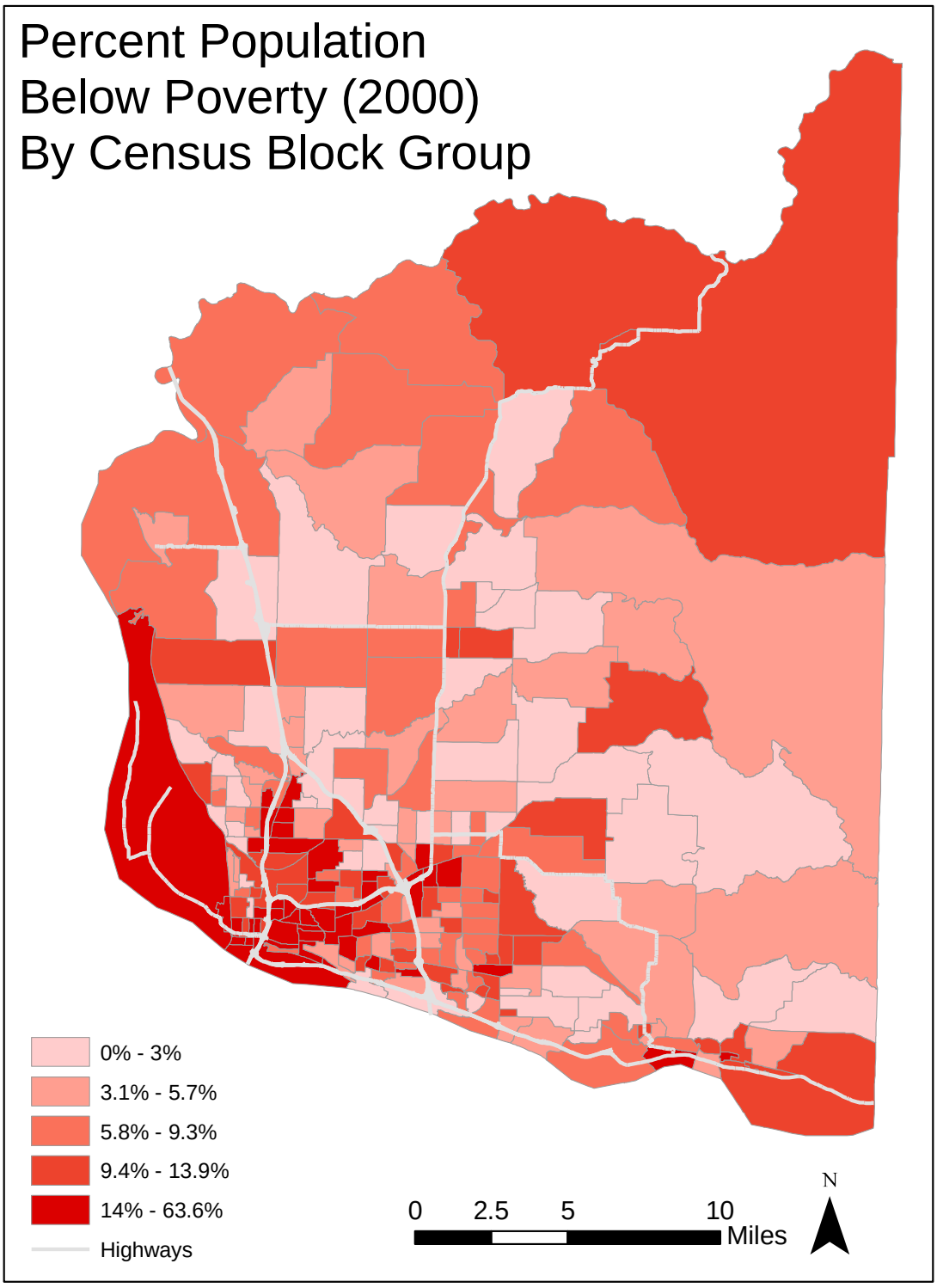
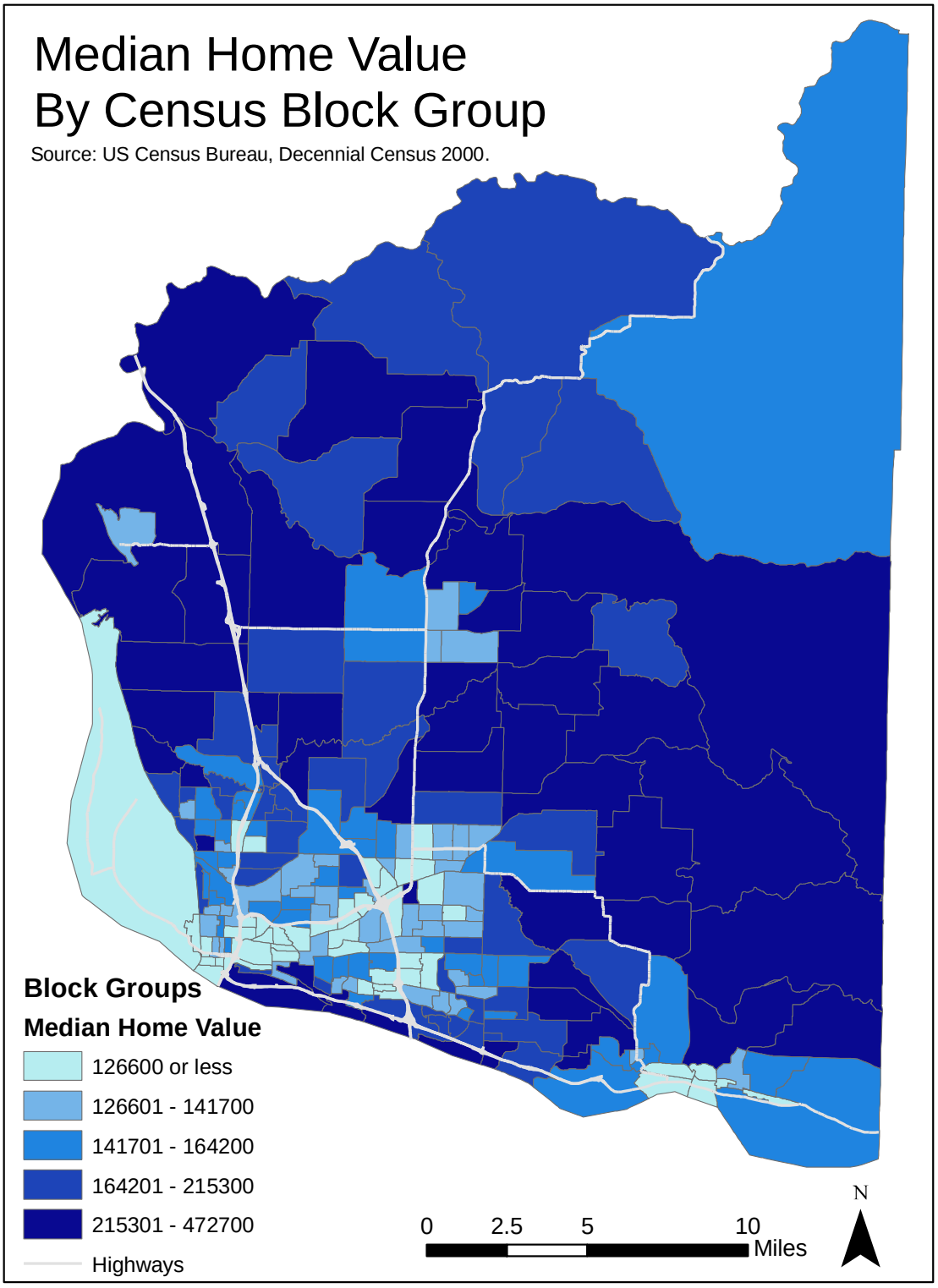
