

CHAPTER 12
GOAL 12: TRANSPORTATION

SECTION 12.0 TRANSPORTATION GOAL

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

SECTION 12.1 TRANSPORTATION SYSTEM PLAN OVERVIEW

12.1.010 Development of Transportation System Plan (TSP)

The City of Umatilla, in conjunction with the Oregon Department of Transportation (ODOT), initiated a study of the City of Umatilla's transportation system in the late fall of 1997. The purpose of the study was to develop a plan to guide the management of existing transportation facilities as well as the development of future facilities over the next 20 years.

The plan was prepared in compliance with State of Oregon legislation requiring local jurisdictions to prepare a Transportation System Plan (TSP) as part of their overall Comprehensive Plan. In addition, recommendations are provided for Umatilla County and ODOT for incorporation with their respective planning.

State of Oregon guidelines stipulate that the TSP must be based on the current comprehensive plan land use map and must provide a transportation system that accommodates the expected 20-year growth in population and employment that will result from implementation of the land use plan. Oregon Revised Statute (ORS) 197.712 and the Land Conservation and Development Commission (LCDC) administrative rule known as the Transportation Planning Rule (TPR), requires that all jurisdictions develop the following:

A road plan for a network of arterial and collector streets

A public transit plan

A bicycle and pedestrian plan

An air, rail, water, and pipeline plans

A transportation finance plan

Policies and ordinances for implementing the transportation system plan

The TPR requires that alternative travel modes be given equal consideration and that reasonable effort be applied to the development and enhancement of the alternative modes in providing the future transportation system. In addition, the TPR requires that local jurisdictions adopt land use and subdivision ordinance amendments to protect transportation facilities and to provide bicycle facilities between residential, commercial, and employment/institutional areas. The TPR further stipulates that local communities coordinate their respective plans with county and state transportation plans.

12.1.020 Study Area

The City of Umatilla is located in Eastern Oregon on the shore of the Columbia River. The study area for the TSP is shown in *Figure 12.1-1* and is bounded by the City's urban growth boundary (UGB). As shown in *Figure 12.1-1*, Umatilla is located at the crossroads of several inter- and intra-state transportation facilities including Interstate 82, U.S. Highway 730, U.S. Highway 395, and the Columbia River.

The City of Umatilla is located along one of the major roadway facilities linking the states of Oregon and Washington and serves as a gateway location for commercial traffic between the two states. The Portland State University Center for Population Research estimates a 1998 population of 3,515 for the City of Umatilla. Beyond the City of Umatilla, the nearest population centers are Boardman and Irrigon to the west; Hermiston and Pendleton to the south and east, and the Tri-Cities area of Washington to the north. At a distance of approximately five miles, Hermiston is the next closest population center.

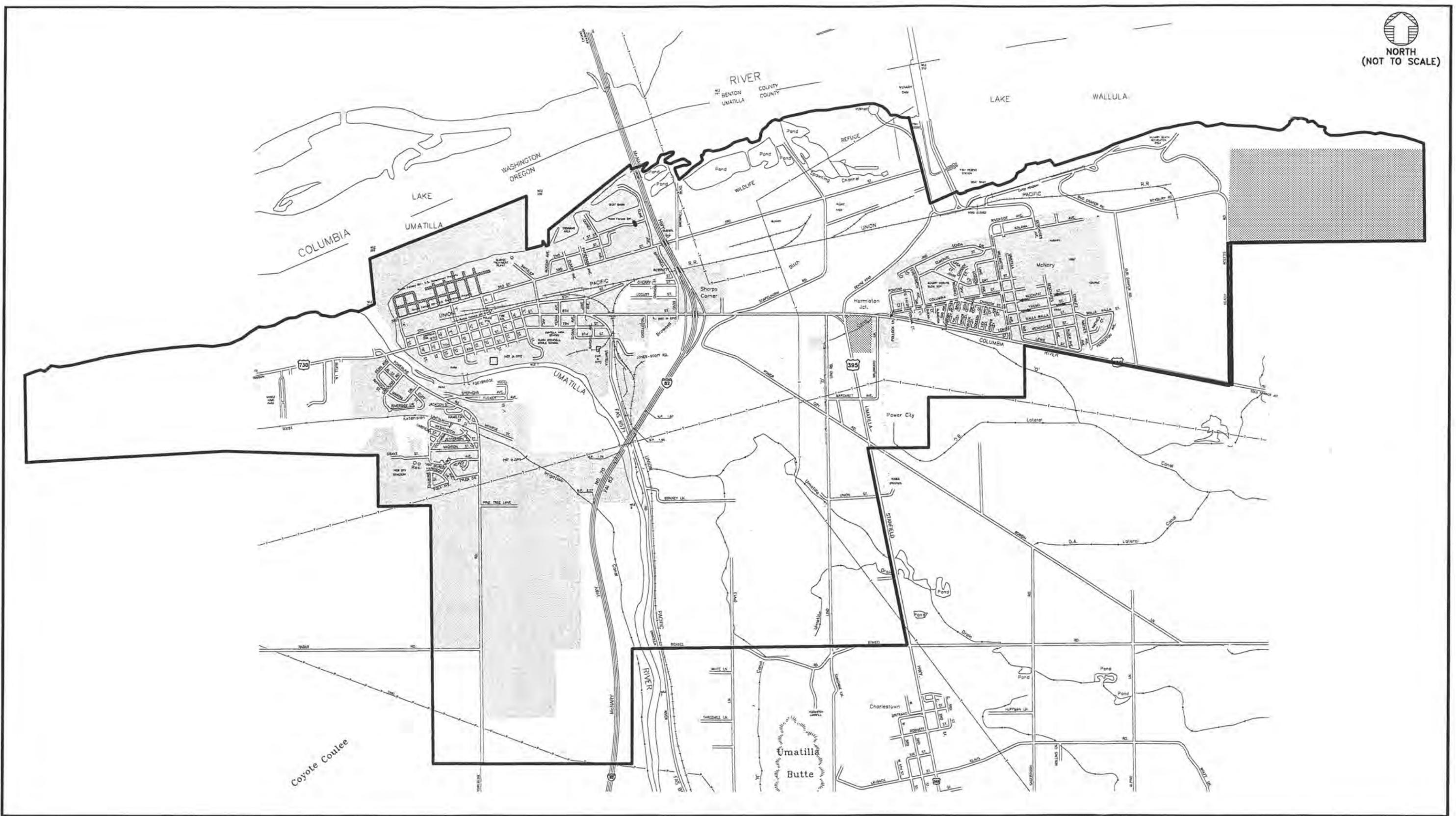
The City of Umatilla and the region as a whole, has experienced unprecedented growth associated with the development of facilities such as the Umatilla Army Depot Chemical Weapons Incinerator and Wal-Mart distribution center, located in Hermiston, and the Two Rivers Correctional Facility, located on the eastern fringe of Umatilla's city limits. Resource-based enterprises comprise a large portion of the local employment base with the remaining local employment consisting of service, retail, industrial/manufacturing, and public service related activities.

12.1.030 Public Involvement and Study Goals

The TSP planning process provided citizens of Umatilla with the opportunity to identify their priorities for future growth and development. Expressing their vision for the future in terms of goals and objectives for the TSP was a central element of the public involvement process. The goals and objectives identified by the community served as guidelines for developing and evaluating alternatives, selecting a preferred transportation plan, and prioritizing improvements.

To facilitate the planning process, two committees were formed to guide the planning process: the Management Team and the Citizens Advisory Group. The Management Team was comprised of representatives of the City of Umatilla, Umatilla County, ODOT, and the consultant team. The Citizens Advisory Committee included members from all walks of life within the City including business persons, representatives of the local police and fire departments, the Port of Entry, and residents of the City itself.

The two committees convened at several key junctures of the project including: project inception, completion of the existing conditions analysis, presentation of the future conditions analysis findings, and presentation of the draft TSP. Through these meetings, the local transportation planning process evolved such that a general consensus was achieved and maintained among all parties in attendance. Given the City's Comprehensive Plan, and through the direction provided by both the two TSP committees and the public hearing process, a series



LEGEND

— URBAN GROWTH BOUNDARY

▨ CITY LIMITS

STUDY AREA

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of transportation system goals and objectives evolved that provided the planning process with direction as well as evaluation criteria. Those goals and objectives are listed below.

TSP Goal 1

Promote a balanced, safe, and efficient transportation system.

Objectives

1. Develop a multi-modal transportation system that avoids reliance upon one form of transportation as well as minimizes energy consumption and air quality impacts.
2. Protect the qualities of neighborhoods and the community.
3. Provide for adequate street capacity and optimum efficiency.
4. Promote adequate transportation linkages between residential, commercial, public, and industrial land uses.

TSP Goal 2

Ensure the adequacy of the roadway network in terms of function, capacity, level of service, and safety.

Objectives

Develop a functional classification system that addresses all roadways within the study area.

In conjunction with the functional classification system, identify corresponding street standards that recognize the unique attributes of the local area.

Identify existing and potential future capacity constraints and develop strategies to address those constraints, including potential intersection improvements, future roadway needs, and future street connections.

Evaluate the need for modifications to and/or the addition of traffic control devices, including evaluation of traffic signal warrants as appropriate.

Identify access spacing standards.

Provide an acceptable level of service at all intersections in the City, recognizing the rural character of the area.

Identify existing and potential future safety concerns as well as strategies to address those concerns.

Provide enhanced access to Highway 730 for the Umatilla Rural Fire District Station 1.

TSP Goal 3

Promote alternative modes of transportation.

Objectives

Develop a comprehensive system of pedestrian and bicycle routes that link major activity centers within the study area.

Encourage the continued use of the Columbia River as a means of transportation.

Encourage the continued use of local freight rail service provided by Union Pacific Railroad.

Encourage the continued use of public transportation services.

TSP Goal 4

Identify and prioritize transportation improvement needs in the City of Umatilla, and identify a set of reliable funding sources that can be applied to these improvements.

