

City of Portland
Outer Powell Boulevard Conceptual Design Plan

Draft Policy Background Technical Memo



Prepared by:

City of Portland Bureau of Transportation

1120 SW Fifth Ave, Suite 800

Portland, OR 97204



Oregon Transportation and Growth Management Program

July 16, 2010

This project is partially funded by a grant from the Transportation and Growth Management (TGM) Program, a joint program of the Oregon Department of Transportation and the Oregon Department of Land Conservation and Development. This TGM grant is financed, in part, by federal Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), local government, and State of Oregon funds.

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

To obtain a copy of this document or more information about this project, please contact:

Stuart Gwin
Portland Bureau of Transportation
1120 SW 5th Avenue, Suite 900
Portland, OR 97204
Phone: 503-823-7788 | Email: Stuart.Gwin@portlandoregon.gov

Table of Contents

Heading	
Subheading	

Policy Background and Existing Conditions

INTRODUCTION

This report contains a review of plans, policies and studies affecting the transportation system, multi-modal traffic and streetscape design on Outer SE Powell Boulevard. Several regional and local plans call for a streetscape plan and multi-modal improvements along Powell Boulevard, including the *Portland Transportation System Plan*, *East Portland Action Plan*, *Powell/Foster Corridor Transportation Plan* (Metro) and the *2035 Regional Transportation Plan*.

Project Area

The Project Area extends along SE Powell Boulevard from I-205, approximately at SE 96th Ave, to SE 174th Ave (City Limits) and up to 500 ft from the centerline of SE Powell Boulevard. For transportation analysis purposes, the Study Area will extend north to SE Division Street and south to SE Foster Road.

The segments of SE Powell Boulevard proposed for review and refinement during this project include:

- I-205 to 124th Ave
- 124th Ave to 138th Ave
- 138th Ave to 148th Ave
- 148th Ave to 174th Ave (City Limits)

Background

Outer SE Powell Boulevard is a designated state highway (Hwy 26) that connects SE Portland to Gresham and east Multnomah County. This segment of Powell Boulevard is predominantly a two-lane rural cross-section with bike lanes and lacking continuous curbs and sidewalks.

The Powell/Foster Corridor Transportation Plan in 2003 used a regional demand model to determine the need to widen Powell Boulevard to five lanes from I-205 to SE 122nd Avenue, and four lanes east of SE 122nd, providing bike lanes and sidewalks throughout. The 2003 Plan called for a second planning effort to identify a specific design for Powell Boulevard improvements; this conceptual design plan project now underway will produce the specific street design. The conceptual design plan will inform both future preliminary engineering phases for public Capital Improvement Projects and private development requirements for dedication and frontage improvements.

The posted speed limit on SE Powell Boulevard is 35 miles per hour. The state, regional and local street classifications for SE Powell Boulevard are documented in this report.

Policy Background and Existing Conditions

Continued

STATE Policy

Oregon Highway Plan

The *1999 Oregon Highway Plan* (OHP) contains goals and policies to guide management and investment decisions on Oregon's highway system. Goals of the plan include:

- Increase safety and capacity as well as preserve capital investments previously made on the state highway system.
- Foster cooperation with regional and local governments.
- Increase linkages between land use and transportation.
- Develop and maintain access management.
- Provide linkages with other transportation modes.
- Create a sustainable and environmentally friendly system.

The segment of SE Powell Boulevard (US Highway 26) that is the subject of the Outer Powell Boulevard Conceptual Design Plan project is not on the federally designated National Highway System (NHS); however, it is on the state highway system. The OHP classifies highways according to their transportation function as part of the state system. The segment of SE Powell Boulevard (US Highway 26) which is the focus of this project is classified as a district highway.

District highways. These are facilities of countywide significance and function largely as county and city arterials or collectors. They provide connections and links between small urbanized areas, rural centers and urban hubs, and also serve local access and traffic. The management objective is to provide for safe and efficient, moderate to high-speed continuous-flow operation in rural areas reflecting the surrounding environment and moderate to low-speed operation in urban and urbanizing areas for traffic flow and for pedestrian and bicycle movements.

