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Clackamas Regional Center Pedestrian/Bicycle Plan



CLACKAMAS REGIONAL CENTER PEDESTRIAN/BICYCLE PLAN

Adopted September 13, 2012

Clackamas County

Department of Transportation and Development

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Oregon City, OR 97045

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The contents of this document do not necessarily reflect views or policies of the State of Oregon.

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Clackamas Regional Center

Pedestrian and Bicycle Connection Project

Project Overview

INTRODUCTION

The purpose of the Clackamas Regional Center (CRC) Area Pedestrian and Bicycle Connection project is to create safe pedestrian and bicycle connections between the Clackamas Regional Center Max Green Line station and major area employers and services. This is done by working with the community to identify and prioritize safe pedestrian and bicycle connections in the study area. The major destinations or routes were identified and the bicycle and pedestrian system gaps and deficiencies for those routes and recommendations on way-finding signage were completed. This information provides a framework for the recommended system improvements associated with pedestrian and bicycle facilities within the project area.

The study area includes the CRC area from Causey Avenue west to Fuller Road, south to below Harmony Road and east to include the area just south of Sunnybrook Boulevard, east of the freeway, past SE 97th Avenue and up to Sunnyside Road back to Causey Avenue.

SUMMARY OF ROUTES AND DESTINATIONS

Seven routes leading to seven major destinations in the CRC study area were examined for system gaps, deficiencies and obstacles. (See Clackamas Regional Center Pedestrian/Bicycle Connection Project Routes and Projects Map). All of the routes have various needs regarding street access, sidewalk/walkway and bike lane gaps and deficiencies. In some cases there are obstacles that are in the way of connecting sidewalks and/or access to bike lanes and the I-205 multi-use path.

The seven destinations include Kaiser Permanente Sunnyside Hospital, Stevens Road Commercial Area/Eagle Landing Mixed Use Development, Mixed Housing North of Clackamas Town Center, 82nd Avenue Development/Housing, Clackamas Promenade Shopping Center, Clackamas Community College Harmony Campus/OIT/Aquatic Center and Clackamas Town Center. The routes leading to these destinations and the various pedestrian and bicycle system gaps, deficiencies and obstacles between the Clackamas Town Center Transit Centers and Max Green Line are described in this report.

DESTINATIONS

There are seven primary destinations within the study area including the CTC. Since all seven routes pass through or near the Town Center it is not distinguished with a separate route but is listed as a destination.

The seven destinations, listed in the table below, have been identified as the employers, services and areas with the CRC that would benefit most from improved pedestrian and bicycle facilities. The seven routes within the CRC have been defined as from the TriMet Max Green Line/Transit Center to the destinations listed below and are shown on the Clackamas Regional Center Pedestrian/Bicycle Connection Project Routes and Projects Map.

Routes	Destinations
	Clackamas Town Center
1	Kaiser Permanente Sunnyside Hospital
2	Stevens Rd. Commercial Area / Eagle Landing Mixed Use Development
3	Mixed Housing North of Clackamas Town Center
4	82nd Avenue Development / Housing
5	Clackamas Promenade Shopping Center
6	Clackamas Community College Harmony Campus/OIT/Aquatic Center

System Gaps and Deficiencies

The system gaps and deficiencies were identified using information gathered from the Technical Advisory Committee's[1] study area field visit and the Project Advisory Committee's[2] study area field visit.

Gaps are defined as missing pieces in the system in contrast to system deficiencies. A system deficiency is where the standard is not met. For example, 8-foot wide sidewalks are the standard for 82nd Avenue within the study area (outside of the gateway intersections) whereas, the majority of sidewalks along 82nd Avenue are less than 8 feet in width and in some cases there are obstacles in the sidewalk in the form of signal and utility poles creating multiple types of deficiencies. Deficiencies can also include hazards such as a buckling or raised sidewalk.

The seven routes in order of priority as determined by the Project Advisory Committee include the following:

1. Kaiser Permanente Sunnyside Hospital (Route 1)
2. Clackamas Community College/Oregon Institute of Technology/Aquatic Center (Route 6)
3. CCC Harmony Campus Connection to Kaiser Hospital. (Route 7)
4. Mixed Housing North of Clackamas Town Center Shopping Center (Route 3)
5. 82nd Avenue Development/Housing (Route 4)
6. Clackamas Promenade Shopping Center (Route 5)
7. Eagle Landing Mixed Use Development/Stevens Road Commercial Area (Route 2)

[1] The Technical Advisory Committee for this project includes representatives from the Oregon Department of Transportation, the Clackamas County Pedestrian/Bikeway Advisory Committee, TriMet and County staff.

[2] The Project Advisory Committee includes representatives from the Town Center, Kaiser, Clackamas Community College Harmony Campus, Oregon Department of Transportation, the Clackamas County Pedestrian/Bikeway Advisory Committee, TriMet, Community Planning Organizations and County staff.

The system gaps, deficiencies and obstacles by route for each of the destinations are described in a separate document and attached. They are colored coded and match the colors illustrated on the Clackamas Regional Center Pedestrian/Bicycle Connection Project Routes and Projects Map.

Project Rating and Evaluation System

The pedestrian and bicycle improvement projects were rated against criteria in order to evaluate and prioritize the projects. Examples of the criteria utilized included connectivity, safety, route completion cost and proximity to pedestrian generator. A detailed description of the rating system is attached.

Sign Plan

An important element to improve the walking and cycling experience in the Town Center Area is wayfinding signage for both pedestrians and bicyclists, especially between the TriMet Max Green Line and area major employers and services. The goal of the Pedestrian and Bicycle Sign Plan (Sign Plan) for the CRC Area Pedestrian / Bicycle Connection Project is to provide a comprehensive wayfinding system for both walkers and bikers within the Study Area.

This Sign Plan includes information on sign placement; sign content (general destinations) and sign type. The plan recommends installation of 21 new pedestrian signs (five map-based signs and 15 pole signs) and 16 bicycle wayfinding signs along bikeways within the Study Area. Detailed maps showing recommended sign locations are attached to the Sign Plan as Map 1: Pedestrian Sign Locations and Map 2: Bicycle Sign Locations.