Objectives

Develop a prioritized list of transportation improvement needs in the study area.

Develop construction cost estimates for the identified projects.

Evaluate the adequacy of existing funding sources to serve projected improvement needs.

Evaluate new innovative funding sources for transportation improvements.

12.1.040 Transportation System Plan Study Methodology and Organization

The transportation system within the City of Umatilla includes more than roadways that vehicles drive on; it also includes facilities for modes as varied as bicycles and riverboats. All of these facilities are identified and discussed in detail in subsequent sections.

The development of the City of Umatilla's Transportation System Plan began with an inventory of the existing transportation system. The inventory included documentation of all transportation-related facilities within the study area and allowed for an objective assessment of the current system's physical characteristics, operational performance, safety, deficiencies, and general function. A description of the inventory process, as well as documentation of the existing conditions analyses and their implications, is presented in Section 12.2.100. The findings of the existing conditions analysis were presented to and verified by the two TSP committees.

Upon completion of the existing conditions analysis, the focus of the project shifted to forecasting future travel demand and the corresponding long-term future transportation system needs. Development of long-term (through year 2017) transportation system forecasts relied heavily on population and employment growth projections for the study area and review of historical growth in the area. Through the City's Comprehensive Plan and a recently compiled buildable lands inventory, reasonable assumptions were drawn as to the potential for and location of future development activities. Section 12.2.300, *Future Conditions*, details the development of anticipated long-term future transportation needs within the study area.

Section 12.2.400, *Alternatives Analysis*, documents the development and prioritization of alternative measures to mitigate identified safety and capacity deficiencies, as well as projects that would enhance the multi-modal features of the local transportation system. The process by which future transportation system projects were identified and prioritized included extensive cooperation with both TSP committees. The impact of each of the identified alternatives was considered on the basis of individual merits, conformance with the existing transportation system, as well as potential conflicts to implementation and integration with the surrounding

transportation system components. Ultimately, a preferred plan was developed that reflected a consensus as to which elements should be incorporated into the City's long-term transportation system.

Having identified a preferred set of alternatives, the next phase of the TSP planning process involved presenting and refining the individual elements of the transportation system plan through a series of decisions and recommendations. The recommendations include a Roadway Network and Functional Classification Plan, a Pedestrian Plan, a Bikeway Plan, a Public Transportation Plan, a Marine Plan, and Rail, Air, Canal, and Pipeline plans. Section 12.11, *Transportation Funding Plan*, provides an analysis and summary of the alternative funding sources available to finance the identified transportation system improvements.

Early in the process of developing the TSP for the City of Umatilla, it was recognized that the City's existing comprehensive plan and zoning ordinances were limited and did not allow the City to develop the type of transportation system desired. In an effort to rectify this situation and insure compliance with the TPR, several comprehensive plan and zoning ordinance modifications were developed. The modifications addressed major land use and transportation issues identified through development of the TSP and reflect the desire to enhance all modes of the transportation system. Those modifications were adopted by the City in Ordinance No. 688.

12.1.050 Transportation Plan Elements

The individual elements that comprise the Transportation System Plan for the City of Umatilla are listed below. The preferred alternatives presented in the TSP consist of those transportation improvements necessary to support the City of Umatilla's Comprehensive Land Use Plan. The TSP addresses several components for development of the future transportation network including:

Roadway System and Access Management Plan

Pedestrian System Plan

Bicycle System Plan

Public Transportation System Plan

Rail System Plan

Marine System Plan

Air/Water/Pipeline System Plans

Implementation Plan

It should be noted that formal alternatives development and analysis were only presented for the roadway network and its components. Other elements of the transportation system such as pedestrian access, bicycle access, rail access, etc., exist at a level such that either an entire network needs to be developed (for example, bikeways) or else services are adequate for existing demand and capacity is unconstrained (for example, rail access). The pedestrian and bicycle plans were based on the base roadway network, anticipated need, and input provided by City, County and State staff as well as the general public.

The individual plans were developed specifically to address the requirements of Oregon's Transportation Planning Rule. Projects associated with each plan element have been identified and costs have been estimated as described herein. The recommendations set forth reflect the findings of the existing and forecast future conditions analyses, the alternatives analysis, and the concerns expressed by both the citizens of Umatilla and the public agencies that serve them.

12.1.060 Jurisdictions

Four core jurisdictions are responsible for the bicycle, sidewalk, roadway, and marine facilities that are located within the study area. In many instances, transportation facilities are identified as essential facilities and included as a part of the transportation plan for more than one jurisdiction. Such duplicity is normally supplemented with intergovernmental agreements that identify the responsibilities each jurisdiction accepts regarding a particular facility. The jurisdictions responsible for facilities within the City of Umatilla UGB are:

The Oregon Department of Transportation (ODOT)

Umatilla County

City of Umatilla

U.S. Army Corps of Engineers

12.1.100 SYSTEM-WIDE TRANSPORTATION SYSTEM PLAN FINDINGS

12.1.101 Alternative modes of transportation in addition to the automobile should be encouraged and promoted.

12.1.102 Routes should be provided that separate regional through-traffic from local intra-city traffic.

12.1.200 SYSTEM-WIDE TRANSPORTATION SYSTEM PLAN POLICIES

12.1.201 The City shall promote a balanced, safe and efficient transportation system. In evaluating parts of the system, the City will support proposals that:

- Protect the qualities of neighborhoods and the community
- Provide for adequate street capacity, optimum efficiency and effectiveness.

12.1.202 The City will coordinate with ODOT in implementing its improvement program. (*Ord 544*)

12.1.202 Development proposals, plan amendments, or zone changes shall conform to the adopted Transportation System Plan.

12.1.203 Amendments to the comprehensive plan, zoning map, and land use regulations that significantly affect a transportation facility shall assure that allowed uses are

consistent with the function, capacity, and level of service of the facility identified in the Transportation System Plan. This shall be accomplished by one of the following:

- A. Limiting allowed land uses to be consistent with the planned function of the transportation facility;
- B. Amending the Transportation System Plan to ensure that existing, improved, or new transportation facilities are adequate to support the proposed land uses consistent with the requirement of the Transportation Planning Rule; or,
- C. Altering land use designations, densities, or design requirements to reduce demand for automobile travel and meet travel needs through other modes.

12.1.204 A proposed comprehensive plan amendment or zoning change significantly affects a transportation facility if:

- A. It changes the functional classification of an existing or planned transportation facility;
- B. Changes the standards implementing a functional classification system;
- C. Allows types or levels of land use that would result in levels of travel or access that are inconsistent with the functional classification of a transportation facility; or
- D. Would reduce the level of service of the facility below the minimum acceptable level identified in the Transportation System Plan.

SECTION 12.2 ROADWAY TRANSPORTATION SYSTEM PLAN & ACCESS MANAGEMENT ELEMENT

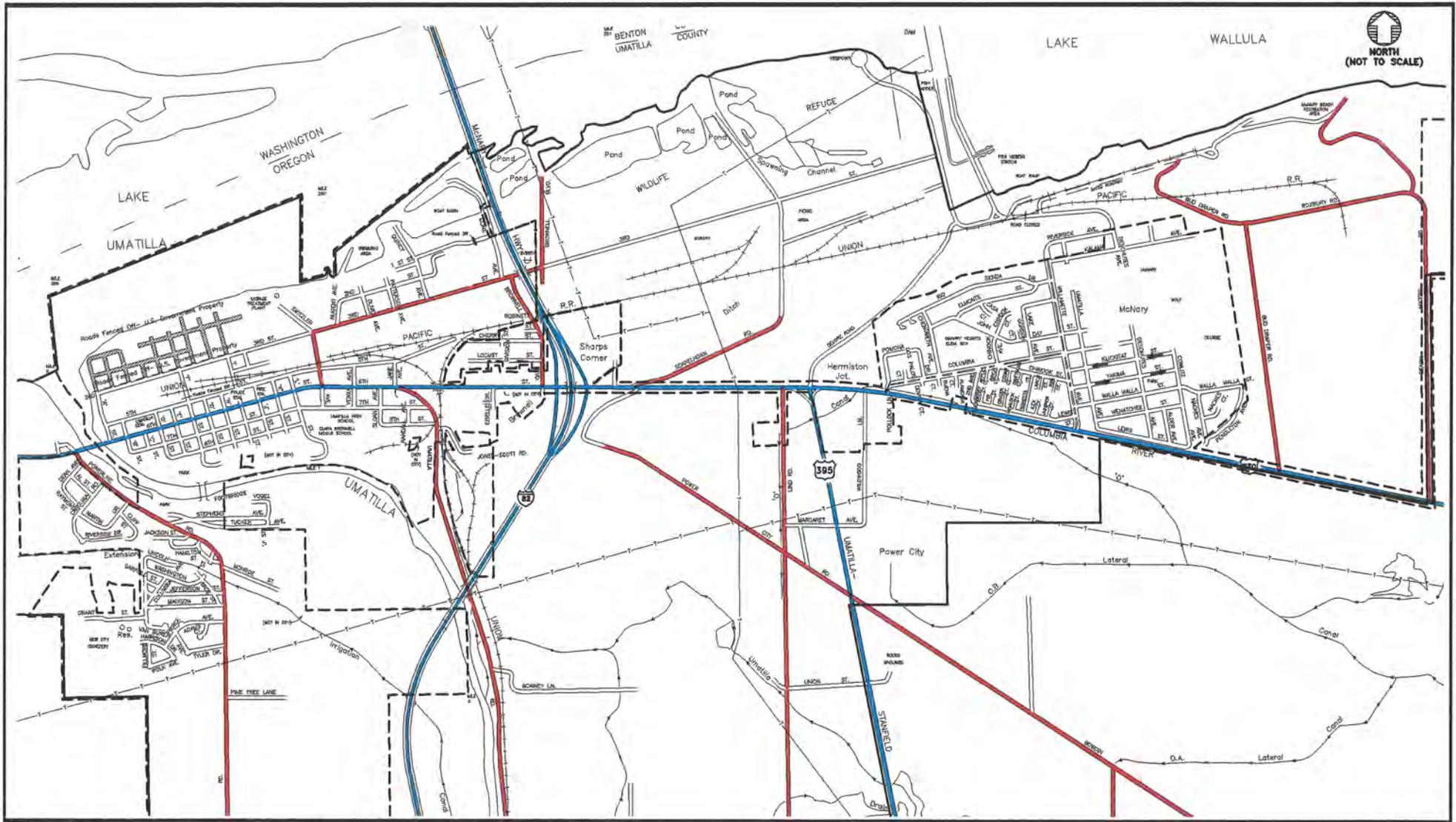
12.2.100 EXISTING ROADWAY TRANSPORTATION SYSTEM

The development of the transportation system plan began with an assessment of the existing transportation system and land use conditions. As part of the TSP, the entire existing public street system within the UGB was inventoried. The inventory identified locations of on-street parking, paved/unpaved roadways, existing traffic control, street widths, and posted speed limits. The following paragraphs summarize the findings of that inventory.

