AREA STUDIES

12

INTRODUCTION

Over the course of the Transportation System Plan (TSP) development, the City of Portland also conducted a number of area studies that inform the TSP's content. These planning studies focus on key areas that will accommodate employment and housing growth, as identified in the Region 2040 Growth Concept. Each study identifies issues that affect the area's ability to meet its intended 2040 design types. The studies also identify implementation strategies, including transportation improvements and, in some cases, changes to land use regulations. The studies' recommended changes to the transportation system are incorporated into the TSP.

This chapter summarizes the approach and findings of the following area studies:

- Central Eastside Development Opportunity Strategy
- Columbia Transportation Corridor Study
- Hollywood and Sandy Plan
- Lents Town Center Business District Transportation Plan
- North Macadam District Planning
- Opportunity Gateway Concept Plan
- St. Johns Truck Strategy
- South Portland Circulation Study
- Tacoma Main Street Plan
- West Portland Town Center Transportation Plan
- 2040 Centers Transportation Strategies and Mode Split Targets Project

CENTRAL EASTSIDE DEVELOPMENT OPPORTUNITY STRATEGY

Introduction

The Portland Development Commission (PDC), in conjunction with a citizen and business steering committee, the Portland Office of Transportation (PDOT), the Portland Bureau of Planning, and the Portland Bureau of Parks and Recreation, are completing the Central Eastside Development Opportunity Strategy (DOS) for a portion of the Central Eastside, which is a subdistrict of the Central City. The current schedule calls for a review of the DOS in spring 2002.

Study Area

The DOS area lies entirely within the Central Eastside Industrial District. Stretching from SE Morrison on the north to SE Caruthers on the south, the DOS area lies between the Willamette River and the railroad mainline; at SE Caruthers Street, the DOS area lies between the river and SE Grand Boulevard.

Study Purpose

The DOS was initiated to determine the feasibility of capturing new jobs and development and to establish a vision for the area. This area was selected because of the availability of vacant/developable land. The study reviews the transportation infrastructure to determine if it is adequate to serve new jobs and development, which provide for more dense employment and different work patterns, and examines how the infrastructure could provide better connections to the Central City and surrounding districts.

Previous Studies

Previous studies reflect a long-term concern with access to and from the Central Eastside and identify several opportunities to improve that access.

- The Central Eastside Transportation Study (July 1990) reviewed existing transportation policies, evaluated current and future transportation conditions, and developed a set of improvement options and recommendations for the study area. The recommended improvements included several surface street projects (restriping, construction, extension, signalization, improvements, railroad crossings); highway improvements (realignment, ramps, reconstruction, signalization); transit improvements; and pedestrian and bicycle improvements.

- The I-5 Southbound Access Study (November 1995) identified and evaluated alternative freeway access routes and supporting improvements to I-5 southbound from the Central Eastside. This study concentrated on assessing the differences between connecting a Water Avenue ramp directly to I-5, versus improving the connection to the Ross Island Bridge as a way to I-5 on the west side of the Willamette River. City Council rejected the recommendation for a Water Avenue ramp connection.

- The Central City Transportation Management Plan (December 1995) addressed the entire Central City. The plan identifies connection to the existing transportation infrastructure as a discrete policy for the Central Eastside (Policy 2.1: System Investments). It also identifies a need for access to the Central Eastside from the I-5 freeway system. Policy 20: Central Eastside, states: "Preserve the Central Eastside as an industrial sanctuary while improving freeway access and expanding the area devoted to the Eastbank Esplanade."

All of these previous studies also recognize concerns about parking in the Central Eastside, especially for people working or shopping downtown; barriers to convenient pedestrian and bicycle movement; and inadequate transit service.

Existing Conditions

Land Use

No single type of land use dominates the DOS area. The area includes institutions, offices, distribution, and manufacturing uses. The KPTV offices, Portland Community College, and the Oregon Museum of Science and Industry are located in the southern portion. The northern portion is occupied more by manufacturing and distribution. Several surface parking lots and vacant parcels add to the redevelopment potential. The surrounding area is largely dominated by truck-related manufacturing and distribution uses. Martin Luther King (MLK) Jr. Boulevard and Grand Avenue serve as the area's commercial/retail corridor.

Zoning

The Portland Comprehensive Plan designates the majority of the area as industrial sanctuary, including heavy and general industrial uses. Some portions of the study area are designated for employment uses. Willamette Greenway overlay zoning protects the riverbank.

Transportation

Bridges largely determine the study area's character. The Marquam, Hawthorne, and Morrison bridges pass through the DOS area above grade. The bridge approach structures and elevated portion of I-5 dominate the area's appearance, and also limit development opportunities.

It is anticipated that both area-generated (employment) traffic and pass-through north/south traffic will continue to increase in this area, creating serious demand for the available traffic capacity, particularly along the MLK/Grand corridor. It is also assumed that commercial/retail growth will continue within this corridor. Access to the Ross Island Bridge and I-5 southbound continues to be indirect and difficult.

East/west travel in the area has been and remains an issue as well, particularly for pedestrians and bicyclists trying to access the river and greenway. The Eastside Esplanade runs along the east bank of the Willamette and provides an attractive environment that draws people, both locally and regionally.Access to the surrounding areas and particularly to

I-5 southbound remain circuitous and at times difficult. This situation is exacerbated during peak hours when the MLK/Grand corridor operates as a commuter access route.

Recommendations

The Central Eastside DOS report summarizes key elements of the steering committee's oversight of the study and describes the vision, plan, strategies and action items for its implementation. Further refinement of the transportation recommendations is needed to address the traffic impacts of the proposed vision. Two particular issues need to be addressed in more detail, as follows.

Implementing the Central Eastside DOS vision may suggest the need to enact potential amendments to the Comprehensive Plan and Zoning Code. In this event, further transportation analysis and findings are required regarding potential impacts on the regional transportation system, given the requirements of the Transportation Planning Rule.

Also, the Central Eastside DOS vision introduces a potential new blend of employees and visitors into the area that may have different transportation service needs and expectations than that of current businesses. Further refinement of the DOS should address potential street use conflicts that may occur concerning on-street parking, loading activities and the mixing of truck and automobile traffic.

Transportation Projects

The Central Eastside DOS confirms that most of the transportation projects identified in the 1991 Central Eastside Transportation Study are still viable and would help serve the DOS vision. These and other potential new projects identified by the DOS include:

- I-5/McLoughlin Ramps
- Belmont-King ramp realignment and intersection improvement
- Clay/King restriping and intersection improvement
- Yamhill/Taylor Couplet
- SE Stark Street
- Grand Avenue Bridgeheads improvements
- SE Main (or SE Salmon) signals with King and Grand

Other Transportation Recommendations

Other transportation recommendations and action items are identified by the Central Eastside DOS that will require more study and definition before they can be categorized as projects. These include:

- Strengthen Water Avenue as the primary north-south multi-modal street in the DOS area
- Investigate potential for streetcar connections to the CEID from Downtown and Lloyd Districts
- Improve vertical connections between the viaducts and Water Avenue for pedestrian access to transit services

- Improve SE 2nd Avenue for trucks and loading functions
- Initiate transit service along Water Avenue and the entire length of the King-Grand couplet through the district
- Investigate, decide and implement improved access from the study area to southbound I-5
- Preserve south-north light rail transit corridors
- Consider future construction of a below-grade integrated transportation facility incorporating high-speed rail, freight rail and I-5.

COLUMBIA CORRIDOR TRANSPORTATION STUDY

Introduction

City Council accepted the Columbia Corridor Transportation Study by resolution 35811 on August 4, 1999.

Study Area

The Columbia Corridor reaches from the Rivergate Industrial District on the west to the City of Troutdale on the east. The Columbia River is its northern boundary, and N Columbia Boulevard, NE Lombard Street, and NE Sandy Boulevard are its south boundary. The Columbia Corridor Transportation Study area includes only about the eastern two-thirds of this area, from Portland Road east to the city limits.

Study Purpose

Bicycle and pedestrian advocates, and residents living adjacent to NE Marine Drive east of I-5 were central to the initiation of this study. The study looks at ways to reduce or remove the impacts of truck traffic on NE Marine Drive and NE 33rd Drive. Conflicts exist between bicyclists/pedestrians and truck traffic. Heavy traffic, excessive speeds, and numerous access points along NE Marine Drive create additional friction. Future growth of industrial uses in the corridor will create the need for additional traffic capacity.

Objectives

The study's five objectives were:

- Develop an interconnected intermodal and multimodal transportation network using existing arterials to serve the area.
- Determine if the transportation network will be able to accommodate the planned levels of development based on Comprehensive Plan designations, and determine whether designations should be modified to reflect the capacity of the network.
- Improve efficiency and access along and between NE Columbia and NE Lombard to primarily serve intermodal goods movement using these arterials.
- Determine environmental impacts and neighborhood mitigation/protection for residential areas close to NE Lombard, which may result from increased truck traffic.
- Develop a strategy to improve NE Marine which will enhance regional recreation opportunities in the Columbia Corridor.

