

PEARL DISTRICT ACCESS AND CIRCULATION PLAN

June 2012



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- Pearl District Neighborhood Association
- Northwest District Association
- Portland Streetcar, Inc.

This plan is dedicated to the memory of Ann Niles.

The Bureau of Transportation and the Portland Development Commission are committed to providing equal access to information and hearings. If you need special accommodation, please call 503-823-7700 (TTY 503-823-6868).

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Summary and Recommendations

The Pearl District Access and Circulation Plan is intended to direct public investment in right-of-way throughout the Pearl District neighborhood. The plan was developed through an extensive public outreach process, engaging a diverse group of stakeholders and responding to new challenges that arose during the planning process.

The documents, plans, and other materials listed below served as background information and guidance during the development of the *Pearl District Access and Circulation Plan*. These documents can be reviewed at the Bureau of Planning and Sustainability's website: www.portlandonline.com/bps

North of Lovejoy Plan

North Pearl District Plan

Northwest District Plan

Pearl District Development Plan

Central City Transportation Management Plan

River District Right-of-Way Standards

Central City Plan

Transportation System Plan

Public Involvement Summary

The Pearl District Access and Circulation Plan process included active participation from the project's Stakeholder Advisory Committee (SAC), comprised of representatives of the Pearl District Neighborhood and Business Associations, property owners, residential, business and institutional representatives, and modal advocates. The SAC generated ideas and provided feedback on staff proposals and to ensure that issues important

to stakeholders on the SAC were addressed in the plan recommendations. In addition, there was input from the public via two open houses, direct communication and email.

SAC meetings

March 29, 2010	April 26, 2010	May 26, 2010
June 28, 2010	October 11, 2010	November 20, 2010
February 7, 2011	March 14, 2011	June 6, 2011
September 12, 2011	October 17, 2011	December 5, 2011
January 13, 2012	May 7, 2012	

Open House dates:

June 23, 2010	November 9, 2011
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Planning and Sustainability Commission briefing

Staff briefed the Planning and Sustainability Commission on the plan recommendations on March 13, 2012.

City Council hearing date: June 13, 2012

Pettygrove Street right-of-way amendments

Staff met four times with property owners, business owners, and neighborhood representatives to achieve consensus on new design standards for NW Pettygrove St:

July 22, 2010	October 28, 2010
April 7, 2011	October 13, 2011

The Design Commission was briefed on December 1, 2011. City Council formally amended the *River District Right-Of-Way Standards* on January 25, 2012 (Ordinance # 185122).

Accomplishments

Several issues identified during the planning process have already been addressed. These include:

- Pettygrove Street right-of-way amendments adopted by City Council
- Everett/Glisan signal timing: adjusted to slow traffic and increase crossing opportunities
- Lovejoy one-way operations extended from 13th to 14th
- Streetcar platform on NW 10th relocated from Marshall to Northrup, to improve visibility at this intersection
- Traffic signal at NW 10th and Northrup: adjusted to provide streetcar signal phase only when a streetcar is present



Below is a summary of recommendations in this plan:

Changes in street cross-sections

- Naito/Parkway: reduction in travel lanes from 5 to 3 to provide on street parking and bicycle lanes
- NW 15th Ave: creating a pedestrian space on the west side
- NW Hoyt Street: provision of bicycle lanes while maintaining two-way operations
- Broadway Bridge ramp: reduction of one northbound travel lane to provide a buffered southbound bike lane
- NW Park Blocks: providing buffered bicycle lanes
- NW Pettygrove: creating a green street design that can be implemented with redevelopment of adjacent properties.

Crossing improvements

The plan includes many crossing improvements, from additional traffic signals to facilitate safe crossings and traffic flow, to provision of curb extensions, rapid flash beacons, and bike infrastructure to improve safety in the Pearl:

- New traffic signals along Everett and Glisan to fill in gaps.
- New traffic signals and crossings on NW Northrup St and NW Overton St as the area develops.
- Enhanced crossings along NW 14th (Johnson, Marshall, Pettygrove, Raleigh).
- Semi-diverter at NW 10th and Marshall to direct westbound auto traffic to NW Northrup St.

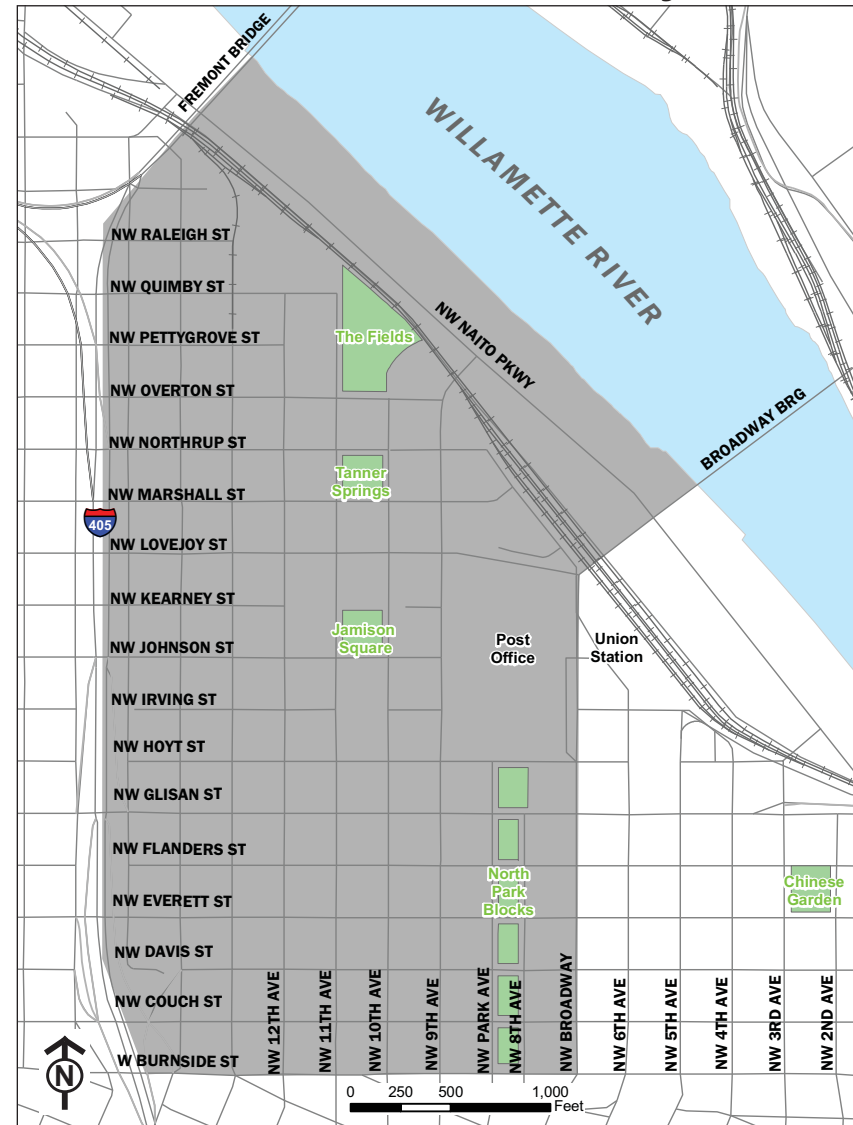
Bicycle improvements at NW 14/Everett, NW 14/Glisan, NW 15/Glisan.

Project Overview and Objectives

The Pearl District has changed dramatically from its origin as a rail yard and warehouse district since redevelopment began in the mid 1990s. The transportation network has evolved along with it, including the development of Portland's first modern streetcar line and the removal of the Lovejoy Viaduct, among other things. Despite these changes, a comprehensive transportation plan for the District has not been developed until now. The *Pearl District Access and Circulation Plan* identifies multimodal transportation needs and recommends projects to support the vision and continued development of the Pearl District (Figure 1). The plan builds on past studies to develop a comprehensive multimodal transportation plan, with emphasis on providing improved multimodal access within as well as to and out of the Pearl District.



Figure 1. Plan Area



Plan Goals

The Stakeholder Advisory Committee developed the following goals early in the process to help identify issues and guide the development of recommendations:

Balanced transportation system. Develop a multimodal transportation system that accommodates pedestrian, bicycle, transit, freight and motor vehicle users and encourages the use of non-automobile transportation to meet the mode split targets for the City and District.

Access and Mobility. Develop and maintain a transportation system that addresses present and future transportation needs, accommodates future growth and provides practical and convenient access to, from and within the Pearl District.

Safety. Develop a plan and recommend infrastructure projects that improve safety for all users of the transportation system.

Funding. Develop a plan that prioritizes short-term and long-term transportation improvements and can be implemented over time using a variety of funding sources.

Economic Development. Develop a transportation system that supports sustained economic development and the development targets for the District.

Livability. Develop a plan and recommend transportation projects that enhances livability and supports the unique assets of the District.

Edges and River. Develop a plan that enhances connections to adjacent areas and to the Willamette River.

Sustainability. Develop a plan that supports the City's goals of reducing carbon emissions from transportation and enhancing the natural environment.

Local and regional plans. Develop a plan that is consistent with the City's Comprehensive Plan and meets City, regional and state land use and transportation policies.



Policy and Existing Conditions Summary

Below is a summary of existing conditions. The full Existing Conditions Report, with data, maps, and a more detailed discussion of the transportation issues in the area, is provided in the Appendix.

Summary

The Pearl District has a similar street system and urban form as the Downtown and Old Town/Chinatown neighborhoods, with a primarily 200-foot by 200-foot block grid and dense, mixed commercial/residential development. However, unlike its neighbors, much of the Pearl has been almost entirely rebuilt over the last 15 years. Fueled by infrastructure investments and a set of policies and development agreements following the creation of the River District Urban Renewal Area in 1998, the Pearl District has experienced rapid residential and commercial growth.

The Pearl displays many of the transportation characteristics of mature mixed use areas, including high pedestrian and transit use, low reliance on the automobile, and a mix of residential, office, institutional and retail uses. As a result, Pearl residents, employers and visitors travel half as much by car as the regional average, and have lower carbon emissions per capita from transportation sources.

However, at the same time, the success of the Pearl has led to an increase in automobile congestion in the area and increased conflict between different modes as they compete for limited space. Congestion is expected to increase at several locations, due to the Pearl's growth despite continued reliance on non-

auto modes. While some congestion is to be expected in high-density, mixed-use environments, gridlock can negatively affect other modes, increase noise and air pollution levels.

However, it is possible to increase the transportation system's capacity to efficiently carry more trips by all modes within existing right-of-way while maintaining and even enhancing the District's quality of life and unique features.

Burnside Street to the south, Interstate 405 to the west, and Naito Parkway and the railroad to the east and north present challenges for access and circulation. In addition, signalized crossings for pedestrians and bicyclists are generally farther apart than is typical in Downtown and Old Town/Chinatown and may limit pedestrian and bicycle access to the Pearl District from surrounding neighborhoods. This is particularly true on Naito Parkway, where the lack of crossing opportunities severely limits access to the Willamette River.

Policy Overview

Central City land use and transportation policies are codified in the *Central City Plan District* (Title 33.510 of the Portland City Code), and the *Transportation System Plan* (TSP). The TSP establishes a hierarchical classification system for City streets, based on mode of transportation. It also provides a 20-year blueprint for capital improvements to the City's transportation system. The *Central City Transportation Management Plan* (CCTMP) is the Central City district chapter of the TSP.

In addition, the *River District Urban Renewal Plan* and the *River District Right-of-Way Standards* guide decision-making for City policy makers. Mode-specific plans (e.g., *Portland Bicycle Plan for 2030*, the *Freight Master Plan*, and the *Pedestrian Master Plan*) inform transportation investment choices. Collectively, these documents comprise the suite of City policies that inform the Pearl District Access and Circulation Plan. Detailed summaries of these documents are provided in the Policy Framework Report in the Appendix.

Zoning and Land Use

The majority of the Pearl District is zoned Central Employment (EX). While this is intended to foster industrial and employment centered development, it is among the least restrictive zoning designations. Consequently, as the area has redeveloped from its heavily industrial past, residential and small retail developments have become the dominant land use type. There are currently approximately 5,000 residents and 13,000 employees in the District.

Transit

The Pearl District is served by the Portland Streetcar and TriMet bus lines 9, 16, 17, 20, and 77. MAX light rail service is available just outside the district on 5th and 6th Avenues. Transit service frequency has been cut recently, and restoration of pre-cut service levels is a top priority for TriMet. The northern section of the District, including the area around the site of the Centennial Mills redevelopment project, is served by bus line 16, which only runs during peak times and has 30-minute headways.

Bicycle and Pedestrian Activity

Bicycle activity is highest on portal streets such as NW Broadway and NW Everett St. Cyclists also utilize NW Marshall St and NW Johnson St to cross I-405. Pedestrian activity is concentrated in the southern portion of the District near the Brewery Blocks, and along the Portland Streetcar on NW 10th Ave, NW 11th Ave, NW Lovejoy and Northrup Streets. Burnside is the main entryway from downtown. These corridors also generally coincide with the areas with the most intense street level retail activity and transit use.

Freight and Railroad System

The Post Office is a designated freight facility. It generates substantial truck traffic in and out of the District. NW 14th and NW 16th Avenues serve as main connections from I-405 to existing industrial uses in the Pearl and to the Northwest Industrial area. Union Station, the City's intercity passenger rail depot, is located in the Pearl District. Amtrak offers service from Union Station to destinations along the west coast. There is also one daily train to Chicago. Freight traffic uses the Union Station tracks as a bypass. Whenever a train passes, gate closures are required at NW Naito Pkwy below the Steel Bridge (approximately 14-26 daily closures), and at NW 9th Ave, NW 15th Ave, NW 17th Ave, and NW Nicolai St (approximately 20-32 daily closures).

Parking

The River District, of which the Pearl District is part, has approximately 18,000 parking spaces. 3,500 are on surface lots, 10,600 are in structures, 3,200 are metered on-street

Policy and Existing Conditions Summary

spaces, and 250 are free on-street spaces. Construction of off-street parking is regulated by maximum ratios, calculated by square footage for different land use types. Since the current parking maximums were implemented in 1997, in the aggregate, residential developments have built about 56% of the maximum allowed parking District-wide, and commercial developments have built about 80% of the maximum allowed parking.

Travel Behavior

Several surveys and analytical techniques have been employed to assess travel behavior in the Pearl District. While the specific numbers vary, the general trend indicates that residents of the Pearl District are less likely to drive a single-occupant vehicle (SOV), and more likely to walk, bicycle or use transit than a typical City resident. Fifty-eight percent of respondents in a 2008 survey indicated that they usually walk, bike or take transit to work. Three out of four residents stated that they drove less since moving to the Pearl. Parking availability, congestion and better transit service were respondents' biggest concerns.

Speed Limits

Speed limits are defined by state law. Most local streets in the study area have a 20 mph limit. W Burnside St, NW Everett St, NW Glisan St, and NW Lovejoy St are posted at 25 mph, NW 14th has a 30 mph limit, and NW Naito Pkwy has a speed limit of 40 mph.

Crashes

The number of crashes in the Pearl District (auto-auto, auto-bicycle, auto-pedestrian) is generally consistent with other high-activity parts of the Central City. W Burnside St has a relatively high number of crashes, including several bicycle and pedestrian fatalities. NW Broadway is also an area of concern for crashes, particularly the intersection of NW Broadway and NW Couch St. The highest rate of crashes in the District occurs at the I-405 ramps at NW Everett St and NW Glisan St.

Pavement Condition

To assess the quality of pavement surfaces, the City uses a pavement condition assessment tool called the Pavement Condition Index. Within the Pearl District, 94% of the pavement has a rating of "good" or better. However, there are some areas of concern in the area, particularly the cobblestone streets and streets where abandoned rail tracks protrude through the asphalt.

Present and Future Travel Demand

The Pearl District is expected to experience a high rate of population growth relative to other areas. The number of households will grow from 3,800 to over 14,200 by 2035, a 274% increase. Employment in the Pearl is expected to grow from 13,000 to 20,000 jobs, a 54% increase, compared to a 49% increase in the Central City, 45% in the City of Portland, and 74% region-wide.

As a result of this growth, daily travel demand is expected to grow at a high rate relative to other areas: 119% in the

Pearl, compared to 56% in the Central City, 32% in the City of Portland, and 66% region-wide. Vehicle trip demand for the 2-hour PM peak will grow at a slower pace of 70%, from 8,600 in 2008 to 14,700 in 2035.

The auto mode split is expected to decrease significantly by 2035, with corresponding increases in the mode splits of transit, bike, and walk. These trends are predicted to occur throughout the region, but are particularly pronounced in the Pearl and Central City where there are high density mixed uses, built-out pedestrian and transit infrastructure and an expanding bicycle network.

The Pearl has and will continue to have some of the lowest auto mode split levels in the region. This translates to some of the smallest vehicle miles traveled (VMT) per capita, resulting generally in a low “carbon footprint” per capita from transportation.

Current auto congestion is relatively isolated to NW Glisan St approaching I-405, and Lovejoy Street approaching the Broadway Bridge. By 2035, congestion is predicted to worsen along Naito Parkway north of the Broadway Bridge, and in the vicinity of I-405. NW 9th and Lovejoy and the Broadway Bridge are predicted to be over capacity by 2035.

Traffic Operations

Generally, traffic operations in the Pearl can be categorized as a mix of local streets and portal streets. Portal streets typically provide the main access points in and out of the Pearl for

transit, bicycles and auto vehicles and trucks. The latter include W Burnside St, NW Everett St, NW Glisan St, and NW Lovejoy St, NW Northrup St and the Broadway Bridge in the east-west direction, and NW Broadway, NW 10th Ave, NW 11th Ave, NW 14th Ave, NW 16th Ave, and I-405 in the north-south direction. NW Everett and Glisan Streets are a couplet (a pair of one-way streets) to and from the Steel Bridge, and NW Lovejoy and NW Northrup Streets are a couplet to and from the Broadway Bridge. These couplet streets provide access through the Pearl, into the Northwest District and to I-405 access ramps. NW 14th and 16th Avenues are also a couplet, distributing traffic to and from I-405 into the Pearl, Northwest and NW Industrial Districts.