Priority Pedestrian/Bicycle Projects							
Projects		Evaluation Criteria					
		Connectivity	Safety	Route Completion or Pedestrian Volume	Cost: Low, Med., High	Proximity to Pedestrian Generators	Total Score
ROUTE 1: KAISER PERMANENTE SUNNYSIDE HOSPITAL							
1C	Construct walkway from Max Green Line platform directly south through existing fence along north and eastern edges of the Clackamas Town Center southeast parking lot to the I-205 multi-use path via stairway and/or to Sunnyside Road. (Needs Report 1.a.)	3	3	2	3	3	14
4L	Travelling south on the I-205 multi-use path, install a pedestrian signal to cross the I-205 northbound/Sunnyside intersection across the right turn lane. (Needs Report 1.k.)	0	4	0	4	5	13
3A/3B	Widen I-205 overpass on Sunnyside Road for bicyclists/pedestrians. (Needs Report 1.b.) OR, construct separate bicycle/pedestrian bridge over I-205. (Needs Report 1.b.)	3	3	3	1	3	13
1D	Construct sidewalk extension/bulb to accommodate pedestrians and cyclists around signal pole at the Sunnyside Road/I-205 northbound interchange. (Needs Report 1.j.)	2.5	3	3	3	3	14.5
2A	Install “green” transition bike lane from where bike lane ends on Sunnyside Road travelling west to the I-205 overpass. (Needs Report 1.c.)	3	3	3	3	2.5	14.5
2B	Widen Sunnyside Road to the north for a bike lane on Sunnyside Road from the I-205 northbound/Sunnyside intersection to approximately 200 feet to the east. (Needs Report 1.c.)	3	3	3	2	2.5	13.5
ROUTE TOTAL:							82.5
AVERAGE ROUTE SCORE:							13.75

Priority Pedestrian/Bicycle Projects							
Projects		Evaluation Criteria					
		Connectivity	Safety	Route Completion or Pedestrian Volume	Cost: Low, Med., High	Proximity to Pedestrian Generators	Total Score
ROUTE 2: EAGLE LANDING MIXED-USE DEVELOPMENT/STEVENS ROAD COMMERCIAL AREA							
1L	Construct contiguous walkway from Max Green Line station north to strip mall/Clackamas Corner Library. (Needs Report 3.d.)	**2.5**	**2**	**1.5**	**3**	**2**	**11**
1K	Construct a pedestrian stairway with bike grooves for cyclists from the intersection of Monterey Avenue/90th Avenue to the Clackamas Town Center parking lot. (Needs Report 3.c.)	**3**	**3**	**3**	**3**	**2**	**14**
6D	Install bicycle signs on Monterey Avenue directing cyclists to I-205 multi-use path and/or median refuge/crossing treatment. (Needs Report 3.e.)	**0**	**0**	**2**	**5**	**3**	**10**
7D	Install parabolic mirror and/or signage to resolve limited sight distance issue at the intersection of the I-205 multi-use path and the path extension at Monterey Avenue. (Needs Report 3.m.)	**0**	**0**	**3**	**3**	**3**	**9**
1I	Analyze feasibility of constructing multi-use path from I-205 northbound/Sunnyside Road intersection north to Bob Schumacher Road. (Needs Report 2.c.)	**2**	**3**	**2**	**1**	**1**	**9**
1E	Construct walkway from Max Green Line transit station north to Monterey Avenue/90th Avenue through Clackamas Town Center parking lot. (Needs Report 2.a.)	**2**	**2**	**2**	**3**	**2.5**	**11.5**
ROUTE TOTAL:							**64.5**
AVERAGE ROUTE SCORE:							**10.75**

Priority Pedestrian/Bicycle Projects							
Projects		**Evaluation Criteria**					
		Connectivity	**Safety**	**Route Completion or Pedestrian Volume**	**Cost: Low, Med., High**	**Proximity to Pedestrian Generators**	Total Score
ROUTE 3: MIXED HOUSING NORTH OF CLACKAMAS TOWN CENTER SHOPPING CENTER							
4D	Install crosswalk(s) where needed at Town Center access drive off of Monterey Avenue leading to the Mall Transit Center. (Needs Report 3.n.)	**0**	**4**	**0**	**5**	**4**	**13**
1J	Remove trees and construct separated sidewalk with landscape strip or curb tight sidewalk along part of 85th Avenue between Causey Avenue and Monterey Avenue. (Needs Report 3.a.)	**3**	**2.5**	**3**	**2**	**2.5**	**13**
6F	Remove "End Bike Route" sign at the end of the Causey Avenue cul-de-sac at the I-205 multi-use path. (Needs Report 3.s.)	**0**	**0**	**2**	**5**	**3**	**10**
2D	Install bike boulevard on Causey Avenue between 82nd Avenue east to the I-205 multi-use path. The bike boulevard should include consideration of the following: left turn lane removal, curb extensions, raised crosswalks for traffic calming and bike sharrows. (Needs Report 3.b.)	**3**	**3**	**3**	**2**	**2.5**	**13.5**
1M	Repair heaving sidewalks along Causey Avenue between 82nd Avenue and 90th Avenue. (Needs Report 3.g.)	**3**	**1.5**	**1.5**	**2**	**2.5**	**10.5**
7C	At the intersection on 82nd Avenue/Causey Avenue (SE and SW corners), install sidewalk ADA ramps. (Needs Report 3.h.)	**0**	**0**	**3**	**4**	**4**	**11**
7E	82nd Avenue/Causey Transit Stop: install pedestrian amenities, e.g. covered shelter. (Needs Report 3.v.)	**0**	**0**	**4**	**3**	**3**	**10**
1R	Replace/repair sidewalks on Causey Avenue west of 82nd Avenue to standard requirement. (Needs Report 4.o.)	**2.5**	**1.5**	**1.5**	**3**	**2.5**	**11**
2F	Install bike lanes on Causey Avenue between Fuller Road and 82nd Avenue. (Needs Report 3.u.)	**3**	**2**	**3**	**3**	**2.5**	**13.5**
ROUTE TOTAL:							**105.5**
AVERAGE ROUTE SCORE:							**11.7**