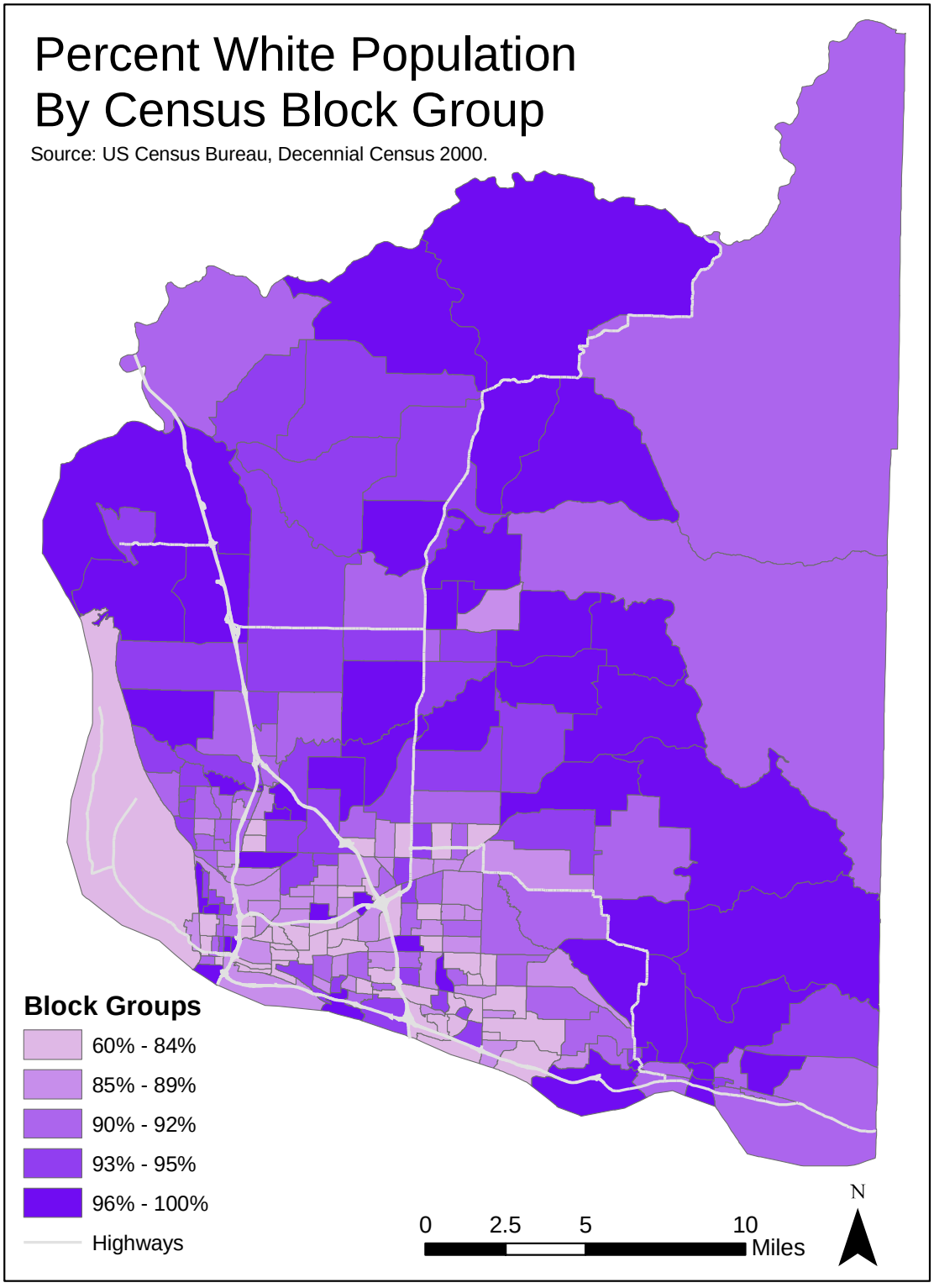
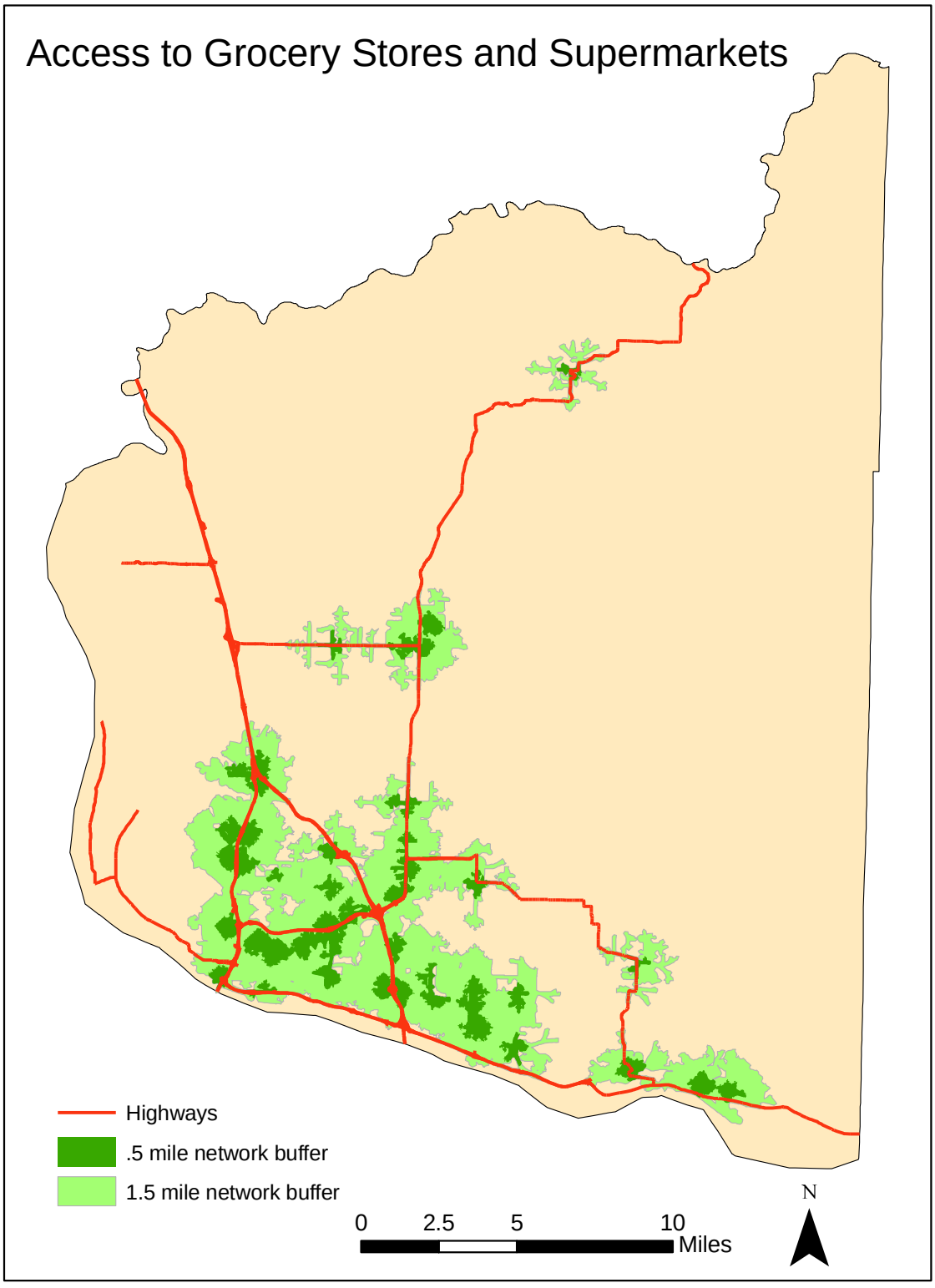
Appendix A: Maps of Existing Conditions

