# CITY OF THE DALLES
# TRANSPORTATION SYSTEM PLAN

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Prepared for
The City of The Dalles
The Dalles, Oregon

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

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# CHAPTER 1: INTRODUCTION

The purpose of this study is to develop a community-based multi-modal transportation system plan (TSP) that addresses transportation needs for a twenty-year period (1995 – 2015) associated with anticipated future growth in The Dalles urban area. The TSP is being prepared to address federal and state regulations that require urban areas to do long-range planning, as well as to serve as a guide for the community in the management of the existing transportation facilities and for the design and implementation of future transportation facilities.

The long-range plan will implement portions of the Oregon Transportation Plan (OTP) and 1999 Oregon Highway Plan, as well as the City's Local Street Network Plan, 1st Street Streetscape Plan and the Downtown Parking Plan. It will be in conformance with Goal 12, the Oregon Transportation Planning Rule (TPR), Oregon Administrative Rule 734.051 and the federal Intermodal Surface Transportation Efficiency Act (ISTEA), thereby helping to ensure that the City of The Dalles is eligible for future state and federal funding. The planning effort included community involvement, and it was guided by local public agency staff.

The Dalles TSP was originally prepared over a period from 1993 through 1999 with a final document dated June 1999 to cover a 20-year period (thereby the 1995 – 2015 planning period). In 2005, several sections of the document were updated to bring the TSP into compliance with the current TPR and the *1999 Oregon Highway Plan*. Street functional classification designations were updated to be consistent with the Federal Aid Functional Classification Mapping System. The project list was updated to reflect projects completed, new projects in the city's capital improvement program, and other changes in the project parameters.

## THE PLANNING AREA

The Dalles is the county seat and, with almost half of the county's population, is the largest city in Wasco County. Located in the Columbia River Gorge along the eastern foothills of the Cascade Mountain Range, the city serves as the hub of the agricultural economy in north-central Oregon.

The Dalles TSP planning area includes the City of The Dalles and the area within the city's Urban Growth Boundary (UGB). The planning area is shown in ***Figure 1***. Roadways included in the TSP fall under several jurisdictions: The Dalles, Wasco County, and the State of Oregon.

The Dalles is served by two state highways: Interstate 84 (I-84) and US 197. The interstate is a four-lane, limited access facility that connects The Dalles to Portland, located 85 miles to the west, and then passes through Idaho and Utah to the east. There are currently six interchanges with I-84 in The Dalles. These interchanges connect at several points along old US 30 and at US 197 where it crosses into Washington. US 197 is a two-lane highway that connects to US 97 and Bend located 132 miles to the south. It extends northward into Washington, terminating at State Route 14. US 30 from the Chenowith Interchange on the west to the Marina Interchange on the east is under city jurisdiction.

A grid pattern of local streets has been maintained through much of The Dalles as it has developed over the years. The grid follows the general contour of the Columbia River and is divided into sections by various topographical features. The core of the grid lies between Mill Creek and Kelly Avenue/Seventh Street. This section contains the old downtown business district and many of the older residential areas. Another well-developed but less dense grid runs eastward from Kelly Avenue to Morton Street. The two grid sections are slightly skewed and, as a result, not all of the roadways

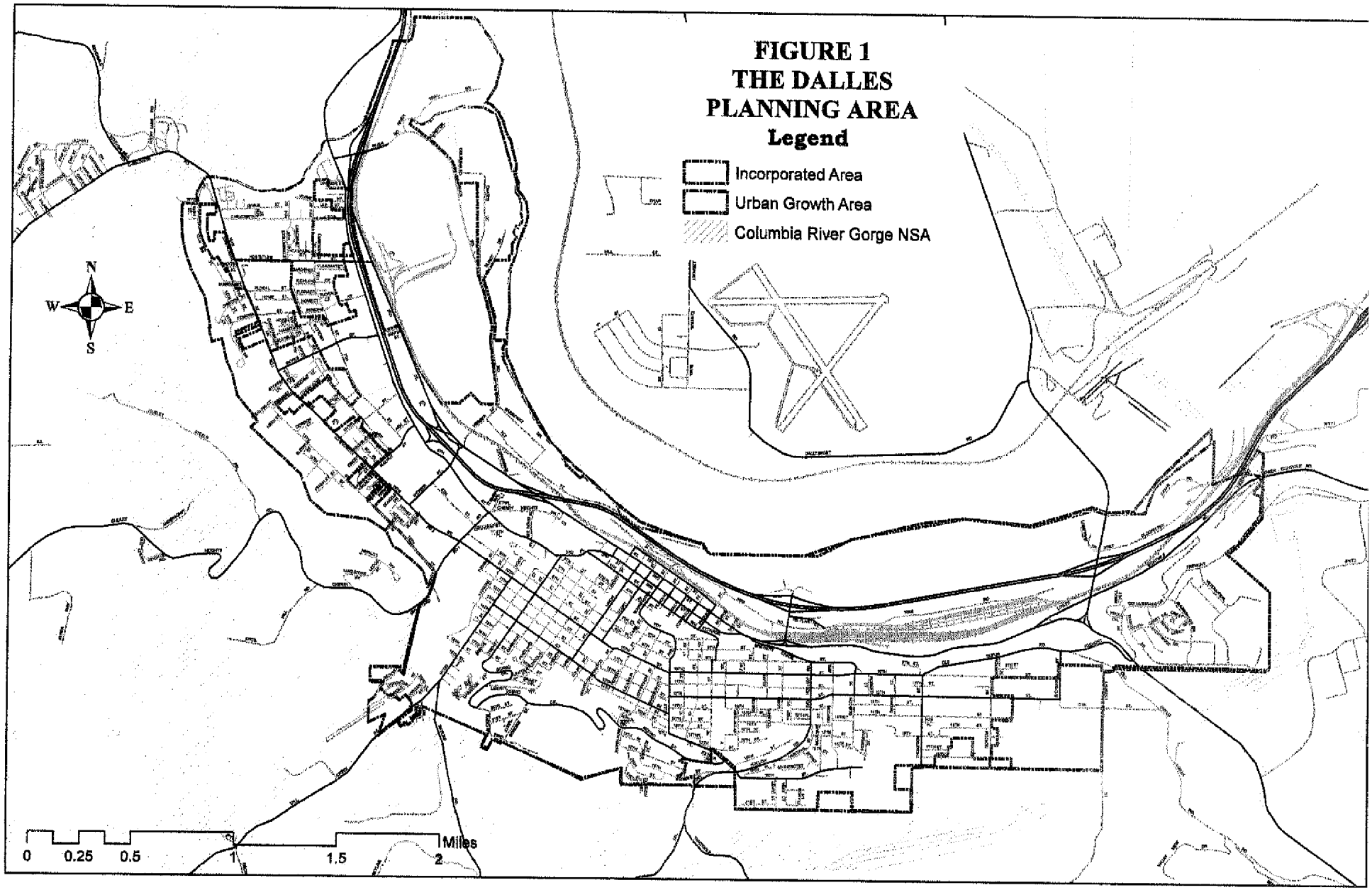
FIGURE 1
THE DALLES
PLANNING AREA
Legend
Incorporated Area
Urban Growth Area
Columbia River Gorge NSA
N
W
E
S
0
0.25
0.5
1
1.5
2
Miles

continue through. A third, less densely developed grid lies northwest of the core section. This grid has much larger blocks than the other grid segments.

A land use zoning map of The Dalles is shown in ***Figure 2***. The majority of the commercial zoning lies along Sixth Street. In the downtown core, a one-way couplet of Second and Third Street serves most of the commercial development. Additional commercial development is focused around the US 197 interchange with I-84.

Residential development lies along the hills primarily to the south of the commercial zones. The core of The Dalles is fairly developed with mostly infill residential development remaining. Areas on the east and west sides of the city are where most of the new residential development is occurring.

The industrial zones lies mostly along the waterfront and the adjacent railroad tracks. An industrial park has been established in the northwestern part of the city, between the railroad tracks and the river. This area is also home to the Port of The Dalles.

## THE PLANNING PROCESS

The draft TSP was initially developed in 1998-99 through a series of technical analyses combined with systematic input and review by the City of The Dalles, a Transportation Advisory Committee (TAC), and the public. A graphical presentation of the planning process is illustrated on ***Figure 3***.

### Public Involvement

Community involvement was an important part of developing the draft TSP in 1998-99. Interaction with the community was achieved in two ways: holding open community meetings and through a Transportation Advisory Committee.

For the 2005 update of the TSP, several meetings took place between September 2004 and April 2005. Two public meetings and four stakeholder meetings were held during this time period. The stakeholder meetings were comprised of local citizens identified by the City. In addition, the Urban Renewal Advisory Committee met three times and the project management team met six times during the same time period. These meetings provided the public with opportunities for input as well as updates from the project team. All of the above meetings were tied to two other projects, the 1st Street Streetscape Plan and the Downtown Parking Plan.

### Goals and Objectives

Using input from the city, the TAC, and the community, a set of goals and objectives were defined for The Dalles TSP. These goals and objectives were then used to make decisions about various potential improvement projects. They are described in Chapter 2: Goals and Objectives.

### Review Existing Plans and Policies

To begin the planning process, existing plans and policies that related to the evaluation and development of the transportation system in The Dalles urban area were reviewed. The review established the history of planning in the city. It identifies how population and employment were projected and how those projections compare with current measurements; what street system improvements were planned and which were implemented; how other transportation facilities were planned and implemented; and how the city is currently managing its ongoing development. The review of existing plans and policies is summarized in Appendix B of this report.

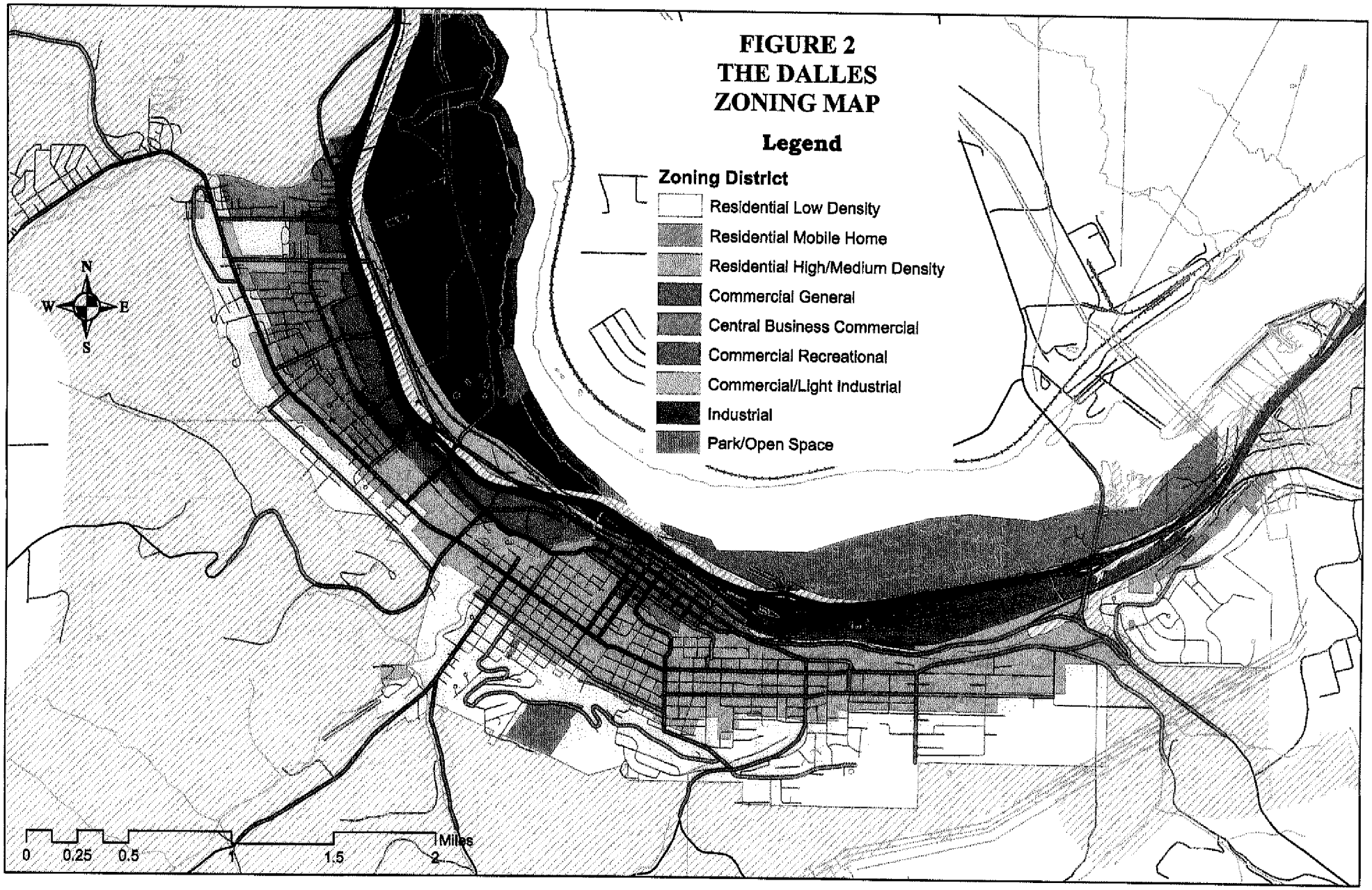
FIGURE 2
THE DALLES
ZONING MAP
Legend
Zoning District
Residential Low Density
Residential Mobile Home
Residential High/Medium Density
Commercial General
Central Business Commercial
Commercial Recreational
Commercial/Light Industrial
Industrial
Park/Open Space
N
W
E
S
0
0.25
0.5
1
1.5
2
Miles

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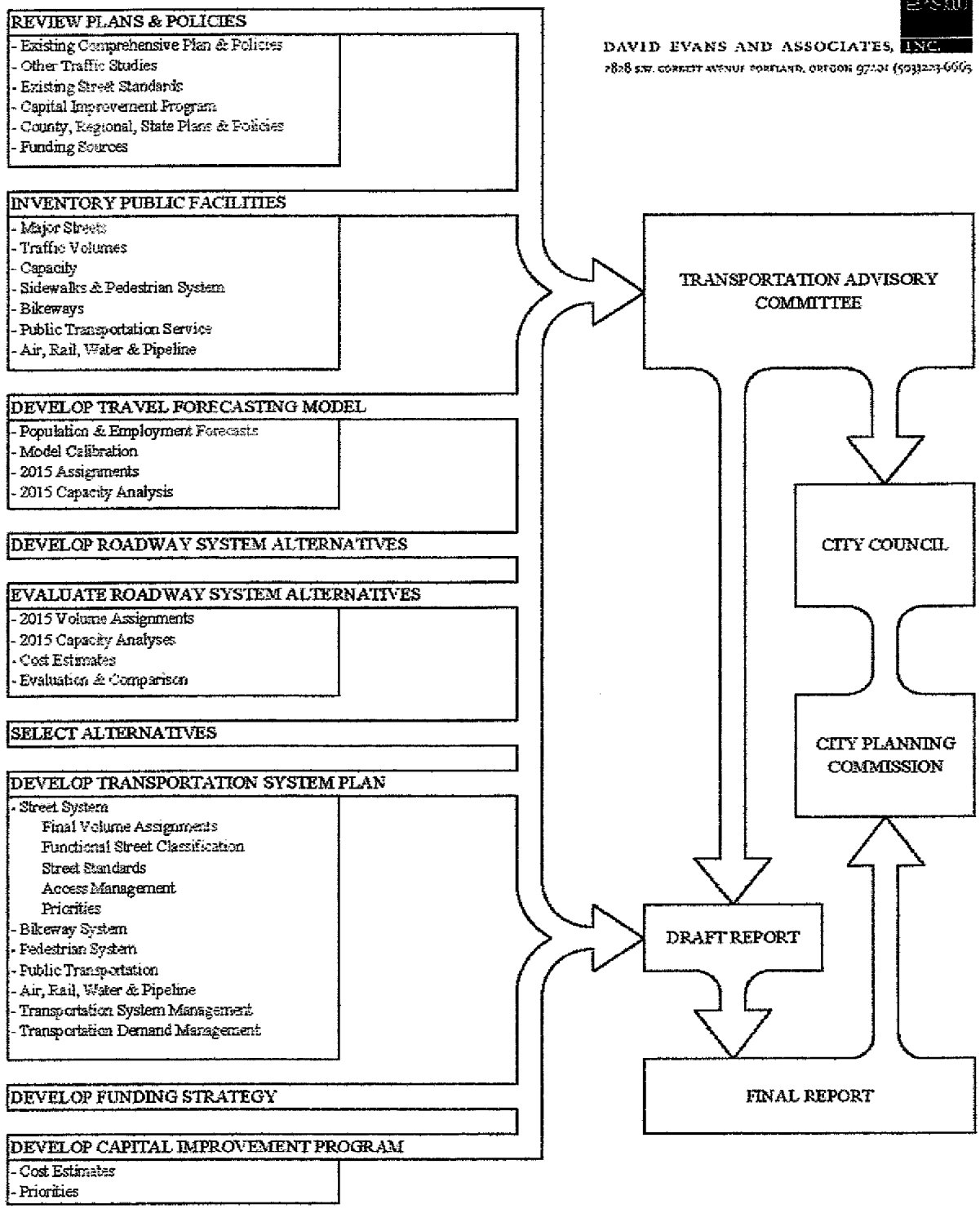


FIGURE 3
THE PLANNING PROCESS

### Inventory Existing Public Facilities

The inventory of existing facilities catalogs the current transportation system and identifies how that system currently operates (this analysis and inventory was not updated in 2005). The results of the inventory are described in Chapter 3: Current Transportation Conditions. Table A-1 in Appendix A summarizes the inventory of the existing arterial and collector street system as it existed in 1993.

### Forecast Demographics and Travel Demand

As required by the TPR, the TSP must address a 20-year forecasting period. The 20-year travel forecasts (1995-2015) were developed based on projections of population and employment by different land use categories within the Urban Growth Boundary and the Chenowith Urban Reserve Area outside the UGB. These projections, along with current street capacity and travel time characteristics were then entered into a computer model to develop 2015 travel forecasts. This process is described in detail in Chapter 4: Future Travel Demand.

### Roadway System Alternatives

Once the travel demand forecasting model was developed, a series of roadway system alternatives were evaluated. The initial alternative evaluated was the "base future," which is the current street system plus any committed street system improvements. Based on projected capacity deficiencies and safety concerns identified in the base future alternative, alternative network improvements were evaluated. After comparing the alternatives with the goals and objectives established at the beginning of the process, a recommended street system plan was selected. The evaluation is described in Chapter 5: Transportation Improvement Options Analysis.

### Develop Transportation System Plan

The TSP was then developed for each mode of transportation as described in Chapter 6: Transportation System Plan. The street system plan was developed from the forecasting and alternatives evaluation described above. The bicycle and pedestrian plans were developed to follow requirements set forth by the Oregon TPR and the *Oregon Bicycle and Pedestrian System Plan*, and they were based on input received from the TAC and the public. The public transportation, air, water, rail, and natural gas pipeline plans were developed based on discussions with the owners and operators of those facilities.

### Develop Funding Plan and Capital Improvement Program

The capital improvement program was developed from the short-range improvements and the recommended street system plan, while the funding analysis examined methods for financing these improvements. Chapter 7: Funding Options and Financial Plan describes the funding options and financial plan.

## TRANSPORTATION SYSTEM PLAN REQUIREMENTS

The City of The Dalles TSP needs to meet the requirements of ISTEA, the Statewide Planning Goal 12 and its implementing division, the TPR (OAR Chapter 660, Division 12). Goal 12 affects all levels of government, and requires that transportation plans be coordinated among all jurisdictions. The requirements for ISTEA are parallel to those required by the Oregon TPR.

**Federal Intermodal Surface Transportation Efficiency Act**

The ISTEA is a landmark federal legislation that specifies requirements for statewide and metropolitan area long-range planning. The law does not specify planning requirements for areas with less than a 50,000 population, such as the City of The Dalles urban area. The legislation is, however, relevant to the City of The Dalles TSP study as it redefines the manner in which federal aid is provided for highway and transit programs. The planning requirements under ISTEA are parallel to those required by Oregon's TPR.

**Goal 12**

In the mid-1970s, Oregon adopted 19 Statewide Planning Goals to be implemented in comprehensive plans. The aim of Goal 12, Transportation, is "to provide and encourage a safe, convenient and economic transportation system."

Each community, region, and metropolitan area updated the transportation element of their comprehensive plans according to the following guidelines set forth in Goal 12.

> *"A transportation plan shall (1) consider all modes of transportation including mass transit, air, water, pipeline, rail, highway, bicycle and pedestrian; (2) be based upon an inventory of local, regional and state transportation needs; (3) consider the differences in social consequences that would result from utilizing differing combinations of transportation modes; (4) avoid principal reliance upon any one mode of transportation; (5) minimize adverse social, economic and environmental impacts and costs; (6) conserve energy; (7) meet the needs of the transportation disadvantaged by improving transportation services; (8) facilitate the flow of goods and services so as to strengthen the local and regional economy; and (9) conform with local and regional comprehensive land use plans."*

**Oregon Transportation Planning Rule**

The Oregon Transportation Planning Rule (TPR) was developed by the Oregon Land Conservation and Development Commission (LCDC) and the Oregon Department of Transportation (ODOT), and was adopted in April 1991. OAR 660 Division 12, the Transportation Planning Rule, implements Statewide Planning Goal 12.

Essentially, the TPR requires that cities, counties, Metropolitan Planning Organizations (MPOs), and state agencies prepare and adopt TSPs. A TSP is "a plan for one or more transportation facilities that are planned, developed, operated, and maintained in a coordinated manner to supply continuity of movement between modes, and within and between geographic and jurisdictional areas."

The ultimate aim of the TPR is to encourage a multi-modal transportation network throughout the state that will reduce our reliance on the automobile. It ensures that local, state, and regional transportation systems "support a pattern of travel and land use in urban areas that will avoid the air pollution, traffic and livability problems faced by other areas of the country."

***Transportation Planning Rule Requirements for The Dalles***

The City of The Dalles falls into the jurisdiction category of cities with a population between 2,500 and 25,000 that are located outside of a major urban area. Therefore, they must develop and adopt a TSP which includes:

A street system plan for a network of arterial and collector roadways
A bicycle and pedestrian plan
A public transportation plan
An air, rail, water, and natural gas pipeline plan
Policies and land use regulations for implementing the TSP
A transportation financing program

In addition to the TSP, the City of The Dalles must adopt land use and subdivision ordinance amendments consistent with the requirements in the TPR to protect transportation facilities for their identified functions. In particular, these amendments should include street standards and access control measures.

The city should also amend land use and subdivision ordinances to require bicycle parking facilities and facilities for safe, convenient, and direct pedestrian and bicycle access within and between residential, commercial, employment, and institutional areas.

As part of the 2005 TSP update, the TPR was reviewed so that this section could be updated to include any relevant amendments. The most recent significant changes to the TPR affecting The Dalles were adopted in 1998, and are addressed in the 1999 TSP. Subsequent amendments to the TPR do not apply to The Dalles. Therefore, as of 2005, The Dalles TSP complies with the TPR.

**Oregon Transportation Plan**

The OTP was completed and adopted by the Oregon Transportation Commission in September 1992. Several alternative approaches to developing the transportation plan were evaluated as part of the OTP planning process. The preferred plan presented in the OTP followed the Livability Approach, which "depends heavily on the concept of minimum levels of service within each transportation mode to assure appropriate transportation alternatives to all areas of the state."

In its inventory of existing facilities, the OTP identifies several transportation facilities of significance in The Dalles. These include:

Interstate 84
AMTRAK inter-city passenger rail service via the Portland to Salt Lake City line (no longer in service)
Greyhound inter-city bus service along the Portland-Boise-Salt Lake City route
Freight rail service provided by the Union Pacific Railroad (UPRR)
Barge and river transportation provided by City of The Dalles
The Columbia Gorge Regional Airport
Local transit service

***Oregon Highway Plan***

The 1999 Oregon Highway Plan (OHP) establishes policies and investment strategies for Oregon's state highway system over a 20-year period and refines the goals and policies found in the Oregon Transportation Plan. Policies in the OHP emphasize the efficient management of the highway system to increase safety and to extend highway capacity, partnerships with other agencies and local governments, and the use of new techniques to improve road safety and capacity. These policies also link land use and transportation, set standards for highway performance and access management, and emphasize the relationship between state highways and local road, bicycle, pedestrian, transit, rail, and air systems.

US 30 through the Dalles is identified as a District Highway and Scenic Byway, US 197 is identified as a Regional Highway and I-84 is identified as an Interstate Highway and Statewide Freight Route in the State Highway Classification System Policy in the Oregon Highway Plan[1]. ODOT uses the state highway classification system to guide management and investment decisions regarding state highway facilities.

**District Highways** are facilities of county-wide 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.

**Regional Highways** typically provide connections and links to regional centers, Statewide or Interstate Highways, or economic or activity centers of regional significance. The management objective is to provide safe and efficient, high-speed, continuous-flow operation in rural areas and moderate to high-speed operations in urban and urbanizing areas. A secondary function is to serve land uses in the vicinity of these highways.

**Interstate Highways** provide connections to major cities, regions of the state, and other states. A secondary function in urban areas is to provide connections for regional trips within the metropolitan area. The Interstate Highways are major freight routes and their objective is to provide mobility. The management objective is to provide for safe and efficient high-speed continuous-flow operation in urban and rural areas.

The goal of the highway classification system is to provide direction for managing the system and a basis for developing funding strategies for improvements. The system will be used in the development of corridor plans, transportation system plans, major investment studies, review of local plan and zoning amendments, periodic review of local comprehensive plans, highway project selection, design and development, and facility management decisions including road approach permits. The following are implementation strategies included in the Oregon Highway Plan that are of significance to state highways through The Dalles urban area:

**Highway Mobility Standards (Policy 1F):** "It is the policy of the State of Oregon to use highway mobility standards to maintain acceptable and reliable levels of mobility on the state highway system." These standards shall be used for –

- **Identifying** state highway mobility performance expectations for planning and plan implementation;
- **Evaluating** the impacts on state highways of amendments to transportation plans, acknowledged comprehensive plans and land use regulations pursuant to the Transportation Planning Rule (OAR 660-12-060); and
- **Guiding** operations decisions such as managing access and traffic control systems to maintain acceptable highway performance.

**Classification and [Access] Spacing Standards (Policy 3A):** "It is the policy of the State of Oregon to manage the location, spacing and type of road and street intersections and approach roads on state

[1] Oregon Department of Transportation - Highway Division, *1999 Oregon Highway Plan*, March, 1999.

highways to assure the safe and efficient operation of state highways consistent with the classification of the highways."

The following are implementation strategies included in the Oregon Highway Plan that are of significance to I-84 through The Dalles urban area include:

- The maximum volume to capacity (v/c) ratio is 0.70 for I-84, an Interstate (NHS) Freight Route through a non-MPO area where non-freeway speed limit is greater or equal to 45 mph.

- Spacing standards for access to statewide highways in urban areas where the posted speed is greater or equal to 55 mph is 1,320 feet.

- Grade separated interchanges on I-84 are subject to OHP Policy 3C, Interchange Access Management Areas (IAMPs), which requires developing an IAMP to ensure the safe and efficient operation between connecting roadways and to minimize the need for major improvements of existing interchanges.

The following are implementation strategies included in the Oregon Highway Plan that are of significance to US 197 through The Dalles urban area:

- The maximum volume to capacity (v/c) ratio is 0.80 for US 197, a Regional Highway through a non- MPO area where non-freeway speed limit is less than 45 mph.

- Spacing standards for driveways on, and approaches to Regional Highways in urban areas is 750 feet where the posted speed is 45 mph. *[Source: OHP Appendix C, Table 14]*

- Old Highway US 30 is still an ODOT facility west of the Chenowith Interchange and east of the Brewery Grade interchange with I-84. With the completion of the Chenowith interchange, the ownership of US 30 between the above mentioned interchanges was transferred to the city.

***Statewide Intercity Passenger Service Plan***

The policy requires that specialized transportation services, airport, and intercity common carrier services must be planned as an integrated system to provide accessibility between communities. The following minimum levels of service standards for intercity passenger services apply to The Dalles:

- Intercity passenger service should be available for an incorporated city or groups of cities within five miles of one another having a combined population of over 2,500, and located 20 miles or more from the nearest Oregon city with a larger population and economy. Services should allow a round-trip to be made within a day.

- Local public transit services and elderly and disadvantaged service providers should regularly connect with intercity passenger services.

- To the extent possible, direct interconnections should be available between intercity bus, air, rail, airport limousine services, and local transit services.

- Services shall be provided in compliance with the Americans with Disabilities Act (ADA) requirements for all modes and transfer facilities.

***Bicycle and Pedestrian Service Plan***

The following are principles established for bikeway development in the *Oregon Bicycle and Pedestrian Plan* that apply to the City of The Dalles:

- Bicycle and pedestrian networks should be developed and promoted in all urban areas to provide safe, direct, and convenient access to all major employment, shopping, educational, and recreational destinations in a manner that would double person-trips by bicycle and walking.

- Secure and convenient bicycle storage available to the public should be provided at all major employment and shopping centers, park-and-ride lots, passenger terminals, and recreation destinations.

- Statewide and regional bicycle systems should be integrated with other transportation systems in urban and rural areas to accommodate commuting and other trips by bicycle. Safe, direct, and continuous bikeways free of unnecessary delays should be provided along all urban arterial and major collector routes.

# CHAPTER 2: GOALS AND OBJECTIVES

The purpose of the TSP is to provide a guide for the City of The Dalles to fulfill its goals and objectives of improved mobility in the 21st century. Throughout the planning process, each element of the plan was evaluated against these parameters.

## OVERALL TRANSPORTATION GOAL

Develop an urban area transportation system that enhances the livability of The Dalles and accommodates growth and development through careful planning and management of existing and future transportation facilities.

## GOAL 1: Enhance transportation user safety.

***Objectives***

1.1 Identify measures to enhance safety along streets and at street intersections in The Dalles urban area.

1.2 Develop revised street cross section standards for local, collector, and arterial streets to enhance safety (and mobility) for vehicles, pedestrians, and bicyclists.

1.3 Develop a system for prioritizing pavement maintenance and rehabilitation.

1.4 Maintain sufficient roadway width and turning radii to ensure safe passage of the motoring public while integrating with pedestrian and bicycle movement.

## GOAL 2: Enhance transportation mobility.

***Objectives***

2.1 Develop a safe and efficient arterial and collector street system that provides additional north-south and east-west local access routes, thereby relieving traffic congestion on the street system[1].

2.2 Develop a street system plan that identifies the need for additional arterial and collector streets throughout the city to accommodate future growth.

2.3 Improve vehicular access to the downtown area.

2.4 Develop a street system plan that maintains The Dalles as a hub by providing access for development in outlying areas.

2.5 Evaluate the need for additional traffic signals in the city, including at the I-84 interchanges.

2.6 Improve intersection operations through downtown by measures including, but not limited to, coordinating traffic signals along the highway.

1 North-south direction refers to roadways perpendicular to the Columbia River; east-west direction refers to roadways parallel to the Columbia River.

2.7 Maintain The Columbia Gorge Regional Airport as a transportation facility of regional importance to meet the needs of the Mid-Columbia area.

2.8 Encourage the provision of adequate barge handling facilities to meet the present and future barge traffic on the Columbia River.

2.9 Identify recommended truck routes and required street improvements to safely accommodate the north-south truck movement from the hillside orchards to the downtown processing plants, and access to the commercial and industrial areas.

2.10 Develop access management strategies for US 30, specifically in relation to businesses located along the highway.

**GOAL 3: Increase the use of alternative travel modes through improved safety and service.**

***Objectives***

3.1 Develop a bicycle and pedestrian facility network.

3.2 Encourage transit service for The Dalles urban area.

3.3 Provide adequate transit access to shopping/services for the transportation disadvantaged.

3.4 Upgrade handicapped transportation services.

3.5 Maintain sidewalks, providing clear and level surfaces that are adequate for use by all citizens.

3.6 Provide pedestrian and bicycle access, especially when direct motor vehicle access is not possible.

3.7 Evaluate the need for separate bike paths or multi-use trails.

**GOAL 4: Develop a transportation system that supports planned land uses.**

***Objectives***

Identify roadway system needs to serve undeveloped areas so that steps can be taken to preserve rights-of-way and maintain adequate traffic circulation.

4.1 Integrate new arterial and collector routes into the existing city grid system.

4.2 Identify improvements to existing policies and standards that address street connectivity and spacing.

4.3 Maintain on-street parking, specifically in the downtown area.

# CHAPTER 3: CURRENT TRANSPORTATION CONDITIONS

As part of the planning process, as part of the original work done on the draft TSP in 1993, DEA conducted an inventory of the existing street system including physical characteristics and traffic volumes. Existing bikeways; public transportation; and rail, air, water, and pipeline services were also reviewed.

## ROADWAYS

The Dalles, like many other smaller communities in Oregon, developed along the state highways serving the region. However, with the construction of I-84 at its northern border, most of the conflict between highway traffic and local traffic was eliminated.

The Dalles has developed around a strong street grid pattern that is evident even today in the central and older parts of town. Several barriers to traffic flow interrupt this grid pattern. These include natural barriers such as the generally hilly terrain and Mill Creek and Chenowith Creek, and it also includes man-made barriers such as I-84 and US 197. US 197 spans across the Columbia River, connecting The Dalles and the surrounding areas to Washington State. The railroad runs along the northern edge of the city, along the Columbia River, and has at-grade intersections with local streets.

DEA, with the support of city staff, measured and examined the current transportation conditions of the existing roadways during 1992 and 1993. Data collection included a physical inventory of the city's arterial, collector, and local roads and a traffic count program that measured volumes at about 50 street or intersection locations.

### Inventory

The existing street system inventory was conducted in 1993 for all of the arterial, collector, and local roads within The Dalles as well as those in Wasco County that interact with city streets. Interstate 84 (a freeway) was not included in the inventory. Inventory elements include:

- Street classification jurisdiction
- Street and right-of-way width
- Number of travel lanes
- Presence of on-street parking, sidewalks, or bikeways
- Speed limits

***Figure 4*** shows the roadway functional classification and the location of traffic signals. Appendix Table A-1 lists the complete inventory. Other roadway characteristics, such as pavement conditions, length of roadway, and curb location are included as part of the pavement management program prepared separately from this report.

Freeways generally carry long-distance traffic through a region. Some of the traffic on freeways may exit/enter to travel to/from the regional street system. Because of the access restriction, however, short-distance local trips are discouraged. Interstate 84 is the only freeway serving the City of The Dalles.

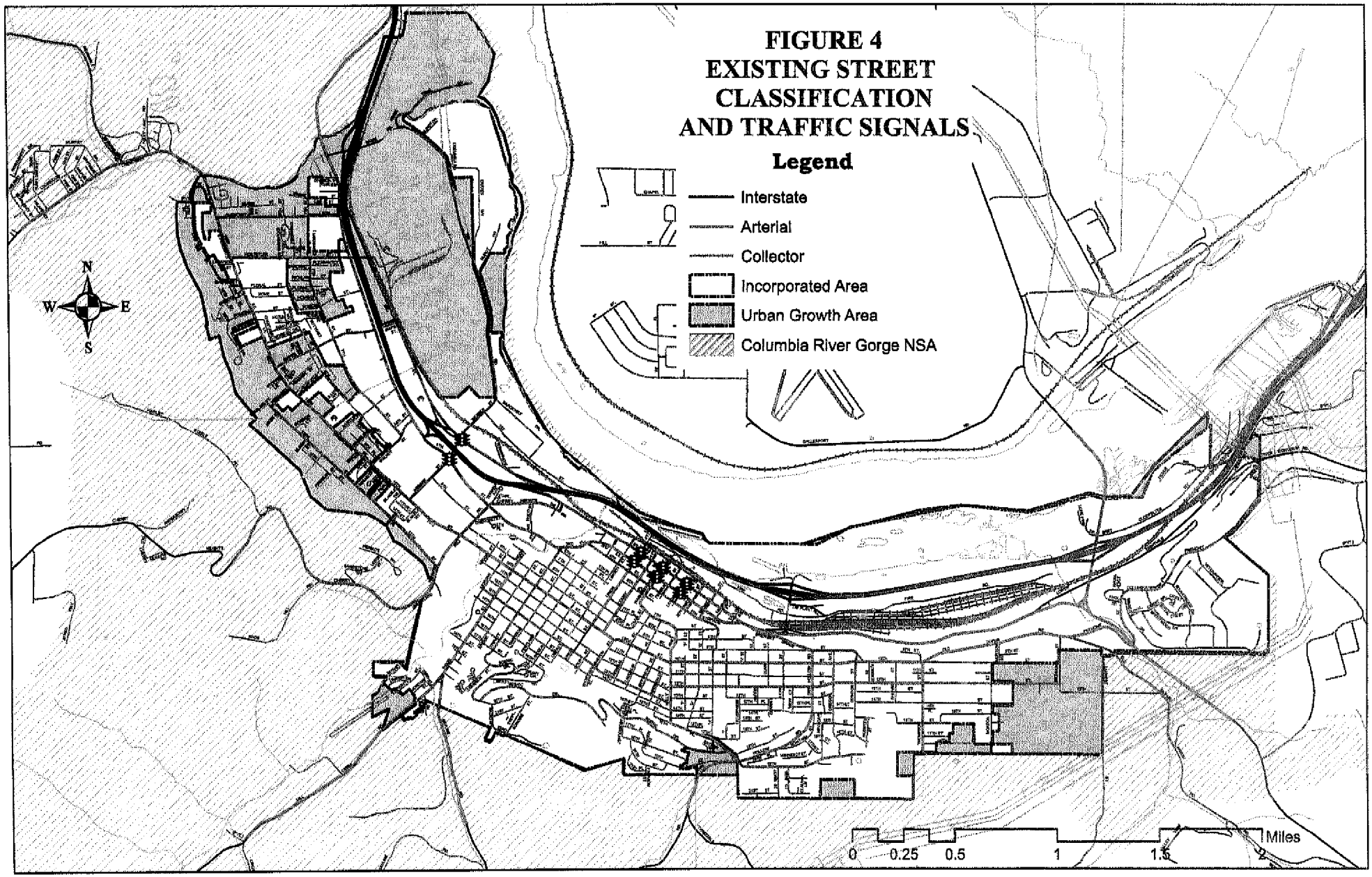
FIGURE 4
EXISTING STREET
CLASSIFICATION
AND TRAFFIC SIGNALS
Legend
Interstate
Arterial
Collector
Incorporated Area
Urban Growth Area
Columbia River Gorge NSA
N
W
E
S
0
0.25
0.5
1
1.5
2
Miles

*Arterial Streets*

Arterial streets form the primary roadway network within and through a region. They provide a continuous road system that distributes traffic between neighborhoods and districts. Generally, arterial streets are high capacity roadways that carry high traffic volumes with minimal localized activity. In The Dalles, the currently designated arterial network consists of state, county, and city streets. These arterial streets include:

- Second Street from Webber Street to US 197
- Third Street from 3rd Place to 2nd Street
- Sixth Street from northwest Urban Growth Boundary to 3rd Place
- Third Place from 6th Street to 3rd Street
- Chenowith Road from west Urban Reserve Area Boundary to 10th Street
- Tenth Street from Chenowith Road to Old Dufur Road
- Old Dufur Road from 10th Street to Fremont Street
- Fremont Street from Old Dufur Road to US 197
- Twelfth Street from Kelly Avenue to Thompson Street
- Webber Street from 10th Street to 2nd Street
- Cherry Heights Road from south Urban Growth Boundary to 6th Street
- Mount Hood Street from south Urban Growth Boundary to 10th Street
- Skyline Road from south Urban Growth Boundary to Mount Hood Street
- Union Street from 14th Street to 1st Street
- Court Street from 10th Street to 1st Street
- Sixteenth Place from Dry Hollow Road to Kelly Avenue
- Kelly Avenue from 16th Place to 7th Street
- Seventh Street from Kelly Avenue to Washington Street
- Washington Street from 7th Street to 1st Street
- Jefferson Street from 4th Street to 1st Street
- Madison Street from 4th Street to 1st Street
- Dry Hollow Road from 16th Place to Brewery Grade
- Brewery Grade from Dry Hollow Road to US 30
- Thompson Street from 18th Street to 10th Street
- US 197 from south Urban Growth Boundary to north Urban Growth Boundary

Since 1993, one additional arterial street has been added to the system:

- Cherry Heights Road from 6th Street to 2nd Street

*Collector Streets*

The function of urban collector streets, on the other hand, is equally divided between mobility and access. Collector streets connect local neighborhoods or district traffic to the arterial network. Generally, they do not connect together to form a continuous network because they are not designed to provide alternative routes to the arterial street system. Streets currently designated as collector streets in The Dalles include:

- River Road from northern terminus to 2nd Street
- First Street from Union Street to Madison Street
- Second Street from 6th Street to Webber Street

- Fourth Street from 3rd Place to 4th Street Grade
- Fourth Street Grade from 4th Street to 9th Street
- Seventh Street from Hostetler Street to Walnut Street
- Ninth Street from Dry Hollow Road to 10th Street
- Twelfth Street from Thompson Street to eastern terminus
- Columbia View Drive from US 197 to east Urban Growth Boundary
- Thirteenth Street from Irvine Street to Emerson Street
- Thirteenth Street from Verdant Street to Cherry Heights Road
- Thirteenth Street from Mount Hood Street to Kelly Avenue
- Sevenmile Hill Road from north Urban Reserve Area Boundary to Chenowith Road
- Scenic Drive from Trevitt Street to 16th Place
- Nineteenth Street from Dry Hollow Road to eastern terminus
- Irvine Street from 13th Street to 10th Street
- Chenowith Loop from 10th Street to 6th Street
- Hostetler Street from 10th Street to 2nd Street
- Emerson Street from 13th Street to 10th Street
- Snipes Street from 10th Street to 6th Street
- Walnut Street from 10th Street to 6th Street
- Trevitt Street from Scenic Drive to 6th Street
- Old Dufur Road from south Urban Growth Boundary to Fremont Street

**Traffic Signals**

Six traffic signals were in place in 1993 when the transportation system inventory was conducted. These signals were located at the following intersections:

- Second Street and Union Street
- Third Street and Union Street
- Second Street and Washington Street
- Third Street and Washington Street
- Second Street and Laughlin Street
- Third Street and Laughlin Street

Since then, traffic signals have been added at two locations:

- Second Street and Webber Street
- Sixth Street and Webber Street

**Traffic**

Traffic volumes on the major streets in The Dalles were measured during 1992 and 1993[1]. The measured 24-hour, two-way volumes are shown on ***Figure 5***. The widest band width illustrates that the highest volumes occur along the US 30 corridor. The greatest east-west activity occurs along the Second/Third Street couplet with about 18,000 vehicles per day traveling along those streets. The two-way, AM and PM peak hour volumes are shown on ***Figure 6*** and ***Figure 7.***

A comparison of the morning and evening traffic indicates a build-up of traffic throughout the day. For example, PM peak hour volumes on the Second/Third Street couplet are nearly twice as high as those

[1] Traffic volumes were not updated for 2005

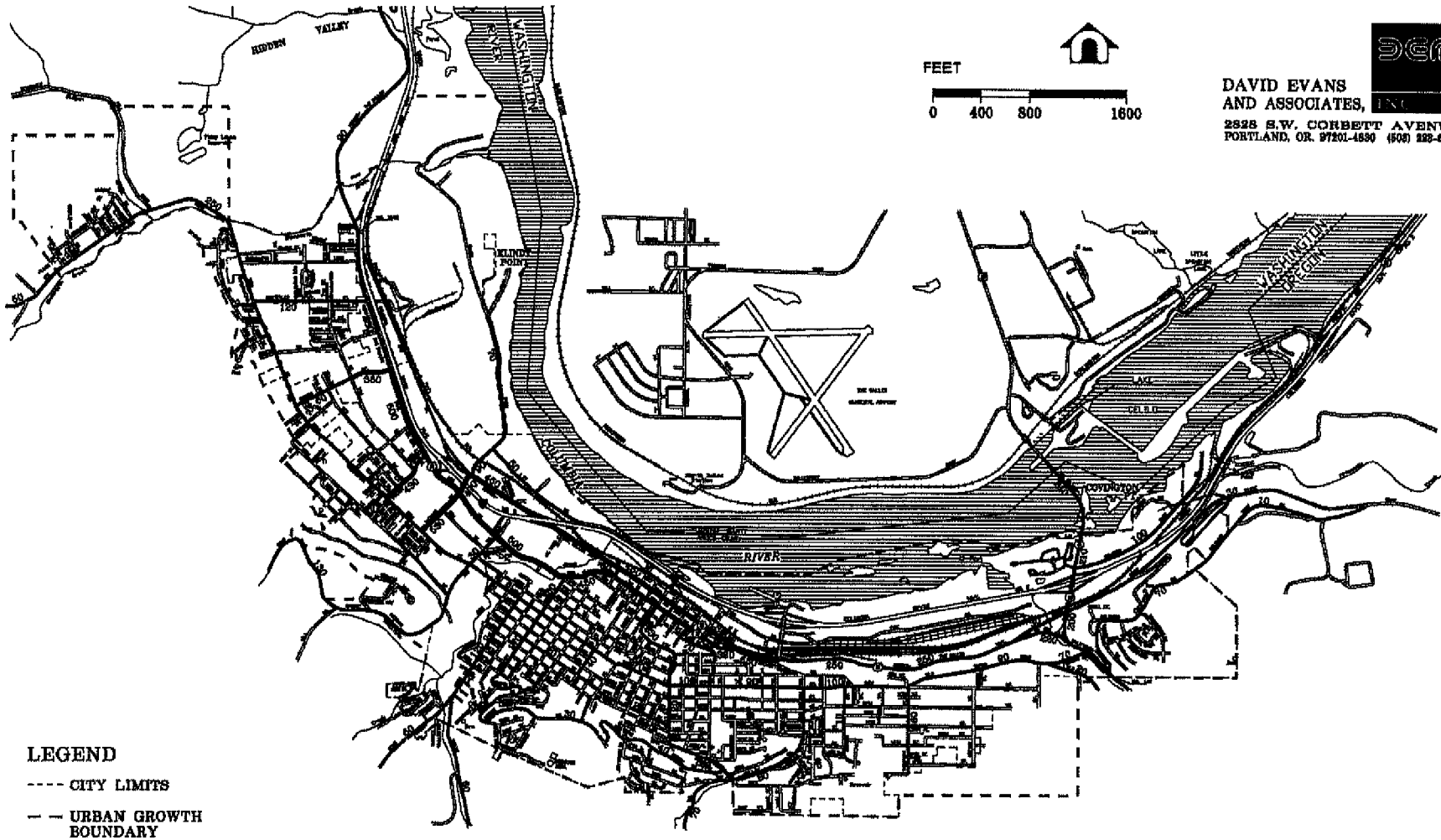


FIGURE 6

1993 WEEKDAY AM PEAK HOUR TRAFFIC VOLUMES

DALL0001 pac 05/27/93 09:43:46 PAC D:\WORK\DAL-93AM

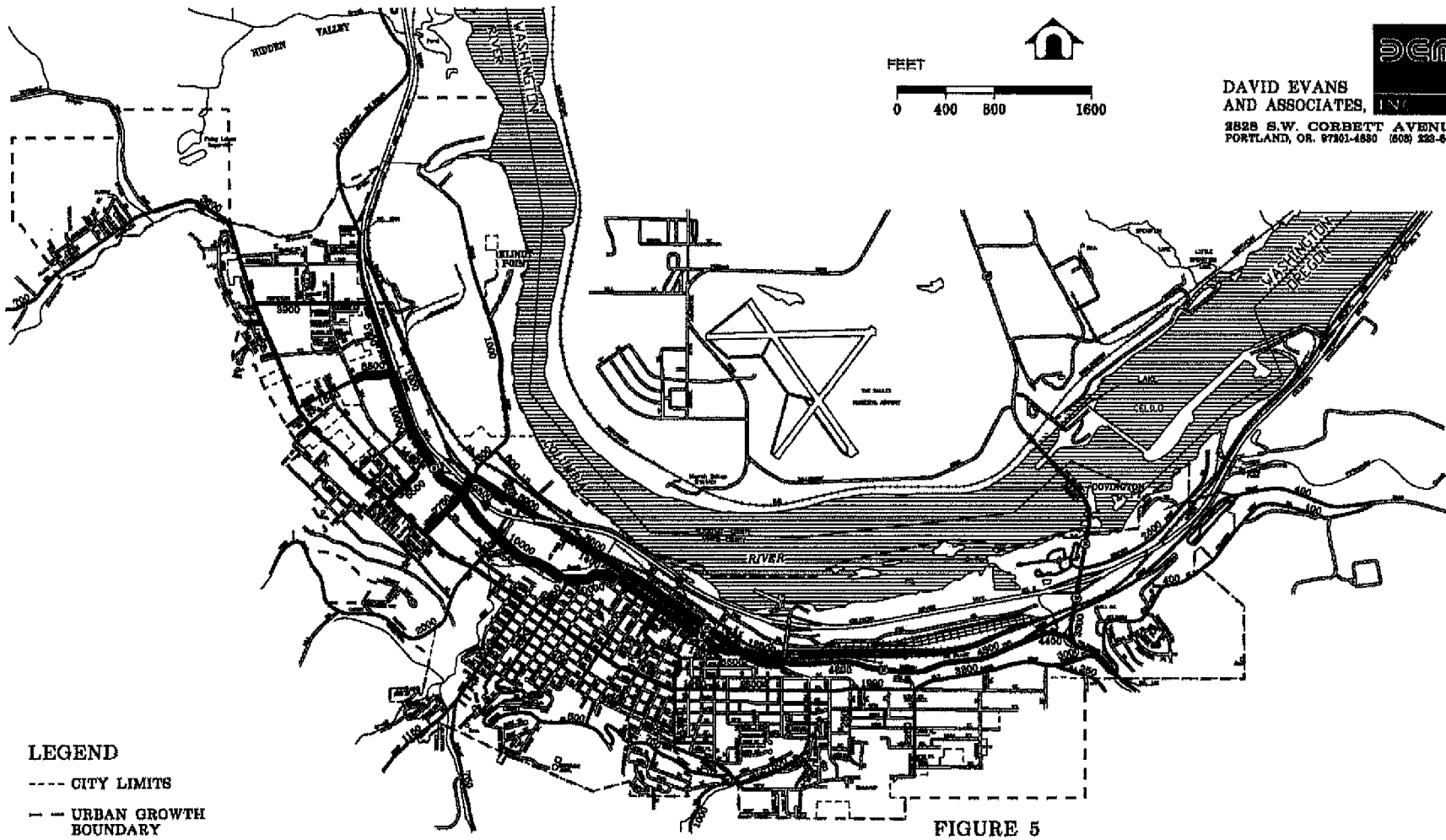


FIGURE 5

1993 WEEKDAY 24-HOUR TWO-WAY TRAFFIC VOLUMES

DALL0001 pac 05/27/93 08:25:53 PAC D:\WORK\DAL-24HR

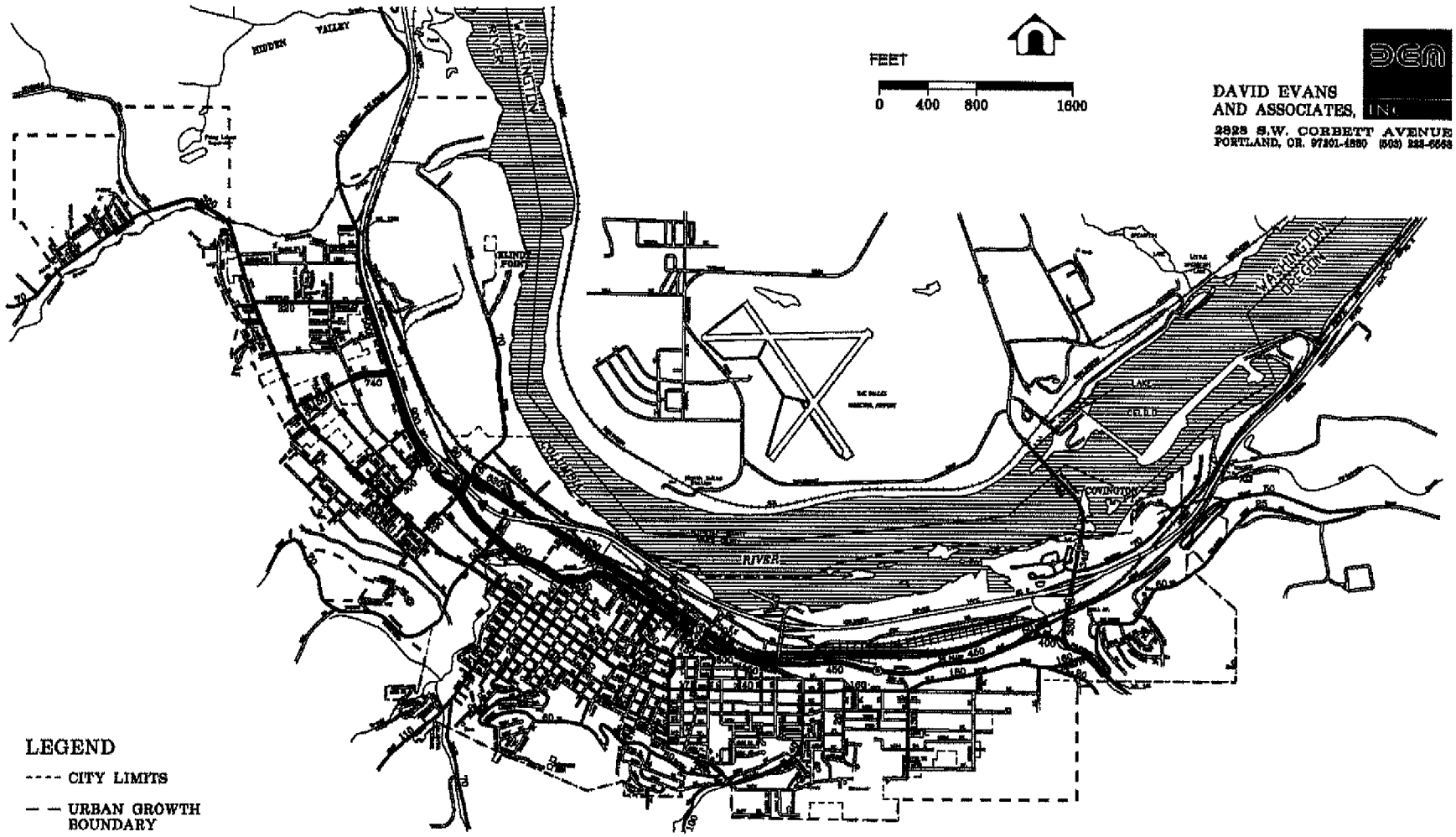


FIGURE 7

1993 WEEKDAY PM PEAK HOUR TRAFFIC VOLUMES

DALL0001 pac 05/27/93 09:32:58 PAC D:\WORK\DAL-93PM

in the AM peak hour. Because the highest hourly volumes occur in the afternoon/evening period, testing and evaluation of the street system was performed for the PM peak hour volumes.