Priority Pedestrian/Bicycle Projects							
Projects		Evaluation Criteria					
		Connectivity	Safety	Route Completion or Pedestrian Volume	Cost: Low, Med., High	Proximity to Pedestrian Generators	Total Score
ROUTE 4: 82ND AVENUE DEVELOPMENT/HOUSING							
4F	Install pedestrian safety devices (e.g. pedestrian signal, signage) for the crosswalk at the Max Green Line Park & Ride to JC Penney. (Needs Report 3.p.)	**0**	**5**	**0**	**5**	**5**	**15**
4G	Install pedestrian safety devices (e.g. pedestrian signal, signage) for the crosswalks leading to the Transit Center on the north side of the mall. (Needs Report 3.r.)	**0**	**4**	**0**	**5**	**4.5**	**13.5**
7B	Upgrade sidewalks and crosswalks on the north side of the mall to ADA standards. (Needs Report 3.f.)	**0**	**0**	**2**	**3**	**2**	**7**
1N	Construct a pedestrian connection through the north Clackamas Town Center parking area west to 82nd Avenue. Construct sidewalk between 82nd Avenue access driveway and the Transit Center north of the cinema. (Needs Report 4.a.)	**3**	**3**	**2.5**	**2**	**3**	**13.5**
2H	Install bike lane on Town Center driveway (northernmost access) from 82nd Avenue to the CTC North Mall Transit Center. (Needs Report 4.g.)	**1**	**1.5**	**1**	**2**	**2.5**	**8**
1P	Construct east/west connector street with sidewalk/bike boulevard treatment between 82nd Avenue and Fuller Road. (Needs Report 4.c.1.)	**3**	**2**	**3**	**1**	**2**	**11**
4H	Increase walk time at crosswalks along 82nd Avenue within project area. (Needs Report 4.k.)	**0**	**3**	**0**	**5**	**4.5**	**12.5**
1O	Construct sidewalk/landscape strip along both sides of 82nd Avenue from Sunnyside Road north to Causey Avenue as per boulevard standard. (Needs Report 4.b.)	**3**	**3**	**3**	**1**	**3**	**13**
7G	Install transit amenities along 82nd Avenue within project area. (Needs Report 4.i.)	**0**	**0**	**4**	**3**	**4**	**11**
2G	Install bike lanes on 82nd Avenue within the project area, if adequate right-of-way exists. If not, acquire right-of-way for bike lanes along 82nd Avenue. (Needs Report 4.d.)	**3**	**3**	**3**	**1**	**3**	**13**
7H	Analyze feasibility of decreasing number of driveways and implementing 82nd Avenue Access Management Targets (Map X-CRC-8). (Needs Report 4.l.)	**0**	**0**	**4**	**3**	**4**	**11**
ROUTE TOTAL:							**128.5**
AVERAGE ROUTE SCORE:							**11.6**

Priority Pedestrian/Bicycle Projects							
Projects		Evaluation Criteria					
		Connectivity	Safety	Route Completion or Pedestrian Volume	Cost: Low, Med., High	Proximity to Pedestrian Generators	Total Score
ROUTE 5: CLACKAMAS PROMENADE SHOPPING CENTER							
1T	Construct pedestrian connection along access drive within the Promenade from the crosswalk on Sunnyside Road at about the 9000 block (Petco). (Needs Report 5.b.)	**2.5**	**2.5**	**2**	**3**	**2.5**	**12.5**
1S	Analyze feasibility of strategically locating and constructing walkways within Clackamas Promenade parking lot. (Needs Report 5.a.)	**3**	**2**	**2**	**1**	**2.5**	**10.5**
1U	Construct walkway(s) from the second driveway heading south through the Promenade Shopping Center parking lot. (Needs Report 5.c.)	**3**	**2**	**2**	**1**	**2.5**	**10.5**
1V	Construct an east/west connector walkway west of 93rd Avenue along the north side of the Target store. (Needs Report 5.d.)	**2.5**	**2.5**	**2.5**	**1**	**2.5**	**11**
2I	Install bike lanes along 93rd Avenue. (Needs Report 5.f.)	**3**	**3**	**3**	**3**	**3**	**15**
1X	Construct sidewalks along the west side of 84th Avenue. (Sidewalks exist along east side of 84th Avenue.) (Needs Report 5.h.)	**1.5**	**1.5**	**2.5**	**1**	**1.5**	**8**
2J	Install bike lanes along 84th Avenue. (Needs Report 5.i.)	**2**	**1.5**	**1.5**	**3**	**1.5**	**9.5**
ROUTE TOTAL:							**77**
AVERAGE ROUTE SCORE:							**11**

Priority Pedestrian/Bicycle Projects							
Projects		Evaluation Criteria					
		Connectivity	Safety	Route Completion or Pedestrian Volume	Cost: Low, Med., High	Proximity to Pedestrian Generators	Total Score
ROUTE 6: CLACKAMAS COMMUNITY COLLEGE (CCC)/OREGON INSTITUTE OF TECHNOLOGY/AQUATIC CENTER							
1B	Construct walkway along existing north/south street in the Clackamas Town Center southeast parking lot to Sunnyside Road. (Needs Report 1.a.)	3	3	2	3	3	14
7F	Prepare traffic study to analyze feasibility of reducing travel lanes or other modifications to add pedestrian/bike improvements including landscaping on Sunnyside Road between 82nd Avenue and I-205. (Needs Report 4.f.)	0	0	5	5	5	15
1W	Repair heaving sidewalks (as per the Sunnyside Road design in Figure X-CRC-3) along south side of Sunnyside Road adjacent to Promenade and on south side of Sunnyside Road between 82nd and I-205. (Needs Report 5.g.)	3	3	3	2	3	14
4J	Analyze need for additional crosswalks across Sunnyside Road between 82nd Avenue and the I-205 overpass. If needed, provide additional crosswalk(s)/pedestrian refuge areas. (Needs Report 6.k.)	0	4	0	4	3.5	11.5
7K	Add and paint bike stencils along Harmony Road. (Needs Report 6.e.)	0	0	4	5	4	13
5C	Install lighting along Harmony Road west of Sunnyside Road. (Needs Report 6.f.)	0	5	0	2	3.5	10.5
4K	Analyze need for additional crosswalks across Harmony Road west of 82nd Avenue at the CCC Harmony Campus area. If needed, provide additional crosswalk(s). (Needs Report 6.l.)	0	4	0	5	4	13
2K	Provide safer left turn movement for cyclists from Harmony Road to the CCC Harmony Campus. (Needs Report 6.j.)	2	3	2	3	3	13
4I	Paint crosswalk at intersection of Harmony Road and Fuller Road. (Needs Report 6.g.)	0	3	0	5	3.5	11.5
7J	Analyze ingress/egress to CCC Harmony Campus west of 82nd Avenue. Consider requiring vehicles to use entrance further west at signalized intersection if traffic issue exists or require modifications to existing accessways to increase safety for pedestrians and bicyclists. (Needs Report 6.d.)	0	0	5	5	5	15
1AA	Construct/replace sidewalks along Harmony Road, west of 82nd to Fuller Road as per the Harmony Road Regional Boulevard design in Figure X-CRC-4. (Needs Report 6.i.)	3	2	2	2	3	12
1BB	Extend Sunnyside Road multi-use path to the intersection of 82nd Avenue/Harmony Road.	3	3	3	3	3	15
ROUTE TOTAL:							157.5
AVERAGE ROUTE SCORE:							13.13

Priority Pedestrian/Bicycle Projects								
Projects		Evaluation Criteria						
		Connectivity	Safety	Route Completion or Pedestrian Volume	Cost: Low, Med., High	Proximity to Pedestrian Generators	Total Score	
ROUTE 7: CLACKAMAS COMMUNITY COLLEGE HARMONY CAMPUS TO KAISER PERMANENTE HOSPITAL								
1Z	Construct bikeway from existing aquatic center multi-use path east to 82nd Avenue/Sunnybrook Boulevard.	3	3	3	1	3	13	
ROUTE TOTAL:							13	
AVERAGE ROUTE SCORE:							13	

DESCRIPTION OF PROJECT RATING AND EVALUATION SYSTEM

To evaluate the bicycle and pedestrian projects recommended and developed by the Project Advisory Committee evaluation criteria were developed. Five evaluation criteria as shown below were established for the Sidewalks/Walkways/Paths/Bicycle Lanes/Sharrows/Parking/I-205 Overpass projects. Four evaluation criteria were established for the Crosswalks/Lighting projects. And three evaluation criteria were established for the Signage/Other projects. The rating system was designed so that the maximum number of points for each project did not exceed 15 points to ensure parity among the project categories. A summary of each of the categories with the corresponding rating system, evaluation criteria and descriptions is offered below.