Companion Study

The St. John's Truck Strategy will provide a transportation vision for the westernmost one-third of the corridor. The focus of this companion study is reducing truck through-trips in

predominantly residential areas and improving the existing routes for truck local and through-trips.

Existing Conditions and Issues

Demographics

The Columbia Corridor is home to approximately 7,500 residents and 2,100 firms that employ more than 41,000 people. It provides a significant opportunity for employment growth because of the large amount of developable land, primarily zoned for employment or industrial use. Corridor employment is anticipated to be 64,000 people by 2010, an increase of 55 percent.

Land Use

The area encompasses diverse land uses. Single-family homes lie adjacent to industrial uses along the edge of the river and within the East Columbia and Bridgeton neighborhoods. The dominant land use in the eastern two-thirds of the corridor is industrial. Encouraged by numerous transportation advantages, including shipping terminals, airfreight facilities, three freeways, and two national railroads, the industrial uses are largely devoted to the movement of goods and merchandise. Heavy machinery manufacturing and airport-related businesses are also common within the area. Two airports (Portland International and Troutdale), several golf courses, and a large regional recreation facility are located within the study boundary.

Zoning

Portland's Comprehensive Plan designates the majority of the area as an industrial sanctuary, allowing heavy and general industrial uses. Some portions of the study area are designated for employment uses. Environmental overlay zoning protects the riverbank and the Columbia River Slough that meanders through the area. Open space zoning protects several recreational facilities in the corridor that provide opportunities for golf, motor sports, and field sports.

Transportation

Traffic

East-west travel in the corridor is accomplished via NE Marine Drive on the north edge and NE Columbia and Lombard Streets on the south edge. Northeast Lombard Street is actually a series of connected road segments, including (from east to west) NE Sandy Boulevard, NE Killingsworth Street, N Portland Highway, and N and NE Lombard Street. City street designations encourage the use of NE Columbia as the primary arterial for east-west truck trips and access to major employers. Poor connections between NE Columbia and NE Lombard have led to inefficient use of available roadway capacity and congestion.

NE Marine Drive and NE 33rd Drive are designated as scenic routes, with facilities for pedestrian and bicycle recreation. The internal collector street system is incomplete because of the airport uses, environmental constraints of the Columbia Slough system, and undeveloped lands.

An origin and destination survey found that both NE Columbia and NE Marine are used primarily for local truck access and circulation in the corridor, not truck through-trips.

Transit
Light rail transit service between downtown Portland and Portland International Airport began in September 2001, after this study was adopted. The line serves Cascade Station, the emerging commercial center adjacent to the airport.

Bus service in the corridor is both limited and intermittent. At the time of the study, eight bus lines served the area, each serving only a small portion of the overall corridor. Most transit demand occurs along NE Columbia where employment is concentrated, but is largely underserved by transit.

Pedestrians and Bicycles
Pedestrian and bicycle facilities are mostly lacking on the corridor's street system. Inconvenient and discontinuous access to facilities inhibits travel by these modes.

Recommendations

The study recommends alleviating identified issues and future capacity problems for the existing transportation system by directing excess traffic to existing underutilized facilities before considering construction of new, extended, or widened roadways. Proposed solutions fall into five categories: expanded transit service, transportation demand management, safety and traffic management projects, connectivity improvements, and system improvements.

- Expanded transit service within the corridor will include light rail to the airport (completed September 2001), fixed bus routes, and paratransit services.

- The formation of the Columbia Corridor Transportation Management Association provides additional opportunities to reduce traffic volumes and/or peak hour traffic volumes through flexible work hours, telecommuting, vanpooling, and carpooling.

- Safety and traffic management improvements will include signalization of certain intersections, improved pedestrian crossings, bike path improvements, and traffic calming measures such as truck traps or semi-diverters, pedestrian refuges, and lowered speed limits.

- Connectivity improvements will enhance local circulation and make it easier for truck traffic to use appropriate streets. Such improvements include left-turn lanes, new connections between roadways, and redesign and reconstruction of certain intersections.

- System improvements will include coordination of traffic signals and access management strategies.

Transportation Projects

The study identifies transportation projects to improve access and circulation in the corridor. The improvements fall under two categories: regional and major city traffic street improvements, and neighborhood collector and local street improvements.

Regional and Major City Traffic Street Improvements

- Reconstruct NE 82nd intersections with NE Columbia and NE Lombard
- Reconstruct MLK Jr. Blvd between NE Lombard and NE Columbia
- Improve capacity at NE Columbia/I-205 interchange
- Install I-205 auxiliary lane
- Improve signal system along NE Columbia and NE Lombard
- Improve capacity at NE Airport Way/I-205 interchange
- Construct Port of Portland International Center street improvements
- Improve I-5 freight mobility
- Reconstruct NE 33rd/NE Columbia interchange

Neighborhood Collector and Local Street Improvements

- Construct Bridgeton neighborhood street improvements
- Construct NE Marine improvements, including signal upgrades, traffic calming, and pedestrian and bicycle facilities
- Improve NE 47th intersections with NE Cornfoot and NE Columbia
- Add left-turn lanes at major intersections along NE Cornfoot
- Connect NE Columbia and NE Cornfoot over Columbia Slough
- Realign NE Alderwood/Cully Blvd intersection
- Extend NE Marx
- Widen NE Alderwood between NE 82nd and NE Cornfoot
- Extend NE Cornfoot to NE 82nd
- Improve NE 138th, NE 148th, and NE 158th to City standards

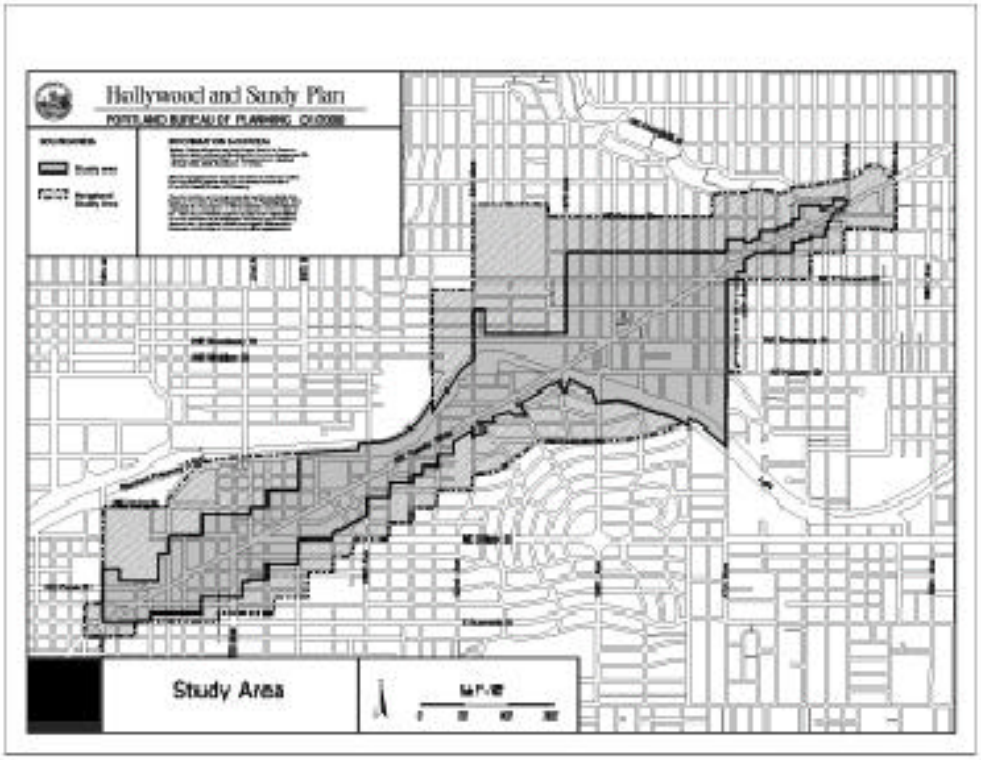
HOLLYWOOD AND SANDY PLAN

Introduction

The Hollywood and Sandy Plan is the outcome of a comprehensive land use, transportation, and public services planning study for the Hollywood District and a portion of Sandy Boulevard. The Portland Bureau of Planning and PDOT, in coordination with other agencies, began the study in November 1997. City Council took action on the final plan in April 2000 through ordinance 174325 and resolution 35875.