The roadway system within the City of Umatilla is collectively owned and maintained by three jurisdictions: ODOT, Umatilla County, and the City of Umatilla. *Figure 12.2-1* identifies the jurisdictional ownership of the existing roadway facilities. All roadways not in color are, by default, owned by the City. Those roadways shown as shaded are controlled by the United States Government and are no longer available for public use.

12.2.110 On-Street Parking and Roadway Conditions

Figure 12.2-2 identifies the location of on-street parking and paved/unpaved roads within the city limits. As shown in *Figure 12.2-2*, the majority of the roadways within the study area have on-street parking on at least one side of the road. Unpaved roads can be found at various locations within the city.



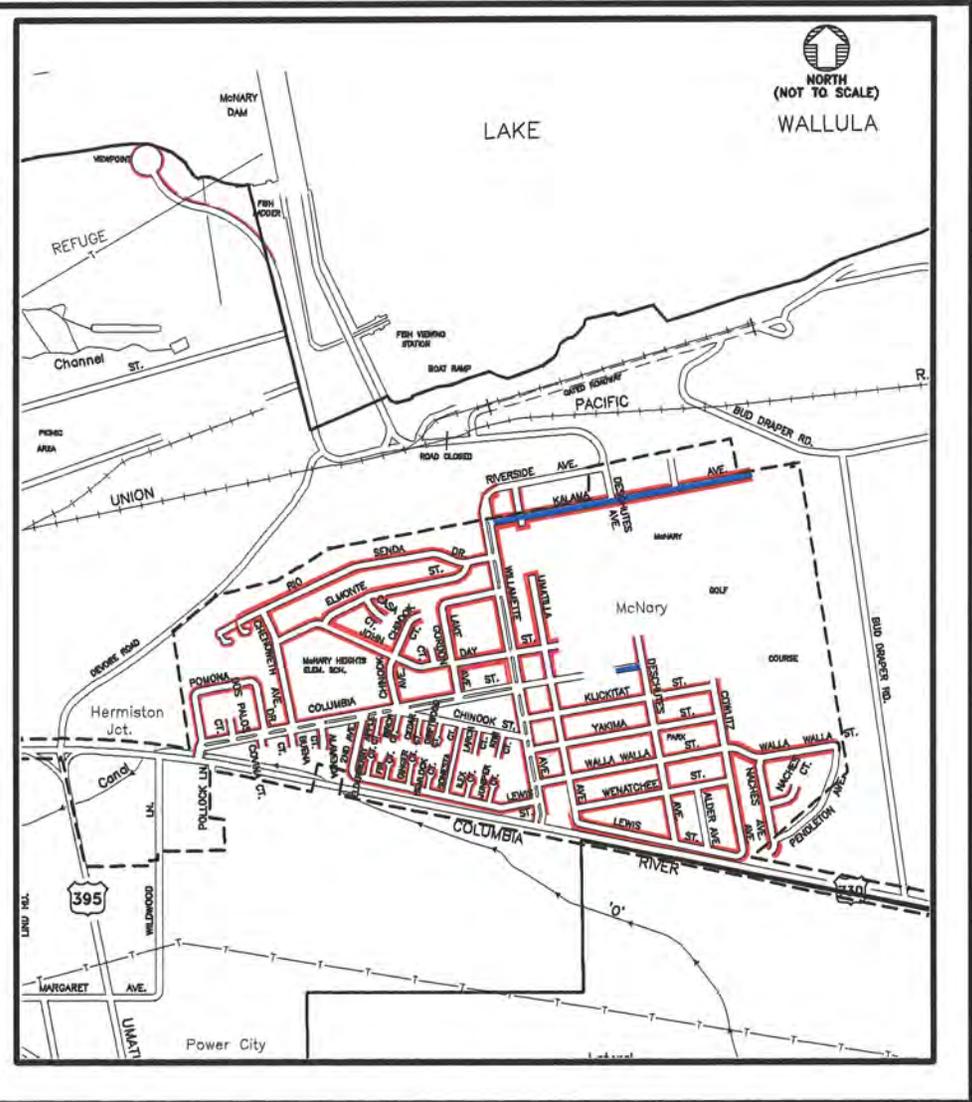
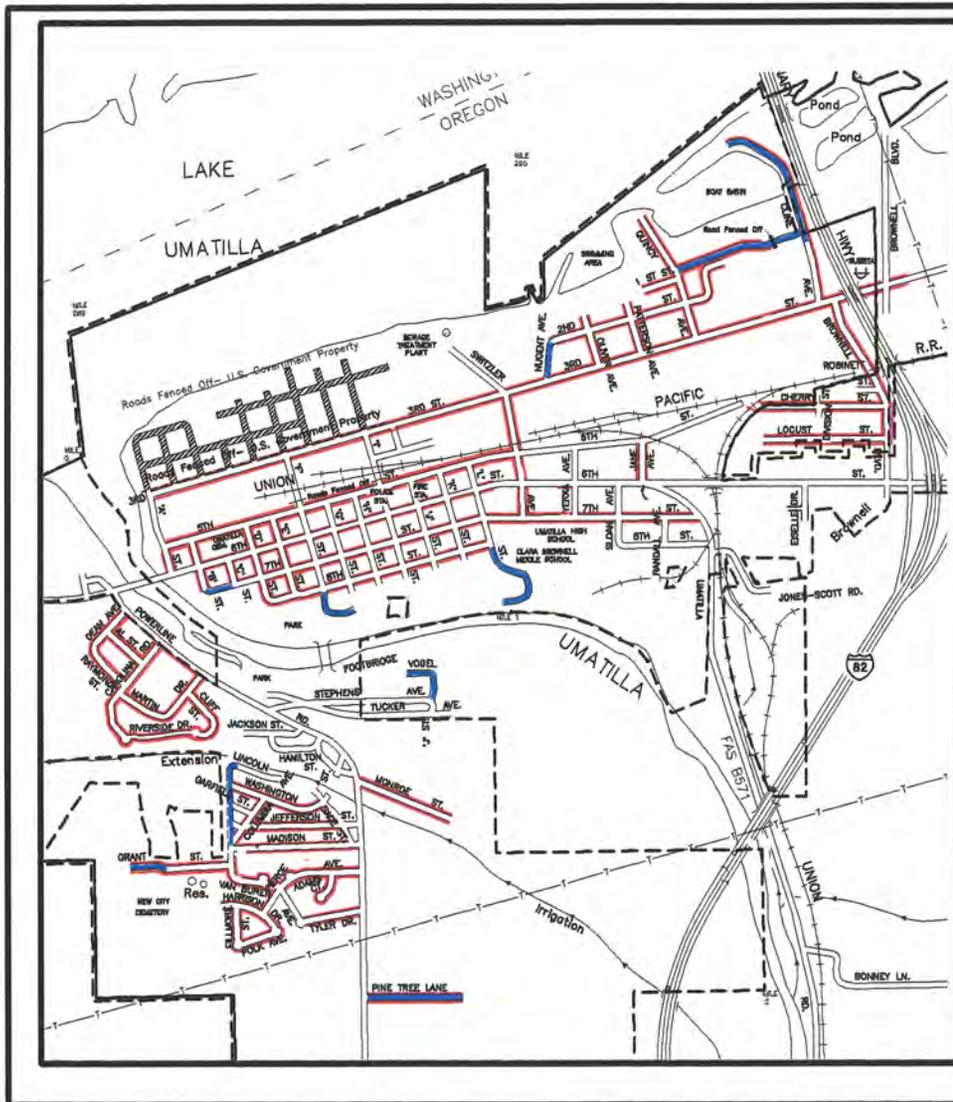
LEGEND	
—	ODOT JURISDICTION
—	UMATILLA COUNTY JURISDICTION
- - -	CITY LIMITS
—	UGB
—	CITY JURISDICTION
▨	NO PUBLIC ACCESS

SUMMARY OF ROADWAY JURISDICTIONS

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FIGURE
12.2-1

2813F02



LOCATIONS OF ON-STREET PARKING AND UNPAVED ROADWAYS

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FIGURE
12.2-2



12.2.120 State Facilities

There are three primary roadway facilities within the study area: Interstate 82, U.S. Highway 730, and U.S. Highway 395. A brief description of each facility is presented below, including general characteristics of the facility and the traffic served.

12.2.120(1) Interstate 82

I-82 is a *Category 1* interstate freeway of an *Interstate Level of Importance*, as described in ODOT's *1991 Oregon Highway Plan* (Reference 1). The primary function of an *Interstate Highway* is to provide connections and links to major cities, regions of the state, and other states. I-82 is oriented north-south through the City and provides connections between Interstate 84 (I-84) to the south and the Tri-Cities (Kennewick, Richland, Pasco, Washington) to the north. Interstate 82 is an essential intra- and interstate commerce route.