SIDEWALKS/WALKWAYS/PATHS/BICYCLE LANES/SHARROWS/PARKING/I-205 OVERPASS

Rating System

3	Alternative meets evaluation Criterion	2.5	Alternative mostly meets evaluation criterion	2	Alternative somewhat meets evaluation criterion	1.5	Alternative barely meets evaluation criterion	1	Alternative does not meet evaluation criterion

Evaluation Criteria (5)

Connectivity	Safety	Route completion	Cost; Low, Med, High	Proximity to Pedestrian Generators

For this group of projects five criteria were scored on a rating system from 1 to 3. The maximum score for each project does not exceed 15 points to ensure more parity among the various project categories, therefore projects were assigned 3, 2.5, 2, 1.5 or 1 point(s).

CROSSWALKS/LIGHTING

Rating System

5	Alternative meets evaluation Criterion	4	Alternative mostly meets evaluation criterion	3	Alternative somewhat meets evaluation criterion	2	Alternative barely meets evaluation criterion	1	Alternative does not meet evaluation criterion

Evaluation Criteria (4)

Safety	Pedestrian Volume	Cost; Low, Med, High	Proximity to Pedestrian Generators

For this group of projects four criteria were scored on a rating system from 1-5 points. The Pedestrian Volume and Proximity to Pedestrian Generators criteria were averaged to ensure a score of no greater than 15 points.

SIGNAGE/OTHER

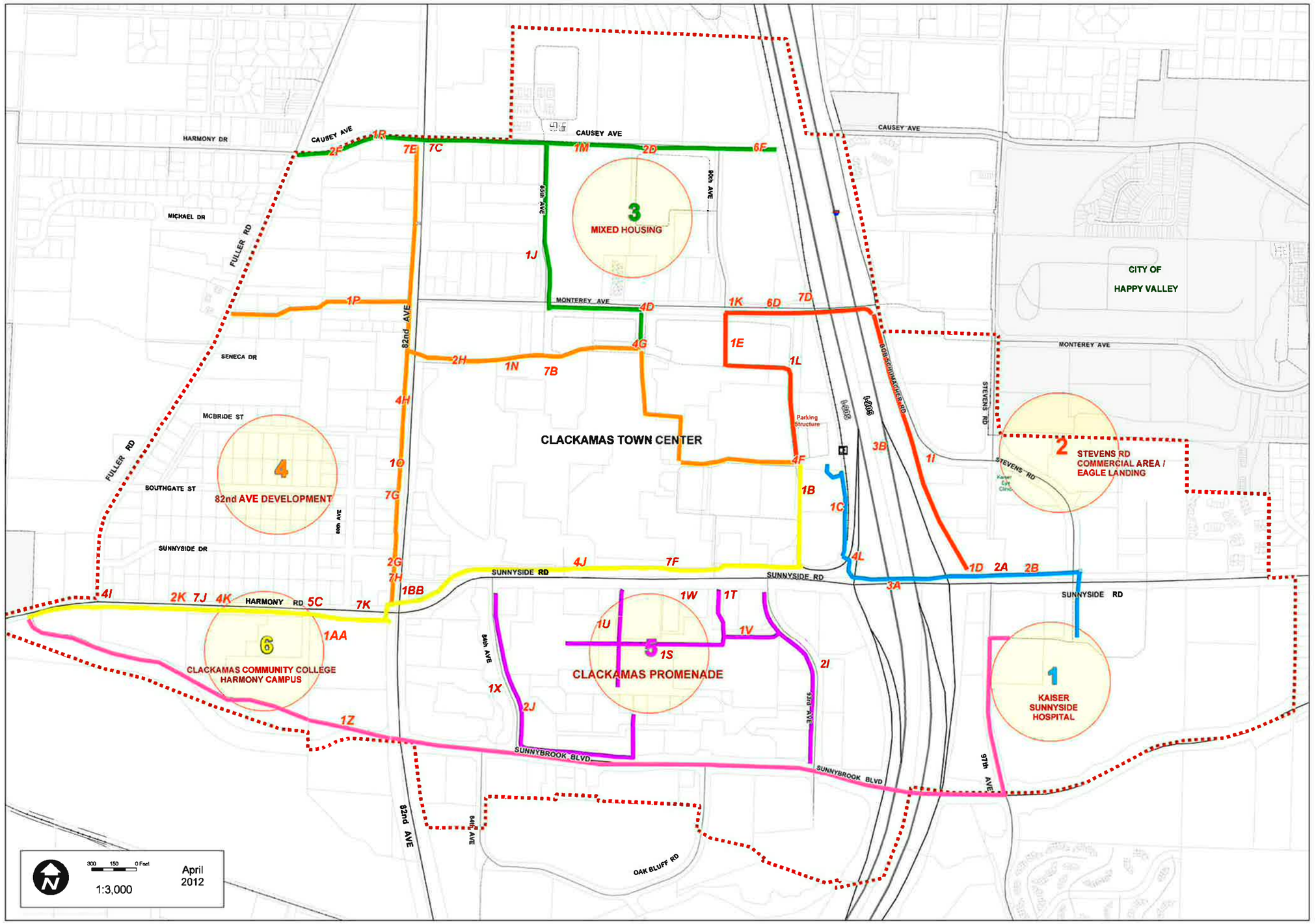
Rating System

5	Alternative meets evaluation Criterion	4	Alternative mostly meets evaluation criterion	3	Alternative somewhat meets evaluation criterion	2	Alternative barely meets evaluation criterion	1	Alternative does not meet evaluation criterion

Evaluation Criteria (3)

Pedestrian Volume	Cost; Low, Med, High	Proximity to Pedestrian Generators

For this group of projects three criteria were scored on a rating system from 1-5 points. The total score will be no greater than 15 points.