The OHP includes standards for access management – the spacing of streets and driveways that connect to highways – and for mobility. Access management is an important tool to maintain safety and capacity on road systems, as the more driveways and intersections on a given segment of road, the greater the potential for crashes and congestion. The access spacing standard for urban district highways, such as Outer Powell Boulevard, is 350 feet. ODOT must still ensure that property owners have reasonable access to their property, so policies allow existing lots that can only be accessed from the highway to have a single driveway or other access solution such as shared driveways.

Policy Background and Existing Conditions

Continued

As adopted in the OHP, ODOT uses volume-to-capacity (v/c) ratios to measure state highway performance rather than intersection or roadway levels of service. Various v/c thresholds are applied to all state highways based on functional classification of these facilities. The OHP's mobility standard on Outer SE Powell Boulevard is a volume-to-capacity ratio of 0.99 for the two-hour traffic peak. The standard for ramp terminals of freeway interchanges, including I-205 Southbound Ramps/SE Powell Boulevard and I-205 Northbound Ramps/SE Powell Boulevard, is 0.85. The intention is that planned improvements on SE Powell shall not result in the mobility standard being exceeded over the course of the planning horizon. If it is determined the standard will not be met, the plan must demonstrate why it would not be feasible to do so.

REGIONAL Policy

2035 Regional Transportation Plan

The Regional Transportation Plan is a 20-year blueprint for the Portland metropolitan region's transportation system. The plan sets a new course for future transportation decisions and implementation of the 2040 Growth Concept through 2035. The plan takes into account the changing circumstances and challenges we face and addresses them directly, adopting new approaches that distinguish this plan from past RTPs.

State law establishes requirements for consistency of plans at the state, regional and local levels. The RTP serves as Portland's regional transportation system plan (TSP), consistent with Oregon Transportation Planning Rule (TPR) requirements. The RTP must be consistent with the Oregon Transportation Plan, state modal and facility plans that implement the Oregon Transportation Plan, and the Oregon Transportation Planning Rule. Local plans must be consistent with the RTP. Projects and programs must be in the RTP's Financially Constrained System in order to be eligible for federal and state funding.

RTP Street Classifications

The regional designations for SE Powell Boulevard in the Metro Regional Transportation Plan are listed in Table 1. These designations are described in the paragraphs below.

Table 1: Regional Transportation Plan Designations

Mode	Segment	Designation
Street Design	Willamette River – City Limits	Regional Street
Motor Vehicle	Willamette River – City Limits	Major Arterial

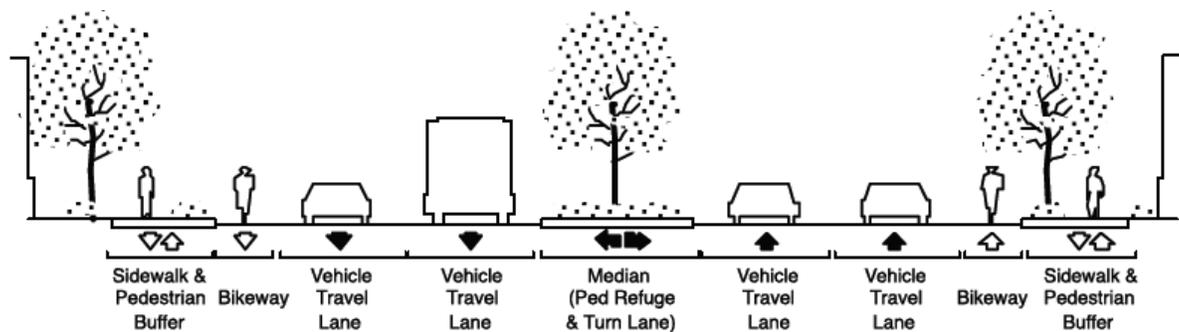
Policy Background and Existing Conditions