**Street Capacity**

Transportation engineers have established various standards for measuring traffic capacity of roadways or intersections[2]. Each standard is associated with a particular level of service (LOS) or mobility measured in the vehicle capacity of the facility, or V/C, one wishes to provide. The LOS concept requires consideration of factors which include travel speed, delay, frequency of interruptions in traffic flow, relative freedom for traffic maneuvers, driving comfort and convenience, and operating cost. Six standards have been established ranging from Level A where traffic flow is relatively free to Level F where the street system is totally saturated or jammed with traffic.

The capacity of each of the major streets was calculated in a generalized way to compare with the PM peak hour traffic volumes to determine locations of capacity deficiencies. Capacity is estimated so that roadways operating below capacity represent traffic conditions of LOS A to LOS D while capacity deficiencies are identified as LOS E or F conditions. For two-lane roadways, which comprise most of The Dalles, capacity was estimated at about 700 vehicles per hour in each direction. The one-way roadways, such as the couplet, would have double the capacity, or about 1,400 vehicles per hour in each direction. Three-lane roadways with very high turning activity, such as sections of Sixth Street, would have a capacity of about 900 vehicles per hour in each direction. These capacity estimates do not specifically address intersection operations.

A volume to capacity ratio (v/c) is the peak hour traffic volume (vehicles/hour) on a highway section divided by the maximum volume that the highway section can handle. For example, when v/c equals 0.85, peak hour traffic uses 85 percent of a highway's capacity; 15 percent of the capacity is not used. If the traffic volume entering a highway section exceeds the section's capacity, traffic queues will form and lengthen for as long as there is excessive demand. When v/c is less than but close to 1.0 (e.g., 0.95), traffic flow becomes very unstable. Small disruptions can cause traffic flow to break down and long traffic queues to form. This is a particular concern for freeways because the capacity of a freeway under stop-and-go traffic conditions is lower than the capacity when traffic is flowing smoothly.

Comparing these general capacity estimates with the 1993 traffic volumes shown in Figure 5 and Figure 6 indicates that the major road segments in The Dalles are operating at LOS C or better, indicating little or no congestion. All of the signalized intersections are also estimated to operate at LOS C or better during the weekday PM peak hour. The un-signalized intersections of Webber Street with both Second Street (three-way, stop-controlled) and Sixth Street (four-way, stop-controlled) were identified as being deficient at the time current conditions were analyzed in 1993. However, with the installation of traffic signals at these intersections, they currently operate at LOS C or better during the weekday PM peak hour.

**PEDESTRIAN SYSTEM**

The most basic transportation option is walking. Walking is the most popular form of exercise in the United States and can be performed by people of all ages and all income levels. However, it is not often considered as a means of travel. This is mainly because pedestrian facilities are generally an afterthought and not planned as an essential component of the transportation system.

[2] Transportation Research Board, *1985 Highway Capacity Manual*, Special Report 209. National Research Council, 1985.

The relatively small size of The Dalles indicates that walking could be employed regularly to reach a variety of destinations. Encouraging pedestrian activities may not only decrease the use of the personal automobile but may also provide benefits for retail businesses. Where people find it safe, convenient, and pleasant to walk, they may linger and take notice of shops that was overlooked before. They may also feel inclined to return to renew the pleasant experience time and again.

As is typical of most towns the size of The Dalles, the sidewalk system in the older core of the city is mostly complete. Sidewalks are also provided along streets fronting new site developments that have occurred in the last few years. However, some of the older street system outside of the central area does not have sidewalks provided along its length.

To assess the condition of the existing sidewalk system in The Dalles, a comprehensive inventory was conducted between November 2001 and April 2002. The results of that inventory and subsequent analysis were summarized in a report entitled "Sidewalk Improvement Plan." (Appendix D). The major finding of the Plan was that The Dalles, while having an extensive network of sidewalks, had many areas where sidewalks were either completely lacking or were discontinuous, were in need of repair, or did not meet current ADA requirements.

*The Dalles Riverfront Plan* identifies a recreational trail (Multi-purpose Path) along the Columbia River with access points at Chenowith Creek, Webber Street, and Riverfront Park. The proposed trail would be approximately 10 miles long. Of this, three segments totaling 1.93 miles were completed in 1993. These include the trail from the west end of the Marina parking lot to Bargeway Road, the Taylor Lakes to railroad segment, and the segment from the railroad to the Discovery Center site. In June 2005, approximately 6 miles of the trail have been completed. The 12-foot-wide pathway would provide for two-directional bicycle traffic along with its shared use by joggers and other pedestrians. Connectors would include the Mill Creek Trail and the Chenowith Creek Trail.

The Mill Creek Trail is a proposed recreational trail along the west bank of Mill Creek with several potential access points from residential streets. The trail would turn west from Mill Creek and connect with the street system at the intersection of Cherry Heights Road and Thirteenth Street.

The Chenowith Creek Trail is a proposed recreational trail along Chenowith Creek. It would begin at the Riverfront Trail and extend southward to Tenth Street with an at-grade crossing at Sixth Street.

**BICYCLE SYSTEM**

Like pedestrians, bicyclists are often overlooked when considering transportation facilities. However, cycling is a very efficient mode of travel. Bicycles take up little space on the road or when parked, do not contribute to air or noise pollution, and offer relatively higher speeds than walking. Because of the small size of The Dalles, a cyclist can travel to any destination in town within a matter of minutes.

Bicycling should be encouraged to reduce the use of automobiles for short trips in order to reduce some of the negative aspects of urban growth. Noise, air pollution, and traffic congestion could be mitigated if more short trips were taken by bicycle or on foot. Typically, a short trip that would be taken by bicycle is around two miles; on foot, the distance commonly walked is around ½ mile.

During the 1993 transportation system inventory, the only existing bike lane was located on West Sixth Street. Since then, bike lanes have been added to Tenth Street, Cherry Heights Road, Webber Street, and Second Street.

The Riverfront, Mill Creek, and Chenowith Creek Trails would also be accessible for bicycle use.

A *Bicycle Master Plan* was prepared for The Dalles urban area in 1993 (Appendix E). The plan included recommended bike paths, bike lanes, shoulder bikeways, and shared roadways.

## PUBLIC TRANSPORTATION

Public transportation in The Dalles consists of long-distance Greyhound bus service and some demand responsive bus service.

Greyhound schedules four buses through The Dalles each day. Two buses travel west-east on the Portland-Boise-Salt Lake City route. The other two buses travel west-northeast on the Portland-Spokane route. Transfers to other routes allow bus riders to travel throughout the United States.

For senior citizens and the transportation disadvantaged, the senior center sponsors a minibus service. This service operates Monday through Friday with four vehicles. Service is available throughout the city, in Dallesport, and out of town as well, if requested.

The Mid-Columbia Council of Governments has created Transportation Network which operates additional demand responsive service available to everyone. This service has been in operation for two years. They have two vans and one 12-passenger bus operating Monday through Friday. This service is available to residents throughout Wasco County. Currently, they are providing 1,300 to 1,500 rides per month. Although the vehicles are not full, the service is at capacity in terms of time.

AMTRAK had scheduled two trains through The Dalles each day; however, this service was discontinued in May 1997. The westbound train was destined for Portland, Oregon, while the eastbound train was destined for Salt Lake City, Utah. Each of these trains connected with other lines for service throughout the United States.

## RAIL SERVICE

The Dalles is served commercially by the Union Pacific Railroad (UPRR). The UPRR tracks run east-west along the Columbia River Gorge, providing vital transport for industry in The Dalles and Wasco County. This commercial rail service allows industry to ship goods throughout the United States.

## AIR SERVICE

The Columbia Gorge Regional Airport is located across the Columbia River in Klickitat County, Washington. The Dalles Municipal Airport is a general aviation airport and a frequent military airplane stopover. It has no passenger or commercial service, though commercial service is expected in the future (see the 2000 *Oregon Aviation Plan, An Element of the Oregon Transportation Plan,* by the Oregon Department of Transportation Aeronautics Division). The air traffic is composed mainly of private pilots and agricultural sprayers. The Portland, Oregon, airport is the nearest international airport.

## WATER TRANSPORTATION SERVICE

Water transportation service to The Dalles is almost exclusively by towboat and barge, although a marina is available for private use. Barge loading and unloading facilities are available, but container transport is not possible. The barges carry mainly one of two products: wood chips or grain. Wood chips require service to Longview, Washington, while grain barges generally travel to Portland, Oregon.

## NATURAL GAS PIPELINE SERVICE

Northwest Natural Gas operates a major natural gas distribution line serving The Dalles. This distribution line extends southward from the main transmission line, which runs along the Washington side of the Columbia River Gorge. Northwest Pipeline Corporation operates the main transmission line.

# CHAPTER 4: FUTURE TRAVEL DEMAND

The travel demand forecast for the study area collector and arterial street system was based on the land use and roadway designations contained in the existing *City of The Dalles Comprehensive Plan*. The travel demand was estimated for the PM peak hour of a typical weekday in 2015 using a computer modeling program TMODEL2[1]. The weekday PM peak hour was modeled because it represents the critical time period of traffic operations for most of the city's collector and arterial street system. Average weekday daily traffic demand was determined assuming that an average of ten percent of the daily traffic occurs during the PM peak hour.

The Dalles travel demand forecasting model was developed through a five-step process. The first step in forecasting the travel demand involved definition of the study area, including the development of traffic analysis zones (TAZs) and the collector and arterial streets being modeled. Next, future population and employment were estimated by TAZ, and productions and attractions were calculated for each TAZ based on standard trip generation rates. The production and attraction trips were then distributed between TAZs, and the trips were then assigned to the study area collector and arterial street system. The following describes each step in the modeling process, and outlines the key assumptions for the City of The Dalles.

## STUDY AREA DEFINITION

The first step in modeling requires defining the study area. For this definition, a roadway network and TAZ system that accurately represent the road system and density of land use activity in the study area were developed.

The study area for the TSP is defined primarily by the city's UGB. In addition, the study area includes residential land northwest of the UGB, known as Murray's Addition, which contributes traffic in the study area. The map included with this report shows the study area boundary.

Because the study area boundary differs from The Dalles city limits and UGB, the demographic data contained in this report should not be compared directly with existing data for the city, nor should the projections be used in other studies associated with the city limits or UGB.

### Roadway System Network

The study area encompasses the limits of the roadway system network for the city. A network composed of arterial and collector roads was selected. This network includes all of the state highways, most of the county roads, and city streets that are vital to the circulation of traffic in The Dalles.

Each roadway in the network has specific distance, speed, and capacity characteristics that are important factors in the traffic forecasting process. These factors help determine the route that a driver takes when traveling between two locations.

### Traffic Analysis Zones

In addition to defining the study area network, a TAZ system was also developed. The TAZ system divides the study area into smaller analysis units that are used to tie land use activity and trip generation to physical locations within the network.

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[1] TMODEL2, Micro-computer software by Professional Solutions, Inc./Metro, 1991.

Within the study area boundaries, 50 TAZs were defined. Physical barriers, land use, and roadway characteristics were factors used to determine the TAZ structure. Whenever possible, the TAZs were developed to have homogeneous land use characteristics because this system results in the most accurate traffic assignment.

Each TAZ is then connected to the network by one or more representative roadways. Since the traffic network does not include every road that exists within the study area, one connector may represent many local roads that are loading onto a collector or arterial street.

Outside of the study area, eight zones load traffic from external locations, generally traffic from other cities. These zones produce three types of trips. The first type is through trips that begin in one external zone and end in another external zone but will pass through the city. For example, a vehicle traveling from Dufur to Portland might take US 197 to The Dalles, pass through the study area and take I-84 to Portland. The second type is a trip that begins in at another location and ends in the city. An example would be a resident of The Dalles who returns during the afternoon peak period after shopping at the Factory Outlet mall in Troutdale. The last type is a trip that begins in the city and ends at another location, such as someone who leaves from their workplace in The Dalles to their residence in Mosier during the afternoon peak period. In the modeling process, the trips traveling to and from these external zones are associated with the actual roads leading into The Dalles.

## EXISTING AND FUTURE DEMOGRAPHICS

Once the TAZ system was defined, both existing and future (2015) land use forecasts were developed. The existing land use was used in the model calibration process. The future land use was the basis for the future travel demand forecasts.

The land use characteristics that define growth in the city are population and employment. For the travel forecasting model, population was represented by the number of single-family and multi-family dwelling units in each traffic analysis zone. Employment was evaluated by type of land use (i.e., retail/commercial, office, industrial, etc.).

During the 20-year planning period, The Dalles is forecast to remain as the center for economic activity in the Mid-Columbia area. Assuming current trends continue, The Dalles will experience moderate population and employment growth over the next 20 years (1995-2015). According to the estimates, there is enough buildable residential land within the UGB to accommodate the expected growth. However, the forecast indicates that the UGB will be built to capacity three to five years past the 20-year (2015) planning horizon.

Employment growth will at least keep pace with population growth, and may grow at a slightly faster rate as more residents will demand goods and services and will work within the urban area rather than in resource-related jobs outside the city. Local retail development will increase at a rate approximately 60 to 70 percent faster than the increase in population during the 20-year (1995-2015) planning period. New retail development is expected to be largely concentrated around the I-84/US 197 interchange and along US 30 west of downtown.

New industrial development in The Dalles urban area is expected to be located largely in the industrial park located in the northwestern part of the city, west of River Road and between I-84 and the Columbia River. The growth in industrial development is expected to outpace the growth in population during the 20-year (1995-2015) planning period by 40 percent. Local office, medical, government, and school development is expected to keep pace with the increase in population during the 20-year planning period.

Table 1 contains a summary of existing and future housing and employment by land use category. Appendix C contains the complete forecast by TAZ in Tables C-1 through C-3 together with a detailed explanation of the land use forecasting process. Also, the TAZ structure is illustrated in the Appendix as Figure C-1.

**TABLE 1**
**CURRENT AND PROJECTED POPULATION AND EMPLOYMENT**

| Land Use | Current 1995 | Forecast 2015 | Projected Increase |
|---|---|---|---|
| Single-Family Dwelling Units | 5,141 | 6,139 | 19% |
| Multi-Family Dwelling Units | 1,312 | 1,763 | 34% |
| Retail/Commercial Employees | 1,339 | 1,894 | 41% |
| Office Employees | 242 | 311 | 29% |
| Industrial Employees | 1,040 | 1,407 | 35% |
| Medical Employees | 903 | 1,233 | 37% |
| Discovery Center Employees | 10 | 65 | 550% |
| Government Employees | 428 | 520 | 21% |
| School Employees | 548 | 685 | 25% |
| **Total Population** | **14,776** | **18,630** | **26%** |
| **Total Dwelling Units** | **6,453** | **7,902** | **22%** |
| **Total Employment** | **4,510** | **6,115** | **36%** |

## Current Population

The 1995 population is estimated at 14,776 for the study area. The number of dwelling units in the study area is estimated at 6,453, of which 5,141 (80 percent) are single-family homes (including manufactured housing) and 1,312 (20 percent) are multi-family units. Population and housing figures are presented in Appendix Table C-1.

The current (1995) population and housing were estimated based upon the 1990 US Census data, available at the census block level. The 1990 census block data were aggregated into study area TAZs to develop the 1990 population and housing data by TAZ. According to The Dalles' most recent comprehensive plan (1994), the city's population is expected to increase at an average rate of 1.1 percent per year. Therefore, the study area total was estimated for 1995 based on the 1990 census counts and the 1.1 percent annual growth rate, resulting in a total population of 14,776.

The 1995 population and housing estimates for each TAZ were based on the assumption that residential infill has occurred throughout the study area, with some TAZs experiencing more growth than others in the past five years. Information obtained from the City of The Dalles planning department identified the higher-growth areas in the eastern portion of the city, where much of the city's recent housing construction has occurred.

## Year 2015 Population

Population and housing counts were forecast to the year 2015 to meet the 20-year planning outlook of the TSP. DEA used an average annual growth rate of 1.1 percent to calculate the 2015 population of the study area. This growth rate was used by the City of The Dalles in preparing its comprehensive plan. The projected 2015 population for the study area is 18,630.

Population and housing growth will be concentrated in the TAZs most able to accommodate it. Most TAZs in the study area are largely developed and will accommodate only infill or replacement units. Some TAZs on the edges of the study area, however, contain substantial amounts of vacant buildable land designated for residential use and can accommodate The Dalles' expected growth.

The amount and type (single- or multi-family) of residential development in each TAZ was estimated based on information provided by the City of The Dalles. The comprehensive plan states that available single-family land is expected to develop at a density of approximately four dwelling units per acre (du/acre). Land designated for manufactured home development is expected to develop at approximately six units per acre, and multi-family land at 10 to 15 units per acre. DEA used the city's inventory of vacant buildable land to approximate the acreage of such land in each TAZ.

Additional dwelling units were then added to 1995 estimated dwelling units to determine 2015 totals. Under these assumptions, the study area would contain a total of 7,902 dwelling units. Of these, 6,139 (78 percent) would be single-family dwellings, and 1,763 would be multi-family dwelling units (22 percent).

Population for each TAZ was estimated using expected average household sizes as stated in the city's comprehensive plan. Single-family units were assumed to contain 2.4 persons per household, and multi-family units will have 2.1 persons per household. The resulting total population is 18,630.

**Current Employment**

The current employment in the study area was estimated by TAZ based on field surveys, document research, and telephone interviews. Most available employment statistics are for Wasco County as a whole rather than for the City of The Dalles. In addition, because employment data needed to be specific to the study area for computer analysis, it was necessary to estimate employment located in each TAZ. Therefore, DEA obtained employment information through document research and telephone interviews. Sources included The City of The Dalles, The Dalles Chamber of Commerce, the Oregon Employment Department, and various businesses and agencies located in the study area.

The Dalles currently has an average of 4,472 non-agricultural jobs in the TSP study area. Employment estimates by type of work are shown in Table 1. The 1995 population-to-employment ratio in the study area is 3.28 to 1, which is higher than average. In most urban areas, the ratio usually falls between 2.1 and 3.0. A Lower ratio occurs where almost all employment is contained within an urban area and is based primarily in manufacturing, commercial, and service industries. Higher ratios occur where many jobs in an area are resource-based, e.g., in agriculture, forestry, mineral extraction; where a large number of employees commute to work in other areas; or where unemployment is high.

Agricultural jobs represent 20 to 25 percent of total employment in Wasco County and likely account for a portion of employment in The Dalles. In addition, The Dalles has a high percentage, relative to the state average, of residents over age 65 (Comprehensive Plan, 1994). It can be assumed that most of these residents are retired. These factors help explain the relatively high population-to-employment ratio in the study area.

**Year 2015 Employment**

The employment forecast for the TSP is not intended to be a full-sector (agricultural and non-agricultural) forecast. The projections do not include agricultural jobs because the TSP is for facilities and improvements within the study area, and agricultural-related trips have only minor impacts on

traffic patterns in the study area. The 2015 employment forecast, with a total employment of 6,115, is shown in Table 1.

Future employment is based on several assumptions. It was assumed that most medical, government, and school employment would increase at approximately the same rate as the population--25 percent over the next 20 years. Employment in already developed commercial areas was assumed to increase by 20 percent. Commercial and industrial land identified in the city's inventory of vacant buildable land was assigned employment based on average densities (employees per gross acre) of the expected land use. The Dalles currently has quite low employee densities, 1.9 employees per gross commercial acre and 1.3 employees per gross industrial acre. However, these densities will increase as infill occurs.

To calculate future employment in TAZs that are largely undeveloped, DEA first estimated the amount of buildable land based on maps contained in the city's comprehensive plan. Employment was then assigned based on average densities (employees per gross acre) of the expected land use, which were calculated from information contained in the Institute of Transportation Engineers' *Trip Generation* report and from previous demographic studies done for small cities in Oregon.

For vacant land, DEA assigned densities of three employees per commercial acre and two employees per industrial acre. We assumed that all available commercial and industrial land would be developed by 2015, most at low densities, with the exception of the large amount of vacant industrial land in the northwest part of the urban area. This area will probably still have some room for development and was assumed to be 75 percent developed by 2015.

The future employment at the Columbia Gorge Discovery Center was obtained from the Discovery Center Office. At build-out of the Discovery Center, it is estimated that the Discovery Center would attract 150,000 visitors annually and it would have a total of 65 employees.

As mentioned above, the study area's current population-to-employment ratio is 3.29 to 1. The ratio will probably decrease somewhat as The Dalles grows, creating more demand for urban services and increasing the share of "urban" employment in relation to resource-based employment. Based on the assumptions used for the 2015 forecast, the population-to-employment ratio would be 3.05.

## TRIP GENERATION

Vehicle trip generation, the next step in the modeling process, is a method of estimating the number and type of trips a specific land use will produce or attract based on historic data and surveys of similar developments. The trip generation estimates were made for each traffic analysis zone in the planning area on the basis of the type and quantity of households and employees. Trip generation rates applied to these land uses were derived from the Institute of Transportation Engineers report, *Trip Generation* (Fifth Edition, 1991). These rates were modified to reflect generalized land use categories for planning purposes on the basis of experience in other similar size cities in Oregon and through the travel model calibration process. These trip rates also reflect the existing level of transit service and use of alternative modes. An increase in transit ridership or use of other modes is not expected to be large enough to have a significant effect on traffic demand and street requirements. These rates are summarized on Table 2.

Each trip is defined by the land use from which it originates, the land use for which it is destined, and the purpose of the trip. Trip generation rates were refined for each origin and destination for four purposes.

Home-based work - Trips between home and a place of employment
Home-based shopping - Trips between home and a retail center for the purpose of shopping
Home-based other - Trips between home and another land use for a purpose other than employment or shopping (e.g., school trips)
Non-home based - Trips between two non-residential land uses.

The amount of traffic generated for each TAZ was estimated for the PM peak hour by multiplying the number of households or employees by the appropriate origin and destination trip generation rate by trip purpose.

**TABLE 2**
**TRIP GENERATION RATES**

| Trip Type | | Trips/Dwelling Unit | | | Trips/Employee | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Single Family | Multi-Family | Retail/ Comm. | Industrial | Hospital | Govt. Office | Office | School |
| Home Based | Origin | 0.03 | 0.02 | 0.10 | 0.40 | 0.10 | 0.68 | 0.49 | 0.68 |
| Work | Destination | 0.39 | 0.27 | 0.00 | 0.05 | 0.00 | 0.00 | 0.00 | 0.00 |
| Home Based | Origin | 0.10 | 0.07 | 0.93 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Shopping | Destination | 0.19 | 0.13 | 0.58 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Home Based | Origin | 0.16 | 0.11 | 0.00 | 0.00 | 0.09 | 0.00 | 0.00 | 0.21 |
| Other | Destination | 0.08 | 0.06 | 0.18 | 0.00 | 0.03 | 0.00 | 0.00 | 0.10 |
| Non-Home | Origin | 0.07 | 0.05 | 0.58 | 0.05 | 0.02 | 0.16 | 0.09 | 0.16 |
| Based | Destination | 0.08 | 0.06 | 0.79 | 0.05 | 0.06 | 0.16 | 0.12 | 0.35 |
| Total Rates | Origin | 0.36 | 0.25 | 1.61 | 0.45 | 0.21 | 0.84 | 0.58 | 1.05 |
| Total Rates | Destination | 0.74 | 0.52 | 1.55 | 0.10 | 0.09 | 0.16 | 0.12 | 0.45 |

The trip generation from the Columbia Gorge Discovery Center was based on an annual visitor estimate of 150,000 obtained from the Discovery Center. It was estimated that of the 150,000 annual visitors, 80 percent would visit the center during the peak summer months between May and September. The peak daily attendance during the peak summer months is estimated at 800 visitors a day. Approximately 44 percent of the 800 daily visitors during the summer are estimated to attend the facility during the peak four hours of the afternoon.

Thus, an estimated 176 visitors would arrive and another 176 visitors would leave the site during the peak afternoon hour in summer[2]. Assuming a vehicle occupancy of 2.6, it is estimated that 70 vehicles would arrive at the site, and another 70 vehicles would leave the site during the peak weekday PM peak hour.

Trip origins and destinations were also calculated for the three external roadways leading into The Dalles. These trip calculations are based on historic growth along the roadways and potential increases in population and/or employment outside of the UGB.

[2] The peak in-grounds crowd during the peak afternoon hour in summer is estimated at 475 visitors, based on an average stay of 2.7 hours.

## TRIP DISTRIBUTION

Vehicle trip distribution, the fourth step in the modeling process, is a method of determining the origin and destination of trips within the study area. For each TAZ, trip origins were distributed to all of the trip destinations within the planning area and to the roads leading out of the study area. (Trip origins were also calculated for the roads leading into the area.)

A standard gravity model was used for trip distribution. The basic premise of the gravity model is that the number of trips between two areas is directly related to the size of the attractions or destinations in each zone and inversely related to the travel time between zones. For example, if two destination zones of equal size were located 10 and 15 minutes from the origin zone, more of the trips from the origin zone would be distributed to the closer destination zone. Likewise, if two destination zones of different sizes were located equal driving times from the origin zone, more trips would be distributed to the larger destination zone. This procedure was followed for trips originating in all 24 internal zones and the roads leading into the study area.

Trips generated by the Discovery Center were distributed separately. It was assumed that 87 percent of the trips generated by the center would come from the east along I-84. These trips from the east include 74 percent from the Tri-Cities and other areas in eastern Washington and another 13 percent from other eastern locations. Another ten percent are assumed to travel from the west along I-84. The remaining three percent would come from the south.

## TRIP ASSIGNMENT

Trip assignment, the final step in the modeling process, is a method of assigning trips distributed between origin zones and destination zones to specific paths on the street system. The forecasting model used a capacity-constrained assignment methodology that assigns traffic in percentage increments to the street system based on travel time. For the first increment, each trip is assigned to the shortest route between its origin and destination based on travel time. The travel time on each route is then adjusted to account for congestion and delay that may result from the first incremental assignment. As the fastest route becomes congested, its travel time increases, possibly making a previously slower route the faster of the two. For the second increment of traffic, each trip follows the same guidelines and is assigned to the shortest route, and then travel times are readjusted to account for the new level of congestion. This process continues until all the increments have been assigned. Using this procedure, the traffic between a single origin/destination pair could be assigned to several routes depending on the congestion of each route, thereby simulating "real world" motorists' choices on a travel route.

### Model Calibration

Prior to assigning 2015 traffic, this entire process of estimating trip generation, distribution, and assignment was completed for 1995[3] conditions and compared with actual measurements on the roadway system. The theory behind calibration reasons that if the model forecasts current conditions reasonably well, the same process should then provide a reasonably good estimate of future conditions.

To calibrate the model, the trip generation, distribution, and assignment process was repeatedly modified until the assigned volumes were within approximately ten percent of the actual counts. The data collected from the phone surveys were used in the calibration procedure to adjust the trip distribution process. Roadway speed was the key factor used to adjust the trip assignment process.

3 The model was calibrated to 1995 because the existing population and employment data was collected for this base year.

Data on through traffic were also used to calibrate the model. Through traffic was measured in the summer of 1995 by matching the license numbers of all vehicles entering and leaving the city. Observers were stationed at all entry and exit points to the city, including at the on- and off-ramps to I-84. Through traffic along I-84 was not measured during the survey. The survey found that excluding through traffic along I-84, 20 percent of all trips entering the study area during the weekday PM peak hour are through trips.

**Future Assignments**

For the future traffic analysis, 2015 traffic was assigned to a street system that included projects that have already been approved and are planned for construction. This assignment, called the "base future" condition, was used to determine which sections of the street system would be deficient within the next 20 years.

# CHAPTER 5:
# TRANSPORTATION IMPROVEMENT OPTIONS ANALYSIS

The traffic volumes in The Dalles are forecast to increase in the future as a result of the anticipated growth in population and employment in the urban area. This chapter presents an evaluation of 2015 traffic demand for a base future street network and eight transportation network improvement options. These improvements options were identified to meet capacity deficiencies, address safety issues, improve traffic circulation, and provide access to developing areas.

In addition to the base future option, the following improvements were evaluated:

- Improve Intersection of US 30 and Brewery Grade.
- Widen 10th Street between Washington Street and Lewis Street.
- Improve Intersection of US 30 and Lower Eight Mile Road.
- Widen River Road Chenowith Creek Bridge.
- Improve Intersection of US 197 and Fremont Street/Columbia View Drive.
- West Gateway.
- Connect 19th Street to Thompson Street.
- Extend Thompson Street to 10th Street.
- Install Traffic Signals at both Ends of Cherry Heights Rd.

As discussed in the remaining sections of this chapter, not all of these considered improvements were recommended. These recommendations were based on costs and benefits relative to traffic operations, the transportation system, and community livability.

Evaluation Criteria

The evaluation of the potential transportation improvements was based on a review many factors. Improvements to traffic circulation and shifts in traffic volumes were identified. In addition, three factors were evaluated qualitatively: 1) safety; 2) environmental factors, such as air quality, noise, and water quality; and 3) socioeconomic and land use impacts, such as right-of-way requirements and impacts to adjacent lands. The final factor in the evaluation of the potential transportation improvements were costs which were estimated in 2005 dollars based on preliminary alignments.

BASE FUTURE CONDITION

The "base future" condition assumes that no changes will be made to the existing street system except for those improvements already planned and funded. These include:

The Chenowith Interchange on I-84 to the west of the city that will provide direct access to the proposed industrial area in the northwest portion of the city. (Completed)
The arterial connection between Sixth Street and Second Street, with the connection at Sixth Street located directly across from the intersection with Cherry Heights Road. (Completed)
The extension of Mt Hood Street from 6th Street to Cherry Heights Rd. (Completed)

At the same time, population and employment will increase by about 30 percent, resulting in increased traffic demand upon the street system. By comparing the future traffic demand with the unchanged street system, we can determine where future traffic problems are likely to occur.

The preceding chapter described in detail how the forecasting model was developed. The results of the base future 2015 model run are shown in ***Figure 8***. The forecast vehicular traffic volumes along US 30 west of Webber Street are projected to increase from the current 900 vehicles to 1,090 vehicles during the weekday PM peak hour by 2015 (an average annual rate of 0.9 percent). East of Brewery Grade, vehicular traffic volumes along US 30 during the weekday PM peak hour are projected to increase from the 450 vehicles to 600 vehicles by 2015 (an average annual rate of 1.3 percent). In the central part of town, vehicular traffic volumes along the US 30 couplet during the weekday PM peak hour are projected to increase from the 1,500 vehicles to 1,740 vehicles by 2015 (an average annual rate of 0.7 percent).

Traffic volumes along 6th Street between Cherry Heights Road and the downtown Second Street/Third Street couplet are estimated to be lower in the future than the existing condition. This is because traffic between the downtown area and the commercial area along Sixth Street would be diverted to the new connection between Cherry Heights Road and Second Street, constructed as a part of the Safeway shopping center development. As a result of the diversion, the traffic volumes along this section of Sixth Street over the Mill Creek Bridge are estimated to decrease during the weekday PM peak hour from 900 vehicles currently to 830 vehicles by 2015. An estimated 420 vehicles during the weekday PM peak hour would be diverted to the new Cherry Heights/Second Street connection.

The highest increases in vehicular traffic volumes are forecast along Second Street between the couplet and Webber Street. Traffic during the weekday PM peak hour along Second Street is estimated to increase from 830 vehicles to 1430 vehicles by 2015. Part of the increase in traffic volumes along Second Street would be due to the diversion of traffic away from 6th Street to the new connection between Second Street and Sixth Street.

Traffic along city streets is projected to increase by between 20 and 50 percent in the older, central part of town, while higher percentage volume increases are forecast along street segments located in areas that are expected to attract new residential and non-residential development. Examples of high growth areas include River Road, with the weekday PM peak hour traffic volume forecast to increase from the current 70 to 900 by 2010, and Old Dufur Road, with the weekday PM peak hour traffic volume forecast to increase from the current 180 to 400 by 2015.

The forecast increase in traffic volumes in the future is estimated to result in slightly worse operating conditions at critical intersections in the urban area. However, we estimated that all existing signalized intersections would continue to operate at a LOS C or better. The estimated levels of service during the 2015 weekday PM peak hour at critical intersections in the urban area are illustrated in Table 3.

**TABLE 3**
**FORECAST 2015 PEAK HOUR LEVELS OF SERVICE**

| Intersection | Level of Service |
|---|---|
| Second Street and Washington Street | 0.50 - A |
| Third Street and Washington Street | 0.73 - C |
| Second Street and Union Street | 0.56 - B |
| Third Street and Union Street | 0.68 - C |
| Webber Street and Second Street | 0.88 - C |
| Webber Street and Sixth Street | 0.66 - C |

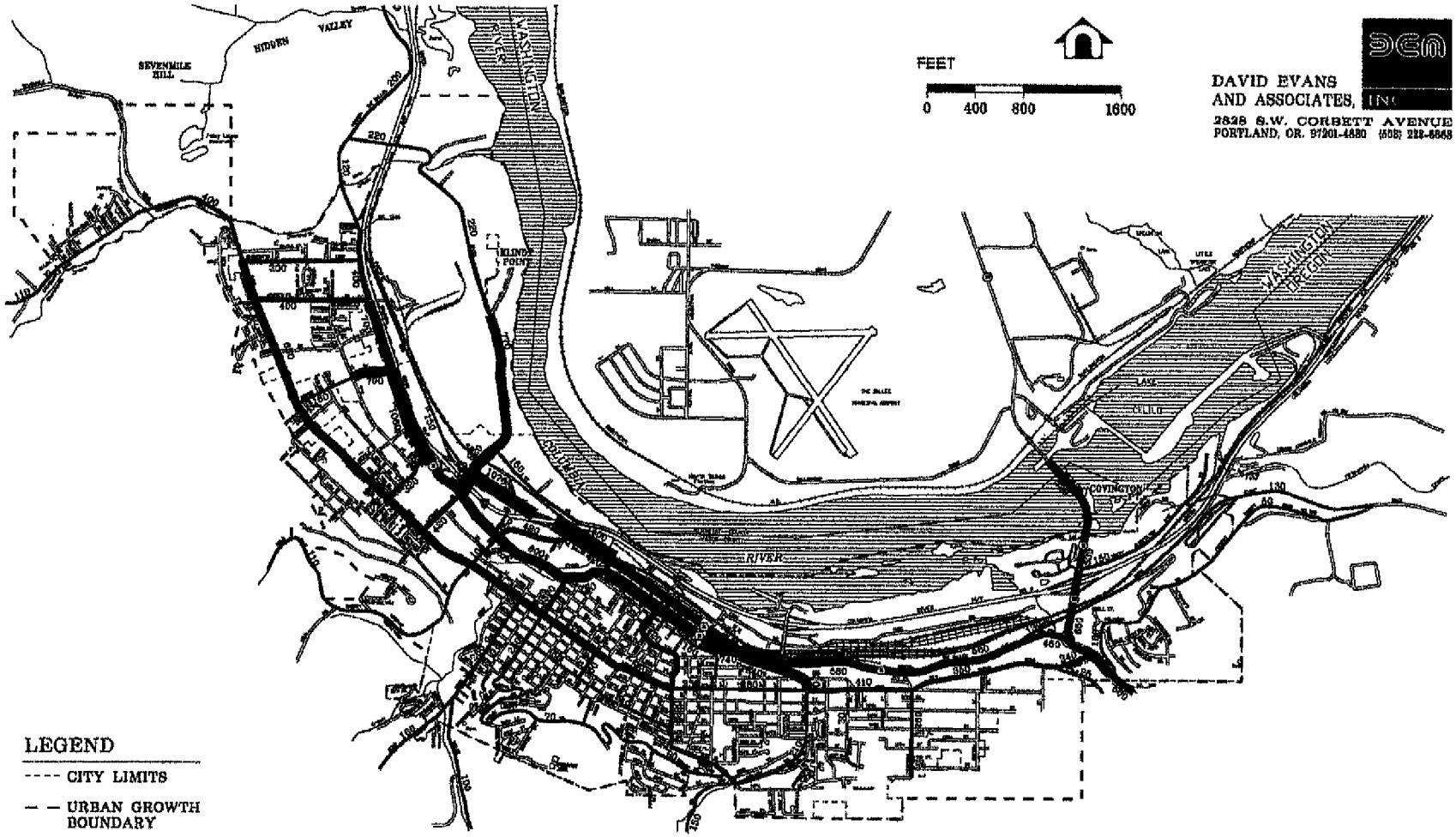


FIGURE 8

2015 WEEKEND PM PEAK HOUR TRAFFIC VOLUMES

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Options Evaluation

Since no capacity deficiencies were identified in The Dalles' transportation system in the future, the optional transportation system improvements were developed to improve safety conditions at existing locations and to provide access to developing areas in the city. These transportation system options were developed with the help of the TAC, keeping in mind the goals and objectives of the transportation plan.

**Option 1: Revise Zoning and Development Codes**

Overview: One of the goals of the Oregon TPR is to reduce the reliance on the automobile. One way a city can do this is through amendments in zoning and development codes to permit mixed use developments and increases in density. Specific amendments include allowing neighborhood commercial uses within residential zones and allowing residential uses within commercial zones.

Improvement: Amend zoning and development codes to permit mixed use developments and increases in density in certain areas of The Dalles.

Impacts: Such code amendments can encourage residents to walk and bicycle throughout the community by providing shorter travel distances between land uses. Maintaining the livability of the community encourages new residents and businesses to locate in The Dalles, helping to keep the area economically viable.

Cost: No direct costs are associated with making the comprehensive plan policy and zoning code amendments.

Recommendation: The Dalles has already taken steps to address this improvement (e.g. Neighborhood Center Overlay, Section 5.040 of the Land Use Development Ordinance). Further support and implementation of these policies is recommended.

**Option 2: Implement Transportation Demand Management Strategies**

Overview: The TPR also recommends that cities should evaluate Transportation Demand Management Strategies (TDMs) measures as part of their TSPs. These strategies are designed to change the demand on the transportation system by providing facilities for other modes of transportation, implementing carpooling programs, and applying other demand management measures such as staggering work schedules at local businesses.

Improvement: The Dalles can implement TDM measures in a variety of ways. They can construct and maintain walkways and bikeways to improve safety for pedestrians and bicyclists and encourage more residents to limit their use of motorized vehicles. The Dalles can work with Wasco County and Hood River County to establish a Columbia River carpooling program. They can also work with local businesses to help set up carpooling programs and stagger work shifts.

Impacts: Implementing TDM measures in The Dalles can improve the livability of a city by improving traffic, bicyclist, and pedestrian safety. With more emphasis on walking or biking in the city, conditions such as air quality and noise levels would be improved as well.

Cost: The estimated cost to install a new sidewalk on one side of an existing street is around $20 per linear foot (2005 costs). This includes a 5-foot-wide walkway composed of four inches of concrete and two inches of aggregate. Curbing would cost an additional $12 to $20 per linear foot (2005 costs).

The cost to construct an asphalt sidewalk is about $10 per linear foot (2005 costs). This estimate assumes that the asphalt pad is six feet wide and composed of two inches of asphalt and four inches of aggregate. Asphalt sidewalks require more maintenance than concrete sidewalks. Maintenance would include sealing every five years at about $0.50 per linear foot (2005 costs) and resurfacing every ten years at about $2.50 per linear foot (2005 costs).

The cost to install bike lanes on both sides of an existing road is around $45 to $50 per linear foot (2005 costs). This cost includes widening the roadway by five feet on both sides, installing curbs, using a fill composed of four inches of asphalt and nine inches of aggregate, and placement of a eight-inch painted stripe.

These costs for are for standalone improvements; the costs can be reduced when they are included as needed in roadway improvement projects throughout The Dalles.

Costs associated with an intra- or inter-county carpool program were not determined as part of this plan.

Recommendation: Implementing TDM strategies would provide needed facilities for pedestrians and bicyclists, increase the safety of the roadway system, and enhance the quality of life in The Dalles. Therefore, the TDM strategies summarized above are recommended for inclusion in the TSP.

**Option 3: Improve Intersection of US 30 and Brewery Grade**

Overview:Brewery Grade connects Dry Hollow Road and E.10th Street to US 30 just east of the downtown area. The street is constructed on a very steep grade and it intersects US 30 at a skewed angle, with its alignment almost parallel to US 30 until it makes a sharp right-angle turn at its intersection with US 30.

The intersection has been improved by the City of The Dalles since the 1999 TSP was completed. This was done primarily through lane reconfiguration and has helped with turning conflicts especially with trucks turning right from Brewery Grade. Large trucks must now turn left and loop back to eastbound on US 30. This is not ideal but limits trucks turning into on-coming lane of traffic

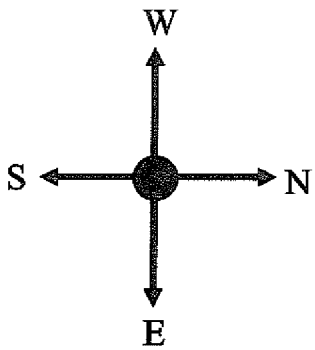
Another problem arises because westbound highway traffic is currently split into two lanes as it approaches the intersection with Brewery Grade. The southern lane remains level and carries traffic from the freeway interchange, while the northern lane carrying US 30 through traffic from the east dips below the interchange and is climbing as it approaches the intersection with Brewery Grade. The new, temporary lane configuration does not allow this traffic to make a left on to Brewery Grade. Traffic must now turn left and loop back to eastbound on US 30 to then make a right onto Brewery Grade.

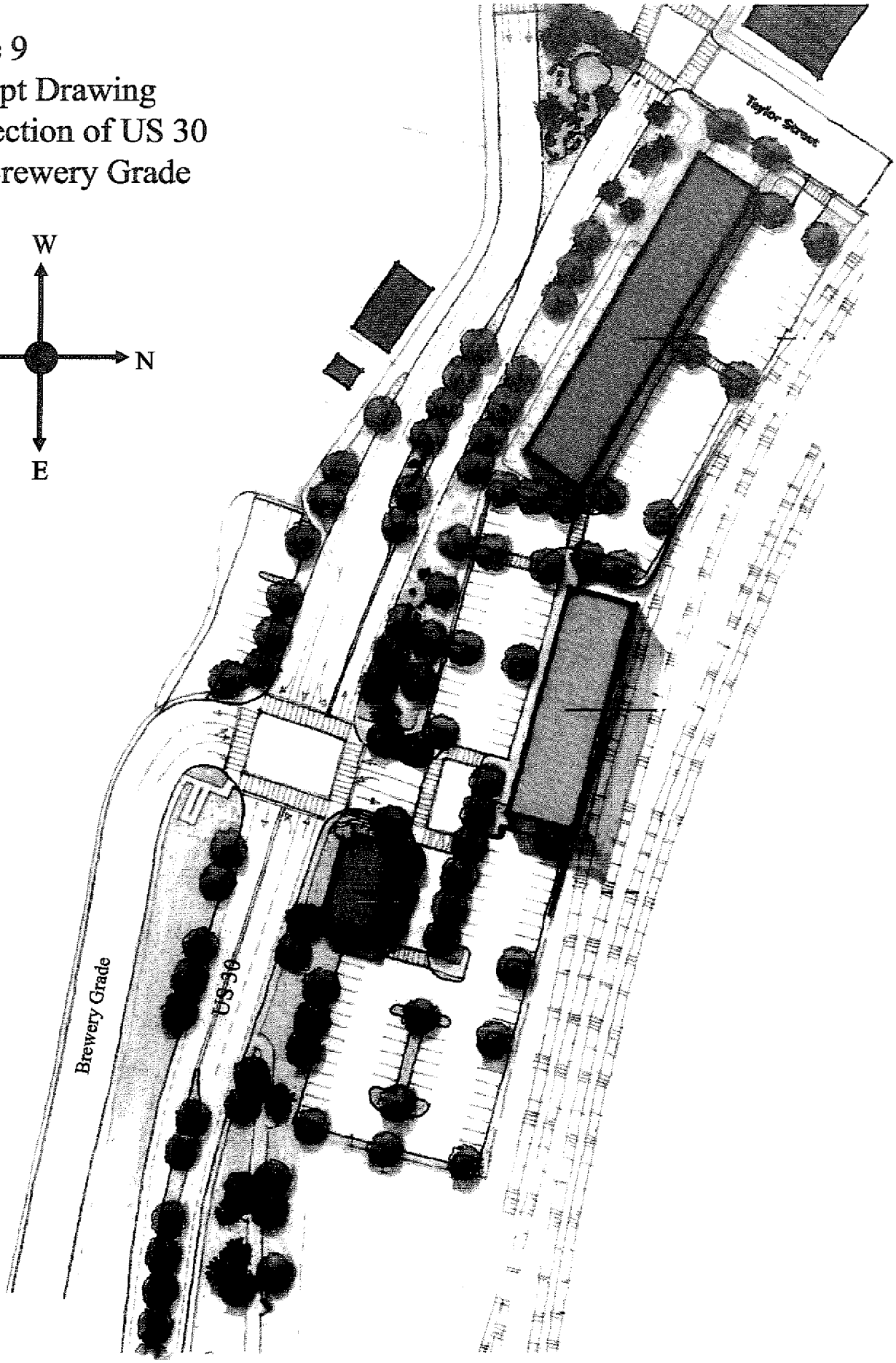
Improvement: Four-way traffic signalization with a combination of improvements would address the problems. In June of 2004, the City completed a TGM Quick Response project that addressed this intersection and the freeway access. It included 30 percent engineered drawings and traffic a study (***Figure 9***).