Clackamas Regional Center
Pedestrian / Bicycle Connection Project
ROUTES AND PROJECTS

PROJECT STUDY AREA

DESTINATION

Recommended Projects → *1A, 2B, etc*

Routes To Destinations

- 1 Kaiser Hospital
- 2 Eagle Landing Mixed-Use Development
- 3 Mixed Housing North of Town Center
- 4 SE 82 Ave Development
- 5 Clackamas Promenade
- 6 Clackamas Community College/OIT/Aquatic Center
- 7 CCC Harmony Campus Connection to Kaiser Hospital

PEDESTRIAN & BICYCLE SIGN PLAN

1. Introduction

The purpose of Clackamas Regional Center (CRC) Area Pedestrian / Bicycle Connection Project is to create a plan for safe pedestrian and bicycle connections within the Study Area. An important element to improve the walking and cycling experience in the Town Center Area is wayfinding signage for both pedestrians and bicyclists, especially between the TriMet Max Green Line and area major employers and services. The goal of the Pedestrian and Bicycle Sign Plan (Sign Plan) for the CRC Area Pedestrian / Bicycle Connection Project is to provide a comprehensive wayfinding system for both walkers and bikers within the Study Area. The Study Area includes the CRC area from Causey Avenue west to Fuller Road, south to below Harmony Road and east to include the area just south of Sunnybrook Boulevard, east of the freeway, past SE 97th Avenue and up to Sunnyside Road back to Causey Avenue.

This Sign Plan includes information on sign placement; sign content (general destinations) and sign type. The plan recommends installation of 21 new pedestrian signs (five map-based signs and 15 pole signs) and 16 bicycle wayfinding signs along bikeways within the Study Area. Detailed maps showing recommended sign locations are attached as Map 1: Pedestrian Sign Locations and Map 2: Bicycle Sign Locations.

2. Clackamas County Bike Wayfinding Sign Program

Clackamas County is currently developing a network of wayfinding signage to direct bicyclists to various destinations. The bicycle wayfinding signs include approximate ride time and distance to destinations in the urban portion of Clackamas County and selected areas in rural County. A typical bicycle wayfinding sign is shown in Figure 1 on page 3. Currently, wayfinding signs have been installed in the urban portion of Clackamas County on River Road, Webster Road and Oatfield Road. Bicycle sign placement within the Town Center Area should tie into the existing network of wayfinding signage to insure a cohesive network of bicycle signs.

3. Destinations

The Sign Plan will direct travelers to various destinations in the CRC Pedestrian / Bicycle Connection Project area. Some of the destinations to be signed include the Town Center, public transit, parks, Kaiser Permanente Hospital, Clackamas Community College Harmony Campus, Aquatic Center and other major destinations. A complete list of destinations is shown in Table 1. Destinations located outside of the Study Area (Mt. Talbert, for example) may be included on the wayfinding signs. With the assistance of the Project Management Team, staff developed the destination list shown on Table 1 below.

TABLE 1: DESTINATIONS		
#	NAME	SIGNED AS
1	Sunnyside Kaiser Permanente Hospital	Hospital
2	Clackamas Community College Harmony Campus	CCC Harmony Campus
3	Mt. Talbert Nature Preserve	Mt. Talbert
4	MAX Green Line	Max Green Line
5	TriMet Bus Stop on north side of Town Center	Transit Station
6	Clackamas Promenade Shopping Center	Clackamas Promenade
7	Eagle Landing Neighborhood	Eagle Landing
8	I-205 Multi-use Path	I-205 Path
9	Clackamas Town Center Shopping Mall	Clackamas Town Center (or "Shopping Center")
10	82nd Avenue Commercial Area	82nd Ave.
11	Clackamas Aquatic Center	Aquatic Center
12	Sunnybrook Boulevard	Sunnybrook Blvd.

4. Bike Sign Design

The CRC Sign Plan recommends wayfinding signage for both pedestrians and bicyclists. Different types of signs are proposed for the different travel modes. The type of bicycle signage proposed for the CRC Area Pedestrian / Bicycle Connection Project is the design shown in Figure 1. Installation of this sign will insure consistency with the existing County Sign Plan and adjacent jurisdictions including the Cities of Milwaukie and Portland. The ODOT approved sign is green and measures 24" x 30". The bicycle wayfinding signs are typically placed in the public right-of-way.

4.1: Bike Design Protocol:

- Each sign can hold one to three destinations but a given sign may have fewer destinations.
- Destinations should be named so as to be consistent with adjacent jurisdictions (e.g. the Milwaukie plan uses Dntwn. Milwaukie; Max Green Line, this project should sign similarly.)
- The straight ahead destination shall be listed on top, the left destination in the middle and the right destination on the bottom.
- For a destination with a straight arrow, the arrow shall be placed to the left of the destination; for a destination with a left arrow, the arrow shall be placed to the left of the destination and the right arrow to the right of a destination.



Figure 1: Bicycle Wayfinding Sign

5. Pedestrian Sign Design

Pedestrian signage should be located primarily in the Town Center and Promenade shopping center complexes and the multi-use paths in the area. Two types of pedestrian signs are recommended: map-based signs and pole signs. A description and examples of the two types of pedestrian signs are shown on pages 5-7 of this report. The sign examples shown on pages 5-7 are for illustrative purposes only; final sign design will be considered during the Sign Plan implementation stage. The two types of signs should work together to create a comprehensive wayfinding system.

The Town Center is planning to install a monument welcoming sign at the southeast corner of the Town Center property near the I-205 exit ramp at Sunnyside Road. Figure 2 shows a version of the proposed monument sign. A pedestrian sign design using a similar color scheme and/or graphics to the signs planned for the Town Center should be considered during the Sign Plan implementation stage. Wayfinding signage at the Town Center proposed under this Sign Plan should be consistent in design with the existing signage and new sign placement shall coordinate with existing directional signage on the Town Center property. In addition, new signs (content, design, location, etc.) proposed in conjunction with this Sign Plan will be coordinated with the Clackamas Town Center and Clackamas Promenade management. Color, content, placement and theme synchronization would create a consistent and recognizable network of signs for the Town Center area.