Portal streets generally get preference over local streets via traffic signalization. Signalization in the Pearl is generally farther apart than is typical in Downtown and Old Town/ Chinatown. Burnside, Everett, Glisan, Lovejoy and Broadway are part of a coordinated traffic signal system. About 75 percent of the green time is given to east-west movement on Burnside. Glisan, Everett and Lovejoy get half to two-thirds of the green time. Broadway, 14th and 16th each gets about half the green time.

Most of the local street intersections in the Pearl are controlled by stop signs. Four-way stop signs are prevalent in the heart of the Brewery Blocks and intersections up to NW Hoyt St. NW Hoyt St and NW Johnson St have four-way or three-way stops between 13th and 10th Avenues.

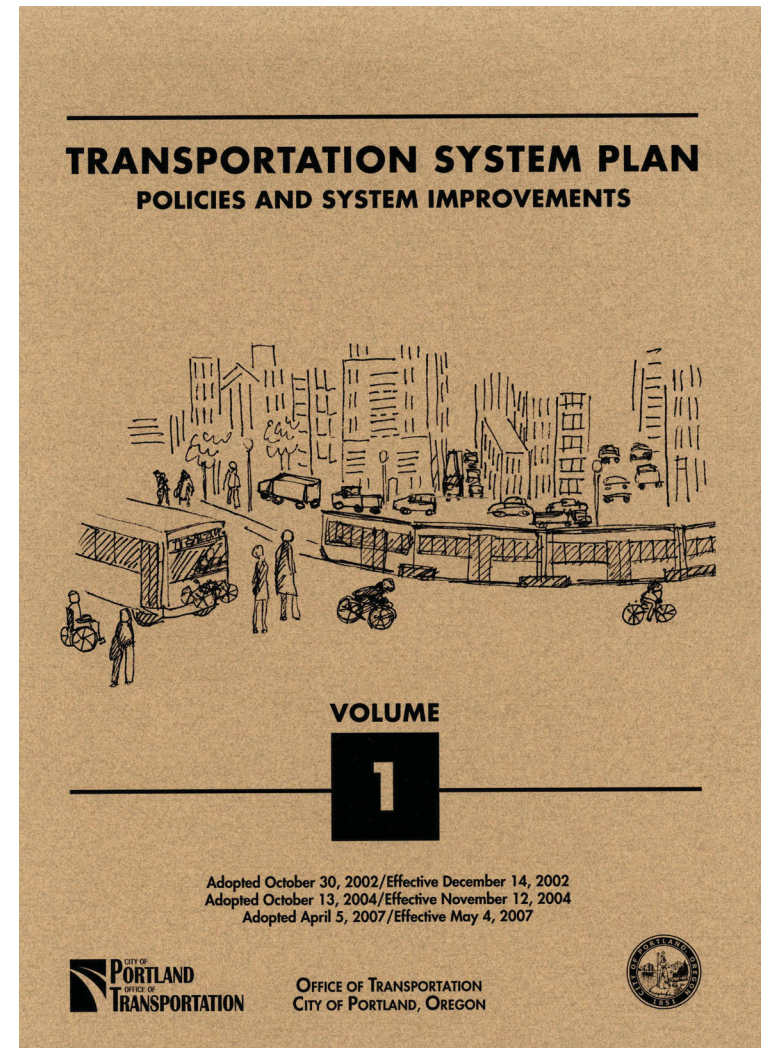
Transportation System Plan Recommendations

The Transportation System Plan (TSP) is the 20-year plan for transportation policy in Portland. As the Transportation Element of the City's Comprehensive Plan, it describes how the transportation system should function and what purpose it fulfills. The street classification descriptions and designations in the TSP describe the types of motor vehicle, transit, bicycle, pedestrian, truck, and emergency response movement that should be emphasized on each street.

TSP classifications are used to determine the appropriateness of street improvements and to make recommendations on new and expanding land uses through the land use review process. Classification descriptions are used to describe how streets should function for each mode of travel, not necessarily how they are functioning at present.

State law requires updates to a city's Transportation System Plan every 5 years. The next update to the Portland Transportation System Plan is scheduled for completion in 2013. The recommendations outlined on the following pages will not be officially added to the TSP until the next update occurs.*

***Note: These recommendations do not address potential TSP classification changes that may be part of a future conversion of W Burnside St and NW Couch St to a one-way couplet.**

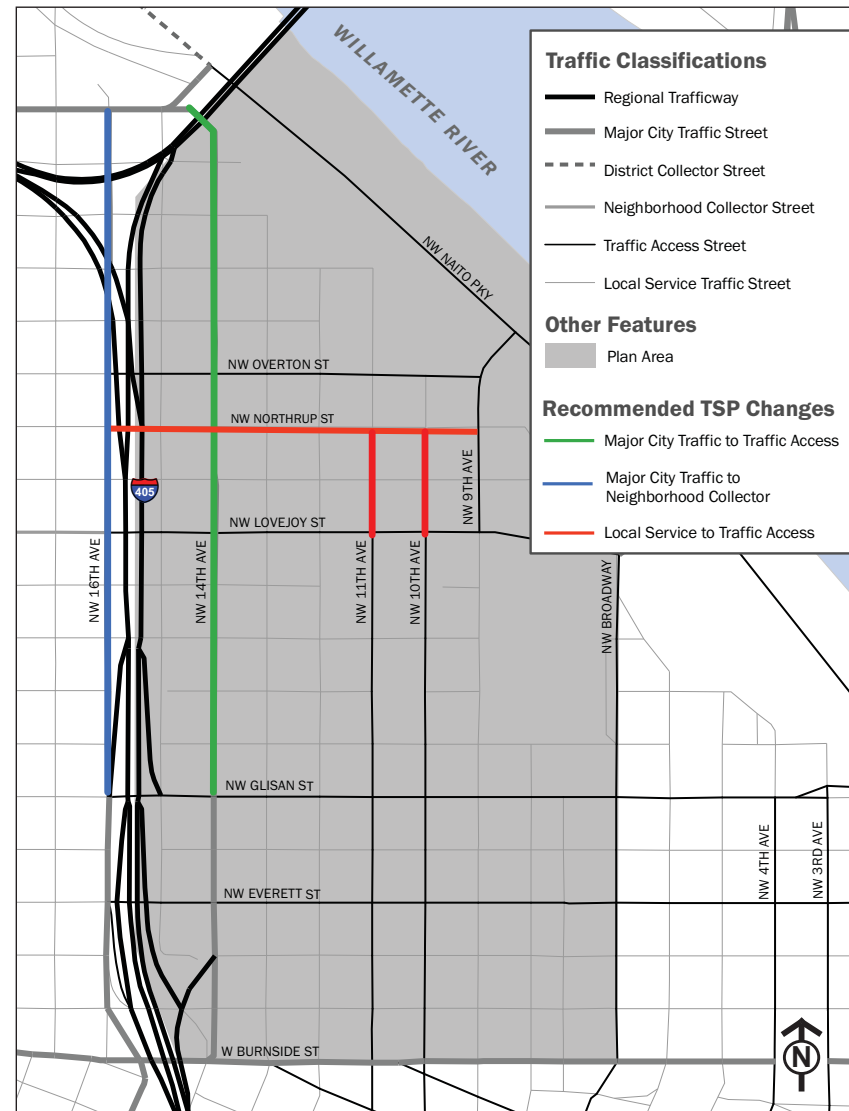


Traffic:

Changing the traffic classification on NW 10th Ave, NW 11th Ave, and NW Northrup St from Local Service to Traffic Access will reflect the new one-way operations on Lovejoy and Northrup. Changing NW 14th and 16th from Major City Traffic streets to Traffic Access Streets will reflect that the primary function of these streets is to distribute trips within the district, rather than accommodate through trips (Figure 2).



Figure 2. Recommended TSP Classifications: Traffic



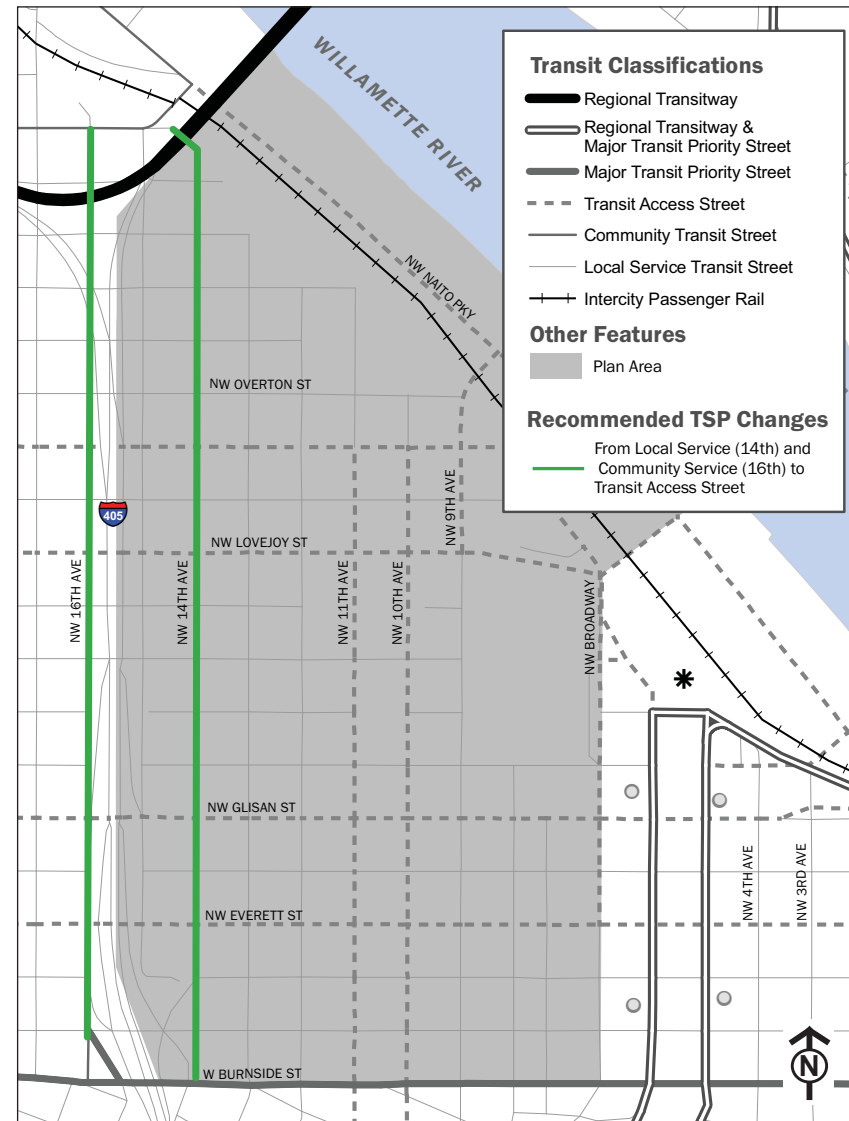
Transportation System Plan Recommendations

Transit:

Changing the transit classification on NW 14th Ave and NW 16th Ave from Local and Community Service Transit Streets, respectively, to Transit Access Streets will support the desired expansion of transit service to redevelopable land in the North Pearl area and in Northwest Portland (Figure 3).



Figure 3. Recommended TSP Classifications: Transit



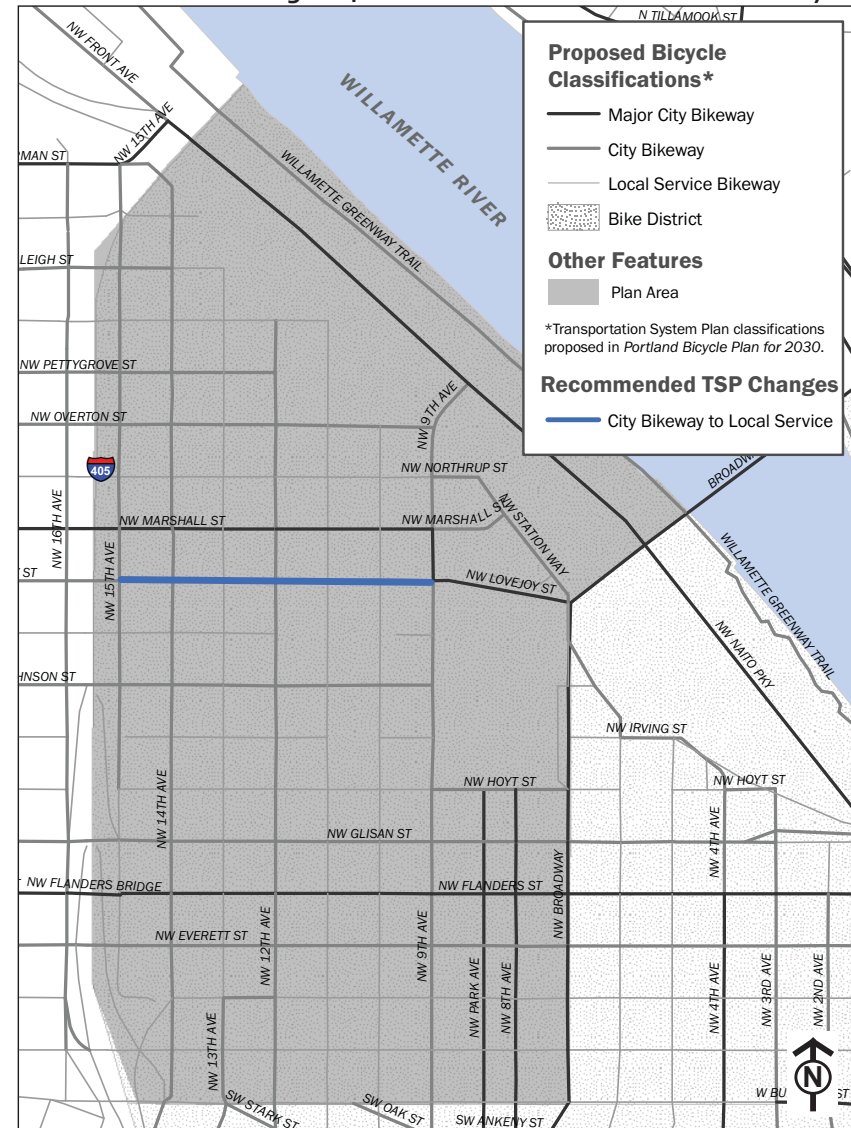
Bicycle:

Figure 4 shows the TSP classifications recommended in the *Portland Bicycle Plan for 2030* (adopted in 2011). The *Pearl District Access and Circulation Plan* refers to these recommended classifications. They will be formally added to the TSP during the 2012-2013 TSP update.

This plan recommends one deviation from the recommendations in the Bicycle Plan on NW Lovejoy St. Changing the bicycle classification on Lovejoy from City Bikeway to Local Service Bikeway will reflect the presence of streetcar tracks in both lanes on Lovejoy. Bike lanes were removed from Lovejoy as part of the construction of the Lovejoy-Northrup couplet, which was built to support the streetcar loop project.



Figure 4. Recommended TSP Classifications: Bicycle



Transportation System Plan Recommendations

Pedestrian:

All of the Pearl District lies within a Pedestrian District. Changing the classification from Local Service to City Walkway on NW 13th Ave, Pettygrove St, and Couch St will reflect the role these streets have in providing pedestrians access to recreation, transit, and between neighborhoods (Figure 5).