The northerly lane on westbound US 30 should be closed and all the through traffic should be routed onto only one northern lane. Thus, the right-turn traffic from the freeway interchange would no longer have a free turn; they would be stop-controlled at the intersection with US 30.

At the Brewery Grade intersection, a left-turn lane would be provided on westbound US 30 at the planned four-way traffic signal.

Figure 9
Concept Drawing
Intersection of US 30
And Brewery Grade



The centerline of US 30 would be moved to the north while holding the northern edge of the highway so as to provide a slightly larger radius for traffic turning right from Brewery Grade onto eastbound US 30. The realignment of US 30 will require a small piece right of way from the property on the north west of the intersection with Brewery Grade; the realignment would be accomplished within the existing right of way for the section east of Brewery Grade.

A traffic signal would be installed at the intersection.

Impacts: These improvements would reduce the number of conflicts between the vehicles. The traffic from Brewery Grade would have more room to turn without intruding into on-coming traffic lanes. The traffic on US 30 would no longer have to weave across traffic to access Brewery Grade.

Cost: It is estimate that all of the improvements would total $2,250,000 (2005 costs).

Recommendation: Because it will improve safety and operations, this project is recommended for inclusion in the TSP.

**Option 4: Widen Tenth Street between Washington Street and Lewis Street**

Overview: Tenth Street serves continuous east-west travel in The Dalles, west of US 197. It currently carries 400 vehicles during the weekday PM peak hour. With future development in The Dalles, travel demand along 10th Street during the weekday PM peak hour in 2015 is estimated to increase to 630 vehicles between Trevitt Street and Washington Street and to 340 vehicles between Washington Street and Dry Hollow Road. Tenth Street is currently narrow between Washington Street and Lewis Street. The pavement is 36 feet wide between Washington Street and Kelly Street, and it is only 28 to 32 feet wide between 'F' Street and Lewis Street. The street is constructed on a 60-foot right-of-way west of Kelly Avenue and it is constructed on a 40- to 50-foot right-of-way between Kelly Avenue and Lewis Street.

Improvement: Because Tenth Street is the only local road other than US 30 which crosses the entire length of the city, we propose upgrading the roadway to better accommodate traffic. The existing street would be widened to 40 feet, and additional right-of-way would be acquired so as widen the right-of-way to 60 feet to accommodate the wider street. The 40-foot-wide pavement would include two 11.5-foot travel lanes (one in each direction), two five-foot bike lanes (one on each side), and a seven-foot parking lane on one side. Continuous curb, gutter, and sidewalks would be provided on both sides of the street.

Tenth Street is constructed on a 50-foot-wide right-of-way between Kelly Avenue and one lot west of 'G' Street. An additional ten-foot-wide right-of-way take would be required to accommodate the wider street. A ten-foot-wide right-of-way take is proposed on the north side of the street. Since houses on the north side of the street have enough setback, this would require land only takes with impacts to landscaping/fencing of nine houses.

Tenth Street is constructed on a 50-foot-wide right-of-way between one lot west of 'G' Street and two lots east of 'I' Street, and it narrows to 45 feet wide between 'I' Street and 'J' Street. It is proposed that the additional right-of-way be taken from properties on the north side of the street only. Sixteen properties would be impacted on the north side of the street. Of these, 14 properties have houses with enough setback so that they would require land only takes with impacts to landscaping/fencing. On the remaining two properties, the house structure would be impacted and it would require a take of the total property.

Tenth Street is constructed on a varying 40- and 45-foot-wide right-of-way between 'J' Street and Lewis Street. It is proposed that the additional right-of-way be taken from properties on the south side of the street only. Fifteen properties would be impacted on the south side of the street. Twelve of these properties have the house structure would be impacted and it would require a take of the total property. The remaining three properties have houses with enough setback so that they would require land only takes with impacts to landscaping/fencing.

Impacts: The major advantage of improving Tenth Street would be the improved connection between residential areas as well as access to the schools. It would also encourage some neighborhood commercial development along its length. The average travel distances may be slightly reduced, saving energy. The parallel route may also reduce some of the minor congestion in downtown, which would improve air and noise quality. It would also improve the general livability of the community.

The primary disadvantage of this project would be the impacts to some of the adjacent property owners, particularly along the very narrow sections of the roadway. Widening the roadway would require some right-of-way acquisition. Some increases in overall traffic volumes near these residences would also occur.

Cost: The total construction and right-of-way acquisition cost is estimated at $1,188,300 (1999 dollars). This estimate includes a construction cost for the wider street of $218,600. The total right-of-way acquisition cost of improving Tenth Street to a 40-foot-wide pavement built on a 60-foot-wide right-of-way is estimated at $969,700. This includes a credit of $179,800 from the sale of surplus land from properties that would have to be acquired due to the impact on their house structures.

Recommendation: Because of the overall community value of a through route along Tenth Street, this project is recommended for inclusion in the TSP.

**Option 5: Improve Intersection of US 30 and Lower Eight Mile Road**

Overview: US 30 and Lower Eight Mile Road currently intersect at a skewed angle, and the intersection is characterized by a very confusing, non-standard design containing several channelizing islands that direct traffic negotiating the intersection. The two directions of traffic along US 30 are unnecessarily separated by channelizing islands that provide storage for traffic turning left from eastbound US 30 onto Lower Eight Mile Road. Also, a very short connecting roadway serves traffic between Lower Eight Mile Road and US 30 to and from the east. The TAC was concerned about this intersection and it was recognized as a problem by the local ODOT District Office.

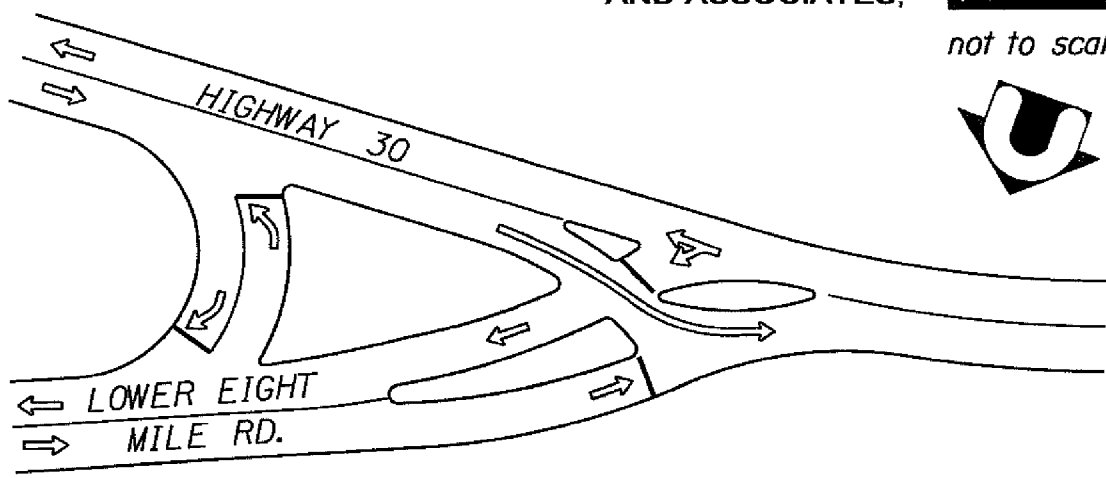
Improvement: The intersection would be redesigned so that Lower Eight Mile Road intersects US 30 at a right-angle, and a standard separate left-turn lane be provided for eastbound US 30 traffic turning into Lower Eight Mile Road. At the intersection with US 30, Lower Eight Mile Road would consist of one inbound lane and two outbound lanes consisting of separate right-turn and left-turn lanes. The right-turn from westbound US 30 to Lower Eight Mile Road would remain as a free right. These improvements would be accomplished within the existing intersection by removal and relocation of the existing channelizing islands (***Figure 10***).

Impacts: These improvements would simplify the operations of the intersection, making it less confusing for drivers on both US 30 and Lower Eight Mile Road.

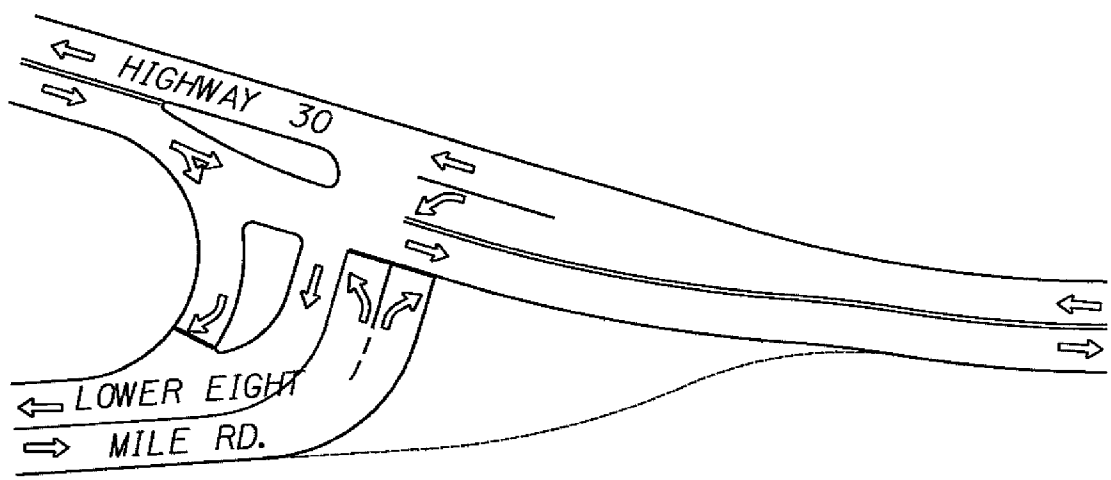
Cost: The improvements are estimated to cost $10,000 (1999 dollars).

DAVID EVANS
AND ASSOCIATES, INC.

*not to scale*




*EXISTING CONFIGURATION*




*PROPOSED DESIGN CONCEPT*

FIGURE 10

# Schematic Improvement-Intersection of Highway 30 and Lower Eight Mile Road

Recommendation: Because it will improve safety and operations, this project is recommended for inclusion in the TSP.

**Option 6: Widen River Road Chenowith Creek Bridge**

Overview: The River Road crossing over Chenowith Creek is currently narrow and can accommodate only one lane of traffic. With the anticipated growth in industrial development in this area, the existing narrow bridge may not be adequate to accommodate the traffic growth in the future.

Based on a review of the inspection report of the existing structure, it was determined that the bridge is currently in fair condition and it has a load rating of 21 tons operating and 12 tons inventory. This restricts the size of vehicles that can safely operate on this structure, as the bridge is not designed to the current HS-25 loading requirement. With the industrial nature of the development in the area, it is estimated that heavy truck traffic will use this route.

Improvement: Since it would be necessary to maintain traffic along this route during construction, and the existing bridge structure does not lend itself to staged construction in-place, it is recommended that the existing bridge structure be replaced. The new structure will be designed to meet current HR-25 loading requirements. The new approach roadway would be constructed 32 feet wide and the bridge deck would be constructed 36 feet wide.

Impacts: This Bridge is important to the circulation of traffic in the industrial park along the river and to operations for the Port of The Dalles. The completed Riverfront Trail will also use this bridge to cross Chenowith Creek.

The construction of a new bridge structure could have some potential environmental impacts to Chenowith Creek associated with construction and increased run-off from the wider roadway surface.

Cost: The cost of the new bridge over Chenowith Creek is estimated to be $411,950 (1999 dollars).

Recommendation: Because it will benefit the traffic circulation in the port industrial area and serve as part of the Riverfront Trail, this project is recommended for inclusion in the TSP.

**Option 7: Improve Intersection of US 197 and Fremont Street/Columbia View Drive**

Overview: The intersection of US 197 and Fremont Street/Columbia View Drive currently has a slightly higher than average crash rate. A total of four crashes occurred at this intersection during the three-year period from January 1990 to December 1992. A majority of these crashes were between vehicles turning onto or crossing the highway from the two stop-controlled side streets, Fremont Street and Columbia View Drive.

The intersection is currently characterized by northbound traffic along the highway going down a long steep grade (six percent) and traveling at speeds of about 55 miles per hour (mph). Conflicts occur when vehicles both enter the highway from Columbia View Drive and Fremont Street and attempt to merge with the faster moving highway traffic or when they try to cross the highway to continue towards town.

The area east of US 197 and south of the railroad is forecast to experience high growth in the future. This will result in an increase in travel demand at the Columbia View Drive approach during the weekday PM peak hour from the current 60 vehicles to 260 vehicles in 2015. The travel demand at the

Fremont Street approach is estimated to increase during the weekday PM peak hour from the current 160 vehicles to 390 vehicles in 2015.

To identify a solution for US 197 and Fremont Street/Columbia View Drive, additional analysis and design will be needed.

Improvement: To be determined

Impacts: This improvement would provide added east-west capacity between the neighborhoods on either side of US 197. It would also reduce conflicting movements with high-speed vehicles.

Cost: Unknown at this time.

***Recommendation***
Undertake a refinement plan for US 197 @ Fremont Street/Columbia View Drive that will evaluate alternative improvements to address congestion and safety issues at this location.

**Option 8: West Gateway, Lincoln to Webber Streets**

Overview: The Columbia Gateway Urban Renewal Agency completed a conceptual plan for the West Gateway project. It would include streetscape, access, and traffic improvements. The goal was to create a gateway into the downtown area, slow traffic, signalize the East 2nd and Cherry Heights Road intersection, and provide better access onto adjacent properties. East 2nd Street is a main arterial carrying traffic from downtown to Webber Street. It is accessed from the freeway by two off-ramps, east and west bound, with a 35 mile speed limit merge onto East 2nd Street; and by Cherry Heights Road intersection just east of the eastbound off-ramp. Driveway access to several businesses is difficult especially west of the west bound off-ramp. Pedestrian access from the merge of both ramps is non-existent although pedestrians use the area and a need exists for a sidewalk on both sides of the street.

Improvement: Three-way traffic signalization at the East 2nd and Cherry Heights Road intersection with a combination of other improvements would address the problems. In 2003, the City completed an Urban Renewal design project that addressed this intersection, access to properties, and the freeway access east of the east bound off-ramp.

A traffic signal would be installed at the intersection of Cheery Heights Road.
East 2nd Street would be slightly curved east of the Cherry Heights intersection, the travel lanes narrowed, and streetscape landscaping would be added to help traffic to slow through this area. Sidewalks would be added on both sides of East 2nd Street from the Lincoln Street intersection to the freeway off-ramp.

Impacts: These improvements would reduce the speed of vehicles. The traffic from the off-ramp would slow down in order to get through the signalized intersection and pedestrian safety would be greatly enhanced. A gateway with streetscape landscaping would create an attractive entry into the downtown area.

Cost: It is estimate that all of the improvements would total $2,500,000 (2005 costs).

Recommendation: Because it will improve safety and operations, this project is recommended for inclusion in the TSP.

**Option 9: Connect Nineteenth Street to Thompson Street**

Overview: Nineteenth Street provides primary access to Mid-Columbia Medical Center. Currently Nineteenth Street dead ends just east of the Medical Center.

Improvements: Nineteenth Street would be extended east to align and connect with existing Thompson Street located in the southeast portion of the planning area. The pavement of the new connection would be 44 feet wide and it would be constructed within a 60-foot-wide right-of-way. Also, continuous curb, gutter, planting strip, and sidewalks would be provided on both sides of the street.

Impacts: The major advantage of the new connection is that it would provide a more direct access to the Mid-Columbia Medical Center from the existing and future development east of Thompson Street. This connection would reduce some of the traffic demand on Dry Hollow Road. It would also reduce the distances that many of the Medical Center employees and patients would have to travel. Shorter travel distances result in decreased energy consumption and improved air quality and noise conditions. Shorter travel distances are also very important to ambulances and other emergency service providers.

The disadvantages of this project include fairly rugged terrain and the need for water and sewer connections. These factors will drive up the cost of construction.

Cost: The cost of constructing the new connection is estimated at $1,220,000 (1999 dollars).

Recommendation: Because it would reduce travel distances and decrease emergency vehicle response time, this project is recommended for inclusion in the TSP.

**Option 10: Thompson Street: 19th to 10th Street**

Overview: This nine block length of Thompson Street is currently in bad repair. It intersects with several east-west streets and carries traffic between these east-west streets. It would eventually connect with East 19th street that would be extended through from the west past the Mid-Columbia Medical Center. With this connection, Thompson Street would carry a lot more traffic.

Improvement: The improvements would include sidewalks, curb and gutters, storm drain, and travel lanes with on-street parking.

Impacts: These improvements would bring the substandard street to City standards.

Cost: No estimate has been developed since the engineering has not been completed.

Recommendation: Because it will improve safety and operations, this project is recommended for inclusion in the TSP.

**Option 11: Install Traffic Signals at Both Ends of Cherry Heights Road**

Overview: The intersections of Terminal Street at West Sixth Street and Cherry Heights Road and West Second Street are both projected to experience very heavy traffic demand. Without traffic signals, the traffic on Cherry Heights Road would find it very difficult to access either West Sixth or West Second Street. Since this route is expected to provide relief to Webber Street, access to and from Cherry Heights Road is critical to traffic circulation.

Improvement: Install actuated traffic signals at the Cherry Heights Road intersections with West Sixth Street and West Second Street.

Impacts: Adding more traffic signals along West Sixth Street and West Second Street will slow through traffic on those roadways. However, traffic traveling on and off Cherry Heights Road will greatly benefit from the signals, especially movements involving left turns.

Cherry Heights Road is a major agricultural truck route through The Dalles. The traffic signals would facilitate product movement from the orchards south of the city to the processing plants along the waterfront.

Overall delays at the intersections will likely be reduced improving air quality in the area.

The actuated traffic signals would also enable pedestrians to cross both West Sixth and West Second Street with greater ease and safety.

Cost: The cost of installing an actuated traffic signal is estimated at about $125,000 (2005 costs). For two signals, the total improvement would be $250,000.

Recommendation: Because the traffic signals would decrease overall delay and improve traffic circulation, they are recommended for inclusion in the TSP.

**Option 12: East 1st Street, Washington Street, I-84/Railroad Underpass Project**

Overview: The City of The Dalles was severed from its historic right of access to the Columbia River during the installation of Interstate 84. To begin the process of reconnecting the community, the City was successful in installing an under crossing on Union Street to the Port of The Dalles. The next phase of the project is the bicycle/pedestrian connection directly from the downtown business core to the City's future festival area, streetscape improvements to East 1st Street, and installation of another bicycle/pedestrian under crossing beneath Interstate 84 and the railroad tracks directly to the Riverfront Trail. This project was approved by the City Council by adoption of 'Alternative C' in the East 1st Street Streetscape study in September of 2005.

Improvement: The first phase of this project will be to provide a safe, below grade bicycle/pedestrian crossing beneath the Union Pacific Railroad main tracks and the East 1st Street streetscape improvements. An at-grade railroad pedestrian crossing was installed at Union Street. However, given the number of people being projected to use the new festival area, an at-grade crossing creates a crossing safety hazard which can be mitigated by a below grade crossing. The planned below grade crossing will provide an ADA accessible ramp as well as bicycle crossing beneath this heavily used main railroad, double track.

Impacts: Establish a strong bicycle/pedestrian connection from the Downtown area to the Riverfront Trail and the Columbia River, and implement the next phase of the Downtown/riverfront Renaissance project.

Costs: The cost for all improvements in this phase of the Downtown Renaissance project is $11,900,000.

Recommendations: Because of its multi-modal aspects, safety, and connectivity to existing streets and bicycle/pedestrian paths, this project is recommended for inclusion in the TSP

Summary

Table 4 summarizes the recommendations of the transportation improvement options based on the evaluation process described in this chapter. Chapter 5: Transportation Improvement Options describes how these improvement options fit into the modal plans for The Dalles.

**TABLE 4**
**TRANSPORTATION IMPROVEMENT OPTIONS**
**RECOMMENDATION SUMMARY**

| Option | Recommendation |
|---|---|
| 1. Revise Zoning and Development Codes | Implement |
| 2. Implement Transportation Demand Management Strategies | Implement |
| 3. Improve Intersection of US 30 and Brewery Grade | Implement |
| 4. Widen Tenth Street between Washington Street and Lewis Street | Implement |
| 5. Improve Intersection of US 30 and Lower Eight Mile Road | Implement |
| 6. Widen River Road Chenowith Creek Bridge | Implement |
| 7. Improve Intersection of US 197 and Fremont Street/Columbia View Drive | Further Refinement |
| 8. West Gateway | Implement |
| 9. Connect Nineteenth Street to Thompson Street | Implement |
| 10. Thompson Street: 19th to 10th | Implement |
| 11. Install Traffic Signals at Both Ends of Cherry Heights Road Street | Implement |
| 12. East 1st Street, Washington Street, I-84/Railroad Underpass Project | Implement |

# CHAPTER 6: TRANSPORTATION SYSTEM PLAN

The TSP includes plans for all modes of transportation. Components of the street system plan include street classification and street width standards, access management standards, and street improvements. Suggested transportation demand measures are also included. Lastly, a plan implementation program is presented.

## STREET FUNCTIONAL CLASSIFICATION SYSTEM

The development of the City of The Dalles TSP provides the city with an opportunity to review and revise the currently adopted street functional classification system and the street cross section design standards.

Street functional classification systems relate the design of a roadway to its function. The function is determined by operational characteristics such as traffic volume, operating speed, safety, and capacity.

The current city street functional classification system designates streets within the city UGB as either freeway, arterial roadways or collector roadways (see ***Figure 4***). All other roadways are considered local roadways. Under the currently adopted street functional classification system, a majority of the classified streets are designated as arterial roadways, with a much smaller proportion of the classified streets designated as collector streets.

In 2005, this section of The Dalles TSP was evaluated and updated in order to be consistent with the federal aid urban functional classification mapping system. New cross sections that reflect the adoption of the federal classification system for arterial and collector streets are also being included as part of this update process.

A roadway's functional classification is determined by the type of traffic it serves (for example local versus through traffic) and the access provided to properties located along the roadway. At one end of the spectrum, streets classified as arterials primarily serve traffic traveling through the urban area; at the other end, residential cul-de-sac streets serve only traffic accessing properties having frontage on the street. In between the two ends of the spectrum, streets such as collectors serve a combination of through traffic as well as direct access to land.

The proposed street classification, as shown in ***Figure 11***, designates US 30 and US 197 through The Dalles urban area as major arterial roadways. Several other segments also remain as arterials. These streets were classified as arterials because they have mobility as their primary characteristic with limited or restricted service to local development. Although they do provide some access to abutting property, such service is only incidental to the primary functional responsibility of moving through traffic along the roadway.

### *Arterial Streets*

Roadways designated as arterial roadways in the city's street functional classification plan are classified as either major arterial or minor arterial designations with a primary function of mobility for through traffic with controlled access to the surrounding land.

**Major arterials** carry the highest traffic volumes, serving the major activity centers of urbanized areas. For major arterials, access to abutting land is subordinate to travel mobility. The **minor arterial** classification includes all arterials that are not designated as major. This classification places more emphasis on land access, accommodating shorter trips and distributing trips to smaller geographic areas than major arterials.

***Major Arterial Streets***

Streets proposed as major arterial streets in The Dalles include:

Second Street from Webber Street to US 197.
Third Street from Lincoln Street to 2nd Street
Webber Street from 6th Street to 2nd Street
Sixth Street (partially US 30) from northwest Urban Growth Boundary to Cherry Heights Road
Cherry Heights Road from 6th Street to 2nd Street
Lincoln Street from 2nd Street to 3rd Street
US 197 from south Urban Growth Boundary to north Urban Growth Boundary

***Minor Arterial Streets***

Streets proposed as minor arterial streets in The Dalles include:

Sixth Street from northwest Cherry Heights Road to Third Place
Chenowith Road from Sevenmile Hill Road to 10th Street
Tenth Street from Chenowith Road to Cherry Heights Road
Old Dufur Road from 10th Street to Fremont Street
Fremont Street from Old Dufur Road to US 197
Fremont Street from US 197 to E. Knoll
Columbia View Drive from E. Knoll to the eastern UGB
Cherry Heights Road from south Urban Growth Boundary to 6th Street
Mount Hood Street from south Urban Growth Boundary to 10th Street
Union Street from 3rd Street to West 1st Street
W. First Street from Union Street to Webber Street
Webber Street from W. 1st to W. 2nd Streets
Sixteenth Place from Dry Hollow Road to Kelly Avenue
Kelly Avenue from 16th Place to 7th Street
Seventh Street from Kelly Avenue to Washington Street
Washington Street from 7th Street to 2nd Street
Dry Hollow Road from 3 Mile Road to Brewery Grade
Brewery Grade from Dry Hollow Road to US 30
E. Tenth Street from E. 9th Street to Old Dufur Road.

***Collector Streets***

The remaining roadways previously designated as arterial roadways in the city's currently adopted street functional classification plan are re-classified to either major collector or minor collector designations depending upon their width, speed, local access and traffic circulation functions. They

actually function as collector streets. Their primary function is not just mobility; rather their function is equally divided between mobility for through traffic and access to the surrounding land.

***Major Collector Streets***

Major collector streets in The Dalles urban area include:

River Road from Chenowith Interchange to Webber Street – Wasco County roadway
Webber Street from Bargeway to W. 1st Street
Third Place from 6th Street to 3rd Street
Third Street from Third Place to Lincoln Street
Fourth Street from Third Place to Jefferson Street
Nineteenth Street from Dry Hollow Road to Oakwood Drive
Nineteenth Street from Oakwood Drive to Thompson Street (Proposed)
Hostetler Street from 10th Street to 2nd Street
Webber Street from 10th Street to 6th Street
Union Street from 14th Street to 3rd Street
Thompson Street from 19th Street to 10th Street
Twelfth Street from Kelly Avenue to Richmond Street
Fourteenth Street from Mount Hood Street to Kelly Avenue
Mt. Hood Street from 10th Street to 9th Street
Tenth St. from Cherry Heights Road to E. 9th Street
Scenic Drive from Trevitt Street to Sixteenth Place
Snipes Street from Tenth Street to Sixth Street
Walnut Street from Tenth Street to Sixth Street
Trevitt Street from 17th Street to 3rd Place
Richmond Street from southern terminus to Old Dufur Road
E. Ninth Street from Brewery Grade to 10th Street
Chenowith Loop Road from 6th Street to 10th Street
W. Ninth Street from Union Street to Cherry Heights Road
Skyline Road from south Urban Growth Boundary to Mount Hood Street
Court Street from 10th Street to 2nd Street

***Minor Collector Streets***

Minor collector streets in The Dalles urban area include:

Second St. from Webber Street to Hostetler Street
Fourth St. Grade from Jefferson Street to E 9th Street
Jefferson Street from 4th Street to 2nd Street
Federal Street from 4th Street to 2nd Street
Laughlin Street from 4th Street to 1st Street
Madison St. from 3rd Street to 1st Street
Seventh Street from Hostetler Street to Walnut Street
Verdant Street from 10th Street to 13th Street
Thirteenth Street from Verdant Street to Cherry Heights Road
Walnut Street from 13th Street to 10th Street
Oregon Street from 12th Street to 19th Street

E. Ninth Street from 4th Street Grade to Dry Hollow Road
Jefferson Street from 14th Street to Scenic Drive
Court Street from 1st Street to 2nd Street
Washington Street from 1st Street to 2nd Street

***Street Design Standards***

Street design standards relate the design of a roadway to the function performed by that roadway. For example, arterial streets need to be designed to carry through traffic at higher speeds. At other end of the spectrum, local streets need to be designed to carry local access traffic at lower speeds. Collector streets are designed to carry a combination of through and local traffic.

Street design standards are necessary to provide a community with roadways that are relatively safe, aesthetic, and easy to administer when new roadways are planned or constructed. The standards for The Dalles are based on experience and policies and publications of the profession. They also meet requirements of the TPR.

Whatever the function, all streets shall be designed so that they:

Promote the safety and convenience of vehicular and non-vehicular traffic
Protect the safety of neighborhood residents
Protect the residential character of neighborhoods by limiting traffic volume, speed, noise and fumes
Encourage the efficient use of land

Urban street design standards are recommended for all streets since the City of The Dalles TSP includes land within the UGB. This includes land outside the city boundary, which may presently have a rural appearance, as these lands will ultimately be part of the urban area. Retrofitting rural streets to urban standards in the future is expensive and controversial; it is better to initially build them to an acceptable urban standard.

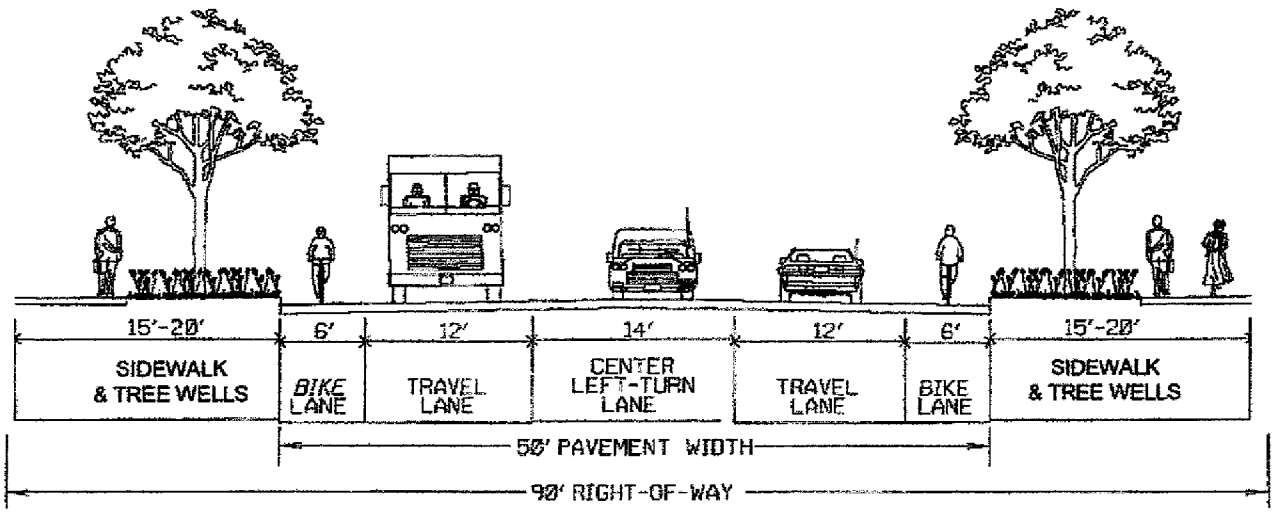
The generalized street cross section design standards for the City of The Dalles street system are summarized in Table 5 and described in the following pages.

***Arterial Streets***

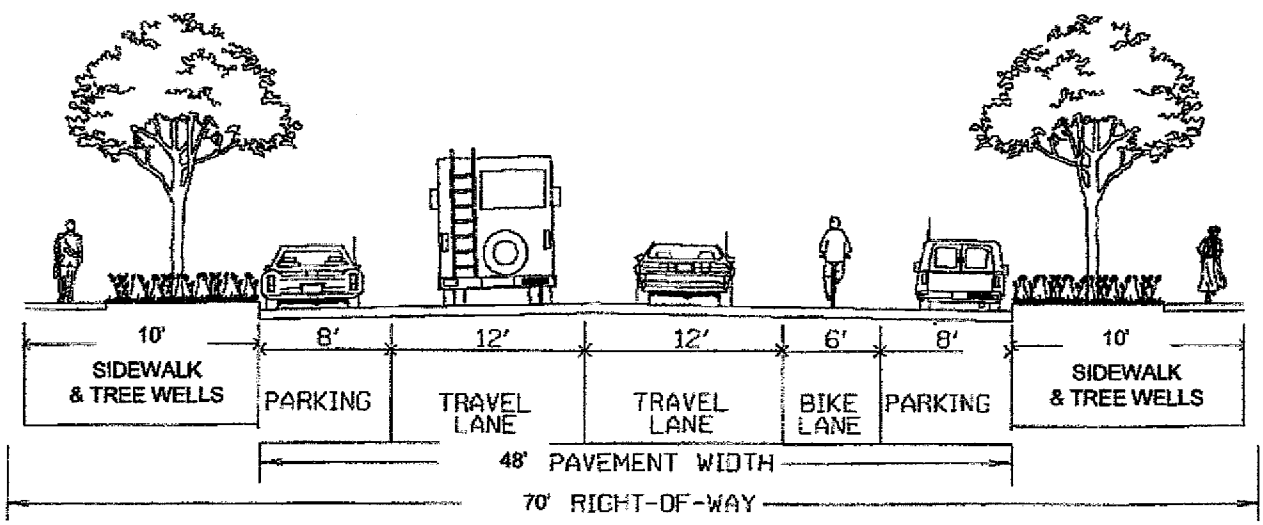
Arterial streets are divided into two classifications based on traffic volume – major and minor. Major Arterial streets form the primary roadway network within and through a region. They provide a continuous roadway system that distributes traffic between different neighborhoods and districts. Their primary function is to provide mobility, with limited or restricted service to adjacent land development. In cases where restricting access is not practical, such as build-out of the surrounding land, their design may be modified to include a center turn lane that separates the turning traffic accessing the surrounding land from the through traffic on the street.

***Major Arterial (2-Way)***

Arterial streets shall be built with no on-street parking. A 50-foot paved width can accommodate a 3-lane arterial cross section with bike lanes on both sides. The roadway shall be striped to provide two travel lanes (one in each direction), two bike lanes and a center left-turn lane (***Figure 12***).

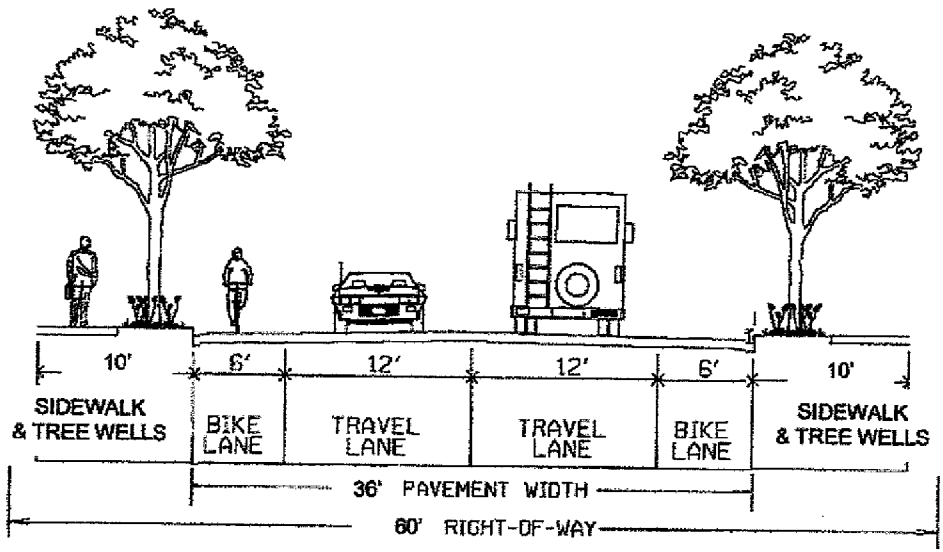



**Three Lane Arterial**

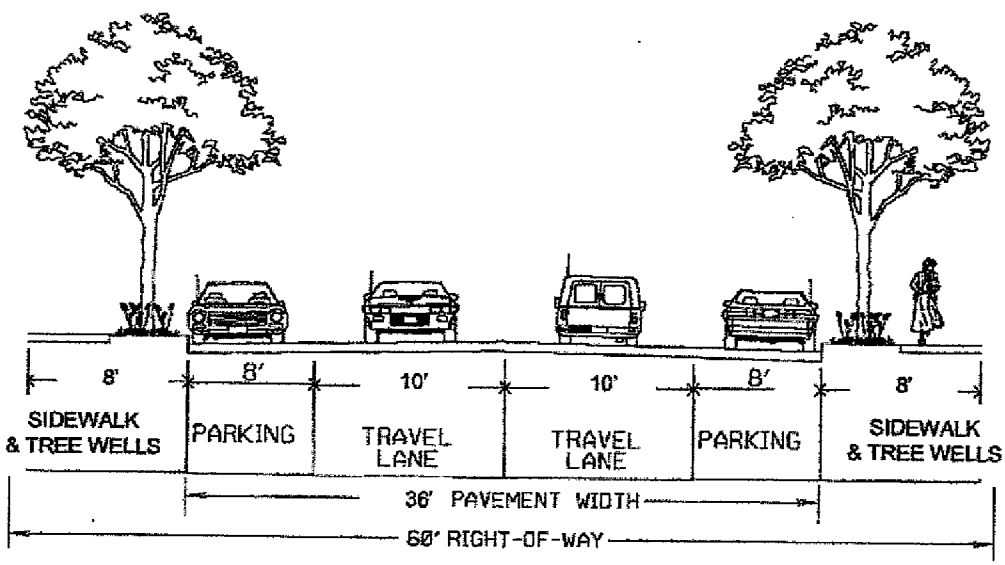



**One-Way Arterial**

Figure 12
**Street Design Standards**




**Major Collector**




**Minor Collector**

Figure 12
**Street Design Standards**

Sidewalks shall be 10 feet wide and located on both sides of the roadway. A hardscape strip may be required to provide a buffer between the sidewalk and roadway travel lanes. To break-up the mass of pavement and provide a more "human scale" to the street, street trees may be required to be planted at regular intervals in tree wells at the back of the curb.

The entire cross-section, including sidewalks, curbs, and pavement, can be accommodated within a 90-foot right-of-way.

The inclusion of a center turn lane may be unnecessary in situations where access along the arterials is limited through regulation or development patterns. In such cases, the center left-turn lane shall be developed with a raised median between left-turn lanes.

***Major Arterial Streets (1-Way)***

Typically, the conventional arterial street is a multi-lane facility with an equal number of lanes for traffic in each direction. Often, however, one-way operation is employed where a single two-way street does not have adequate capacity and does not lend itself readily to improvement to accommodate anticipated traffic demand. In such cases, two parallel streets are converted to one-way operations. The one-way operations provide higher capacity, especially when left-turning movements are heavy at numerous intersections along the arterial. Two one-way arterial cross-sections are shown in ***Figure 12***.

This roadway section shall be 46 feet wide and striped to provide two travel lanes, a bike lane on the right side of the road, and two parking lanes.

Sidewalks for this section shall be located adjacent to the roadway with no planting strip. Sidewalks shall be 10 feet wide and located on both sides of the roadway. To break-up the mass of pavement and provide a more "human scale" to the street, street trees may be required to be planted at regular intervals in tree wells at the back of the curb.

The entire cross-section, including sidewalks, curbs, and pavement, can be accommodated within a 67-foot right-of-way.

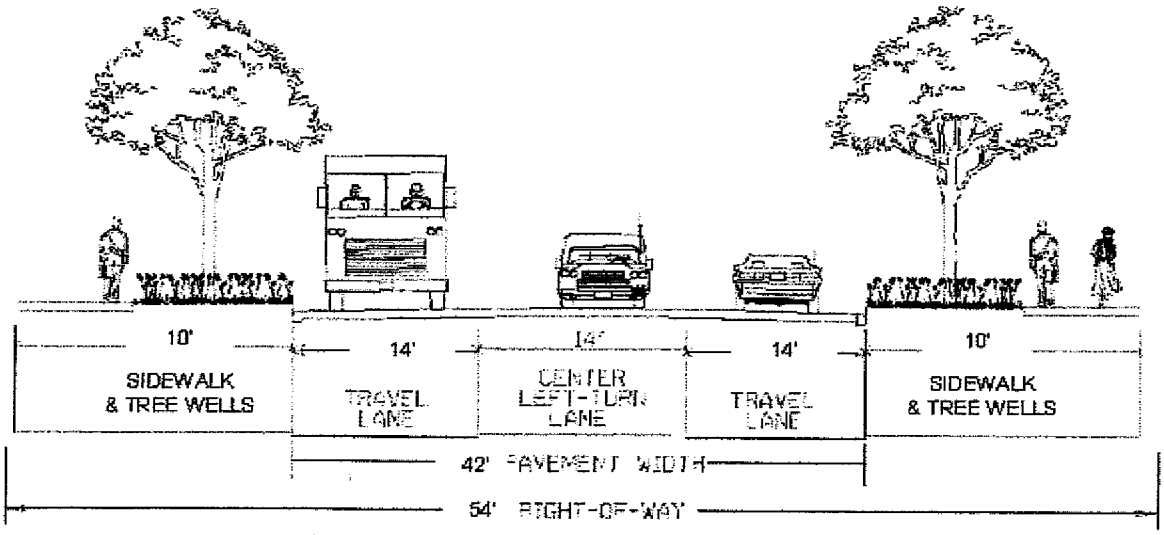
Minor Arterial

The minor arterial street shall have 36 feet of pavement. This section shall be striped to provide two travel lanes and two bike lanes.

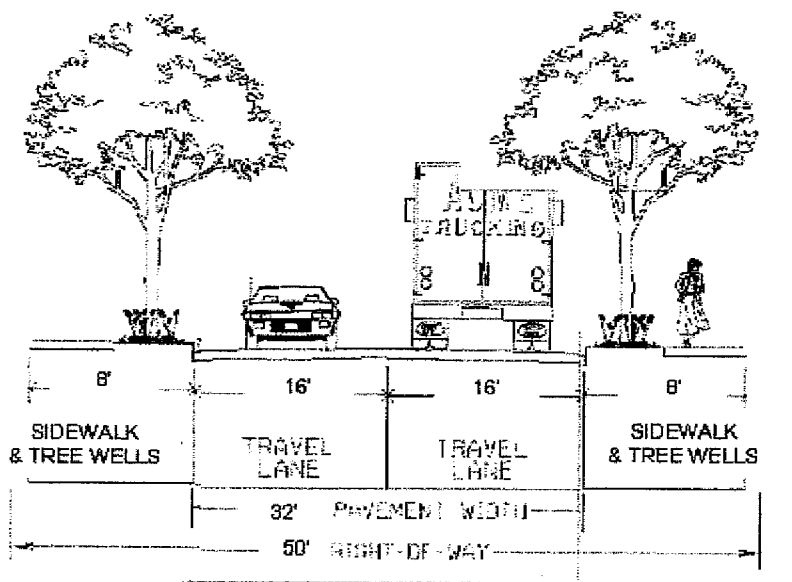
Sidewalks shall be a minimum of 5 feet wide on both sides of the street. They may be required to be separated from the roadway by a hardscape strip at least 5 feet wide, designed to allow street trees in tree wells. The entire cross-section can be accommodated within a 60-foot right-of-way, ***Figure 12***.

***Collector Streets***

Collector streets connect local neighborhoods or districts to the arterial network. Two levels of collector streets are included in The Dalles street classification. Major collector streets are intended to carry more through traffic than local traffic. A major collector street can serve residential, commercial, industrial, or mixed land uses. Minor collector streets provide the vital link between arterial/major collector and local streets. They are intended to carry mostly local neighborhood traffic feeding it on to

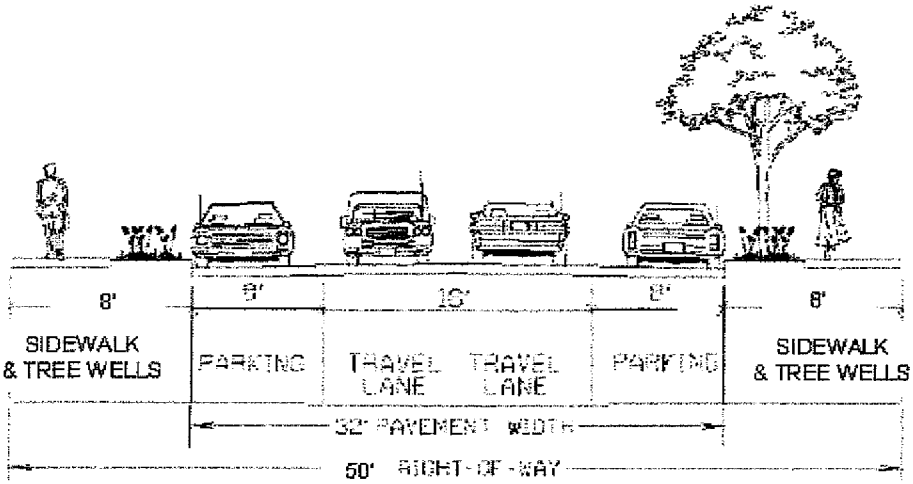



**Collector in Industrial Area**

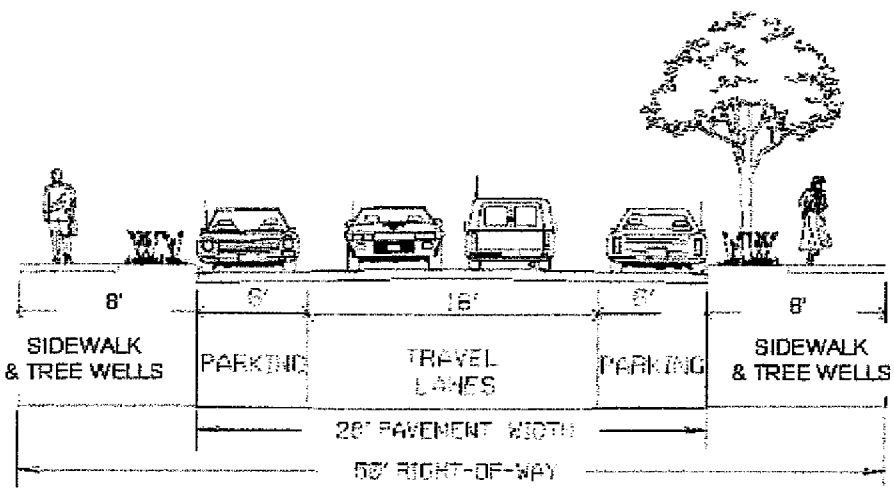



**Local in Industrial/Commercial Area**

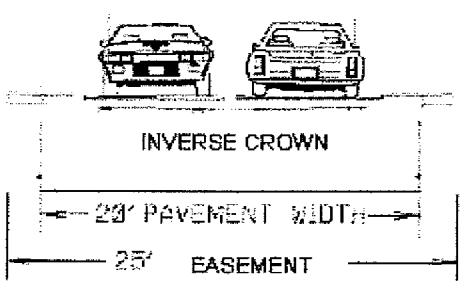
Figure 13
**Street Design Standards**




**Local Residential "Type A"**




**Local Residential "Type B"**




**Private Street/Alley**

Figure 13
**Street Design Standards**

the arterial and major collector street system. Four generalized collector street standards have been developed, as shown in ***Figure 12 & 13***.

***Major Collector***

The major collector street may have 36 feet of pavement. This section is to be striped to provide two travel lanes and two bike lanes.

Sidewalks are to be a minimum of 5 feet wide on both sides of the street. They may be separated from the roadway by a hardscape strip at least 5 feet wide designed to allow street trees in tree wells. The entire cross-section can be accommodated within a 60-foot right-of-way.

***Minor Collector***

The minor collector street may have 36 feet of pavement. This section is to be striped to provide two travel lanes and two parking lanes.

Sidewalks are to be located on both sides of the street with a minimum width of 5 feet. Sidewalks may be separated from the roadway by a hardscape strip at least 5 feet wide designed to allow street trees in tree wells.

The entire cross-section can be accommodated within a 60-foot right-of-way.

***Collector in Industrial Areas***

The industrial urban collector street may be 42 feet wide. The pavement section is to be striped to provide two travel lanes and a two-way left turn lane.

Sidewalks are to be a minimum of 5 feet wide. They may be separated from the roadway by hardscape strip at least 5 feet wide designed to allow street trees in tree wells. Overall, the sidewalk and hardscape strip dimension can be up to 10 feet.

The entire cross-section can be accommodated within a 54-foot right-of-way.

***Local Streets***

Local streets form the majority of the street system in The Dalles. They are designed to carry the very low traffic volumes associated with the local uses that abut them. In The Dalles, the local streets help form part of the grid system; however, they are not intended to function as alternate routes to the arterial and collector street system. Local streets can serve either residential traffic, industrial or even low-volume commercial land uses.

The overriding consideration in the design of a local street is to provide direct access to land; the convenience of the through motorist is a secondary consideration. This holds true for all adjacent land uses.

To maintain neighborhoods, local residential streets shall be designed to encourage low speed travel and to discourage through traffic. Design speeds on local residential streets shall be 15 to 25 mph. When traffic volumes exceed approximately 1,000 to 1,200 vehicles per day, the residents on that street will begin to notice the traffic as a noise and safety problem.

On local industrial/commercial streets, accommodating large vehicles is an important consideration. Trucks must be able to maneuver in and out of driveways. These maneuvers often block local roadways for short periods of time.

Lastly, a good, well-connected grid system of relatively short blocks can minimize excessive volumes of motor vehicles by providing a series of equally attractive or restrictive travel options. This street pattern is also beneficial to pedestrians and bicyclists.