Study Location

The study area includes Sandy Boulevard between NE 12th Avenue and NE 54th Avenue and extends north and south of the street for approximately one to three blocks, depending on location. The Hollywood District portion of the study area is located between NE Tillamook Street on the north, I-84 on the south, NE 37th Avenue on the west, and NE 47th Avenue on the east.



Study Purpose

The Region 2040 Growth Concept designates Sandy as a main street and the Hollywood area as a town center and station community, based on their historic development patterns and the light rail station near NE 42nd and Halsey Street. The intent of the 2040 designations is to direct growth to locations and in ways that will result in mixed use areas that take

advantage of existing and planned transportation facilities and other infrastructure and encourage modes of travel other than the automobile.

Goals and Objectives

The study's goals were to:

- Enhance business and economic vitality
- Reinforce the connection between the Hollywood Transit Center and the business core
- Promote housing and mixed-use development
- Enhance the pedestrian experience
- Enhance building character
- Improve and enhance the transportation system
- Maintain adequate parking
- Promote open spaces and gathering spaces
- Enhance community services and activities
- Maintain public and private infrastructure facilities

Transportation Elements
The Hollywood and Sandy transportation concept was developed to meet the following three objectives:

- Address community concerns related to transportation
- Support desired land use and zoning patterns
- Meet State and regional needs and requirements

Existing Conditions

Demographics

The Hollywood and Sandy planning study area encompasses the entire Hollywood neighborhood, as well as parts of the Kerns, Laurelhurst, Grant Park, and Rose City Park neighborhoods. Population in most of the study area has been relatively stable. Overall, a small population increase occurred between 1980 and 1990 (34,176 versus 34,439), but the number of households declined.

People from various racial backgrounds, age groups, and professions live in the study area, similar to the composition of the City of Portland as a whole. Also similar to the City as a whole, the number of people who drive alone to work increased from 1980 to 1990, ranging from a high of 68 percent in Laurelhurst to a low of 51 percent in Buckman.

Land Uses

Existing land uses result from the study area's evolution from a streetcar suburb to an automobile-oriented commercial district. The current mix of land uses along Sandy Boulevard includes industrial, retail, office, residential, and other uses. Large auto sales businesses are one of the defining land uses. Many of the existing commercial storefront buildings date from the streetcar era and are located at major intersections and other locations that were once streetcar stops. The Hollywood District is predominately commercial north of Sandy; south of Sandy, it has a mix of uses, including churches, medical offices, and high-density residential development. The light rail station and transit center are located near 42nd, south of Halsey.

Little new development has occurred within the study area since 1980. The study area is surrounded by moderate-density residential development around the lower stretch of Sandy and predominately single-family residential around Hollywood and near Sandy north and east of Hollywood.

Economic Development

The primary/local trade areas for businesses in the study area are the nearby neighborhoods. Because of the study area's location and characteristics (proximity to downtown Portland, access to the freeway, the presence of a street grid and sidewalks throughout the area, and frequent bus and light rail service), it also houses businesses that rely on a regional trade area. Changes in retailing, such as internet shopping, may result in redevelopment opportunities as car dealerships relocate or change business practices. Although Hollywood is well located as a shopping district for adjacent neighborhoods, its traffic circulation system and the proximity of other major shopping areas results in a sizable portion of local consumer dollars 'leaking' out of the trade area to stores in competing retail areas.

Transportation

Traffic

Sandy Boulevard in the Hollywood District has multiple and sometimes conflicting transportation functions, including providing freeway access, serving as a State highway, linking the neighborhoods to the Central City, providing access to shopping, and serving as a transit hub. The Hollywood Transit Center serves four bus lines and MAX light rail.

Interstate 84 carries about 181,700 vehicles (both directions) east of the Hollywood District and about 170,600 west of Hollywood. As one of the few I-84 locations with a full interchange, the Hollywood area attracts freeway users, contributing to traffic volumes and circulation issues. Sandy Boulevard is a State highway and Major City Traffic Street that functions well for moving cars through the project area by prohibiting left turns at most major intersections between NE 12th and NE 43rd. These left-turn prohibitions were put in

place in the early 1980s in conjunction with other transportation changes that addressed congestion and crashes.

Major north-south arterials along Sandy are NE 12th, 20th, 28th, and 54th. Other arterials in the study area are NE Broadway, 39th, 42nd, and 47th in the Hollywood District. Northeast Broadway is two-way until 37th, where southbound traffic is routed to Sandy or Halsey.

Transit
Transit service is excellent throughout the study area, with four Tri-Met bus lines and MAX light rail serving Hollywood and several other bus lines crossing Sandy along its length. Completion of the MAX line to the airport will result in rerouting the #12 bus so it continues on Sandy rather than being routed through the transit center.

Pedestrians and Bicycles
The study area has sidewalks along almost all streets. The major barriers for pedestrians are the lack of safe crossing opportunities along Sandy and substandard sidewalk widths along most streets. The exception is the core area of Hollywood, where there are wide sidewalks along Sandy, and crosswalks and pedestrian-activated signals at all signalized intersections.

Designated bicycle lanes are provided along 12th north of Sandy and on Glisan east of Sandy. Portions of Tillamook and Hancock are developed as an east-west bicycle boulevard with striped lanes in Hollywood. Portions of NE 42nd and 47th are developed with bike lanes in Hollywood. Sandy Boulevard is designated as a City Bikeway, but has no bicycle lanes.

Parking
The availability of on-street parking varies along the length of Sandy. In some places, on-street parking is lacking because of large curb cuts, bus zones, and turn lanes. Parking is generally prohibited in the core of Hollywood along Sandy to allow wide sidewalks and lane configurations. The remainder of Hollywood typically has on-street parking, and many businesses along Sandy and within Hollywood have off-street parking. Many older buildings were constructed without off-street parking, including the Hollywood Theater in the center of the district.

Recommendations

To develop the transportation concept, the study analyzed several alternatives. The preferred transportation concept envisions more frequent pedestrian crossings along Sandy, enhanced transit stops, more opportunities to make left turns at key nodes, wider sidewalks, and more on-street parking.

In Hollywood, the transportation concept is intended to simplify circulation, particularly at the intersections of Broadway, NE 39th, and Sandy, and to improve signage to public parking. The concept includes circulation changes that will reduce travel times for buses through the transit center and improve the pedestrian environment to and within the transit center.

Transportation Projects

The study identified a large number of projects to address transportation issues along Sandy and within the Hollywood District. The Hollywood and Sandy Plan groups these projects into three categories: circulation and parking, transit, and pedestrian/bicycle. Some of the projects for each area of the plan are listed below.

Sandy Boulevard - Circulation and Parking

- Intelligent transportation measures, including central traffic signal monitoring and traffic flow management
- 18th/Sandy – Convert pedestrian signal to full signal
- 20th/Sandy – Add curb extensions at all corners and enlarge island
- 22nd/Sandy/Glisan – Realign intersection, install full traffic signal
- 33rd/Sandy – Add eastbound left-turn pocket, modify signal to allow left turns, build curb extensions
- Selectively close streets that intersect Sandy at oblique angles

Sandy Boulevard – Transit

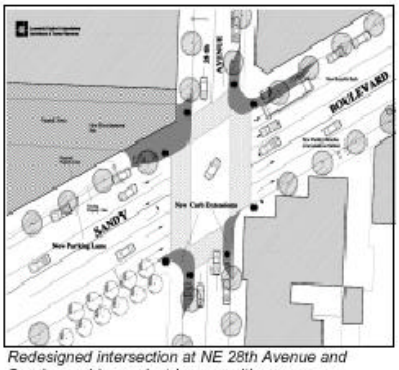
- Reevaluate bus stop spacing to align with new pedestrian plazas, crossings, and nodes
- Develop route #12 as a frequent bus with preferential transit measures
- Add shelters at bus stops and include schedule information and lighting

Sandy Boulevard – Pedestrian/Bicycle

- Implement enhanced pedestrian nodes at 20th, 28th, 33rd, and 42nd
- Add new signalized pedestrian crosswalks at 14th, 31st, and 35th
- Add curb extensions or medians to improve pedestrian crossings
- Reinforce 24th as the north/south bicycle connection between Ankeny and Glisan
- Widen sidewalks along Sandy as properties redevelop

Hollywood – Circulation and Parking

- Reconfigure Sandy between 40th and 42nd to add on-street parking on north side of street
- 37th/Sandy – Restripe lanes for more through movement
- 39th/Halsey – Add westbound left-turn lane, increase northbound turn radius, modify signal
- 40th/Sandy – Reconfigure intersection to remove 'jug handle' turn
- 41st/Halsey – Signalize intersection
- 45th/Sandy – Install full traffic signal
- 47th/Sandy – Create left turn pocket westbound, modify signal



Redesigned intersection at NE 28th Avenue and Sandy provides pedestrian amenities

Hollywood – Transit
- Add bus shelters, rider information, amenities
- Improve signage to transit center, add 'real time' information boards
- Reconfigure transit center to remove onsite circulation lane
- Add second access to light rail platform

Hollywood – Pedestrian/Bicycle
- 37th/Sandy – Add curb extensions
- 42nd – Add pedestrian improvements to enhance it as a Pedestrian Street
- Add bicycle parking along streets and at transit center
- Increase width of sidewalks as redevelopment occurs

Other Transportation Recommendations

In addition to transportation projects, the plan recommends other transportation improvements for the Sandy corridor and Hollywood District. These include closing unused curb cuts to create more on-street parking opportunities, encouraging shared parking arrangements to increase parking availability, seeking vendors and concessionaires at the transit center, establishing transportation management associations, and evaluating locations and financing for public or private parking structures.