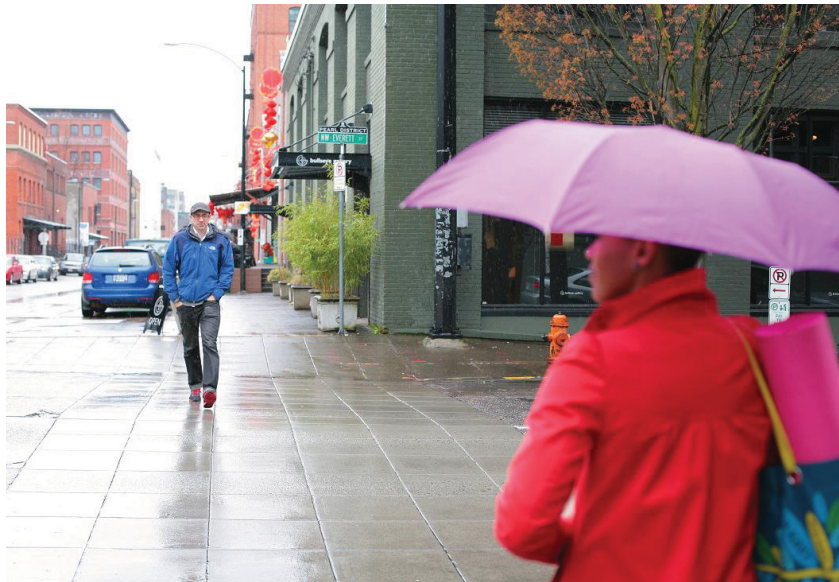
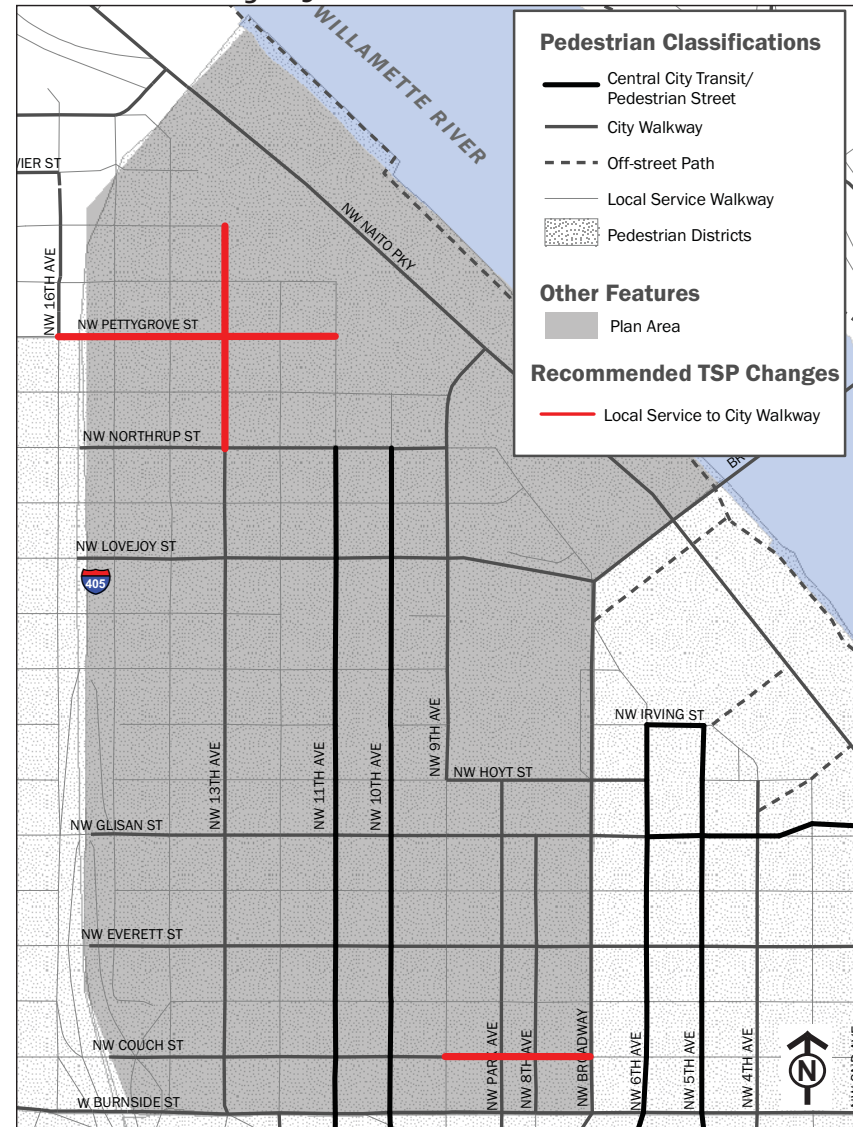


Figure 5. Recommended TSP Classifications: Pedestrian



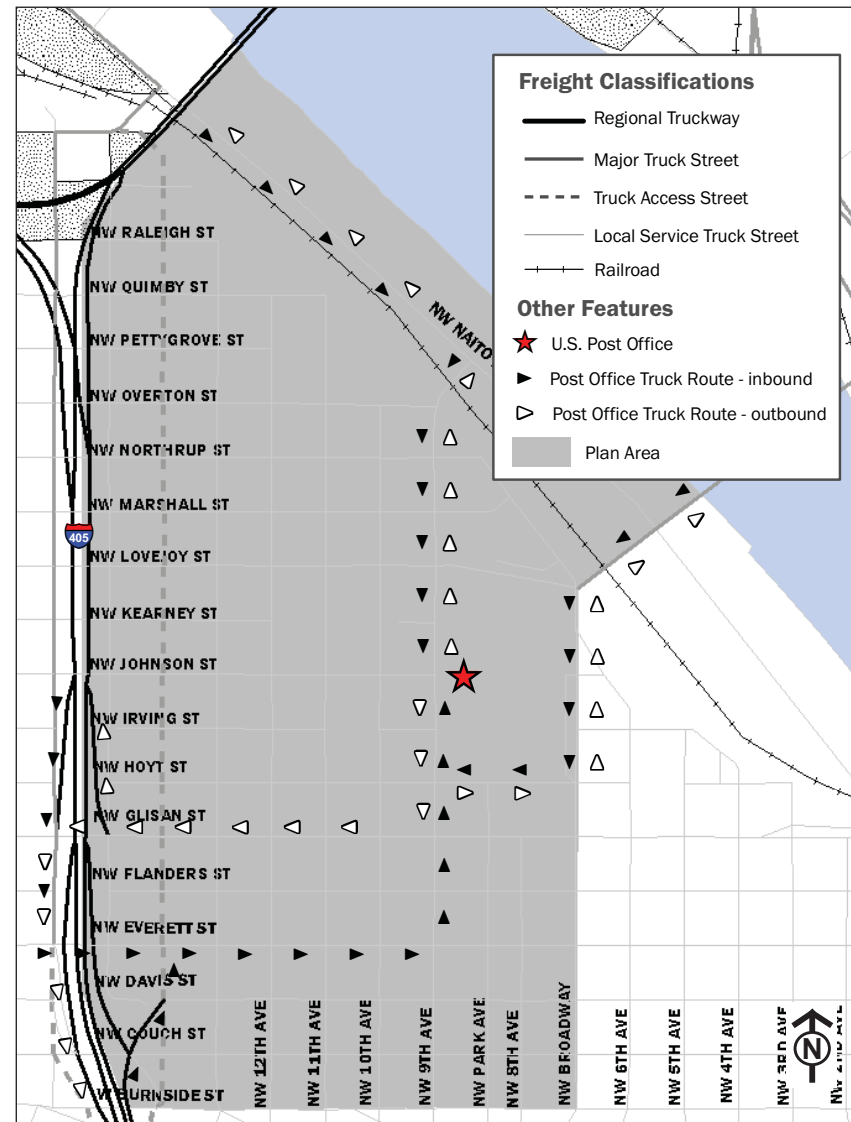
Freight:

Figure 6 shows the existing Freight classifications in the study area. The freeway and ramps are classified as Regional Truckways, NW 14th Ave is a Truck Access Street, and the Broadway Bridge ramp is a Major Truck Street. All other streets in the plan area are classified as Local Service Truck Streets. No changes are recommended to these classifications.

Figure 6 also shows the routes approved by the City Traffic Engineer for trucks coming from and going to the U.S. Post Office facility at NW 9th and Johnson.



Figure 6. Existing TSP Classifications: Freight



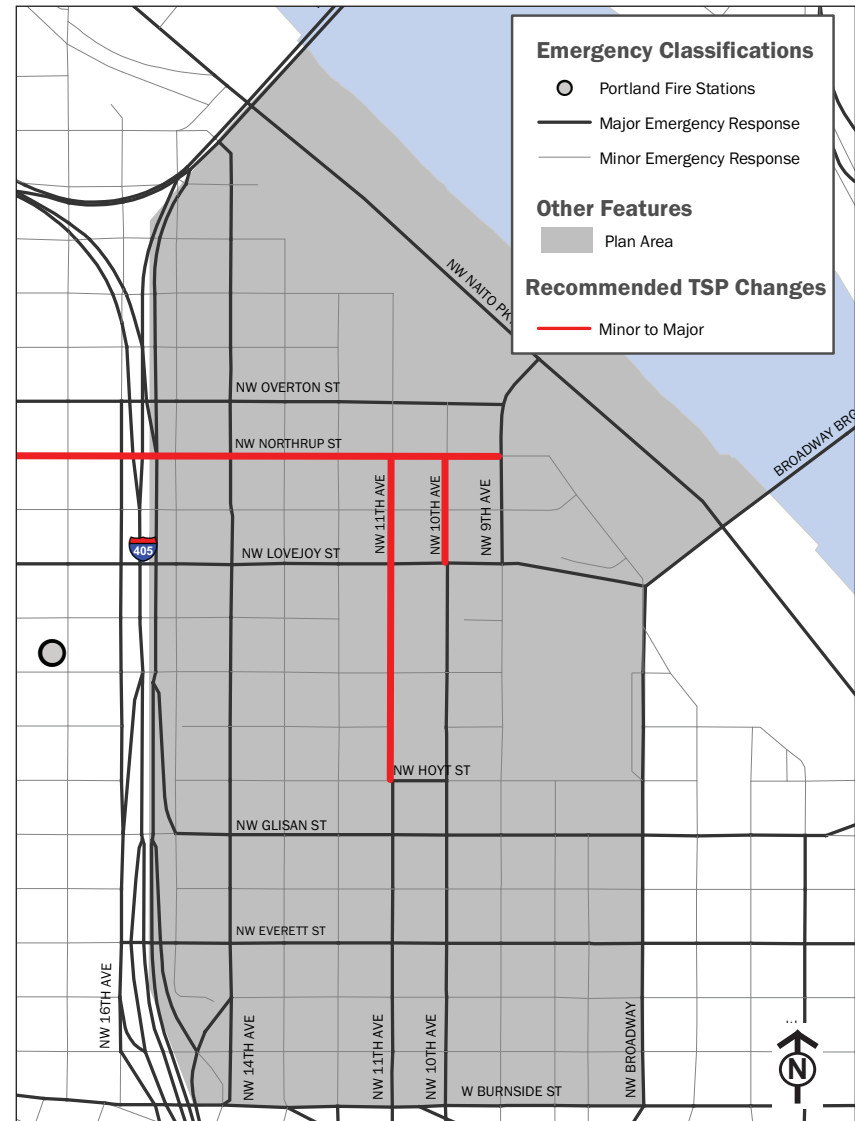
Transportation System Plan Proposals

Emergency Response:

Changing the Emergency Response classification on NW 10th Ave, NW 11th Ave, and NW Northrup St from Minor to Major will reflect the new one-way operations on Lovejoy and Northrup (Figure 7).



Figure 7. Recommended TSP Classifications: Emergency Response

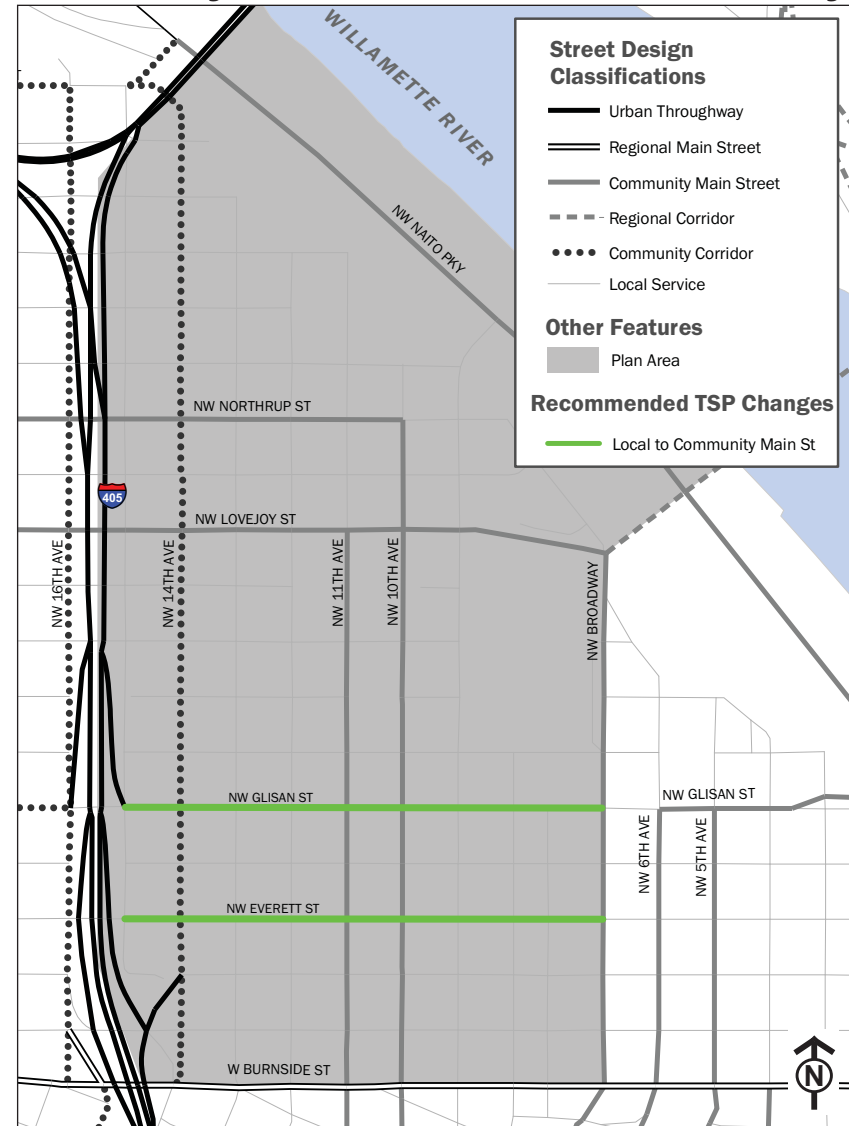


Street Design:

Changing the street design classification on NW Everett and Glisan Streets from Local Street to Community Main Street will encourage design treatments that accommodate motor vehicle traffic, with special features to facilitate public transportation, bicycles, and pedestrians (Figure 8).



Figure 8. Recommended TSP Classifications: Street Design



Traffic Circulation and Control

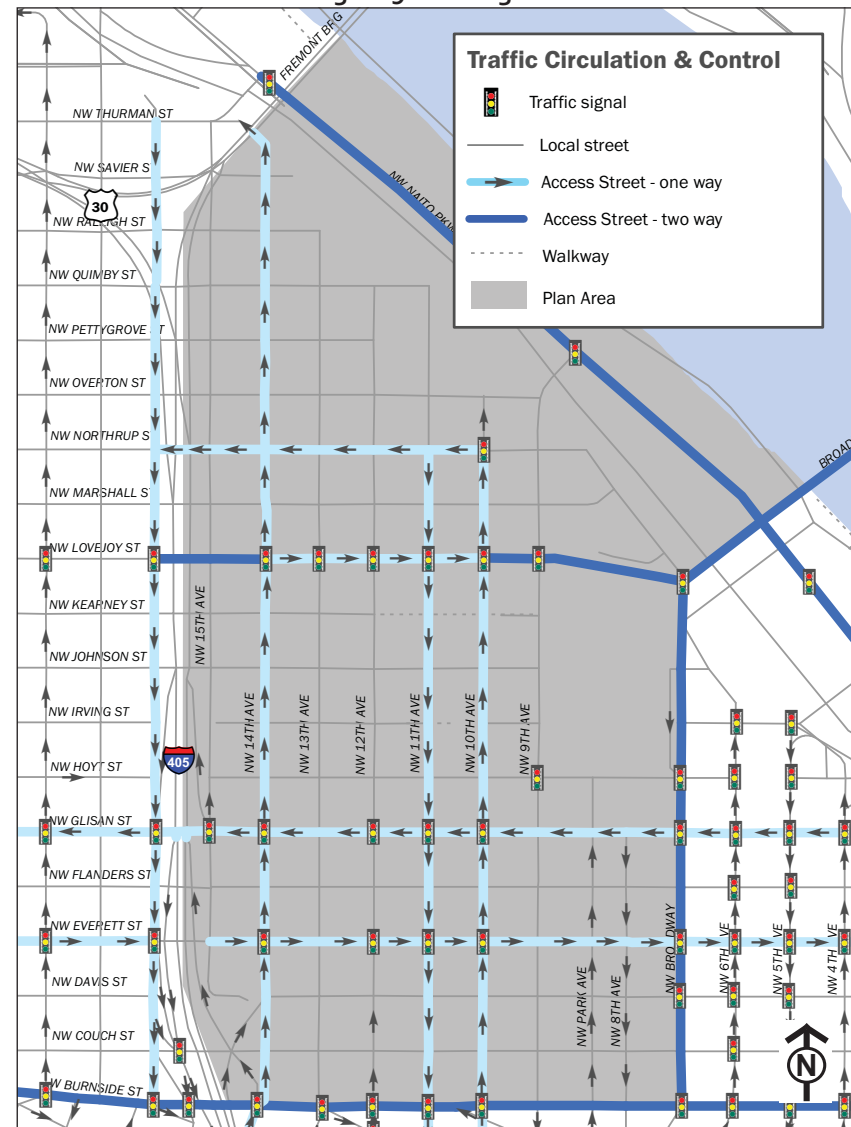
The Pearl District has complementary systems of access streets and local streets (Figure 9). The access streets are designed to act as portals into the district for motor vehicles, transit (buses and streetcar) and emergency vehicles. Portals generally carry more traffic than local streets. They connect to freeway ramps, overpasses, and Willamette River bridges. Local streets primarily serve circulation within the district.

Several circulation options were analyzed in the planning process, including extending the downtown system of alternating one-way streets north through the Pearl District. However, that was determined to be infeasible, primarily due to the existing configuration of one-way streets in the Pearl that access the bridges over I-405 and the Willamette River. Everett and Glisan, for example, provide connections to both the Steel Bridge and I-405 ramps. For this reason, the primary system of one-way streets in the Pearl (Everett-Glisan, Lovejoy-Northrup, 10th-11th, and 14th-16th) will remain a series of one-way couplets, rather than an extension of the grid system found south of W Burnside St.

W Burnside St and NW Couch St have been recommended to become a one-way couplet in previous plans. This plan assumes the couplet will be implemented, but also offers recommendations that function with and without it.

The plan recommends relatively minor changes to the traffic system, primarily through the addition of new traffic signals and enhanced pedestrian and bicycle crossings. The plan will provide a density of signalized intersections on access streets

Figure 9. Existing Traffic Circulation and Control



comparable to Downtown and Old Town/Chinatown (Figure 10). Traffic signals, when they are synchronized, also provide the benefit of improving traffic flow while reducing travel speeds.