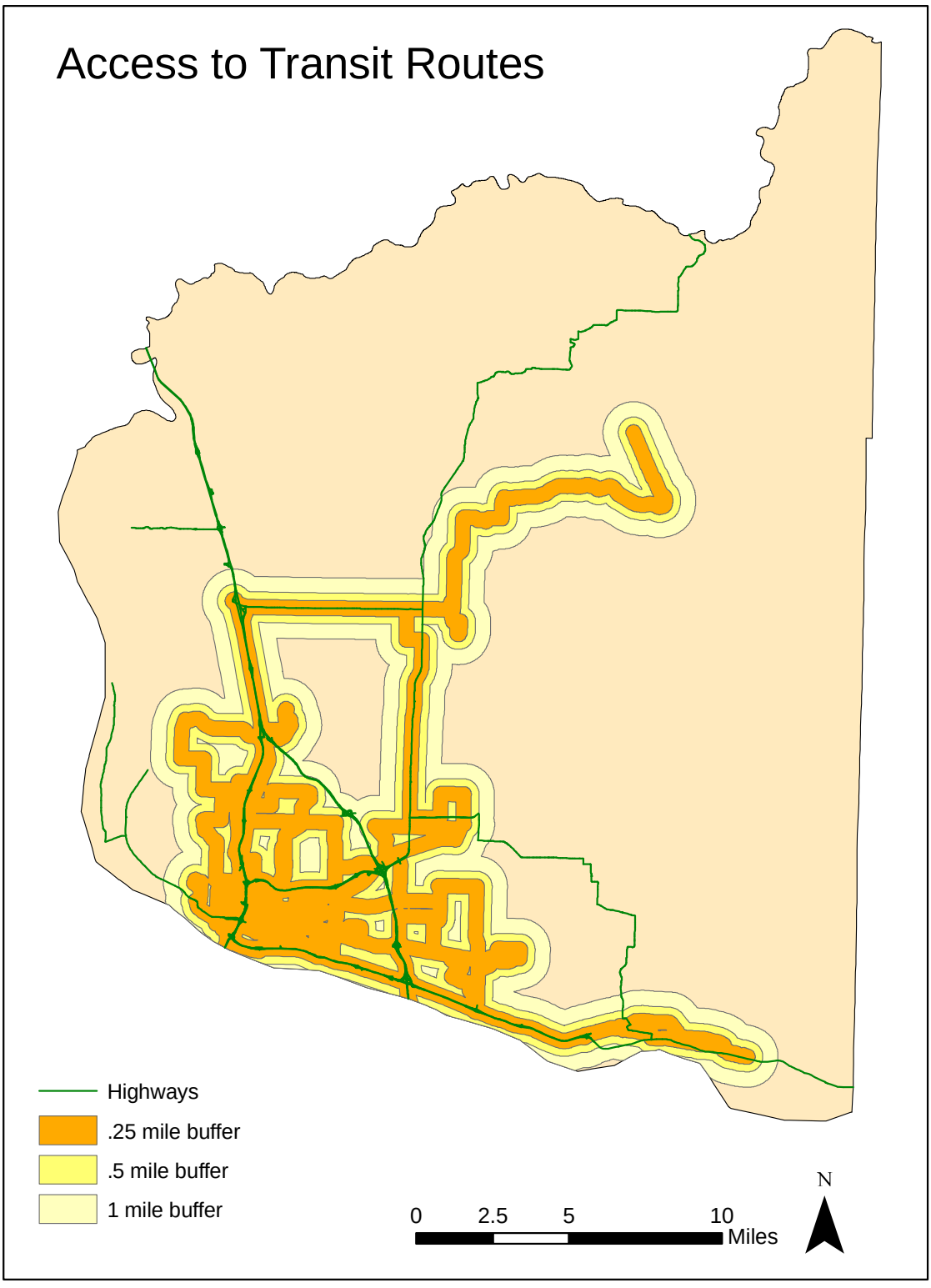


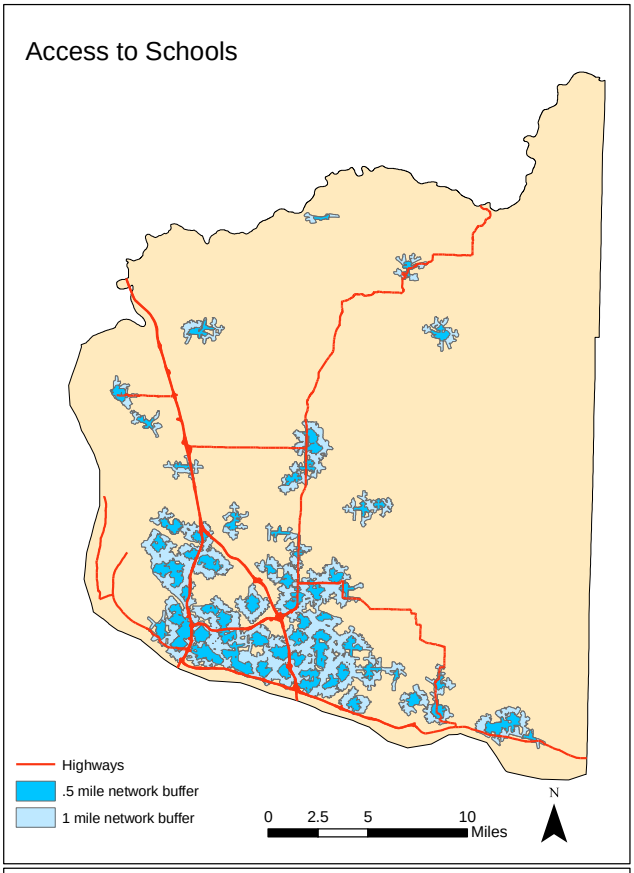

Percent Population
Below Poverty (2000)
By Census Block Group
0% - 3%
3.1% - 5.7%
5.8% - 9.3%
9.4% - 13.9%
14% - 63.6%
Highways
0
2.5
5
10
Miles
N

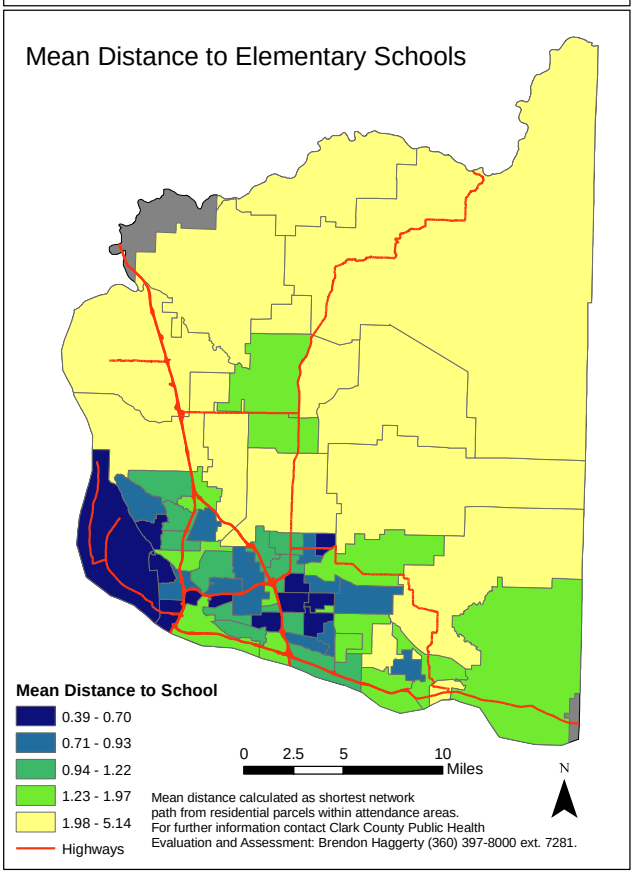

Median Home Value
By Census Block Group
Source: US Census Bureau, Decennial Census 2000.