To meet the requirements of Metro's Regional Transportation Plan (RTP), the plan establishes mode split goals for Hollywood and Sandy. It also identifies benchmarks for these goals and for other performance indicators. In 1994, non-single-occupant-vehicle (SOV) trips comprised 39 percent of all trips to, from, and within the Hollywood District and 34.9 percent of all trips to, from, and along Sandy Boulevard. The plan establishes a non-SOV goal of 55 percent for Hollywood and 50 percent for Sandy by 2020.
The plan also establishes benchmarks for transit service, transportation demand management, sidewalks, and bicycle facilities for both the Sandy corridor and Hollywood District. In addition, it establishes benchmarks for parking, residential and employment density, and mix of uses for Hollywood.

The plan provides detailed street design guidelines for major intersections along Sandy: 20th, 28th, 33rd, 42nd, and 52nd. (See Hollywood and Sandy Plan, Appendix J for complete text.) The street guidelines will be used to guide project development for Sandy Boulevard. The TSP is proposing several projects for Sandy Boulevard and the Hollywood District that will carry out the Hollywood and Sandy Plan and incorporate the plan's recommendations for an improved environment for all modes of travel.

LENTS TOWN CENTER BUSINESS DISTRICT TRANSPORTATION PLAN

Introduction

The Lents Town Center Business District Transportation Plan results from an intensive analysis of transportation alternatives to support the revitalization of the Lents business district. PDOT and PDC managed the plan, which City Council accepted by resolution 35854 on January 12, 2000.

Study Location

The plan focuses on the historic core of the Lents business district (the area surrounding the intersection of SE 92nd and SE Foster) and the function of the three arterial streets serving the core area: SE 92nd, SE Foster, and SE Woodstock.

Study Purpose

The Lents business district is at the heart of the Lents town center and Lents urban renewal district. City Council created the urban renewal district in 1998 to support revitalization of this economically depressed area and support its designation as a town center in the Region 2040 Growth Concept.

A top priority of the urban renewal plan is to revitalize the core of the business district. The plan directs the City to develop an economic development strategy and to identify transportation infrastructure improvements to support economic development, consistent with the town center concept. The purpose of the Lents Town Center Business District Transportation Plan is to create a comprehensive transportation improvement plan, paying specific attention to improving multimodal accessibility to support the commercial redevelopment goals of the business district.

Objectives

A citizen advisory committee developed plan objectives to guide the process and to help evaluate proposed alternatives. The objectives include:

- Enhance the pedestrian access and circulation throughout the business district; improve connections into the neighborhood and to transit service.
- Ensure transportation improvements support local commercial redevelopment opportunities.
- Develop a strategy for the provision and management of adequate on- and off-street parking to support commercial development.
- Improve transit service and connections; coordinate with high-capacity transit in the I-205 corridor.

- Create a more attractive environment for pedestrians and commercial development through streetscape design and planning.
- Determine the feasibility of decoupling Foster/Woodstock.
- Keep through (non-local) traffic off local streets.
- Maintain acceptable traffic levels of service and stabilize traffic speeds.
- Ensure safety for all modes of travel.
- Improve bicycle access and circulation to and through the business district.

Existing Conditions

Traffic

Congestion is a problem along 92nd in the evening rush hour because of inadequate storage for southbound vehicles between Foster and Woodstock. Significant future growth in traffic volumes is expected. It is anticipated that new development east of I-205 will substantially increase traffic volumes on Foster. Increased traffic congestion on I-205 is likely to increase traffic volumes on 92nd, a parallel route.

Although a survey found that most traffic obeyed the posted speed of 35 mph on Foster and Woodstock, people perceive traffic speed as detrimental to the pedestrian and retail environment. This perception results from the current cross-section of the streets, which have narrow sidewalks and no on-street parking to act as a buffer for pedestrians.

Transit

Transit service to downtown Portland is considered good relative to the rest of the region. However, there are poor transit connections to link Lents to the Gateway regional center to the north and the Clackamas regional center to the south.

Pedestrians and Bicycles

Pedestrian access and circulation is poor in the business district because of the narrow sidewalk widths, lack of sufficient signalized crossings along Foster and Woodstock, and the volume and speed of traffic moving through the area. The absence of amenities such as landscaping and street trees also makes the area uninviting to pedestrians.

Bike lanes are provided along Foster and Woodstock, creating an adequate east-west connection to the core business district. The north-south connection along SE 92nd is incomplete because bike lanes are missing north of Woodstock.

Parking

On-street parking is limited along Foster and Woodstock. Peak-hour restrictions further reduce the supply at key demand times. Current use of the existing supply is low.

Recommendations

Using the plan's objectives for guidance, two transportation system alternatives were developed and evaluated. The plan recommends retaining and enhancing the existing one-way Foster/Woodstock couplet through the business district. The plan also includes a streetscape developed in conjunction with the preferred street network and provides specific design guidelines for sidewalks, street trees, and street lighting.

Transportation Projects

The plan recommends the following transportation improvements:

- Widen the sidewalks along Foster, Woodstock, and 92nd Avenue
- Stripe bike lanes on 92nd Avenue
- Provide on-street parking along both sides of Foster and Woodstock
- Install new traffic signals at the intersections of Woodstock and Foster with 90th and 91st

Other Transportation Recommendations

The plan also recommends the following actions:

- Study the feasibility and desirability of providing a direct connection between Harold and Ellis in the vicinity of 92nd.
- Work with Metro and Tri-Met to study and develop a high-capacity transit system in the I-205 corridor, including a station in Lents.

NORTH MACADAM DISTRICT PLANNING

Introduction

The North Macadam District is a 130-acre sub-district of Portland's Central City. As the last major undeveloped area of the Central City, this area presents the opportunity to create a vibrant new urban district.

Several planning efforts have occurred to define a development strategy for the district. Currently, the Planning Bureau, PDC, PDOT, the Bureau of Environmental Services, and the Parks Bureau are jointly refining the North Macadam Framework Plan. Adoption of the updated plan is expected in summer 2002.

Study Area

The North Macadam District is located along the Willamette River south of Portland's downtown area. As defined by the Central City Plan, the North Macadam sub-district is bounded by the I-5 freeway to the west, the Willamette River to the east, the Marquam Bridge to the north, and Hamilton Court to the south.

Study Purpose

North Macadam has the potential become a vibrant mixed-use urban district of Portland's Central City. The purpose of the City's planning efforts is to develop a common vision for how the district should develop and to establish a regulatory framework to support the vision's realization.

Previous Studies

North Macadam Framework Plan
The North Macadam Framework Plan was initiated by PDC and the North Macadam Steering Committee in June 1997 and accepted by City Council in August 1999. The plan defines goals, objectives, and an overall vision to guide future redevelopment of the North Macadam District. It also describes an implementation strategy, including proposed actions the public and private sectors can take to achieve the vision, and conceptual amendments to the City's Comprehensive Plan and development code to support the vision.

Urban Renewal District
City Council accepted the North Macadam Urban Renewal District on August 11, 1999. The urban renewal district will provide tax increment dollars to fund the public improvements needed to support redevelopment. Urban renewal will also leverage the private investments required to realize the vision presented in the Framework Plan, and will be the primary mechanism for creating public/private partnerships.

North Macadam Proposed Revisions to the Central City Plan, Willamette Greenway Plan, and Title 33: Zoning Code

When the Framework Plan and urban renewal district were created, the Bureau of Planning was directed to propose amendments to existing plan policies, development regulations, and design guidelines. The proposed amendments are currently under review.

North Macadam Street Plan
The North Macadam Street Plan was developed by PDOT and accepted by City Council as part of the City Engineer's report on November 12, 1996. The Street Plan identifies the optimum location, dimensions, and right-of-way requirements for future public streets and accessways to support urban development of the district. The plan integrates various urban design and transportation planning principles and provides multimodal services for current and planned land uses in the district.