Interstate 82 is a four-lane facility (two lanes in each direction) with two grade-separated interchanges (Highway 730 and Powerline Road) providing easy access to the City. The 1996 average daily traffic (ADT) volume on I-82 was 12,675 vehicles at the Umatilla Bridge.⁴³ Bicycle and pedestrian travel is prohibited on I-82; however, the northbound Interstate 82 Columbia River Bridge span does provide a separate multi-use path for pedestrians and bicycles. Posted speed along I-82 in the vicinity of the City is 65 mph.

12.2.120(2) U.S. Highway 730

Highway 730, also called the Columbia River Highway, is a state highway of a *Regional Level of Importance* (Reference 1). The primary function of a *Regional Highway* is to provide connections and links to areas within regions of the state, between small urbanized areas and larger population centers, and to higher level facilities. The highway generally parallels the Columbia River, providing a continuous east-west route between Interstate 84 and Washington and serves as a city-to-city link between such neighboring cities as Irrigon, Umatilla, and Cold Springs Junction. The 1996 ADT on Highway 730 was 6,100 vehicles at the west city limits and 3,900 vehicles at the east city limits.

Highway 730 provides the backbone of the City's transportation system and serves as the primary east-west corridor through town. The cross-section design of Highway 730 changes from a two-lane roadway to a four-lane roadway from west to east. The cross-section design and posted speed limits are identified in Table 12.2-1.

⁴³ ODOT permanent recorder 30-025

TABLE 12.2-1
HIGHWAY 730 EXISTING CONDITIONS

Roadway Section Boundary Limits	Cross Section	Speed Limit (MPH)
West City Limits to Umatilla River Bridge	2-lane	45
Umatilla River Bridge to Jane Avenue	3-lane	25
Jane Avenue to Union Pacific Railroad Overpass	3-lane	35
Union Pacific Railroad Overpass to I-82 Interchange	3-lane	35
I-82 Interchange Area	5-lane	35
I-82 Interchange to Scapelhorn Road	4-lane	35
Scapelhorn Road to Columbia Street (Polluck Lane)	4-lane	45
Polluck Lane to East City Limits (east of Willamette Ave.)	4-lane	55
East City Limits to Eastern UGB Boundary	2-lane	55

No striped bike lanes are provided along Highway 730 within the City of Umatilla. Sidewalks are provided intermittently within the city limits and are predominantly concentrated within the downtown area between Jane Avenue and “A” Street. On-street parking spaces are provided intermittently along Highway 730 between Jane Avenue and the Umatilla River Bridge.

12.2.120(3) U.S. Highway 395

Highway 395 (Umatilla-Stanfield Highway) is a state highway linking Highway 730 with Interstate 84 to the south. Historically, Highway 395 had been identified by ODOT as a facility with a *District Level of Importance*. A more recent study of the Highway 395 corridor indicated that the classification of the study area segment of Highway 395 should be re-designated to reflect a *Regional Level of Importance* (Reference 2). The 1991 Oregon Highway Plan, (OHP Reference 1) states that the primary function of a *Regional Highway* is to provide connections and links to areas within regions of the state, between small urbanized areas and larger population centers, and to higher level facilities. By comparison, *District Highways* serve local traffic and land uses. The re-designation of Highway 395 was based “on a desire to balance the need for relatively uncongested traffic flow conditions on the highway with the need to maintain local access” (OHP Reference 2).

The Oregon Department of Transportation’s January 1999 draft of the 1998 Oregon Highway Plan (Reference 3) suggests that Highway 395 will be re-designated as having a *Statewide Level of Importance*, if adopted as drafted. The *Statewide Level of Importance* designation implies that the primary purpose of the highway is to provide connections and links to larger urban areas, ports, and major recreation areas that are not directly served by interstate highways. The 1991 Oregon Highway Plan, (Reference 1) further states that *Statewide* highways provide links to the interstate system and alternate links to other states.

Highway 395 serves primarily as a north-south route connecting Umatilla with the cities of Hermiston and Stanfield to the south. The 1996 ADT on Highway 395 was 11,600 vehicles at the roadway’s northern terminus. Beginning at the northern terminus of Highway 395 (the intersection with Highway 730) and continuing south to the City of Umatilla UGB, the roadway

has a four-lane cross section and a speed limit of 55 mph. No sidewalks or bike lanes are provided along Highway 395 within the UGB.

12.2.130 Umatilla County Facilities

At the time the City of Umatilla's TSP was prepared, Umatilla County did not have a formal functional classification system for roadways within the County. The County did provide a general roadway classification scheme for county roadways within the City of Umatilla UGB. The classification scheme was loosely defined to reflect the importance, character, and capacity of each identified facility based on historical traffic counts and staff familiarity with the area. The hierarchy of functional classification provided by the county was broken into three categories: Major Collector, Minor Collector, and Local Access Road. Notable county roadways within the study area are listed below and shown in *Figure 12.2-1-* (unless otherwise noted, the identified facilities were considered by the County to be the functional equivalent of a Local Access Road).

12.2.130(1) Powerline Road

Powerline Road is one of two north-south county roadways that connect Umatilla with the City of Hermiston. Powerline Road has a two-lane cross section and was identified by the County as serving the equivalent of a Minor Collector function. The northern terminus of Powerline Road intersects with Highway 730 at an unsignalized intersection immediately west of the Umatilla River Bridge. Property along the northern portion of Powerline Road has predominately been developed for residential land uses, though no sidewalks or bicycle facilities are provided and no on-street parking is allowed.

12.2.130(2) Umatilla River Road

Umatilla River Road is the second of two north-south county roadways that connect the City of Umatilla with the City of Hermiston to the south. This two-lane roadway was identified by the County as serving the equivalent of a Major Collector function. Umatilla River Road was noted to be the primary choice of drivers for trips between the two cities and, although the roadway has a narrow cross section at some points and no sidewalks, it was noted to be frequently used by pedestrian and bicycle traffic. The northern terminus of Umatilla River Road intersects with Highway 730 at an unsignalized "T"-intersection.

12.2.130(3) Brownell Boulevard

Brownell Boulevard provides a north-south connection between Highway 730 and the shore of the Columbia River. This two-lane facility was divided into two segments as a result of the construction of Interstate 82. The southern segment of Brownell Boulevard connects Highway 730 with 3rd Street while the northern segment connects 3rd Street with a wildlife refuge that extends to the shore of the Columbia River. The southern terminus of Brownell Boulevard intersects with Highway 730 at a signalized intersection immediately east of the Umatilla Port of Entry and is used as the sole egress route for truck traffic passing through the Port of Entry's weigh station. On-street parking is allowed along Brownell Boulevard, though no bicycle or pedestrian facilities are available.

12.2.130(4) Third Street

Third Street is a two-lane east-west roadway that extends from Avenue “A” to the McNary Dam area. Although this facility parallels Highway 730 throughout a large portion of the City, its location does not directly serve the major residential areas. Consequently, its use is currently largely limited to trips related to the McNary Dam area and local business uses along the roadway such as the Bonneville Power Authority. No bicycle or pedestrian facilities are provided along 3rd Street.

12.2.130(5) Bud Draper Drive

Bud Draper Drive links Highway 730 with Roxbury Road and serves as the gateway to the Port of Umatilla Industrial Park. This two-lane north-south facility was constructed with an industrial grade concrete base and is intended to function as the truck route for the industrial park. To date, access connections (driveways) to Bud Draper Drive have only been granted to industrial park land uses and no sidewalk or bicycle facilities have been provided.

12.2.130(6) McNary Beach Access Road

McNary Beach Access Road serves as a second north-south access route to the Port of Umatilla Industrial Park and also provides access to the McNary Beach Recreation Area located on the shore of the Columbia River. This two-lane roadway was not intended to serve as a primary access route for truck access to the business park and its current cross section does not provide bicycle or pedestrian facilities.

12.2.130(7) Power City Road

Power City Road provides two-lane access for gravel quarries and residential areas west of Highway 395, intersecting with Highway 395 at an unsignalized intersection. Large portions of Power City Road are not paved and no bicycle or pedestrian facilities are provided.

12.2.140 City of Umatilla Facilities

Prior to development of the TSP, the City of Umatilla did not have a roadway classification system in place to identify the hierarchy of existing roadways. This classification system was developed in conjunction with the TSP and is presented in Section 12.2.500. Notable city streets are listed below and are shown in *Figure 12.2-2*.

12.2.140(1) Fifth Street

Fifth Street is located one block north of Highway 730 on the City’s west side and is aligned roughly parallel to Highway 730. This two-lane east-west facility serves a mix of both residential and industrial land uses but does not provide bicycle or pedestrian facilities.

12.2.140(2) Seventh Street

Seventh Street is located one block south of Highway 730 on the City’s west side and is also aligned roughly parallel to Highway 730. The north side of this two-lane facility serves a mix of commercial/residential land uses while the south side provides access to private residences and

the City's middle and high schools. Sidewalk facilities are provided along most of 7th street and on-street parking is permitted; however, no bicycle facilities are currently available.

12.2.140(3) Switzler Avenue

Switzler Avenue is the primary north-south through connection between 3rd Street and 7th Street. Sidewalk facilities are provided along this two-lane facility and on-street parking is permitted, though no bicycle lanes are currently provided.

12.2.140(4) Devore Road

Devore Road forms the north leg of the signalized Highway 730/Highway 395 intersection and provides access from the respective highways to the U.S. Army Corps of Engineer's McNary Dam facilities and the Port of Umatilla. This two-lane roadway offers no bicycle, pedestrian, or on-street parking facilities.