Continued

Public Transportation	50 th Ave – City Limits	Frequent Bus
Public Transportation	Willamette River – City Limits	High Capacity Transit Corridor
Freight	Willamette River – City Limits	Road Connector
Bicycle	72 nd Ave – City Limits	Community Bikeway
Pedestrian	Willamette River – City Limits	Mixed-use Corridor

Regional Street. Regional streets are designed to carry significant vehicle traffic while also providing for public transportation, bicycle and pedestrian travel. These facilities serve a development pattern that ranges from low-density residential neighborhoods to more densely developed corridors and main streets, where buildings are often oriented toward the street at major intersections and transit stops. Regional street designs accommodate moderate motor vehicle speeds and usually include four vehicle lanes. Additional motor vehicle lanes may be appropriate in some situations. These facilities have some to many street connections, depending on the district they are serving. Regional streets have few driveways that are combined whenever possible. On-street parking may be included, and a center median serves as a pedestrian refuge and allows for left turn movements at intersections.

“Regional Street” 2040 Design Concept



Source: Metro 2035 Regional Transportation Plan - Arterial and Throughway Design Concepts

Major arterial. These facilities serve as primary links to the principal arterial system. Major arterials, in combination with principal arterials, are intended to provide general mobility for travel within the region. Motor vehicle trips between the central city, regional centers, industrial areas and intermodal facilities should occur on these routes. Major arterials serve as freight routes, with an emphasis on mobility.

Policy Background and Existing Conditions

Continued



2035 Regional Transportation Plan – Arterial and Throughway Network

Frequent bus. Frequent bus service offers local and regional bus service with stops approximately every 750 to 1000 feet, providing corridor service rather than nodal service along selected arterial streets. This service typically runs at least every 15 minutes throughout the day and on weekends though frequencies may increase based on demand, and it can include transit preferential treatments, such as reserved bus lanes and transit signal priority, and enhanced passenger infrastructure along the corridor and at major bus stops, such as covered bus shelters, curb extensions, special lighting and median stations.

High capacity transit network (HCT). High capacity transit is defined by its function: to carry high volumes of passengers quickly and efficiently from one place to another. Other defining characteristics of HCT service include the ability to bypass traffic and avoid delay by operating in exclusive or semi-exclusive rights of way, faster overall travel speeds due to wide station spacing, frequent service, transit priority street and signal treatments, and premium station and passenger amenities. Speed and schedule reliability are preserved using transit signal priority at at-grade crossings and/or intersections. High levels of passenger infrastructure are provided at transit stations and station communities, including real time schedule information, ticket machines, special lighting, benches, shelters, bicycle parking, and commercial services.

The transit modes most commonly associated with high capacity transit include:

- light rail transit - light rail trains operating in exclusive or semi-exclusive right of way

Policy Background and Existing Conditions

Continued

-
- bus rapid transit - regular or advanced bus vehicles operating primarily in exclusive or semi-exclusive right of way
 - rapid streetcar - streetcar trains operating primarily in exclusive or semi-exclusive right of way
 - commuter rail - heavy rail passenger trains operating on exclusive, semi-exclusive or nonexclusive (with freight) railroad tracks.

Other transit modes, such as exclusive track heavy rail or monorail, could be applied in Portland but have generally not been considered due to high costs.

Road connector. Designated freight route that connects freight facilities or freight generation areas to a main roadway route.

Community bikeway. Designated on-street routes that connect main streets, station areas, industrial areas and other regional attractions such as schools and parks and connect neighborhoods to the rest of the regional bicycle network. These bikeways are typically located on arterial streets but may also be located on collectors or other low volume streets. These bikeways should be designed using a flexible “toolbox” of bikeway designs, including bike lanes, cycle tracks (physically separated bicycle lanes) shoulder bikeways, shared roadway/wide outside lanes and bicycle priority treatments (e.g. bicycle boulevards).