North Macadam Right-of-Way Criteria and Street Standards
Street standards developed for North Macadam in 1997 add further detail to the Street Plan guidelines. The design criteria and standards in this document establish a detailed common understanding of the required improvements for streets and accessways within the public right-of-way.

North Macadam Transit and Parking Strategies
PDC asked PDOT in 1999 to help develop a parking and transit strategy for the North Macadam District. PDOT analyzed the relationship between travel demand and transit and parking. Using the Metro travel model, PDOT calculated the number and types of trips produced by and attracted to North Macadam, and determined the level of transit service and amount of parking required over the next 20 years.

Existing Conditions

Demographics

Historically, North Macadam was an active industrial district with companies involved in manufacturing, shipbuilding, and steel production. Today, North Macadam has large plots of vacant land and a mixture of smaller industrial and commercial businesses. It currently accommodates approximately 3,000 jobs and 300 housing units. By 2020, the district is envisioned to grow to 8,500-10,000 jobs and 1,500-3,000 housing units.

Land Use

The district currently consists primarily of vacant land. The district has remained largely undeveloped for many reasons, including inadequate infrastructure and soil contamination. The primary limitations on future development are transportation access and circulation constraints and lack of transit service.

Zoning

The majority of North Macadam is currently zoned central commercial, which is intended to provide for a broad range of uses in the City's most urban commercial districts. The Planning Bureau initiated a process in 1999 to update the Central City Plan and Title 33: Zoning Code and to create regulations specific to North Macadam and consistent with the Framework Plan vision. The proposed changes add bonus options and overlays to encourage the desired

mixture of jobs and housing. The proposed zoning also includes a 100-foot greenway along the Willamette River shoreline.

Transportation

Traffic

Only a small portion of the planned street network identified in the North Macadam Street Plan has been completed to date. Two new north-south streets are planned. Bond is designated as a Traffic Access Route and will serve as the primary street through the center of the district. River Parkway is designated a Local Service Street and will serve developments along the eastern edge of the district and the greenway. East-west local service streets are also planned to provide for circulation within the district. Pedestrian and bicycle accessways will connect this new street system to the greenway trail.

Vehicle access to North Macadam is limited to two primary traffic portals: SW Moody/ Harbor Drive to the north and SW Bancroft to the south. Although traffic congestion currently is not a major issue in the district, limited vehicle access and circulation will be a growing issue and a constraint on development potential as the district develops.

Transit

Current transit service is minimal, with only a few bus lines travelling along the western and northern edges of the district. However, extensive transit improvements are planned to meet the growing demand of residents, employees, and visitors. Multiple new bus lines, the Central City streetcar, light rail, and an aerial connection from Oregon Health Sciences University (OHSU) are all proposed to serve the district. A transit hub is proposed near SW Moody and Gibbs to provide a focussed connection between these transit investments..

Pedestrians and Bicycles

All streets in the district will meet or exceed City guidelines for sidewalks. A number of enhanced pedestrian streets are proposed to provide an improved pedestrian environment at key retail locations.

Bond Street is designated as a Central City Bikeway and will serve as the primary on-street bike route through the district. The greenway trail will be built to accommodate both bicycle and pedestrian traffic and will also serve an important transportation and recreation function.

Parking

Parking in North Macadam will be provided through a mixture of on-street spaces, surface lots, and structured lots. Because of the constrained street network and access portals, managing the supply of parking is of key importance to the district's future viability. Proposed parking regulations will manage the supply of off-street parking to improve mobility, promote the use of alternative modes of transportation, maintain air quality, and enhance the urban form of the district.

OPPORTUNITY GATEWAY CONCEPT PLAN

Introduction

The Opportunity Gateway Concept Plan is the result of a year-long planning process to determine long-term transportation, land use, parks, and other public services in the Gateway regional center. PDC managed the project, in cooperation with PDOT, the Planning Bureau, and the Parks Bureau. City Council accepted the plan by resolution 35867 on February 23, 2000.

Study Location

The study area comprises approximately 600 acres. It is bounded on the north by the NE Halsey/Weidler couplet, on the south by SE Market Street, on the west by I-205, and on the east by a ragged line to the east of 102nd that delineates the boundary between single-family zoning and multifamily zoning.

Study Purpose

The Region 2040 Growth Concept designates Gateway as a regional center, the only area within the City of Portland to receive such a designation. Gateway occupies an important position in the regional hierarchy of development. The district is envisioned to become a center of activity for east Portland--a destination for employment, shopping, and recreation as well as home to thousands of people.

Project Principles, Goals, and Objectives

Standing Principle

ESTABLISH THE GATEWAY REGIONAL CENTER
The purpose of all urban renewal activities is to facilitate the full and productive use of the land for appropriate regional center uses. The regional center concentrates compact mixed-use development that is home to a range of travel and housing options, and multiple opportunities for community interaction and economic advancement. It is a physical and functional center for housing, employment, and services. It is physically defined by a pedestrian orientation that contributes to a clear and attractive identity. It is distinguished by the ongoing efforts of citizens, government, and investors to be a part of the individual and institutional choices that shape the look, feel, and function of the regional center.

Subordinate Principles

1. Utilize Information Public Participation
   Goals and Objectives
   - Inclusiveness
   - Leadership
   - Education
   - Accountability

2. Maximize Investment in the District
   Goals and Objectives
   - Community Investment
   - Strategic Public Investment
   - Policy-Supportive Private Investment

3. Establish a Distinctive Identity
   Goals and Objectives
   - Unity and Coherence
   - Attractive Appearance/Deliberate Design
   - Elimination of Visual Blight
   - High-Visibility Projects

4. Support Compact Development
   Goals and Objectives
   - Respect Adjacent Neighborhoods
   - Efficient Land Use
   - Focus on Station Areas

5. Support a Mixture of Land Uses
   Goals and Objectives
   - Within the District
   - Within Development Projects

6. Create a Mixture of Public Spaces
   Goals and Objectives
   - Parks and Plazas
   - Rights-of-Way
   - Public Buildings

7. Establish a Pedestrian Orientation
   Goals and Objectives
   - Safety/Amenities
   - Destinations
   - Connectivity/Accessibility
   - Visual Interest

8. Expand and Improve Travel Options
   Goals and Objectives
   - Street Grid
   - Facilitate Non-Auto Trips
   - Transit Improvements
   - Traffic Management

9. Expand and Improve Housing Options
   Goals and Objectives
   - Mixed Income
   - Home Ownership

- Neighborhood Compatibility
- Minimize Residential Displacement

10. Enhance Economic Opportunities

Goals and Objectives

- Support Small Local Business
- Employment Center
- Family Wage Jobs
- Complement I-205 Corridor Development

Existing Conditions

Demographics

Largely developed after World War II, the Gateway area is characterized by low-density, suburban-style development. It consists primarily of small and medium-sized businesses, medical and dental offices, national retail chains, and a mixture of single-family and multifamily housing. Today, it has a relatively small population and large employment base. The largest employer in the district is the Adventist Medical Center, with more than 2,000 employees. Like many inner-ring suburban areas, Gateway shows signs of disinvestment and stagnation: few new businesses, a lack of parks and open space, an aging building stock, vacant and poorly maintained property, and a jumble of unplanned land uses.

Land Use

Existing land uses in the study area result from mostly unregulated suburban development following World War II. The north and south ends are dominated by auto-oriented retail uses surrounded by large surface parking lots. The southern third is composed of low-intensity industrial uses. The northern two-thirds is filled with aging single-family and multifamily use, with strip commercial on 102nd Avenue.

Little new development has occurred within the study area since 1980. During the last five years, however, this trend has begun to reverse itself, particularly with regard to multifamily housing. Several new large-scale residential developments have been built in Gateway, and several more are being planned.

Economic Development

The primary/local trade areas for business in the study are the nearby neighborhoods. Traffic modeling done for the area shows that more than half of the traffic on 102nd is of local origination. The area has excellent access. It is served by two freeways (I-84 and I-205), two light rail lines, eastside MAX and airport MAX, one major north-south urban arterial, 102nd, and five east-west urban arterials (Stark, Washington, Glisan, Halsey, and Weidler) that serve many regional destinations. It is also well located between the existing commercial centers at Lloyd District, Gresham, and Portland International Airport.

The ease of access to Gateway has made it particularly attractive for new multi-family residential development in the last five years.

Transportation

Traffic
The urban arterials and Gateway have multiple and sometimes conflicting transportation functions, including freeway access, linking neighborhoods to the regional center, and serving as a major regional transit hub (the largest outside of downtown Portland).

Major traffic congestion currently occurs on Glisan at both the freeway entrance and 102nd and will continue in the future. Other arterials operate at near capacity, both now and in the future. High levels of congestion also occur around the Gateway Transit Center as a result of bus and auto access to the rail platforms and parking. For example, over 200 buses pass through the intersection of NE 99th and Pacific during both the a.m. and p.m. peak hours.