When traffic volumes do not warrant traffic signals, enhanced crossings (curb extensions, marked crossings, rapid flash beacons) are recommended. The plan recommends enhanced crossings on NW 14th Ave at intersections with major bikeways: Flanders, Johnson, Marshall, Pettygrove and Raleigh.

In addition, the plan recommends changing the direction on NW 12th Ave in the Brewery Blocks (extending 2-way operations one block south, to NW Couch St).

Recommended Traffic Signals*

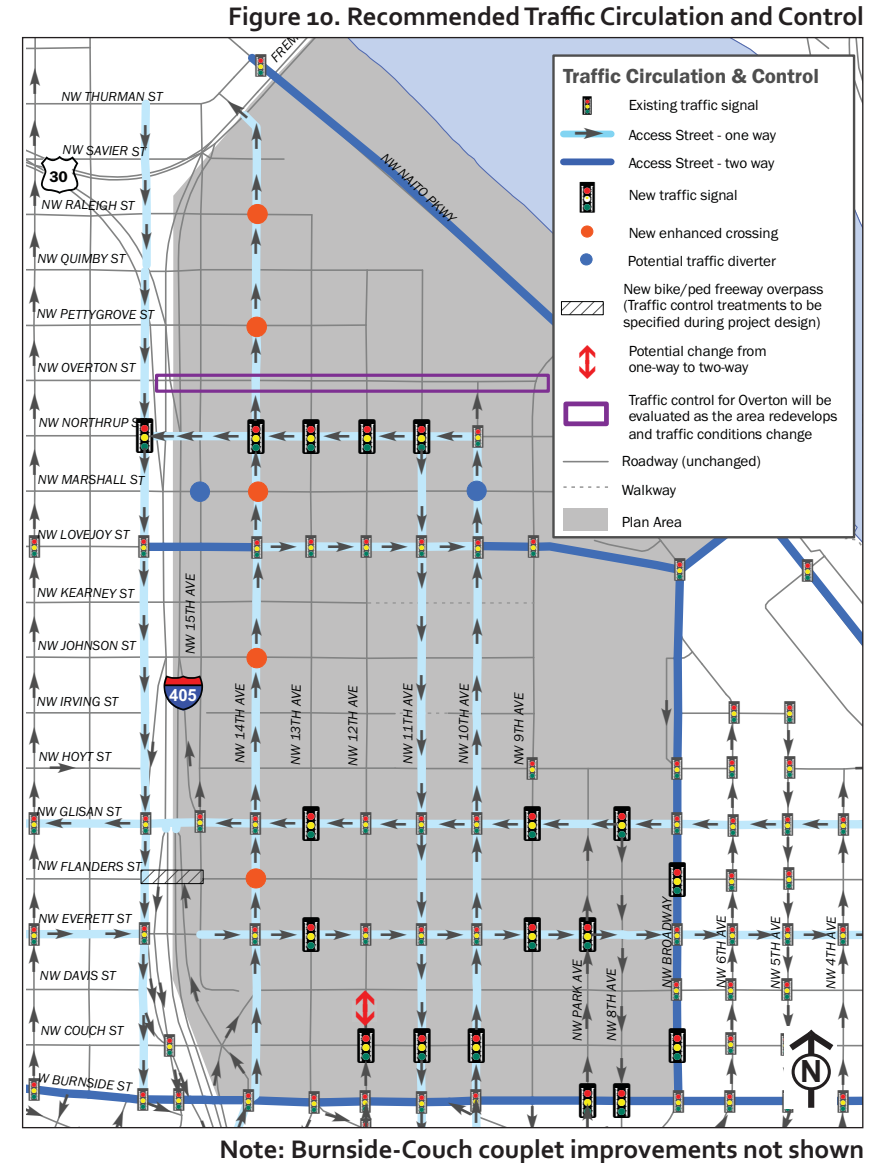
Near Term (1-5 years):

1. NW Couch St and NW Broadway
2. NW Couch St and NW 11th Ave
- 3-4. (tie) NW 13th Ave and NW Everett St, NW Glisan St
- 5-6. (tie) NW Couch St and NW 10th Ave, NW 12th Ave
7. NW Park/8th Ave and W Burnside St
8. NW Flanders St and NW Broadway

Long Term (6 years and more):

- NW Glisan St and 9th Ave
- NW Glisan St and 8th Ave
- NW Everett St and 9th Ave
- NW Everett St and Park Ave
- NW Northrup St: 11th through 15th Aves

*Near Term traffic signal locations were ranked by the Stakeholder Advisory Committee. Long Term locations were not ranked.



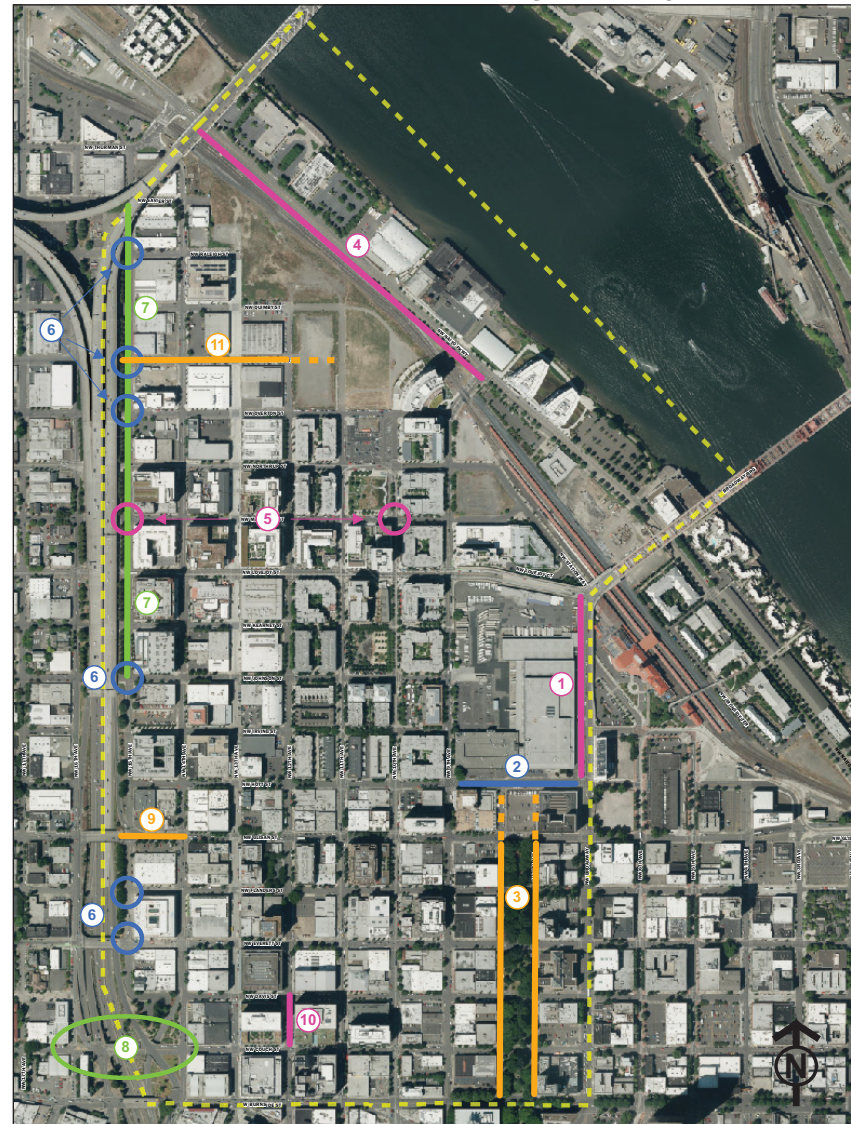


Focus Areas

Figure 11 shows eleven project areas where changes to street cross-section, crossing improvements, and signalization treatments are recommended. The recommendations represent concepts for how to improve specific areas. Some changes or adjustments to the designs are to be expected as part of implementation.

1. Broadway Bridge Ramp
2. NW Hoyt Street
3. North Park Blocks
4. NW Naito Parkway
5. NW Marshall Street
6. NW 14th Avenue
7. NW 15th Avenue
8. Interstate 405/NW Couch Street Interchange
9. NW Glisan Street
10. NW 12th Avenue
11. NW Pettygrove Street

Figure 11. Project Focus Areas



Broadway Bridge Ramp

The ramp connecting the Broadway Bridge to NW Broadway has an 8' sidewalk, a 5' bike lane directly adjacent to 2 motor vehicle travel lanes, and a left turn pocket at NW Irving St. Leading to the Bridge, there are 2 motor vehicle lanes, and a shared bicycle/pedestrian facility on the sidewalk (Figures 12 and 13).

Figure 12. Existing Broadway Bridge ramp cross-section*

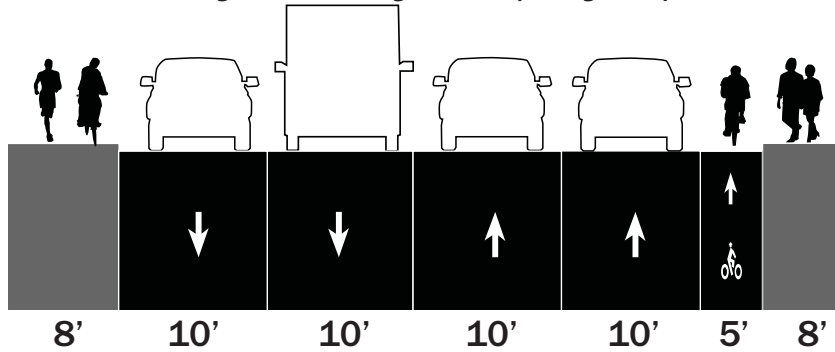
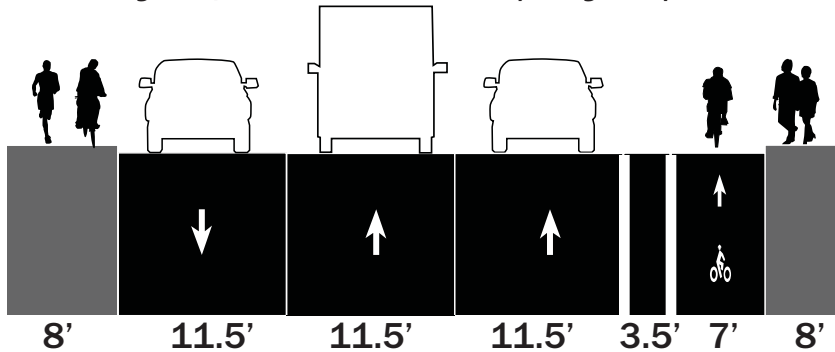
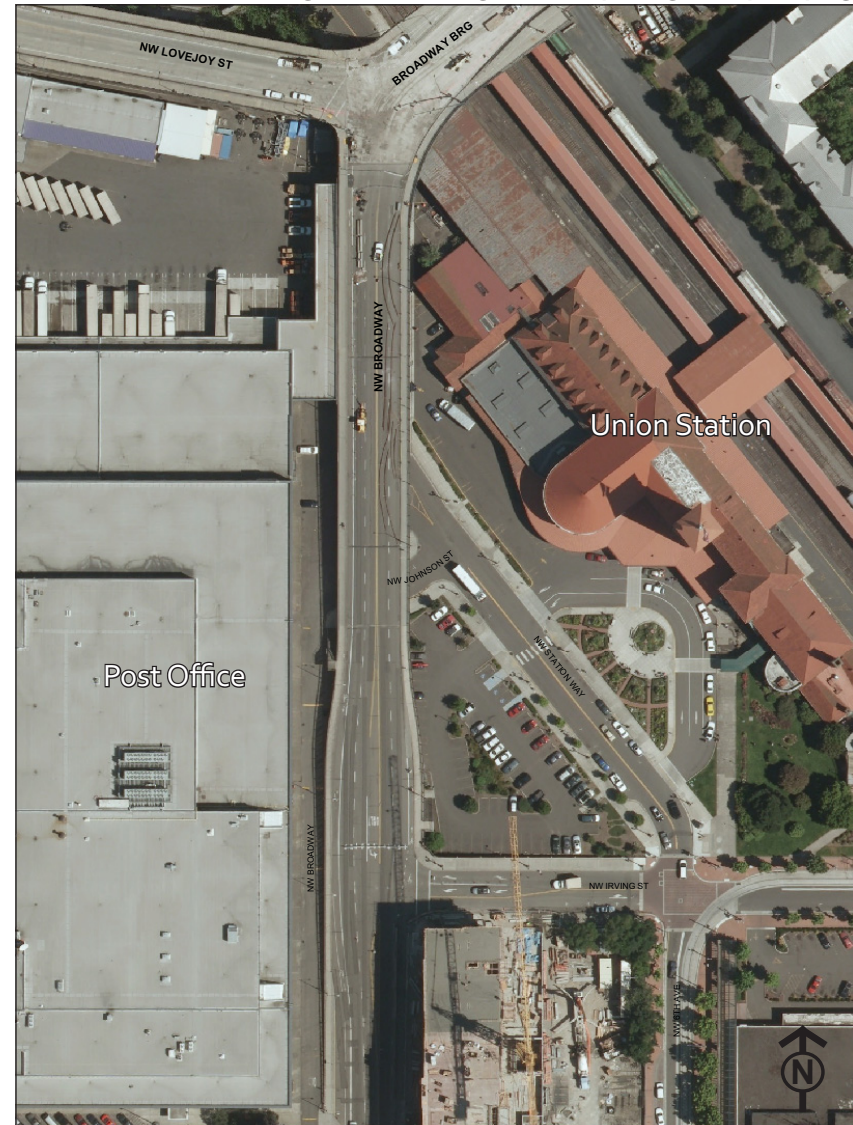


Figure 14. Recommended Broadway Bridge ramp cross-section*



*Both views above are facing southbound, and do not depict the left turn pocket at NW Irving St, which would remain unchanged.

Figure 13. Existing Broadway Bridge ramp striping

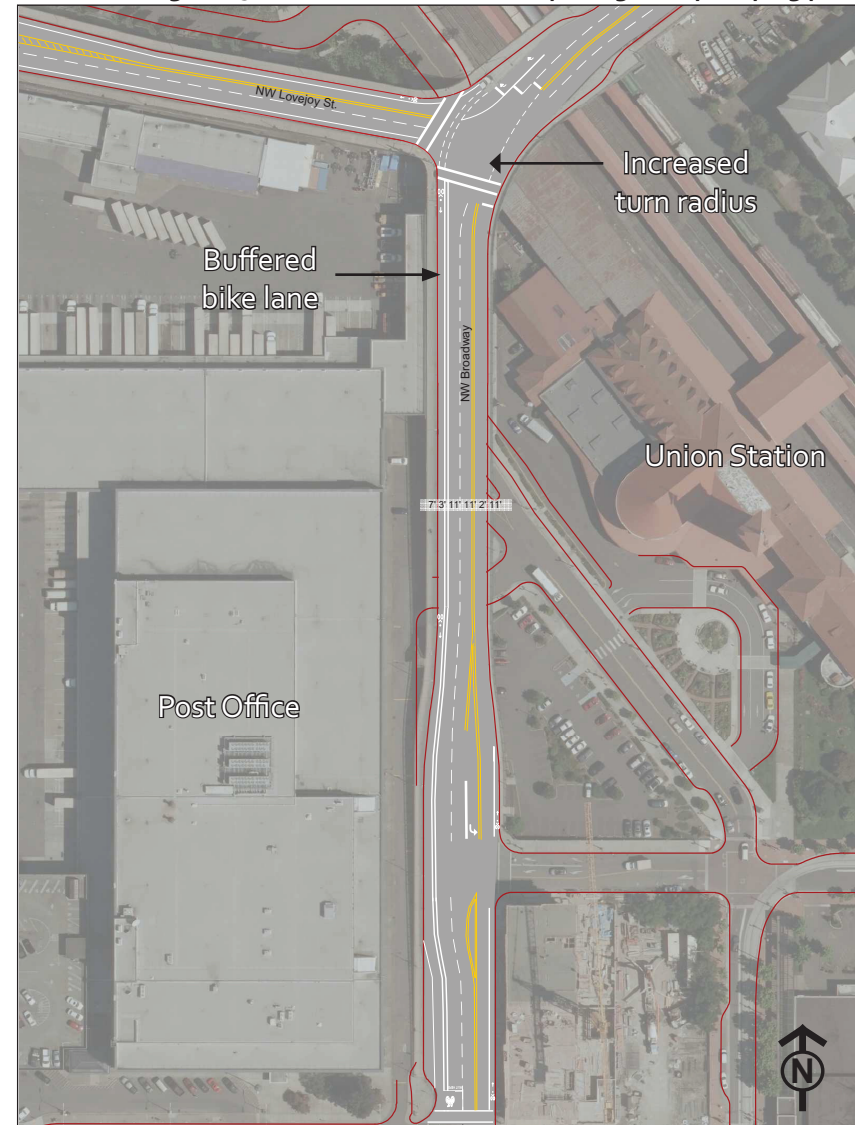


The recommended striping plan removes a motor vehicle travel lane leading to the bridge from NW Broadway, and creates a wider, buffered bicycle lane leading to NW Broadway. The sidewalks, left turn pocket at NW Irving St, the striping on the Bridge, and the ramp leading to NW Lovejoy St will remain unchanged (Figures 14 and 15).

This will have significant safety benefits. The buffer provides greater separation between cyclists and motorists, and shifts the two southbound auto lanes to the east. This increases the radius for vehicles turning off the Bridge onto NW Broadway, resulting in a more even transition and less possibility of encroachment into the bicycle lane.

The Broadway Bridge is a key portal leading into downtown; therefore maintaining system capacity is a key consideration. This recommendation maintains 2 southbound motor vehicle lanes, and while it reduces north/eastbound motor vehicle lanes from two to one, overall system capacity is maintained. First, both NW Broadway and NW Hoyt St, feed only one lane of traffic onto the Bridge ramp at a time. This recommendation extends one lane operations on the ramp only, a distance of approximately 850 feet. Second, capacity in the eastbound direction is limited by the traffic signals on the east side of the Broadway Bridge. Therefore this recommendation is not expected to result in increases in delay or congestion for vehicles crossing the Broadway Bridge.