Six local street standards have been provided, as shown in ***Figure 13.***

***Local Industrial/Commercial***

A Local Industrial/Commercial street may have 32-foot-wide pavement for local streets in industrial or low-volume commercial areas (see ***Figure 13***). This section provides for two travel lanes.

Sidewalks are to be located on both sides of the street with a minimum width of 5 feet. They may be separated from the roadway by either a landscape or hardscape strip at least 5 feet wide designed to allow street trees.

The entire cross-section can be accommodated within a 50-foot right-of-way.

***Local Residential Type "A"***

The local residential street may have 32 feet of pavement. This section provides for two travel lanes and on-street parking on both sides of the street.

Sidewalks are to be a minimum of 5 feet wide and located on both sides of the street. They may be separated from the roadway by either a landscape or hardscape strip at least 5 feet wide that allows for street trees. Overall, the sidewalk and hardscape strip dimension shall be 8 feet.

The entire cross-section can be accommodated within a 50-foot right-of-way.

***Local Residential Type "B"***

The residential Type "B" is a variation of the residential street and are only be permitted for streets where individual block lengths are shorter and 440 linear feet and/or streets that serve 16 or fewer lots for a cul-de-sac and 1,000 ADT for all other local residential streets. The pavement may be 28 feet wide.

Because of the low volume of traffic, sidewalks are not be required. When they are provided sidewalks are to be located on one or both sides of the street and have a minimum width of 5 feet. They may be separated from the roadway by either a landscape or hardscape strip at least 5 feet wide that allows for street trees. The entire cross-section can be accommodated within a 50-foot right-of-way.

**12 feet** – The 12-foot standards shall be applied to community-wide facilities that accommodate a variety of high uses (i.e. bicycles, joggers, and pedestrians). It shall be clear of vegetation and other obstacles and have good sight distance.

Pathways shall be accommodated in an 18-foot right-of-way.

### *Urban Bike Lanes*

Bike lanes shall be provided on all arterial and collector streets. Where a bikeway is proposed within the street right-of-way, 12 feet of roadway pavement (between curbs) shall be provided for a six-foot bikeway on each side of the street. Except in rare circumstances, bicycle lanes on one-way streets shall be located on the right side of the roadway, be one-way, and flow in the same direction as vehicular traffic. The striping shall be done in conformance with the *State Bicycle and Pedestrian Plan* (1995). In cases where curb parking will exist with a bike lane, the bike lane shall be located between the parking and travel lanes. In some situations, curb parking may have to be removed to permit a bicycle lane.

The bikeways on new streets or streets to be improved as part of the street system plan shall be added when the improvements are made. The implementation program identifies an approximate schedule for these improvements.

On arterial and collector streets that are not scheduled to be improved as part of the street system plan, bicycle lanes shall be added to the existing roadway at any time to encourage cycling, or when forecast traffic volumes exceed 2,500 to 3,000 vehicles per day. The striping of bicycle lanes on streets that lead directly to schools shall be a high priority.

### *Urban Sidewalks*

Sidewalks shall be included on all urban streets as an important component of the pedestrian system. When sidewalks are located directly adjacent to the curb, they cannot accommodate such impediments as mailboxes, street light standards, and sign poles without widening the sidewalk since these features reduce the effective width of the walk. Sidewalks buffered from the street by a hardscape strip eliminate obstructions in the walkway, provide a more pleasing design as well as a buffer from traffic, and make the sidewalk more useable.

To maintain a safe and convenient walkway for at least two adults, a minimum 5-foot sidewalk shall be used in residential areas; a minimum 10-foot sidewalk shall be constructed along most arterials and major collectors, especially near commercial retail and school areas which may be characterized by higher pedestrian activity.

Sidewalk standards for general roadway classifications are:

**Arterial** – Sidewalks on arterial streets shall be a minimum of 5-feet wide if separated from the roadway by a 10-foot wide hardscape strip. If on-street parking is provided, the sidewalk shall be located adjacent to the curb but must be at least 10 feet wide.

**Collector** – Sidewalks on major and minor collector streets shall be a minimum of 5 feet wide. In general, they shall be separated from the street by at least a 5-foot wide hardscape strip. If on-street

parking is provided, the sidewalk shall be located adjacent to the curb. Sidewalks adjacent to the curb shall be wider than 5 feet if possible.

**Local** – Sidewalks on local streets shall be a minimum of 5 feet wide and be separated from the roadway by a 5-foot wide hardscape strip.

A complete pedestrian system shall be implemented in the urban portion of The Dalles planning area. Generally, every urban street shall have sidewalks on both sides of the roadway as shown in Figure 12 through Figure 13. Exceptions may include portions of Scenic Drive, where a sidewalk shall be provided on only one side of the roadway. In addition, pedestrian and bicycle connections shall be provided between any cul-de-sac or other dead-end streets.

Another essential component of the urban sidewalk system is street crossings. Intersections shall be designed to provide safe and comfortable crossing opportunities. This includes not only signal timing (to ensure adequate crossing time) and crosswalks, but also such enhancements as curb extensions and center medians.

### *Street Connectivity*

Street connectivity is important because a well-connected street system provides more capacity than a disconnected one, provides alternate routes for local traffic, and is more pedestrian and bicycle-friendly.

Public streets serve a range of access and mobility needs, with facilities typically emphasizing either access or mobility. At one end of the access-mobility spectrum, freeways and expressways focus on mobility by moving high volumes of traffic at high speeds. Arterials and collectors combine mobility and access functions, with arterials generally emphasizing mobility over access and vice-versa for collectors. Local streets make up the majority of lane-miles in a city's transportation network, and function primarily as access routes connecting travel origins and destinations to the broader transportation network.

A well-connected local street network such as the downtown grid in The Dalles diffuses the traffic load by providing multiple connecting routes to any given destination. With increased connectivity, the need to construct ever-wider roadways with associated right-of-way needs and impacts to developed property can be reduced. Routes that are more direct tend to attract more traffic, but multiple connections provide nearby or parallel local routes offering comparable travel time. By spreading traffic around rather than concentrating it on a single route, multiple connections also help avoid excessive noise impacts on adjacent properties.

A well-connected local street system also benefits bicyclists and pedestrians. Shorter travel time and more direct access encourage additional bicycle and pedestrian travel. Multiple connections also offer pedestrians and bicyclists routes with less traffic and fewer potential conflicts with vehicles, creating a more pleasant travel environment.

The Dalles currently has a very effective grid street system in the central core area including downtown and the area over the hill south of the downtown area. The grid system structure deteriorates outside the core area. Ensuring that the core area grid street system development is extended as development occurs is critical to city's continued livability. To this end, a maximum block perimeter of 1,200 feet is recommended.

The City of The Dalles Local Street Master Plan (1999 Administrative Draft Plan) was drafted to address the City's local street planning needs and the associated State requirements as specified in OAR 660-12-045(e)(b) of the Transportation Planning Rule (TPR). The Local Street Master Plan, which contains recommendations for local street connectivity, is an important part of implementing the City's TSP.

With peak hour operations at level of service C or better, as reported in the City's TSP, it is unlikely that there is any appreciable level of diversion onto local streets created by drivers seeking to avoid congestion on arterial or collector roadways.

The Local Street Master Plan notes that access and traffic speed are the issues typically associated with the local street network, rather than congestion and level of service (LOS). As the TSP notes, the City's arterials and collector streets function at LOS C or higher, meaning that no real operation deficiencies exist for which the local network has to compensate. The Local Street Master Plan is divided into three Sections including the Existing Local Street System Documentation, the Future Local Street System, and Implementation Tools (Appendix F). The findings and recommendations of the Local Street Master Plan are incorporated by reference into the City's TSP.

## ACCESS MANAGEMENT

Access management is the process that provides (or manages) access to land development while simultaneously preserving the flow of traffic on the surrounding road system in terms of safety and capacity.

Access management is an important key to balanced urban growth. As evidence, the lack of a prudent access management plan has led to miles of strip commercial development along the arterial streets of many urban areas. Business activities along arterial streets lead to increased traffic demands and the provision of roadway improvements to accommodate the increasing traffic demand. Roadway improvements stimulate more business activity and traffic demands. This often continues in a cyclical fashion, and requires extensive capital investments for roadway improvements and relocation. However, with the tightening of budgets by federal, state, and local governments, the financial resources to pay for such solutions are becoming increasingly scarce.

Reducing capital expenditures is not the only argument for access management. Access management is also essential to preserving the 'functional integrity' of the street system by reserving the high speed and high capacity roads for longer distance trips, and assigning the lowest restriction of access to local roads.

Additional driveways along arterial streets lead to an increased number of potential conflict points between vehicles entering and exiting the driveway and through vehicles on the arterial streets. This not only leads to increased vehicle delay and a deterioration in the level of service on the arterial, but also leads to a reduction in safety. Thus, it is essential that all levels of government try to maintain the efficiency of existing arterial streets through better access management.

### *Access Management Techniques*

The primary goal of an access management program is enhanced mobility and improved safety by limiting the number of traffic conflicts. A traffic conflict point occurs where the paths of two traffic movements intersect. In the order of increasing severity, vehicle maneuvers on the street system that

result in potential conflicts includes diverge, merge, and cross. In each case, drivers of one or more vehicles may need to take appropriate action in order to avoid a collision.

Crossing conflicts are the most serious because of the potential for high speed head-on collisions, nearly head-on collisions, or right-angle collisions. Hence, these conflict points are often referred to as 'major conflict points.' Diverge and merge conflicts are potentially less severe and are often referred to as 'minor conflict points.' Diverge conflicts occur when a driver executes a left-turn or right-turn maneuver, and merge conflicts occur where a vehicle makes a left or right-turn and enters a through traffic stream.

The area and complexity of the crossing conflicts are also affected by the roadway cross section. For example, on a two-lane roadway, each of the conflict points with the traffic stream approaching from the left and the right involves only one lane. With a four-lane cross section, each conflict point involves two lanes.

Traffic conflicts can be reduced either by restricting the number of access points along the arterial or by separating the conflict areas through traffic operations improvements.

The number of access points to an arterial can be restricted through the following techniques:

Restrict spacing between access points based on the type of development and the speed along the arterial.
Share access points between adjacent properties.
Provide access via collector or local streets where possible.
Construct frontage roads to separate local traffic from through traffic.
Provide service drives to prevent spill-over of vehicle queues onto the adjoining roadways.
Provide acceleration, deceleration, and right turn only lanes.
Install median barriers to control conflicts associated with left turn movements.
Install side barriers to the property along the arterial to restrict access width to a minimum.

Other access management strategies are described on the following pages.

## *Access Management Strategies*

Access management strategies consist of managing the number of access points and/or providing traffic and facility improvements. The solution is a balanced, comprehensive program that provides reasonable access while maintaining the safety and efficiency of traffic movement. Standards have been developed for regulating driveway spacing, driveway width, number of driveways per property frontage, driveway sight distance, joint driveways, cross access, and other access management techniques.

### *Minimum Spacing of Driveways*

Regulating the minimum spacing of driveways and public street intersections along the highway reduces the frequency of conflict by separating adjacent, basic conflict areas and limiting the number of basic conflict points per length of highway. An additional effect is that driveway vehicles will be delayed less by standing queues at signal-controlled intersections.

## *General Access Management*

Driveway regulation or access management is hierarchical, ranging from complete access control on freeways to increasing use of streets for access purposes, parking and loading at the local and minor collector level. Table 6 describes recommended general access management guidelines by roadway functional classification and appropriate adjacent land use type.

In cases where standard access spacing cannot be met on arterial or collector streets due to the specific characteristics of the site and it use, the spacing shall not be reduced below the safe stopping sight distance for the posted speed on the roadway. Safe stopping sight distance shall be consistent with AASHTO guidelines[1].

These access management restrictions are not intended to eliminate existing intersections or driveways. Rather, they are best implemented by instituting them into the land use permitting process and applying them as new development occurs.

The challenge is greater in applying access management guidelines to a developed major arterial due to right-of-way limitations and concerns by the owners of the adjacent properties and the affected businesses. In such cases, such as along Old US 30 west of downtown, access management can be implemented as part of roadway improvement plans or as part of roadway retrofits plans.

**TABLE 6**
**GENERAL ACCESS MANAGEMENT GUIDELINES**

| Functional Classification | Minimum Posted Speed | Minimum Spacing between Driveways and/or Streets | Appropriate Adjacent Land Use Type |
|---|---|---|---|
| Arterial Street (2-Way) | 25-40 mph | 300-400 feet | Community/neighborhood commercial near major intersections<br>Industrial/office/low volume retail and buffered medium or higher density residential between intersections |
| Arterial Street (1-Way) | 25-35 mph | 150-300 feet | Community Commercial/office |
| Major Collector Street | 25-35 mph | 150-300 feet | light industry/offices and buffered medium or low density residential<br>neighborhood commercial near some major intersections |
| Minor Collector Street | 25-35 mph | 75-150 feet | primarily lower density residential |
| Industrial Collector | 25-35 mph | 150-300 feet | Industrial |

[1] American Association of State Highway and Transportation Officials, *A Policy on Geometric Design of Highways and Streets 1990.*

## ***State Highway Access Management***

Old US 30 and US 197 are the most heavily traveled routes through The Dalles (excluding I-84). Therefore, access management is important to promoting safe and efficient travel for both local and long distance users along US 30 and US 197 in The Dalles.

Goal 3 in the *1999 Oregon Highway Plan* addresses the issue of access management on state highways. Access management is balancing access to developed land while ensuring movement of traffic in a safe and efficient manner. To achieve effective transportation it is necessary to have a blend and balance of road facilities. Each performs its unique function, since no single class of highway can provide both high levels of movement and high levels of access to property. The spectrum ranges from freeways that provide for ease of movement through higher speeds, higher capacity and freedom from interruption to local residential streets that serve a diverse group of users from pedestrians to garbage collectors and emergency response vehicles by providing ease of access through slow speeds and numerous driveways.

Access can be managed a number of different ways, including freeway interchange placement and design, driveway and road spacing and design, traffic signal location, median design and spacing of openings, connectivity and the use of turn lanes. The challenge is to determine how to best apply these access management techniques on Oregon's state highway system to safely protect the highway efficiency and investment, contribute to the health of Oregon's local, regional and statewide economies, and support and maintain livable communities.

Implementation of access management is essential if the safety, efficiency and investment of the existing and planned state highways are to be protected. Roads link together as a chain and the roadway system is only as effective as its weakest link. The amount of access and how it is allowed to a state highway is a critical factor in determining how long the facility can remain functional, and is the largest contributor to safety. An uncontrolled number of driveways to a highway can cause it to be very unsafe, and some highways will not serve their intended function to carry people, freight, and goods throughout the state. Implementation of access management techniques produces a more constant traffic flow, which helps to reduce congestion, fuel consumption and air pollution.

The criteria for State Access Management Policies and the standards are found in Appendix C of the Oregon Highway Plan and are implemented through OAR 734.051. These policies and standards are to be applied to the development of all ODOT highway construction, reconstruction or modernization projects and approach road permits, as well as all planning processes involving state highways, including corridor plans, refinement plans, state and local transportation system plans and local comprehensive plans.

The policy and procedures for Deviations and the standards, and the policy and procedures for Appeals portions of the Access Management Policies as set forth in OAR 734.051 apply to local governments, private applicants, and state agencies, including ODOT, where there is a desire to apply standards and criteria different than those outlined in the Access Management Policies, for the following instances:

All approach road and private road crossing requests for approaches to state highways.
New state highway construction projects and new highway plans.
Any reconstruction or modernization work on state highways.

All proposed traffic control devices on the state highway system must have prior approval of the State Traffic Engineer and may include criteria not set forth in these policies.

Policy 3A, Classification and [Access] Spacing Standards, of the OHP states: "It is the policy of the State of Oregon to manage the location, spacing and type of road and street intersections and approach roads on state highways to assure the safe and efficient operation of state highways consistent with the classification of the highways." For highways in The Dalles, access to state highways is defined as follows –

Freeways – Interstate (I – 84)

- Freeways are multi-lane highways that provide for the most efficient and safe high speed and high volume traffic movement.
- Interstate Freeways are subject to federal interstate standards as established by the Federal Highway Administration.
- Freeways are subject to ODOT's Interchange Policy.
- ODOT owns the access rights and direct access is not allowed. Users may enter or exit the roadway only at interchanges.
  - Preference is given to through traffic.
  - Driveways are not allowed.
- Traffic signals are not allowed.
- Parking is prohibited.
- Opposing travel lanes are separated by a wide median or a physical barrier.
- Grade separated crossings that do not connect to the freeway are encouraged to meet local transportation needs and to enhance bicycle and pedestrian travel.

The primary function is to provide connections and links to major cities, regions of the state, and other states.

Access management standards for I-84 as given in Table 12 in Appendix C of the OHP shown below in Table 7.

**TABLE 7**
**INTERCHANGE SPACING**

| Access Management Classification | Area | Interchange Spacing |
|---|---|---|
| Interstate and Non-Interstate Freeways (NHS) | Urban | 3 miles (5 kilometers) |
| | Rural | 6 miles (10 kilometers) |

In addition to defining the spacing of interchanges on the interstate, Appendix C of the Oregon Highway Plan also establishes access management spacing standards for connecting roads. Table 16 and Figure 18 in Appendix C establish spacing standards for two-lane connecting roads. These are shown in Table 8 and 9 below.

**TABLE 8:**
**MINIMUM SPACING STANDARDS APPLICABLE TO FREEWAY INTERCHANGES WITH TWO-LANE CROSSROADS**

| Category of Mainline | Type of Area | Spacing Dimension | | | |
|---|---|---|---|---|---|
| | | A | X | Y | Z |
| Freeway | Fully Developed Urban | 1 mi. (1.6 km) | 750 ft. (230 m) | 1320 ft. (400 m) | 750 ft. (230 m) |
| | Urban | 1 mi. (1.6 km) | 1320 ft. (400 m) | 1320 ft. (400 m) | 990 ft. (300 m) |
| | Rural | 2 mi. (3.2 km) | 1320 ft. (400 m) | 1320 ft. (400 m) | 1320 ft. (400 m) |

Notes:

1) If the crossroad is a state highway, these distances may be superseded by the Access Management Spacing Standards, providing the distances are greater than the distances listed in the above table.

2) No four-legged intersections may be placed between ramp terminals and the first major intersection.

A =Distance between the start and end of tapers of adjacent interchanges

X =Distance to the first approach on the right; right in/right out only

Y =Distance to first major intersection; no left turns allowed in this roadway section

Z =Distance between the last right in/right out approach road and the start of the taper for the on-ramp

**TABLE 9:**
**MINIMUM SPACING STANDARDS APPLICABLE TO FREEWAY INTERCHANGES WITH MULTI-LANE CROSSROADS**

| Category of Mainline | Type of Area | Spacing Dimension | | | | |
|---|---|---|---|---|---|---|
| | | A | X | Y | Z | M |
| Freeway | Fully Developed Urban | 1 mi. (1.6 km) | 750 ft. (230 m) | 1320 ft. (400 m) | 990 ft. (300 m) | 1320 ft. (400 m) |
| | Urban | 1 mi. (1.6 km) | 1320 ft. (400 m) | 1320 ft. (400 m) | 1320 ft. (400 m) | 1320 ft. (400 m) |
| | Rural | 2 mi. (3.2 km) | 1320 ft. (400 m) | 1320 ft. (400 m) | 1320 ft. (400 m) | 1320 ft. (400 m) |

Notes:

1) If the crossroad is a state highway, these distances may be superseded by the Access Management Spacing Standards, providing the distances are greater than the distances listed in the above table.

2) No four-legged intersections may be placed between ramp terminals and the first major intersection.

A=Distance between the start and end of tapers of adjacent interchanges

X=Distance to first approach on the right; right in/right out only

Y=Distance to first major intersection

Z=Distance between the last approach road and the start of the taper for the on-ramp

M=Distance to first directional median opening. No full median openings are allowed in non-traversable medians to the first major intersection Figure 19: Measurement of Spacing Standards for Table 17

### *Regional Highways (US 197)*

Regional Rural Highways provide for efficient and safe medium to high speed and medium to high volume traffic movements.
These highways serve as routes passing through areas which have moderate dependence on the highway to serve land access.
The function of the highway supports selected acquisition of access rights. Purchase of access rights should be considered where beneficial such as, but not limited to, ensuring safe and efficient operation between connecting highways in interchange areas, protecting resource lands, preserving highway capacity on land adjacent to an urban growth boundary, or ensuring safety on segments with sharp curves, steep grades or restricted sight distance, or those with a history of accidents.

The primary function of these highways is to provide connections and links to regions within the state, and between small urbanized areas and larger population centers through connections and links to Freeways, Expressways, or Statewide Highways.

The function of the highway is consistent with selected acquisition of access rights. Purchase of access rights should be considered where beneficial such as, but not limited to, ensuring safe and efficient operation between connecting highways in interchange areas, protecting resource lands, or ensuring safety on segments with sharp curves, steep grades or restricted sight distance, or those with a history of accidents.

Access management standards for US 197 are given in Table 14 in Appendix C of the OHP shown below in Table 10.

**TABLE 10:**
**ACCESS MANAGEMENT SPACING STANDARDS FOR REGIONAL HIGHWAYS (MEASUREMENT IS IN FEET)***

| | Rural | | Urban | | | |
|---|---|---|---|---|---|---|
| Posted Speed | Expressway** | Other | Expressway** | Other | UBA | STA |
| ≥55 | 5280 | 990 | 2640 | 990 | | |
| 50 | 5280 | 830 | 2640 | 830 | | |
| 40 & 45 | 5280 | 750 | 2640 | 750 | | |
| 30 & 35 | | 600 | | 600 | 425 | 150 |
| ≤25 | | 450 | | 450 | 350 | 150 |

**TABLE 11:**
**ACCESS MANAGEMENT SPACING STANDARDS FOR DISTRICT HIGHWAYS**
**(Measurement is in Feet)***

| | Rural | | Urban | | | |
|---|---|---|---|---|---|---|
| Posted Speed | Expressway** | Other | Expressway** | Other | UBA | STA |
| ≥55 | 5280 | 700 | 2640 | 700 | | |
| 50 | 5280 | 550 | 2640 | 550 | | |
| 40 & 45 | 5280 | 500 | 2640 | 500 | | |
| 30 & 35 | | 400 | | 400 | 350 | 150 |
| ≤25 | | 400 | | 400 | 350 | 150 |

***District Highways (US 30)***

These highways provide for safe and efficient medium speed and medium to high volume traffic movements.
Traffic movement demands and access needs are more evenly balanced, with reasonable access to abutting property.

The function of the highway supports acquisition of access rights in limited circumstances, recognizing the balanced demands of traffic movement and access needs. Purchase of access rights should be considered where beneficial such as, but not limited to, ensuring safe and efficient operation between connecting highways in interchange areas, protecting resource lands, preserving highway capacity on land adjacent to an urban growth boundary, or ensuring safety on segments with sharp curves, steep grades or restricted sight distance, or those with a history of accidents.
The primary function of these highways is to provide connections and links to intercity, inter-community and intra-city movements.

Access management standards for US 30 is given in Table 15 in Appendix C of the OHP shown above in Table 10.

The function of the highway is consistent with acquisition of access rights in limited circumstances, recognizing the balanced demands of traffic movement and access needs. Purchase of access rights should be considered where beneficial such as, but not limited to, ensuring safe and efficient operation between connecting highways in interchange areas, protecting resource lands, or ensuring safety on segments with sharp curves, steep grades or restricted sight distance, or those with a history of accidents.

US 30 was turned over to The Dalles from the Chenoweth Interchange on the West to the Marina Interchange on the East. Access management between those two points should follow the general access management guidelines identified in Table 6.

## STREET, BICYCLE, AND PEDESTRIAN SYSTEM ELEMENT

The street system element of The Dalles TSP includes a list of street, bicycle, and pedestrian system projects. The list identifies improvements needed on the city's arterial and collector street system to serve the long-range needs for mobility and accessibility, based upon adopted land use patterns.

The project list was identified based on an evaluation of the existing roadway system in terms of its relationship to the study area goals and objectives and to relevant state and federal regulations. These objectives relate to making the most efficient use of the existing transportation infrastructure; and to providing adequate mobility, safety, and accessibility to all modes of transportation. The list was reviewed by 1999 TAC members and was altered as necessary to reflect local priorities and information available to local agency staff.

The proposed street system improvement projects summarized in Table 12 and illustrated in ***Figure 14*** identifies improvements needed on the arterial and collector street system in the project study area to serve the needs of through and local traffic, based upon adopted land use patterns. Besides new street connections, the list also includes projects that would widen existing streets to provide adequate vehicular capacity and to provide safe access via bicycle and pedestrian modes of travel.

In 2005, this section was updated to include the street, bicycle and pedestrian projects that have been proposed since the 1999 TSP update. The new projects are shown on ***Figure 14***, *Street Improvement Projects,* in Table 12, *Street, Bicycle and Pedestrian Improvement Projects* as items 10S through 23S and in the project list at the end of this element.

The projects are listed so that all sixteen short-range projects appear at the beginning of the list in Table 12. Next on the list, the two intermediate-range projects are listed; and finally, the list includes six long-range projects.

The projects are arranged alphabetically within each term period. North-south street improvements describe the project location from south to north, and the east-west street improvement projects describe the project location from west to east. Intersection improvement locations are described with the north-south street listed first, and then the east-west cross street.

The following information is included for each project in the list in Table 12:

Project location, including termini
General project description
Project improves travel by mode
Project justification
Project phasing
Financial partners
Project distance in miles (where applicable)
Project cost

### *Project Characteristics*

Each of the above items identified in the preliminary draft project list is explained in the following discussion.

#### *Project Location*

For most projects, the description of location is a street segment defined by the street name and termini. For others, the location is an intersection. Location information will be refined when further analysis and preliminary engineering is conducted prior to construction.

***Project Description***

Only a general description of each project is included. Project information will be refined several times between a project's inclusion in this list and its construction. A project is analyzed before it is added to a capital improvement program and again when preliminary engineering is undertaken a year or two prior to construction.

When planning is undertaken for specific projects, many variables are considered including: traffic volumes and turns, accident history, the percentage of trucks and buses, the location of intersecting streets and driveways, the available right-of-way, topographic constraints, utility conflicts, and impacts on property owners. After such information has been analyzed, general descriptions from this plan can be refined and more specific information can be made available.

Generally, high-cost projects require more analysis and planning than low-cost projects. For example, the construction of an arterial street for a new location may require a corridor or location study, and environmental analysis, public hearings, and right-of-way negotiations and acquisition. In some cases, an affirmative vote of residents of the city or county may also be required. On the other end of the scale, installation of traffic signals, for example, may require only limited technical analysis and preparation of construction plans and specifications.

## Table 12

## Street, Bikeway, and Pedestrian System Improvements Project List

| New Project No. | Project Location | Project Description | Project Improves Travel by Mode | | | Project Justification | | | | | Project Phasing Years | Financial Partners | | | | Project Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Vehicle | Bicycle | Pedestrian | Access | Economic | Safety | Operations | Upgrade | | ODOT | County | The Dalles | Other | $000 |
| 1 | Riverfront Trail | Complete Construction of Bike/Ped Trail | | ■ | ■ | ■ | ■ | ■ | | | S | | | ■ | ■ | $500 |
| 2 | Dry Hollow Road, 14th to 19th Street | Re-stripe existing pavement to provide bike lanes | | ■ | | ■ | | ■ | | ■ | S | | | ■ | | $8 |
| 3 | Mill Creek, 2nd - 8th Place | Construct Bikeway and Pedestrian Trail | | ■ | ■ | ■ | ■ | ■ | | | S | | | ■ | ■ | $500 |
| 4 | Second Street and Brewery Grade | Redesign Intersection | ■ | ■ | ■ | | | ■ | ■ | ■ | S | ■ | | ■ | | $2,200 |
| 5 | Highway 30 and Lower Eight Mile Road | Redesign Intersection | ■ | ■ | ■ | | | ■ | ■ | | M | ■ | | ■ | | $250 |
| 6 | Hostetler Street, Sixth to Tenth Street | Re-stripe to provide bike lanes; add curbs and sidewalks | | ■ | ■ | ■ | | ■ | | ■ | S | | ■ | | | $2,000 |
| 7 | Snipes Street, 7th to 10th Street | Widen to Major Collector cross-section | ■ | ■ | ■ | ■ | | ■ | | ■ | M | | ■ | | | $1,000 |
| 8 | Tenth Street, Union Street and Mt. Hood Road | Remove street surface and provide overlay | ■ | | | | | | | ■ | S | | | ■ | | $250 |
| 9 | West First Street, Webber Street to Railroad Spur | Widen to Industrial Collector Standards | ■ | | ■ | | | ■ | ■ | | S | | | ■ | | $1,200 |
| 10 | Nineteenth Street, Dry Hollow Road and MCMC | Remove street surface and provide overlay | ■ | | | | | | | ■ | S | | | ■ | | $200 |
| 11 | Twelfth Street, Kelly Avenue and Dry Hollow Road | Remove street surface and provide overlay | ■ | | | | | | | ■ | M | | | ■ | | $300 |
| 12 | Union Street, 4th - 14th Streets | Remove street surface and provide overlay | ■ | | | | | | | ■ | S | | | ■ | | $300 |
| 13 | East Nineteenth Street, Nineteeth Street to Dry Hollow Road | Widen to Local Residential Type "A" cross-section | ■ | | ■ | ■ | | | ■ | | S | | | ■ | | $500 |
| 14 | West 2nd & W 6th Streets @ Webber | Improve traffic signals | ■ | | ■ | | | ■ | ■ | ■ | S | | | ■ | | $180 |
| 15 | West 2nd & W 6th Streets/Cherry Heights Road Intersections | Install traffic signals | ■ | | ■ | | | ■ | ■ | | S | | | ■ | | $500 |
| 16 | Fremont Street, Old Dufur Road to Highway 197 | Widen shoulders to provide bike lane | ■ | ■ | ■ | ■ | | ■ | | ■ | M | | ■ | ■ | | $1,000 |
| 17 | Highway 197 and Fremont Street/Columbia View Drive | Re-design Intersection | ■ | ■ | ■ | ■ | | ■ | ■ | | M | ■ | ■ | ■ | | $7,000 |

## Table 12

## Street, Bikeway, and Pedestrian System Improvements Project List

| New Project No. | Project Location | Project Description | Project Improves | | | Project Justification | | | | | Project Phasing | Financial Partners | | | | Project Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Vehicle | Bicycle | Pedestrian | Access | Economic | Safety | Operations | Upgrade | | ODOT | County | The Dalles | Other | $000 |
| 18 | Tenth Street, Washington to Lewis Street | Widen to Major Collector cross-section | ■ | ■ | | | | ■ | ■ | ■ | L | | | ■ | | $2,000 |
| 19 | Nineteenth Street, Dead End to Thompson Street | Construct to Major Collector cross-section | ■ | ■ | ■ | ■ | ■ | | ■ | | L | | | ■ | | $1,220 |
| 20 | Thompson Street, Tenth to Nineteenth Street | Widen to Major Collector cross-section | ■ | ■ | ■ | ■ | | ■ | ■ | ■ | L | | | ■ | | $2,500 |
| 21 | Old Dufur Road, Tenth to Fremont Street | Widen to Minor Collector cross section with curb/parking.sidewalk one-side | ■ | ■ | ■ | ■ | | ■ | ■ | ■ | L | | ■ | ■ | | $2,500 |
| 22 | River Road over Chenoweth Creek | Widen Bridge | ■ | ■ | ■ | ■ | ■ | ■ | | | L | ■ | ■ | ■ | | $1,500 |
| 23 | Chenoweth Creek | Construct Bikeway and Pedestrian Trail | | ■ | ■ | ■ | | ■ | | | L | | | ■ | ■ | $750 |
| 24A | E 1st Street Streetscape Alt. C - Underpass/curbless | Washington St. Pedestrian Path Under UPRR and I-84 | | ■ | ■ | ■ | | ■ | | | S | | | ■ | ■ | $8,073 |
| 24B | E 1st Street Streetscape Alt. C - Underpass/curbless | Redevelop 1st Street from Union - Washington | ■ | ■ | ■ | ■ | | ■ | | | M | | | ■ | ■ | $1,420 |
| 24C | E 1st Street Streetscape Alt. C - Underpass/curbless | Build Rock Sound Wall | | | | | | ■ | | ■ | M | | | ■ | ■ | $500 |
| **Short Term Project Costs Total** | | | | | | | | | | | | | | | | **$7,838** |
| **Intermediate Term Project Costs Total** | | | | | | | | | | | | | | | | **$10,050** |
| **Long Term Project Costs Total** | | | | | | | | | | | | | | | | **$20,463** |
| **Total Project Costs** | | | | | | | | | | | | | | | | **$38,351** |

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### *Project Improves Travel by Mode*

Projects in the list are aimed at improving some or all of the following three travel modes: vehicle, bicycle, and pedestrian.

Approximately 50 percent of the street improvement projects would improve travel by vehicular mode. These include street projects that would add mainline through capacity, projects that would add median turning lanes, as well as those projects that would upgrade the street to urban or rural standards. Also, all of the street improvement projects would improve travel by the bicycle mode and about 80 percent would improve travel for pedestrians through the provision of bicycle lanes/shoulder bikeways and sidewalks, respectively.

### *Project Justification*

Seven different project justifications are shown in the roadway projects list. Multiple justifications are indicated for most projects. The following is an explanation of those project justifications:

**Access** improvements are specified as a justification for 14 street and highway projects. New collector and arterial streets designed to serve presently undeveloped land are labeled as access improvements. Many existing streets proposed for upgrading also qualify since a portion of the forecast traffic increase is from land that is presently undeveloped.

**Economic** development is indicated on three projects where access would be improved for land designated for commercial and industrial use. Economic development is generally regarded as the attraction and expansion of employers, thus the emphasis on commercial and industrial sites.

**Safety** is indicated as a justification for 15 proposed projects on the street and highway list. A majority of the proposed projects are designed to improve safety for bicyclists and pedestrians. Improvements in other instances, such as outlying collector streets, may be needed as the area grows and traffic increases, to maintain or enhance safety conditions.

**Operations** improvement is included as a justification for four of the projects in the list. Most of these projects are intersections where excessive delays occur or are anticipated. Some other projects include widening of the roadway to accommodate additional travel lanes, a raised median, or a continuous two-way left-turn only lane.

**Upgrade to urban standards** is included as a justification on ten of the projects in the list. In developing the list, it was assumed that urban standards (including curbs, gutters, and sidewalks) were appropriate for most collector and arterial streets within the UGB. Streets constructed to urban standards are generally thought to be more aesthetically pleasing, safer, and less costly to maintain than those not constructed to urban standards. In addition, streets constructed to urban standards generally include underground storm drainage.

### *Project Phasing*

Projects in the list are divided into the general categories: short-, medium-, and long-range according to the phase in which construction would take place. Since environmental analysis, design, engineering

work, and right-of-way acquisition precede construction, these activities may be undertaken in the phase preceding that listed for construction.

The proposed phasing is not an implementation schedule since no priorities have been set within each phase. The actual timing for project implementation will be determined later via updates of the three-year Transportation Improvement Program (TIP) by ODOT, and updates to the capital improvement programs for Wasco County and the City of The Dalles. The construction of any project is contingent upon the availability of revenues in the future. Thereby, inclusion of a project in a particular phase does not represent a commitment to complete the project during that phase. It is expected that some projects may be accelerated and others delayed.

The project phasing is based on a 1997 estimate of project need and justification, funding availability and rate of land development. Should any of the factors that influence phasing prove different than expected, changes in phasing may be required. For example, a more rapid than expected land development or the occurrence of a safety or operational problem may result in the need to advance a project. Availability of funds restricted to a particular type of project may also make it appropriate to advance or delay a project.

The projects in the short-, intermediate- and long-range phases generally have the following characteristics:

Projects identified as **short-range** needs are expected to be needed within five years of plan adoption (2010). The short-range projects are generally designed to correct existing deficiencies (e.g., maintenance, operational or safety problems) with a lower improvement cost.

Projects identified as **Intermediate-range** needs are expected to be needed six to ten years after plan adoption (2011-2015). Intermediate-range projects generally include collector and arterial streets that need to be upgraded to urban standards where future land development is likely to occur in the first half of the planning period. In addition, intermediate-range projects include those projects needed to correct level of service or operational problems, but that have long lead times before construction due to high capital cost, the need to purchase right-of-way or the need to complete environmental assessments, and also those projects for which funding has not yet been identified and is unlikely to be available in the short-range.

Projects identified as **long-range** are expected to be needed more than ten years after plan adoption (2016+). Long-range projects generally include those projects needed to ensure that urban standards are provided on all the remaining collector streets within the urban growth boundary. In addition, long-range projects also include higher capital costs for which funding will be unlikely until the later years after plan adoption.

### *Financial Partners*

This category indicates the agencies that would be responsible for providing funding for the project. For projects that have more than one source of agency funding, the agency that currently has jurisdiction over the roadway segment is indicated as the likely lead.

Since project timing and financing are not binding, the financial partner listing does not represent a commitment by a particular agency to construct that project. For example, Wasco County has been indicated as the lead for all county road improvement projects. However, the county may expect the

City of The Dalles to take the lead on roadway improvements and upgrades of county roads located inside The Dalles UGB and/or city limits.

Project Cost

The costs shown in this project list are preliminary planning estimates calculated in 1996 dollars. The estimates include the cost of construction, engineering, and right-of-way acquisition, where appropriate. Cost estimates are based upon costs of similar street and highway projects constructed in recent years.

Cost estimates will be refined as the construction date approaches. More precise cost estimates will be prepared when projects are proposed for inclusion in local agencies' capital improvement programs. Even more detailed estimates will be made during preparation of design engineering and construction specifications. Among the variables that influence the cost are right-of-way acquisition, storm drainage facilities and utility relocations. The cost of these can vary greatly and may not be known until engineering work is completed.

### *Recommended Improvements*

Each of the recommended improvements is discussed in the following pages.

Short-range improvements (designated with and "S" after the project number) would be implemented in a time frame of less than five years (By 2010). The required short-range improvements were identified based on field observations, traffic volume measurements, accident analysis, and an analysis of current capacity and circulation deficiencies. In 2005, this section was updated to include the street, bicycle and pedestrian projects that have been proposed since the 1999 TSP update. Projects identified as intermediate-range needs (designated with and "M" after the project number) are expected to be needed five to ten years after plan adoption (2011-2015). Finally, projects identified as long-range needs (designated with and "L" after the project number) are expected to be needed more than ten years after plan adoption (2016+). The new projects are shown in ***Figure 14***, *Street Improvement Projects*, in Table 12, *Street Bicycle and Pedestrian Improvement Projects* as items 10S through 23S and the project list at the end of this element.

### ***1S: Riverfront Trail***

A separated bicycle and pedestrian recreational trail is proposed along the Columbia River with access points at Chenoweth Creek, Webber Street, Union Street, and Riverfront Park. The bicycle and pedestrian pathway should be paved to be 12 feet wide, with an additional three feet of area adjacent to the pavement graded to provide clearance from trees, poles, walls, fences, guardrails, and other lateral obstructions. The 12-foot-wide pathway would provide for two-directional bicycle traffic along with its shared use by joggers and other pedestrians.

The complete length of the proposed trail is approximately 10 miles. Of this, several segments totaling 6 miles are already completed in 1999. These include the trail from the west end of the Marina parking lot to the Cherry Growers processing plant, the Discovery Center to River Road (3.4 miles), and The Dalles Dam to the ODOT property.

### *2S: Dry Hollow Road between Fourteenth Street and Nineteenth Street*

Dry Hollow Road is classified as a major collector street. The existing pavement from Ninth Street to Fourteenth Street is 52 feet wide with on-street parking and curbs and sidewalks on both sides of the street. The existing pavement from Fourteenth Street to Nineteenth Street is narrower at 42 feet wide; parking is provided on both sides. The segment is curbed on both sides, and has intermittent sidewalks on the east side only. Bike lanes should be provided along the narrower 42-foot-wide pavement between Fourteenth Street and Nineteenth Street by removing on-street parking along the west side of the street. The 42-foot-wide pavement should be re-striped to include two travel lanes (one in each direction), two bike lanes (one on each side) and a parking lane on one side of the street.

### *3S: Mill Creek Trail*

A separated bicycle and pedestrian recreational trail is proposed along the west bank of Mill Creek with several potential access points from residential streets. The trail would turn west from Mill Creek and connect with the street system at the intersection of Cherry Heights Road and Thirteenth Street. The bicycle and pedestrian pathway should be paved to be 12 feet wide, with an additional three feet of area adjacent to the pavement graded to provide clearance from trees, poles, walls, fences, guardrails, and other lateral obstructions. The 12-foot-wide pathway would provide for two-directional bicycle traffic along with its shared use by joggers and other pedestrians.

### *4S: Intersection of Second Street and Brewery Grade*

A number of improvements have been implemented at the intersection of Brewery Grade and Second Street to address operational and safety problems. The northern viaduct lane and westbound lane on Second Street from the Boat Basin Overpass are merged to a single westbound traffic lane. Westbound traffic on Second Street from the Boat Basin Overpass desiring access to Brewery Grade can enter a protected shelter lane for the left hand turn movement. Traffic on Brewery Grade entering Second Street is channeled into a dedicated right or left hand turn lane. The left turn lane enters a westbound shelter lane protected from through westbound traffic. Eastbound traffic on Second Street is channelized at Taylor Street to provide a designated lane eastbound leaving downtown The Dalles and a dedicated lane up Brewery Grade. An actuated traffic signal should be installed at the intersection as a future improvement when growth and development of properties on the north side of Second Street occurs.

### *5M: Intersection of US 30 and Lower Eight Mile Road*

The intersection of US 30 and Lower Eight Mile Road should be redesigned to form a right-angle. A standard separate left-turn lane should be provided for eastbound US 30 traffic turning into Lower Eight Mile Road. At the intersection with US 30, Lower Eight Mile Road should consist of one inbound lane and two outbound lanes consisting of separate right-turn and left-turn lanes. The right-turn from westbound US 30 to Lower Eight Mile Road should remain as a free-right.

### *6S. Hostetler Street between Sixth Street and Tenth Street*

Hostetler Street is classified as a major collector street in this segment. The existing pavement is 36 feet wide with parking on both sides of the street. The existing street between Sixth Street and Tenth Street should be re-striped to include two travel lanes and two bike lanes on each side of the street. Also, curbs and sidewalks should be added on both sides of the street.

### *7M: Snipes Street between Sixth Street and Tenth Street*

Snipes Street is classified as a minor collector street from Sixth Street to Tenth Street. The existing pavement from Sixth Street to Ninth Street is 44 feet wide with on-street parking permitted on both sides of the street, and it is 22 feet wide for the two block segment from Ninth Street to Tenth Street with no on-street parking. The existing street from Ninth Street to Tenth Street should be widened to include two travel lanes (one in each direction) for shared bicycle use and two parking lanes (one on one side). Also, curbs and sidewalks should be provided on both sides of the pavement.

### *8S: West 10th – Union to Mt. Hood*

West 10th Street is classified as a minor arterial from Union to Mt. Hood Streets. Street surface needs to be removed and street overlaid.

### *9S: West 1st Street [Rebuild if LID Fails]*

All of West 1st Street is classified as a major collector. The existing street between Webber Street and the railroad spur should be widened to include two travel lanes (one in each direction), curbs provided on both sides of the pavement and a sidewalk on the north side of the roadway.

### *10S: East 19th, Dry Hollow to Mid Columbia Medical Center (MCMC)*

East 19th Street between Dry Hollow and MCMC is classified as a major collector. Street surface needs to be removed and street overlaid.

### *11M: East 12th Street - Kelly to Dry Hollow*

East 12th Street is classified as a major collector from Kelly Street east to Dry Hollow Rd. Street surface needs to be removed and street overlaid.

### *12S: Union St – 4th to 14th Street*

Union Street is classified as a major collector from 4th Street to 14th Street and as a minor arterial from 3rd Street to 1st Street. According to the 5-Year CIP, Union Street needs to be profiled and paved.

### *13M: East 19th Street – 19th to Dry Hollow Rd*

All of East 19th Street is classified as a major collector. The existing street between 19th Street and Dry Hollow Road should be widened to include two travel lanes (one in each direction), and two parking lanes (one on one side). Also, curbs and sidewalks should be provided on both sides of the pavement.

### *14S: West 2nd and West 6th Street @ Webber*

West 2nd and West 6th Streets are classified as a major arterial where they intersect with Webber Street. The 5-Year CIP calls for traffic control signals on Webber at both West 2nd and West 6th Streets.

### *15S: West 2nd and West 6th Streets @ Cherry Heights Road*

The intersection of Cherry Heights Road with West 2nd and West 6th Street is classified as a major and minor arterial respectively. Traffic control signals to be installed at the intersection of West 2nd and West 6th Streets and Cherry Heights Road.

### *16M: Fremont Street between US 197 and Old Dufur Road*

Fremont Street is classified as a minor arterial street. The existing pavement is generally 20 feet wide with two ten-foot travel lanes, no shoulders, and no on-street parking permitted. The roadway should be widened to accommodate two travel lanes and a bike lanes on each side of the street. Also, curbs shall be provided on both sides of the street and sidewalks shall be provided on one side of the street.

### *17M: Intersection of US 197 and Fremont Street/Columbia View Drive (Wasco County roadway)*

To improve safety at the intersection of US 197 and Fremont Street/Columbia View Drive, an over-crossing of the highway should be added to allow through traffic to cross the highway unimpeded and without the conflicts of the at-grade crossing. Also, ramps should be provided to access the highway and they would be designed so that all ingress would be by a right-turn. The actual design of this improvement will be determined through further study.

### *18L: Tenth Street from Washington Street to Lewis Street*

Because Tenth Street is the only road other than (Former) US 30 which crosses the entire length of the city, the roadway should be upgraded to better accommodate traffic. The existing street should be widened to minor arterial standard and additional right-of-way should be acquired so as widen the right-of-way to 60 feet to accommodate the wider street.

### *19L: Nineteenth Street from Dead End to Thompson Street*

Nineteenth Street provides primary access to Mid-Columbia Medical Center. Nineteenth Street currently dead ends just east of the medical center. Nineteenth Street should be extended east to align and connect with the existing Thompson Street located in the southeast portion of the planning area.

The pavement of the new connection should be built to major collector standards with two travel lanes, two bike lanes and a parking lane on one side. Also, continuous curb, gutter, planting strip, and sidewalks should be provided on both sides of the street.

### *20L: Thompson Street between Tenth Street and Nineteenth Street*

Thompson Street is classified as a major collector street. The existing pavement from Tenth Street to Nineteenth Street is 26 to 28 feet wide with intermittent on-street parking and no curbs and sidewalks, accommodated within a 60-foot right-of-way. The existing street from Tenth Street to Nineteenth Street should be widened to major collector standards within the existing right-of-way.

### *21L: Old Dufur Road from Tenth Street to Fremont Street*

Old Dufur Road is classified as a minor collector street in this segment. The existing pavement is generally 30 feet wide with two travel lanes and on-street parking permitted on both sides of the street. The roadway should be widened to minor collector standards to accommodate a shoulder bike lane on each side of the street.

### *22L: River Road over Chenowith Creek*

The River Road crossing over Chenowith Creek is currently narrow and can accommodate only one lane of traffic. Since it would be necessary to maintain traffic along this route during construction, and the existing bridge structure does not lend itself to staged construction in-place, the existing bridge structure should be replaced. The new structure will be designed to meet current HR-25 loading requirements. The new approach roadway should be constructed to accommodate a major collector street.

### *23L: Chenowith Creek Trail*

A separated bicycle and pedestrian recreational trail is proposed along Chenowith Creek from Riverfront Trail to Tenth Street with an at-grade crossing at Sixth Street. The bicycle and pedestrian pathway should be paved to be 12 feet wide, with an additional three feet of area adjacent to the pavement graded to provide clearance from trees, poles, walls, fences, guardrails, and other lateral obstructions. The 12-foot-wide pathway would provide for two-directional bicycle traffic along with its shared use by joggers and other pedestrians.

### 24S: East 1st Street, Washington Street, I-84/Railroad underpass project

This phase of the Downtown Renaissance project (24A on Table 12) is the bicycle/pedestrian connection directly from the downtown business core to the City's future festival area, streetscape improvements to East 1st Street, and installation of another bicycle/pedestrian under crossing beneath Interstate 84 and the railroad tracks directly to the Riverfront Trail.

## BIKEWAY PLAN

Bicycles are legally classified as vehicles that may be ridden on most public roadways in Oregon. Because of this, bicycle facilities shall be designed to allow bicyclists to emulate motor vehicle drivers. Shared roadway facilities are common on city street systems. On a shared roadway facility, bicyclists share the normal vehicle lanes with motorists. Where bicycle travel is significant, bike lanes are most appropriate.

Bicycle lanes are currently provided in The Dalles along segments of US 30 in the commercial area west of downtown. While all streets in The Dalles urban area should accommodate safe travel by bicyclists, a bikeway network providing a higher level of service for bicyclists should be implemented along all designated arterial and collector streets to encourage bicycle use.

In 1993, the City adopted a *Bicycle Master Plan*. Where new bike lanes are recommended, they should be provided on each side of the road and be five to six feet wide, when feasible. Bike lanes are located adjacent to the curb, except where there is curb parking or a right-turn lane. Where these conditions occur, the bike lane will be located between the through travel lane and the parking or right-turn lane. The bike lane will be marked for travel in the same direction as the adjacent travel lane. The striping shall be done in conformance with the *Manual on Uniform Traffic Control Devices*.

The bikeways on new streets or streets to be improved as part of the street system plan shall be added when the improvements are made. The Street, Bicycle and Pedestrian System Project List identify an approximate schedule for these improvements. ***Figure 15*** shows the recommended bikeway plan.

## PEDESTRIAN FACILITIES PLAN

Six percent of the journey-to-work trips in Wasco County take place by the walking mode of travel. This is higher than the national average of 3.9 percent.