12.2.140(5) Willamette Avenue

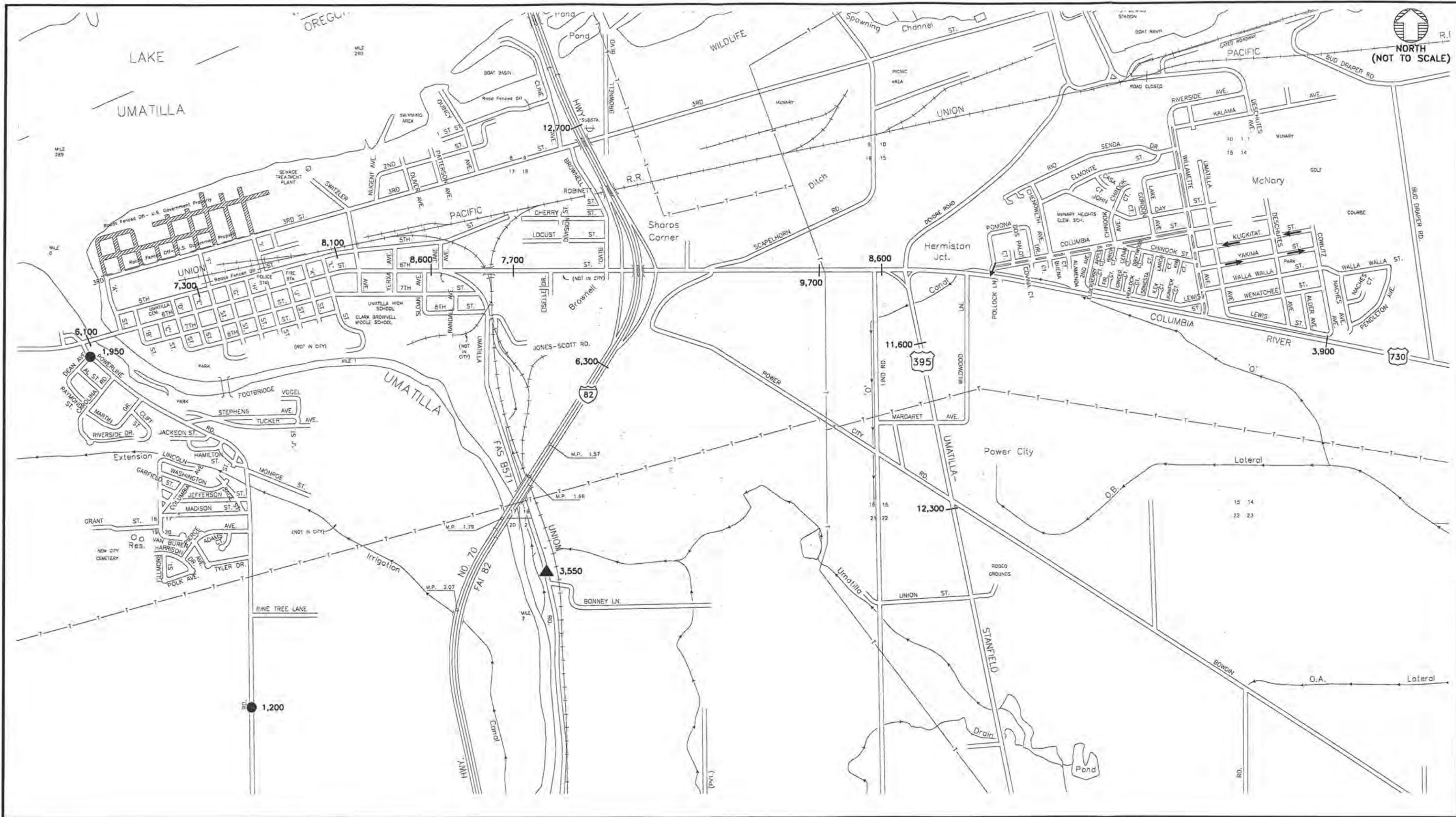
Willamette Avenue is the primary north-south road through the McNary residential area and is the only two-way street that offers a connection to Highway 730 from the McNary Housing Area. Willamette Avenue has a landscaped median between the northbound and southbound lanes and intersects with Highway 730 at an unsignalized intersection. On-street parking is allowed along Willamette Avenue, though few pedestrian and no bicycle facilities are provided.

12.2.140(6) Columbia Street

Columbia Street is the primary east-west roadway within the McNary residential area, running from Deschutes Avenue west to Highway 730. The eastbound and westbound travel lanes of Columbia Street are separated by a planted median strip. While Columbia Street does not have continuous sidewalks, it is the only roadway in the study area that currently provides striped bicycle lanes. Although Columbia Street intersects with Highway 730, access to the Highway is provided in only one direction. "Do Not Enter" signs prohibit vehicles from entering Columbia Street from Highway 730, except in the case of emergency vehicles.

12.2.150 Average Daily Traffic Volumes

For comparative purposes, *Figure 12.2-3* summarizes Average Daily Traffic (ADT) volume data estimated or counted by ODOT and Umatilla County, at several points along key roadway corridors within the study area. This figure offers a glimpse of the relative traffic levels on several of the major area roadways.



LEGEND

- ESTIMATED
- ODOT 1996 DATA
- ▲ UMATILLA COUNTY 1997 DATA

AVERAGE DAILY TRAFFIC VOLUME DATA

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 FEBRUARY 1999

FIGURE
 12.2-3



12.2.200 TRAFFIC OPERATIONS ANALYSIS

A total of 12 signalized and unsignalized study area intersections were selected for detailed analysis under existing conditions. These intersections were identified by the respective transportation agencies as being focal points of the City's roadway network. Traveling west to east, those intersections include:

Columbia River Highway (Highway 730) and:

Powerline Road

Switzler Avenue

Umatilla River Road

Eiselle Drive

Brownell Boulevard

Interstate 82 West (southbound) Ramp

Interstate 82 East (northbound) Ramp

Highway 395/Devore Road

Columbia Street (Polluck Lane)

Willamette Avenue

Bud Draper Drive

McNary Beach Access Road

Figure 12.2-4 illustrates the existing lane configurations and traffic control devices at each of the study intersections. Using the existing intersection geometries, traffic control devices, and traffic volumes, the operational performance of the respective study intersections was analyzed.

Traffic operations at each of the intersections were examined during the existing weekday p.m. peak hour. The p.m. peak period has been shown in previous studies to be the worst case condition for traffic operations within the Umatilla area transportation system. Travel patterns during this weekday time period typically combine commuting, shopping, and recreational trips, thus generating higher traffic volumes on the transportation system than during any other time period or day of the week.

12.2.201 Traffic Volumes

Weekday p.m. peak hour manual traffic volume counts at the study intersections were conducted in late May, 1997. These manual turning movement traffic counts were conducted between 4:00 p.m. and 6:00 p.m. on a mid-week day. The highest one-hour flows during these periods were then used in the study.

Based on the turning movement counts conducted at study area intersections, the system-wide p.m. peak hour of traffic on a typical weekday afternoon was estimated to occur between 4:45 and 5:45 p.m.

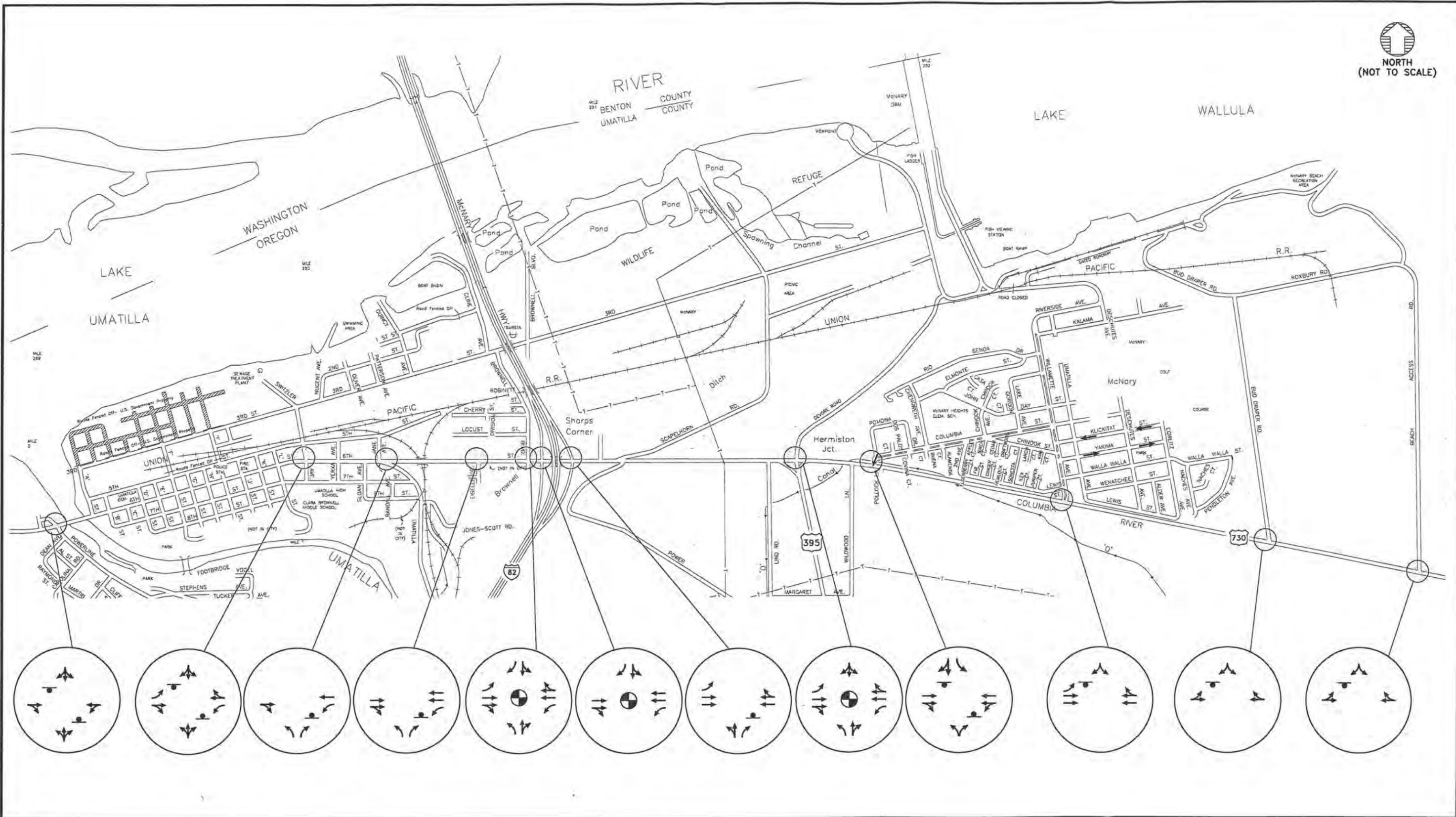
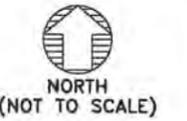
Existing weekday p.m. peak hour traffic volumes are shown in *Figure 12.2-5*. Traffic volumes have been rounded to the nearest five vehicles per hour.