Transit/mixed-use corridors. Priority areas for pedestrian improvements. They are located along good-quality transit lines and will be redeveloped at densities that are somewhat more than today. These corridors will generate substantial pedestrian traffic near neighborhood-oriented retail development, schools, parks and bus stops.

Transit/mixed-use corridors should be designed to promote pedestrian travel with such features as wide sidewalks with buffering from adjacent motor vehicle traffic, street crossings at a minimum of 530 feet – though an ideal spacing is 200 to 400 feet where possible (unless there are no intersections, bus stops or other pedestrian attractions), special crossing amenities at some locations, special lighting, benches, bus shelters, awnings and street trees.

RTP Regional Mobility Corridors

The 2035 RTP introduced the concept of regional mobility corridors, expanding the region’s focus on mobility from individual facilities to the network of facilities (supporting all modes of travel) and the adjacent land uses they serve. The corridor concept encompasses not only the primary throughways, but also parallel networks of arterial streets, regional bicycle parkways, high capacity transit, and frequent bus service. Of the 24 mobility corridors identified in the RTP, 13 are located with the City of Portland. For each mobility corridor, the Plan documents

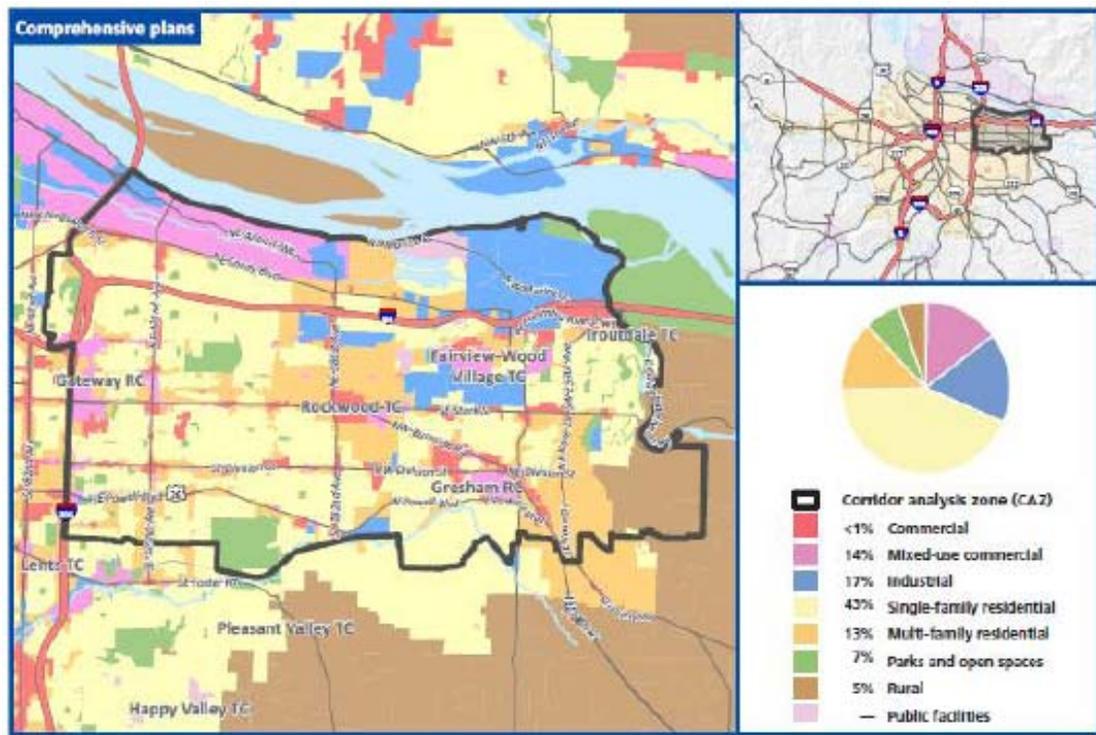
Policy Background and Existing Conditions

Continued

regional system needs, functions, solutions to address identified needs and investment strategies to work towards over the life of the RTP.