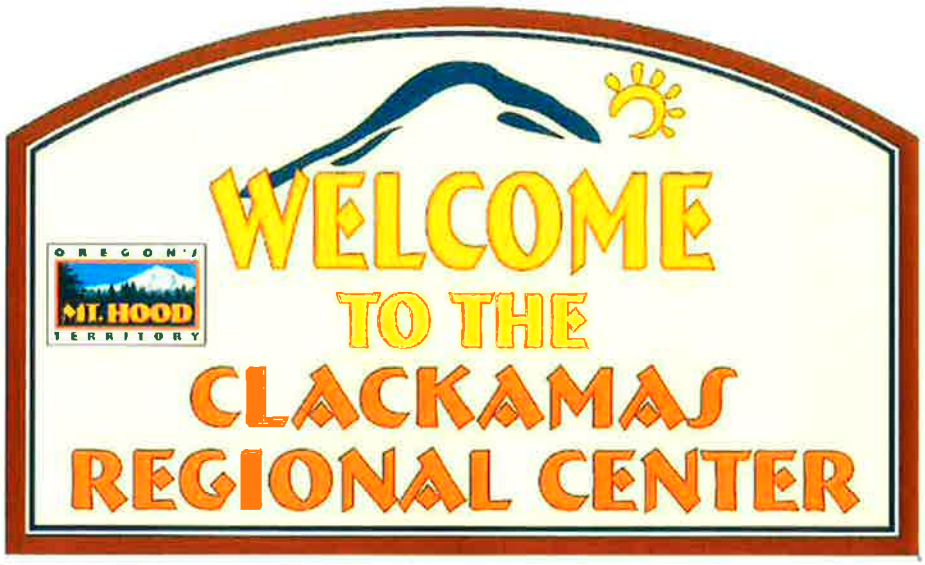


Figure 2: Monument Sign

A) Map-Based Signs

As shown in Figures 3 and 4, the map-based signs would include a simple map of the Study Area as well as directional arrows to destinations. These types of signs would help visitors navigate the Study Area. Staff suggests a limited number (five) of the map-based signs. The final design, specific placement and dimensions of the map-based signs will be considered during the Sign Plan implementation stage.

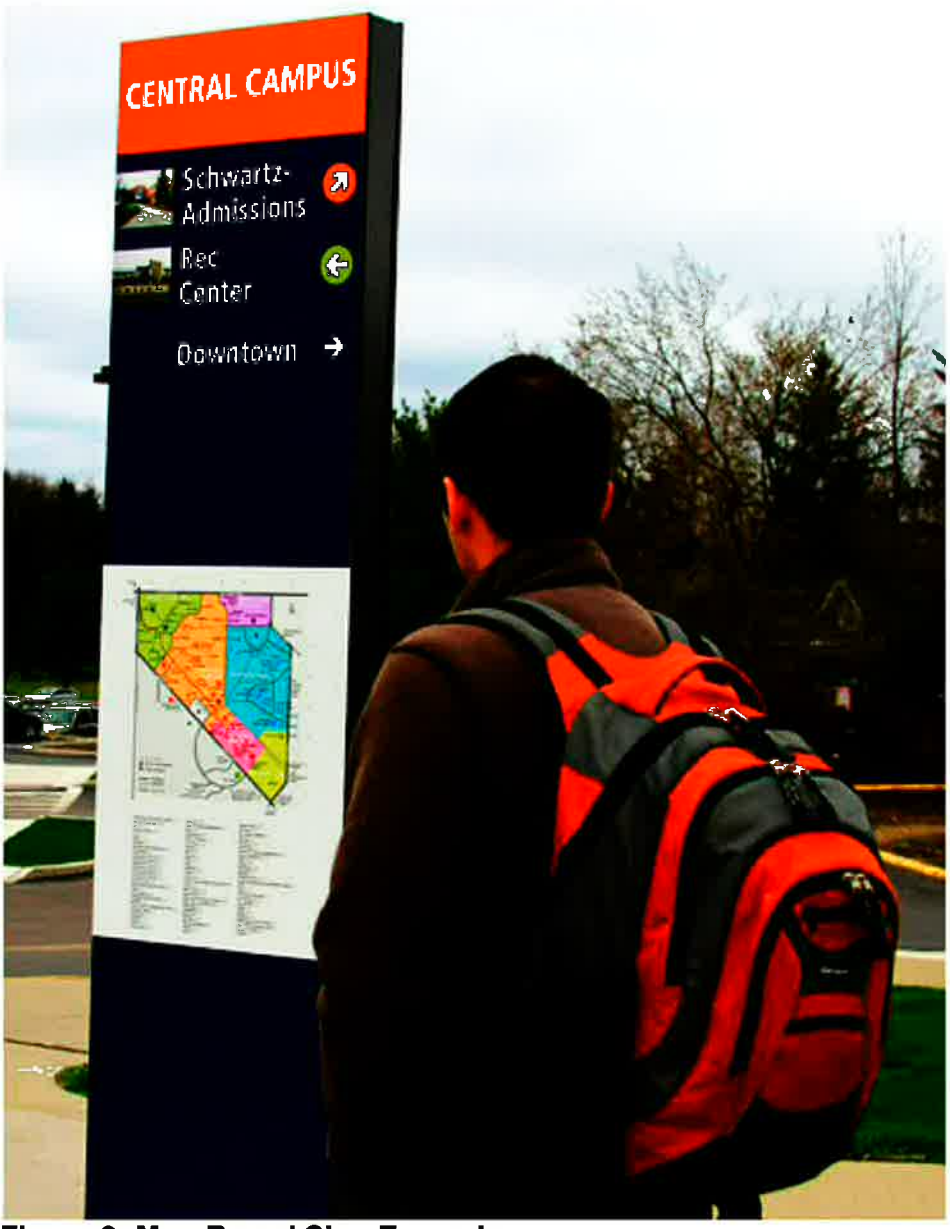


Figure 3: Map-Based Sign Example.



Figure 4: Map-Based Sign Example.

B) Pole Signs

As shown in Figure 5, the pole signs include destination and directional arrows. Distance could also be placed on these signs. Pole signs can be "collocated" with other road signs located in the public right-of-way.



Figure 5: Pole Sign Example

6. Pedestrian and Bicycle Sign Locations

The bicycle wayfinding signs should be located along existing bikeway facilities. Pedestrian wayfinding signs should be located in areas with significant pedestrian traffic. In order to limit clutter, streets with extremely low volume pedestrian or bicycle traffic should not be signed. For example, the local east-west streets between Fuller Road and 82nd Ave. (Southgate Street; Sunnyside Drive, etc.) and north-south streets between Sunnybrook and Sunnyside (84th Avenue and 93rd Avenue) should not be signed for pedestrians. With the assistance of the Project Management Team, staff developed a list of locations appropriate for wayfinding signage. Sign locations include streets such as Monterey Avenue as well as general areas such as the Town Center and Clackamas Promenade. General locations suitable for sign placement are shown in Table 2 which will be further refined when the Sign Plan is implemented. Installation of the signs indicated on Map 1: Proposed Pedestrian Sign Locations and on Map 2: Proposed Bike Sign Locations shall be in coordination with the underlying property owners (Clackamas Town Center management; Clackamas Promenade management; Clackamas Community College/OIT and the Clackamas County Traffic Engineering Division, as appropriate) and may change during implementation.

6.1 Bike Wayfinding Sign Locations

Bike wayfinding signs should be located on roads within the CRC Pedestrian / Bicycle Connection Project area with existing bike facilities, i.e. streets with bike lanes and multi-use paths. Placement should be coordinated with the broader County Bike Sign Plan in order to achieve adequate sign coverage.

6.2 Pedestrian Wayfinding Sign Locations

Pedestrian signs should be located in high traffic pedestrian areas. For example, at the end of the Max Green Line and the Tri-Met Transit Station located on the north side of the Town Center shopping mall. Areas with a low volume of pedestrian traffic such as Sunnybrook Boulevard should not be signed for pedestrians.