Transit
Gateway has the best transit service in the region, outside of downtown Portland. With the opening of Airport MAX in September 2001, light rail headways at the Gateway Transit Center will be approximately every three minutes. Planned transit service changes after Airport MAX is opened will provide 15-minute service on Halsey/Weidler, Stark, and Washington. Line 15 will travel the length of the district from Main Street to the Parkrose park-and ride facility.

Pedestrians and Bicycles
There is a bike path along I-205 and bike lanes along some of the east-west arterials (Halsey, Glisan, and Stark). The north-south bike access is limited.

Pedestrian facilities are equally, if not more, lacking. Pedestrian travel is restricted by the lack of a local street network; as a result, most pedestrian travel is indirect and inconvenient.

Parking
Parking is abundant in Gateway, except in and around the transit center park-and-ride lot at the Gateway light rail station. Parking there is scarce, resulting in widespread use of on-street parking in the adjacent neighborhood after the park-and-ride lot is full.

Recommendations

This intensive two-year planning process resulted in a concept plan map and associated public infrastructure improvements and redevelopment strategies. The concept map will guide future development and policy decisions affecting Gateway. The most important principle illustrated in the map is the unification of the 650-acre district, using an improved street network and park system.

Transportation Projects

The plan identifies the following key transportation improvements:
- Improve SE 102nd as a boulevard.
- Transform SE 99th into a local carrier and spine for the district's new identity.
- Create additional north-south local street connections.
- Improve freeway access points on major east-west arterials to create a friendlier environment for local traffic, pedestrians, and transit-users.

ST. JOHNS TRUCK STRATEGY

Introduction

Prepared by PDOT, the St. Johns Truck Strategy identifies interim or short-term improvements to address truck circulation and access issues on the north peninsula. City Council accepted the strategy as a report from the project advisory committee on July 11, 2001, in conjunction with a minority report. Staff was directed to prepare a follow-up report to resolve issues related to the St. Johns Bridge rehabilitation project.

Study Area

Situated on the west end of the Columbia Corridor, the St. Johns study area includes all of the North Portland peninsula, east to NE Martin Luther King Jr. Boulevard and south to N Columbia Boulevard and Cary Boulevard and the railroad 'cut.' The study area occupies approximately the western one-third of the Columbia Corridor.

Study Purpose

Residents living in and around St. Johns were central to the initiation of this study. The study's purpose was to look at ways to reduce or remove the impacts of truck traffic on residential and commercial/retail streets, while providing for truck movement across the peninsula from Columbia Boulevard, I-5, and the industrial areas to the St. Johns Bridge. The identified impacts included truck volume, vibration, cut-through truck traffic, and conflicts between modes.

Objectives

The plan has two primary objectives:

- Identify ways in which truck routing can be improved to and from the St. Johns Bridge, Rivergate, and I-5.
- Determine how non-local truck traffic can be eliminated or reduced on residential and retail/commercial streets.

Additionally, City Council directed the study's advisory committee to:

- Utilize the existing local and regional street system.
- Provide a short-term solution (two to five years).
- Limit combined solutions to $10 million.
- Coordinate with other North Portland projects.
- Carefully analyze solutions so as not to shift a problem to a different location.

Companion Study

The Columbia Corridor Transportation Study has provided a transportation vision for the eastern two-thirds of the corridor. The focus of this companion study was to look at ways to reduce or remove the impacts of truck traffic on NE Marine Drive and NE 33rd Drive. The identified impacts included speeding, volume, vibration, cut-through traffic, and conflicts between modes.

Existing Conditions

Demographics

Both employment and residential population are anticipated to increase throughout the Columbia Corridor, including the St. Johns Truck Strategy study area. Employment is predicted to increase from 21,344 positions in 1994 to 35,989 positions by 2020, with non-retail employment more than doubling. With one exception, employment increases will occur mostly through infill and expansion. The Port of Portland is expected to provide approximately 400 acres of new industrial land on West Hayden Island for marine-related business. The number of households in the study area is expected to grow from 12,229 in 1994 to 14,984 by 2020.

Land Use

Besides the natural components of the sloughs and lakes, this area has long been established as a place where blue-collar workers live close to jobs and industry. Meat processing and shipbuilding have both played important roles in the character and development of the area, which was originally an independent city.

The dominant land use along the edge of the Willamette and Columbia rivers is industrial. The area south of Columbia Boulevard (which mostly comprises the St. Johns and Cathedral Park neighborhoods) is a mix of single-family and multifamily homes and commercial/retail activities. The area's industries are largely devoted to the movement of goods and merchandise, facilitated by numerous transportation advantages, including shipping terminals, nearby airfreight facilities, three freeways, and two national railroads. Heavy machinery manufacturing and other businesses are also common within the area.

Zoning

The Portland Comprehensive Plan designates the majority of the industrial lands for industrial sanctuary, including heavy and general industrial uses. Some portions of the study area are designated for employment uses. Environmental or Willamette Greenway overlay zoning protects the riverbank, Smith and Bybee Lakes, and the Columbia River Slough that meanders through the area.

Transportation

East-west travel in the corridor is accomplished via N/NE Marine Drive on the north edge and N/NE Columbia Boulevard and Lombard Street on the south edge. Lombard Street is designated as US 30 Bypass, but passes through concentrations of commercial/retail activity

with significant residential use. City street designations encourage the use of Columbia as the primary arterial for east-west truck trips and access to major employers. West of I-5, Marine Drive is expected to provide access to the Rivergate Industrial District, Terminal 6, and eventually West Hayden Island.

Travel between Columbia Boulevard and the St. Johns Bridge (US 30 Bypass) is currently unrestricted and undefined for trucks, resulting in an overly pervasive truck presence in the St. Johns neighborhood.

Non-local trucks adversely affect residential and commercial/retail streets, with the impacts including truck volume, vibration, and mode conflicts. Additionally, no streets between Columbia Boulevard and the St. Johns Bridge are designated for trucks. The recommended truck streets need improvements to specifically accommodate trucks, and many streets need safety and convenience improvements to accommodate all modes.

Recommendations

City Council accepted both the advisory committee's report and recommendations and the minority report submitted by one advisory committee member. Council also directed staff to investigate the impact of limiting vehicle weight on streets leading to the St. Johns Bridge or on the bridge itself, including the economic impact on the trucking community.

The majority report to Council includes the following recommendations:

1. Designation of a truck route between Columbia Boulevard and the St. Johns Bridge. Portions of Lombard Street, St. Louis Avenue, and Ivanhoe Street would be designated as Major Truck Streets.

2. Follow-up studies to investigate the success of adopted/implemented projects and to recommend remedial or alternative actions if necessary; and a study of the type and quantity of hazardous materials and materials routing currently allowed.

3. A program of education and enforcement to provide interested and affected parties with a point of contact, information services, and enforcement of truck regulations; and a citywide truck sign program for design and placement of new signs and maintenance of existing signs.

4. Recommended projects that fall into two categories: 1) traffic calming and 2) safety and truck street improvements:

    - Traffic calming for Lombard Street (Pier Park to St. Louis), Fessenden (Columbia Way to St. Louis), St. Louis (Fessenden to Lombard), and pedestrian and bicycle safety on Columbia Boulevard.

    - Redesign/rebuilding of intersections at Lombard/St. Louis/Ivanhoe, Ivanhoe/Philadelphia, and Columbia Boulevard/Portland/Columbia Way, and the street segment of Burgard and Lombard from the main Rivergate entrance to Terminal Road.

The minority report includes the following recommendations:

1. Mandate all truck traffic on the already established Truck Route: US 30 to I-405 to Fremont Bridge to Marine Drive (and reversed).

2. Build a bridge between US 30 and Rivergate/St. Johns.

3. Build a road along the railroad track cut that runs north/south under viaduct between N Ida and N Carey.

4. No trucks over 18,000 pounds on the St. John's Bridge.

SOUTH PORTLAND CIRCULATION STUDY

Introduction

Conducted by PDOT, the South Portland Circulation Study provides a long-term vision to guide transportation improvements that will reconnect the Lair Hill neighborhood with the surrounding area. City Council accepted the report and recommendations by resolution 34014 on August 1, 2001.

Study Area

This study area is centered on the west end of the Ross Island Bridge and Naito Parkway between I-405 and Barbur Boulevard. It extends mostly over the north half of the Corbett-Terwilliger-Lair Hill (CTLH) neighborhood.

Study Purpose

Over time, the Lair Hill community has become a crossroads for many of the region's vital transportation links, including I-405, 1-5, and the Ross Island Bridge. As the transportation system grew, no freeway ramps were built in this area; instead, regional traffic was routed along local and collector streets. As a result, the community has been physically split in two and separated form the Willamette River and downtown Portland.