Mobility Corridor #6

Outer SE Powell is considered part of the Mobility Corridor 6 (*Gateway to Troutdale/Wood Village/Fairview*). Corridor 6 serves as the eastern gateway to the region connecting the Gateway and Gresham regional centers, and provides access to industrial areas, the Troutdale Airport and regional recreation, the Columbia Gorge and Mount Hood.



SE Powell Boulevard is a parallel arterial to the corridor’s principal throughway, Interstate-84. The RTP identifies eastbound SE Powell Boulevard (just east of I-205) as one of the arterial deficiencies within the corridor since it “does not meet 2005 nor 2035 performance thresholds.” SE Powell Boulevard ranks on ODOT’s Safety Priority Index System (SPIS) as a Category 4 and 5 (on a scale of 1-5). The RTP notes that there are over \$60,000,000 in unfunded improvements identified on SE Powell between I-205 and 174th Avenue to address performance and safety.

Policy Background and Existing Conditions

Continued

Powell/Foster Corridor Transportation Plan

In 2003, Metro developed the Powell/Foster Corridor Transportation Plan. The plan presents recommendations for implementing the Powell Boulevard/Foster Road Corridor Transportation Plan based on results of a process that evaluated multi-modal operations.

The Plan recommends a five-lane cross-section (four through lanes and turn lanes where needed) as well as bike lanes and sidewalks on Powell Boulevard. A project development study is recommended to determine the right-of-way requirements and general dimensions needed to support the planned cross-section and multi-modal needs. The Plan also recommends transit improvements be developed as part of the Powell study to enhance transit operations and reliability. Transit improvements may include transit queue-bypass lanes, far-side bus stops and traffic signal pre-emption.

The Powell/Foster Corridor Transportation Plan in 2003 used a regional demand model to determine the need to widen Powell Boulevard. The Outer Powell Boulevard Conceptual Design Plan will serve as the recommended project development study and produce a more fine-grained operational demand model to identify specific design improvements for Outer Powell Boulevard.

CITY Policy

Transportation System Plan

The Transportation System Plan (TSP) is the City's 20-year plan for transportation improvements. The Transportation Element (TE) serves as the policy basis for the TSP. The TSP describes what the system should look like and what purpose it fulfills. The goals, policies and objectives contained in the TE are a subset of Portland's Comprehensive Plan, which guides Portland's long-term growth and development. The TE chapter of the TSP also contains the street classification maps and street plan maps.

TSP Street Classifications

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. They 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.

Policy Background and Existing Conditions

Continued

The Regional Transportation Plan contains transportation policy and street classifications with which Portland must be consistent. The RTP’s street design and traffic classification systems uses different naming conventions from Portland’s. Table 2, taken from the Chapter 5 (Modal Plans) of the TSP, compares classifications used in RTP and the TSP.

Comparison of Traffic Classifications		Comparison of Street Design Classifications	
2000 RTP Classification	TSP Classification	2000 RTP Classification	TSP Classification
Principal Arterial (Freeway)	Regional Trafficway	Freeway	Urban Throughway
Principal Arterial (Highway)	Regional Trafficway	Highway	Urban Highway
Major Arterial	Major City Traffic Street	Regional Boulevard	Regional Main Street
Minor Arterial	Major City Traffic Street, Traffic Access Street (Central City), District Collector	Regional Street	Regional Corridor
Collector of Regional Significance*	Traffic Access Street (Central City), District or Neighborhood Collector*	Community Boulevard	Community Main Street
Not mapped	Neighborhood Collectors, Traffic Access Street (Central City)	Community Street	Community Corridor
Not mapped	Local Service Traffic Street	Urban Road	Urban Road
		Rural Road	None in Portland
		Local Street	Local Street
		Boulevard Intersections	Multimodal Intersections (not mapped)

Table 2: RTP and TSP Classification Comparisons (City of Portland TSP Chapter 5)

The street classifications from the TE Chapter of the TSP for SE Powell Boulevard are listed in Table 3 below. These classifications are described in the paragraphs below.