TABLE 2: PEDESTRIAN AND BICYCLE SIGN LOCATIONS

LOCATION	PEDS	BIKES
Monterey Avenue	Yes	Yes
Sunnyside Road Multi-Use Path	Yes	Yes
Harmony Road	No	Yes
I-205 Multi-Use Path	Yes	Yes
Town Center	Yes	No
Promenade	Yes	No
Sunnybrook Blvd.	No	Yes
Stevens Road/Schumacher	No	Yes
"Costco Path"	Yes	Yes
Clackamas Community College Harmony Campus	Yes	No

7. Sign Placement: Bike Wayfinding Signs

Bicycle wayfinding signs should be installed along streets within the Study Area that have bike lanes. Sign placement (the specific site of the sign) typically occurs at the intersection of all established bikeways and anywhere else a cyclist faces a decision point. The existing bikeways in the Study Area include Fuller Road, Sunnybrook Boulevard, Monterey Avenue, Causey Avenue, 84th Avenue and Harmony Road.

This Sign Plan recommends installation of 16 bicycle wayfinding signs along bikeways within the Study Area. The 16 signs are listed in Table 3, which provides sign placement and content (e.g. destinations and directional arrows). A map of the Study Area showing proposed bicycle sign placement is attached as Map 2.

7.1: Sign Placement Protocol

- Placement along streets with bike lanes only.
- Signs should be placed at major intersections, high bicycle traffic areas and at important wayfinding decision points / directional changes in route.
- Distance from intersection: signs shall be placed at a distance to allow adequate notification of left or right turns.
- Frequency: sign spacing and overall quantity is critical. Signs should be frequent enough so cyclists can find destinations but not too numerous that they clutter the urban environment. Periodic signs at regular, predictable intervals are recommended. A Primary Destination that is signed at a distance of 5-6 miles might have 2-3 wayfinding signs along a given route. (Note: urban areas typically need more signs per mile than rural areas because of more route intersections and more decision points).
- Destinations will be signed from multiple directions.

TABLE 3: BICYCLE SIGN PLACEMENT		
#	PLACEMENT	CONTENT
1	East end of Causey Avenue @ the cul-de-sac, near the I-205 bike path.	Left Arrow: I-205 Path North Bound Right Arrow: I-205 Path South Bound
2	85th Avenue southbound @ SE Monterey Avenue	Left Arrow: Mt. Scott Left Arrow: Eagle Landing Straight Arrow: Clackamas Town Center
3	Causey Avenue eastbound @ 85th Avenue	Straight Arrow: I-205 Path Right Arrow: Clackamas Town Center Right Arrow: Mt. Scott
4	Causey Avenue west bound @ 82nd Avenue	Straight Arrow: Downtown Milwaukie Straight Arrow: Aquatic Center Straight Arrow: OIT
5	Causey Avenue eastbound @ 82nd Avenue	Straight Arrow: I-205 Path Straight Arrow: Max Green Line Straight Arrow: Mt. Scott
6	Fuller Road northbound @ Causey Avenue	Left Arrow: Springwater Trail Left Arrow: Downtown Milwaukie Right Arrow: I-205 Path
7	Causey Avenue west bound @ Fuller Road.	Straight Arrow: Downtown Milwaukie Left Arrow: CCC Harmony Campus/Aquatic Center/OIT
8	Fuller Road southbound @ Causey Avenue	Straight Arrow: CCC Harmony Campus/Aquatic Center/OIT Right Arrow: Downtown Milwaukie Left Arrow: I-205 Path
9	Harmony Drive eastbound @ Fuller Road	Straight Arrow: I-205 Path Straight Arrow: Clackamas Town Center Right Arrow: CCC Harmony Campus/Aquatic
10	Fuller Road southbound @ Harmony Road	Straight Arrow: CCC Harmony Campus/Aquatic Center Left Arrow: Clackamas Town Center
11	Harmony Road westbound @ Fuller Road	Straight Arrow: N. Clackamas Park Right Arrow: Springwater Trail
12	Harmony Road eastbound @ 82nd Avenue	Right Arrow: I-205 Path/Max Green Line Right Arrow: Mt. Talbert
13	82nd Ave. southbound @ Sunnybrook Blvd.	Left Arrow: Max Green Line Left Arrow: I-205 Path Left Arrow: Mt. Talbert Park
14	Sunnybrook Boulevard eastbound @ the I-205 bike path.	Straight Arrow: Mt. Talbert Park Left Arrow: I-205 Path North Bound Right Arrow: I-205 Path South Bound
15	SE Monterey Avenue eastbound @ SE Bob Schumacher Boulevard.	Left Arrow: Mt. Scott Right Arrow: Eagle Landing Right Arrow: Mt. Talbert Park
16	SE Monterey Avenue eastbound @ 9100 block.	Left Arrow: I-205 Path Straight Arrow: Mt. Scott / Eagle Landing Straight Arrow: Mt. Talbert Park

8. Sign Placement: Pedestrian Wayfinding Signs

Pedestrian wayfinding signs should be installed in areas with high amounts of pedestrian traffic. For example, at the end of the Max Green Line and the Tri-met Transit station at the north side of the Town Center. Pedestrian wayfinding sign placements are described in Table 4 which can be further refined when the Sign Plan is implemented.

8.1: Sign Placement Protocol

- Signs should be placed in high pedestrian traffic areas.
- A combination of map-based wayfinding signage and pole-based signs is recommended.
- Signs should be placed along the "walking routes" identified in Table 2.
- The map-based signs should be placed at key "origin/destination points" such as the Max Green Line and the transit station on the north side of the Town Center.
- To enhance the sense of place and provide navigational assistance, pole signs should be placed at points between the map-based signs.