Figure 15. Recommended Broadway Bridge ramp striping plan



NW Hoyt Street

NW Hoyt St between 9th Ave and Broadway has a 72' right-of-way. There are two 11' travel lanes, parking on both sides, and a dual center turn lane used for customer access to the Post Office (Figure 16). It is classified as a City Walkway, Local Service for other modes, and is a recommended City Bikeway.

Trucks access the Post Office on NW 9th Ave at NW Johnson St. The City Traffic Engineer has designated specific routes for trucks going to and from the Post Office, including this segment of NW Hoyt St (See Figure 6 on page 15). Therefore any changes to the cross section must maintain turning radii at corners for large trucks.

Figure 16. Existing NW Hoyt St cross-section, NW 9th to NW Broadway

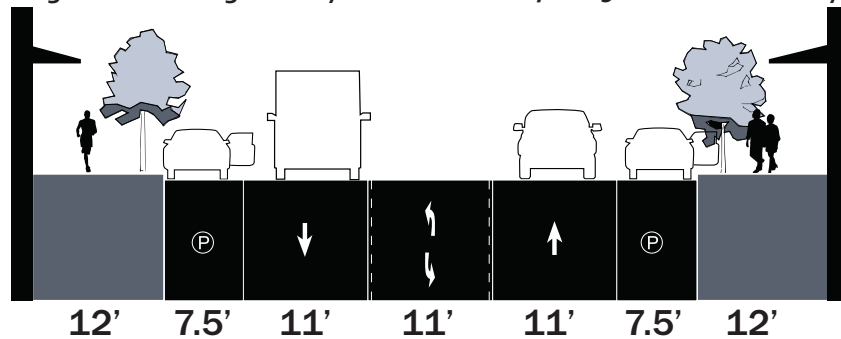
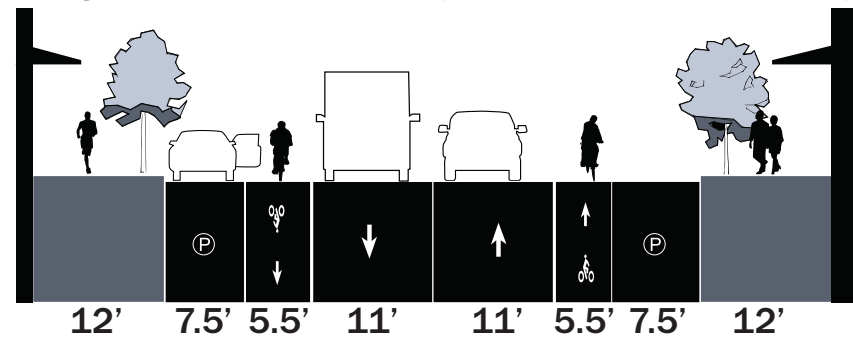


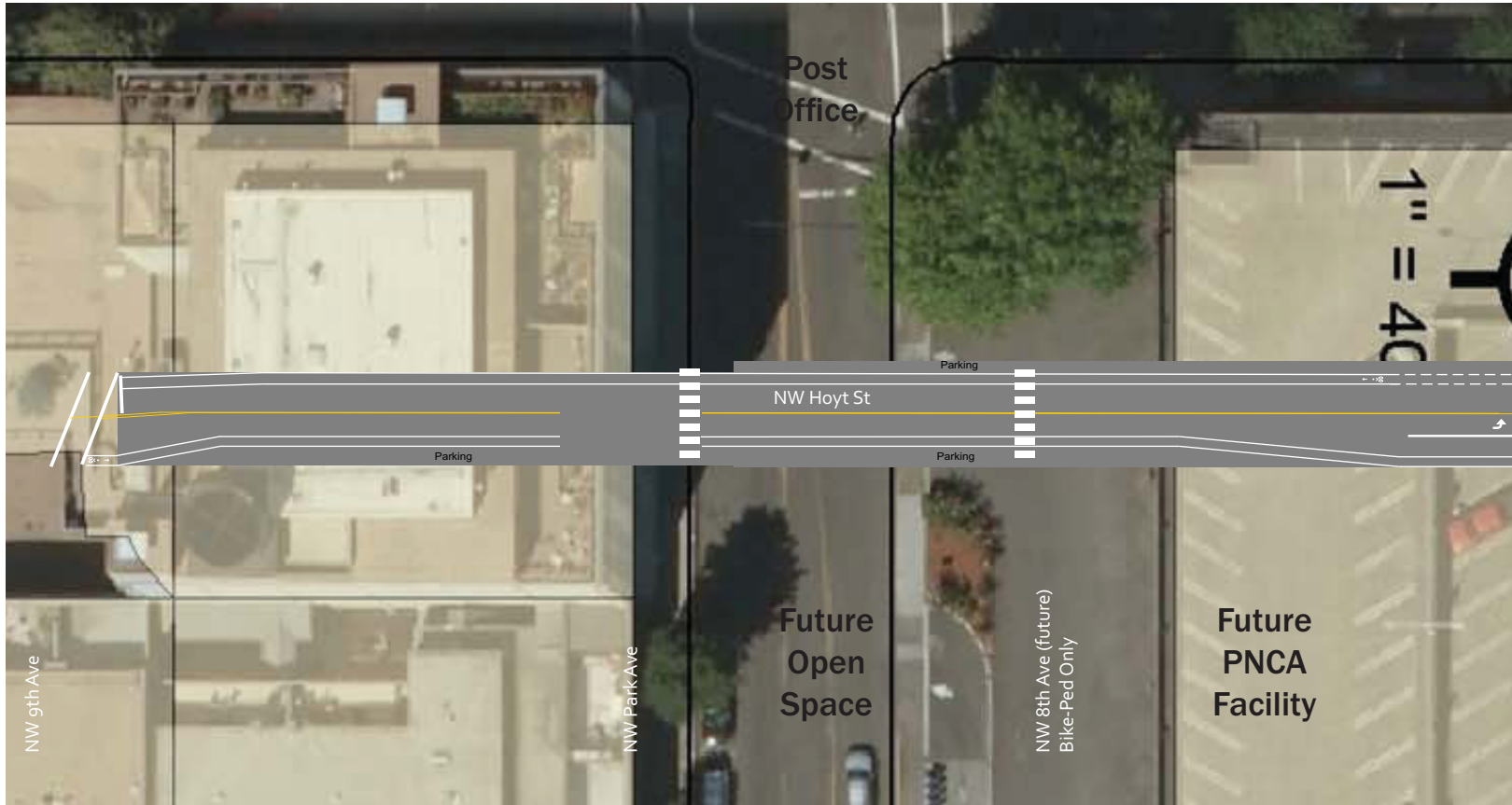
Figure 17. Recommended NW Hoyt St cross-section, 9th to Broadway



The recommendation for NW Hoyt St removes the center turn lane between NW 9th Ave and NW Broadway, adding bike lanes in both directions (Figure 17) and mid-block crossings. Parking is retained on both sides of the street. All corner radii and the left turn pocket at NW Broadway would remain unchanged to ensure that truck turns to and from NW Hoyt are not affected. See Figure 18 for striping details.

The Pacific Northwest College of Art (PNCA) has purchased the former Federal office building at 511 NW Broadway, and is planning to open a new academic facility by 2015. A high percentage of PNCA students commute by bicycle, and the recommended cross-section will facilitate safe and direct access to the new facility. A new park space is also envisioned for the surface parking lot directly north of the existing North Park Blocks. The current proposal calls for 2-way bicycle and pedestrian access on an extended NW 8th Ave, but no motor vehicle access. Together, these improvements will fill a key gap in the bikeway network between the Broadway Bridge and the North Park Blocks, particularly for northbound bicycle traffic.

Figure 18. Aerial view of recommended NW Hoyt Street striping plan

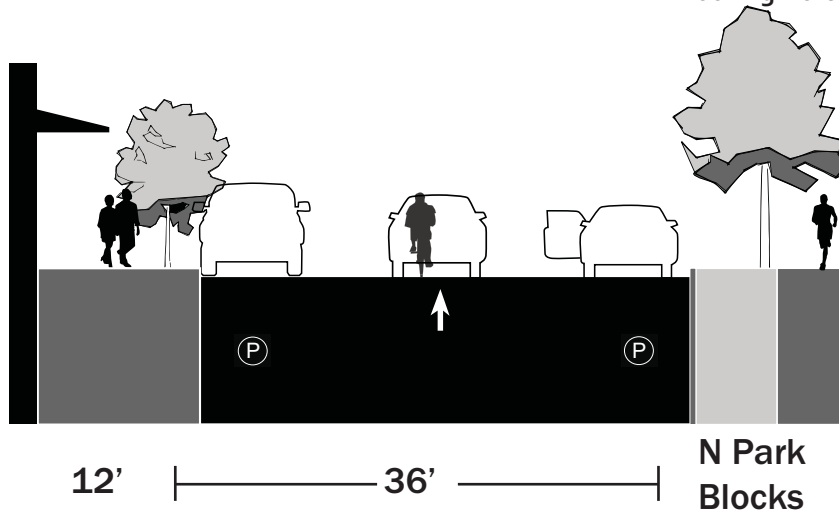


North Park Blocks

NW Park and 8th Avenues are recommended Major City Bikeways. They are classified as Local Service for other modes. Both streets are one-way, with parking on both sides and sidewalks on the non-park side only. Bicycles and motor vehicles share space in the roadway.

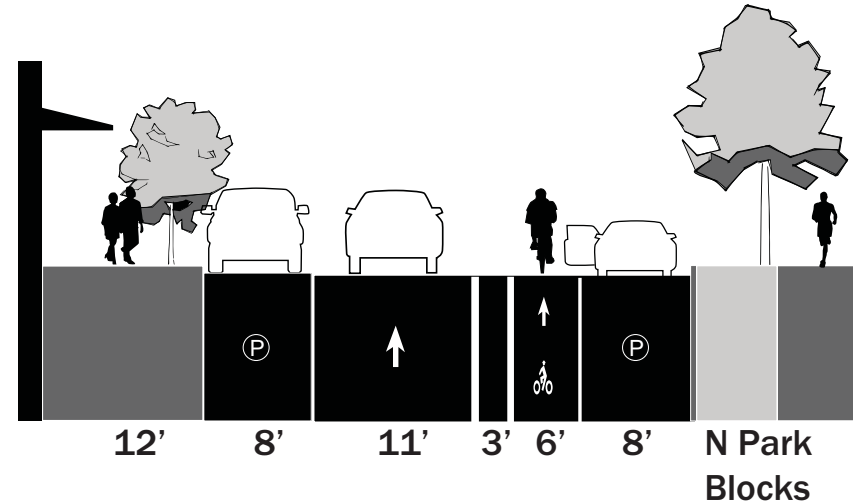
A long-term vision for the Park Blocks is of a continuous north-south bikeway through the Pearl District and Downtown on low-volume streets. This requires improvements to the crossings at major intersections, particularly W Burnside St.

Figure 19. Existing NW Park Ave* cross-section Looking North



*Both cross sections on this page also apply to southbound NW 8th Ave.

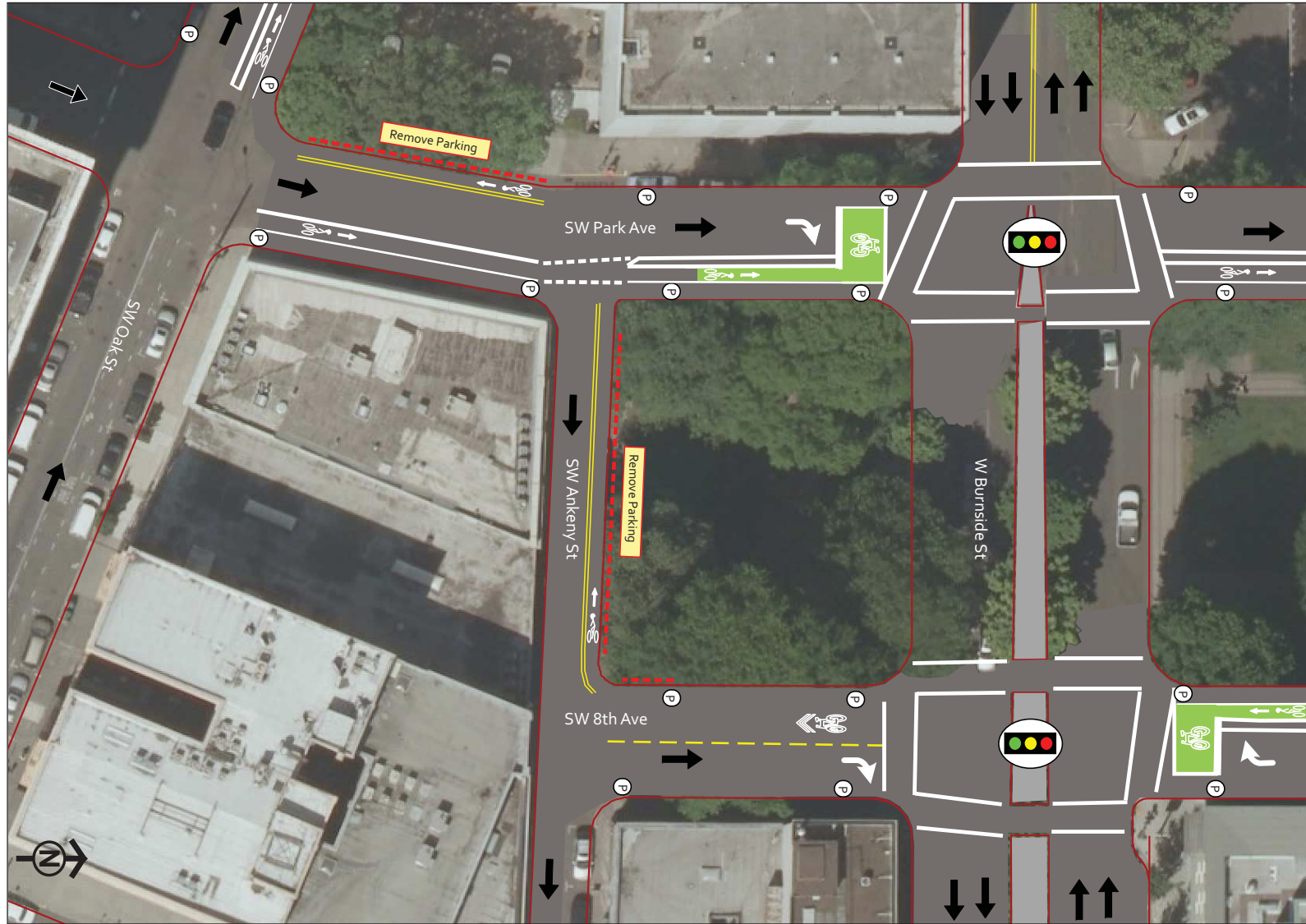
Figure 20. Recommended NW Park Ave* cross-section Looking North



The recommended cross section adds a 6' bike lane with a 3' buffer separating cyclists from moving traffic. Parking is retained on both sides of the street. Marked crosswalks with rapid flash beacons will be installed at NW Everett and Glisan Streets. This will facilitate north-south bicycle movement through this part of the District. With a future bike-ped extension of NW 8th Ave and the recommended bike lanes on NW Hoyt St, this will provide a direct route to the Broadway Bridge.

Figure 21 shows the recommended detail at W Burnside St. Bike boxes, contra-flow bike lanes, and new traffic signals combine to make crossing Burnside safer, improving the connection to the South Park Blocks and Portland State University.

Figure 21. Park and 8th Avenues, recommended crossing at W Burnside St



NW Naito Parkway

NW Naito Parkway is classified as a Traffic Access Street, intended to provide access in and out of the district. The *River District Right-Of-Way Standards* do not define a cross-section for the segment between NW 9th Ave and NW 15th Ave. The current cross-section in this segment has two northbound travel lanes, two southbound travel lanes, a center turn lane, and a sidewalk on the east side (Figures 22 and 23). Currently, trucks use Naito to access the Post Office on NW 9th Ave. Freight and passenger rail use the right-of-way to the west of the roadway. In this segment, Naito is classified as a City Walkway, Transit Access Street, and is a recommended Major City Bikeway.

Two options were developed to provide bicycle facilities and on-street parking. The rail corridor will remain in place under both options. Implementation will respond to funding opportunities and development patterns in this area. They could be built in a phased strategy or as stand-alone projects.

Figure 22. NW Naito Parkway, existing cross-section Looking North

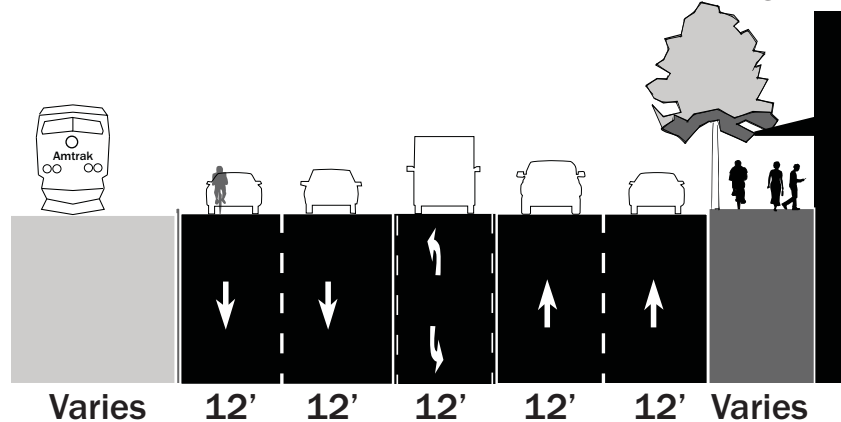


Figure 23. NW Naito Parkway, existing striping



Option A:

Option A would alter the cross section to provide two 11' travel lanes, an 11' center turn lane, 12' sidewalks on the east side (the existing sidewalk corridor), and buffered bike lanes in both directions (Figures 24 and 25). Parking is provided on the east side only. Intersections are designed to accommodate trucks.