Block Groups
Median Home Value
126600 or less
126601 - 141700
141701 - 164200
164201 - 215300
215301 - 472700
Highways
0
2.5
5
10
Miles
N

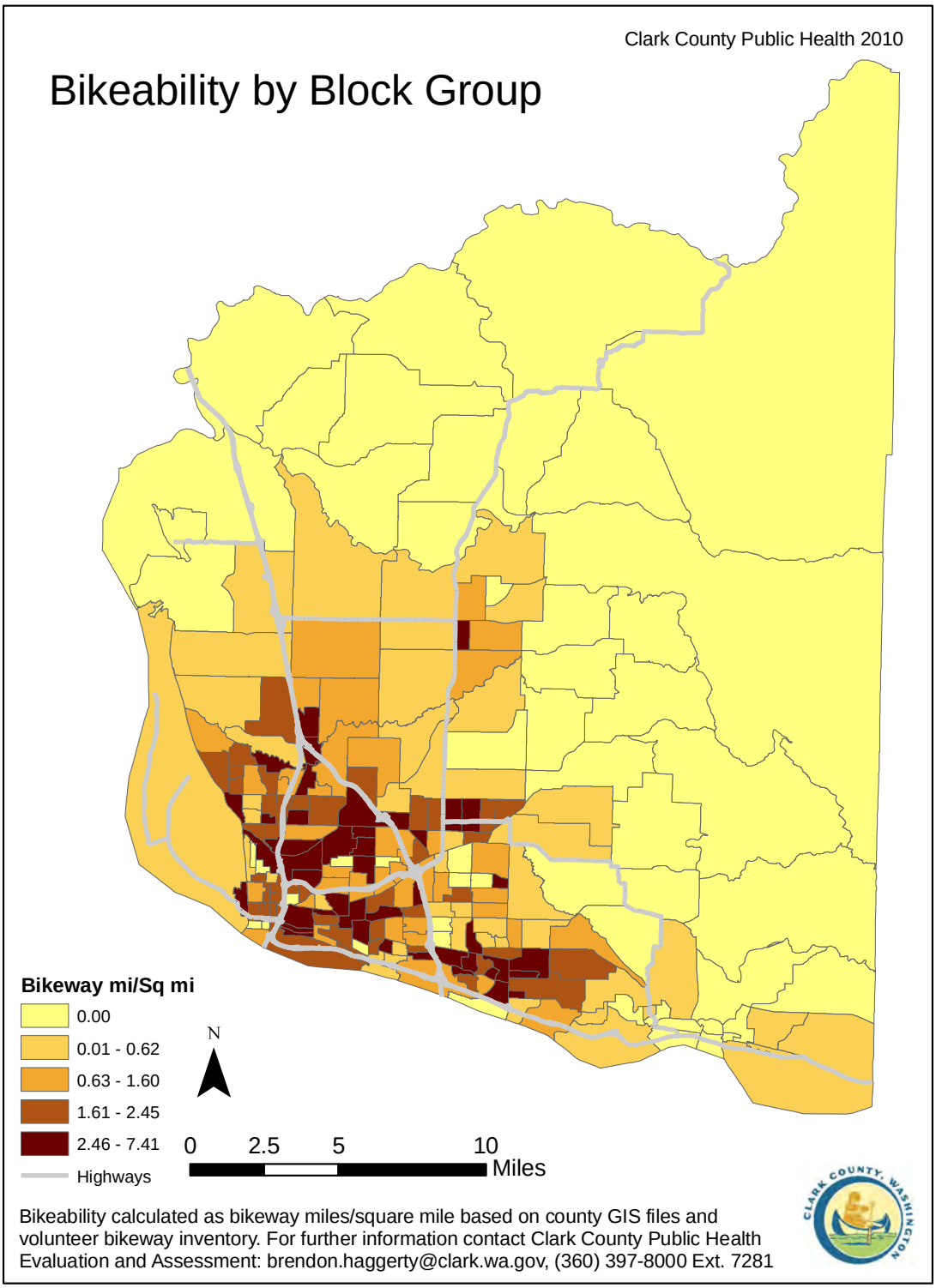

Percent White Population
By Census Block Group
Source: US Census Bureau, Decennial Census 2000.
Block Groups
60% - 84%
85% - 89%
90% - 92%
93% - 95%
96% - 100%
Highways
0
2.5
5
10
Miles
N