TABLE 4: PEDESTRIAN SIGN PLACEMENT			
#	PLACEMENT	TYPE	CONTENT
1	SE corner of Max Green Line Park N Ride	Map Sign	Map of CRC area with destinations labeled.
2	SE corner of Town Center property at the intersection of the I-205 & Sunnybrook multi-use paths.	Pole Sign	East Bound: Mt. Talbert, Hospital, I-205 path West Bound: CCC Harmony Campus, Aquatic Center, OIT
3	Northbound I-205 path and Sunnyside Road	Pole Sign	North bound: Max Green Line East bound: Hospital; Mt. Talbert West bound: OIT, Aquatic Center
4	"Costco Path" and I-205 path intersection.	Pole Sign	Oregon City, Portland
5	Walkway in central portion of Promenade	Map Sign	Map of CRC area with destinations labeled.
6	NE Corner of 82nd Avenue and Sunnyside Road	Pole Sign	CCC Harmony Campus, Aquatic Center, OIT
7	Beginning of Sunnyside Multi-use path – west end.	Pole Sign	East Bound: Mt. Talbert, Hospital, I-205 path West Bound: CCC Harmony Campus, Aquatic Center, OIT
8	SE corner of 82nd Ave. and Monterey Ave.	Pole Sign	CCC Harmony Campus, Aquatic Center, OIT
9	1st access driveway to Town Center Mall east of 82nd Ave.	Pole Sign	East Bound: I-205 path West Bound: CCC Harmony Campus, Aquatic Center, OIT
10	2nd access driveway to Town Center Mall east of 82nd Ave.	Pole Sign	East Bound: I-205 path West Bound: CCC Harmony Campus, Aquatic Center, OIT
11	Mall Transit Stop (north side of mall).	Map Sign	Map of CRC area with destinations labeled.
12	Walkway on the north side of the Town Center Mall.	Pole Sign	Max Green Line
13	SE Town Center Mall Plaza north of REI	Map Sign	Map of CRC area with destinations labeled.
14	Northeast corner of Town Center Mall.	Pole Sign	Max Green Line
15	Intersection of I-205 path and pathway leading to Max Green Line platform.	Pole Sign	Max Green Line

16	Intersection of Causey Avenue and the I-205 path.	Pole Sign	North Bound: Portland South Bound: Gladstone
17	Intersection of Causey Avenue and 85th Avenue	Pole Sign	South Bound: Clackamas Town Center West Bound: CCC Harmony Campus, Aquatic Center, OIT
18	Intersection of Causey Avenue and 82nd Avenue	Pole Sign	South Bound: CCC Harmony Campus, Aquatic Center, OIT.
19	CCC Harmony Campus/Aquatic Center	Map Sign	Map of CRC Area with destinations labeled.
20	Intersection of Sunnybrook Boulevard and Oak Bluff Road	Pole Sign	Clackamas Town Center; Clackamas Promenade; CCC Harmony Campus, Aquatic Center, OIT;
21	Max Green Line Platform	Pole Sign	Directional signage to the I-205 Multi-use path and bike parking.

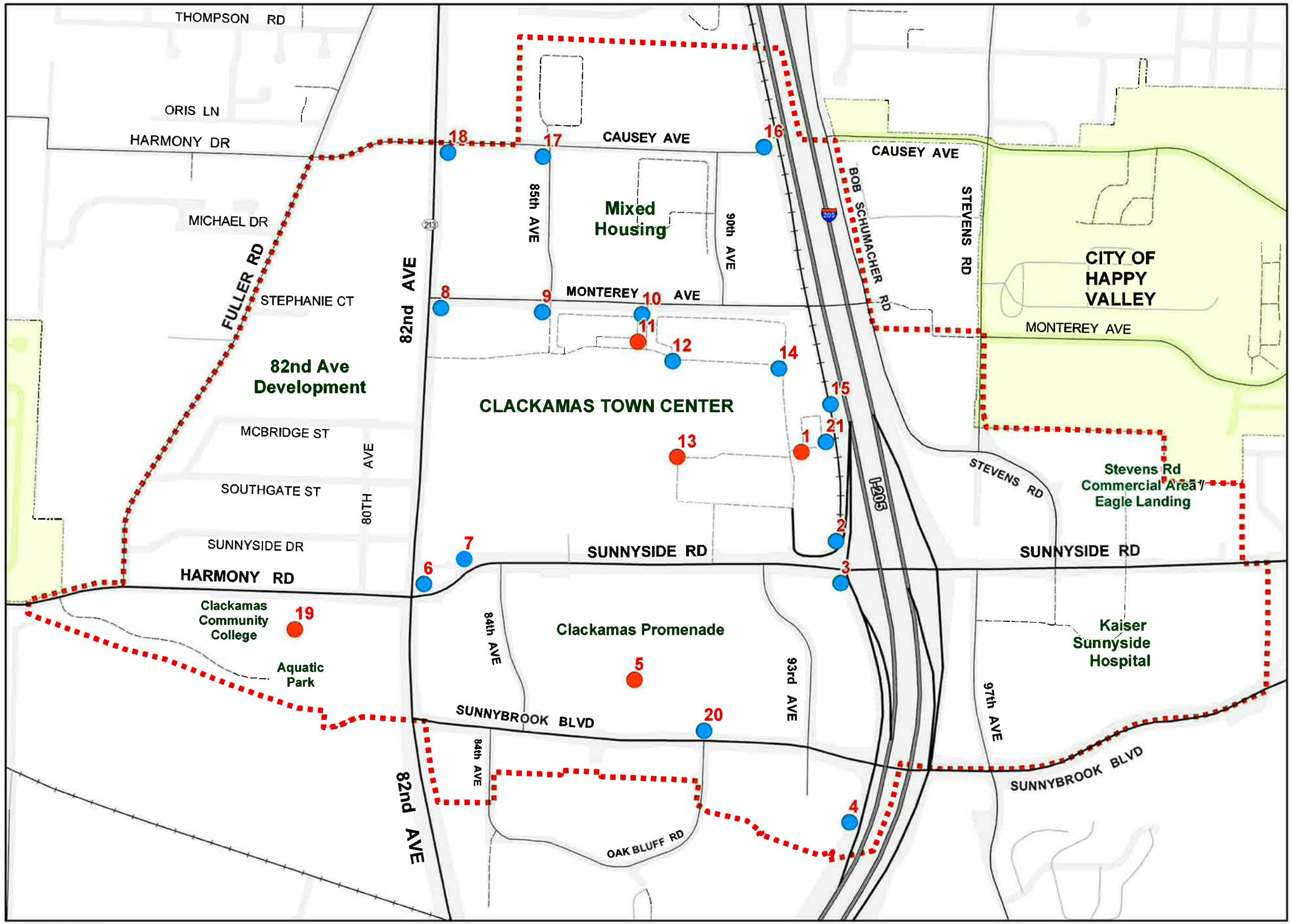
9. Implementation

In order to implement a Sign Plan funding needs to be addressed. Sign production, funding and installation can be one of the recommended projects for the CRC Area Pedestrian / Bicycle Connection Project. Implementation should include further refinement of specific sign placements, sign content, and design (including color and logo).

Clackamas Regional Center Pedestrian/Bicycle Connection Project

MAP 1

PROPOSED PEDESTRIAN SIGN LOCATIONS



Legend

- Map-Based Sign
- Pole Sign
- Project Study Area
- Incorporated City

1:7,750

500 250 0 Feet

CLACKAMAS COUNTY

TownCenter_PedSigns.MXD

Clackamas Regional Center Pedestrian/Bicycle Connection Project

MAP 2

PROPOSED BIKE SIGN LOCATIONS

Legend

- BIKE SIGNS
- Project Study Area
- Incorporated City

1:7,750

500 250 0 Feet

CLACKAMAS COUNTY