The southbound right turn pocket onto NW 9th Ave would be eliminated. Although freight and passenger trains frequently block motorists on NW 9th Ave, video observation conducted during the planning process showed that the turn pocket is not necessary as most motorists tend not to queue at this location when trains are present.

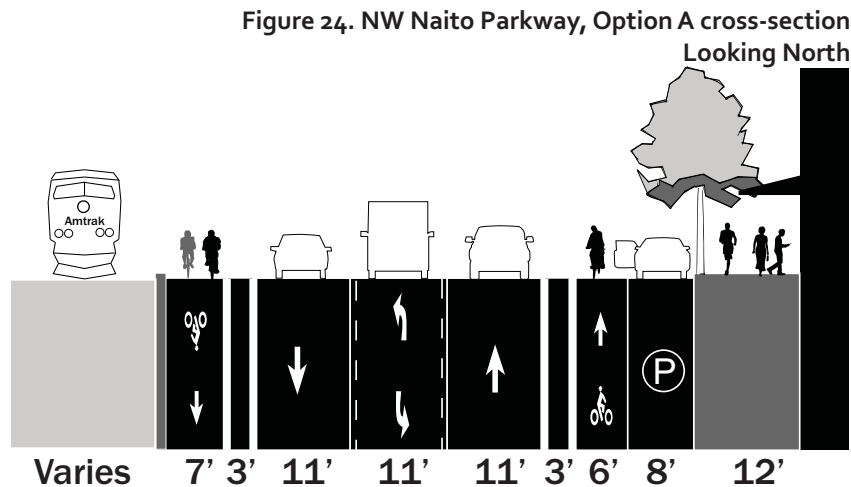
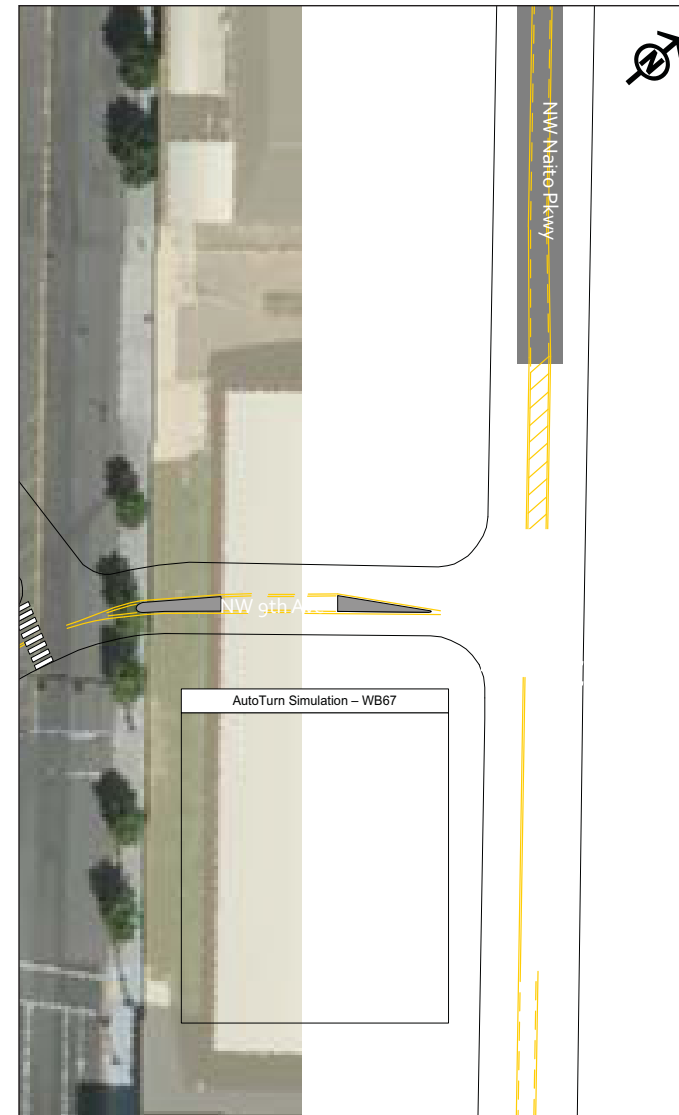


Figure 25. NW Naito Parkway, Option A striping plan



NW Naito Parkway

Option B:

Option B would move the curb on the west side a few feet further to the west, to allow construction of a 5' sidewalk and on-street parking on the west side. This option would maximize the amount of on-street parking to support the redevelopment of Centennial Mills. It would add standard 6' bike lanes in both directions (Figures 26 and 27). The center turn lane could become a landscaped median with street trees and additional pedestrian crossings. This option may require additional right-of-way.

Figure 26. NW Naito Parkway, Option B cross-section Looking North

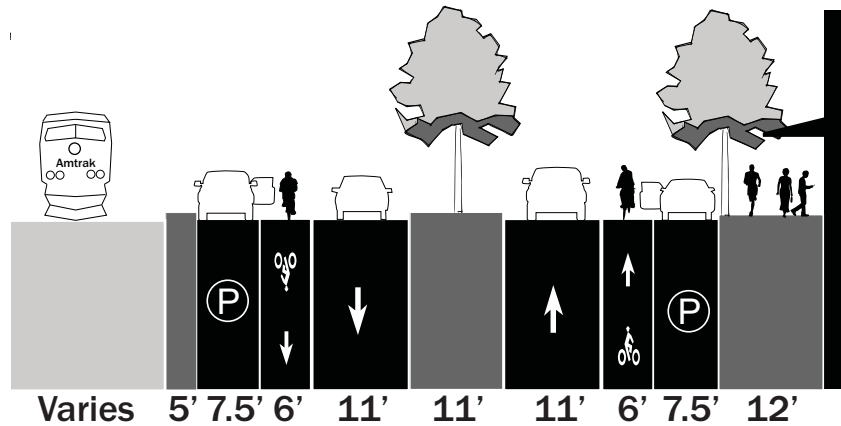
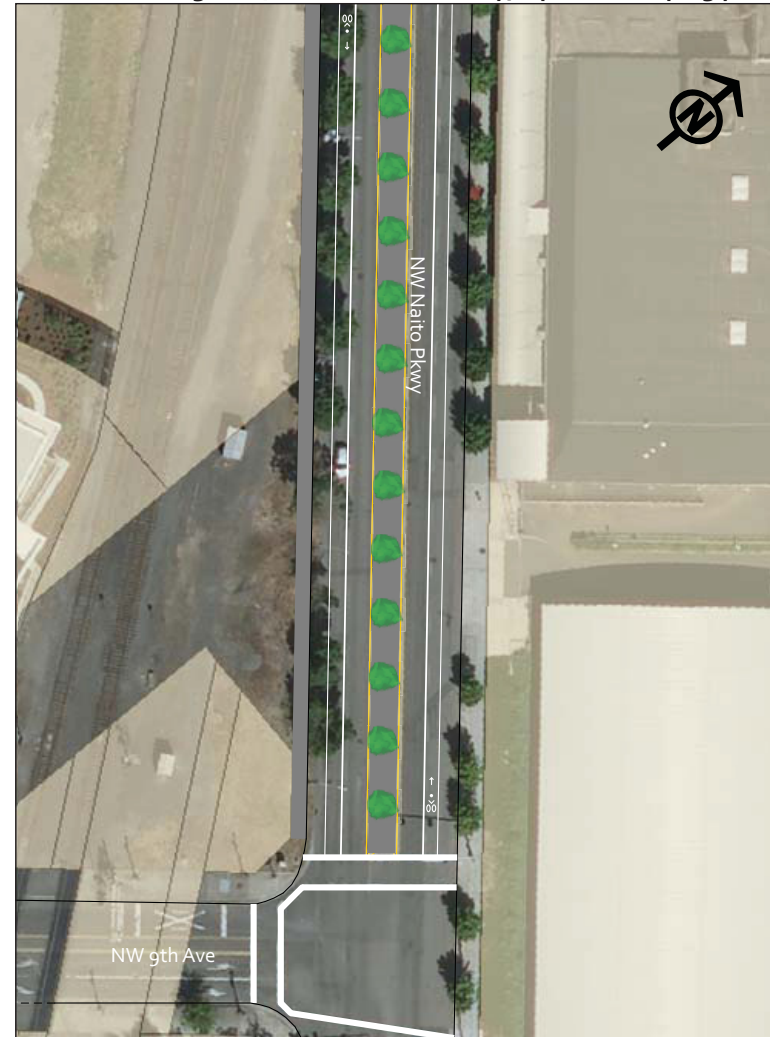


Figure 27. NW Naito Parkway, Option B striping plan



Note: Once driveway locations on the east side have been determined, the median could be designed with left turn pockets for southbound vehicles.

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NW Marshall Street

NW Marshall St is a proposed Major City Bikeway and is classified as Local Service for other modes. It is intended to be a primary east-west route for bicyclists traveling to and through the Pearl District. When NW Lovejoy and Northrup Streets were converted to one-way operations as part of the streetcar loop project, the intention was for those streets to accommodate auto and transit trips in and out of the district. Bike lanes were removed from Lovejoy, and Marshall was fitted with smooth areas for cyclists on the blocks paved with cobblestones.

Traffic counts and citizen feedback have shown that auto traffic is higher than desired on Marshall. The street is not intended to serve through auto trips; however, motorists frequently use Marshall instead of Northrup to access the Pearl and Northwest Portland from the Broadway Bridge. Prior to re-location (see below), streetcars stopped at the platform at NW 10th Ave and Marshall blocked visibility. As a result, motorists on 10th had a hard time seeing pedestrians and cyclists trying to cross 10th on Marshall; similarly, pedestrians and cyclists had a hard time seeing approaching vehicles. A three-phase process is underway to fix these issues.

Phase 1: Streetcar Platform Relocation

The streetcar platform at NW 10th and Marshall was moved one block north in December 2011, eliminating the visibility issues described above. The relocated platform allowed the traffic signal at 10th and Northrup to be re-programmed to detect the presence of streetcar and trigger the special streetcar phase only when a streetcar is present. This is expected to improve traffic operations since motorists no longer have to wait for the

streetcar phase every cycle. This should encourage motorists to use Northrup more and rely less on Marshall.

Phase 2: Traffic Diversion at 10th and Marshall

If the phase 1 treatments do not reduce auto volumes on Marshall, PBOT will test a semi diverter at the northwest corner of Marshall at 10th (Figure 28). Marshall will remain two-way, but motorists will not be able to turn left onto Marshall from NW 10th cross 10th on westbound Marshall. Parking will be removed from the north side of Marshall between 10th and 11th. Bicyclists will still be able to travel westbound on Marshall. If the test is successful in lowering traffic volumes on Marshall, the semi diverter will be made permanent.

Figure 28. Potential semi-diverter at NW Marshall St and NW 10th Ave

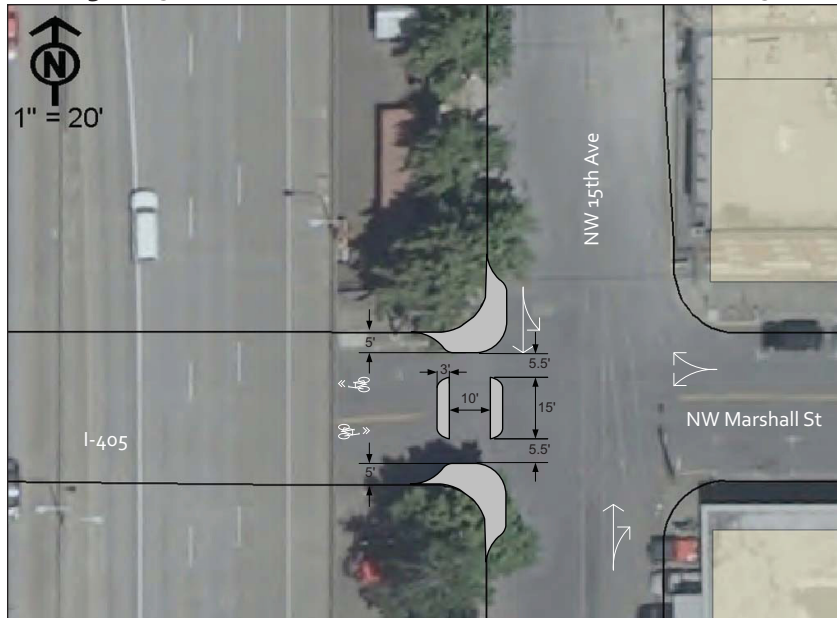


Note: Figures 28 and 29 are conceptual renderings, not the final designs.

Potential Phase 3: Traffic Diversion at 15th and Marshall

If the Phase 1 and 2 treatments do not sufficiently reduce auto volumes on Marshall, then PBOT may test a full diverter at NW 15th Ave and Marshall (Figure 29). The full diverter will not allow motor vehicles to cross 15th. This should encourage car drivers to use Lovejoy and Northrup to travel between the Broadway Bridge and Northwest Portland. Bicyclists and pedestrians will still be able to cross 15th.

Figure 29. Potential full diverter at NW Marshall St and NW 15th Ave



NW 14th Avenue

Subarea A: NW Everett Street

NW 14th Ave is a Major City Traffic Street and a City Bikeway. It is classified as Local Service for other modes. Between NW Davis St and NW Everett St, it is striped for 3 auto lanes, a bike lane, and a parking lane. There is a loading zone on the northern half of the block on the east side, where no parking is allowed.

The I-405 off-ramp merges with NW 14th Ave at NW Davis St. Motorists who want to travel eastbound on NW Everett St have one block to move over to the right lane. Due to the lack of parked cars in the loading zone, it has become a de facto right turn lane. Motorists are frequently observed crossing or obstructing the bike lane while making a right turn onto NW Everett St, posing a safety risk for bicyclists continuing northbound on NW 14th Ave (see photo below).



Figure 30. Enhanced bike lane and curb extension at 14th and Everett



The recommended improvements call for additional speed limit signs on the I-405 off-ramp, add a curb extension on the northeast corner and an enhanced bike lane (Figure 30). The curb extension will prevent motorists from crossing over the bike lane and ensure that right turns are made from the auto lane. The 25' curb radius will still allow large trucks to turn from 14th to Everett, a key movement for trucks accessing the Post Office and the District.

Subarea B: NW Johnson Street and other cross streets

NW Johnson St is classified a City Bikeway, and provides the only crossing of I-405 for bicycles and pedestrians in the middle part of the Pearl District with low auto volumes. REI is located on the NW corner of NW Johnson St and NW 14th Ave, and generates a large number of bicycle and pedestrian trips. In addition, NW Johnson St connects Northwest Portland to Jamison Square and the Ecotrust Building.

The intersection currently has a ladder-bar style marked crosswalk and two signs indicating a pedestrian crossing. The will add four curb extensions on NW 14th Ave, decreasing

Figure 31. Recommended crossing improvements at 14th and Johnson

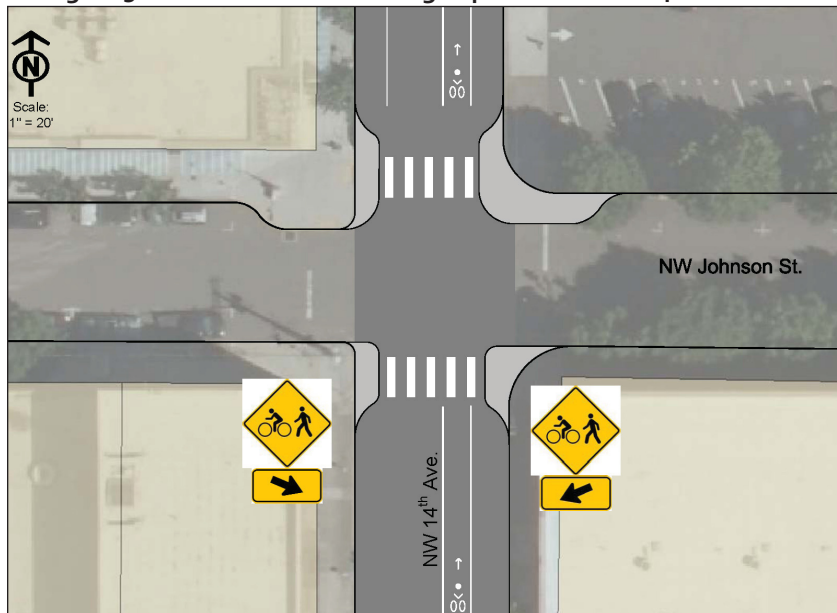


Figure 32. View of recommended improvements from NW 14th Ave



the pedestrian crossing distance and increasing the visibility of pedestrians waiting to cross (Figures 31 and 32). In addition, two new signs will be placed on the southern leg of the intersection to indicate that the intersection is a high volume crossing for pedestrians and bicyclists. A Rectangular Rapid-flash Beacon, activated by persons waiting to cross, will be included if crossing volumes increase to a level that warrants such a treatment. A full traffic signal is not recommended as this will likely result in increased auto volumes on NW Johnson St.