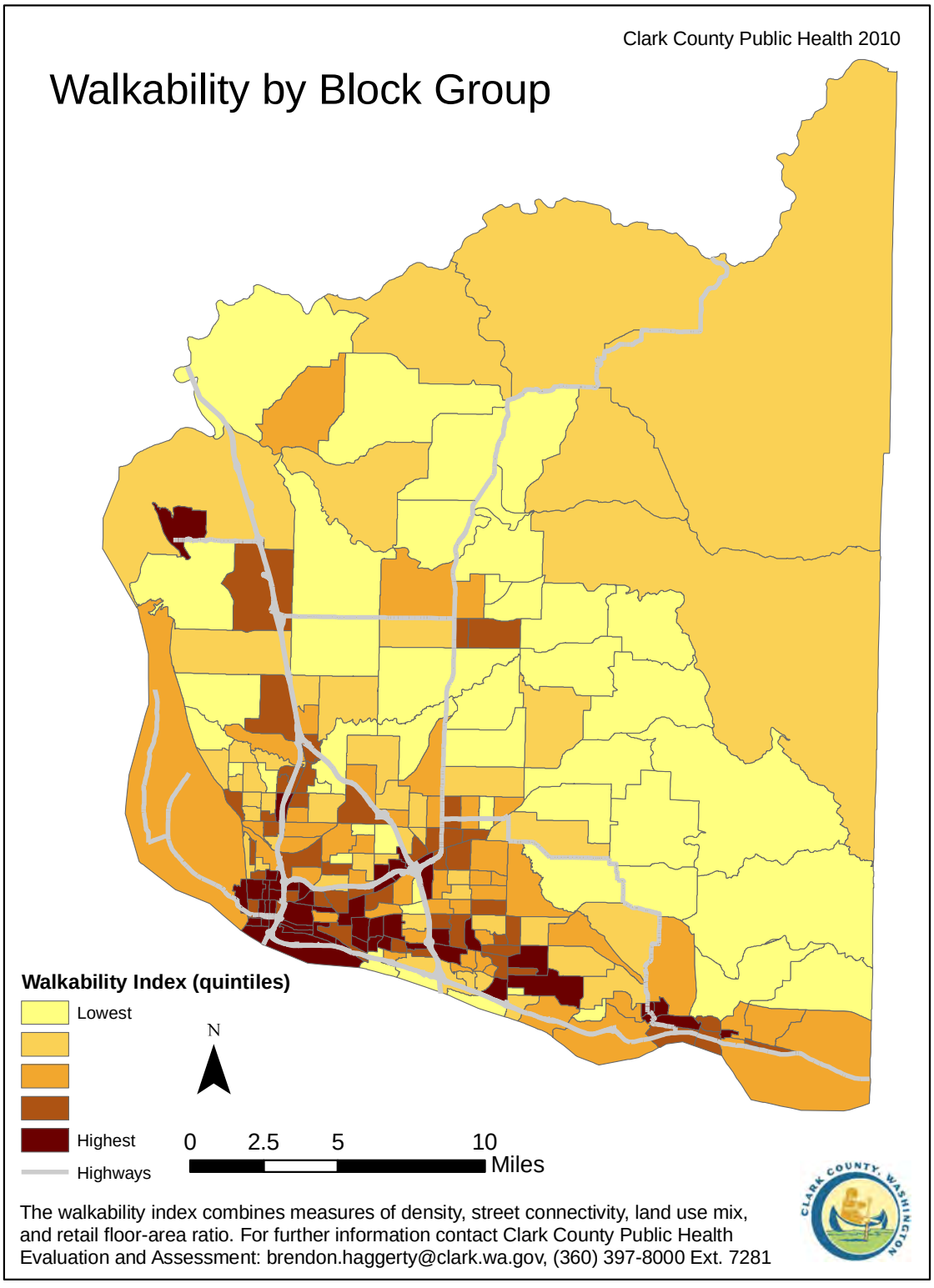

Access to Grocery Stores and Supermarkets
Highways
.5 mile network buffer
1.5 mile network buffer
0
2.5
5
10
Miles
N