Table 3: Transportation System Plan Street Classifications

Mode	Segment	Classification
Traffic	Willamette River – City Limits	Major City Traffic Street
Transit	50 th – City Limits	Transit Access Street
Bicycle	SE 72 nd – City Limits	City Bikeway <i>(Adopted TSP)</i>
Bicycle	I-205 path – City Limits	Major City Bikeway <i>(Adopted 2030 Bicycle Plan)</i>
Pedestrian	Willamette River – City Limits	City Walkway
Freight	Willamette River – City Limits	Major Truck Street
Emergency Response	Willamette River – City Limits	Major Emergency Response
Street Design	Willamette River – City Limits	Regional Corridor

Major City Traffic Street: Intended to serve as the principal routes for traffic that has at least one trip end within the Southeast transportation district. On-street parking may be removed and additional right-of-way purchased to provide adequate traffic access when consistent with the street design designation of the street. Evaluate the need for on-street parking to serve adjacent land uses and improve the safety of pedestrians and bicyclist when making changes to the roadway.

Transit Access Street: Intended for district-oriented transit service serving main streets, neighborhoods and commercial, industrial and employment areas. Provide safe and convenient pedestrian and bicycle access to transfer points and stops and long Transit Access Streets.

Policy Background and Existing Conditions

Continued

Employ transit-preferential measures at specific intersections to facilitate bus operations where there are significant bus delays. Applicable preferential treatments include signal priority, queue jump lanes and curb extensions.

City Bikeway (*Adopted TSP*): Intended to serve the Central City, regional and town centers, station communities and other employment, commercial, institutional and recreational destinations. Consider the following factors in determining the appropriate design treatment for City Bikeways: traffic volumes, speed of motor vehicles and street width. Minimize conflicts where City Bikeways cross other streets. Consider the following possible design treatments for City Bikeways: bicycle lanes, wider travel lanes, wider shoulders on partially improved roadways, bicycle boulevards and signage for local street connections.

Major City Bikeway (*Adopted Portland Bicycle Plan for 2030*): In February 2010, the City of Portland adopted the Portland Bicycle Plan for 2030. Proposed changes to the bicycle classifications have not yet been adopted as part the City's TSP. The 2030 Bicycle Plan recommends classifying Outer SE Powell as a Major City Bikeway. Major City Bikeways form the backbone of the city's bikeway network and are intended to serve high volumes of bicycle traffic and provide direct, seamless, efficient travel across and between transportation districts. Major City Bikeways should be designed to accommodate large volumes of bicyclists, to maximize their comfort and to minimize delays by emphasizing the movement of bicycles. Motor vehicle lanes and on-street parking may be removed on Major City Bikeways to provide needed width for separated-in-roadway facilities where compatible with adjacent land uses and only after taking into consideration the essential movement of all modes.

City Walkway: Intended to provide safe, convenient and attractive pedestrian access to activities along major streets and to recreational and institutions; provide connections between neighborhoods; and provide access to transit. Use the Pedestrian Design Guidelines to design City walkways. Consider special design treatments for City Walkways that are also designated as Regional or Community Main Streets.

Major Truck Street: Intended to serve truck trips with one or both trip ends in the Southeast transportation district. Major Truck Streets should distribute truck traffic from Regional Truck Streets to Minor Truck Streets and provide access to Truck Districts. On new or reconstructed Major Truck Streets, buffer adjacent residential uses from noise impacts, where warranted. Truck access points should be consolidated to the extent feasible to reduce conflicts with all modes.

Major Emergency Response Street: Intended to serve primarily the longer, most direct legs of emergency response trips. Design treatments on Major Emergency Response Streets should

Policy Background and Existing Conditions

Continued

enhance mobility for emergency response vehicles by employing preferential or priority treatments. Major Emergency Response Streets are not eligible for traffic slowing devices in the future. Existing traffic slowing devices may remain and be replaced if necessary.