Upgrades to existing facilities and expansion of the sidewalk system are planned to increase the use of walking for the journey-to-work and non-work trips. The upgrade of the pedestrian system should include the filling in missing sidewalk links and design of subdivision layouts so that they provide for non-roadway pedestrian links between subdivisions and neighborhood commercial areas and schools.

Sidewalks are required on both sides along all streets within the urban growth boundary, meeting the requirements set forth in the street design standards. Sidewalks and walkways should be required in new developments in the metropolitan area and they should be provided in connection with most major street improvement projects. Also, a systematic approach to filling gaps in the sidewalk system and an annual allocation for construction is recommended. The highest priority for sidewalk construction should be given to locations near schools, parks, and heavily used transit corridors. Safety should be a prime consideration in evaluation and design.

A complete pedestrian system shall be implemented in the city. Every paved street shall have sidewalks on both sides of the roadway meeting the requirements set forth in the street standards.

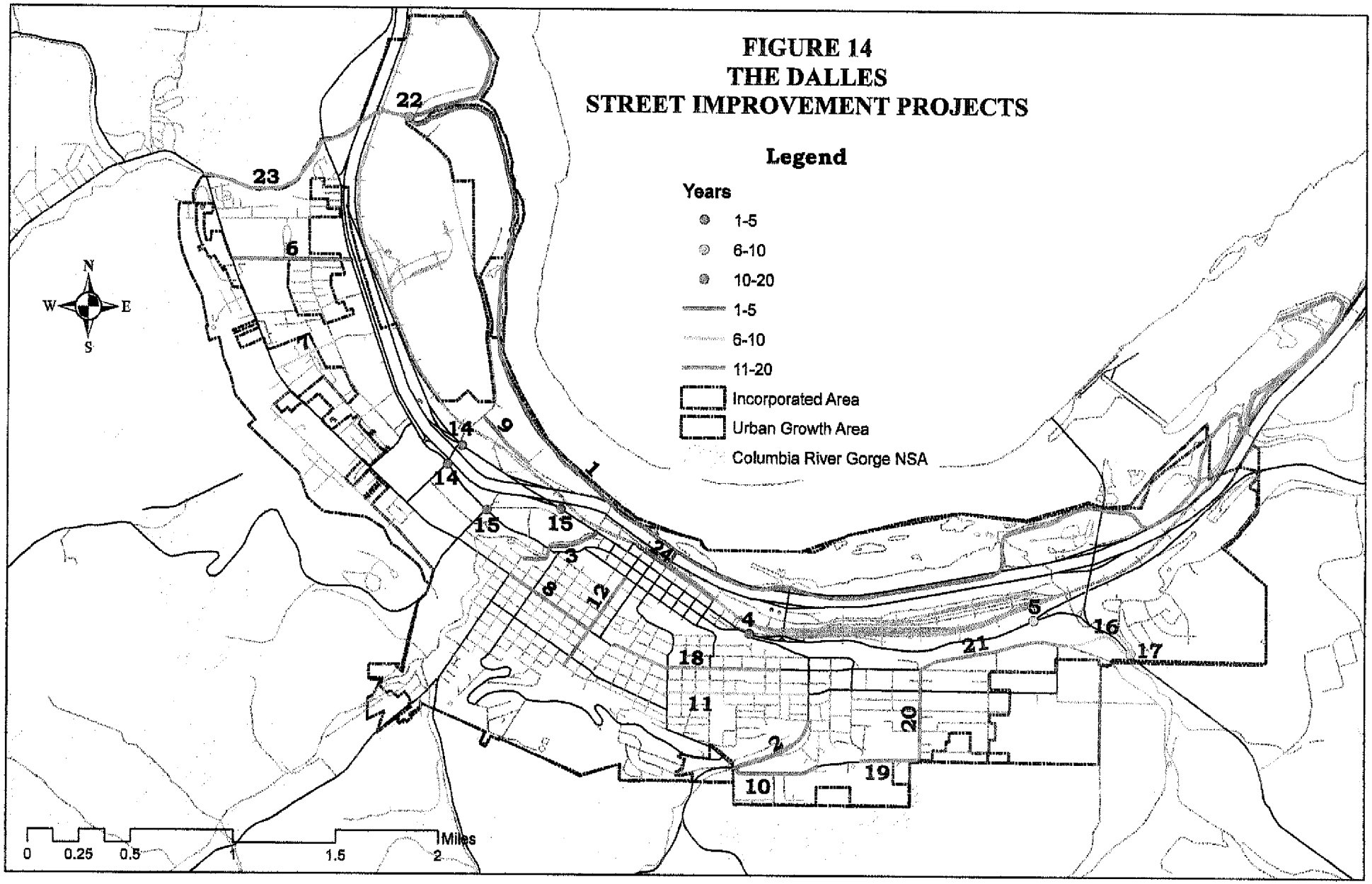
FIGURE 14
THE DALLES
STREET IMPROVEMENT PROJECTS
Legend
Years
1-5
6-10
10-20
1-5
6-10
11-20
Incorporated Area
Urban Growth Area
Columbia River Gorge NSA
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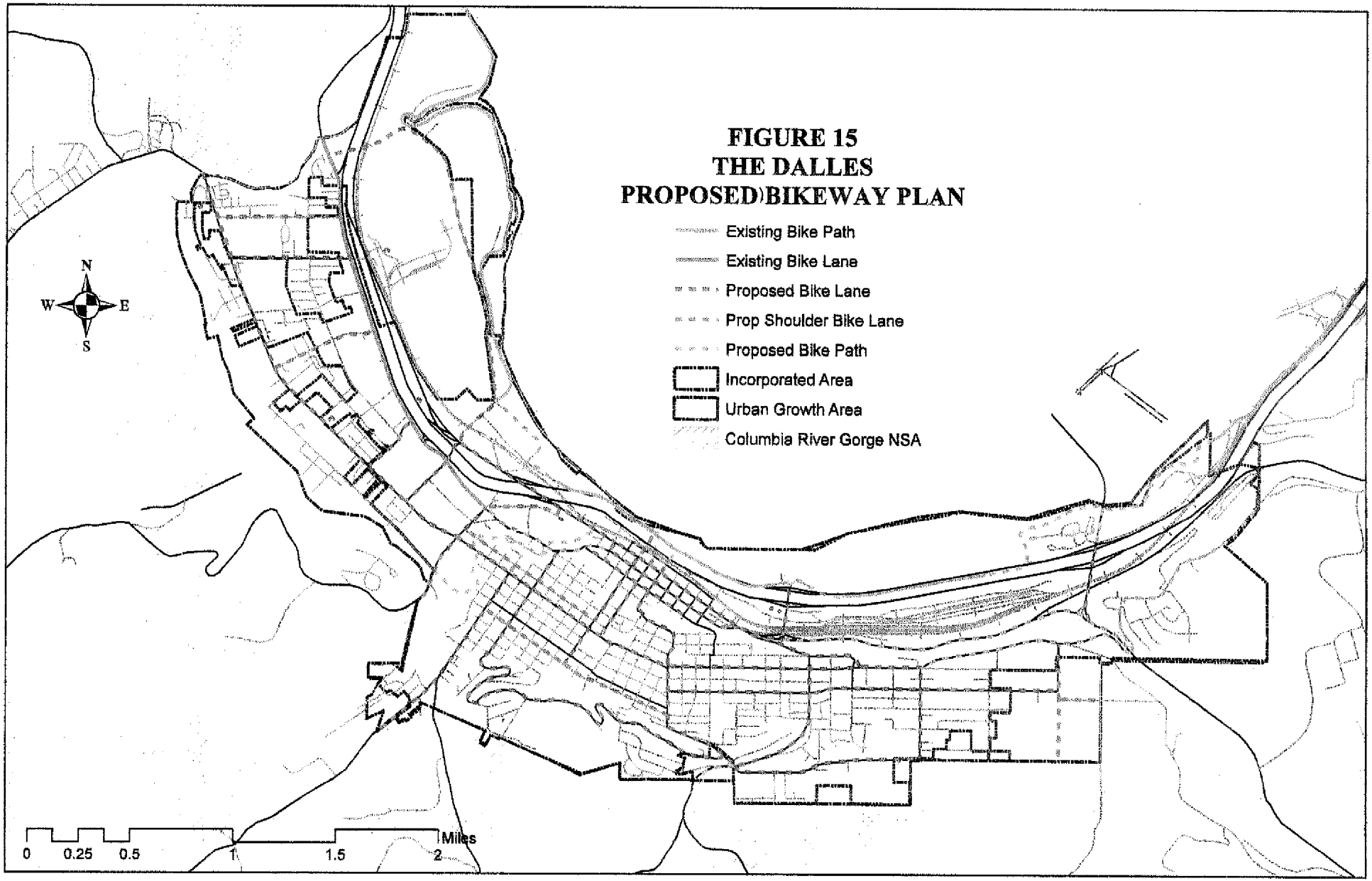
FIGURE 15
THE DALLES
PROPOSED BIKEWAY PLAN
Existing Bike Path
Existing Bike Lane
Proposed Bike Lane
Prop Shoulder Bike Lane
Proposed Bike Path
Incorporated Area
Urban Growth Area
Columbia River Gorge NSA
N
W
E
S
0
0.25
0.5
1
1.5
2
Miles

Pedestrian access on walkways shall be provided between all buildings including shopping centers and abutting streets and adjacent neighborhoods.

Over time, sidewalks shall be added to streets that currently lack them and are not programmed for improvements. The priority streets shall be collector and arterial roadways where pedestrians feel most uncomfortable because of the higher traffic volumes these roadways carry. Also, sidewalk improvements along streets that lead to schools and parks will be given higher priority. Residential streets shall also have sidewalks; however, because they are lower vehicular traffic volume streets, they shall be lower priority for adding sidewalks.

Consideration may be given to providing curb extensions to shorten crossing distances and to alert motorists to the presence of pedestrians. These are rounded extensions of the sidewalk located at intersections. Curb extensions allow motor vehicle turning movements while improving visibility for both the pedestrian and motorists, as well as shortening pedestrian crossing distances.

**TRUCK ROUTES**

The truck route plan for The Dalles is prepared to address required street improvements to safely accommodate the north-south truck movement from the hillside orchards to the downtown processing plants, and to provide access to the commercial and industrial areas.

All arterial roadways in The Dalles under the proposed Street Functional Classification Plan (***Figure 16***) are proposed as designated truck routes. These include Interstate 84, US 197, and US 30. Also, all streets in the industrial area northwest of downtown (including River Road) are proposed to be designated as truck routes.

Besides arterial roads and roads in the industrial area, trucks in The Dalles also currently travel along north-south routes that connect the cherry processing plants along the river to the agricultural areas to the south. These north-south roads pass through residential areas, and truck use in these areas conflicts with other local traffic. However, because of the unique topography of The Dalles, the agricultural truck traffic is forced to use city streets that pass through residential areas. The truck route plan is intended to keep trucks on designated routes that are or can be improved for safe use by trucks, while keeping other areas free of truck traffic.

Trucks accessing the processing plants along the river travel along one of three roads that connect to the agricultural areas to the south. These include Dry Hollow Road, Mount Hood Street (including Skyline Road), and Cherry Heights Road. The proposed truck route plan routes trucks coming into town via Dry Hollow Road to continue along the road and access US 30 and the downtown area via Brewery Grade. This would keep them from using the Sixteenth Place/Kelly Avenue/Seventh Street/Washington Street route; the streets along this route are mostly narrow and there is high degree of on-street parking and pedestrian activity. The proposed improvements at the US 30/Brewery Grade intersection will facilitate and make it attractive for trucks to use the proposed truck route.

Trucks accessing the downtown processing plant from Mount Hood Street will travel along Tenth Street eastbound to Union Street into downtown. Those accessing the riverside plant from Mount Hood Street will travel west along Tenth Street to north along Webber Street to the plant.

Trucks accessing the downtown processing plant from Cherry Heights Road will travel along the new Cherry Heights extension to US 30 into downtown. Those accessing the riverside plant from Cherry Heights Road will travel west along Sixth Street to north along Webber Street to the plant. The

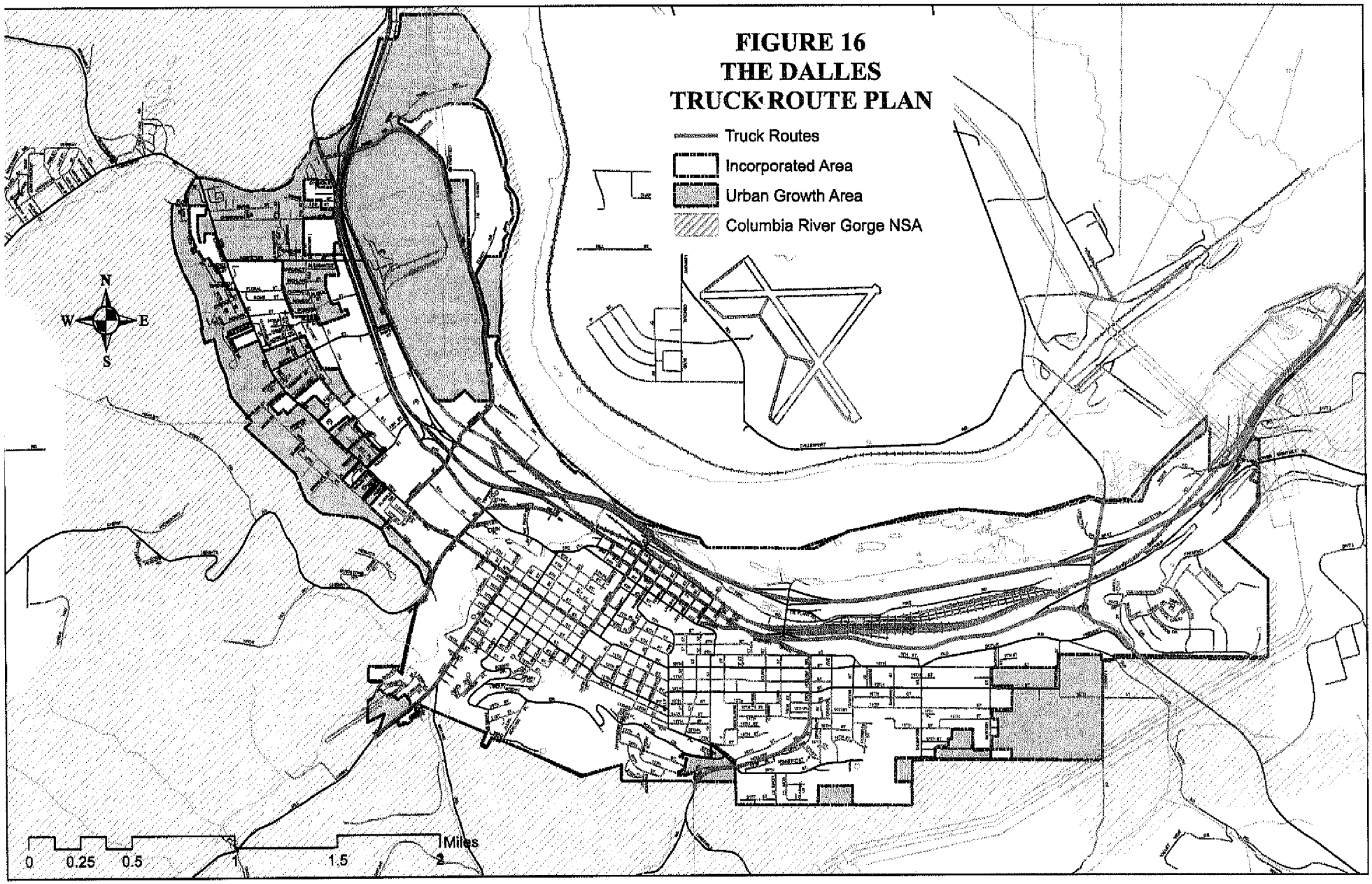
FIGURE 16
THE DALLES
TRUCK ROUTE PLAN
Truck Routes
Incorporated Area
Urban Growth Area
Columbia River Gorge NSA
N
W
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S
0
0.25
0.5
1
1.5
2
Miles

extension of Cherry Heights Road to US 30, including the proposed improvements at the intersection of Cherry Heights Road with Second Street and Sixth Street will facilitate and make it attractive for trucks to use the proposed truck route.

The proposed truck route plan is shown in ***Figure 16***.

## TRANSPORTATION DEMAND MANAGEMENT PLAN

Through transportation demand management (TDM), the peak travel demands could be reduced or spread to more efficiently use the transportation system, rather than building new or wider roadways. Techniques that have been successful and could be initiated to help alleviate some traffic congestion include carpooling and vanpooling, alternative work schedules, bicycle and pedestrian facilities, and programs focused on high density employment areas.

The major effect of the TDM programs would be on the home-to-work and return trips. The journey-to-work census data for 1990 indicated that 74 percent of the journey-to-work trips in the Wasco County area are the drive-alone type. Of the remaining 26 percent of the journey-to-work trips, 13 percent use carpools, six percent walked to work, one percent biked to work, and six percent used other travel modes. Overall, 67 percent of the journey-to-work trips in The Dalles urban area are the drive-alone type. Of the remaining 33 percent of the daily trips, 32 percent use carpools, and less than one percent walk/bicycle or take transit to their destination.

### *Alternative Work Schedules*

Alternative work schedules (*such as flex-time or staggered work hours*), especially with large employers, can help spread the peak period traffic volumes over a longer time period, thus providing greater service out of a fixed-capacity roadway. Staggered work hours should be encouraged with new industries and be coordinated to eliminate high surges of traffic.

### *Ridesharing*

The effectiveness of subsidizing ridesharing and increasing rideshare convenience depends not only upon the particular tool chosen, but also upon the combination of tools chosen. Consequently, general estimates of the effectiveness of these tools are difficult to obtain. Specific estimates of particular combinations of tools could be evaluated using a TDM model.

The city can work with large employers, to establish a carpool and vanpool program. These programs will help to reduce the travel and parking requirements, and to reduce air pollution. Employers can encourage ridesharing by providing matching services subsidizing vanpools, establishing preferential car and vanpool parking and convenient drop-off sites, and through other promotional incentives.

### *Pedestrian/Bicycle Facilities*

The planned provision of adequate facilities for bicycles (and pedestrians) along arterial and collector streets and many local streets in the metropolitan area is expected to significantly increase the attractiveness and competitiveness of bicycles as a travel mode.

### *Telecommuting*

The effectiveness of telecommuting in reducing demand would depend on the number of employees for which telecommuting is an option, the level of participation of their employers, and the average number of telecommuting days. Employees eligible for telecommuting would come mostly from information industries such as accounting, data processing, programming, and engineering design. Production lines, construction, or sales, in contrast, would not provide many opportunities for telecommuting. Some employers require part of each employee's time each week to be spent in the office; others allow the employee flexibility to use telecommuting exclusively.

## MODAL PLANS

### *Public Transportation*

The Dalles has a mixture of long-distance and local demand-responsive transit services. Greyhound provides inter-city transit service to The Dalles, connecting it via Portland and Salt Lake City to the rest of the continental United States. The senior center sponsors a demand-responsive minibus service for travel anywhere within the city, in Dallesport, and out of town as well, if requested. The Mid-Columbia Council of Governments (MCCOG) operates additional demand responsive service available to everyone in Wasco County.

No specific expansion of either Greyhound service or the senior service is planned at this time; however, MCCOG has funding to conduct a county-wide transit study in 1999. The study will examine the adequacy of existing transit services in the area and how they can better serve residents.

AMTRAK passenger rail service was discontinued in May 1997. Reduction of non-profitable AMTRAK routes is ongoing throughout the country. Resumption of passenger rail service is unlikely in the short-term but The Dalles should support efforts to bring service back to the Columbia Corridor.

The existing public transportation services already meet the requirements of the *Oregon Transportation Plan*. Connections are possible and convenient between all the services provided, and the service frequency meets the required daily trip to a larger city specified for communities the size of The Dalles. However, growth should be guided so that it does not prevent transit development in the future.

No costs have been estimated for this modal plan. Grants may be available to conduct feasibility studies. State and federal funding may be available to purchase equipment.

### *Rail Service*

Union Pacific Railroad provides freight service. No plans are known to alter these services to The Dalles. Efforts should be made by the city to retain or expand its rail service to foster growth in the industrial area.

### *Air Service*

The Dalles Municipal Airport is located across the Columbia River in Klickitat County, Washington, outside the city's UGB. There are no commercial flights to the airport at this time; however, efforts to solicit air service are ongoing.

Because The Dalles Municipal Airport is located across the river, land use impacts by growth of The Dalles will not affect operations.

### *Water Transportation Service*

Water transportation service to The Dalles is almost exclusively by towboat and barge, although a marina is available for private use. Barge loading and unloading facilities are available, but container transport is not possible. The barges carry mainly one of two products: wood chips or grain. Wood chips require service to Longview, Washington, while grain barges generally travel to Portland, Oregon.

### *Pipeline Service*

The Dalles is served by a major natural gas distribution line operated by Northwest Natural Gas. This distribution line extends southward from the main transmission line, which runs along the Washington side of the Columbia River Gorge. The transmission line is operated by Northwest Pipeline Corporation.

# CHAPTER 7: FUNDING OPTIONS AND FINANCIAL PLAN

The TPR requires TSPs to evaluate the funding environment for recommended improvements. This evaluation must include a listing of all recommended improvements, estimated costs to implement those improvements, a review of potential funding mechanisms, and an analysis of existing sources' ability to fund proposed transportation improvement projects. The Dalles TSP identifies about $19 million in improvements recommended over the next 20 years (1995-2015). This section of the TSP provides an overview of The Dalles' revenue outlook and a review of some funding and financing options that may be available to the City of The Dalles.

Pressures from increasing growth throughout much of Oregon have created an environment of estimated improvements that remain unfunded. The Dalles will need to work with Wasco County and ODOT to finance new transportation projects over the 20-year planning horizon (1995-2015). The actual timing of these projects will be determined by the rate of population and employment growth actually experienced by the community. This TSP assumes an annual growth rate of 1.1 percent. If population growth exceeds this rate, the improvements may need to be accelerated. Slower than expected growth will relax the improvement schedule.

## HISTORICAL STREET IMPROVEMENT FUNDING SOURCES

In Oregon, state, county, and city jurisdictions work together to coordinate transportation improvements. In addition to this overlapping jurisdiction of the road network, transportation improvements are funded through a combination of federal, state, county, and city sources. Table 13 shows the distribution of road revenues for the different levels of government within the state by jurisdiction level. Although these numbers were collected and tallied in 1991, ODOT estimates that these figures accurately present the current revenue structure for transportation-related needs.

**TABLE 13**
**SOURCES OF ROAD REVENUES BY JURISDICTION LEVEL**

| | Jurisdiction Level | | | Statewide |
|---|---|---|---|---|
| Revenue Source | State | County | City | Total |
| State Road Trust | 58% | 38% | 41% | 48% |
| Local | 0% | 22% | 55% | 17% |
| Federal Road | 34% | 40% | 4% | 30% |
| Other | 9% | 0% | 0% | 4% |

Source: ODOT 1993 Oregon Road Finance Study.

At the state level, nearly half (48 percent in Fiscal Year 1991) of all road-related revenues are attributable to the State Highway Fund, whose sources of revenue include fuel taxes, weight-mile taxes on trucks, and vehicle registration fees. As shown in Table 8, the state road trust is a considerable source of revenue for all levels of government. Federal sources (generally the federal highway trust account and federal forest revenues) comprise another 30 percent of all road-related revenue. The remaining sources of road-related revenues are generated locally, including property taxes, LIDs, bonds, traffic impact fees, road user taxes, general fund transfers, receipts from other local governments, and other sources.

As a state, Oregon generates 94 percent of its highway revenues from user fees, compared to an average of 78 percent among all states. This fee system, including fuel taxes, weight distance charges,

and registration fees, is regarded as equitable because it places the greatest financial burden upon those who create the greatest need for road maintenance and improvements. Unlike many states that have indexed user fees to inflation, Oregon has static road-revenue sources. For example, rather than assessing fuel taxes as a ***percentage*** of price per gallon, Oregon's fuel tax is a fixed amount (currently 24 cents) per gallon.

**Transportation Funding in Wasco County**

Transportation revenues and expenditures for Wasco County are shown in Table 14 and Table 15. These tables present receipts and disbursements for road and street purposes as reported by counties to ODOT and the League of Oregon Cities.

**TABLE 14**
**WASCO COUNTY TRANSPORTATION-RELATED REVENUES**

| | 1993-94 | 1994-95 | 1995-96 |
|---|---|---|---|
| Land Sales/Rentals | $37,100 | $37,920 | $40,880 |
| Interest | $130,184 | $144,023 | $118,022 |
| State Highway Fund | $1,049,788 | $1,072,643 | $1,099,367 |
| National Forest Reserve Revenue | $1,578,316 | $1,581,364 | $1,541,291 |
| BLM Land Sales | $10,651 | $4,036 | $3,119 |
| Mineral Leases | $178 | | $134 |
| Federal Flood Control | $188 | $189 | $204 |
| Other Local Sources | $63,077 | $281,251 | $109,517 |
| Other State Sources | | $180,559 | $26,393 |
| Federal Emergency Funds | | | $1,242,024 |
| Total Revenues | $2,869,482 | $3,301,985 | $4,180,951 |

Source: Wasco County.

Revenues have risen from less than $3 million to over $4 million from 1993-94 to 1995-96. Although over $1.2 million of this increase is directly attributable to federal funds provided for flood relief in the 1996 fiscal year, the county incurred over $3.1 million in flood-related expenditures during the year. Resources were directed to flood-related spending at the expense of county capital projects (declining from $1.7 million in 1994/1995 to $888,000 in 1995-96) and regular operations and maintenance (decreasing from $1.7 million in 1994/1995 to $1.4 million in 1995-96).

**TABLE 15**
**WASCO COUNTY TRANSPORTATION-RELATED EXPENSES**

| | 1993-94 | 1994-95 | 1995-96 |
|---|---|---|---|
| Capital Projects | $1,071,822 | $1,713,401 | $887,550 |
| Operations and Maintenance | $1,417,063 | $1,736,491 | $1,413,237 |
| Admin. and General Engineering | $116,069 | $109,147 | $176,186 |
| Federal Emergency Exp. (FEMA) | | | $3,114,208 |
| Total Expenditures | $2,604,954 | $3,559,039 | $5,591,181 |

Source: Wasco County.

**Historical Revenues and Expenditures in the City of The Dalles**

The City of The Dalles accounts for its Street and Storm Funds together. Sources of revenues for the Street and Storm Funds include the following:

- The local gas tax
- The State Federal Assistance Urban (FAU) Exchange Fund
- The State Motor Vehicle Fund

Other revenue from interdepartmental sources, interest on the fund balances, and the sale of fixed assets

A summary of this budget's activity is shown in Table 16 and Table 17. The state motor vehicle tax is the most significant source of revenue accounting for over approximately one-half of the budget's income (over $500,000 annually). The local gas tax also provides a significant source of stable income to the city, providing approximately $300,000 annually (or over 30 percent of the fund's revenue). Flood-related needs also had an impact on the city's revenue stream. The "Miscellaneous Revenue" line includes Federal Emergency Management Act (FEMA) moneys distributed to The Dalles in the 1997 Fiscal Year.

**TABLE 16**
**THE DALLES STREET AND STORM BUDGET REVENUES**

| | 1994-95 | 1995-96 | 1996-97 | 1997-98 | 1998-99 |
|---|---|---|---|---|---|
| Working Capital | $646,492 | $593,500 | $520,236 | $251,997 | $92,128 |
| Local Gas Tax | $318,791 | $320,000 | $325,000 | $310,000 | $310,000 |
| ADA Ramps Grant | $- | $- | $- | $- | |
| State FAU Exchange Fund | $43,313 | $- | $59,310 | $114,310 | $55,000 |
| State Highway Fund | $516,588 | $519,456 | $516,421 | $510,000 | $510,000 |
| Misc. Sales & Service | $27,382 | $2,500 | $500 | $500 | $500 |
| Interdepartmental Revenue | $26,352 | $28,054 | $95,540 | $19,840 | $19,840 |
| Interest Income | $31,681 | $30,000 | $16,000 | $20,000 | $16,000 |
| Other Misc. Revenue | $1,956 | $- | $170,195 | $72,240 | $72,240 |
| Sale of Fixed Assets | $680 | $- | $- | $- | $0 |
| Transfers | $- | $- | $- | $- | $0 |
| **Total Revenues** | **$966,743** | **$900,010** | **$1,182,966** | **$1,046,890** | **$983,580** |

Source: The City of The Dalles.

Increased spending for streets has been partly the cause of increased expenditures overall, leading to a drawdown of the fund's working capital balance. Spending on street materials and services has increased 60 percent in two years (from approximately $250,000 in the 1994-95 year to an estimated $410,000 in the 1996-97 year). Capital outlay related to streets tripled (from $93,000 in 1994-95 to nearly $300,000 in 1996-97). In order to fund increasing expenditures related to capital projects and street construction and maintenance, the City of The Dalles has been using its working capital balance, drawing it down from nearly $650,000 in 1994-95 to an estimated $92,000 in 1998-99. In addition, the city has continued to transfer funds from the street and storm budget to the general fund, the unemployment reserve fund, and the Public Works reserve fund.

**TABLE 17**
**THE DALLES STREET AND STORM BUDGET EXPENDITURES**

| | 1994-95 | 1995-96 | 1996-97 | 1997-98 | 1998-99 |
|---|---|---|---|---|---|
| Storm Sewer Personnel | $143,956 | $158,735 | $158,857 | $139,314 | $143,069 |
| Materials and Services | $44,163 | $72,952 | $72,183 | $50,600 | $51,827 |
| Capital Outlay | $26,737 | $44,665 | $3,074 | $3,457 | $3,650 |
| Street Personnel | $316,569 | $306,704 | $305,978 | $336,242 | $345,318 |
| Street Materials & Services | $256,695 | $378,702 | $411,060 | $385,776 | $353,660 |
| Street Capital Outlay | $93,207 | $277,438 | $292,679 | $252,619 | $132,240 |
| Transfer to General Fund | $107,532 | $75,698 | $46,835 | $29,951 | $29,951 |
| Transfer to Unempl. Reserve | $2,800 | $2,800 | $2,800 | $2,800 | $2,800 |
| Transfer to PW Reserve | $50,000 | $20,000 | $258,800 | | |
| Contingency | $113,231 | $152,169 | $114,427 | $98,128 | $19,193 |
| **Total Expenditures** | **$1,154,890** | **$1,489,863** | **$1,666,693** | **$1,298,887** | **$1,081,708** |

Source: City of The Dalles.

**Transportation Revenue Outlook in The Dalles**

ODOT's policy section recommends certain assumptions in the preparation of transportation plans. In its *Financial Assumptions* document prepared in March 1995, ODOT projected the revenue of the State Highway Fund through year 2018. The estimates are based on the following assumptions:

- Fuel tax (and weight-mile fee) increases of 1 cent per gallon per year, with an additional 1 cent per gallon every fourth year.
- TPR goals are met.
- Inflation occurs at an average annual rate of 3.7 percent (as assumed by ODOT).

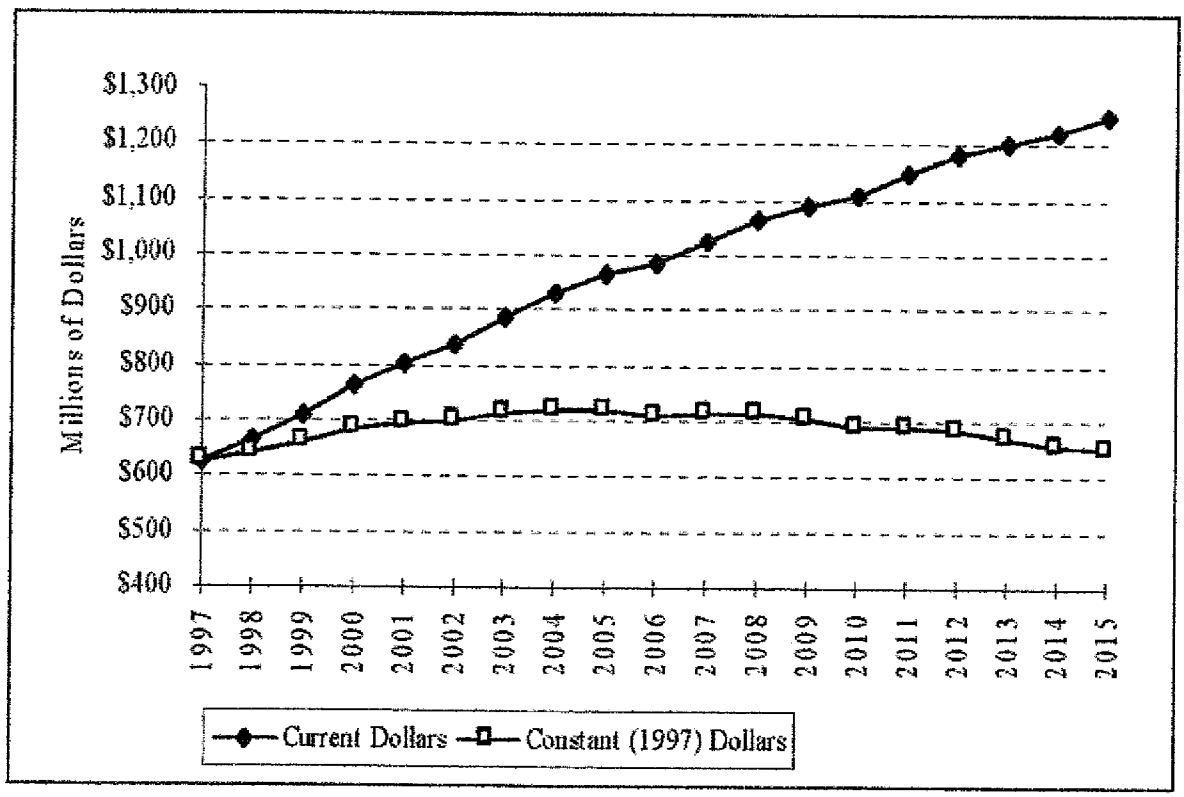
***Figure 17*** shows the forecast in both current-dollar and inflation-deflated constant (1997) dollars. As highlighted by the constant-dollar data, the highway fund is expected to grow faster than inflation early in the planning horizon, with growth slowing to a rate somewhat less than inflation around year 2004, continuing a slight decline through the remainder of the planning horizon.

As the State Highway Fund and the Local Gas Tax are expected to remain significant sources of funding for The Dalles, the city is highly susceptible to changes in the State Highway Fund. From 1994-1998, the State Highway Fund supplied approximately one-half of The Dalles' total revenue, while the local gas tax provided nearly one-third of all revenues. Assuming that the proportion of revenues provided to The Dalles by the State Highway Fund remains constant, estimated revenue from this source for selected years is shown in Table 18.

By expressing this revenue in constant (1997) dollars, the decrease in funding in the middle of the planning horizon is evident: The resources from the State Highway Fund for the City of The Dalles is expected to increase 15 percent from its current level of just over $516,000 to $593,000 by year 2004, declining again to approximately $534,000 by year 2015.

In order to analyze the city's ability to fund the recommended improvements from current sources, DEA applied the following assumptions:

ODOT State Highway Fund assumptions as outlined above.




Source: ODOT Financial Assumptions.

**FIGURE 17**

STATE HIGHWAY FUND
(MILLIONS OF DOLLARS)

The State Highway Fund will continue to account for approximately one-half of the city's Street and Storm Fund.
The local gas tax and other local sources continue to provide stable revenue streams.
The proportion of actual revenues (exclusive of working capital) available for capital expenditures for street improvements will decrease to the 1998-99 level of approximately 13.4 percent.

**TABLE 18**
**ESTIMATED REVENUE FROM THE STATE HIGHWAY FUND**

| Year | The Dalles Share | CAARG (1) |
|---|---|---|
| 1995 (2) | $516,600 | |
| 2000 (3) | $563,627 | 3.99% |
| 2005 (3) | $592,248 | 1.00% |
| 2010 (3) | $568,900 | -0.80% |
| 2015 (3) | $533,761 | -1.27% |

Notes:
(1) Compound Average Annual Rate of Growth
(2) 1995 expressed in current dollars.
(3) Future years expressed in constant (1997) dollars

Given current resources and the assumptions outlined above, the City of The Dalles is expected to be able to fund capital expenditures totaling approximately $2.7 million (constant 1997 dollars) from currently-available resources in the 1998-2015 time period. Applying the above assumptions to the estimated level of State Highway Fund resources, estimated resources for capital expenditures in the City of The Dalles are shown in Table 19.

**TABLE 19**
**CITY OF THE DALLES RESOURCES AVAILABLE FROM CURRENT SOURCES FOR CAPITAL OUTLAY**

| Period | Potential Funding (Existing Sources) |
|---|---|
| 1998-2000 | $423,963 |
| 2001-2005 | $756,914 |
| 2006-2010 | $752,897 |
| 2011-2015 | $714,348 |
| **Total** | **$2,648,122** |

Source: City of The Dalles.

## REVENUE SOURCES

In order to finance the full range of recommended transportation system improvements listed in this TSP, it will be important to consider a range of funding sources. Although the property tax has traditionally served as the primary revenue source for local governments, property tax revenue goes into general fund operations, and is typically not available for street improvements or maintenance. Despite this limitation, the use of alternative revenue funding has been a trend throughout Oregon as the full implementation of Measure 5 has significantly reduced property tax revenues. This trend is expected to continue with the recent passage of Measure 47. The alternative revenue sources described in this section may not all be appropriate in The Dalles; however, this overview is being provided to illustrate the range of options currently available to finance transportation improvements during the next 20 years.

### Property Taxes

Property taxes have historically been the primary revenue source for local governments. However, property tax revenue goes into general fund operations, and is not typically available for street improvements or maintenance. The dependence of local governments on this revenue source is due, in large part, to the fact that property taxes are easy to implement and enforce. Property taxes are based on real property (i.e., land and buildings) which have a predictable value and appreciation to base taxes upon. This is as opposed to income or sales taxes that can fluctuate with economic trends or unforeseen events.

Property taxes can be levied through: 1) tax base levies, 2) serial levies, and 3) bond levies. The most common method uses tax base levies that do not expire and are allowed to increase by six percent per annum. Serial levies are limited by amount and time they can be imposed. Bond levies are for specific projects and are limited by time based on the debt load of the local government or the project.

The historic dependence on property taxes is changing with the passage of Ballot Measure 5 in the early 1990s. Ballot Measure 5 limits the property tax rate for purposes other than payment of certain voter-approved general obligation indebtedness. Under full implementation, the tax rate for all local taxing authorities is limited to $15 per $1,000 of assessed valuation. As a group, all non-school taxing authorities are limited to $10 per $1,000 of assessed valuation. All tax base, serial, and special levies are subject to the tax rate limitation. Ballot Measure 5 requires that all non-school taxing districts' property tax rate be reduced if together they exceed $10 per $1,000 per assessed valuation by the county. If the non-debt tax rate exceeds the constitutional limit of $10 per $1,000 of assessed valuation, then all of the taxing districts' tax rates are reduced on a proportional basis. The proportional reduction in the tax rate is commonly referred to as compression of the tax rate.

Measure 47, an initiative petition, was passed by Oregon voters in November 1996. It is a constitutional amendment that reduces and limits property taxes and limits local revenues and replacement fees. The measure limits 1997-98 property taxes to the lesser of the 1995-96 tax minus ten percent, or the 1994-95 tax. It limits future annual property tax increase to three percent, with exceptions. Local governments' lost revenue may be replaced only with state income tax, unless voters approve replacement fees or charges. Tax levy approvals in certain elections require 50 percent voter participation.

The State Legislature created Measure 50, which retains the tax relief of Measure 47 but clarifies some legal issues. This revised tax measure was approved by voters in May 1997.

The League of Oregon Cities (LOC) estimated that direct revenue losses to local governments, including school districts, will total $467 million in fiscal year 1998, $553 million in 1999, and increasing thereafter. The actual revenue losses to local governments will depend on actions of the Oregon Legislature. LOC also estimates that the state will have revenue gains of $23 million in 1998, $27 million in 1999, and increasing thereafter because of increased personal and corporate tax receipts due to lower property tax deduction.

Measure 50 adds another layer of restrictions to those which govern the adoption of tax bases and levies outside the tax base, as well as Measure 5's tax rate limits for schools and non-schools and tax rate exceptions for voter approved debt. Each new levy and the imposition of a property tax must be tested against a longer series of criteria before the collectible tax amount on a parcel of property can be determined.

**System Development Charges**

System Development Charges (SDCs) are becoming increasingly popular in funding public works infrastructure needed for new local development. Generally, the objective of systems development charges is to allocate portions of the costs associated with capital improvements upon the developments that increase demand on transportation, sewer or other infrastructure systems.

Local governments have the legal authority to charge property owners and/or developers fees for improving the local public works infrastructure based on projected demand resulting from their development. The charges are most often targeted towards improving community water, sewer, or transportation systems. Cities and counties must have specific infrastructure plans in place that comply with State guidelines in order to collect SDCs.

The City of The Dalles could implement SDCs for their transportation system. The fee is collected when new building permits are issued. The city would calculate the fee based on trip generation of the proposed development. Residential calculations would be based on the assumption that a typical household will generate a given number of vehicle trips per day. Nonresidential use calculations are based on employee ratios for the type of business or industrial uses. The SDC revenues would help fund the construction of transportation facilities necessitated by new development.

**State Highway Fund**

Gas tax revenues received from the State of Oregon are used by all counties and cities to fund street and road construction and maintenance. In Oregon, the state collects gas taxes, vehicle registration fees, overweight/overheight fines, and weight/mile taxes and returns a portion of the revenues to cities and counties through an allocation formula. The revenue share to cities is divided among all incorporated cities based on population. Like other Oregon cities, the City of The Dalles uses its State Gas Tax allocation to fund street construction and maintenance.

**Local Gas Taxes**

The Oregon Constitution permits counties and incorporated cities to levy additional local gas taxes with the stipulation that the moneys generated from the taxes will be dedicated to street-related improvements and maintenance within the jurisdiction. At present, The Dalles is one of only a few local governments (others include the City of Woodburn and Multnomah and Washington Counties) which levy a local gas tax. The City of The Dalles may consider raising its local gas tax as a way to generate additional street improvement funds. However, with relatively few jurisdictions exercising this tax, an increase in the cost differential between gas purchased in The Dalles and gas purchased in

neighboring communities may encourage drivers to seek less expensive fuel elsewhere. Any action will need to be supported by careful analysis to minimize the unintended consequences of such an action.

**Vehicle Registration Fees**

The Oregon Vehicle Registration Fee is allocated to the state, counties and cities for road funding. Oregon counties are granted authority to impose a vehicle registration fee covering the entire county. The Oregon Revised Statutes would allow Wasco County to impose a biannual registration fee for all passenger cars licensed within the county. Although both counties and special districts have this legal authority, vehicle registration fees have not been imposed by local jurisdictions. In order for a local vehicle registration fee program to be viable in Wasco County, all the incorporated cities and the county would need to formulate an agreement which would detail how the fees would be spent on future street construction and maintenance.

**Local Improvement Districts**

The Oregon Revised Statutes allow local governments to form Local Improvement Districts (LIDs) to construct public improvements. LIDs are most often used by cities to construct localized projects such as streets, sidewalks, or bikeways. The statutes allow formation of a district by either the city government or property owners. Cities that use LIDs are required to have a local LID ordinance that provides a process for district formation and payback provisions. Through the LID process, the costs of local improvements are generally spread out among a group of property owners within a specified area. The cost can be allocated based on property frontage or other methods such as traffic trip generation. The types of allocation methods are only limited by the Local Improvement Ordinance. The cost of LID participation is considered an assessment against the property which is a lien equivalent to a tax lien. Individual property owners typically have the option of paying the assessment in cash or applying for assessment financing through the city. Since the passage of Ballot Measure 5, cities have most often funded local improvement districts through the sale of special assessment bonds.

**Other User Fees**

There may be other user fees that the City of The Dalles can levy on residents and businesses based on specific geographic areas or specialized needs. For example, legislation relating to systems development charges may allow certain SDCs for businesses if the expenditures can be directly linked to the businesses charged. More analysis will be required to ensure that the rational nexus criteria would be satisfied.

**Hotel/Motel Tax**

In reviewing alternative sources of funding for transportation improvements, the Hotel/Motel tax has been suggested as a potential funding source. Given the demands of this funding mechanism and the proposed uses of these funds, further analysis will be required for the potential employment of the Hotel/Motel tax as a funding source for transportation improvements.

**Urban Renewal Plan**

The City of the Dalles' Urban Renewal Plan was developed to redevelop and revitalize blighted parts of the city, in conformance with current development standards. With funds available to it, the Urban Renewal Agency is entitled to fund various infrastructure projects, including projects related to the wastewater system, storm sewer system, water supply and distribution system, street system, and

general landscaping, and pedestrian amenities. Road projects currently include projects related to connectivity, signalization, and road widening. This project list could be expanded to include additional projects identified in this Transportation System Plan that also address the key objectives of the Urban Renewal Plan.

**Grants and Loans**

The majority of the grant and loan programs available today are geared towards economic development and not specifically for construction of new streets. Typically, grant programs target areas that lack basic public works infrastructure needed to support new or expanded industrial businesses. Because of the popularity of some grant programs such as the Oregon Special Public Works Fund, the emphasis has shifted to more of a loan program. Many programs require a match from the local jurisdiction as a condition of approval. Because grant programs are subject to change, they should not be considered a secure long-term funding source for the City of The Dalles.

These programs include the Immediate Opportunity Grant and the Oregon Special Public Works Fund program that are described below.

***Immediate Opportunity Grant Program***

The Oregon Economic Development Department (OEDD) and ODOT collaborate to administer a grant program designed to assist local and regional economic development efforts. The program is funded to a level of approximately $5,000,000 per year through state gas tax revenues. The following are primary factors in determining eligible projects:

- Improvement of public roads.
- Inclusion of an economic development-related project of regional significance.
- Creation of primary employment.
- Ability to provide local funds to match grant (lesser matches may also be considered).

The maximum amount of any grant under the program is $500,000. Local governments which have received grants under the program include Washington County, Multnomah County, Douglas County, City of Hermiston, Port of St. Helens, and the City of Newport.

***Oregon Special Public Works Fund***

The Special Public Works Fund (SPWF) program was created by the 1995 State Legislature as one of the several programs for the distribution of funds from the Oregon Lottery to economic development projects in communities throughout the state. The program provides grant and loan assistance to eligible municipalities primarily for the construction of public infrastructure that support commercial and industrial development that result in permanent job creation or job retention. To be awarded funds, each infrastructure project must support businesses wishing to locate, expand, or remain in Oregon. SPWF awards can be used for improvement, expansion, and new construction of public sewage treatment plants, water supply works, public roads, and transportation facilities.

While SPWF program assistance is provided in the form of both loans and grants, the program emphasizes loans in order to assure that funds will return to the state over time for reinvestment in local economic development infrastructure projects. The maximum loan amount per project is $11,000,000 and the term of the loan cannot exceed the useful life of the project or 25 years, whichever is less. Interest rates for loans funded with the State of Oregon Revenue Bonds are based on the rate the state may borrow through the Oregon Economic Development Department Bond Bank. The department

may also make loans directly from the SPWF and the term and rate on direct loans can be structured to meet project needs. The maximum grant per project is $500,000, but may not exceed 85 percent of the total project cost.

Jurisdictions that have received SPWF funding for projects that include some type of transportation-related improvement include the Cities of Baker City, Bend, Cornelius, Forest Grove, Madras, Portland, Redmond, Reedsport, Toledo, Wilsonville, Woodburn, and Douglas County.

**ODOT Funding Options**

The State of Oregon provides funding for all highway-related transportation projects through the Statewide Transportation Improvement Program (STIP) administered by the Oregon Department of Transportation. The STIP outlines the schedule for ODOT projects throughout the state. The STIP, which identifies transportation for a three-year funding cycle, is updated on an annual basis. Starting with the 1998 budget year, ODOT will then identify projects for a four-year funding cycle. In developing this funding program, ODOT must verify that the identified projects comply with the OTP, ODOT modal plans, corridor plans, local comprehensive plans, and ISTEA planning requirements. The STIP must fulfill ISTEA planning requirements for a staged, multi-year, statewide, intermodal program of transportation projects. Specific transportation projects are prioritized based on a review of the ISTEA planning requirements and the different state plans. ODOT consults with local jurisdictions before highway related projects are added to the STIP.

The highway-related projects identified in The Dalles TSP will be considered for future inclusion on the STIP. The timing of including specific projects will be determined by ODOT based on an analysis of all the project needs within Region 4. The TSP will provide ODOT with a prioritized project list for The Dalles area for the next 20 years. The City of The Dalles, Wasco County, and ODOT will need to communicate on an annual basis to review the status of the STIP and the prioritization of individual projects within the project area. Ongoing communication will be important for the city, county, and ODOT to coordinate the construction of both local and state transportation projects.

ODOT also has the option of making some highway improvements as part of their ongoing highway maintenance program. Types of road construction projects that can be included within the ODOT maintenance programs are intersection realignments, additional turn lanes, and striping for bike lanes. Maintenance related construction projects are usually done by ODOT field crews using state equipment. The maintenance crews do not have the staff or specialized road equipment needed for large construction projects.

An ODOT funding technique that will likely have future application to The Dalles TSP is the use of state and federal transportation dollars for off-system improvements. Until the passage and implementation of ISTEA, state and federal funds were limited to transportation improvements within highway corridors. ODOT now has the authority and ability to fund transportation projects that are located outside the boundaries of the highway corridors. The criteria for determining what off-system improvements can be funded has not yet been clearly established. It is expected that this new funding technique will be used to finance local system improvements that reduce traffic on state highways or reduce the number of access points for future development along state highways.