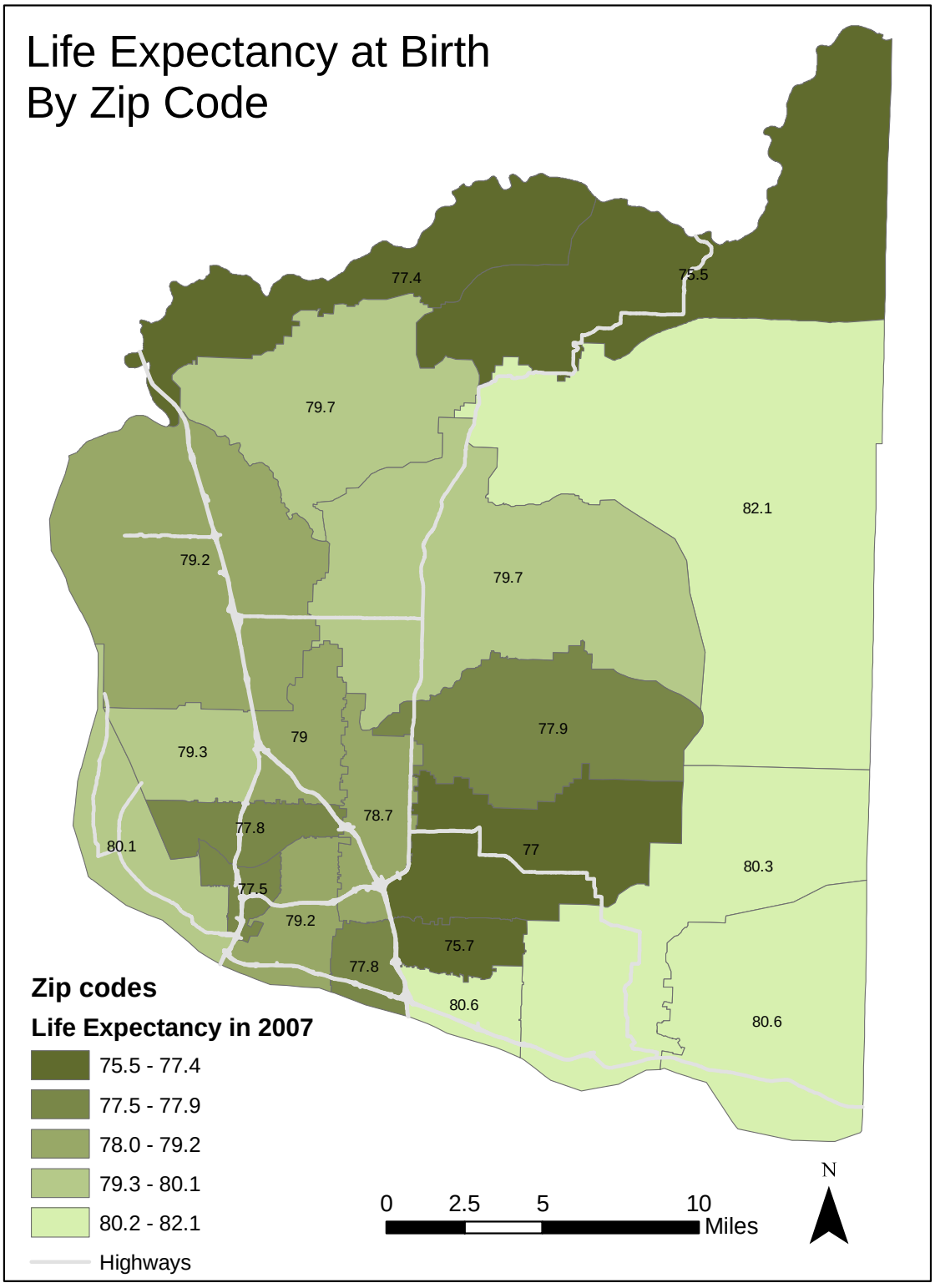

Access to Transit Routes
Highways
.25 mile buffer
.5 mile buffer
1 mile buffer
0
2.5
5
10
Miles
N


Access to Schools
Highways
.5 mile network buffer
1 mile network buffer
0 2.5 5 10
Miles
N


Mean Distance to Elementary Schools
Mean Distance to School
0.39 - 0.70
0.71 - 0.93
0.94 - 1.22
1.23 - 1.97
1.98 - 5.14
Highways
0 2.5 5 10
Miles
N
Mean distance calculated as shortest network
path from residential parcels within attendance areas.
For further information contact Clark County Public Health
Evaluation and Assessment: Brendon Haggerty (360) 397-8000 ext. 7281.


Clark County Public Health 2010
Bikeability by Block Group
Bikeway mi/Sq mi
0.00
0.01 - 0.62
0.63 - 1.60
1.61 - 2.45
2.46 - 7.41
Highways
N
0
2.5
5
10
Miles
Bikeability calculated as bikeway miles/square mile based on county GIS files and volunteer bikeway inventory. For further information contact Clark County Public Health Evaluation and Assessment: brendon.haggerty@clark.wa.gov, (360) 397-8000 Ext. 7281


Clark County Public Health 2010
Walkability by Block Group
Walkability Index (quintiles)
Lowest
Highest
Highways
N
0
2.5
5
10
Miles
The walkability index combines measures of density, street connectivity, land use mix, and retail floor-area ratio. For further information contact Clark County Public Health Evaluation and Assessment: brendon.haggerty@clark.wa.gov, (360) 397-8000 Ext. 7281


Life Expectancy at Birth
By Zip Code
77.4
75.5
79.7
82.1
79.2
79.7
79.3
79
77.9
78.7
77.8
80.1
77
80.3
77.5
79.2
75.7
77.8
80.6
80.6
Zip codes
Life Expectancy in 2007
75.5 - 77.4
77.5 - 77.9
78.0 - 79.2
79.3 - 80.1
80.2 - 82.1
Highways
0
2.5
5
10
Miles
N

Appendix B: Evidence of Impacts

Projects

1. Wayfinding

Impact: Supportive of increase in physical activity

Evidence: Depending on the quality and availability, there is a hypothesized increase in use of alternative modes associated with wayfinding signage. Importantly, best practices include accompanying wayfinding with encouragement and marketing efforts (VPTI, 2010). Whereas there are no studies measuring cycling increases as a result of wayfinding, the practice is growing (Pucher, Dill, and Handy, 2010).

2. Completed network

Impact: Likely to increase physical activity

Evidence: Many studies have shown the importance of infrastructure in increasing walking and cycling mode shares. Cross-sectional studies consistently show a positive correlation between bike facilities and cycling (Pucher, Dill, and Handy, 2010). Among these, Dill and Carr (2003) found each additional bikeway mile per square mile is associated with a roughly one percent increase in bicycle mode share. Recent studies have found that walkability is a highly significant predictor of physical activity independent of self-selection and socioeconomic status (Sallis et al, 2009). A review of studies on the built environment correlates of walking found that sidewalks and connectivity are commonly found to be significant correlates (Saelens & Handy, 2008).

3. Bike parking

Impact: Likely to increase physical activity

Evidence: Research supports the provision of end-of-trip facilities in general. In a 2008 review of best practices, Pucher and Buehler found that cities with high mode shares provide state-of-the-art bike parking. In a review of literature on bicycle parking effects, Pucher, Dill, and Handy (2010) point out that research shows a strong impact of bike parking. They cite Hunt and Abraham (2007), who estimated the availability of bicycle parking to be valued at the equivalent of 27 minutes of travel time. Pucher, Dill, and Handy also note that "it is not clear to what extent providing parking facilities follows increased bicycling levels instead of preceding and encouraging more bicycling. The causation is almost certainly in both directions."

Programs

4. Publicity

Impact: Likely to increase physical activity

Evidence: Marketing programs have been successful in promoting behavior change. Such programs can increase the use of alternative (active) modes by 10-25% (Victoria Transportation Policy Institute [VTPI], 2010). Impacts from marketing can be expected to decline over time, and must be implemented *after* infrastructure improvements to achieve maximum benefit (VTPI, 2010). Evaluations of trip reduction efforts in Portland show increases in bicycle mode share (City of Portland Office of Transportation, 2005).

5. Maintenance program

Impact: Likely to increase physical activity

Evidence: Recent research shows that maintenance levels are lower in low-income minority neighborhoods (Zhu and Lee, 2008). Sallis, et al. found that physical activity was lower in low-income walkable neighborhoods than in high-income walkable neighborhoods (2009). The authors suggest that other needs, such as maintenance and safety from crime, are prerequisites for physical activity.