Regional Corridor: Regional Corridors are designed to include special amenities to balance motor vehicle traffic with public transportation, bicycle travel and pedestrian travel. Regional Corridors usually include four vehicle travel lanes. They occasionally have additional lanes in some situations, such as to allow turning movements. Design shall consider the following: moderate vehicle speeds; the use of medians and curb extensions to enhance pedestrian crossing where wide streets make crossing difficult or to manage motor vehicle access' combined driveway; on-street parking when feasible; buffered sidewalks with pedestrian amenities such as special lighting and special crossing amenities tied to major transit stops; landscape strips, street trees or other design features that create a pedestrian buffer between curb and sidewalk; improved pedestrian crossings at signalized intersections; striped bikeways or wide outside lanes; and motor vehicle lane widths that consider the above improvements.

TSP Policy 6.39 Far Southeast Transportation District

Address transportation issues in the Far Southeast District by encouraging the use of transit and demand management measures, improving pedestrian/bicycle access, creating a more connected street system, and improving the functioning of arterials.

Objectives:

- A. Consider existing and future land use patterns, environmental impacts, the need for additional connectivity of collectors, and transit accessibility when improvements are planned and designed for the arterial system, particularly SE Powell and SE Foster.
- B. Improve arterials through better signalization and intersection design to serve adjacent land uses and to provide for access to adjacent neighborhoods, while minimizing non-local traffic on local streets.
- C. Accommodate bicyclists and pedestrians along arterials and at crossings, especially at activity nodes, through a combination of street and traffic management improvements.
- D. Reduce travel demand in the district by providing additional transit service, including feeder service to light rail and alternatives to buses for low-density areas.
- H. Implement transportation improvements identified in the Lents Urban Renewal Plan that will revitalize its commercial core and environs.

TSP Major Transportation Improvement List

Portland's TSP complies with the state TPR mandate to list major planned facilities and system improvements. The TSP major transportation improvements list serves as the primary source of new large-scale projects for PBOT's Capitol Improvement Programs (CIP).

Policy Background and Existing Conditions

Continued

TSP Project Number: 80015

Project Name: Powell, SE (I-205 – 174th): Multi-modal Improvements

Project Description: Widen street to four lanes with sidewalks and bike lanes.

Portland Bicycle Plan for 2030 (2010)

The Portland Bicycle Plan for 2030 includes a list of capital projects and recommended actions. It recommends strengthening City policies in support of bicycling, providing more and better bicycle parking, expanding educational and encouragement programs and developing ongoing measures of success. The Portland Bicycle Plan recommends that the bicycle classification for SE Powell Boulevard from the I-205 Path east to the City Limits be changed from City Bikeway to Major City Bikeway. The proposed changes to the bicycle classifications have not yet been adopted as part the City's TSP.

City of Portland Freight Master Plan (2006)

The Freight Master Plan provides a road map for managing freight movement and commercial delivery of goods and services in Portland, today and into the future. The goal is to foster a freight system that works for the community. The Freight Master Plan objectives center around three main themes: mobility, livability, and healthy economy. The Plan recommends freight system classifications to correspond with the types of freight movement on the street and the adjacent land use activities. SE Powell Boulevard is designated as a Major Truck Street from the Ross Island Bridge east to the City Limits. The design objective for this freight classification is that Major Truck Streets should accommodate all truck types, as practicable.¹

Portland Pedestrian Master Plan (1998)

The Pedestrian Master Plan (PMP) is a 20-year framework for improvements that will enhance the pedestrian environment and increase opportunities to choose walking as a mode of transportation. The PMP is organized into five major elements: pedestrian policies, pedestrian street classifications, pedestrian design guidelines, a list of capital projects, and set of recommended funding strategies. The entire length of SE Powell Boulevard is designated as a City Walkway in the PMP. The PBP calls for a phase one project on SE Powell Blvd – 69th to 174th (#406) to construct sidewalks and crossing improvements for pedestrian travel and access to transit.

¹ *Designing for Truck Movements and other Large Vehicles in Portland*. Adopted October 8, 2008. City of Portland Office of Transportation