City Council tabled a 1978 South Portland Circulation Study because outer southwest Portland neighborhoods opposed the study's main proposals to reconfigure the Ross Island Bridge ramps and close Naito Parkway to traffic at both Barbur Boulevard and I-405. The study's recommendations were tabled until the Terwilliger Bridge and its access ramps to I-5 could be rebuilt. Once the northbound ramp to I-5 was completed, access to southwest neighborhoods would improve, removing the objections to modifying Naito Parkway and the Ross Island Bridge. The Terwilliger Bridge and ramps were finished in the late 1980s, and the new South Portland Circulation Study was begun in 1997.

Objectives

The study's primary objectives include:

- Stop non-local traffic from using local streets within this neighborhood
- Provide access to the river
- Reunite the street grid

Existing Conditions

Land Use

South Portland is a diverse area of single-family and multifamily housing and commercial uses. Historic buildings are interspersed throughout the area. Offices are located primarily on the north and south portions of the study area. Retail activity is minimal. Although the area is close to the Willamette River, parks and open space are limited.

Transportation

Traffic
Several major travel corridors traverse the area, creating confusing travel patterns that cause traffic congestion. South Portland has some of the highest accident locations in the City (as measured against the number of vehicle miles traveled statewide), including the SW Naito Parkway connection to the Ross Island Bridge and the intersection of SW Kelly and SW Whitaker.

Transit
The area has numerous north-south Tri-Met lines that provide good transit service to downtown Portland. However, the linear nature of major north-south arterials, coupled with the lack of east-west street connections, has resulted in diminished transit service. Most cross-town destinations require riders to transfer downtown. Although transit service on Barbur, Naito Parkway, and Macadam is frequent, residents who do not live adjacent to these routes find access difficult because of inadequate connectivity.

Pedestrians and Bicycles
Pedestrians and bicyclists circulation is difficult. The major arterials and highways that divide the area are hard to cross because they have high traffic and in some cases serve as physical barriers. Numerous crossings are unsafe, and bicycle facilities are minimal.

Recommendations

The study recommends the following actions:

- A total rebuild of the Ross Island Bridge ramps
- Changing the character of Naito Parkway from a four-lane, limited-access expressway design to a two-lane neighborhood collector/main street with east-west cross-street intersections, pedestrian/transit improvements, bike lanes, and street trees
- Reconfiguration of the Naito Parkway/Kelly Way intersection from grade-separated to at-grade

All these amenities will reunite the severed halves of the Lair Hill neighborhood, supporting its historic landmark designation.

The study supports transportation policies that encourage the use of multiple modes to increase the person-carrying capacity of the transportation system, yet are sensitive to the unique design features of the community.

Implementation
Funding for this project is not clear. The project is included in the RTP with a high priority, but does not have secure federal appropriation dollars. It would cost $2 million in 1998 dollars to complete the recommended plan.

The steps toward implementation include City Council of the plan and additional preliminary and final design engineering that would require two years.

TACOMA MAIN STREET PLAN

Introduction

The Tacoma Main Street Plan, managed by PDOT, recommends transportation improvements to enhance the main street character of SE Tacoma. City Council accepted the plan by resolution 36052 on January 23, 2002.

Study Location

The plan focuses primarily on SE Tacoma between the Sellwood Bridge to the west and SE McLoughlin Boulevard to the east. It also considers local street impacts between SE Nehalem to the north and SE Umatilla to the south.

Study Purpose

Traffic impacts on Tacoma are a long-standing livability issue in the Sellwood-Moreland neighborhood. More than 30,000 vehicles travel through the heart of this historic neighborhood every day on their way to the Sellwood Bridge, which is the only bridge crossing between the Ross Island Bridge in downtown Portland and I-205 in Oregon City. Approximately one-third to one-half of this traffic is regional. The street design emphasizes its current role as a through route for vehicles.

Regional, City, and neighborhood policies envision a more pedestrian-friendly, neighborhood-oriented commercial and residential 'main street function for Tacoma. The planning challenge was to balance the needs for local multimodal access and circulation with the impacts and needs of the regional traffic the street also serves.

Objectives

With guidance from policy, a community survey, existing conditions information, and input from the first public open house, the project's advisory committee identified the following plan objectives:

- Create a high-quality pedestrian-oriented street. Improve safety, convenience of crossings, and the design of the sidewalk area.

- Support the continued redevelopment of SE Tacoma as a commercial destination that serves the needs of the neighborhood and supports the region's growth management goals. Key issues include on-street parking, traffic, and pedestrian access.

- Reduce the barrier effect of SE Tacoma that divides the neighborhood, and protect the function and character of the surrounding local street network. Key issues include traffic diversion and bicycle and transit access.

Existing Conditions

Land Uses

Existing commercial uses are strongly oriented to SE 13th and SE 17th. A small node of commercial development also exists near the bridgehead. The areas between these three nodes reflect Tacoma's origins as a residential street before the construction of the Sellwood Bridge. The land uses are primarily residential, with a mix of single-family and multifamily dwellings.

Zoning

The zoning along Tacoma supports continued neighborhood-oriented commercial development around the bridgehead node and between 13th and 17th. These areas are zoned storefront commercial (CS). The area between the bridgehead and 13th is zoned for medium-density residential, with a Comprehensive Plan designation that allows for a mix of commercial and residential development in the future. East of 17th, the zoning supports a mix of single-family and multifamily residential development.

Economic Development

The market area assessment for the Tacoma main street area found that the area has a strong market in the surrounding area, enhanced by the regional traffic passing through. In addition, 13th has a regional draw because of its concentration of antique stores. Factors that work against future main street development include the poor quality of the pedestrian environment and potential competition with existing main street areas within the neighborhood, such as the Milwaukie-Bybee area.

Transportation

Traffic

Three pinch points on SE Tacoma affect the flow of traffic through the area. The two-lane Sellwood Bridge constrains the volume of traffic in each direction to 1,800 vehicles per hour. The demand in the p.m. peak hour exceeds this capacity and is expected to grow in the future. Heavy turn movements at the intersections with 13th and 17th also place a strain on the street's capacity. Both intersections are operating above design capacity. These capacity constraints cause increased congestion.

Traffic diversion is a byproduct of congestion, and the local street network is affected by cut-through traffic. Traffic on 17th avoids the left turn at the SE Tacoma intersection by cutting through on SE Linn or SE Marion, local service streets. At 13th, SE Spokane is a favored alternative to congestion at the Tacoma/13th intersection. The McLoughlin Neighborhoods Project has addressed some of these concerns with traffic calming.

Transit

The area is generally well served by transit. Three bus routes connect the area with downtown Portland, Marquam Hill, the Milwaukie Transit Center, and the Rose Quarter Transit Center. One bus shelter is located at the Tacoma/13th intersection, which has the highest passenger activity in the area.

Pedestrians and Bicycles
Tacoma's pedestrian facilities are lacking. The eight-foot sidewalks do not meet minimum standards for basic streetscape elements, such as street trees and comfortable pedestrian passage, associated with vital pedestrian environments. The ban on peak-hour on-street parking removes a buffer for pedestrians from the heavy traffic.

Adequate crossings are also missing along Tacoma. No crosswalks occur between 13th and the bridge, the segment with the highest traffic volumes and speeds.

Tacoma has no dedicated facilities for bicycles. The Bike Master Plan calls for the development of a bike boulevard couplet on Spokane and Umatilla, which run parallel to Tacoma.

Parking
The available supply of on-street parking is regulated by time of day. In the peak traffic hours, on-street parking is restricted between 17th and the bridge in order to create two additional lanes for traffic. These time restrictions create a potential utilization problem; during off-peak hours, motorists tend to avoid parking in the curb lane. The time restrictions in the evening peak hour also coincide with peak on-street parking demand. The lack of full-time parking also restricts the ability to add curb extensions to the roadway.

Recommendations

The planning process considered ten cross-section alternatives. The final recommendation includes the following basic design elements:

- Provide one travel lane in each direction during all hours.
- Provide full-time on-street parking.
- Create gateways at the east and west ends of the Tacoma main street that will also serve as pedestrian refuges.
- Construct curb extension to facilitate pedestrian crossings.
- Implement streetscape design guidelines, including wider sidewalks, street trees, pedestrian-scale street lighting, and bus shelters where ridership warrants.