**FINANCING TOOLS**

In addition to funding options, the recommended improvements listed in this plan may benefit from a variety of financing options. Although often used interchangeably, the words financing and funding are not the same. Funding is the actual generation of revenue by which a jurisdiction pays for

improvements; some examples include the sources discussed above: property taxes, SDCs, fuel taxes, vehicle registration fees, LIDs, and various grant programs. In contrast, financing refers to the collecting of funds through debt obligations.

There is a number of debt financing options available to the City of The Dalles. The use of debt to finance capital improvements must be balanced with the ability to make future debt service payments and to deal with the impact on its overall debt capacity and underlying credit rating. Again, debt financing should be viewed not as a source of funding, but as a time shifting of funds. The use of debt to finance these transportation-system improvements is appropriate since the benefits from the transportation improvements will extend over the period of years. If such improvements were to be tax financed immediately, a large short-term increase in the tax rate would be required. By utilizing debt financing, local governments are essentially spreading the burden of the costs of these improvements to more of the people who are likely to benefit from the improvements and lowering immediate payments.

**General Obligation Bonds**

General obligation bonds (GO) are voter-approved bond issues that represent the least expensive borrowing mechanism available to municipalities. GO bonds are typically supported by a separate property tax levy specifically approved for the purposes of retiring debt. The levy does not terminate until all debt is paid off. The property tax levy is distributed equally throughout the taxing jurisdiction according to assessed value of property. General obligation debts typically used to make public improvement projects that will benefit the entire community.

State statutes require that the general obligation indebtedness of a city not exceed three percent of the real market value of all taxable property in the city. Since general obligation bonds would be issued subsequent to voter approval, they would not be restricted to the limitations set forth in Ballot Measures 5, 47, and 50. Although new bonds must be specifically voter approved, Measure 47 and 50 provisions are not applicable to outstanding bonds, unissued voter-approved bonds, or refunding bonds.

**Limited Tax Bonds**

Limited tax general obligation bonds (LTGOs) are similar to general obligation bonds in that they represent an obligation of the municipality. However, a municipality's obligation is limited to its current revenue sources and is not secured by the public entity's ability to raise taxes. As a result, LTGOs do not require voter approval. However, since the LTGOs are not secured by the full taxing power of the issuer, the limited tax bond represents a higher borrowing cost than general obligation bonds. The municipality must pledge to levy the maximum amount under constitutional and statutory limits, but not the unlimited taxing authority pledged with GO bonds. Because LTGOs are not voter approved, they are subject to the limitations of Ballot Measures 5, 47, and 50.

**Bancroft Bonds**

Under Oregon statute, municipalities are allowed to issue Bancroft bonds that pledge the city's full faith and credit to assessment bonds. As a result, the bonds become general obligations of the city but are paid with assessments. Historically, these bonds provided a city with the ability to pledge its full faith and credit in order to obtain a lower borrowing cost without requiring voter approval. However, since Bancroft bonds are not voter approved, taxes levied to pay debt service on them are subject to the limitations of Ballot Measures 5, 47, and 50. As a result, since 1991, Bancroft bonds have not been used by municipalities who were required to compress their tax rates.

## FUNDING REQUIREMENTS

The Dalles TSP identifies a range of transportation improvements recommended during the next 20 years to address problems and expand the transportation system to support a growing population and economy. The improvements include approximately $11 million in state-funded projects, $2.9 million in county-funded projects, and nearly $3.5 million in municipally-funded improvements. The total cost of all projects is estimated at $19.1 million. Three priority levels have been identified:

Short-Range: prior to year 2010
Intermediate-Range: between year 2011 and year 2015
Long-Range: after year 2015

Estimated costs by financial leader and priority level are shown in Table 20.

**TABLE 20**
**TRANSPORTATION IMPROVEMENTS**
**FUNDING REQUIREMENT SUMMARY**

| Project Phase | State | County | The Dalles | Other | Total |
|---|---|---|---|---|---|
| Short-Range | $11,008,000 | $521,000 | $2000 | $1,490,000 | $13,021,000 |
| Intermediate-Range | | $2,015,000 | $250,000 | | $2,265,000 |
| Long-Range | | $412,000 | $3,277,000 | $165,000 | $3,854,000 |
| **Total** | $11,008,000 | $2,948,000 | $3,529,000 | $1,655,000 | **$19,140,000** |

### Oregon Department of Transportation Projects

ODOT will be the lead jurisdiction and primary source of funding for future transportation improvements that impact the operation of state highways. These three projects will cost a total of approximately $11 million in 1997 dollars. All three the projects have been classified as short-range priorities. Individual projects and their cost estimates are shown in Table 21.

**TABLE 21**
**STATE TRANSPORTATION IMPROVEMENTS**
**FUNDING REQUIREMENTS AND PRIORITY LEVEL**

| Project | Estimated Project Cost |
|---|---|
| Short-Range | |
| Chenowith Interchange | $10,748,000 |
| Redesign Intersection of US 30 and Brewery Grade | $250,000 |
| Redesign Intersection of US 30 and Lower Eight Mile Road | $10,000 |
| Subtotal | $11,008,000 |
| **TOTAL** | **$11,008,000** |

### County Projects

This TSP identifies six projects with Wasco County as the lead financial partner. Three of the six are short-range projects with grant funding secured, two are estimated to be built in the intermediate-range, and the final project has been classified as a long-range project The six projects, their priority classification, and cost estimates are shown in Table 22.

**TABLE 22**
**COUNTY TRANSPORTATION IMPROVEMENTS**
**FUNDING REQUIREMENTS AND PRIORITY LEVEL**

| Project | Estimated Project Cost |
|---|---|
| **Short-Range (2005-2010)** | |
| Widen Chenowith Loop Road | $288,000 |
| Re-stripe Hostetler Street | $156,000 |
| Widen Snipes Street | $77,000 |
| Subtotal | $521,000 |
| **Intermediate-Range (2011-2015)** | |
| Widen Fremont Street/Redesign 197 Intersection | $715,000 |
| Redesign US 197/Fremont Street/Columbia View Drive Intersection | $1,300,000 |
| Subtotal | $2,015,000 |
| **Long-Range (2016+)** | |
| Widen River Road Bridge | $412,000 |
| Subtotal | $412,000 |
| **TOTAL** | **$2,948000** |

### Local Projects

This TSP identifies five transportation improvement projects with The Dalles as the lead jurisdiction. One of these five projects has been categorized as a short-range priority and should be undertaken within three years. The remaining four projects are long-range priorities and are estimated to cost nearly $3.3 million. The estimated costs of the projects have been categorized by priority level and summarized in Table 23.

**TABLE 23**
**LOCAL TRANSPORTATION IMPROVEMENTS**
**FUNDING REQUIREMENTS AND PRIORITY LEVEL**

| Project | Estimated Project Cost |
|---|---|
| **Short-Range (2005-2010)** | |
| Re-stripe Dry Hollow Road for bike lanes | $2,000 |
| Subtotal | $2,000 |
| **Intermediate-Range (2011-2015)** | |
| Add traffic signal at West Sixth/Terminal Street | $125,000 |
| Add traffic signal at West Second/Terminal Street | $125,000 |
| Subtotal | $250,000 |
| **Long-Range (2016+)** | |
| Widen Tenth Street, Washington to Lewis | $1,188,000 |
| Construct Nineteenth Street | $1,220,000 |
| Widen Thompson Street | $396,000 |
| Widen Old Dufur Road | $473,000 |
| Subtotal | $3,277,000 |
| **TOTAL** | **$3,529,000** |

Based on the current revenue sources for The Dalles and the improvements recommended in this TSP, The Dalles faces a funding deficit for the long-range priority classification. The funding deficit totals $881,000 over the 20-year planning horizon (1995-2015). A summary of the funding situation based on cost estimates for recommended projects and estimated resources is shown in Table 24.

**TABLE 24**
**ESTIMATED FUNDING DEFICIT**
**RECOMMENDED TRANSPORTATION SYSTEM IMPROVEMENTS**

| Project Phase | Local Funding Requirements | Potential Revenue (Existing Sources) | Remaining Surplus (Deficit) | Cumulative Funding Surplus (Deficit) |
|---|---|---|---|---|
| Short-Range | $2,000 | $424,000 | $422,000 | $422,000 |
| Intermediate-Range | $250,000 | $757,000 | $507,000 | $929,000 |
| Long-Range | $3,277,000 | $1,467,000 | ($1,810,000) | ($881,000) |

Many local governments in Oregon are seeking alternative revenue sources to fund street improvements and operations. Two potential sources of local revenue for The Dalles include a proposed Utility Access Fee and the adoption of a Systems Development Charge (SDC) for transportation projects.

*Proposed Utility Access Fee*

In addition to currently-available resources, a proposed utility access fee is expected to generate annual revenues of $72,240. If approved and successful in generating steady revenue streams, this proposed fee could generate an additional $1.2 million during the 1998 to 2015 planning horizon, as shown in Table 25.

**TABLE 25**
**POTENTIAL REVENUE OF THE PROPOSED UTILITY ACCESS FEE**

| Project Phase | Potential Revenue (Proposed Access Fee) |
|---|---|
| Short-Range | $144,480 |
| Intermediate-Range | $361,200 |
| Long-Range | $722,400 |
| **Total** | **$1,228,080** |

Applying this additional revenue, generated by the proposed utility access fee, to the funding deficit, the City of The Dalles can begin to "close the gap" between the funding requirements of the recommended projects in this TSP and the funding resources. The funding outlook for each priority level is shown in Table 26.

**TABLE 26**
**FUNDING OUTLOOK**
**APPLYING REVENUE FROM THE PROPOSED UTILITY ACCESS FEE**

| Project Phase | Funding Surplus (Deficit) | Potential Revenue (Proposed Access Fee) | Remaining Funding Surplus (Deficit) | Cumulative Funding Surplus (Deficit) |
|---|---|---|---|---|
| Short-Range | $422,000 | $145,000 | $567,000 | $567,000 |
| Intermediate-Range | $507,000 | $361,000 | $868,000 | $1,435,000 |
| Long-Range | ($1,810,000) | $722,000 | ($1,088,000) | $347,000 |

As shown in Table 26, the cumulative funding deficit, ($881,000 over the planning horizon), could be met with the successful implementation of the proposed utility access fee and the commitment of these funds to the capital improvements recommended in this TSP.

*Implementation of Systems Development Charges*

Another option for the City of The Dalles is implementation of a Transportation Systems Development Charge. Currently, very few cities along the I-84 corridor utilize street SDCs; however, Hood River has sewer, water, and park SDCs, and several cities (including Hermiston, Ontario, and La Grande) are seeking to implement sewer and water SDCs.

By statute, SDC fees must be related to improvements serving new development. In other words, there must be a documented relationship between the need for capital outlays and the development being charged. In the case of The Dalles' improvements, the projects often have multiple justifications, several of which are linked to expanding capacity. For example, **access** improvements include the

provision of access to undeveloped parcels of land, **economic** development improvements serve primarily to attract or expand employment uses, and **operations** improvements are often provided as a result of increased traffic volumes. Further analysis and documentation will be required to implement SDCs; this analysis is intended to generate discussion by providing an illustration of SDCs as a potential funding sources

Over the 20-year planning horizon (1995-2015) for this TSP, there is a total of $3.5 million in locally-funded improvements. By using only locally-funded projects, county projects which have already secured funding, more regional state-funded projects, and projects not related to capacity are removed from the pool of projects driven by new development.

Based on household and employment projections and standard number of trips generated by use, there will be an estimated increase of 41,700 total daily trips by year 2015, as shown in Table 27. The resulting cost per trip is estimated at about $85.

**TABLE 27**
**SDC TRIP GENERATION ESTIMATES**

| Land Use | 1995 | 2015 | 1995-2015 Increase | Trips per Day | Total Trips |
|---|---|---|---|---|---|
| Residential | | | | | |
| Single-Family Dwelling Units | 5,141 | 6,139 | 998 | 9.5 | 9,481 |
| Multi-Family Dwelling Units | 1,312 | 1,763 | 451 | 6.3 | 2,841 |
| **Non-Residential** | | | | | |
| Retail/Commercial Employees | 1,339 | 1,894 | 555 | 40.0 | 22,200 |
| Office Employees | 242 | 311 | 69 | 7.0 | 483 |
| Industrial Employees | 1,040 | 1,407 | 367 | 3.0 | 1,101 |
| Medical Employees | 903 | 1,233 | 330 | 6.5 | 2,145 |
| Government Employees | 428 | 520 | 92 | 15.0 | 1,380 |
| School Employees | 548 | 685 | 137 | 15.0 | 2,055 |
| **Total** | | | | | **41,686** |

Based on the number of trips per day generated by each use, potential SDCs could be up to $950 per single-family dwelling unit and $630 per multi-family unit as shown in Table 28. SDCs for non-residential uses would range from $300 to $4,000 per employee depending on trip generation expectations by type of use.

**TABLE 28**
**POTENTIAL SDC RATES BASED ON IMPROVEMENT COSTS**

| Land Use | Trips per Day | SDC Charge | |
|---|---|---|---|
| **Residential** | | | |
| Single-Family Dwelling Units | 9.5 | $805 | per dwelling unit |
| Multi-Family Dwelling Units | 6.3 | $535 | per dwelling unit |
| **Non-Residential** | | | |
| Retail/Commercial Employees | 40.0 | $3,400 | per employee |
| Office Employees | 7.0 | $595 | per employee |
| Industrial Employees | 3.0 | $255 | per employee |
| Medical Employees | 6.5 | $555 | per employee |
| Government Employees | 15.0 | $1,275 | per employee |
| School Employees | 15.0 | $1,275 | per employee |

After providing the documentation necessary, The Dalles may wish to compare its potential SDCs with those of other communities. Jurisdictions may choose to adopt SDCs that account for only a certain proportion of recommended improvements. The Dalles' leadership may determine that SDCs covering the total cost of improvements related to new development would be too much of a disincentive to development; in this case, SDCs can be set generate a certain percentage of the capital improvements. Table 29 shows the total revenue that could be generated through use of SDCs at a 50 percent level and a 25 percent level.

**TABLE 29**
**REVENUE GENERATED BY POTENTIAL SDCS**

| | 50 Percent SDC | | Revenue Generated | 25 Percent SDC | | Revenue Generated |
|---|---|---|---|---|---|---|
| **Residential** | | | | | | |
| Single-Family Dwelling Units | $405 | per dwelling unit | $404,000 | $200 | per dwelling unit | $200,000 |
| Multi-Family Dwelling Units | $270 | per dwelling unit | $122,000 | $135 | per dwelling unit | $61,000 |
| **Non-Residential** | | | | | | |
| Retail-Commercial | $1,700 | per employee | $944,000 | $850 | per employee | $472,000 |
| Office-Commercial | $300 | per employee | $21,000 | $150 | per employee | $10,000 |
| Industrial | $130 | per employee | $48,000 | $65 | per employee | $24,000 |
| Medical | $280 | per employee | $92,000 | $140 | per employee | $46,000 |
| Government | $640 | per employee | $59,000 | $320 | per employee | $29,000 |
| School | $640 | per employee | $88,000 | $320 | per employee | $44,000 |
| **Total Revenue** | | | $1,778,000 | | | **$886,000** |

The revenue generated through implementation of SDCs is one option that may be used to fill the gap in funding between existing sources and capital required to fund recommended improvements.

## FUNDING OPTIONS CONCLUSIONS

This TSP identifies 19 projects recommended for The Dalles' planning area over the 20-year planning horizon (1995-2015). The three state projects will cost an estimated $11 million in current 1997 dollars. Wasco County has secured grant funding for the three short-term county-led projects, totaling $521,000; an additional $2.4 million is needed for the intermediate- and long-term Wasco County projects. The seven local projects are estimated to cost $3.5 million. The remaining three projects are expected to be funded through either local LIDs or federal funds.

In addition to traditional property taxes and funding from the State Highway Fund, The Dalles will need to evaluate the availability of alternative funding sources. Debt financing, system development charges, local improvement districts, and state and federally sponsored funding programs are some of the financing options that may be available to The Dalles. Although there is a wide range of possible funding options, the selected option must address all applicable requirements. Two distinct possibilities for additional funding are the proposed utility access fee and the implementation of Systems Development Charges. The Dalles will need to evaluate its options and work with Wasco County and ODOT in evaluating potential avenues for implementing this TSP.

# APPENDIX A
# STREET INVENTORY TABLE

# TABLE A-1
## Street System Inventory
## City of The Dalles

| Roadway | | Juris-diction | Classi-fication | ROW Width | Street Width | Number of Travel Lanes | Direction | On-Street Parking | Sidewalk | Bike Lan | Speed Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1st St. | | | | | | | | | | | |
| River Rd. | Port of The Dalles | City | Local | 40 | 22 | Unstriped | Two-way | No | No | No | 25 |
| Union St. | Court St. | City | Arterial | 80 | 29 | 1 | One-way | Yes | 1 Side | No | 20 |
| Court St. | Washington St. | City | Arterial | 80 | 29 | 1 | One-way | Yes | 1 Side | No | 20 |
| Washington St. | Federal St. | City | Arterial | 80 | 36 | 1 | One-way | Yes | No | No | 20 |
| Federal St. | Laughlin St. | City | Arterial | 80 | 28 | 1 | One-way | Yes | No | No | 20 |
| Laughlin St. | Jefferson St. | City | Arterial | 80 | 24 | 1 | One-way | Yes | No | No | 20 |
| Jefferson St. | Madison St. | City | Arterial | 80 | 31 | 1 | One-way | Yes | No | No | 20 |
| 2nd St. | | | | | | | | | | | |
| I-84 | Hostetler St. | County | Collector | 60 | 37 | 1 | Two-way | Yes | No | No | 40 |
| Hostetler St. | City Limits | County | Collector | 60 | 42 | 1 | Two-way | Yes | No | No | 40 |
| City Limits | Split | City | Collector | 60 | 36 | 1 | Two-way | No | No | No | 40 |
| 2nd St. SEB | | | | | | | | | | | |
| Split | I-84 WB On Ramp | City | Collector | NA | 17 | 1 | One-way | No | No | No | 40 |
| I-84 WB On Ramp | I-84 WB On Ramp | City | Collector | NA | 21 | 1 | One-way | No | No | No | 40 |
| I-84 WB On Ramp | Webber St. | City | Collector | NA | 28 | 1 | One-way | No | No | No | 40 |
| 2nd St. NWB | | | | | | | | | | | |
| Split | I-84 WB On Ramp | City | Collector | NA | 26 | 2 | One-way | No | No | No | 40 |
| I-84 WB On Ramp | Webber St. | City | Collector | NA | 24 | 2 | One-way | No | No | No | 40 |
| 2nd St. | | | | | | | | | | | |
| Webber St. | Terminal Ave. | State | Arterial | NA | 48 | 2 | Two-way | Intermittent | No | No | 35 |
| Terminal Ave. | I-84 WB Off Ramp | State | Arterial | NA | 62 | 2 | Two-way | Intermittent | No | No | 35 |
| I-84 WB Off Ramp | I-84 EB Off Ramp | State | Arterial | NA | 34 | 2 | Two-way | No | No | No | 35 |
| I-84 EB Off Ramp | Mount Hood St. | State | Arterial | NA | 49 | 2 | Two-way | No | No | No | 35 |
| Mount Hood St. | Pentland St. | State | Arterial | 80 | 52 | 2 | Two-way | Intermittent | Intermittent | No | 35 |
| Pentland St. | Lincoln St. | State | Arterial | 80 | 52/35 | 2 | Two-way | Intermittent | Yes | No | 30 |
| Lincoln St. | Liberty St. | State | Arterial | 60 | 40 | 2 | One-way | Yes | Yes | No | 20 |
| Liberty St. | Union St. | State | Arterial | 60 | 40 | 2 | One-way | Yes | Yes | No | 20 |
| Union St. | Court St. | State | Arterial | 60 | 40 | 2 | One-way | Yes | Yes | No | 20 |
| Court St. | Washington St. | State | Arterial | 60 | 40 | 2 | One-way | Yes | Yes | No | 20 |
| Washington St. | Federal St. | State | Arterial | 60 | 40 | 2 | One-way | Yes | Yes | No | 20 |
| Federal St. | Laughlin St. | State | Arterial | 60 | 40 | 2 | One-way | Yes | Yes | No | 20 |
| Laughlin St. | Jefferson St. | State | Arterial | 60 | 40 | 2 | One-way | Yes | Yes | No | 20 |
| Jefferson St. | Madison St. | State | Arterial | 60 | 40 | 2 | One-way | Yes | Yes | No | 20 |
| Madison St. | Monroe St. | State | Arterial | 60 | 40 | 2 | One-way | Yes | Yes | No | 20 |
| Monroe St. | Taylor St. | State | Arterial | 60 | 40 | 2 | One-way | Yes | Yes | No | 20 |
| Taylor St. | 3rd St. | State | Arterial | 60 | 42 | 2 | One-way | No | Yes | No | 20 |
| 2nd St. - US 30 | | | | | | | | | | | |
| 3rd St. | Brewery Grade | State | Arterial | 100 | 46/72 | 2 | Two-way | Intermittent | Intermittent | No | 35 |
| Brewery Grade | US 30 WB Merge | State | Arterial | 100 | 87 | 3 | Two-way | No | No | No | 40 |
| US 30 WB Merge | I-84 Access Rd. | State | Arterial | 100 | 50 | 3 | Two-way | No | No | No | 40 |
| I-84 Access Rd. | US 30 WB Split | State | Arterial | 100 | 46 | 3 | Two-way | No | No | No | 40 |
| US 30 WB Split | State Rd. to WB | State | Arterial | 100 | 32 | 2 | Two-way | No | No | No | 40 |
| State Rd. to WB | State Rd. to EB | State | Arterial | 100 | 40 | 2 | Two-way | No | No | No | 40 |
| State Rd. to EB | US 197 | State | Arterial | 100 | 36/40 | 2 | Two-way | No | No | No | 40 |
| 2nd St. - US 30 WB Through | | | | | | | | | | | |
| US 30 Merge | US 30 Split | State | Arterial | 100 | 25 | 1 | One-way | No | No | No | 40 |
| 3rd Pl. | | | | | | | | | | | |
| 6th St. | Trevitt St. | City | Arterial | 60 | 48 | 2 | Two-way | Intermittent | Yes | No | 30 |
| Trevitt St. | 4th St. | City | Arterial | 60 | 36 | 2 | Two-way | Intermittent | Yes | No | 25 |
| 4th St. | Pentland St. | City | Arterial | 60 | 42 | 2 | Two-way | Intermittent | Yes | No | 25 |
| 3rd St. | | | | | | | | | | | |
| Pentland St. | Lincoln St. | State | Arterial | 60 | 42 | 2 | Two-way | Yes | Yes | No | 20 |
| Lincoln St. | Liberty St. | State | Arterial | 60 | 40 | 2 | One-way | Yes | Yes | No | 20 |

# TABLE A-1
## Street System Inventory
## City of The Dalles

| Roadway | | Juris-diction | Classi-fication | ROW Width | Street Width | Number of Travel Lanes | Direction | On-Street Parking | Sidewalk | Bike Lan | Speed Limi |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Liberty St. | Union St. | State | Arterial | 60 | 40 | 2 | One-way | Yes | Yes | No | 20 |
| Union St. | Court St. | State | Arterial | 60 | 40 | 2 | One-way | Yes | Yes | No | 20 |
| Court St. | Washington St. | State | Arterial | 60 | 40 | 2 | One-way | Yes | Yes | No | 20 |
| Washington St. | Federal St. | State | Arterial | 60 | 42 | 2 | One-way | Yes | Yes | No | 20 |
| Federal St. | Laughlin St. | State | Arterial | 60 | 40 | 2 | One-way | Yes | Yes | No | 20 |
| Laughlin St. | Jefferson St. | State | Arterial | 60 | 39 | 2 | One-way | Yes | Yes | No | 20 |
| Jefferson St. | Madison St. | State | Arterial | 60 | 40 | 2 | One-way | Yes | Yes | No | 20 |
| Madison St. | Monroe St. | State | Arterial | 60 | 40 | 2 | One-way | Yes | Yes | No | 20 |
| Monroe St. | Taylor St. | State | Arterial | 60 | 40 | 2 | One-way | Yes | Yes | No | 20 |
| Taylor St. | 2nd St. | State | Arterial | 60 | 53 | 2 | One-way | Yes | Yes | No | 20 |
| 4th St. | | | | | | | | | | | |
| 3rd Pl. | Lincoln St. | City | Arterial | 60 | 40 | 2 | Two-way | No | Yes | No | 25 |
| Lincoln St. | Liberty St. | City | Arterial | 60 | 40 | 2 | Two-way | No | Yes | No | 25 |
| Liberty St. | Union St. | City | Arterial | 60 | 39 | 2 | Two-way | No | Yes | No | 25 |
| Union St. | Court St. | City | Arterial | 60 | 40 | 2 | Two-way | No | Yes | No | 25 |
| Court St. | Washington St. | City | Arterial | 60 | 40 | 2 | Two-way | No | Yes | No | 25 |
| Washington St. | Federal St. | City | Arterial | 60 | 37 | 2 | Two-way | No | Yes | No | 25 |
| Federal St. | Laughlin St. | City | Arterial | 60 | 36 | 2 | Two-way | No | Yes | No | 25 |
| Laughlin St. | Jefferson St. | City | Arterial | 60 | 38 | 2 | Two-way | No | Yes | No | 25 |
| 4th St. Grade | | | | | | | | | | | |
| Jefferson St. | 7th St. | City | Collector | 60 | 34 | 2 | Two-way | No | Intermittent | No | 25 |
| 7th St. | 8th St. | City | Collector | 60 | 30 | 2 | Two-way | No | Yes | No | 25 |
| 8th St. | 9th St. | City | Collector | 60 | 30 | 2 | Two-way | Intermittent | Yes | No | 25 |
| 5th St. | | | | | | | | | | | |
| Union St. | Court St. | City | Local | 60 | 40 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Court St. | Washington St. | City | Local | 60 | 38 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Washington St. | End | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 6th St. - US 30 | | | | | | | | | | | |
| Chenowith Creek | I-84 EB Off Ramp | State | Arterial | NA | 24 | 2 | Two-way | No | No | No | 40 |
| I-84 EB Off Ramp | Division St. | State | Arterial | NA | 40 | 2 | Two-way | No | No | Yes | 40 |
| Division St. | Irvine St. | State | Arterial | NA | 40 | 2 | Two-way | No | No | Yes | 40 |
| Irvine St. | Lee St. | State | Arterial | NA | 40 | 2 | Two-way | No | No | Yes | 40 |
| Lee St. | Chenowith Loop | State | Arterial | NA | 42 | 2 | Two-way | No | No | Yes | 40 |
| Chenowith Loop | Hostetler St. | State | Arterial | NA | 40 | 2 | Two-way | No | No | Yes | 40 |
| Hostetler St. | Pomona St. | State | Arterial | NA | 39/70 | 2 | Two-way | Intermittent | No | Yes | 40 |
| Pomona St. | Snipes St. | State | Arterial | NA | 55/69 | 2 | Two-way | Intermittent | No | Yes | 40 |
| Snipes St. | Myrtle St. | State | Arterial | NA | 62/68 | 3 | Two-way | Intermittent | Intermittent | Yes | 40 |
| Myrtle St. | Ash St. | State | Arterial | NA | 68 | 3 | Two-way | Intermittent | Intermittent | Yes | 40 |
| Ash St. | Walnut St. | State | Arterial | NA | 67 | 3 | Two-way | Intermittent | Intermittent | Yes | 35 |
| Walnut St. | I-84 EB Off Ramp | State | Arterial | NA | 68 | 3 | Two-way | Yes | Yes | Yes | 30 |
| I-84 EB Off Ramp | I-84 EB On Ramp | State | Arterial | NA | 67 | 3 | Two-way | No | Intermittent | Yes | 30 |
| I-84 EB On Ramp | Webber St. | State | Arterial | NA | 67 | 3 | Two-way | Yes | Yes | Yes | 30 |
| 6th St. | | | | | | | | | | | |
| Webber St. | Cherry Heights Rd. | City | Arterial | 100 | 64 | 3 | Two-way | Yes | Yes | Yes | 30 |
| Cherry Heights Rd. | Chenowith St. | City | Arterial | 100 | 64 | 3 | Two-way | Yes | Yes | Yes | 30 |
| Chenowith St. | Jordan St. | City | Arterial | 60-100 | 44 | 2 | Two-way | Yes | Yes | No | 30 |
| Jordan St. | 3rd Pl. | City | Arterial | 60 | 45 | 2 | Two-way | Intermittent | Yes | No | 30 |
| 3rd Pl. | Trevitt St. | City | Local | 60 | 30 | Unstriped | Two-way | No | Intermittent | No | 25 |
| Trevitt St. | Garrison St. | City | Local | 60 | 30 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Garrison St. | Pentland St. | City | Local | 60 | 30 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Pentland St. | Lincoln St. | City | Local | 60 | 30 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Lincoln St. | Liberty St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 7th Pl. | | | | | | | | | | | |
| Court St. | Washington St. | City | Local | 40 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Washington St. | Case St. | City | Local | 40 | 30 | Unstriped | Two-way | Yes | Yes | No | 25 |

# TABLE A-1
## Street System Inventory
## City of The Dalles

| Roadway | | Juris-diction | Classi-fication | ROW Width | Street Width | Number of Travel Lanes | Direction | On-Street Parking | Sidewalk | Bike Lan | Speed Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7th St. | | | | | | | | | | | |
| Irvine St. | Chenowith Loop | County | Local | 50 | 28 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| Hostetler St. | Pleasant Ct. | County | Collector | 50 | 24 | 2 | Two-way | Yes | No | No | 25 |
| Pleasant Ct. | Garden Ct. | County | Collector | 50 | 24 | 2 | Two-way | Yes | No | No | 25 |
| Garden Ct. | Richland Ct. (N) | County | Collector | 50 | 25 | 2 | Two-way | Yes | No | No | 25 |
| Richland Ct. (N) | Richland Ct. (S) | County | Collector | 50 | 25 | 2 | Two-way | Yes | No | No | 25 |
| Richland Ct. (S) | Floral Ct. (N) | County | Collector | 50 | 25 | 2 | Two-way | Yes | No | No | 25 |
| Floral Ct. (N) | Floral Ct. (S) | County | Collector | 50 | 25 | 2 | Two-way | Yes | No | No | 25 |
| Floral Ct. (S) | Home Ct. (N) | County | Collector | 50 | 25 | 2 | Two-way | Yes | No | No | 25 |
| Home Ct. (N) | Home Ct. (S) | County | Collector | 50 | 25 | 2 | Two-way | Yes | No | No | 25 |
| Home Ct. (S) | Pomona St. | County | Collector | 50 | 25 | 2 | Two-way | Yes | No | No | 25 |
| Pomona St. | Snipes St. | City | Collector | 50-80 | 42 | 2 | Two-way | Yes | Intermittent | No | 25 |
| Snipes St. | Myrtle St. | City | Collector | 80 | 44/30 | 2 | Two-way | Yes | Intermittent | No | 25 |
| Myrtle St. | Ash St. | City | Collector | 80 | 56 | 2 | Two-way | Yes | Intermittent | No | 25 |
| Ash St. | Walnut St. | City | Collector | 80 | 56 | 2 | Two-way | Yes | Yes | No | 25 |
| Trevitt St. | Garrison St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Garrison St. | Pentland St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Pentland St. | Lincoln St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Lincoln St. | E of Lincoln St. | City | Local | 60 | 30 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| Union St. | Court St. | City | Local | 60 | 36/42 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Washington St. | Case St. | City | Arterial | 70 | 41 | 2 | Two-way | Yes | Intermittent | No | 25 |
| Case St. | Federal St. | City | Arterial | 70 | 40 | 2 | Two-way | Yes | Intermittent | No | 25 |
| Federal St. | Laughlin St. | City | Arterial | 60 | 40 | 2 | Two-way | Yes | Yes | No | 25 |
| aughlin St. | Kelly Ave. | City | Arterial | 60 | 40 | 2 | Two-way | Yes | Yes | No | 25 |
| Kelly Ave. | F St. | City | Local | 40 | 22 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| F St. | G St. | City | Local | 30 | 17 | Unstriped | Two-way | Yes | No | No | 25 |
| G St. | 4th St. Grade | City | Local | 40 | 33/12 | Unstriped | Two-way | Intermittent | No | No | 25 |
| 8th Pl. | | | | | | | | | | | |
| Chenowith St. | Dead End | City | Local | 60 | 44 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Court St. | Washington St. | City | Local | 30 | 20 | Unstriped | Two-way | No | No | No | 25 |
| Washington St. | Case St. | City | Local | 30 | 20 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| 8th St. | | | | | | | | | | | |
| W of Chenowith Loop | Chenowith Loop | County | Local | 50 | 23 | Unstriped | Two-way | Yes | No | No | 25 |
| Chenowith Loop | Cascade St. (W) | County | Local | 50 | 24 | Unstriped | Two-way | Yes | No | No | 25 |
| Cascade St. (W) | Cascade St. (E) | County | Local | 50 | 25 | Unstriped | Two-way | Yes | No | No | 25 |
| Cascade St. (E) | Cascade Ct. | County | Local | 50 | 24 | Unstriped | Two-way | Yes | No | No | 25 |
| Cascade Ct. | Hoestetler St. | County | Local | 50 | 25 | Unstriped | Two-way | Yes | No | No | 25 |
| W of Snipes St. | Snipes St. | County | Local | 40 | 20 | Unstriped | Two-way | No | No | No | 25 |
| Snipes St. | Verdant St. | County | Local | 50 | 22 | Unstriped | Two-way | No | No | No | 25 |
| Verdant St. | Myrtle St. | County | Local | 50 | 22 | Unstriped | Two-way | Intermittent | No | No | 25 |
| Myrtle St. | Walnut St. | County | Local | 50 | 24 | Unstriped | Two-way | Yes | No | No | 25 |
| Webber St. | Cherry Heights Rd. | City | Local | 60 | 44 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| W of Mount Hood St. | Mount Hood St. | City | Local | 60 | 12 | Unstriped | Two-way | No | No | No | 25 |
| Bridge St. | Trevitt St. | City | Local | 60 | 30 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Trevitt St. | Garrison St. | City | Local | 60 | 30 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Garrison St. | Pentland St. | City | Local | 60 | 30 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| Pentland St. | Lincoln St. | City | Local | 60 | 30 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| Lincoln St. | Liberty St. | City | Local | 60 | 30 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Liberty St. | Union St. | City | Local | 60 | 30 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Union St. | Court St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Court St. | Washington St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Case St. | Federal St. | City | Local | 60 | 30 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Federal St. | Laughlin St. | City | Local | 60 | 30 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Laughlin St. | Kelly Ave. | City | Local | 60 | 30 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Kelly Ave. | F St. | City | Local | 60 | 30 | Unstriped | Two-way | 1 Side | Yes | No | 25 |

# TABLE A-1
## Street System Inventory
## City of The Dalles

| Roadway | | Juris-diction | Classi-fication | ROW Width | Street Width | Number of Travel Lanes | Direction | On-Street Parking | Sidewalk | Bike Lan | Speed Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| F St. | G St. | City | Local | 60 | 30 | Unstriped | Two-way | 1 Side | Yes | No | 25 |
| G St. | 4th St. Grade | City | Local | 60 | 30 | Unstriped | Two-way | 1 Side | Yes | No | 25 |
| 4th St. Grade | Harris St. | City | Local | 60 | 30 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 9th Pl. | | | | | | | | | | | |
| W of Kingsley St. | Kingsley St. | County | Local | 40 | 22 | Unstriped | Two-way | Yes | No | No | 25 |
| Kingsley St. | Walnut St. | County | Local | 40 | 22 | Unstriped | Two-way | Yes | No | No | 25 |
| 9th St. | | | | | | | | | | | |
| Irvine St. | Chenowith Loop | County | Local | 60 | 34 | Unstriped | Two-way | Yes | No | No | 25 |
| W of Snipes St. | Snipes St. | County | Local | 40 | 20 | Unstriped | Two-way | Yes | No | No | 25 |
| Myrtle St. | Kingsley St. | County | Local | 40 | 22 | Unstriped | Two-way | Intermittent | No | No | 25 |
| Kingsley St. | Walnut St. | County | Local | 40 | 22 | Unstriped | Two-way | Intermittent | No | No | 25 |
| Cherry Heights Rd. | Wright St. | City | Local | 60 | 44 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Wright St. | Jordan St. | City | Local | 60 | 41/36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Jordan St. | Mount Hood St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Mount Hood St. | Bridge St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Bridge St. | Trevitt St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Trevitt St. | Garrison St. | City | Local | 60 | 41 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Garrison St. | Pentland St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Pentland St. | Lincoln St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Lincoln St. | Liberty St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Liberty St. | Union St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Union St. | Court St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Federal St. | Laughlin St. | City | Local | 50 | 26 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Laughlin St. | Kelly Ave. | City | Local | 50 | 26 | Unstriped | Two-way | Yes | Yes | No | 5 |
| Kelly Ave. | F St. | City | Local | 40 | 24 | Unstriped | Two-way | Yes | Yes | No | 25 |
| F St. | G St. (S) | City | Local | 40 | 24 | Unstriped | Two-way | Yes | No | No | 25 |
| G St. (S) | G St. (N) | City | Local | 40 | 31 | Unstriped | Two-way | Yes | Yes | No | 25 |
| G St. (N) | H St. | City | Local | 40 | 31 | Unstriped | Two-way | Yes | Yes | No | 25 |
| H St. | 4th St. Grade | City | Local | 40 | 31 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 4th St. Grade | I St. | City | Local | 40 | 31 | Unstriped | Two-way | Yes | Yes | No | 25 |
| I St. | J St. | City | Local | 40 | 31 | Unstriped | Two-way | Yes | Yes | No | 25 |
| J St. | Harris St. | City | Local | 40 | 31 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Harris St. | Clark St. | City | Local | 40 | 31 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Clark St. | Lewis St. | City | Local | 40 | 31 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Lewis St. | Brewery Grade | City | Local | 40 | 43 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Brewery Grade | Dry Hollow Rd. | City | Arterial | 50 | 36 | 2 | Two-way | Yes | Yes | No | 25 |
| Dry Hollow Rd. | Oregon Ave. | City | Collector | 60 | 36 | 2 | Two-way | Yes | Yes | No | 25 |
| Oregon Ave. | Quinton St. | City | Collector | 60 | 36 | 2 | Two-way | Yes | Yes | No | 25 |
| Quinton St. | 10th St. | City | Collector | 60 | 35 | 2 | Two-way | Intermittent | 1 Side | No | 25 |
| NW of 10th St. | 10th St. | City | Local | 60 | 12 | Unstriped | Two-way | No | No | No | 25 |
| 10th St. | | | | | | | | | | | |
| Chenowith Loop | Hostetler | County | Arterial | 60 | 41 | 2 | Two-way | Yes | No | No | 35 |
| Hostetler | Lorenzen St. | County | Arterial | 60 | 41 | 2 | Two-way | Yes | No | No | 35 |
| Lorenzen St. | Emerson St. | County | Arterial | 60 | 41 | 2 | Two-way | Yes | No | No | 35 |
| Emerson St. | Chinook St. | County | Arterial | 60 | 41 | 2 | Two-way | Yes | No | No | 35 |
| Chinook St. | Pomona St. | County | Arterial | 60 | 42 | 2 | Two-way | Yes | No | No | 35 |
| Pomona St. | Snipes St. | County | Arterial | 60 | 42 | 2 | Two-way | Yes | No | No | 35 |
| Snipes St. | Stoffer Lane | County | Arterial | 60 | 42 | 2 | Two-way | Yes | No | No | 35 |
| Stoffer Lane | Verdant St. | County | Arterial | 60 | 42 | 2 | Two-way | Yes | No | No | 35 |
| Verdant St. | Myrtle St. | County | Arterial | 60 | 42 | 2 | Two-way | Yes | No | No | 35 |
| Myrtle St. | Kingsley St. | County | Arterial | 60 | 43 | 2 | Two-way | Yes | No | No | 5 |
| Kingsley St. | Eric Ct. | County | Arterial | 60 | 43 | 2 | Two-way | Yes | No | No | 35 |
| Eric Ct. | Sandy St. | County | Arterial | 60 | 43 | 2 | Two-way | Yes | No | No | 35 |
| Sandy St. | Walnut St. (N) | City | Arterial | 60 | 44 | 2 | Two-way | Yes | No | No | 35 |
| Walnut St. (N) | Walnut St. (S) | City | Arterial | 60 | 44 | 2 | Two-way | Yes | No | No | 35 |

# TABLE A-1
## Street System Inventory
## City of The Dalles

| Roadway | | Juris-diction | Classi-fication | ROW Width | Street Width | Number of Travel Lanes | Direction | On-Street Parking | Sidewalk | Bike Lan | Speed Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Walnut St. (S) | Frost Ct. | City | Arterial | 60 | 44 | 2 | Two-way | Yes | No | No | 35 |
| Frost Ct. | Perkins Ave. | City | Arterial | 60 | 44 | 2 | Two-way | Yes | No | No | 35 |
| Perkins Ave. | Blakeley Dr. | City | Arterial | 60 | 44 | 2 | Two-way | Yes | Intermittent | No | 35 |
| Blakeley Dr. | Webber St. | City | Arterial | 60 | 44 | 2 | Two-way | Yes | Yes | No | 35 |
| Webber St. | Blakeley Way | City | Arterial | 60 | 44 | 2 | Two-way | Yes | Yes | No | 35 |
| Blakeley Way | Cherry Heights Rd. | City | Arterial | 60 | 45 | 2 | Two-way | Yes | Yes | No | 35 |
| Cherry Heights Rd. | Wright St. | City | Arterial | 60 | 44 | 2 | Two-way | Yes | Yes | No | 25/20 |
| Wright St. | Jordan St. | City | Arterial | 60 | 40 | 2 | Two-way | Yes | Yes | No | 25 |
| Jordan St. | Mount Hood St. | City | Arterial | 60 | 36 | 2 | Two-way | Yes | Yes | No | 25 |
| Mount Hood St. | Bridge St. | City | Arterial | 60 | 36 | 2 | Two-way | Yes | Yes | No | 25 |
| Bridge St. | Trevitt St. | City | Arterial | 60 | 36 | 2 | Two-way | Yes | Yes | No | 25 |
| Trevitt St. | Garrison St. | City | Arterial | 60 | 36/40 | 2 | Two-way | Yes | Yes | No | 25 |
| Garrison St. | Pentland St. | City | Arterial | 60 | 36 | 2 | Two-way | Yes | Yes | No | 25 |
| Pentland St. | Lincoln St. | City | Arterial | 60 | 41 | 2 | Two-way | Yes | Yes | No | 25 |
| Lincoln St. | Liberty St. | City | Arterial | 60 | 36 | 2 | Two-way | Yes | Yes | No | 25 |
| Liberty St. | Union St. | City | Arterial | 60 | 36 | 2 | Two-way | Yes | Yes | No | 25 |
| Union St. | Court St. | City | Arterial | 60 | 40 | 2 | Two-way | Yes | Yes | No | 25 |
| Court St. | Washington St. | City | Arterial | 60 | 40 | 2 | Two-way | Yes | Yes | No | 25 |
| Washington St. | Federal St. | City | Arterial | 60 | 36 | 2 | Two-way | Yes | Yes | No | 25 |
| Federal St. | Laughlin St. (S) | City | Arterial | 60 | 36 | 2 | Two-way | Yes | Yes | No | 25 |
| Laughlin St. (S) | Laughlin St. (N) | City | Arterial | 60 | 36 | 2 | Two-way | Yes | Yes | No | 25 |
| Laughlin St. (N) | Jefferson St. | City | Arterial | 60 | 36 | 2 | Two-way | Yes | Yes | No | 25 |
| Jefferson St. | Kelly Ave. | City | Arterial | 60 | 36 | 2 | Two-way | Yes | Yes | No | 25 |
| Kelly Ave. | F St. | City | Arterial | 60 | 40 | 2 | Two-way | Yes | Yes | No | 25 |
| F St. | G St. | City | Arterial | 60 | 26 | 2 | Two-way | 1 Side | Yes | No | 25 |
| G St. | H St. | City | Arterial | 60 | 26 | 2 | Two-way | 1 Side | Yes | No | 25 |
| H St. | I St. | City | Arterial | 60 | 26/31 | 2 | Two-way | 1 Side | Yes | No | 25 |
| I St. | J St. | City | Arterial | 60 | 26 | 2 | Two-way | 1 Side | Yes | No | 25 |
| J St. | Clark St. | City | Arterial | 50-60 | 26 | 2 | Two-way | 1 Side | Yes | No | 25 |
| Clark St. | Lewis St. | City | Arterial | 50 | 26 | 2 | Two-way | 1 Side | Yes | No | 25 |
| Lewis St. | Dry Hollow Rd. | City | Arterial | 50 | 36 | 2 | Two-way | Yes | Yes | No | 25 |
| Dry Hollow Rd. | Oregon Ave. | City | Arterial | 50 | 36 | 2 | Two-way | Yes | Yes | No | 25 |
| Oregon Ave. | Quinton St. | City | Arterial | 60 | 36 | 2 | Two-way | Yes | Yes | No | 25 |
| Quinton St. | 9th St. | City | Arterial | 60 | 36 | 2 | Two-way | Yes | Yes | No | 25 |
| 9th St. | Roberts St. | City | Arterial | 60 | 36 | 2 | Two-way | Yes | Yes | No | 25 |
| Roberts St. | Shearer St. | City | Arterial | 60 | 36 | 2 | Two-way | Yes | 1 Side | No | 25 |
| Shearer St. | Thompson St. | City | Arterial | 60 | 36 | 2 | Two-way | Yes | Yes | No | 25 |
| Thompson St. | Morton St. (S) | City | Local | 60 | 24 | Unstriped | Two-way | No | No | No | 25 |
| Morton St. (S) | Morton St. (N) | City | Local | 60 | 23 | Unstriped | Two-way | No | No | No | 25 |
| Morton St. (N) | Richmond St. | City | Local | 60 | 23 | Unstriped | Two-way | No | No | No | 25 |
| 11th St. | | | | | | | | | | | |
| NW of Chinook St. | Chinook St. | County | Local | 60 | 20 | Unstriped | Two-way | Yes | No | No | 25 |
| Chinook St. | SE of Chinook St. | County | Local | 60 | 24 | Unstriped | Two-way | Yes | No | No | 25 |
| Blakeley Dr. | Blakeley Way | City | Local | 50 | 32 | Unstriped | Two-way | Yes | No | No | 25 |
| Wright St. | Jordan St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Jordan St. | Mount Hood St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Mount Hood St. | Bridge St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Bridge St. | Trevitt St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Trevitt St. | Garrison St. | City | Local | 60 | 30 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Garrison St. | Pentland St. | City | Local | 60 | 30 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Pentland St. | Lincoln St. | City | Local | 60 | 30 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Lincoln St. | Liberty St. | City | Local | 60 | 30 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Liberty St. | Union St. | City | Local | 60 | 30 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Washington St. | Federal St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Federal St. | Laughlin St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |

# TABLE A-1
## Street System Inventory
## City of The Dalles

| Roadway | | Juris-diction | Classi-fication | ROW Width | Street Width | Number of Travel Lanes | Direction | On-Street Parking | Sidewalk | Bike Lan | Speed Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Laughlin St. | Jefferson St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Jefferson St. | Madison St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Madison St. | Kelly Ave. | City | Local | 60 | 40 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Kelly Ave. | F St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| F St. | G St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| G St. | H St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| H St. | I St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| I St. | J St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| J St. | Clark St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Clark St. | Lewis St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Lewis St. | Dry Hollow Rd. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Dry Hollow Rd. | Oregon Ave. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| W of Thompson St. | Thompson St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| Thompson St. | E of Thompson St. | City | Local | 40 | 24 | Unstriped | Two-way | Yes | No | No | 25 |
| 12th St. | | | | | | | | | | | |
| NW of Chinook St. | Chinook St. | County | Local | 60 | 20 | Unstriped | Two-way | Yes | No | No | 25 |
| Chinook St. | SE of Chinook St. | County | Local | 60 | 18 | Unstriped | Two-way | Intermittent | No | No | 25 |
| Blakeley Dr. | Blakeley Way | City | Local | 50 | 32 | Unstriped | Two-way | Yes | No | No | 25 |
| Jordan St. | Mount Hood St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Mount Hood St. | Bridge St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Bridge St. | Trevitt St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Trevitt St. | Garrison St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Garrison St. | Pentland St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Pentland St. | Lincoln St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Lincoln St. | Liberty St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Liberty St. | Union St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| Union St. | Court St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Court St. | Washington St. | City | Local | 60-80 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Washington St. | Federal St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Federal St. | Laughlin St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Laughlin St. | Jefferson St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Jefferson St. | Madison St. | City | Local | 60 | 41 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Madison St. | Fork/Split | City | Local | 60 | 30 | Unstriped | Two-way | Intermittent | Yes | No | 25 |
| Fork/Split | Kelly Ave. (S) | City | Local | 60 | 33 | Unstriped | Two-way | No | Yes | No | 25 |
| Fork Split | Kelly Ave. (N) | City | Arterial | 60 | 29 | 2 | Two-way | No | Yes | No | 25 |
| Kelly Ave. (N) | F St. | City | Arterial | 60 | 35 | 2 | Two-way | Yes | Yes | No | 25 |
| F St. | G St. | City | Arterial | 60 | 35 | 2 | Two-way | Yes | Yes | No | 25 |
| G St. | H St. | City | Arterial | 60 | 35 | 2 | Two-way | Yes | Yes | No | 25 |
| H St. | I St. | City | Arterial | 60 | 34 | 2 | Two-way | Yes | Yes | No | 25 |
| I St. | J St. | City | Arterial | 50 | 37 | 2 | Two-way | Yes | Yes | No | 25 |
| J St. | Harris St. | City | Arterial | 50 | 37 | 2 | Two-way | Yes | Yes | No | 25 |
| Harris St. | Clark St. | City | Arterial | 50 | 37 | 2 | Two-way | Yes | Yes | No | 25 |
| Clark St. | Lewis St. | City | Arterial | 50 | 37 | 2 | Two-way | Yes | Yes | No | 25 |
| Lewis St. | View Ct. | City | Arterial | 60 | 36 | 2 | Two-way | Yes | Yes | No | 25 |
| View Ct. | Dry Hollow Rd. | City | Arterial | 60 | 36 | 2 | Two-way | Yes | Yes | No | 25 |
| Dry Hollow Rd. | Oregon Ave. | City | Arterial | 60 | 40 | 2 | Two-way | Yes | Yes | No | 25 |
| Oregon Ave. | Quinton St. | City | Arterial | 60 | 37 | 2 | Two-way | Yes | Yes | No | 25 |
| Quinton St. | Roberts St. | City | Arterial | 60 | 36 | 2 | Two-way | Yes | Yes | No | 25 |
| Roberts St. | Shearer St. | City | Arterial | 60 | 36 | 2 | Two-way | Yes | Yes | No | 25 |
| Shearer St. | Thompson St. | City | Arterial | 60 | 36 | 2 | Two-way | Yes | Yes | No | 25 |
| Thompson St. | Morton St. | City | Collector | 60 | 24 | 2 | Two-way | No | No | No | 25 |
| Morton St. | Richmond St. | City | Collector | 60 | 24 | 2 | Two-way | No | No | No | 25 |
| Richmond St. | E of Richmond St. | County | Collector | 60 | ? | ? | ? | ? | ? | ? | ? |
| 13th Pl. | | | | | | | | | | | |
| Riverview St. | Harris St. | City | Local | 50 | 14 | Unstriped | Two-way | No | No | No | 25 |