12.2.202 Level of Service Analysis

Using the weekday p.m. peak hour turning movement volumes shown in *Figure 12.2-4*, an operational analysis was conducted at each study area intersections to determine existing levels of service. Level of service analysis is a traffic engineering term that refers to the operational characteristics of a roadway or intersection. The level of service concept has been developed to quantify the degree of comfort (based on delay) afforded to drivers as they travel through an intersection. Six grades are used to denote the various levels of service from “A” (ample capacity and minimal delay) to “F” (severe congestion and excessive delays). All level of service analyses described in this study were conducted in accordance with the *1994 Highway Capacity Manual*, published by the Transportation Research Board (Reference 4).

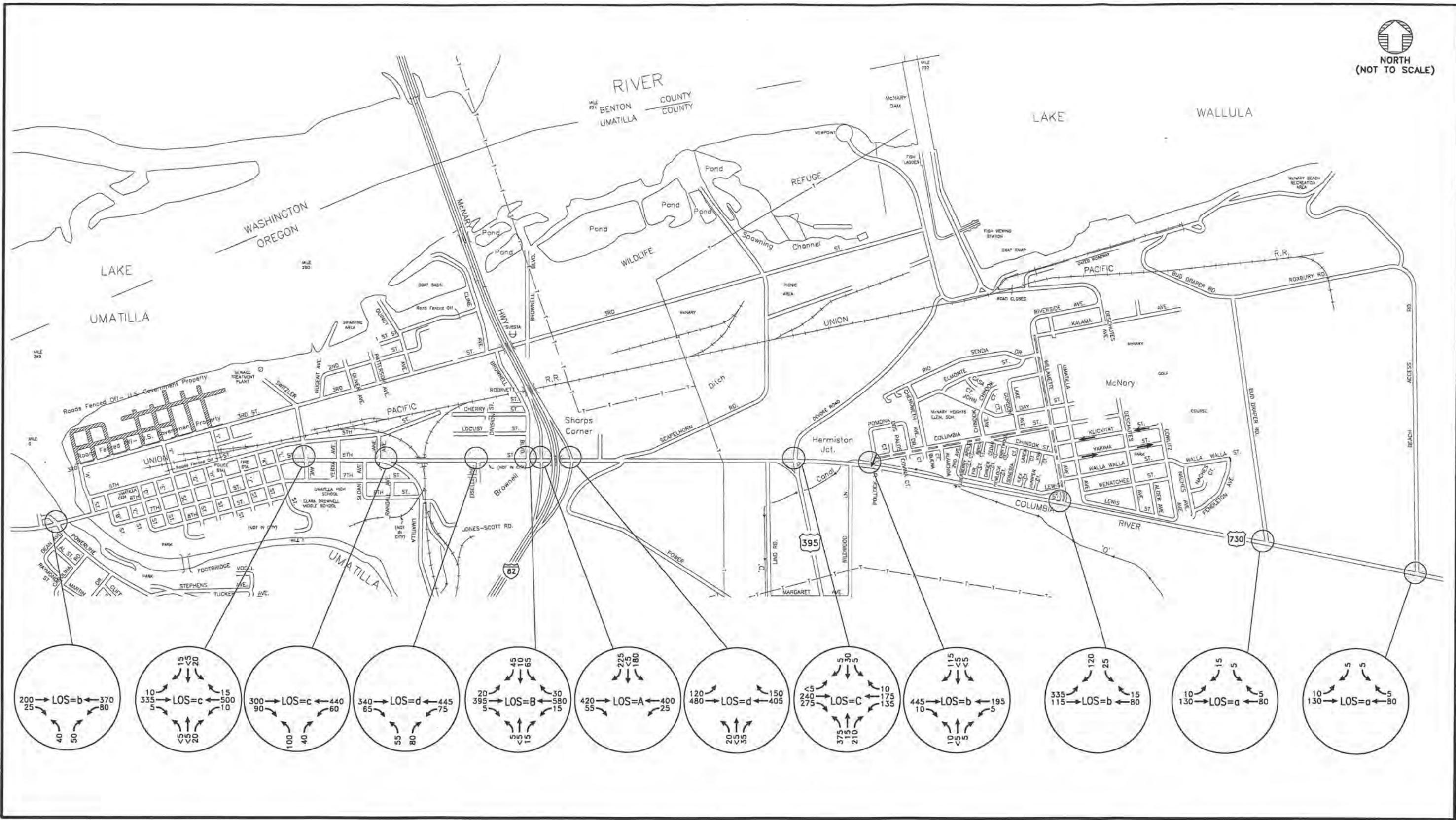
To ensure that this analysis was based on a reasonable worst-case scenario, the peak 15-minute flow rate during the weekday p.m. peak hour was used in the evaluation of all intersection level of service analyses. For this reason, the analyses reflect conditions that are only likely to occur for 15 minutes out of each average weekday p.m. peak hour. Traffic conditions during all other weekday periods will likely operate under better conditions than those described in this report.

Figure 12.2-5 summarizes the level of service results for signalized and unsignalized intersections. Signalized intersection level of service results are shown with a capital letter. Unsignalized intersection level of service results are shown with a lower case letter.



LEGEND
 TRAFFIC SIGNAL
 STOP SIGN

EXISTING LANE CONFIGURATIONS AND TRAFFIC CONTROL DEVICES Page 146



LEGEND
 LOS = INTERSECTION LEVEL OF SERVICE
 X : SIGNALIZED INTERSECTION
 x : UNSIGNALIZED INTERSECTION

**1997 EXISTING TRAFFIC VOLUMES
 WEEKDAY PM PEAK HOUR**

CITY OF UMATILLA, OREGON
 TRANSPORTATION SYSTEM PLAN
 FEBRUARY 1999

Page 147
 FIGURE 12.2-5



12.2.203 Signalized Intersections

For signalized intersections located within an Urban Growth Boundary along a highway of a *Regional Level of Importance* (such as Highway 730), ODOT’s *Oregon Highway Plan* indicates that, under current conditions, level of service “A” through “D” are considered acceptable and that level of service “E” through “F” are generally considered unacceptable.

The signalized intersection level of service analyses were duplicated using ODOT’s own analysis method, SIGCAP, to analyze signalized intersections throughout this report. While the HCM methodology bases levels of service on the delay experienced by motorists, SIGCAP uses intersection volume-to-capacity ratios to determine level of service. Table 12.2-2 summarizes the level of service analysis results for the signalized study intersections.

TABLE 12.2-2
EXISTING PM PEAK HOUR LEVEL OF SERVICE,
SIGNALIZED STUDY INTERSECTIONS

Intersection	Highway Capacity Manual			SIGCAP	
	V/C	Average Delay(sec/veh)	LOS	V/C	LOS
Brownell Boulevard/Highway 730	0.30	16.5	C	0.55	B
I-82 southbound Ramp/Highway 730	0.37	17.7	C	0.46	A
Highway 730/Highway 395	0.47	15.2	C	0.60	C

Legend: LOS = Level of Service, V/C = Volume/Capacity Ratio

As Table 12.2-2 indicates, all signalized intersections operate at acceptable levels of service under existing weekday p.m. peak hour conditions.

12.2.204 Unsignalized Intersections

For unsignalized two-way stop-controlled (TWSC) intersections, level of service is based on the intersection’s capacity to accommodate the worst, or critical, movement. Typically, the left-turn from the stop-controlled approach is the most difficult movement for drivers to complete at a TWSC intersection. This is due to this movement being exposed to the greatest potential number of conflicting, higher-priority movements at the intersection. Available gaps in the through-traffic flow of the uncontrolled approach(es) are used by all other conflicting movements before the side-street left-turn can be negotiated. Therefore, the number of available gaps for the side street left-turn to negotiate its movement safely is likely to be substantially lower than any other movement. As a result, the side-street left-turn typically experiences the highest delays and the worst level of service. For TWSC intersections, ODOT stipulates that level of service “A” through “D” are considered acceptable, level of service “E” is generally considered “marginally acceptable”, and level of service “F” is unacceptable. Table 12.2-3 summarizes the level of service results for the unsignalized study intersections.

TABLE 12.2-3
EXISTING PM PEAK HOUR LEVEL OF SERVICE,
UNSIGNALIZED INTERSECTIONS

Intersection	Critical Movement	V/C	Average Delay (sec/veh)	LOS
Powerline Road/Highway 730	Northbound	0.12	7.7	B
Switzler Avenue/Highway 730	Southbound	0.11	11.3	C
Umatilla River Road/Highway 730	Northbound Left	0.35	18.0	C
Eiselle Drive/Highway 730	Northbound Left	0.24	23.2	D
Interstate 82 Northbound Ramp/Highway 730	Northbound Left	0.14	24.4	D
Columbia Street (Polluck Lane)/Highway 730	Southbound Left	0.01	9.8	B
Willamette Avenue/Highway 730	Southbound	0.21	5.4	B
Bud Draper Drive/Highway 730	Southbound	0.02	3.2	A
McNary Beach Access Road/Highway 730	Southbound	0.01	3.9	A

Legend: LOS = Level of Service, V/C = Volume/Capacity Ratio

As Table 12.2-3 indicates, all of the unsignalized study area intersections operate at acceptable levels of service under existing weekday p.m. peak hour conditions.