6. Construction mitigation

Impact: Supportive of increased physical activity

Evidence: Best practices in work zone mitigation measures are recommended in various existing guidelines, including the MUTCD, Seattle DOT Traffic Control Manual, and the FHWA module on Bicycle and Pedestrian Accommodation in Work Zones (FHWA, 2006).

7. Traffic Counts

Impact: Supportive of increased physical activity

Evidence: As articulated by the National Bicycle and Pedestrian Documentation Project, bicycle and pedestrian counts are critical to determining current growth rates and future demand. Early results show that there are significant regional differences that will require specifying local demand models (Jones, 2009).

8. Enforcement

Impact: Likely to increase physical activity

Evidence: In a study of European successes in increasing the safety cycling and walking, Pucher (2003) found that a contributing factor was the heightened enforcement of traffic laws by police. In addition to traffic codes that favor and prioritize vulnerable road users, police are stricter in citing users of all modes for violations. Lower speeds are safer for cyclists and pedestrians: at 20 mph, there is a five percent chance of dying if hit by a motor vehicle. This chance increases to 45% at 30mph, and 85% at 40mph (United Kingdom Department of Environment and Transportation, 1997). However, research comparing enforcement to engineering (traffic calming), report that enforcement effects tend to be temporary, whereas effects of traffic calming are greater and more permanent (Transportation for America, 2009).

9. Safety Education

Impact: Likely to increase physical activity, strong evidence
Evidence: Safety education is most effective among children. Evidence suggests that promoting helmet use is effective, and that lowering the cost of helmets increases use. Training programs improve pedestrian skills such as timing and choosing safe crossings (Killoran et al., 2006).

10. Safe Routes to Schools

Impact: Likely to increase physical activity
Evidence: There is strong evidence that SRTS programs and infrastructure improvements near schools increase physical activity among students. At schools with SRTS programs, parents report higher rates of active transportation to school in a wide variety of social and built environments (Boarnet, 2005). Additionally, research suggests that there are also benefits to adults in the larger community (Watson and Dannenberg, 2008).

11. Monitor crash data

Impact: Supportive of increased physical activity
Evidence: Similar to monitoring bicycle and pedestrian traffic counts, this basic data input enables better planning for future bicycle and pedestrian improvements.

12. Inter-jurisdictional communication

Impact: Supportive of increased physical activity
Evidence: Best practice

13. County-wide training program

Impact: Supportive of increased physical activity
Evidence: Best practice

Policies

14. Integrate Bike/Ped facilities into all new construction

Impact: Likely to increase physical activity
Evidence: See proposal #2.

15. Link regional destinations

Impact: Likely to increase physical activity
Evidence: See proposal #2.

16. Reduced parking requirements

Impact: Likely to increase physical activity

Evidence: Managing automobile parking reduces SOV mode share and increases use of alternative modes (Litman, 2008). Litman recognizes the findings of several studies that support managing parking to achieve an 85% occupancy rate, stating that an excessive supply of parking reinforces automobile dependency. Shoup (1997) documented the success of one parking cash-out program that let to a 39% increase in the number of employees bicycling and walking to work.

17. Design for type "B" cyclists

Impact: Likely to increase physical activity

Evidence: Type "B" cyclists are described in the 1999 AASHTO guide as cyclists who are, "comfortable riding on neighborhood streets and shared-use paths and prefer designated facilities such as bike lanes or wide shoulder lanes on busier streets." The same set of standards identifies type "C" cyclists as children requiring multi-use paths or low-traffic neighborhood streets. The importance of accomodating facilities has been supported by a recent study in Portland. Dill (2009) found that 24% of utilitarian bicycle trips occurred on bicycle boulevards or off-street paths, despite the fact that these facilities constitute less than 3% of the network. The same study found that cycling on streets with low traffic volumes was the second most important of 7 route choice factors, surpassed only by minimizing total distance. Of the cyclists studied, 59% achieved the recommended 150 minutes of physical activity through utilitarian travel.

18., 19. Selection criteria

Impact: Likely to increase physical activity

Evidence: **Whereas the criteria proposed in the draft plan are mostly aligned with literature findings, current revisions are underway to tailor criteria to Clark County needs and priorities. In light of these developments, Public Health has made recommendations on evaluation criteria (see appendix).*

20. Design guidelines for bicycle parking

Impact: Supportive of increased physical activity

Evidence: See proposal #3.

21. Design guidelines for bicycle facilities

Impact: Supportive of increased physical activity

Evidence: The quality and perceived safety of bikeways is of critical importance to helping adults achieve weekly recommended levels of physical activity through transportation. One research study concluded that "a network of different types of infrastructure appears necessary to attract new people to bicycling. Simply adding bike lanes to all new major roads is unlikely to achieve high rates of bicycling." (Dill, 2009). Dill also found that cyclists go out of their way to use certain facility types and features more than others (Dill, 2010).

22. Design guidelines for safety

Impact: Supportive of increased physical activity

Evidence: Research and experience suggest that by designing for perceived safety concerns and cyclist preference, real threats to safety can be mitigated while making cycling more appealing (Dill, 2009). The experience of Portland and many European cities has shown that crash rates decrease as the number of pedestrians and cyclists increase (Jacobsen, 2003). This is known as the "safety in numbers" concept.

23. Design guidelines for maintenance and street closures

Impact: Supportive of increased physical activity

Evidence: See proposal # 6.

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Appendix C: Evidence on Recommended Actions

Projects

1. Include low-speed roadway designs as bicycle and pedestrian projects
Impact: Likely to increase physical activity
Evidence: Research shows that low-speed traffic designs are especially attractive to utilitarian cyclists. In a survey of Portland cyclists, Dill & Voros (2007) found that people who agreed that their neighborhood had destinations connected by quiet streets were more likely to use bicycles for transportation. Pucher & Dijkstra (2003) identify perceived safety and traffic speeds as the foremost barriers to bicycling and walking, a finding supported by Dill's survey. Pucher and Dijkstra also point to European examples of successful traffic calming and the associated reduction in crash injuries. The 2009 report *Dangerous by Design* points out that slower traffic speeds decrease crashes for all users, and that engineering measures create more permanent effects than enforcement (Transportation for America, 2009).

2. Implement a variety of bikeway facility types
Impact: Likely to increase physical activity
Evidence: Based on empirical observations of cyclist behavior, Dill (2009) found that bike lanes are important and favored by cyclists, but mainly as connections when routes on low-traffic streets are not available. Dill concludes that, "A network of different types of infrastructure appears necessary to attract new people to bicycling. Simply adding bike lanes to all new major roads is unlikely to achieve high rates of bicycling."