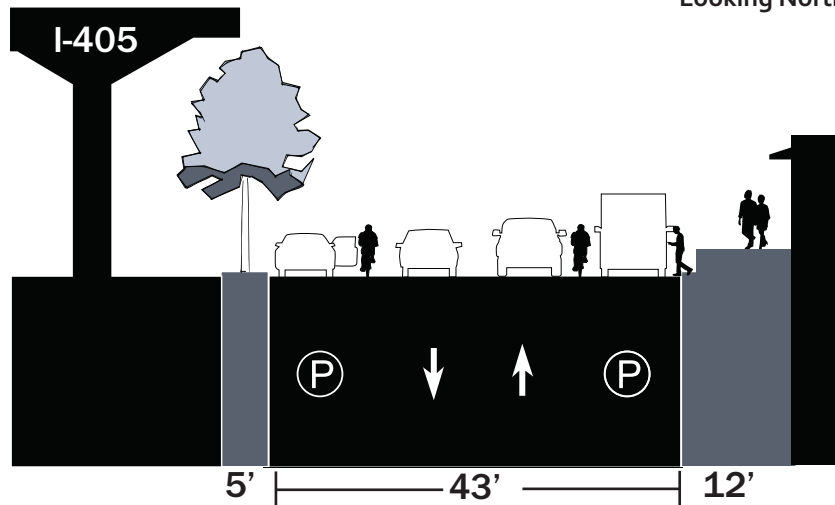
The same crossing treatment is recommended for NW Flanders, Marshall, Pettygrove, and Raleigh Streets as the north Pearl grows.

NW 15th Avenue

North of NW Hoyt St, NW 15th Ave is classified as a City Bikeway. It is classified as Local Service for other modes. For most of the length of NW 15th, the west curb is 5' from the I-405 right-of-way with minimal pedestrian improvements (Figure 33). In addition, there are abandoned freight rail spurs from NW Savier St to NW Glisan St.

Similar to NW 13th Ave, loading docks are allowed in the right-of-way, on the east side only. On the west side, standard 12' sidewalks are required. Both loading docks and sidewalks are required to meet ADA standards. Typically, sidewalks are built when the adjacent property redevelops. However, the presence of the I-405 viaduct on the west side makes that unlikely. Only one block, between NW Northrup and Overton Streets, has 12-foot sidewalk on the west side, constructed in 2010 as part of the expansion of the Portland Streetcar maintenance facility.

Figure 33. Existing NW 15th Ave cross-section Looking North



NW 15th Ave is classified as a Special Function Street in the *River District Right-Of-Way Standards*. The standards call for two-way operations, a 36' roadway, 12' sidewalks, optional curb extensions at corners, and parking allowed on both sides (Figure 34).

Figure 34. Current Right-of-Way Standard Looking North

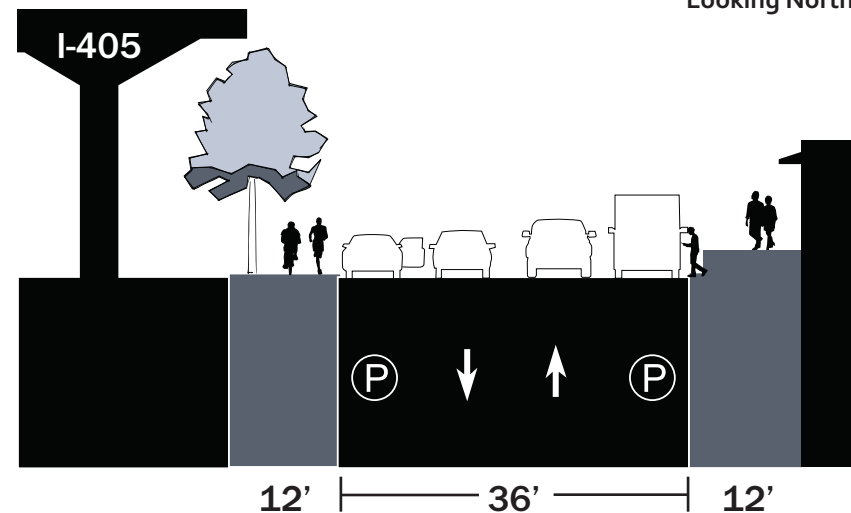
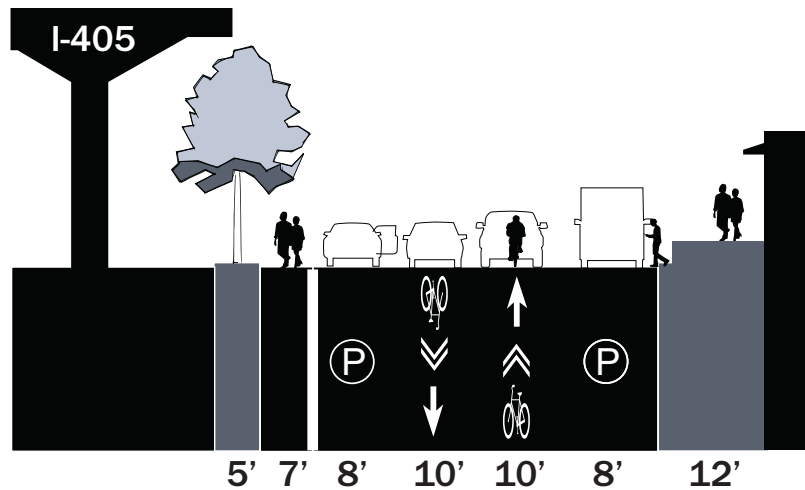


Figure 35. Recommended NW 15th Ave cross-section (north of Johnson)
Looking North



The recommendation will alter the striping north of NW Johnson St, adding 7' of pedestrian space on the west side by moving parking away from the curb (Figure 35). This will improve pedestrian access at minimal cost and preserve parking and loading access adjacent to buildings on the east side of the street. Bicycle sharrows will be striped in both directions. Additionally, the plan calls for removal of the abandoned freight rail tracks and smoothing of the road surface.

NW Couch/I-405 Interchange

Access ramps to and from I-405 terminate at W Burnside St, one of the primary portals for the Central City. NW Couch St, one block north of Burnside, crosses both the on- and off-ramps at grade. NW Couch St is the only non-arterial street to cross I-405 within one-quarter mile of this intersection. Counts conducted in winter 2011 showed 80 pedestrian crossings occur at this location in the PM peak hour. This number is likely much higher in the summer months. However, the current ramp intersection design prevents NW Couch St from operating efficiently and safely as a bicycle and pedestrian connection for the Central City and Northwest Portland.

The elements of the recommendation are divided into two distinct areas. Both will work with Couch either as a two-way street, or as part of a one-way couplet with Burnside. The final design that makes any change to traffic signalization, signage, or corner radii will be subject to approval of ODOT's Region 1 traffic engineer.

Project Area A: NW Couch St/I-405 on-ramp

Currently, a stop sign controls east- and westbound traffic on NW Couch St as it crosses the I-405 on-ramp. Freeway-bound traffic merges from two lanes to one lane south of Couch, as motorists approach the pedestrian crossing. Improvements at this location would include:

- Moving the on-ramp merge area to the north, past the Couch intersection by modifying striping, to reduce driver distraction by multiple driving tasks

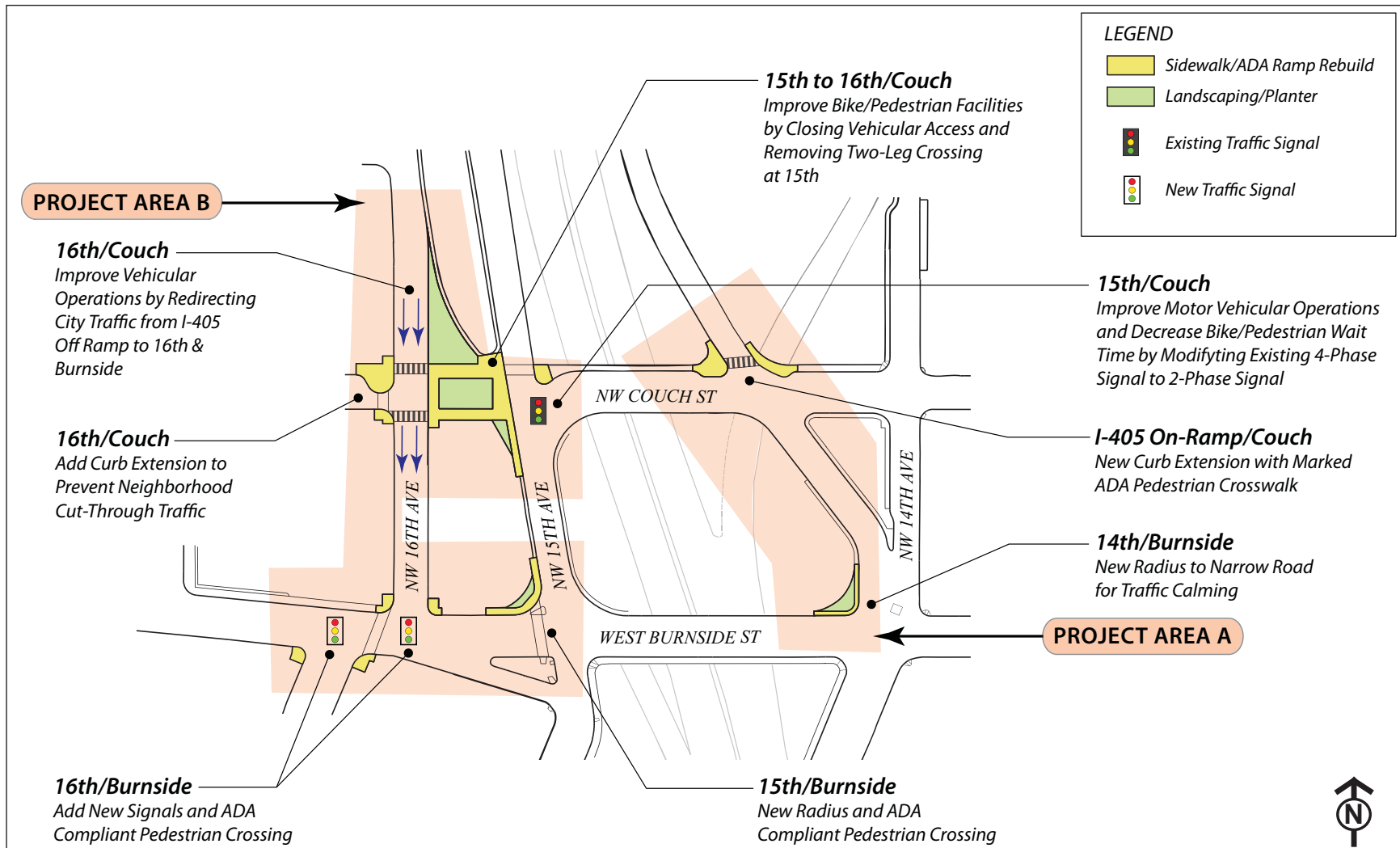
- Improving pedestrian visibility and reducing crossing distance by constructing new curb extensions and marked crosswalks on the northeast and northwest corners of the on-ramp/Couch intersection
- Adding pedestrian crossing signage
- Improving visibility for motorists on Couch by moving the eastbound stop bar forward and modifying screening on the freeway overpass
- Additional street lighting

Project Area B: NW Couch St/NW 16th Ave/I-405 off-ramp

Currently, NW 16th Ave merges with the I-405 off-ramp at NW Couch St. A four-phase traffic signal controls this intersection. Improvements at this location would include:

- Redirecting southbound traffic from NW 16th Ave to W Burnside St by removing the connection from NW 16th to the freeway off-ramp
- Improving off-ramp efficiencies by modifying to a two-phase signal cycle from the current four-phase
- Increasing pedestrian crossing opportunities by modifying each signal cycle to include a dedicated pedestrian phase, rather than button-activated
- Enhancing pedestrian safety by installing marked crosswalks across NW 16th Ave
- Upgrading the outdated traffic signal at NW 16th Ave and W Burnside St to modern equipment standards
- Removing a slip lane, constructing a new corner extension and marked crosswalks at NW 15th Ave and W Burnside St.

Figure 36. Recommended re-configuration of Couch/I-405 interchange



Note: The design shown is conceptual. The final design will include bicycle and pedestrian facilities through 15th and 16th Avenues.

NW Glisan Street

NW Glisan St is a Traffic Access Street, Transit Access Street, City Walkway, and a proposed City Bikeway. Currently, a westbound bike lane begins at NW 14th Ave and continues into Northwest Portland. The intersection at NW 15th Ave also provides access to I-405 northbound. As a result, there is a very wide turning radius, often resulting in right-turning motorists obstructing the bike lane, and creating long crossing distances for pedestrians (see photo below).



The recommendation for this location has two components (Figure 37). First, a left-turn bike box is recommended for bicyclists traveling northbound on NW 14th Ave who want to continue west on Glisan. At NW 15th Ave, a curb extension is recommended, along with an enhanced (green) bicycle lane before and through the intersection. The orange lines in Figure 37 show the path a large semi-truck (WB-67) would make through the intersection while turning right onto NW 15th Ave. This recommendation maintains truck access, enhances bicyclist visibility and safety, and reduces pedestrian crossing distances at a busy intersection. It results in the loss of one on-street parking stall.

Figure 37. Recommended improvements on NW Glisan St at NW 14th Ave and NW 15th Ave.

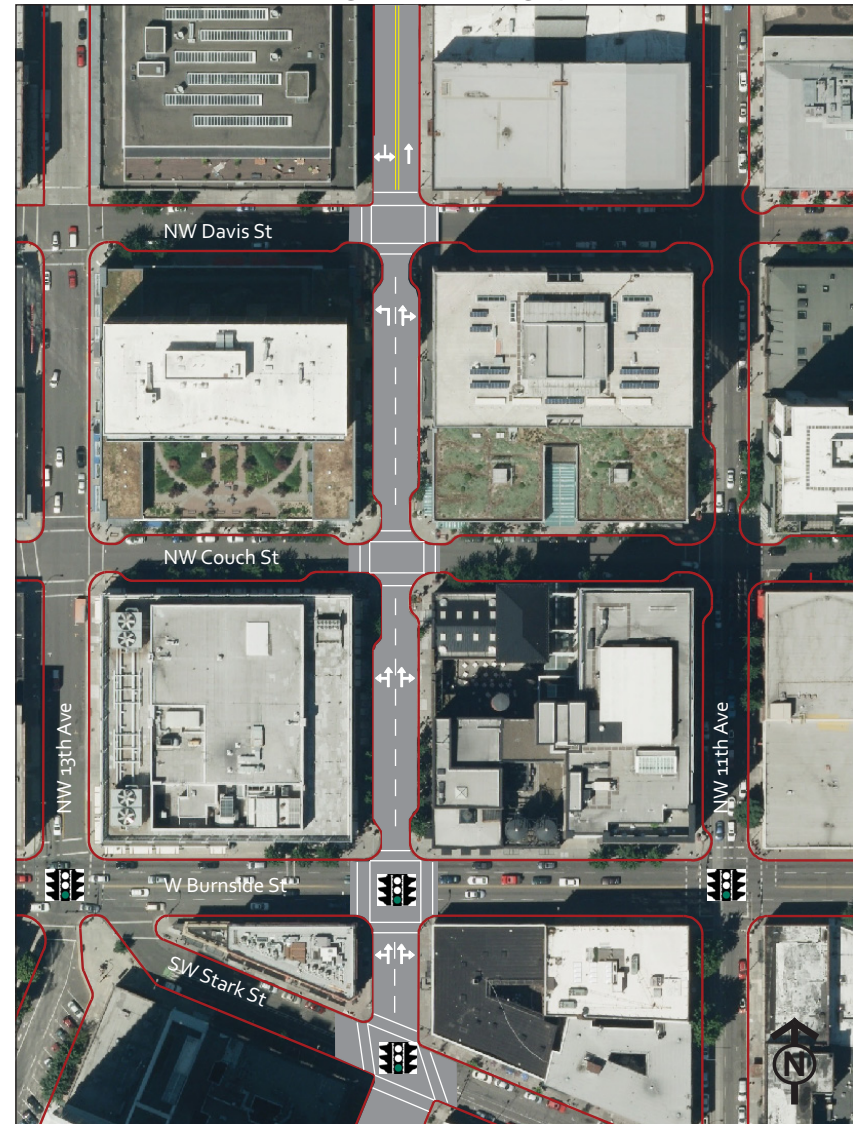


NW 12th Avenue

NW 12th Ave is classified as a City Bikeway, and as Local Service for other modes. It is unique in the Pearl District because it is one-way for only two blocks, northbound from W Burnside St to NW Davis St (Figure 38). North of NW Davis St it is two-way. During the planning process, stakeholders expressed the desire to extend two-way operations to W Burnside St to improve local circulation and provide another street for bicyclists and motorists destined for Burnside and downtown.

W Burnside St is a Major City Traffic Street, and therefore has signal priority (i.e., there is more “green time” for east-west traffic in this corridor). In order to prevent traffic disruptions on Burnside, a limited amount of green time can be given to north-south traffic. The high volume of pedestrians typically crossing Burnside at this location would also reduce the ability of traffic to clear the intersection.