# TABLE A-1
## Street System Inventory
## City of The Dalles

| Roadway | | Juris-diction | Classi-fication | ROW Width | Street Width | Number of Travel Lanes | Direction | On-Street Parking | Sidewalk | Bike Lan | Speed Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Harris St. | Clark St. | City | Local | 50 | 14 | Unstriped | Two-way | No | No | No | 25 |
| View Ct. | Dry Hollow Rd. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 13th St. | | | | | | | | | | | |
| Irvine St. | Emerson St. | County | Collector | 60 | 24 | 2 | Two-way | No | No | No | 25 |
| Verdant St. | Meek St. | County | Collector | 50 | 32 | 2 | Two-way | Intermittent | No | No | 25 |
| Meek St. | Gordon Ct. | County | Collector | 50 | 32 | 2 | Two-way | Intermittent | No | No | 25 |
| Gordon Ct. | Elberta St. | County | Collector | 50 | 32 | 2 | Two-way | Intermittent | No | No | 25 |
| Elberta St. | Myrtle St. | County | Collector | 50 | 33 | 2 | Two-way | Intermittent | No | No | 25 |
| Myrtle St. | Kingsley St. | County | Collector | 50 | 33 | 2 | Two-way | Intermittent | No | No | 25 |
| Kingsley St. | Walnut St. | County | Collector | 50 | 30 | 2 | Two-way | No | No | No | 25 |
| Walnut St. | Perkins Ave. | County | Collector | 50 | 20 | 2 | Two-way | Yes | No | No | 25 |
| Perkins Ave. | Webber St. | County | Collector | 40 | 15 | 1 | Two-way | Yes | No | No | 25 |
| Webber St. | Cherry Heights Rd. | County | Collector | 40 | 19 | 2 | Two-way | Yes | No | No | 25 |
| Jordan St. | Mount Hood St. | City | Collector | 60 | 42 | 2 | Two-way | Yes | Yes | No | 25 |
| Mount Hood St. | Bridge St. | City | Collector | 60 | 42 | 2 | Two-way | Yes | Yes | No | 25 |
| Bridge St. | Trevitt St. | City | Collector | 60 | 39 | 2 | Two-way | Yes | Yes | No | 25 |
| Trevitt St. | Garrison St. | City | Collector | 60 | 42 | 2 | Two-way | Yes | Yes | No | 25 |
| Garrison St. | Pentland St. | City | Collector | 60 | 42 | 2 | Two-way | Yes | Yes | No | 25 |
| Pentland St. | Lincoln St. | City | Collector | 60 | 42 | 2 | Two-way | Yes | Intermittent | No | 25 |
| Lincoln St. | Liberty St. | City | Collector | 60 | 42 | 2 | Two-way | Yes | Yes | No | 25 |
| Liberty St. | Union St. | City | Collector | 60 | 42 | 2 | Two-way | Yes | Yes | No | 25 |
| Union St. | Court St. | City | Collector | 60 | 42 | 2 | Two-way | Yes | Yes | No | 25 |
| Court St. | Washington St. | City | Collector | 60 | 42 | 2 | Two-way | Yes | Yes | No | 25 |
| Washington St. | Short St. | City | Collector | 60 | 42 | 2 | Two-way | Yes | Intermittent | No | 25 |
| Short St. | Federal St. | City | Collector | 60 | 30 | 2 | Two-way | Yes | Intermittent | No | 25 |
| Federal St. | Laughlin St. | City | Collector | 60 | 30 | 2 | Two-way | Yes | Intermittent | No | 25 |
| Laughlin St. | Jefferson St. | City | Collector | 60 | 30 | 2 | Two-way | Yes | Intermittent | No | 25 |
| Jefferson St. | Madison St. | City | Collector | 60 | 30 | 2 | Two-way | Yes | Intermittent | No | 25 |
| Madison St. | Kelly Ave. | City | Collector | 60 | 30 | 2 | Two-way | Yes | Intermittent | No | 25 |
| Kelly Ave. | F St. | City | Local | 60 | 45 | Unstriped | Two-way | Yes | Yes | No | 25 |
| F St. | G St. | City | Local | 60 | 42 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| G St. | H St. | City | Local | 60 | 42 | Unstriped | Two-way | Yes | Yes | No | 25 |
| I St. | Riverview St. | City | Local | 40 | 26 | Unstriped | Two-way | 1 Side | Yes | No | 25 |
| Riverview St. | Harris St. | City | Local | 40 | 26 | Unstriped | Two-way | 1 Side | Yes | No | 25 |
| Harris St. | Clark St. | City | Local | 40 | 26 | Unstriped | Two-way | 1 Side | Yes | No | 25 |
| Clark St. | Lewis St. | City | Local | 40 | 26 | Unstriped | Two-way | 1 Side | Yes | No | 25 |
| View Ct. | Dry Hollow Rd. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Dry Hollow Rd. | Nevada St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Nevada St. | Oregon Ave. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Quinton St. | Shearer St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Shearer St. | Thompson St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Richmond St. | Lambert St. | City | Local | 40 | 22 | Unstriped | Two-way | No | No | No | 25 |
| 14th Pl. | | | | | | | | | | | |
| Thompson St. | E of Thompson St. | City | Local | 60 | 24 | Unstriped | Two-way | Yes | No | No | 25 |
| 14th St. | | | | | | | | | | | |
| Elberta St. | Myrtle St. | County | Local | 50 | 34 | Unstriped | Two-way | Yes | No | No | 25 |
| Myrtle St. | Kingsley St. | County | Local | 50 | 34 | Unstriped | Two-way | Yes | No | No | 25 |
| Kingsley St. | SE of Kingsley St. | County | Local | 50 | ? | ? | ? | ? | ? | ? | ? |
| Jordan St. | Mount Hood St. | City | Local | 60 | 30 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Mount Hood St. | Bridge St. | City | Local | 60 | 30 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Bridge St. | Trevitt St. | City | Local | 60 | 30 | Unstriped | Two-way | Intermittent | Yes | No | 25 |
| Trevitt St. | Garrison St. | City | Local | 60 | 30 | Unstriped | Two-way | Intermittent | Yes | No | 25 |
| Garrison St. | Pentland St. | City | Local | 60 | 30 | Unstriped | Two-way | Intermittent | Yes | No | 25 |
| Pentland St. | Lincoln St. | City | Local | 60 | 30 | Unstriped | Two-way | Intermittent | Yes | No | 25 |
| Lincoln St. | Liberty St. | City | Local | 60 | 30 | Unstriped | Two-way | Intermittent | Yes | No | 25 |

# TABLE A-1
## Street System Inventory
## City of The Dalles

| Roadway | | Juris-diction | Classi-fication | ROW Width | Street Width | Number of Travel Lanes | Direction | On-Street Parking | Sidewalk | Bike Lan | Speed Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Liberty St. | Union St. | City | Local | 60 | 33 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Union St. | Court St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Court St. | Washington St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Washington St. | Short St. | City | Local | 50 | 26 | Unstriped | Two-way | 1 Side | Yes | No | 25 |
| Short St. | Federal St. | City | Local | 50 | 26 | Unstriped | Two-way | 1 Side | Yes | No | 25 |
| Federal St. | Laughlin St. | City | Local | 50 | 26 | Unstriped | Two-way | 1 Side | Intermittent | No | 25 |
| Laughlin St. | Jefferson St. | City | Local | 50 | 26 | Unstriped | Two-way | 1 Side | Intermittent | No | 25 |
| Jefferson St. | Madison St. | City | Local | 50 | 26 | Unstriped | Two-way | 1 Side | Yes | No | 25 |
| Madison St. | Kelly Ave. | City | Local | 50 | 26 | Unstriped | Two-way | 1 Side | Yes | No | 25 |
| Kelly Ave. | F St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| F St. | G St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| G St. | H St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Riverview St. | Clark St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Clark St. | Lewis St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Lewis St. | View Ct. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| View Ct. | Dry Hollow Rd. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Dry Hollow Rd. | Nevada St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Nevada St. | Oregon Ave. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Oregon Ave. | Quinton St. | City | Local | 50 | 37 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Quinton St. | Shearer St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Shearer St. | Thompson St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Thompson St. | Morton St. | City | Local | 60 | 24 | Unstriped | Two-way | Yes | No | No | 25 |
| Morton St. | E of Morton St. | City | Local | 60 | 20 | Unstriped | Two-way | No | No | No | 25 |
| 15th Pl. | | | | | | | | | | | |
| W of Terrace Dr. | Terrace Dr. | City | Local | 60 | 13 | Unstriped | Two-way | No | No | No | 25 |
| Terrace Dr. | E of Terrace Dr. | City | Local | 60 | 26 | Unstriped | Two-way | Yes | No | No | 25 |
| G St. | E of G St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 15th St. | | | | | | | | | | | |
| W of Mount Hood St. | Mount Hood St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Mount Hood St. | Bridge St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Trevitt St. | Garrison St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Garrison St. | Pentland St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Pentland St. | Lincoln St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| Lincoln St. | Liberty St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Jefferson St. | Madison St. | City | Local | 50 | 12 | Unstriped | Two-way | Yes | No | No | 25 |
| Madison St. | Monroe St. | City | Local | 50 | 26 | Unstriped | Two-way | Yes | No | No | 25 |
| Monroe St. | Kelly Ave. | City | Local | 50 | 26 | Unstriped | Two-way | Yes | No | No | 25 |
| Kelly Ave. | G St. | City | Local | 50 | 30 | Unstriped | Two-way | Yes | No | No | 25 |
| G St. | H St. | City | Local | 50 | 17/36 | Unstriped | Two-way | Intermittent | Intermittent | No | 25 |
| I St. | Riverview St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Riverview St. | Dead End | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Montana St. | Nevada St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Nevada St. | Oregon Ave. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Oregon Ave. | Quinton St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Quinton St. | Roberts St. | City | Local | 30 | 15 | Unstriped | Two-way | No | No | No | 25 |
| Roberts St. | E of Roberts St. | City | Local | 30 | 15 | Unstriped | Two-way | No | No | No | 25 |
| 16th St. | Morton St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | No | No | 25 |
| 16th Ct. | | | | | | | | | | | |
| W of Nevada St. | Nevada St. | City | Local | 80 | 60 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Nevada St. | E of Nevada St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 16th Pl. | | | | | | | | | | | |
| Monroe St. | Kelly Ave. | City | Local | 60 | 29 | Unstriped | Two-way | Yes | No | No | 25 |
| Kelly Ave. | G St. | City | Arterial | 60 | 36 | 2 | Two-way | Yes | Yes | No | 25 |
| G St. | 17th St. | City | Arterial | 60 | 37 | 2 | Two-way | Yes | Intermittent | No | 25 |
| 17th St. | Scenic Dr. | City | Arterial | 60 | 36 | 2 | Two-way | Yes | Intermittent | No | 25 |

# TABLE A-1
## Street System Inventory
## City of The Dalles

| Roadway | | Juris-diction | Classi-fication | ROW Width | Street Width | Number of Travel Lanes | Direction | On-Street Parking | Sidewalk | Bike Lan | Speed Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Scenic Dr. | 18th St. | City | Arterial | 60 | 36 | 2 | Two-way | Yes | Yes | No | 25 |
| 18th St. | Dry Hollow Rd. | City | Arterial | 60 | 35 | 2 | Two-way | No | No | No | 25 |
| 16th St. | | | | | | | | | | | |
| Mount Hood St. | Bridge St. | City | Local | 60 | 18 | Unstriped | Two-way | No | No | No | 25 |
| Bridge St. | Trevitt St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Trevitt St. | Garrison St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| W of Pentland St. | Pentland St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Pentland St. | Lincoln St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Lincoln St. | Liberty Way | City | Local | 60 | 34 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| Riverview St. | Dead End | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Oregon Ave. | Quinton St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Shearer St. | Thompson St. | City | Local | 60 | 20 | Unstriped | Two-way | Intermittent | No | No | 25 |
| Thompson St. | 15th St. | City | Local | 60 | 22 | Unstriped | Two-way | Intermittent | No | No | 25 |
| 15th St. | E of 15th St. | City | Local | 60 | 17 | Unstriped | Two-way | No | No | No | 25 |
| Morton St. | Richmond St. | City | Local | 60 | 15 | Unstriped | Two-way | No | No | No | 25 |
| 17th Pl. | | | | | | | | | | | |
| Jefferson St. | Fairview St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 17th St. | | | | | | | | | | | |
| Mount Hood St. | Bridge St. | City | Local | 60 | 26 | Unstriped | Two-way | Yes | No | No | 25 |
| Bridge St. | Trevitt St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| Trevitt St. | E of Trevitt St. | City | Local | 60 | 29 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| H St. | I St. | City | Local | 50 | 30 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| I St. | Riverview St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Montana St. | Minnesota St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| ~~Minnesota St.~~ | ~~Nevada St.~~ | ~~City~~ | ~~Local~~ | ~~50~~ | ~~36/29~~ | ~~Unstriped~~ | ~~Two-way~~ | ~~Yes~~ | ~~Yes~~ | ~~No~~ | ~~25~~ |
| Thompson St. | E of Thompson St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 18th St. | | | | | | | | | | | |
| Jordan St. | Mount Hood St. | City | Local | 60 | 31 | Unstriped | Two-way | Yes | No | No | 25 |
| Mount Hood St. | Bridge St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Jefferson St. | 20th St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 20th St. | Fairview St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Fairview St. | Dead End | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 16th Pl. | E of 16th Pl. | City | Local | 40 | 19 | Unstriped | Two-way | Yes | No | No | 25 |
| Thompson St. | Morton St. | City | Local | 60 | 28 | Unstriped | Two-way | No | No | No | 25 |
| 19th St. | | | | | | | | | | | |
| W of Mount Hood St. | Mount Hood St. | City | Local | 50 | 37 | ? | ? | ? | ? | ? | ? |
| Mount Hood St. | E of Mount Hood St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| W of Garrison St. | Garrison St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Fairview St. | 20th St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 20th St. | Dry Hollow Rd. Overlap | County | Local | 50 | 36/23 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| Dry Hollow Rd. Overlap | 16th Pl. | County | Local | 60 | 30 | Unstriped | Two-way | Intermittent | No | No | 25 |
| Lewis St. | View Ct. | City | Arterial | 80 | 44 | 2 | Two-way | Yes | Yes | No | 25 |
| View Ct. | Hospital Access | City | Arterial | 80 | 44 | 2 | Two-way | Yes | Yes | No | 25 |
| Hospital Access | Nevada St. | City | Arterial | 80 | 44 | 2 | Two-way | Yes | Yes | No | 25 |
| Nevada St. | Oregon Ave. | City | Arterial | 80 | 44 | 2 | Two-way | Yes | Yes | No | 25 |
| Oregon Ave. | Reservoir Access | City | Arterial | 80 | 44 | 2 | Two-way | Yes | Yes | No | 25 |
| Reservoir Access | Dead End | City | Arterial | 80 | 44 | 2 | Two-way | Yes | No | No | 25 |
| 20th St. | | | | | | | | | | | |
| Scenic Dr. | Radio Way | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| adio Way | Dead End | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 18th St. | 21st Pl. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 21st Pl. | Fairview St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Fairview St. | 19th St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 21st Pl. | | | | | | | | | | | |

# TABLE A-1
## Street System Inventory
## City of The Dalles

| Roadway | | Juris-diction | Classi-fication | ROW Width | Street Width | Number of Travel Lanes | Direction | On-Street Parking | Sidewalk | Bike Lan | Speed Limi |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 21st St. | S of 21st St. | City | Local | 50 | 26 | Unstriped | Two-way | Intermittent | Intermittent | No | 25 |
| 20th St. | Fairview St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 21st St. | | | | | | | | | | | |
| Radio Way | 21st Pl. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 21st Pl. | Sorosis St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Dead End | Lewis St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| View Ct. | Claudia Lane | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Claudia Lane | E of Claudia Lane | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 22nd St. | | | | | | | | | | | |
| W of Garrison St. | Garrison St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 23rd St. | | | | | | | | | | | |
| Wright St. | Jordan St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Jordan St. | Mount Hood St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Radio Way | Sorosis St. | City | Local | 50 | 20 | Unstriped | Two-way | No | Intermittent | No | 25 |
| Sorosis St. | E of Sorosis St. | City | Local | 50 | 14 | Unstriped | Two-way | No | No | No | 25 |
| 25th St. | | | | | | | | | | | |
| W of Wright Dr. | Wright Dr. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| Allen Pl. | | | | | | | | | | | |
| Starlight St. | Dead End | County | Local | 50 | 20 | Unstriped | Two-way | No | No | No | 25 |
| Ash St. | | | | | | | | | | | |
| 7th St. | 6th St. | City | Local | 80 | 56 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Bargeway Rd. | | | | | | | | | | | |
| River Rd. | SE of River Rd. | City | Collector | 40 | 24 | 2 | Two-way | No | No | No | 25 |
| Blakeley Dr. | | | | | | | | | | | |
| 12th St. | 11th St. | City | Local | 50 | 31 | Unstriped | Two-way | Yes | No | No | 25 |
| 11th St. | 10th St. | City | Local | 50 | 31 | Unstriped | Two-way | Yes | No | No | 25 |
| Blakeley Way | | | | | | | | | | | |
| 12th St. | 11th St. | City | Local | 50 | 31 | Unstriped | Two-way | Yes | No | No | 25 |
| 11th St. | 10th St. | City | Local | 50 | 31 | Unstriped | Two-way | Yes | No | No | 25 |
| Brentwood Dr. | | | | | | | | | | | |
| E of Summit Ridge Dr. | Summit Ridge Dr. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Summit Ridge Dr. | Royal Crest Dr. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Royal Crest Dr. | Columbia View Dr. | City | Local | 60 | 34 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| Brewery Grade | | | | | | | | | | | |
| US 30 | 9th St. | City | Arterial | 60-70 | 44 | 2 | Two-way | Intermittent | Intermittent | No | 25 |
| Bridge St. | | | | | | | | | | | |
| 18th St. | 17th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 17th St. | 16th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 16th St. | 15th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 15th St. | 14th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 14th St. | 13th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 13th St. | 12th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 12th St. | 11th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 11th St. | 10th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 10th St. | 9th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 9th St. | 8th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| Cascade Ct. | | | | | | | | | | | |
| 8th St. | Dead End | County | Local | 50 | 24 | Unstriped | Two-way | Intermittent | No | No | 25 |
| Cascade St. | | | | | | | | | | | |
| W 8th St. | E 8th St. | County | Local | 50 | 24 | Unstriped | Two-way | Yes | No | No | 25 |
| Case St. | | | | | | | | | | | |
| 8th Pl. | 8th St. | City | Local | 40 | 20 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| 8th St. | 7th Pl. | City | Local | 40 | 26 | Unstriped | Two-way | No | Yes | No | 25 |
| 7th Pl. | 7th St. | City | Local | 20 | 25 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| Chenowith Loop | | | | | | | | | | | |

# TABLE A-1
## Street System Inventory
## City of The Dalles

| Roadway | | Juris-diction | Classi-fication | ROW Width | Street Width | Number of Travel Lanes | Direction | On-Street Parking | Sidewalk | Bike Lan | Speed Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10th St. | 9th St. | County | Collector | 40 | 40 | 2 | Two-way | Yes | No | No | 25 |
| 9th St. | 8th St. | County | Collector | 40 | 40/30 | 2 | Two-way | Yes | No | No | 25 |
| 8th St. | 7th St. | County | Collector | 40 | 24 | 2 | Two-way | Yes | No | No | 25 |
| 7th St. | US 30 | County | Collector | 40 | 24 | 2 | Two-way | Yes | No | No | 25 |
| Chenowith Rd. | | | | | | | | | | | |
| UGB (~0.1 mi.) | Starlight St. | County | Arterial | 60 | 25 | 2 | Two-way | No | No | No | 35 |
| Starlight St. | Hiland Ct. | County | Arterial | 60 | 24 | 2 | Two-way | No | No | No | 35 |
| Hiland Ct. | Sunflower St. | County | Arterial | 60 | 24 | 2 | Two-way | No | No | No | 35 |
| Sunflower St. | Pine St. | County | Arterial | 60 | 24 | 2 | Two-way | No | No | No | 35 |
| Pine St. | Oak St. | County | Arterial | 60 | 24 | 2 | Two-way | No | No | No | 35 |
| Oak St. | Maple St. | County | Arterial | 60 | 24 | 2 | Two-way | No | No | No | 35 |
| Maple St. | Whitman St. | County | Arterial | 60 | 24 | 2 | Two-way | No | No | No | 35 |
| Whitman St. | Seven Mile Rd. | County | Arterial | 60 | 24 | 2 | Two-way | No | No | No | 35 |
| Seven Mile Rd. | Irvine St. on S side | County | Arterial | 60 | 24 | 2 | Two-way | No | No | No | 35 |
| Irvine St. on S side | Irvine St. on N side | County | Arterial | 60 | 24/40 | 2 | Two-way | No | No | No | 35 |
| Irvine St. on N side | Chenowith Loop | County | Arterial | 60 | 40 | 2 | Two-way | No | No | No | 35 |
| Chenowith St. | | | | | | | | | | | |
| Cherry Heights Rd. | 8th Pl. | City | Local | 60 | 41 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 8th Pl. | 6th St. | City | Local | 60 | 41 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Cherry Heights Rd. | | | | | | | | | | | |
| Hill Rd. | Sandstone Way | County | Collector | 60 | 24 | 2 | Two-way | No | No | No | 35 |
| Sandstone Way | 13th St. | County | Arterial | 60 | 30 | 2 | Two-way | No | No | No | 35 |
| 13th St. | 10th St. | City | Arterial | 60 | 42 | 2 | Two-way | Yes | Yes | No | 25 |
| 10th St. | 9th St. | City | Arterial | 80 | 44 | 2 | Two-way | Yes | Yes | No | 25 |
| 9th St. | 8th St. | City | Arterial | 80 | 44 | 2 | Two-way | Yes | Yes | No | 25 |
| 8th St. | 6th St. | City | Arterial | 80 | 44 | 2 | Two-way | Yes | Yes | No | 25 |
| Chinook St. | | | | | | | | | | | |
| SW of 12th St. | 12th St. | County | Local | 60 | 20 | Unstriped | Two-way | Intermittent | No | No | 25 |
| 12th St. | 11th St. | County | Local | 60 | 21 | Unstriped | Two-way | Intermittent | No | No | 25 |
| 11th St. | 10th St. | County | Local | 60 | 21 | Unstriped | Two-way | No | No | No | 25 |
| Clark St. | | | | | | | | | | | |
| Dead End | 14th St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| 14th St. | 13th Pl. | City | Local | 50 | 14 | Unstriped | Two-way | No | No | No | 25 |
| 13th Pl. | 13th St. | City | Local | 50 | 22 | Unstriped | Two-way | No | No | No | 25 |
| 12th St. | 11th St. | City | Local | 50 | 31 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| 11th St. | 10th St. | City | Local | 50 | 18 | Unstriped | Two-way | 1 Side | No | No | 25 |
| 10th St. | 9th St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 9th St. | N of 9th St. | City | Local | 60 | 32 | Unstriped | Two-way | Yes | No | No | 25 |
| Claudia Lane | | | | | | | | | | | |
| 21st St. | Dead End | City | Local | 50 | 28 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Columbia View Dr. | | | | | | | | | | | |
| US 197 | E Knoll Dr. | City | Collector | 90-100 | 31 | 2 | Two-way | No | No | No | 35 |
| E Knoll Dr. | Wasco Dr. | City | Collector | 80-90 | 42 | 2 | Two-way | Intermittent | No | No | 35 |
| Wasco Dr. | E Knoll Dr. | City | Collector | 80 | 54 | 2 | Two-way | Intermittent | Intermittent | No | 25 |
| E Knoll Dr. | Brentwood Dr. | City | Collector | 80 | 45 | 2 | Two-way | Yes | Yes | No | 25 |
| Brentwood Dr. | Summit Ridge Dr. | City | Collector | 80 | 45 | 2 | Two-way | Yes | Intermittent | No | 25 |
| Summit Ridge Dr. | City Limits (~0.4 mi.) | City | Collector | 80 | 34 | 2 | Two-way | No | No | No | 25 |
| Court St. | | | | | | | | | | | |
| S of 14th St. | 14th St. | City | Local | 80 | 36 | Unstriped | Two-way | Yes | No | No | 25 |
| 14th St. | 13th St. | City | Local | 80 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 3th St. | 12th St. | City | Local | 80 | 37 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 10th St. | 9th St. | City | Arterial | 80 | 47 | 2 | Two-way | Yes | Yes | No | 20 |
| 9th St. | 8th Pl. | City | Arterial | 80 | 47 | 2 | Two-way | Yes | Yes | No | 20 |
| 8th Pl. | 8th St. | City | Arterial | 80 | 47 | 2 | Two-way | Yes | Yes | No | 20 |
| 8th St. | 7th Pl. | City | Arterial | 80 | 48 | 2 | Two-way | Yes | Yes | No | 20 |

# TABLE A-1
## Street System Inventory
## City of The Dalles

| Roadway | | Juris-diction | Classi-fication | ROW Width | Street Width | Number of Travel Lanes | Direction | On-Street Parking | Sidewalk | Bike Lan | Speed Limi |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7th Pl. | 7th St. | City | Arterial | 80 | 48 | 2 | Two-way | No | Yes | No | 20 |
| 7th St. | 5th St. | City | Arterial | 80 | 48 | 2 | Two-way | Yes | Yes | No | 20 |
| 5th St. | 4th St. | City | Arterial | 80 | 54 | 2 | Two-way | Yes | Yes | No | 20 |
| 4th St. | 3rd St. | City | Arterial | 80 | 56 | 2 | Two-way | Yes | Yes | No | 20 |
| 3rd St. | 2nd St. | City | Arterial | 80 | 58 | 2 | Two-way | Yes | Yes | No | 20 |
| 2nd St. | 1st St. | City | Arterial | 80 | 57 | 2 | Two-way | Yes | Yes | No | 20 |
| Crest Ct. | | | | | | | | | | | |
| Royal Crest Dr. | Dead End | City | Local | 60 | 34 | Unstriped | Two-way | Yes | No | No | 25 |
| Dawson Dr./7th St. | | | | | | | | | | | |
| NW of Hostetler St. | Hostetler St. | County | Local | 40 | 22 | Unstriped | Two-way | No | No | No | 25 |
| Division St. | | | | | | | | | | | |
| W of US 30 | US 30 | County | Local | 20 | 30 | Unstriped | Two-way | Yes | No | No | 25 |
| Dry Hollow Rd. | | | | | | | | | | | |
| 19th St. | Montana St. | City | Arterial | 60-140 | 42 | 2 | Two-way | No | Intermittent | No | 40 |
| Montana St. | 14th St. | City | Arterial | 80-120 | 36 | 2 | Two-way | No | Intermittent | No | 40/25 |
| 14th St. | 13th Pl. | City | Arterial | 80 | 52 | 2 | Two-way | Yes | Yes | No | 25 |
| 13th Pl. | 13th St. | City | Arterial | 80 | 52 | 2 | Two-way | Yes | Yes | No | 25 |
| 13th St. | 12th St. | City | Arterial | 80 | 53 | 2 | Two-way | Yes | Yes | No | 25 |
| 12th St. | 11th St. | City | Arterial | 80 | 53 | 2 | Two-way | Yes | Yes | No | 25 |
| 11th St. | 10th St. | City | Arterial | 80 | 52 | 2 | Two-way | Yes | Yes | No | 25 |
| 10th St. | 9th St. | City | Arterial | 80 | 52 | 2 | Two-way | Yes | Yes | No | 25 |
| E Knoll Ct. | | | | | | | | | | | |
| E Knoll Dr. | Dead End | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| E Knoll Dr. | | | | | | | | | | | |
| Columbia View Dr. | E Knoll Ct. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| E Knoll Ct. | Columbia View Dr. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| Elberta St. | | | | | | | | | | | |
| 14th St. | 13th St. | County | Local | 50 | 34 | Unstriped | Two-way | Yes | No | No | 25 |
| Emerson St. | | | | | | | | | | | |
| 13th St. | 10th St. | County | Local | 50 | 31 | Unstriped | Two-way | Intermittent | No | No | 25 |
| Eric Ct. | | | | | | | | | | | |
| SW of 10th St. | 10th St. | County | Local | 50 | 24 | Unstriped | Two-way | No | No | No | 25 |
| Esther Way | | | | | | | | | | | |
| Scenic Dr. | Dead End | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| F St. | | | | | | | | | | | |
| 14th St. | 13th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| 13th St. | 12th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| 12th St. | 11th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 11th St. | 10th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| 10th St. | N of 10th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| 9th St. | 8th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | No | No | 25 |
| 8th St. | 7th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | No | No | 25 |
| Fairview St. | | | | | | | | | | | |
| S of 21st Pl. | 21st Pl. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 21st Pl. | 20th St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Fallon Ct. | | | | | | | | | | | |
| Snipes St. | Dead End | City | Local | 30 | 15 | Unstriped | Two-way | Yes | No | No | 25 |
| Federal St. | | | | | | | | | | | |
| 14th St. | 13th St. | City | Local | 60 | 38 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 13th St. | 12th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 12th St. | 11th St. | City | Local | 60 | 33 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 11th St. | 10th St. | City | Local | 60 | 35 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 10th St. | 9th St. | City | Local | 60 | 32/36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 9th St. | 8th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 8th St. | 7th St. | City | Local | 60 | 18 | Unstriped | Two-way | Yes | Intermittent | No | 25 |

# TABLE A-1
## Street System Inventory
## City of The Dalles

| Roadway | | Juris-diction | Classi-fication | ROW Width | Street Width | Number of Travel Lanes | Direction | On-Street Parking | Sidewalk | Bike Lane | Speed Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| S of 4th St. | 4th St. | City | Collector | 75 | 38 | 2 | Two-way | Yes | Intermittent | No | 20 |
| 4th St. | 3rd St. | City | Collector | 75 | 56 | 2 | Two-way | Yes | Yes | No | 20 |
| 3rd St. | 2nd St. | City | Collector | 75 | 57 | 2 | Two-way | Yes | Yes | No | 20 |
| 2nd St. | 1st St. | City | Collector | 75 | 59 | 2 | Two-way | Yes | Yes | No | 20 |
| Fire Rd. | | | | | | | | | | | |
| Washington St. | Madison St. | City | Local | 60 | 23 | Unstriped | Two-way | No | No | No | 25 |
| Madison St. | Clark St. | City | Local | 60 | 18 | Unstriped | Two-way | No | No | No | 25 |
| Clark St. | Access to I-84 | City | Local | 60 | 20 | Unstriped | Two-way | No | No | No | 25 |
| Access to I-84 | End | City | Local | 60 | 25 | Unstriped | Two-way | No | No | No | 25 |
| Floral Ct. | | | | | | | | | | | |
| W of 7th St. | 7th St. | County | Local | 40 | 24 | Unstriped | Two-way | Yes | No | No | 25 |
| 7th St. | E of 7th St. | County | Local | 40 | 22 | Unstriped | Two-way | Yes | No | No | 25 |
| Fremont St. | | | | | | | | | | | |
| Old Dufur Rd. | US 197 | City | Arterial | 60 | 22 | 2 | Two-way | No | No | No | 35 |
| Frost Ct. | | | | | | | | | | | |
| Dead End | 10th St. | County | Local | 20 | 20 | Unstriped | Two-way | No | No | No | 25 |
| G St. | | | | | | | | | | | |
| 16th Pl. | 15th Pl. | City | Local | 60 | 36 | Unstriped | Two-way | Intermittent | Intermittent | No | 25 |
| 15th Pl. | 15th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 15th St. | 14th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 14th St. | 13th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 13th St. | 12th St. | City | Local | 60 | 34 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 12th St. | 11th St. | City | Local | 60 | 35 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 11th St. | 10th St. | City | Local | 60 | 34 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 10th St. | 9th St. | City | Local | 60 | 34 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 9th St. | 8th St. | City | Local | 60 | 45 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 8th St. | 7th St. | City | Local | 60 | 12 | Unstriped | Two-way | No | No | No | 25 |
| Garden Ct. | | | | | | | | | | | |
| W of 7th St. | 7th St. | County | Local | 40 | 25 | Unstriped | Two-way | Yes | No | No | 25 |
| Garrison St. | | | | | | | | | | | |
| S of 22nd St. | 22nd St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 22nd St. | 19th St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 19th St. | Scenic Dr. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 17th St. | N of 17th St. | City | Local | 60 | 29 | Unstriped | Two-way | Yes | No | No | 25 |
| 16th St. | 15th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 15th St. | 14th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 14th St. | 13th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 13th St. | 12th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 12th St. | 11th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 11th St. | 10th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 10th St. | 9th St. | City | Local | 60 | 40 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 9th St. | 8th St. | City | Local | 60 | 41 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 8th St. | 7th St. | City | Local | 60 | 30 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 7th St. | 6th St. | City | Local | 60 | 30 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Gorden Ct. | | | | | | | | | | | |
| 13th St. | NE of 13th St. | County | Local | 50 | 17 | Unstriped | Two-way | No | No | No | 25 |
| Grant Cir. | | | | | | | | | | | |
| Lincoln Way | Dead End | City | Local | 30 | 23 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| H St. | | | | | | | | | | | |
| 17th St. | 15th St. | City | Local | 60 | 42 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 15th St. | 14th St. | City | Local | 60 | 42 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 14th St. | 13th St. | City | Local | 60 | 42 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 13th St. | 12th St. | City | Local | 60 | 42 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 12th St. | 11th St. | City | Local | 60 | 37 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 11th St. | 10th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |

# TABLE A-1
## Street System Inventory
## City of The Dalles

| Roadway | | Juris-diction | Classi-fication | ROW Width | Street Width | Number of Travel Lanes | Direction | On-Street Parking | Sidewalk | Bike Lan | Speed Lim |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10th St. | 9th St. | City | Collector | 60 | 36 | 2 | Two-way | Yes | Yes | No | 25 |
| Harris St. | | | | | | | | | | | |
| 13th Pl. | 13th St. | City | Local | 40-60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 13th St. | 12th St. | City | Local | 50 | 32 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 9th St. | 8th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Hermits Way | | | | | | | | | | | |
| W of Ledge St. | Ledge St. | County | Local | 50 | 20 | Unstriped | Two-way | No | No | No | 25 |
| Ledge St. | Dead End | County | Local | 50 | 20 | Unstriped | Two-way | No | No | No | 25 |
| Hiland Ct. | | | | | | | | | | | |
| Dead End | Chenowith Rd. | County | Local | 50 | 34 | Unstriped | Two-way | Yes | No | No | 25 |
| Home Ct. | | | | | | | | | | | |
| W of 7th St. | 7th St. | County | Local | 40 | 23 | Unstriped | Two-way | Yes | No | No | 25 |
| 7th St. | E of 7th St. | County | Local | 40 | 15 | Unstriped | Two-way | No | No | No | 25 |
| Hostetler St. | | | | | | | | | | | |
| 10th St. | 8th St. | County | Collector | 40 | 35 | 2 | Two-way | No | No | No | 30 |
| 8th St. | Dawson Dr. | County | Collector | 50 | 35 | 2 | Two-way | No | No | No | 30 |
| Dawson Dr. | 7th St. | County | Collector | 50 | 35 | 2 | Two-way | No | No | No | 30 |
| 7th St. | US 30 | County | Collector | 40 | 35/44 | 2 | Two-way | No | No | No | 30 |
| US 30 | 2nd St. | County | Local | 40 | 28 | Unstriped | Two-way | No | Intermittent | No | 30 |
| 2nd St. | N of 2nd St. | County | Local | 40 | 40 | Unstriped | Two-way | No | No | No | 15 |
| I St. | | | | | | | | | | | |
| 17th St. | 15th St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | No | No | 25 |
| I St. | | | | | | | | | | | |
| 13th St. | 12th St. | City | Local | 50 | 35 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 12th St. | 11th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 11th St. | 10th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 10th St. | 9th St. | City | Local | 50 | 35 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Irvine St. | | | | | | | | | | | |
| W of 13th St. | 13th St. | County | Local | 40 | 20 | Unstriped | Two-way | No | No | No | 25 |
| 13th St. | Chenowith Rd. | County | Local | 40 | 24 | Unstriped | Two-way | No | No | No | 25 |
| Chenowith Rd. | 9th St. | County | Local | 40 | 24 | Unstriped | Two-way | No | No | No | 25 |
| 9th St. | E of 9th St. | County | Local | 40 | 24 | Unstriped | Two-way | Yes | No | No | 25 |
| W of 7th St. | 7th St. | County | Local | 40 | 15 | Unstriped | Two-way | No | No | No | 25 |
| 7th St. | US 30 | County | Local | 40 | 33/20 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| J St. | | | | | | | | | | | |
| 13th St. | 12th St. | City | Local | 50 | 14 | Unstriped | Two-way | No | No | No | 25 |
| 12th St. | 11th St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 10th St. | 9th St. | City | Local | 50 | 22 | Unstriped | Two-way | Yes | No | No | 25 |
| Jefferson St. | | | | | | | | | | | |
| 18th St. | 17th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 17th St. | Scenic Dr. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 15th St. | 14th St. | City | Local | 60 | 24 | Unstriped | Two-way | No | No | No | 25 |
| 14th St. | 13th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| 13th St. | 12th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 12th St. | 11th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 11th St. | 10th St. | City | Local | 60 | 35 | Unstriped | Two-way | Yes | Yes | No | 25 |
| S of 4th St. | 4th St. | City | Arterial | 80 | 30 | 2 | Two-way | No | No | No | 20 |
| 4th St. | 3rd St. | City | Arterial | 80 | 56 | 2 | Two-way | Yes | Yes | No | 20 |
| 3rd St. | 2nd St. | City | Arterial | 80 | 60 | 2 | Two-way | Yes | Yes | No | 20 |
| 2nd St. | 1st St. | City | Local | 80 | 60 | Unstriped | Two-way | Yes | Yes | No | 20 |
| Jordan St. | | | | | | | | | | | |
| S of 23rd St. | 23rd St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 18th St. | 14th St. | City | Local | 50 | 12 | Unstriped | Two-way | No | No | No | 25 |
| 14th St. | 13th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 13th St. | 12th St. | City | Local | 60 | 35 | Unstriped | Two-way | Yes | Yes | No | 25 |

# TABLE A-1
## Street System Inventory
## City of The Dalles

| Roadway | | Juris-diction | Classi-fication | ROW Width | Street Width | Number of Travel Lanes | Direction | On-Street Parking | Sidewalk | Bike Lan | Speed Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 12th St. | 11th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 11th St. | 10th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 10th St. | 9th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 9th St. | N of 9th St. | City | Local | 60 | 27 | Unstriped | Two-way | Yes | No | No | 25 |
| S of 6th St. | 6th St. | City | Local | 60 | 40 | Unstriped | Two-way | Intermittent | Yes | No | 25 |
| Kelly Ave. | | | | | | | | | | | |
| 16th St. | 15th St. | City | Arterial | 60 | 36 | 2 | Two-way | Yes | Yes | No | 25 |
| 15th St. | 14th St. | City | Arterial | 60 | 36 | 2 | Two-way | Yes | Yes | No | 25 |
| 14th St. | 13th St. | City | Arterial | 60 | 36 | 2 | Two-way | Yes | Yes | No | 25 |
| 13th St. | 12th St. | City | Arterial | 60 | 36 | 2 | Two-way | Yes | Yes | No | 25 |
| 12th St. | 11th St. | City | Arterial | 60 | 44 | 2 | Two-way | Yes | Yes | No | 25 |
| 11th St. | 10th St. | City | Arterial | 60 | 44 | 2 | Two-way | Yes | Yes | No | 20 |
| 10th St. | 9th St. | City | Arterial | 60 | 36 | 2 | Two-way | No | Yes | No | 20 |
| 9th St. | 8th St. | City | Arterial | 50 | 33 | 2 | Two-way | No | Yes | No | 20 |
| 8th St. | 7th St. | City | Arterial | 50 | 33 | 2 | Two-way | No | Yes | No | 20 |
| Kingsley St. | | | | | | | | | | | |
| S of Loring St. | Loring St. | County | Local | 40 | ? | ? | ? | ? | ? | ? | ? |
| Loring St. | 14th St. | County | Local | 40 | 36 | Unstriped | Two-way | Yes | No | No | 25 |
| 14th St. | 13th St. | County | Local | 40 | 36 | Unstriped | Two-way | Yes | No | No | 25 |
| 10th St. | 9th Pl. | County | Local | 40 | 22 | Unstriped | Two-way | No | No | No | 25 |
| 9th Pl. | 9th St. | County | Local | 40 | 22 | Unstriped | Two-way | No | No | No | 25 |
| Lambert St. | | | | | | | | | | | |
| 13th St. | Old Dufur Rd. | City | Local | 40 | 19 | Unstriped | Two-way | No | No | No | 35 |
| ?hlin St. | | | | | | | | | | | |
| 14th St. | 13th St. | City | Local | 60 | 37 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| 13th St. | 12th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 12th St. | 11th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 11th St. | 10th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 10th St. | 9th St. | City | Local | 40 | 26 | Unstriped | Two-way | Intermittent | Yes | No | 25 |
| 9th St. | 8th St. | City | Local | 40 | 26 | Unstriped | Two-way | Intermittent | Yes | No | 25 |
| 8th St. | 7th St. | City | Local | 40 | 18 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| S of 4th St. | 4th St. | City | Local | 60 | 40 | Unstriped | Two-way | Yes | Yes | No | 20 |
| 4th St. | 3rd St. | City | Local | 60 | 40 | Unstriped | Two-way | Yes | Yes | No | 20 |
| 3rd St. | 2nd St. | City | Local | 60 | 40 | Unstriped | Two-way | Yes | Yes | No | 20 |
| 2nd St. | 1st St. | City | Local | 60 | 40 | Unstriped | Two-way | Yes | Yes | No | 20 |
| Ledge St. | | | | | | | | | | | |
| Sandstone Way | Hermits Way | County | Local | 50 | 20 | Unstriped | Two-way | No | No | No | 25 |
| Lee St. | | | | | | | | | | | |
| 7th St. | US 30 | County | Local | 40 | 20/24 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| Lewis St. | | | | | | | | | | | |
| S of 21st St. | 21st St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 21st St. | 19th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 14th St. | 13th St. | City | Local | 40 | 28 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 13th St. | 12th St. | City | Local | 40 | 28 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| 12th St. | 11th St. | City | Local | 40 | 30 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| 11th St. | 10th St. | City | Local | 40 | 29 | Unstriped | Two-way | Yes | 1 Side | No | 25 |
| 10th St. | 9th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Liberty St. | | | | | | | | | | | |
| 15th St. | 14th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 14th St. | 13th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| ?th St. | 11th St. | City | Local | 60 | 18 | Unstriped | Two-way | Yes | No | No | 25 |
| .1th St. | 10th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 10th St. | 9th St. | City | Local | 60 | 31 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 9th St. | 8th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 6th St. | 4th St. | City | Local | 60 | 32 | Unstriped | Two-way | Yes | Yes | No | 20 |

# TABLE A-1
## Street System Inventory
## City of The Dalles

| Roadway | | Juris-diction | Classi-fication | ROW Width | Street Width | Number of Travel Lanes | Direction | On-Street Parking | Sidewalk | Bike Lan | Speed Limi |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4th St. | 3rd St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 20 |
| 3rd St. | 2nd St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 20 |
| Liberty Way | | | | | | | | | | | |
| Scenic Dr. | Lincoln St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Intermittent | No | 20 |
| Lincoln St. | | | | | | | | | | | |
| 16th St. | 15th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| 15th St. | 14th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 14th St. | 13th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| 13th St. | 12th St. | City | Local | 60 | 18 | Unstriped | Two-way | No | No | No | 25 |
| 12th St. | 11th St. | City | Local | 60 | 23 | Unstriped | Two-way | No | Intermittent | No | 25 |
| 11th St. | 10th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 10th St. | 9th St. | City | Local | | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 8th St. | N of 8th St. | City | Local | 60 | 14 | Unstriped | Two-way | No | No | No | 25 |
| 7th St. | 6th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 4th St. | 3rd St. | City | Arterial | 60 | 36 | 2 | Two-way | Yes | Yes | No | 20 |
| 3rd St. | 2nd St. | City | Arterial | 60 | 42 | 2 | Two-way | No | Yes | No | 20 |
| Lincoln Way | | | | | | | | | | | |
| Grant Cir. | 16th St. | City | Local | 50 | 32 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| Lockwood St. | | | | | | | | | | | |
| Starlight St. | Sunflower St. | County | Local | 50 | 34 | Unstriped | Two-way | Yes | No | No | 25 |
| Sunflower St. | Pine St. | County | Local | 50 | 12 | Unstriped | Two-way | No | No | No | 25 |
| Pine St. | Oak St. | County | Local | 50 | 12 | Unstriped | Two-way | No | No | No | 25 |
| Oak St. | Maple St. | County | Local | 50 | 22 | Unstriped | Two-way | Yes | No | No | 25 |
| Maple St. | Murray Dr. | County | Local | 50 | 34 | Unstriped | Two-way | Yes | No | No | 25 |
| Lorenzen St. | | | | | | | | | | | |
| S of 10th St. | 10th St. | City | Local | 40 | 18 | Unstriped | Two-way | No | No | No | 25 |
| Loring St. | | | | | | | | | | | |
| NW of Myrtle St. | Myrtle St. | County | Local | 40 | 10 | ? | ? | ? | ? | ? | ? |
| Myrtle St. | Kingsley St. | County | Local | 40 | 12 | Unstriped | Two-way | No | No | No | 25 |
| Kingsley St. | Webber St. | County | Local | 40 | 12 | Unstriped | Two-way | No | No | No | 25 |
| Madison St. | | | | | | | | | | | |
| 15th St. | 14th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 14th St. | 13th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| 13th St. | 12th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| 12th St. | 11th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| S of 3rd St. | 3rd St. | City | Arterial | 80 | 59 | 2 | Two-way | Yes | Yes | No | 20 |
| 3rd St. | 2nd St. | City | Arterial | 80 | 61 | 2 | Two-way | Yes | Yes | No | 20 |
| 2nd St. | 1st St. | City | Arterial | 80 | 61 | 2 | Two-way | Yes | Yes | No | 20 |
| 1st St. | Fire Rd. | City | Arterial | 80 | 54 | 2 | Two-way | Yes | Intermittent | No | 20 |
| Maple St. | | | | | | | | | | | |
| Lockwood St. | Chenowith Rd. | County | Local | 50 | 34 | Unstriped | Two-way | Yes | No | No | 25 |
| Meek St. | | | | | | | | | | | |
| SW of 13th St. | 13th St. | County | Local | 50 | 16 | Unstriped | Two-way | No | No | No | 25 |
| Minnesota St. | | | | | | | | | | | |
| Dead End | 17th St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Monroe St. | | | | | | | | | | | |
| 15th St. | 16th Pl. | City | Local | 80 | 14 | Unstriped | Two-way | No | No | No | 25 |
| 3rd St. | 2nd St. | City | Local | 80 | 60 | Unstriped | Two-way | Yes | Yes | No | 20 |
| 2nd St. | N of 2nd St. | City | Local | 80 | 61 | Unstriped | Two-way | Yes | Yes | No | 20 |
| Montana St. | | | | | | | | | | | |
| Dry Hollow Rd. | 17th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 17th St. | 15th St. | City | Local | 60 | 35 | Unstriped | Two-way | Intermittent | Intermittent | No | 25 |
| 15th St. | 14th St. | City | Local | 60 | 27/35 | Unstriped | Two-way | No | Intermittent | No | 25 |
| Morton St. | | | | | | | | | | | |
| 18th St. | 16th St. | City | Local | 60 | 23 | Unstriped | Two-way | No | No | No | 25 |