Programs

3. Include temporary street closures (ciclovias) in programs
Impact: Supportive of increased physical activity
Evidence: Communities around the world have embraced the trend of day-long street closures to encourage physical activity (Pucher, Dill, and Handy, 2010). There is widespread popularity of these programs, which are often targeted to low-income areas. Anecdotally, such programs have increased a sense social cohesion (Holt, 2008). As access to physical activity and social cohesion are important social determinants of health, implementing temporary street closures would improve health outcomes.

4. Add programs that manage automobile parking
Impact: Likely to increase physical activity
Evidence: (See evidence for proposal 4). Managing automobile parking reduces SOV mode share and increases use of alternative modes (Litman, 2008). Litman recognizes the findings of several studies that support managing parking to achieve an 85% occupancy rate, stating that an excessive supply of parking reinforces automobile dependency.

Policies

5. Declare measureable targets for project objectives. The plan should include:

- **Numeric objectives that define a desirable level of service**
- **Which government agency is responsible for implementation and when**
- **Benchmarks and performance measures for assessing progress**

Impact: Supportive of increased physical activity
Evidence: Various publications identify adoption of performance measures as a best practice in ensuring the effectiveness of plans (Public Health Law & Policy, 2009).

6. Prioritize projects and adopt policies that increase the following measures of walkability: connectivity, urban design, land use mix, and residential density. Possible actions not mentioned in the plan include:

- **limit construction of new cul-de-sacs**
- **connect existing cul-de-sacs**
- **limit block size**
- **design for imageability, enclosure, human scale, transparency, and complexity (See Ewing et al., 2006)**
- **encourage a dense mix of land uses**
- **encourage higher density housing**

Impact: Likely to increase physical activity
Evidence: In studies of the built environment, both with self-reported data and with empirically observed physical activity, research finds significant built environment predictors of physical activity. Among these, Sallis et al. (2009) identified four independent influences on physical activity: connectivity, urban design, land use mix, and residential density. Connectivity is essentially a measure of the prevalence of cul-de-sacs and dead ends. Dill & Voros (2007) found that higher connectivity is positively associated with physical activity. The walking environment is important in increasing walkability. Ewing et al. (2006) identified five important urban design concepts that influence walkability, listed above. These measures can be said to encapsulate person-oriented design as opposed to auto-oriented design. Density and land use-mix are significant predictors of physical activity (Sallis, et al., 2009, Krizek & Johnson, 2006), and have been found in case studies to positively influence bikeability and walkability (Pucher & Dijkstra, 2003).

7. Create policies to increase bicycle and pedestrian access to nutritious food
Impact: Supportive of increased physical activity
Evidence: In a review of literature on food access, PolicyLink and The Food Trust found that access to grocery stores is associated with healthier food consumption and with lower risk of obesity (2010). Of particular concern are inequalities in access based on socioeconomic status, as documented by Larson (2009).

8. Design for inexperienced cyclists
Impact: Likely to increase physical activity
Evidence: In her study already described above, Dill (2009) found that even experienced cyclists are willing to travel far out of their way to access low-stress bikeways such as

off-street paths and bicycle boulevards. When compared to shortest-path routes, utilitarian cyclists deviated 57% to use an off-street path for the entire trip (Dill, 2010). This suggests that designing for the least experienced users will attract more cyclists and better serve experienced cyclists.

9. Include health and equity in project evaluation criteria
Impact: Likely to increase physical activity
Evidence: According to the World Health Organization, improving the social determinants of health is an issue of social justice, and addressing inequalities is "an ethical imperative" (Commission on Social Determinants of Health, 2008). Including health and equity in project evaluation criteria is one way Clark County can help ensure equal access to physical activity, healthy food, and transportation.

10. Recognize increased numbers of bicyclists and pedestrians as a safety strategy
Impact: Likely to increase physical activity
Evidence: There is consistent evidence that injury rates from crashes decrease as the number of cyclists and pedestrians increases (Jacobsen, 2003). As Jacobsen succinctly puts it, "Policies that increase the numbers of people walking and bicycling appear to be an effective route to improving the safety of people walking and bicycling."

References for Appendix C

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Appendix D: Recommendation on Health Outcomes Criterion

Following the adoption of "Health Outcomes" as a project selection criterion, Public Health recommends the following system for assigning the 20 points currently allocated. The recommendations below reflect point values based on ability to improve health outcomes, particularly through physical activity. The strength of evidence supporting the criteria was also considered, with more weight given to strategies that are supported by extensive evidence.

Summary of health outcomes points break-down

Socioeconomic status	10 points
Walkability potential	4 points
Connectivity	5 points
Low-stress facilities	1 point

Socioeconomic Status: 10 points

Description: Project is located in a block group with unfavorable social determinants of health

Measure: % of block group population living in poverty based on census data (See Map 1).

Points:

Quintile	Points
1 (Lowest poverty BGs)	0
2	2
3	5
4	7
5 (Highest poverty BGs)	10

Evidence: Health outcomes improve as socioeconomic status increases (Commission on Social Determinants of Health, 2008). Availability of physical activity increases with socioeconomic status, while risk of obesity decreases (Powell, Frank, & Chaloupka, 2004).

Walkability Potential: 4 points

Description: Project adds infrastructure in areas with high walkability potential

Measure: If possible, measure walkability within the project impact area. Eligible projects are at or above the 60th percentile in walkability county-wide. If walkability cannot be measured in the project area, use block groups with walkability index values in the highest 2 quintiles county-wide (See Map 2). The walkability index is based on connectivity, land use mix (destinations), retail FAR, and density.

Points: All 4 points awarded if conditions are met.

Evidence: Walkability is linked with physical activity, independently of income or self-selection (Sallis et al., 2009). Neighborhoods with higher walkability facilitate physical activity (Transportation Research Board and Institute of Medicine, 2005).

Connectivity: 5 points

Description: Project improves connectivity for active transportation modes
Measure: Eligible projects provide a new connection, improving the effective connected node ratio for active transportation modes. If possible, measure walkability within the project impact area. Additional points are available for projects in areas at or below the 40th percentile in walkability county-wide (see Map 2). If walkability cannot be measured in the project area, use block groups with walkability index values in the lowest 2 quintiles county-wide.
Points: 2 points if a new connection is provided, 5 points if in an area with poor connectivity or within a 1 mile network buffer of a school.
Evidence: Connectivity is a strong predictor of physical activity (Sallis et al. 2009; Dill, 2004).

Low-stress facilities: 1 point

Description: Project involves low-speed/low-traffic designs
Measure: Eligible projects include bike boulevards, off-street paths, traffic calming, or other projects that reduce the speed of vehicle in close proximity to cyclists & pedestrians.
Points: Awarded if conditions are met.
Evidence: Cyclists go out of their way to use these facilities, indicating that they have potential to attract new users (Dill, 2009). Low speed designs are safer for users (Pucher and Dijkstra, 2003).

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