Transportation Projects

Phase I
Implement basic traffic management elements immediately, including:
- Lane striping
- Parking sign removal and replacement
- Signal timing modifications
- Speed bumps on Spokane and Umatilla, subject to the approval of adjacent property owners

Phase II
Implement all remaining design elements, including:

- Curb extensions and medians along Tacoma
- Spokane and Umatilla bike boulevard project

WEST PORTLAND TOWN CENTER TRANSPORTATION PLAN

Introduction

The West Portland Town Center Transportation Plan identifies transportation improvements that support long-term development of a town center in the West Portland area. The plan was completed in December 1997. Although City Council has not formally accepted the plan, some of the projects identified in the plan are incorporated into the TSP. In addition, one of the refinement plans identified in both the RTP and Portland's TSP calls for further study of the Barbur/I-5 corridor, including the West Portland town center area.

Study Location

The West Portland town center includes the area surrounding the intersection of SW Capitol Highway/SW Barbur/I-5. The study area is bounded by SW Brugger/SW Alice to the north, SW Arnold to the south, SW 35th to the east, and SW 50th and I-5 to the west.

Study Purpose

Most of the current impediments to town center-level development in West Portland are transportation related. West Portland is at the crossroads of three major arterials in SW Portland, which complicates access between the arterials, as well as pedestrian access from the surrounding neighborhood into the commercial core. The purpose of the plan is to identify ways to improve connections among the major facilities and overall pedestrian access to and across these facilities.

Existing Conditions

Land Use

West Portland town center is a mix of residential and commercial uses, with open space interspersed. As a result of natural and manmade barriers, these uses occur as distinct sub-districts. The wooded areas associated with the various open spaces serve as natural barriers between adjacent land uses. The wall-like barrier of SW Barbur/I-5 limits connections between uses.

Most of the existing land use designations do not support a town center designation because they do not ensure a mixture of pedestrian-oriented activities.

Economic Development

SW Barbur's proximity to I-5 is a constraint to redevelopment, particularly for housing. Opportunities for substantial mixed-use redevelopment occur in underutilized sites, but may require relocating existing businesses or reconfiguring development around existing structures.

Traffic congestion and the lack of pedestrian amenities on SW Barbur restrict the linkages required for optimum development of a mixed-use town center. Similarly, topographic constraints are a significant barrier to future development.

Transportation

Traffic
Regional traffic dominates the town center area. The I-5 access ramps in the heart of the area draw traffic from outside the town center. Topographic and other physical constraints push regionally oriented traffic onto district streets such as Capitol, Taylors Ferry, and Huber. As a result, peak-hour operating conditions at key intersections are generally poor. These conditions also cause access problems from these streets to adjacent land uses.

Transit
Four transit routes serve the Barbur Transit Center. Boardings from the transit center average 800-900 persons per day. The 400-space park-and-ride lot is at capacity almost daily.

Pedestrians and Bicycles
Pedestrian facilities in the area are inadequate. The sidewalks are discontinuous, and crosswalks do not meet City standards for spacing. The combination of I-5 and Barbur creates an almost impenetrable barrier for pedestrians, with only two crossing points: at Capitol and the pedestrian bridge at the transit center.

Bicycle facilities are virtually non-existent, with the exception of a bike lane planned for Barbur.

Recommendations

The plan recommends a number of major changes to the I-5 connection with Barbur Boulevard to reduce the impact of regional through-traffic, as well as new local street connections to improve access across I-5 north and south of Capitol.

Most of the plan's recommendations require additional study. A TSP refinement plan (see Chapter 4) will study the Barbur and I-5 corridor. The refinement plan will evaluate both land use and appropriate transportation changes for the corridor, which includes the West Portland town center area.

2040 CENTERS TRANSPORTATION STRATEGIES AND MODE SPLIT TARGETS PROJECT

Introduction

State and regional requirements for Portland's TSP Plan include the development of performance measures and benchmarks to monitor progress in implementing the plan over 20 years. The 2040 Centers Transportation Strategies and Mode Split Targets project, funded by a Transportation Growth Management grant, was designed to help develop the measures and benchmarks, specifically for town centers and light rail station communities in the City of Portland, as designated by the 2040 Growth Concept.

Study Location

The project focuses on three town centers (Hillsdale, St. Johns, West Portland) and four eastside MAX light rail station communities (60th, 82nd, 122nd, and 148th). Other planning processes address the remaining centers in Portland (Gateway regional center, Hollywood town center and Lents town center).

The boundaries for each area were developed in conjunction with the City's Comprehensive Plan Update Project, which ensured compliance with Metro's Urban Growth Management Functional Plan (UGMFP). Various methodologies were used to determine area boundaries, reflecting the various levels of planning that had been undertaken in each area.

Study Purpose

The project has the following objectives:

- Development of quantitative measures for transportation and land use characteristics that could be applied to the TSP requirements
- Assignment of non-single occupancy vehicle (SOV) mode split targets for each study area
- Identification of strategies for increasing the non-SOV mode split in these areas

Elements

The project has three essential work elements: analysis of Metro's travel forecast data, development of the performance measures, and assessment of the selected study areas.

Travel Forecast Model Assessment

Metro's travel forecast model was the primary data resource for the baseline mode split information in each of the seven study areas. The 1,260 travel analysis zones were aggregated into a 105-zone system to approximate the boundaries of the 2040 design types. Using origin and destination data from the travel forecast model, baseline mode splits for 1994 base year and 2020 future year were calculated and compared against the UGMFP mode split targets for 2040 design types.

The analysis showed that the overall non-SOV mode split experienced a relatively small increase between the 1994 base year and the 2020 future year. Most of the study areas are at or near the 45 percent target established by the UGMFP for the 2020 future year. The shared ride element of the non-SOV mode split garnered the largest percentage of trips in both the base and future years. In 2020, however, the transit, walk, and bicycle modes showed substantial growth, while the mode share for shared rides declined. The rationale for this adjustment is that the land use and transportation assumptions in the 2020 model represent an optimistic view of the region's investment in infrastructure improvements and land use practices.

Additional findings from the travel forecast model include:

- 'Homebased other trips' account for the largest percentage of person trips in the model, but the overall mode shares for transit, walking, and bicycling are very low.

- Study areas exhibiting a mature pedestrian network and good street connectivity had higher mode shares for transit use, walking and bicycling.

- SOV reduction strategies have traditionally focused on the work trip, resulting in relatively higher mode shares for alternative modes in this category.

- In 2020, modeled transit network improvements increased transit mode split from between 1 percent and 6 percent, depending on the study area.

Development of the Descriptors

The development of performance measures, called descriptors in the project, relied on substantial research, including a literature review, expert interviews, and a work session with the TSP technical advisory committee. The objective was to identify measures predictive of a higher level of walking, bicycling, and transit use in a given area.

The research resulted in the identification of categorical elements and associated measures, including density, diversity, urban design, transit service, transportation demand management programs, parking management, and demographics. These descriptors were then applied to the seven study areas to assess current ability to meet the 2020 non-SOV mode split target and identify improvements to help each center achieve the desired target.

Assessment of Study Areas

Case studies were developed for each of the seven study areas to analyze the descriptors and identify improvements needed to affect non-SOV mode split. Each case study included a study area profile depicting land use, transportation, and demographics; baseline values for each of the descriptors; and analysis of current and future travel behavior based on the travel forecast model.

An overall assessment of the study areas found:

- Most of the centers have zoning and comprehensive plan designations that support the desired mix of uses and density.
- The level of pedestrian infrastructure and street connectivity varies, based on the age of the center. Study areas built out in the past 30 years are more likely to have missing sidewalks, unsafe crossings, and a low street connectivity ratio.
- The majority of the planned bicycle network in each study area has yet to be constructed.
- Study areas that developed in the past 30 years have a higher ratio of vehicle parking to commercial building space than older areas. In general, however, there was ample free surface parking.
- In many study areas, the on-street parking restrictions conflict with the transit- and pedestrian-friendly commercial zoning.

Recommendations

The project identifies a target non-SOV mode split, as well as programmatic strategies and capital improvements to help achieve the desired mode split over the 20-year timeframe.

The project recommendations include:

- Adopt a 45 percent non-SOV mode split target for town centers and station community design types.
- Prepare a development plan for each study area that implements the desired growth and form of commercial and residential uses.
- Evaluate zoning and Comprehensive Plan designations for study areas not included in recent community planning efforts to ensure land use regulations are compatible with desired character.
- Coordinate with Tri-Met to implement service improvements on regional and primary routes to levels identified in the RTP.
- Work with Tri-Met to develop a secondary transit network for each study area to improve accessibility between the center and the surrounding community.
- Create a master street plan for each study area that identifies new street connections and accessways.
- Complete the pedestrian and bicycle networks.
- Adopt pedestrian districts in the 60th, 82nd and 148th station communities and expand the pedestrian district boundaries in the 122nd station community.

- Identify north-south bicycle connections to the 60th and 82nd station communities and provide secure, long-term bicycle parking at all the light rail stations.

- Increase opportunities for on-street parking in the commercial districts.

- Evaluate potential for creating transportation management associations in the study areas to reduce SOV commute trips.