Based on the level of service analysis results shown in Tables 12.2-2 and 12.2-3, the local Umatilla area roadway system can generally be quantified as being more than adequate to accommodate existing travel demand. Notwithstanding the level of service analysis results, operational concerns have been identified involving the Interstate 82 interchange. These concerns are directly related to the adjacent truck weigh station and the traffic signal location.

12.2.205 Port of Entry/ODOT Truck Weigh Station

The signalized study intersections of Brownell Boulevard/Highway 730 and the southbound Interstate 82 ramp/Highway 730 are located extremely close to each other and ODOT has coordinated the signals in an effort to improve intersection operations. Nevertheless, it was noted that queuing problems associated with truck traffic accessing the truck weigh station occurred at these two intersections during the weekday p.m. peak hour conditions.

Field observations made during the mid-summer (1997) weekday p.m. peak hour at the Brownell Boulevard/Highway 730 intersection and the southbound Interstate 82 ramp/Highway 730 intersection identified several signal cycle failures. The observed failure of the intersections to perform adequately was a direct consequence of Interstate 82 truck traffic destined to the Umatilla Port of Entry/Oregon Department of Transportation truck weigh station. At the time the observations were made, the weigh station (located on the northwest corner of the Brownell Boulevard/Highway 730 intersection) was only operating one processing lane during the p.m. peak hour. It was observed that the truck traffic at the weigh station queued onto the westbound Highway 730 lane, through the two study intersections, and back up the Interstate 82 southbound exit ramp. The truck queue effectively limited westbound Highway 730 traffic to a single travel lane.

Truck traffic circulating back out of the weigh station to Highway 730 currently is routed to Highway 730 via the southbound approach of Brownell Boulevard. Because of the slow start up speeds of the trucks, it was observed that only four to six trucks were able to access Highway 730 from Brownell Boulevard during each signal cycle. As a result, truck traffic was constantly queued on the northern approach to the Brownell Boulevard/Highway 730 intersection. The truck queue exiting the site wrapped from Brownell Boulevard back around the weigh station exit road and averaged 15-20 trucks during the peak period. This traffic effectively blocks the southbound approach of Brownell Boulevard to local traffic and is reported to be a source of contention among some members of the local community; especially persons accessing the Oregon Welcome Center.

This condition varies by season; a visual inspection of intersection operations made during the fall of 1997 identified no significant truck queuing at the intersections. Seasonal increases in truck traffic were attributed to peaking characteristics experienced by shipping interests and local harvest activities.

Community representatives further noted that truck drivers have inadvertently turned northbound on Brownell Boulevard in an attempt to access the weigh station. Realizing that they are on the wrong road and can't access the weigh station, the trucks apparently then try to back out of Brownell Boulevard onto Highway 730 so that they can proceed west on Highway 730 and enter the weigh station at the correct access.

12.2.210 Traffic Safety

In addition to conducting intersection operational analyses, the relative safety of the study area's roadway network was examined to determine if any outstanding safety deficiencies or potential conflict points could be identified. This safety review included an examination of historical accident records, a visual examination of the study intersections, and discussions with both the local agency staff and the general public.

12.2.211 Intersection Accident History

The accident history of the study intersections was first examined for potential and existing safety problems based on data provided by ODOT. ODOT accident data for the period 1993-1996 were used for this analysis. In addition, the ODOT District 12's 1992-1995 Safety Priority Index System (SPIS) list was reviewed. The SPIS list identifies locations with relatively high accident rates and locations that have been the site of one or more fatal accidents.

Table 12.2-4 presents accident rates for the individual study intersections. Accident rates for intersections are calculated by relating the total entering volume of traffic at the intersection, on an average daily basis, to the number of reported accidents for a given period of time. The accident rate for intersections is expressed as the number of accidents per million entering vehicles (Accidents/MEV). An accident rate of 1.0 Accidents/MEV is generally accepted as the safety threshold for intersections within urban areas, with accident rates below 1.0 considered indicative of intersections that are likely to be operating safely.

TABLE 12.2-4
STUDY INTERSECTION ACCIDENT RATES

Roadway Section Boundary Limits	Number of Accidents	Accidents/MEV
Powerline Road/ Highway 730*	3	0.36
Switzler Avenue/Highway 730*	3	0.10
Umatilla River Road/Highway 730*	4	0.35
Eiselle Drive/Highway 730*	3	0.26
Brownell Road/Highway 730	6	0.35
Interstate 82 Southbound Ramp/Highway 730	2	0.10
Interstate 82 Northbound Ramp/Highway 730	6	0.34
Highway 395/Devore Road/Highway 730	10	0.47
Columbia Street (Polluck Lane) /Highway 730*	1	0.12
Willamette Avenue/Highway 730	1	0.10
Bud Draper Drive/Highway 730	2	0.57
McNary Beach Access Road/Highway 730	0	0.0

*ODOT Accident data search period of January 1994 – December 1996

As shown in Table 12.2-4, there is no indication of a safety problem at the study intersections; however, some additional details regarding the reported accidents are worthy of further discussion as noted below.

A fatal accident was reported at the Willamette Avenue/Highway 730 intersection and resulted in inclusion of this site on the SPIS list. Although a fatality was involved, this was the only accident reported at the intersection over the four year analysis period and a field inspection of the intersection led to the conclusion that no significant safety deficiency could be identified from the accident data.

Similarly, a fatal accident was reported at the Columbia Street (Polluck Lane)/Highway 730 intersection. Although a fatality was involved, this was the only accident reported at the intersection over the three year period. A field inspection of the intersection led to the conclusion that no significant safety deficiency could be identified from the accident data, although it was noted that the one-way nature of the north leg of the intersection may contribute to confusion at the intersection.

The Interstate 82 southbound ramp/Brownell Boulevard/Highway 730 area also appeared on the SPIS list, though the accident rate in this area was much less than 1.0 accident/MEV. ODOT records indicate that the signal system timing controlling these intersections has been reconfigured to improve the intersection's safety.

In reviewing the aforementioned accident data, it should be noted that this information reflects *reported* accidents and is only as accurate as the information provided. No assumptions have been made regarding the number, location, or severity of the unreported accidents in the study area.

Due to the generally low volume of traffic at many of the study intersections, it is inappropriate to assume that the low accident rates are a definitive indication that all intersections are safe. Often, geometric or other deficiencies do not compromise the safety of an intersection until increased traffic volumes exacerbate a problem. Recognizing the potential for the existence of a safety deficient location not identified through a review of accident data, field reconnaissance were performed in an attempt to further identify potential safety deficiencies within the transportation system.

12.2.212 Safety Reconnaissance

Safety reconnaissance trips were made to all of the study intersections and, in conjunction with comments provided by local agency staff and the general public, resulted in the identification of a limited number of safety deficiencies. One of the primary sources of safety concerns was determined to be intersection sight distance.

Intersection sight distance is simply defined as the length of roadway that is visible to a motorist. Sight distance requirements at unsignalized intersections are defined by the American Association of State Highway and Transportation Officials (Reference 5). The existing sight distances provided at the study intersections were examined and found to be generally adequate with the exception of those at two intersections, Powerline Road/ Highway 730 and Umatilla River Road/Highway 730.

Locations and descriptions of identified safety concerns are presented below:

12.2.212(1) Powerline Road/Highway 730 Intersection

Northbound Powerline Road intersection sight distance is limited for motorists looking to the east by the bridge structure carrying Highway 730 over the Umatilla River. It is necessary for northbound left-turn traffic to advance to the pavement edge of Highway 730 to see approaching westbound Highway 730 traffic. No sight distance obstructions were identified for the vehicles traveling northbound on Powerline Road looking west.

In addition to sight distance concerns, based on observations made during the field reconnaissance, the need for a westbound left-turn lane (as well as the appropriate storage length that would be required to accommodate left-turning traffic) at the Highway 730/ Powerline Road intersection was examined under existing conditions. The analysis indicated that left-turn warrants are currently met at this location for the westbound Highway 730 left-turn movement under weekday p.m. peak hour operations. Recent regional growth in the Umatilla area and the probability of future development along Powerline Road suggests that the need for a westbound left-turn lane at this intersection will increase. The left-turn lane analysis further indicated that 75 feet of storage space should be provided for queued left-turn traffic, under existing conditions. Provision of a westbound left-turn lane would enhance both the safety and operational performance of the intersection by separating the westbound left-turn and through movements on Highway 730.

The westbound Highway 730 approach to the Powerline Road/Highway 730 intersection does not currently have adequate room to provide a left-turn bay due to the constrained width of the bridge structure that carries Highway 730 over the Umatilla River and due to the proximity of

Powerline Road to the bridge abutment. The location of Powerline Road effectively prohibits provision of a westbound approach left-turn bay without widening the bridge structure itself. There is no current need for an eastbound Highway 730 left-turn lane at Powerline Road as the northern leg of the intersection is an unpaved dead end roadway.

12.2.212(2) Umatilla River Road/Highway 730 Intersection

Intersection sight distance restrictions were also noted at the Umatilla River Road intersection. Northbound Umatilla River Road traffic intersection sight distance is limited for motorists looking to the east by the viaduct carrying Highway 730 over the Union Pacific Railroad right-of-way. It is necessary for northbound left-turn traffic to advance to the pavement edge of Highway 730 to fully see approaching westbound Highway 730 traffic. Looking to the left from the northbound Umatilla River Road approach, no sight distance obstructions were identified.

12.2.212(3) Interstate 82 Southbound Ramp Traffic Signal Location

During the field data collection visit to the Umatilla area, members of the local community expressed concern with the location of the traffic signal at the Interstate 82 southbound ramp/Highway 730 intersection. The concern raised involves the visibility of the intersection's traffic signal heads when approaching the intersection traveling westbound on Highway 730. Field reconnaissance verified the combination of the westbound Highway 730 grade and the Interstate 82 bridge deck does partially obstruct motorists' views of the signal heads. Community concerns were also expressed regarding the potential for this sight limitation contributing to certain types of traffic accidents at this location.