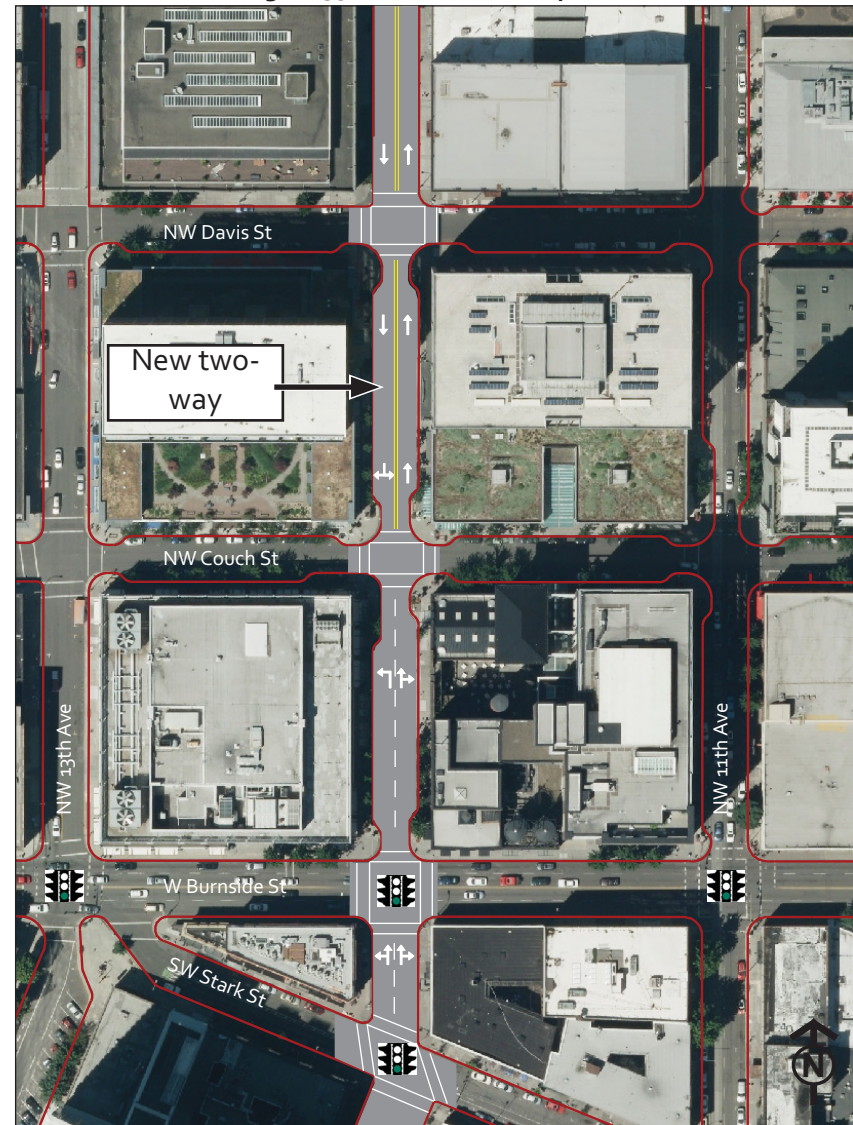
Figure 38. Existing operations on NW 12th Ave



Due to the small number of vehicles that could typically utilize a two-way NW 12th Ave to access Burnside and the cost associated with re-configuring the traffic signal at this intersection, it is recommended not to extend two-way operations on 12th to Burnside. Perhaps as part of a re-configured Burnside/Couch (for example, as a one-way couplet) it may be feasible to extend two-way operations to Burnside. The recommendation for this plan extends the two way system one block south to NW Couch St (Figure 39). Benefits include:

- Improving access for bicyclists traveling south on NW 12th Ave to destinations on NW Couch St (i.e., Whole Foods, Powell's)
- Increased access to and from the parking garage serving the Brewery Blocks
- Relatively easy and inexpensive to implement
- No significant negative impacts on motor vehicle flow

Figure 39. Recommended operations on NW 12th Ave

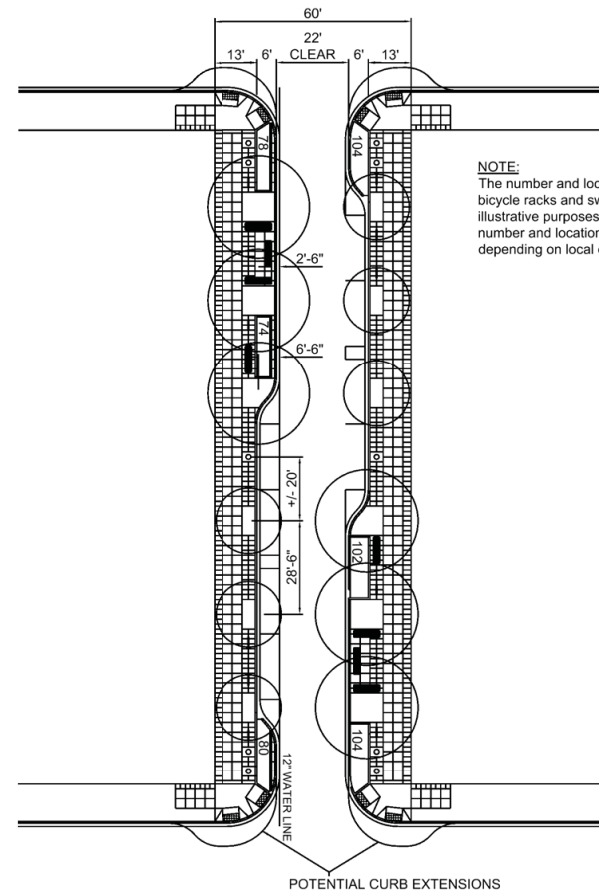


NW Pettygrove Street

These cross sections were developed for NW Pettygrove St from NW 11th Ave to NW 15th Ave. The goal was to create a “green street” connecting The Fields Park with Wallace Park. Wide sidewalks and large street trees will be prominent features, and stormwater facilities will capture and treat runoff from the entire street. The primary difference between the options is the amount of on-street parking. Option A provides three parking stalls on each block face, Option B provides 4, and Option C has no on-street parking.






On January 25, 2012, City Council adopted Ordinance # 185122, adding these designs to the *River District Right-of-Way Standards*. They will be implemented as properties redevelop. Developers will choose among the three options.

Figure 40. NW Pettygrove St Option A



NOTE:
The number and location of benches, bicycle racks and swales shown is for illustrative purposes only. Actual number and location will vary depending on local conditions.

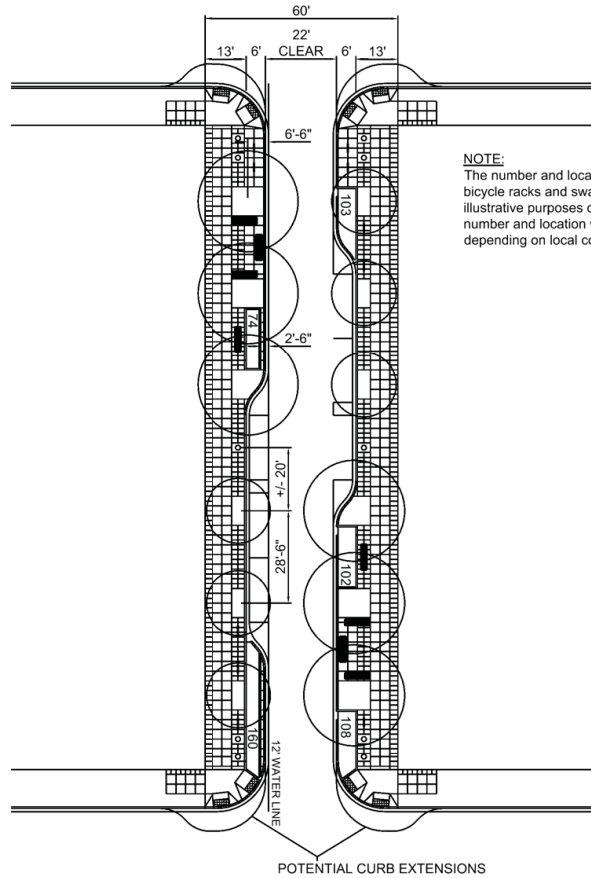
Four (4) motor vehicle parking spaces per block face, mix of larger canopy trees and broad headed trees

- LEGEND**
-  BENCH (2-4 PER BLOCK FACE)
 -  STAPLE BICYCLE RACK (2-5 PER BLOCK FACE)
 -  STREET TREE (6 PER BLOCK FACE)
 -  STREET LIGHT (3 PER BLOCK FACE)
 -  STORMWATER FACILITY (+/- 250 SF PER BLOCK FACE)

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user.

Note:
All material and workmanship shall be in accordance with the City of Portland Standard Construction Specifications.

Figure 41. NW Pettygrove St Option B



NOTE:
The number and location of benches, bicycle racks and swales shown is for illustrative purposes only. Actual number and location will vary depending on local conditions.

POTENTIAL CURB EXTENSIONS

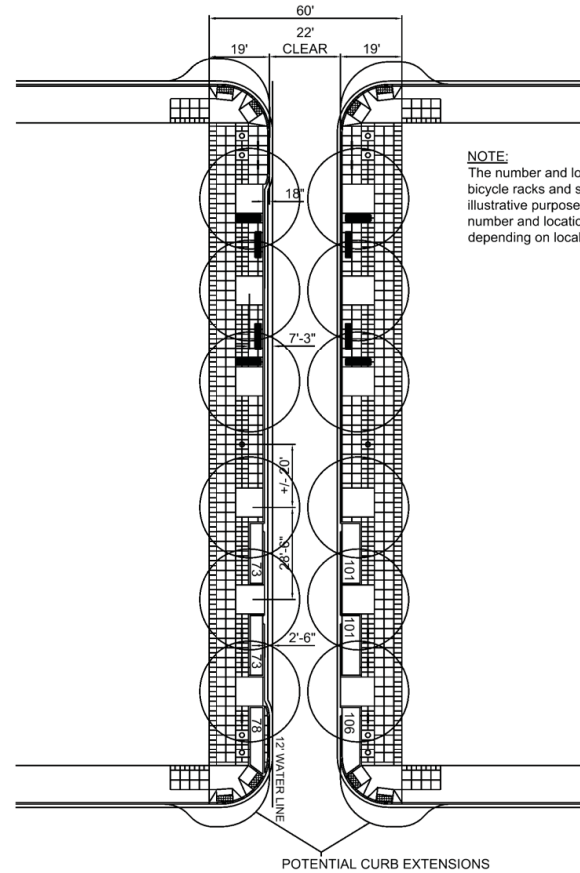
Three (3) motor vehicle parking spaces per block face, mix of larger canopy trees and broad headed trees

- LEGEND**
- BENCH (2-4 PER BLOCK FACE)
 - STAPLE BICYCLE RACK (2-5 PER BLOCK FACE)
 - STREET TREE (6 PER BLOCK FACE)
 - STREET LIGHT (3 PER BLOCK FACE)
 - STORMWATER FACILITY (+/- 250 SF PER BLOCK FACE)

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user.

Note:
All material and workmanship shall be in accordance with the City of Portland Standard Construction Specifications.

Figure 42. NW Pettygrove St Option C



NOTE:
The number and location of benches, bicycle racks and swales shown is for illustrative purposes only. Actual number and location will vary depending on local conditions.

POTENTIAL CURB EXTENSIONS

NO MOTOR VEHICLE PARKING SPACES, LARGER CANOPY TREES

- LEGEND**
- BENCH (2-4 PER BLOCK FACE)
 - STAPLE BICYCLE RACK (2-5 PER BLOCK FACE)
 - STREET TREE (6 PER BLOCK FACE)
 - STREET LIGHT (3 PER BLOCK FACE)
 - STORMWATER FACILITY (+/- 250 SF PER BLOCK FACE)

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user.

Note:
All material and workmanship shall be in accordance with the City of Portland Standard Construction Specifications.

Action Items and Project List

Type	Location	Description	Timeline
Bicycle infrastructure	Throughout District	Install more bicycle infrastructure, parking and bicycle sharing opportunities, enhanced crossings, markings and wayfinding signage.	Ongoing
Bicycle Parking	Throughout District	Explore options for providing additional on-street bicycle parking at key intersections	Near term, 1-5 years
Circulation	NW Naito, 14 th Ave, Everett, Glisan and Lovejoy Streets	Work to lower speed limits on Naito, 14th Ave to 30 mph or less, and Everett, Glisan and Lovejoy to 20mph ("business district" designation).	Near term, 1-5 years
Circulation	NW 12 th Ave	Convert 12 th Avenue between Couch and Davis two-way to enhance bicycle and vehicle access in the area.	Near term, 1-5 years
Circulation	NW 12 th Ave	With major changes to Burnside, study extending 12 th as a two-way street to Burnside.	Long term, 6-10 years
Cross section improvement	NW Pettygrove Street, Fields Park to I-405	Develop new right-of-way standards for Pettygrove. Work to improve the block under I-405 to provide features consistent with the new standards.	Standards adopted; implementation ongoing
Cross section improvement	NW Glisan at 14th and 15th	Create 2-stage left turn at 14th and improve auto/bike conflicts at 15th/I-405 ramp	Near term, 1-5 years
Cross section improvement	Broadway Bridge ramp, Lovejoy to Hoyt	Add a buffer to existing southbound bike lane	Near term, 1-5 years
Cross section improvement	NW Hoyt St, 9th to Broadway	Convert center turn lane to two bike lanes	Near term, 1-5 years
Cross section improvement	North Park Blocks	Add buffered bike lanes	Near term, 1-5 years
Cross section improvement	NW Glisan at 14th/15th	Install left turn bike box, curb extension, enhanced bike lane	Near term, 1-5 years
Cross section improvement	NW 14th at Everett	Install curb extension/enhanced bike lane	Near term, 1-5 years
Cross section improvement	NW 15th Ave, Hoyt to Savier	Re-stripe to add pedestrian buffer on west side	Near term, 1-5 years
Cross section improvement	NW Naito, 9th to 15th	Add on street parking (north side) and bike lanes (Option A)	Near term, 1-5 years

Type	Location	Description	Timeline
Cross section improvement	NW Naito, 9th to 15th	West side sidewalk and crossing treatments (Option B)	Long term, 6-10 years*
Crossing improvement	NW Marshall Street	If semi-diverter decreases auto traffic, consider adjusting stop signs on Marshall, to facilitate bicycle travel, provided it does not lead to significant additional traffic and is safe and convenient for pedestrians.	Near term, ongoing
Crossing improvement	NW Couch/Broadway	Install traffic signal	Near term, 1-5 years
Crossing improvement	NW Couch/11th	Install traffic signal	Near term, 1-5 years
Crossing improvement	NW 13th/Everett	Install traffic signal	Near term, 1-5 years
Crossing improvement	NW 13th/Glisan	Install traffic signal	Near term, 1-5 years
Crossing improvement	NW Couch/10th	Install traffic signal	Near term, 1-5 years
Crossing improvement	NW Couch/12th	Install traffic signal	Near term, 1-5 years
Crossing improvement	NW Park/8th and Burnside	Install traffic signal	Near term, 1-5 years
Crossing improvement	NW Flanders/Broadway	Install traffic signal	Near term, 1-5 years
Crossing improvement	NW14th/Johnson	Install curb extension/rapid flash beacon	Near term, 1-5 years
Crossing improvement	NW 14th/Marshall	Install curb extension/rapid flash beacon	Near term, 1-5 years
Crossing improvement	NW 14th/Pettygrove	Install curb extension/rapid flash beacon	Near term, 1-5 years
Crossing improvement	NW 14th/Raleigh	Install curb extension/rapid flash beacon	Near term, 1-5 years
Crossing improvement	NW Couch at I-405	Install curb extensions, new traffic signals, new lighting	Near term, 1-5 years
Crossing improvement	NW Overton, 9th-15th	Monitor traffic volumes and construct pedestrian crossing improvements as warranted	Ongoing
Crossing improvement	NW 9th/Glisan	Install traffic signal	Long term, 6-10 years
Crossing improvement	NW 8th/Glisan	Install traffic signal	Long term, 6-10 years
Crossing improvement	NW 9th/Everett	Install traffic signal	Long term, 6-10 years
Crossing improvement	NW Park/Everett	Install traffic signal	Long term, 6-10 years
Crossing improvement	NW Northrup/11th	Install traffic signal	Long term, 6-10 years

* This option could be constructed concurrent with Centennial Mills redevelopment)

Action Items and Project List

Type	Location	Description	Timeline
Crossing improvement	NW Northrup/12th	Install traffic signal	Long term, 6-10 years
Crossing improvement	NW Northrup/13th	Install traffic signal	Long term, 6-10 years
Crossing improvement	NW Northrup/14th	Install traffic signal	Long term, 6-10 years
Crossing improvement	NW Northrup/15th	Install traffic signal	Long term, 6-10 years
Crossing improvement	NW Northrup/16th	Install traffic signal	Long term, 6-10 years
Crossing improvement	NW Flanders over freeway	Construct new bike/ped bridge across I-405	Long term, 6-10 years
Funding	Throughout District	Strive to allocate funding for recommended improvements as they approach their implementation timeline or as needed given actual conditions.	Ongoing
Maintenance	NW Kearney, Marshall	Maintain and enhance cobblestone blocks.	Near term, ongoing
Maintenance	NW 12 th Ave, NW 15 th Ave	Remove rail spurs at intersections with major bikeways: Flanders, Johnson, Marshall, Pettygrove, Raleigh	Near term, 1-5 years
Maintenance	NW 12 th Ave, NW 15 th Ave	Remove remaining rail on 12th and 15th Avenues.	Long term, 6-10 years
Parking	Throughout District	Test new on street parking parking arrangements, including: remove striping to increase the number of spaces; explore new technologies to better manage the supply and provide better information to users.	Near term, 1-5 years
Parking	NW 15 th Ave	Increase on street parking along NW 15th Avenue (in full blocks on west side between Lovejoy/Marshall, Pettygrove/Quimby, and in half blocks elsewhere).	Near term, 1-5 years
Special street design	Davis, Flanders at North Park Blocks	Redesign streets crossing the Park Blocks with special designs and traffic calming to enhance the pedestrian environment and complement the function of the park.	Long term, 6-10 years
Transit	North Pearl and NW 14 th Avenue	Increase accessibility north of Lovejoy, along 14 th Avenue via additional transit lines and stops.	Long term, 6-10 years
Transit	Throughout District	Improve service over time: number of lines, frequency of service, quality of stops	Long term, ongoing
TSP Classification changes	Throughout District	Recommend new street classifications with TSP update	2013