# TABLE A-1
## Street System Inventory
## City of The Dalles

| Roadway | | Juris-diction | Classi-fication | ROW Width | Street Width | Number of Travel Lanes | Direction | On-Street Parking | Sidewalk | Bike Lan | Speed Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 16th St. | 15th St. | City | Local | 60 | 23 | Unstriped | Two-way | No | No | No | 25 |
| 15th St. | 14th St. | City | Local | 60 | 24 | Unstriped | Two-way | No | No | No | 25 |
| 14th St. | 12th St. | City | Local | 60 | 24 | Unstriped | Two-way | No | No | No | 25 |
| 12th St. | 10th St. | City | Local | 60 | 18 | Unstriped | Two-way | No | No | No | 25 |
| 10th St. | Old Dufur Rd. | City | Local | 60 | 18 | Unstriped | Two-way | No | No | No | 25 |
| Mount Hood St. | | | | | | | | | | | |
| City Limits (~0.2 mi) | Sunset Valley Rd. | City | Arterial | 60 | 25 | 2 | Two-way | Yes | No | No | 35 |
| Sunset Valley Rd. | 23rd St. | City | Arterial | 60 | 26 | 2 | Two-way | Yes | No | No | 35 |
| 23rd St. | Skyline Rd. | City | Arterial | 60 | 26 | 2 | Two-way | Yes | No | No | 35 |
| Skyline Rd. | 21st St. | City | Arterial | 60 | 24 | 2 | Two-way | 1 Side | No | No | 35 |
| 21st St. | 20th St. | City | Arterial | 60 | 42 | 2 | Two-way | Yes | Yes | No | 35 |
| 20th St. | 19th St. | City | Arterial | 60 | 42 | 2 | Two-way | Yes | Yes | No | 35 |
| 19th St. | 18th St. | City | Arterial | 60 | 42 | 2 | Two-way | Yes | Yes | No | 35 |
| 18th St. | 17th St. | City | Arterial | 60 | 42 | 2 | Two-way | Yes | Yes | No | 25 |
| 17th St. | 16th St. | City | Arterial | 60 | 42 | 2 | Two-way | Yes | Yes | No | 25 |
| 16th St. | 15th St. | City | Arterial | 60 | 42 | 2 | Two-way | Yes | Yes | No | 25 |
| 15th St. | 14th St. | City | Arterial | 60 | 42 | 2 | Two-way | Yes | Yes | No | 25 |
| 14th St. | 13th St. | City | Arterial | 60 | 42 | 2 | Two-way | Yes | Yes | No | 25 |
| 13th St. | 12th St. | City | Arterial | 60 | 42 | 2 | Two-way | Yes | Yes | No | 25 |
| 12th St. | 11th St. | City | Arterial | 60 | 42 | 2 | Two-way | Yes | Yes | No | 25 |
| 11th St. | 10th St. | City | Arterial | 60 | 42 | 2 | Two-way | Yes | Yes | No | 25 |
| 10th St. | 9th St. | City | Arterial | 60 | 42 | 2 | Two-way | Yes | Yes | No | 25 |
| 9th St. | 8th St. | City | Arterial | 60 | 36 | 2 | Two-way | Yes | Yes | No | 25 |
| of 2nd St. | 2nd St. | City | Local | 60 | 50 | Unstriped | Two-way | Yes | No | No | 25 |
| Murray Dr. | | | | | | | | | | | |
| Unpaved Surface | Lockwood St. | County | Local | 50 | 20 | Unstriped | Two-way | No | No | No | 25 |
| Lockwood St. | Chenowith Rd. | County | Local | 50 | 34 | Unstriped | Two-way | Yes | No | No | 25 |
| Myrtle St. | | | | | | | | | | | |
| S of Loring St. | Loring St. | County | Local | 40 | ? | ? | ? | ? | ? | ? | ? |
| Loring St. | 14th St. | County | Local | 40 | ? | ? | ? | ? | ? | ? | ? |
| 14th St. | 13th St. | County | Local | 40 | 12 | Unstriped | Two-way | No | No | No | 25 |
| 10th St. | 9th St. | County | Local | 40 | 20 | Unstriped | Two-way | No | No | No | 25 |
| 9th St. | 8th St. | County | Local | 40 | 20 | Unstriped | Two-way | No | No | No | 25 |
| 8th St. | 7th St. | City | Local | 60 | 23 | Unstriped | Two-way | No | No | No | 25 |
| 7th St. | US 30 | City | Local | 80 | 44 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Nevada St. | | | | | | | | | | | |
| 19th St. | 17th St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 17th St. | 16th Ct. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 16th Ct. | 15th St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 14th St. | 13th St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Oak St. | | | | | | | | | | | |
| Murray Dr. | Lockwood St. | County | Local | 50 | 15 | Unstriped | Two-way | No | No | No | 25 |
| Lockwood St. | Chenowith Rd. | County | Local | 50 | 34 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| Old Dufur Rd. | | | | | | | | | | | |
| 10th St. | Morton St. | City | Arterial | 60 | 30 | 2 | Two-way | Yes | No | No | 35 |
| Morton St. | Richmond St. | City | Arterial | 60 | 30 | 2 | Two-way | Yes | No | No | 35 |
| Richmond St. | Fremont St. | City | Arterial | 60 | 24 | 2 | Two-way | No | No | No | 35 |
| Fremont St. | Lambert St. | City | Collector | 60 | 23 | 2 | Two-way | No | No | No | 35 |
| Lambert St. | City Limits (~0.1 mi.) | City | Collector | 60 | 23 | 2 | Two-way | No | No | No | 35 |
| Oregon Ave. | | | | | | | | | | | |
| of 16th St. | 16th St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 16th St. | 15th St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 15th St. | 14th St. (W) | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 14th St. (W) | 14th St. (E) | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 14th St. (E) | 13th St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |

# TABLE A-1
## Street System Inventory
## City of The Dalles

| Roadway | | Juris-diction | Classi-fication | ROW Width | Street Width | Number of Travel Lanes | Direction | On-Street Parking | Sidewalk | Bike Lan | Speed Limi |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 13th St. | 12th St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| 12th St. | 11th St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 11th St. | 10th St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 10th St. | 9th St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Pentland St. | | | | | | | | | | | |
| 16th St. | 15th St. | City | Local | 60 | 40 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 15th St. | 14th St. | City | Local | 60 | 30 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 14th St. | 13th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 13th St. | 12th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| 12th St. | 11th St. | City | Local | 60 | 20 | Unstriped | Two-way | Yes | No | No | 25 |
| 11th St. | 10th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 10th St. | 9th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 9th St. | 8th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 8th St. | 7th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| 7th St. | 6th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| 3rd St. | 2nd St. | City | Local | 50 | 40 | Unstriped | Two-way | Yes | Yes | No | 20 |
| Perkins Ave. | | | | | | | | | | | |
| 13th St. | 10th St. | County | Local | 30 | 20 | Unstriped | Two-way | No | No | No | 25 |
| Pine St. | | | | | | | | | | | |
| Unpaved Surface | Lockwood St. | County | Local | 50 | 12 | Unstriped | Two-way | No | No | No | 25 |
| Lockwood St. | Chenowith Rd. | County | Local | 50 | 34 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| Pleasant Ct. | | | | | | | | | | | |
| 7th St. | E of 7th St. | County | Local | 40 | 25 | Unstriped | Two-way | Yes | No | No | 25 |
| Pomona St. | | | | | | | | | | | |
| W of 10th St. | 10th St. | County | Local | 60 | 22 | Unstriped | Two-way | No | No | No | 25 |
| 10th St. | 7th St. | County | Local | 80-50 | 43 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 7th St. | US 30 | County | Local | 40 | 44 | Unstriped | Two-way | Yes | Yes | No | 25 |
| Quinton St. | | | | | | | | | | | |
| Dead End | Roberts St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | No | No | 25 |
| Roberts St. | 16th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| 16th St. | 15th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | No | No | 25 |
| 15th St. | 14th St. (W) | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 14th St. (W) | 14th St. (E) | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| 14th St. (E) | 13th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| 13th St. | 12th St. | City | Local | 60 | 36 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| 12th St. | 10th St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 10th St. | 9th St. | City | Collector | 50 | 36 | 2 | Two-way | Yes | 1 Side | No | 25 |
| Radio Way | | | | | | | | | | | |
| 20th St. | 21st St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| 21st St. | 23rd St. | City | Local | 50 | 36 | Unstriped | Two-way | Yes | Intermittent | No | 25 |
| Richland Ct. | | | | | | | | | | | |
| W of 7th St. | 7th St. | County | Local | 40 | 23 | Unstriped | Two-way | Yes | No | No | 25 |
| 7th St. | E of 7th St. | County | Local | | 12 | Unstriped | Two-way | No | No | No | 25 |
| Richmond St. | | | | | | | | | | | |
| 16th St. | 14th St. | County | Local | 40 | ? | ? | ? | ? | ? | ? | ? |
| 14th St. | 13th St. | County | Local | 40 | ? | ? | ? | ? | ? | ? | ? |
| 13th St. | 12th St. | County | Local | 40 | 22 | Unstriped | Two-way | No | No | No | 25 |
| 12th St. | 10th St. | County | Local | 40 | 19 | Unstriped | Two-way | No | No | No | 25 |
| 10th St. | Old Dufur Rd. | City | Local | 40 | 18 | Unstriped | Two-way | No | No | No | 25 |
| River Rd. | | | | | | | | | | | |
| NW End | Port of The Dalles | County | Collector | 40 | 25/32 | 2 | Two-way | No | No | No | 10 |
| Port of The Dalles | Bargeway Rd. | County | Collector | 40 | 25/32 | 2 | Two-way | No | No | No | 40 |
| Riverview St. | | | | | | | | | | | |
| 17th St. | 16th St. | City | Local | 50 | 32 | Unstriped | Two-way | Yes | Yes | No | 25 |
| 16th St. | 15th St. (W) | City | Local | 50 | 32 | Unstriped | Two-way | Yes | Intermittent | No | 25 |

# APPENDIX B
# REVIEW OF EXISTING PLANS AND POLICIES

**MEMORANDUM**

TO: DALL0001 File

FROM: Manish Babla

DATE:

SUBJECT: **THE DALLES TRANSPORTATION MASTER PLAN PHASE I - TECHNICAL MEMORANDUM # 1 - REVIEW OF PAST PLANS AND POLICIES**

---

This memorandum summarizes the review of past plans and policies related to transportation system development in the City of The Dalles. The intent of the review is to acquaint the consultant, David Evans and Associates, Inc. (DEA), with the transportation issues in The Dalles.

The following reports were reviewed under this task:

1. The City of The Dalles Comprehensive Plan, City of The Dalles Planning Department, December, 1982.
2. The Dalles Traffic Safety Management Program, Oregon Traffic Safety Commission, May, 1981.
3. Proposed Narrow Streets Policy Report, City of The Dalles Planning Department, October, 1975.
4. Mid-Columbia Transportation Plan, Mid-Columbia Economic Development District, October, 1975.
5. Wasco County Advance Road Planning Program, Wasco County, October, 1973.
6. General Plan of Highway and Street Improvements for The Dalles, Oregon, Oregon State Highway Division, May, 1972.
7. A Traffic Safety Program and Arterial Street System for City of The Dalles, Oregon, City of The Dalles Community and Economic Development Department, December, 1970.
8. Street Report for The Dalles, Oregon, City of The Dalles, August, 1968.
9. Planning for Streets, The Dalles City Planning Commission, October, 1961.
10. 1993-1998 Six-Year Highway Improvement Program, Oregon Department of Transportation (ODOT), July 1992.
11. The Dalles Riverfront Plan: Master Plan and Action Recommendations, Wasco County, City of The Dalles, Port of The Dalles, National Park Service, October, 1989.

There is no current comprehensive multi-modal transportation plan document prepared for the City of The Dalles.

The basic content of each of the eleven documents as it relates to The Dalles transportation system, is summarized in the following pages.

## THE CITY OF THE DALLES COMPREHENSIVE PLAN

The comprehensive plan recognizes the need for a multi-modal transportation system that conforms with local and regional land use plans; that meets the needs of the transportation disadvantaged; and that minimizes adverse social, economic, and environmental impacts and costs. The comprehensive plan discussion on the transportation system in The Dalles presents a single transportation goal and nine associated policies and implementing measures.

### Transportation Goal

To provide and encourage a safe, convenient, and economic transportation system.

### Policies

1. Mass transit and transportation for the disadvantaged in The Dalles urban area shall be encouraged.
2. Pedestrian, bicycle, and horse trails in the urban area shall be encouraged.
3. The Dalles Municipal Airport is a transportation facility of regional importance which shall be properly maintained to meet the needs of the mid-Columbia area.
4. Encourage the provision of adequate barge handling facilities to meet present and future barge traffic on the Columbia river.
5. Traffic and pedestrian circulation shall be improved in The Dalles urban area.
6. An adequate system of arterial and collector streets to provide for the needs of the residential, commercial, and industrial areas of the community shall be maintained.
7. Commercial and industrial developments shall provide adequate ingress and egress, off-street parking, and adequate landscaping.
8. Provide adequate access to the west side of the urban area.
9. Transportation services to make health and social services accessible to all residents shall be provided as funds are available.

**Implementing Measures**

1. A study shall be initiated by the City of The Dalles as funds are available to evaluate the need for mass transit in the urban area to consider an economically feasible mass transit and centrally located mass transit facilities
2. A study shall be initiated by the City of The Dalles to evaluate the feasibility and location of pedestrian, bicycle, and horse trails as funds are available.
3. The Dalles Municipal Airport Plan shall be implemented as funds are available.
4. If Congress authorizes a study of Bonneville Dam Locks, the Port and City of The Dalles and Wasco County shall encourage the construction of a deeper lock which would accommodate ocean-going vessels.
5. Traffic and Pedestrian circulation will be improved by the completion of the First Street project, increased traffic signalization, street improvements; i.e. curbs, sidewalks, and additional right-of-ways, bicycle, and pedestrian paths, and recommendations by the Traffic Safety Commission to the City Council.
6. Streets over estimated capacity shall be improved in accordance with the adopted programs for street improvements as funds become available.
7. The Planning Commission shall review all landscaping and off-street parking site plans to ensure conformance with the Zoning Ordinance and Comprehensive Plan.
8. The City of The Dalles in cooperation with the State Highway Department and the Port of The Dalles should initiate a study to consider the need, location, and costs for construction of an additional westbound exit off of Interstate 84N.
9. A convenient and economic system of transportation shall be encouraged to be provided for needy senior citizens and the handicapped and other transportation disadvantaged.

## THE DALLES TRAFFIC SAFETY MANAGEMENT PROGRAM

This study was a follow-up to a Oregon Highway Safety Plan prepared by the Oregon Traffic Safety Commission in 1979. The study was designed to establish:

1. A Comprehensive Traffic Engineering Review of the city to provide the data and design details necessary for correction of hazardous conditions throughout the city.
2. An Accident Review Program for the city that would allow the identification of problem areas within the city.
3. A Traffic Control Improvement Program that will aid the city in providing up-to-date traffic control device inventories and identify future traffic control device needs.

4. A Street and Roadway Improvement Program that will help the city correct the hazardous conditions that exist within the city.

Fifteen Component projects were proposed by the study.

**Project 1: Traffic Accident Analysis**

The traffic accidents at intersections and in roadway sections during 1977, 1978, and 1979 were summarized to help determine the improvements that would be required to reduce special types of accidents. The analysis identified highest accident intersections and 10 highest accident road sections in the city.

The five highest accident intersections and the five highest accident roadway sections identified through the analysis are listed below:

1. Intersection of Hostelier Street and Sixth Street
2. Intersection of Federal Street and Second Street
3. Intersection of Chenowith Loop and Second Street
4. Intersection of Court Street and Fourth Street
5. Intersection of Washington Street and Third Street
6. Tenth Street, between Webber Street and Old Dufur Road
7. Twelfth Street, between Jordan Street and Morton Street
8. I-84 on-ramps at Webber, River, Second, and Sixth Streets
9. Jefferson Street, between Second Street and Seventeenth Street
10. Union Street, between Second Street and Fifteenth Street

**Project 2: Signing**

The project reviewed existing traffic signing in The Dalles and identified locations with signs that did not conform to the Manual on Uniform Traffic Control Devices (MUTCD) standards, and recommended new signs as well as changes to existing signing to make them conform to MUTCD standards.

**Project 3: Vision Obstructions**

The project identified roadway locations with visibility problems, with the aim of decreasing the number of intersection and non-intersection accidents.

**Project 4: Speed Zoning**

The project identified improvements to the speed zoning to provide uniform and consistent speed zones to provide for the safe and orderly flow of traffic.

**Project 5: Pavement Striping**

The project was aimed at providing a uniform system of pavement markings to be compatible with other projects being proposed by the city and this Traffic Safety Management Program, to reduce traffic accidents, and to provide the motoring public with a designated street system.

**Project 6: Traffic Volume Counts**

Traffic volume studies were conducted to obtain accurate information about the number and movement of vehicles and/or pedestrians within or through an area, or at selected points within an area.

**Project 7: Special Routes**

The project was aimed at providing a continuous route for heavy trucks though town or to specific areas of town to provide routes for emergency vehicles and for snow removal priority.

**Project 8: One Way Streets**

The project identified converting some of the existing two-way street to one-way operation with the aim of decreasing accidents and increasing the capacity of existing arterial streets at a minimum cost to citizens.

**Project 9: Downtown Safety**

Downtown projects were identified with the aim of reducing the number of traffic accidents in the Central Business District and to design improvements with the highest benefit to cost ratios.

**Project 10: Bicycle Systems**

The project was aimed at providing a continuous bicycle system to reduce bicycle accidents and provide mobility to bicyclists.

**Project 11: Guardrail Improvements**

The project was aimed at providing a method by which the City may determine the need for a future guardrail, to provide the City with standard plans for the installation of guardrails, and to reduce the severity of fixed object and guardrail involvement accidents.

**Project 12: Intersection Improvements**

The project was aimed at identifying strategies to improve traffic flow and safety at individual intersections. The following improvements were identified to meet the above-stated objective:

1. Traffic Signal at the intersections of Sixth Street with Snipes Street, Webber Street, and Terminal Street.
2. Traffic Signal at the intersection of Second Street and Mt. Hood Street
3. At the intersection of Second Street and Terminal Street, realign Terminal Street to be a 90 degree intersection with Second Street
4. Re-stripe turn lanes at the intersection of Sixth Street and Chenowith Street
5. At intersection of Third Street and Trevitt Street, post Trevitt Street for right-turn only
6. At intersection of Third Street and Lincoln Street, southbound Lincoln Street should be stopped at Third Street
7. At intersection of Tenth Street and Union Street, place school crossing signs back-to-back to end the illusion of a four-way stop

8. At intersection of Tenth Street and Washington Street, add curve warning signs with an advisory speed of 15 mph
9. At intersection of Tenth Street and Kelly Street, if Tenth Street is not made one-way, then re-stripe Tenth Street on the south side to align with the east side of the street
10. At intersection of Twelfth Street and Kelly Street, stripe south leg approach as right turn only
11. Re-stripe Ninth Street and Dry Hollow Road with changes in control signs at the intersection
12. Place Yield signs on Eleventh Street, Fourteenth Place, and Seventeenth Street at Thompson Street
13. At intersection of Old Dufur Road and Tenth Street, stripe westbound Tenth Street
14. Re-stripe Old Dufur Road at the intersection with Fremont Street
15. Place advance "Yield Ahead" warning sign and double arrow warning sign on Nevada and "Yield" sign on Fifteenth Street at Nevada

**Project 13: Street Section Improvements**

The project was aimed at reducing the number and severity of traffic accidents, to increase the capacity of the street system, and to have a minimum cost. The following improvements were identified to meet the above-stated objective:

1. Old Dufur Road should have a curve warning sign with an advisory speed sign of 30 mph, intersection warning signs, and directional guide signs at intersections with Fremont Street and Tenth Street
2. Sixteenth Street / Kelly Street curve should have a curve warning sign and an advisory speed sign of 15 mph
3. Terrace Drive from Scenic Drive to Fourteenth Street requires advance warning signs
4. Ninth and Tenth Streets from Lewis to Kelly Streets require three parking signs per block
5. Seventh Street from Washington Street to Kelly Street requires advanced curve warning signs
6. Second Street from Lincoln Street to I-84 ramps should be re-striped for the proposed traffic signal at Mt. Hood Street. Striping at the intersection should consist of a left turn lane and four through lanes tapering to two lanes
7. Sixth Street from Chenowith Street to Ash Street should be re-striped for a continuous left turn lane and four through lanes

8. Mt. Hood Street and Terminal Street should be continuous from Sixth Street to Second Street
9. The City should continue with the widening of the intersection of Sixth Street and Snipes Street
10. The City should encourage the State of Oregon to implement the plan for Highway 30 at Brewery grade and I-84 ramps

**Project 14: State Highway Improvements**

The following projects were identified to increase capacity and improve safety of the state highway system:

1. Channelization and traffic signal at the intersection of Highway 30 and Brewery Grade
2. Closure of the ramps on Second Street between Mt. Hood and Terminal Streets, and replace the ramps at Webber Street
3. Signalize the intersection of Sixth Street with Webber and Snipes Streets
4. Redirect traffic, through changes in traffic control, to use Lincoln and Pentland Streets at their intersection with the Highway 30 couplet
5. Reconstruct guardrail on Highway 30 from about Lewis Street east towards US 197
6. Re-stripe Highway 30 from Webber Street to Ash Street to five lanes to match Sixth Street east of Webber Street
7. Change signing and re-design Hostelier Street at Sixth and Second Streets

**Project 15: Comprehensive Plan**

The project was aimed at revising and updating the Transportation Section of the then existing City Comprehensive Plan in order to provide for the future safety of the public

## PROPOSED NARROW STREETS POLICY REPORT

The proposed narrow streets policy report was designed to increase safety on the City's arterial and collector streets for motorists, pedestrians, and adjacent property-owners. The following standards were proposed:

1. Arterial and Collector streets with less than 28' of improved street (curb to curb) would be allowed no on-street parking;
2. Arterial and Collector streets with less than 36', but more than 28', of improved street (curb to curb) would be allowed on-street parking on one side of the street only (east side for north-south streets and south side for east-west streets);
3. Arterial and Collector streets with 36' or more of improved width (curb to curb) would be allowed on-street parking on both sides.

Additionally, the following street standards for arterial and collector street were listed in the report.

**TABLE**

**CITY STREET STANDARDS**

| Street Type | City Street Standards | | |
|---|---|---|---|
| | Right-of-Way | Improved Pavement Width | Sidewalks |
| Arterials | | | |
| Commercial or Industrial | 100' | 64' | 6'-10' |
| Residential | 80' | 44' | 6'-8' |
| Collectors | | | |
| Commercial or Industrial | 80' | 44' | 6'-10' |
| Residential | 60' | 36' | 6'-8' |
| Locals | | | |
| Commercial or Industrial | 50' | 36' | 6'-10' |
| Residential | 50' | 36' | 6'-10' |

## MID-COLUMBIA TRANSPORTATION PLAN

Unlike transportation plans developed by many agencies, this document does not stress specific projects which must be developed by other agencies to meet the area's needs, but rather describes the area, its needed transportation facilities, then culminates in a system by which the Mid-Columbia Economic Development District will evaluate proposals for Federal and federally assisted transportation projects.

## WASCO COUNTY ADVANCE ROAD PLANNING PROGRAM

The program is a tool used by the Wasco County Road Department to allocate its road improvement projects which govern the reconstruction and improvement of existing County roads. The program involved classifying the County road system into urban and rural arterial, collector, and local roads, and then rating them to indicate the relative importance of similarly classified roads to establish a priority for roadway improvement programs.

## GENERAL PLAN OF HIGHWAY AND STREET IMPROVEMENTS FOR THE DALLES, OREGON

The General Plan identified future (1980) traffic projections, capacity conditions, and required roadway improvement projects. The following six projects were identified in the General Plan:

1. Widen East Second Street from Taylor Street to Brewery Grade from two to four lanes
2. Increase capacity of East Third Street between Union and Washington Streets
3. Increase capacity of West Second Street between Lincoln and Webber Streets
4. Increase capacity of West Third Place/West Sixth Street between Lincoln and Myrtle Streets
5. Improvement of Tenth Street to arterial standards to provide an alternative east-west route
6. Union-Court Street couplet between Second and Tenth Streets

## A TRAFFIC SAFETY PROGRAM AND ARTERIAL STREET SYSTEM FOR CITY OF THE DALLES

The project consisted of a complete inventory of roadways and traffic controls along roadways and at intersections in The Dalles. Also, the traffic operations and safety conditions were analyzed, and methods of financing established for improvement projects in The Dalles.

## STREET REPORT FOR THE DALLES, OREGON

The report listed streets in The Dalles requiring nearly complete construction, curbing and/or widening, and also listing of streets outside the City limits.

## PLANNING FOR STREETS

The plan identified future street facility requirements in The Dalles based on a 1956 traffic survey.

## SIX-YEAR HIGHWAY IMPROVEMENT PROGRAM

The program identifies funding for a Senior Citizens Bus Service in fiscal years 1993, 1996, and 1997. The program identifies the construction of a bikeway on I-84 from Port Access Road to River Front Park for fiscal year 1995, and construction of an interchange at Chenowith Road for 1996. Also, the West Sixth and Second Street interchange and Mosier-The Dalles Highway at Webber Street improvement projects are identified as requested projects in the six-year program.

## THE DALLES RIVERFRONT PLAN: MASTER PLAN AND ACTION RECOMMENDATIONS

The intent of the Riverfront Plan is to create a multipurpose greenway along a nine-mile stretch of the Columbia River in The Dalles. The plan would provide river access, recreational opportunities, and protection for important riverfront resources. In addition, the plan proposes to link riverfront commercial and industrial areas with each other and with other community activity centers.

The plan includes recreation, circulation and transportation, natural resource protection, cultural resource, scenic resource, and commercial and industrial development proposals. The circulation and transportation proposals are presented below:

- shuttle service and other alternative transportation to connect the Dam area with other riverfront attractions

- multipurpose Riverfront Trail and greenway trails linking riverfront activity areas

- support for developing a new west interchange and integrating it with other riverfront proposals

- an area-wide bikeway system

- a system of boat landings along the waterfront for tour boats and small craft

- shuttle service and other alternative transportation to connect the Dam area with other riverfront attractions

CC: Jennifer Danziger, DEA
Jay Lyman, DEA

# APPENDIX C
# LAND USE FORECASTING

# City of The Dalles

# Transportation System Plan

## Demographic Forecast

*Prepared for:*

City of The Dalles, Oregon

**June 22, 1995**

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# I. INTRODUCTION

This report summarizes the methods and assumptions used by David Evans and Associates, Inc. (DEA) to estimate current population, housing, and employment in The Dalles and to forecast these demographics for the year 2015. The demographic data, presented in Tables 1, 2, and 3, were prepared for use in a computer transportation model, TModel 2, which uses housing, employment, and transportation data to determine future transportation needs. Identified needs then will be utilized to prepare the City of The Dalles' Transportation System Plan (TSP).

# II. STUDY AREA

The study area for the TSP is defined primarily by the City's Urban Growth Boundary (UGB). In addition, the study area includes some residential land northwest of the UGB, known as Murray's Addition. This area is identified as transportation analysis zone (TAZ) 1. The map included with this report shows the study area boundary.

It is important to note that, because the study area boundary differs from The Dalles city limits and UGB, the demographic data contained in this report should not be compared directly with existing data for the city, nor should the projections be used in other studies associated with the city limits or UGB.

# III. BASE CASE ESTIMATES AND METHODOLOGY

To begin the demographic work, DEA divided the study area into 50 TAZs. Dividing the area into zones enables the computer model to analyze traffic movements between localized areas. TAZ boundaries typically are based on land use, major streets, topography, natural constraints, and US Census blocks. All population and employment estimates for existing (base case) and forecasted conditions are divided according to the appropriate TAZs to enable the computer to track demographic change for different portions of the city.

## Population and Housing

DEA's calculations result in an estimated 1995 population of 14,720 for the study area. The number of dwelling units in the study area is estimated at 6,410, of which 5,141 (80 percent) are single-family homes (including mobile homes) and 1,269 (20 percent) are multi-family units. Population and housing figures are presented in Table 1.

**Table 1**
**Existing and Projected Housing and Population**
**The Dalles Study Area**

| | 1990 | | | | 1995 estimate | | | | 2015 forecast | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TAZ | Total du | SF du | MF du | Pop. | Total du | SF du | MF du | Pop. | Total du | SF du | MF du | Pop. |
| 1 | 259 | 259 | 0 | 657 | 270 | 270 | 0 | 687 | 320 | 320 | 0 | 768 |
| 2 | 99 | 40 | 59 | 244 | 104 | 42 | 62 | 255 | 114 | 50 | 63 | 254 |
| 3 | 215 | 203 | 12 | 425 | 225 | 212 | 13 | 445 | 265 | 243 | 23 | 630 |
| 4 | 57 | 31 | 26 | 110 | 60 | 32 | 27 | 115 | 60 | 32 | 27 | 135 |
| 5 | 104 | 102 | 2 | 266 | 109 | 107 | 2 | 278 | 187 | 185 | 2 | 448 |
| 6 | 360 | 316 | 44 | 791 | 397 | 349 | 49 | 873 | 537 | 454 | 83 | 1,264 |
| 7 | 150 | 99 | 51 | 374 | 157 | 104 | 53 | 391 | 229 | 136 | 93 | 521 |
| 8 | 287 | 183 | 104 | 610 | 317 | 202 | 115 | 673 | 411 | 273 | 138 | 946 |
| 9* | 2 | 1 | 1 | 119 | 2 | 1 | 1 | 125 | 2 | 1 | 1 | 125 |
| 10 | 114 | 112 | 2 | 250 | 120 | 117 | 2 | 262 | 184 | 144 | 40 | 430 |
| 11 | 42 | 2 | 40 | 48 | 44 | 2 | 42 | 50 | 123 | 25 | 98 | 265 |
| 12 | 1 | 1 | 0 | 2 | 1 | 1 | 0 | 2 | 1 | 1 | 0 | 3 |
| 13 | 64 | 34 | 30 | 118 | 67 | 36 | 31 | 123 | 67 | 36 | 31 | 151 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 204 | 87 | 117 | 353 | 213 | 91 | 122 | 369 | 226 | 92 | 134 | 502 |
| 16 | 110 | 95 | 15 | 251 | 115 | 99 | 16 | 263 | 183 | 167 | 16 | 434 |
| 17 | 46 | 42 | 4 | 101 | 48 | 44 | 4 | 106 | 48 | 44 | 4 | 114 |
| 18 | 313 | 227 | 86 | 672 | 328 | 238 | 90 | 703 | 328 | 238 | 90 | 759 |
| 19 | 16 | 16 | 0 | 32 | 17 | 17 | 0 | 33 | 17 | 17 | 0 | 40 |
| 20 | 2 | 2 | 0 | 4 | 2 | 2 | 0 | 4 | 2 | 2 | 0 | 5 |
| 21 | 112 | 104 | 8 | 236 | 117 | 109 | 8 | 247 | 117 | 109 | 8 | 279 |
| 22 | 355 | 336 | 20 | 876 | 371 | 351 | 20 | 916 | 383 | 363 | 20 | 914 |
| 23 | 154 | 146 | 9 | 388 | 161 | 152 | 9 | 405 | 161 | 152 | 9 | 384 |
| 24 | 276 | 180 | 96 | 621 | 289 | 188 | 100 | 650 | 289 | 188 | 100 | 663 |
| 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 26 | 58 | 2 | 56 | 30 | 61 | 2 | 59 | 31 | 61 | 2 | 59 | 128 |
| 27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 28 | 172 | 124 | 48 | 353 | 180 | 130 | 50 | 369 | 180 | 130 | 50 | 417 |
| 29 | 1 | 1 | 0 | 4 | 1 | 1 | 0 | 4 | 1 | 1 | 0 | 3 |
| 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 31 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 32 | 234 | 147 | 87 | 531 | 245 | 154 | 91 | 556 | 245 | 154 | 91 | 560 |
| 33 | 492 | 481 | 12 | 1,163 | 515 | 503 | 12 | 1,216 | 533 | 521 | 12 | 1,275 |
| 34 | 64 | 56 | 8 | 158 | 67 | 59 | 8 | 165 | 67 | 59 | 8 | 158 |
| 35 | 143 | 131 | 12 | 343 | 150 | 137 | 13 | 359 | 150 | 137 | 13 | 355 |
| 36 | 114 | 114 | 0 | 288 | 119 | 119 | 0 | 301 | 119 | 119 | 0 | 286 |
| 37 | 256 | 247 | 9 | 657 | 268 | 258 | 9 | 687 | 278 | 269 | 9 | 665 |
| 38 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 39 | 51 | 10 | 41 | 90 | 53 | 10 | 43 | 94 | 53 | 10 | 43 | 115 |
| 40 | 60 | 0 | 60 | 85 | 63 | 0 | 63 | 89 | 63 | 0 | 63 | 132 |
| 41 | 4 | 4 | 0 | 14 | 4 | 4 | 0 | 15 | 4 | 4 | 0 | 10 |
| 42 | 147 | 139 | 8 | 440 | 154 | 145 | 8 | 460 | 281 | 273 | 8 | 673 |
| 43 | 72 | 62 | 10 | 150 | 75 | 65 | 10 | 157 | 158 | 72 | 86 | 353 |
| 44 | 79 | 18 | 61 | 169 | 83 | 19 | 64 | 177 | 83 | 19 | 64 | 179 |
| 45 | 145 | 103 | 42 | 338 | 152 | 108 | 44 | 354 | 170 | 109 | 61 | 390 |
| 46 | 96 | 87 | 9 | 222 | 109 | 98 | 10 | 251 | 194 | 105 | 89 | 440 |
| 47 | 271 | 255 | 16 | 645 | 284 | 267 | 17 | 675 | 288 | 271 | 17 | 685 |
| 48 | 115 | 115 | 0 | 295 | 130 | 130 | 0 | 334 | 237 | 225 | 13 | 565 |
| 49 | 31 | 31 | 0 | 77 | 33 | 33 | 0 | 80 | 165 | 148 | 17 | 391 |
| 50 | 125 | 125 | 0 | 347 | 132 | 132 | 0 | 367 | 240 | 240 | 0 | 576 |
| Total | 6,072 | 4,868 | 1,204 | 13,945 | 6,410 | 5,141 | 1,269 | 14,720 | 7,823 | 6,139 | 1,685 | 18,391 |

* majority of population in TAZ 9 lives in group dwelling

du = dwelling units  Pop. = population
SF = single-family  MF = multi-family

To estimate current population and housing, DEA relied upon 1990 US Census data at the census block level. Block data were aggregated into study area TAZs to get the 1990 demographic information for each TAZ and the total study area. According to The Dalles' most recent Comprehensive Plan (1994), the city's population is expected to increase at an average rate of 1.1 percent per year. Therefore, the study area total was estimated for 1995 based on the 1990 census counts and the 1.1 percent annual growth rate, resulting in a total population of 14,720.

In estimating 1995 population and housing for each TAZ, DEA assumed that residential infill has occurred throughout the study area, with some TAZs experiencing more growth than others in the past five years. Information obtained from the City of The Dalles planning department identified the higher-growth areas. The population estimates for 1995 were calculated with a 0.91 percent average annual growth rate for most TAZs (this was the average growth rate between 1990 and 1993), and a 2 or 2.5 percent growth rate for TAZs 6, 8, 46, and 48. The higher growth rate was applied to TAZs in the eastern portion of the city, where much of the city's recent housing construction has occurred.

Base case housing estimates were derived using 1990 census data and the 1995 population estimates for each TAZ. The total number of dwelling units for 1995 in each TAZ was calculated by applying the 1990 ratio of population to dwelling units to the 1995 population estimates. The number of single- and multi-family dwelling units was similarly determined. The 1990 proportions of single- and multi-family units in each TAZ were calculated, then applied to the 1995 estimated total dwelling units in each TAZ.

**Employment**

According to DEA's estimates, The Dalles currently has an average of 4,472 non-agricultural jobs in the TSP study area. Employment estimates by type of work are shown in Table 2.

Most available employment statistics are for Wasco County as a whole rather than for the City of The Dalles. In addition, because employment data needed to be specific to the study area for computer analysis, it was necessary to estimate employment located in each TAZ. Therefore, DEA obtained employment information through document research and telephone interviews. Sources included The City of The Dalles, The Dalles Chamber of Commerce, the Oregon Employment Department, and various businesses and agencies located in the study area.

The 1995 population-to-employment ratio in the study area is 3.29 to 1, which is somewhat higher than average. In most urban areas, the ratio usually falls between 2.1 and 3.0. Lower ratios occur where almost all employment is contained within an urban area and is based primarily in manufacturing, commercial, and service industries. Higher ratios occur where

**Table 2**
**1995 Employment Estimates**
**The Dalles Study Area**

| TAZ | Total | Commercial | Office | Industrial | Medical | Government | School | | Students |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | | | | | | | | |
| 2 | 48 | | | | | 18 | 30 | | 256 |
| 3 | 25 | 25 | | | | | | | |
| 4 | 861 | 166 | 5 | 690 | | | | | |
| 5 | 83 | | | | | | 83 | | 670 |
| 6 | 28 | 24 | | | 4 | | | | |
| 7 | 3 | 3 | | | | | | | |
| 8 | 238 | 238 | | | | | | | |
| 9 | 174 | | | | 123 | 26 | 25 | | |
| 10 | 29 | 27 | 2 | | | | | | |
| 11 | 154 | 154 | | | | | | | |
| 12 | 94 | 94 | | | | | | | |
| 13 | 42 | 30 | 8 | | 4 | | | | |
| 14 | 0 | | | | | | | | |
| 15 | 63 | 45 | 8 | | 10 | | | | |
| 16 | 32 | | | | 12 | | 20 | | 190 |
| 17 | 0 | | | | | | | | |
| 18 | 74 | 58 | 8 | | 8 | | | | |
| 19 | 27 | 4 | 18 | | 5 | | | | |
| 20 | 66 | 54 | 12 | | | | | | |
| 21 | 0 | | | | | | | | |
| 22 | 38 | | | | | | 38 | | 275 |
| 23 | 100 | 2 | | | 3 | 10 | 85 | | 708 |
| 24 | 242 | 8 | 49 | | 3 | 182 | | | |
| 25 | 67 | 6 | 22 | | 7 | 32 | | | |
| 26 | 129 | 27 | 27 | | | 75 | | | |
| 27 | 48 | 48 | | | | | | | |
| 28 | 94 | 10 | 22 | | 52 | 10 | | | |
| 29 | 123 | 107 | 16 | | | | | | |
| 30 | 129 | 110 | 19 | | | | | | |
| 31 | 391 | 64 | 24 | 300 | 3 | | | | |
| 32 | 5 | 5 | | | | | | | |
| 33 | 138 | 10 | | | 3 | | 125 | | 500 |
| 34 | 4 | 4 | | | | | | | |
| 35 | 39 | | | | 6 | | 33 | | 257 |
| 36 | 0 | | | | | | | | |
| 37 | 59 | 2 | | | | | 57 | | 476 |
| 38 | 0 | | | | | | | | |
| 39 | 0 | | | | | | | | |
| 40 | 25 | | | | | 25 | | | |
| 41 | 104 | 4 | | 50 | | 50 | | | |
| 42 | 10 | 10 | | | | | | | |
| 43 | 0 | | | | | | | | |
| 44 | 0 | | | | | | | | |
| 45 | 16 | | | | 16 | | | | |
| 46 | 2 | | 2 | | | | | | |
| 47 | 16 | | | | 16 | | | | |
| 48 | 6 | | | | | | 6 | | |
| 49 | 0 | | | | | | | | |
| 50 | 646 | | | | 600 | | 46 | | 344 |
| | | | | | | | | | |
| Total | 4,472 | 1,339 | 242 | 1,040 | 875 | 428 | 548 | | 3,676 |

**Total Employment within Study Area =** 4,472

many jobs in an area are resource-based, e.g., in agriculture, forestry, mineral extraction, etc.; where a large number of employees commute to work in other areas; or where unemployment is high. Agricultural jobs represent 20 to 25 percent of total employment in Wasco County and likely account for a portion of employment in The Dalles. In addition, The Dalles has a high percentage, relative to the state average, of residents over age 65 (Comprehensive Plan, 1994). It can be assumed that most of these residents are retired. These factors help explain the relatively high population-to-employment ratio in the study area.

It is interesting to note that agricultural jobs accounted for a smaller share of total county employment in 1994 (22 percent) than in the previous four years (approximately 25 percent). This trend is likely to continue as parts of the county urbanize, adding more industrial and commercial jobs.

## IV. FORECAST

### Population and Housing

Population and housing counts were forecast to the year 2015 to meet the 20-year planning outlook of the TSP. DEA used an average annual growth rate of 1.1 percent to calculate the 2015 population of the study area. This growth rate was used by the City of The Dalles in preparing its Comprehensive Plan.

Population and housing growth will be concentrated in the TAZs most able to accommodate it. Most TAZs in the study area are largely developed and will accommodate only infill or replacement units. Some TAZs on the edges of the study area, however, contain substantial amounts of vacant buildable land designated for residential use and can accommodate the majority of The Dalles' expected growth.

The amount and type (single- or multi-family) of residential development in each TAZ was estimated based on information provided by the City of The Dalles. The Comprehensive Plan states that available single-family land is expected to develop at a density of approximately four dwelling units per acre (du/acre). Land designated for mobile home development is expected to develop at approximately six units per acre, and multi-family land at 10 to 15 units per acre. DEA used the City's inventory of vacant buildable land to approximate the acreage of such land in each TAZ. Additional development was assumed to occur on vacant lands as follows:

| Land Use Designation | Percentage of Buildable Land as Single- or Multi-Family | Density |
|---|---|---|
| R1 (single-family residential) | 100% SF | 4 du/acre |
| RMH (mobile home residential) | 75% SF | 6 du/acre |
| | 25% MF | 6 du/acre |
| R2 (multi-family residential) | 50% SF | 4 du/acre |
| | 50% MF | 10 du/acre |
| R3 (multi-family residential) | 25% SF | 4 du/acre |
| | 75% MF | 15 du/acre |

Additional dwelling units were then added to 1995 estimated dwelling units to determine 2015 totals. Under these assumptions, the study area would contain a total of 7,823 dwelling units. Of these, 6,139 (78 percent) would be single-family dwellings, and 1,685 would be multi-family dwelling units (21 percent).

Population for each TAZ was estimated using expected average household sizes as stated in the city's Comprehensive Plan. Single-family units were assumed to contain 2.4 persons per household, and multi-family units will have 2.1 persons per household. The resulting total population is 18,391.

Table 1 indicates the number of housing units and population projected for each TAZ. The forecast shows some TAZs containing fewer people than they do currently. This is a result of declining household size.

With the exception of TAZ 1, all of the buildable land will lie within the city's UGB in 2015. Based on the assumptions in this report, the expected population can be accommodated within the UGB by 2015. Although outlying TAZs (7, 16, and 42) were assumed to be not fully developed in 20 years, most available land in the UGB will be built out by that time. At a 1.1 percent annual growth rate, expected residential densities, and buildable land inventory, the UGB will be built out by the year 2020.

**Employment**

The employment forecast for the TSP is not intended to be a full-sector (agricultural and non-agricultural) forecast. The projections do not include agricultural jobs because the TSP is for facilities and improvements within the study area, and agricultural-related trips have only minor impacts on traffic patterns in the study area. The 2015 employment forecast, with a total employment of 5,911, is shown in Table 3.

**Table 3**
**2015 Projected Employment**
**The Dalles Study Area**

| TAZ | Total | Commercial | Office | Industrial | Medical | Government | School | | Students |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 |
| 2 | 87 | 27 | 0 | 0 | 0 | 23 | 38 | | 320 |
| 3 | 30 | 30 | 0 | 0 | 0 | 0 | 0 | | 0 |
| 4 | 1,260 | 228 | 27 | 1,005 | 0 | 0 | 0 | | 0 |
| 5 | 149 | 45 | 0 | 0 | 0 | 0 | 104 | | 838 |
| 6 | 50 | 45 | 0 | 0 | 5 | 0 | 0 | | 0 |
| 7 | 4 | 4 | 0 | 0 | 0 | 0 | 0 | | 0 |
| 8 | 289 | 289 | 0 | 0 | 0 | 0 | 0 | | 0 |
| 9 | 254 | 36 | 0 | 0 | 154 | 33 | 31 | | 0 |
| 10 | 35 | 32 | 2 | 0 | 0 | 0 | 0 | | 0 |
| 11 | 185 | 185 | 0 | 0 | 0 | 0 | 0 | | 0 |
| 12 | 113 | 113 | 0 | 0 | 0 | 0 | 0 | | 0 |
| 13 | 121 | 106 | 10 | 0 | 5 | 0 | 0 | | 0 |
| 14 | 10 | 0 | 0 | 10 | 0 | 0 | 0 | | 0 |
| 15 | 76 | 54 | 10 | 0 | 13 | 0 | 0 | | 0 |
| 16 | 40 | 0 | 0 | 0 | 15 | 0 | 25 | | 238 |
| 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 |
| 18 | 89 | 70 | 10 | 0 | 10 | 0 | 0 | | 0 |
| 19 | 33 | 5 | 22 | 0 | 6 | 0 | 0 | | 0 |
| 20 | 79 | 65 | 14 | 0 | 0 | 0 | 0 | | 0 |
| 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 |
| 22 | 48 | 0 | 0 | 0 | 0 | 0 | 48 | | 344 |
| 23 | 125 | 2 | 0 | 0 | 4 | 13 | 106 | | 885 |
| 24 | 285 | 10 | 59 | 0 | 4 | 213 | 0 | | 0 |
| 25 | 82 | 7 | 26 | 0 | 9 | 40 | 0 | | 0 |
| 26 | 159 | 32 | 32 | 0 | 0 | 94 | 0 | | 0 |
| 27 | 58 | 58 | 0 | 0 | 0 | 0 | 0 | | 0 |
| 28 | 116 | 12 | 26 | 0 | 65 | 13 | 0 | | 0 |
| 29 | 148 | 128 | 19 | 0 | 0 | 0 | 0 | | 0 |
| 30 | 155 | 132 | 23 | 0 | 0 | 0 | 0 | | 0 |
| 31 | 409 | 77 | 29 | 300 | 4 | 0 | 0 | | 0 |
| 32 | 6 | 6 | 0 | 0 | 0 | 0 | 0 | | 0 |
| 33 | 172 | 12 | 0 | 0 | 4 | 0 | 156 | | 625 |
| 34 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | | 0 |
| 35 | 49 | 0 | 0 | 0 | 8 | 0 | 41 | | 321 |
| 36 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 |
| 37 | 74 | 2 | 0 | 0 | 0 | 0 | 71 | | 595 |
| 38 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 |
| 39 | 36 | 36 | 0 | 0 | 0 | 0 | 0 | | 0 |
| 40 | 55 | 24 | 0 | 0 | 0 | 31 | 0 | | 0 |
| 41 | 147 | 5 | 0 | 80 | 0 | 63 | 0 | | 0 |
| 42 | 24 | 12 | 0 | 12 | 0 | 0 | 0 | | 0 |
| 43 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 |
| 44 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 |
| 45 | 20 | 0 | 0 | 0 | 20 | 0 | 0 | | 0 |
| 46 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | | 0 |
| 47 | 20 | 0 | 0 | 0 | 20 | 0 | 0 | | 0 |
| 48 | 8 | 0 | 0 | 0 | 0 | 0 | 8 | | 0 |
| 49 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 |
| 50 | 808 | 0 | 0 | 0 | 750 | 0 | 58 | | 430 |
| | | | | | | | | | |
| Total | 5,911 | 1,894 | 311 | 1,407 | 1,094 | 520 | 685 | | 4,59 |

**Total Employment within Study Area =** 5,911

Future employment is based on several assumptions. It was assumed that most medical, government, and school employment would increase at approximately the same rate as population--25 percent over the next 20 years. Employment in already developed commercial areas was assumed to increase by 20 percent. Commercial and industrial land identified in the City's inventory of vacant buildable land was assigned employment based on average densities (employees per gross acre) of the expected land use. The Dalles currently has quite low employee densities (1.9 employees per gross commercial acre and 1.3 employees per gross industrial acre). (Current densities were derived using the inventory of developed land in the city's Comprehensive Plan and DEA's 1995 employment estimates.) However, these densities will increase as infill occurs. For vacant land, DEA assigned densities of 3 employees per commercial acre and 2 employees per industrial acre. It was assumed that all available commercial and industrial land would be developed by 2015, although at low densities, with the exception of the large amount of vacant industrial land in TAZ 4. This area will probably still have some room for development and was assumed to be 75 percent developed by 2015.

As mentioned above, the study area's current population-to-employment ratio is 3.29 to 1. The ratio will probably decrease somewhat as The Dalles grows, creating more demand for urban services and increasing the share of "urban" employment in relation to resource-based employment. Based on the assumptions used for the 2015 forecast, the population-to-employment ratio would be 3.11.

## V. CONCLUSIONS AND LIMITATIONS OF THE DATA

Assuming current trends continue, The Dalles will experience moderate population and employment growth over the next 20 years. According to the estimates, there is enough buildable residential land within the UGB to accommodate the expected growth. However, the forecast indicates that the UGB will be built to capacity three to five years past the 20-year planning horizon.

Employment growth will at least keep pace with population growth, and may grow at a slightly faster rate as more residents will demand goods and services and will work within the urban area rather than in resource-related jobs outside the city.

This study was prepared to estimate current conditions and expected growth patterns which will be used in a computer model to determine future transportation needs. The amount of growth, and where it occurs, will affect traffic and transportation facilities in the study area. It should be noted that the study area was defined specifically for use with the computer model and that this demographic analysis was designed specifically for use in developing The Dalles' TSP. This report is not intended to provide an accurate economic forecast or

housing analysis, and it should not be used for any purpose other than that for which it was designed.