Field inspection further determined that a "Traffic Signal Ahead" sign is currently posted for the westbound travel lanes ahead of the Interstate 82 southbound ramp/Highway 730 intersection. According to ODOT, the accident situation was reviewed and the "Traffic Signal Ahead" sign was posted. ODOT further notes that the current location of the traffic signal, in conjunction with the "Traffic Signal Ahead" sign, meets standards.

12.2.212(4) Highway 730/Columbia Street Intersection

As previously noted, a fatal accident was reported at the Columbia Street/Highway 730 intersection. Although a fatality was involved, this was the only accident reported at the intersection over the three-year review period. During a field inspection of the intersection, it was noted that the one-way nature of the north leg of the intersection might contribute to confusion at the intersection. The northern leg of the intersection has a throat wide enough to accommodate two-way traffic. However, according to ODOT officials, turns on to Columbia Street were prohibited because of queuing concerns on Highway 730. (The signing at the entrance permits emergency vehicles to enter at this location).

Comments made at TSP committee meetings and an open house suggest that some people disregard the "Do Not Enter" signs, and turn onto Columbia Street through this intersection anyway. Because this intersection offers one of only two access points to the entire McNary Housing Area, it is an attractive way to enter the neighborhood; apparently regardless of the one-way arrangement currently in use.

12.2.212(5) Highway 730/Willamette Avenue Intersection

A fatal accident also was reported at the Willamette Avenue/Highway 730 intersection. Similar to the Columbia Street/Highway 730 intersection, although a fatality was involved, this was the only accident reported at the intersection over the three year review period. Field inspection of the area suggested that the intersection with Highway 730 appears reasonably adequate but that the adjacent intersection of Lewis Street with Willamette Avenue (immediately north of Highway 730) is not ideal. The two unsignalized intersections are closely spaced and, because of the wide median on Willamette Avenue, the left turn bays that are provided result in a potentially undesirable geometric configuration.

12.2.220 Other Identified Existing Transportation Deficiencies

As an extension of the existing conditions analysis, several different locations with existing transportation system deficiencies were identified. A description of the deficiencies and potential improvements follows. The summary is based on field data/observations and information/suggestions that were made by members of the respective transportation agencies and the general public.

12.2.220(1) Powerline Road

Members of the Umatilla community raised several concerns regarding the cross-section and function of Powerline Road. These issues reflect both vehicular and pedestrian/bicycle access concerns.

As previously noted, Powerline Road provides access to the southwestern residential area of the city. Powerline Road is a narrow two-lane roadway (approximately 22 feet wide) with limited to non-existent shoulders and no sidewalk facilities. Several agency staff members and citizens noted that, although there are no sidewalk facilities, children play and people routinely walk along the roadway. Compounding the situation, some side streets are located on curves along the roadway and provide only short sight-distance for vehicles turning from these side roads onto Powerline Road. Additional housing development activity along Powerline Road, including a new 319-unit subdivision, are expected to further increase traffic on Powerline Road. Local residents also expressed concern that drivers' speeds along the roadway are too fast given the roadway's geometric limitations.

12.2.220(2) Highway 730 Between The West City Limits and Interstate 82

As with Powerline Road, several concerns with the cross-section and function of Highway 730 -- especially between the west city limits and the Interstate 82 interchange -- were raised by members of the Umatilla community. These issues also reflect both vehicular and pedestrian/bicycle access concerns.

12.2.220(3) Traffic on Highway 730

Community concerns involving Highway 730 between the western city limits and the Interstate 82 interchange predominantly reflect traffic volumes on Highway 730. As previously noted, approximately 7,300 vehicles traverse this segment of Highway 730 on a daily basis.

The combination of traffic volumes and the design of Highway 730 in this area lead to several concerns including:

A perceived lack of safe places for pedestrians to cross Highway 730 due to few breaks in the traffic stream that allow pedestrians to safely cross the roadway;

A perceived need for a traffic signal at Switzler Avenue to assist school children and pedestrians in general, cross Highway 730;

Difficult access to Highway 730 from side-streets such as Switzler Avenue;

The use (by some drivers) of the Highway 730 center left-turn lane as a through lane; and

The need for some form of traffic control to facilitate emergency vehicle's access to Highway 730 from the fire station (Station 1). The City's emergency vehicles have difficulty entering the traffic stream on Highway 730. This difficulty is due to the relatively steep grade up from their driveway, the lack of a clear line of site owing to the bank building and on-street parking, and the lack of cooperation provided by motorists on Highway 730.

12.2.220(4) Umatilla River Road

Umatilla River Road is perceived as serving growing traffic demands and also is the subject of community concerns. The Umatilla River Road/Highway 730 intersection has an identified sight distance restriction associated with the bridge structure that carries Highway 730 over the Union Pacific Railroad right-of-way. Currently, northbound left-turn traffic must advance to the pavement edge of Highway 730 to see approaching westbound Highway 730 traffic.

In addition to the sight distance issue at the intersection with Highway 730, Umatilla River Road is perceived by the community as being used by an increasing number of large trucks to avoid the designated truck route up from Hermiston.

12.2.220(5) Access to the McNary Residential Area

The McNary Residential Area on the east side of town is accessible via two intersections connecting with Highway 730, Columbia Street and Willamette Avenue. Each of these intersections has been identified as a potentially problematic location. Safety concerns at the intersections of Columbia Street/Highway 730 and Willamette Avenue/ Highway 730 appear to be closely related to the overall character of access to the McNary Residential Area. Under the existing access configuration, all ingress movements to the housing area are focused through Willamette Avenue while egress is served by Willamette Avenue and Columbia Street. The resulting lack of connectivity to other roadway facilities was identified as being undesirable.

12.2.230 Conclusion

The City of Umatilla's transportation system is comprised of bicycle, pedestrian, roadway, transit, railway, pipeline, and river transportation facilities located within the UGB. On a typical weekday afternoon, the transportation system experiences its peak roadway traffic demand between 4:45 and 5:45 p.m. During this peak period, the transportation system operates sufficiently well to accommodate the peak demand in most areas of the City.

The bicycle system is currently limited to two striped bike lanes on Columbia Street, a multi-use path traversing the northbound span of the Columbia River Bridge and, a path along the Columbia River. The City of Umatilla has a reasonably well developed pedestrian system in the downtown area as well as along its arterial and collector street system. Most key pedestrian generators are adequately served by the existing sidewalk network; however, sidewalk connections to some key pedestrian generators do not exist. These key missing links in the system should be completed in a timely manner to ensure adequate access to these alternative modes. In addition, improved connections to the pedestrian bridge crossing of the Umatilla River should be provided.

Transit service in the City of Umatilla is relatively limited. Dial-a-Ride services are available in the area through out-of-town providers but they are only offered on a limited basis. Greyhound operates daily inter-city bus service to the area, providing an on-street stop at the intersection of Switzler Avenue and Highway 730.

No airports are located within the City of Umatilla's UGB, though facilities are available in neighboring communities. Union Pacific Railroad operates a freight rail line spur through the City of Umatilla on an as-needed basis, currently three days a week.

Both the West Extension Irrigation District and the Hermiston Irrigation District operate irrigation canals within the City's UGB. High-voltage transmission lines managed by the Bonneville Power Administration originate at the McNary Dam and carry power to and through the Umatilla area. Assuming the timely completion of City water and sewer line expansion projects currently underway, there is no capacity limitation for either pipelines or transmission lines in the Umatilla area that would limit industrial or residential expansion.

The Columbia River provides marine transportation to the area and two facilities operated and maintained by the Port of Umatilla support recreational and commercial use of the waterway. The McNary Dam is operated by U.S. Army Corps of Engineers and serves both commercial barge traffic and recreational boats traveling along the river.

All of the study intersections currently operate at acceptable levels of service under average weekday p.m. peak hour conditions. The signalized study intersections of Brownell Boulevard/Highway 730 and the southbound Interstate 82 ramp/Highway 730 are located extremely close to each other and ODOT has coordinated their operations in an effort to improve their performance. Operational concerns within the Interstate 82 interchange have been identified and linked in part to the adjacent Port of Entry truck weigh station.

An evaluation of historical ODOT accident data revealed that accident rates at the study intersections are within generally accepted safety thresholds. Two study area intersections were identified as the location of a fatal accident, Columbia Street (Polluck Lane)/Highway 730 and Willamette Avenue/Highway 730. Both of these intersections had only one accident reported during the review period and both accidents involved a fatality. No obvious deficiencies were identified at the Willamette Avenue/Highway 730 intersection but it was noted that the one-way operation of the northern leg of the Columbia Street/Highway 730 intersection may be a source of confusion. Community concerns have been identified with the cross section and safety of

Powerline Road, Highway 730, and Umatilla River Road as well as with the limited access provided to the McNary Residential Area.

12.2.300 FUTURE ROADWAY CONDITIONS ANALYSIS

This section presents estimates of long-term future travel conditions within the TSP study area. The long-term future transportation needs for the City of Umatilla were examined based on available employment and population forecasts, previously prepared future travel demand forecasts, identified development activities, review of the proposed roadway network, results from the operational analysis of the existing street system, and extensive discussions with regional transportation personnel and Umatilla citizens.

12.2.305 Transportation Demand

Future transportation demand for the City of Umatilla was estimated based on expected growth in the study area population, employment, and traffic traveling through the study area for the horizon year 2017. The unique trip making characteristics of residential as well as employment-based activities were considered in the development of the future travel demand estimates. Further, the available lands identified in the City's Buildable Lands Inventory were compared with the land use mix proposed in the City's Comprehensive Plan during development of the long-term travel demand forecast.

As part of their analysis, Kittelson & Associates, Inc. reviewed and identified planned developments and transportation improvement projects within the site vicinity. Historic transportation trends were compared with proposed future site-specific growth to arrive at a reasonable forecast condition.

12.2.310 Land Use/Demographics

Year 2017 traffic volumes on the City of Umatilla's transportation system were forecast based on population and employment estimates developed by the State of Oregon for Umatilla County and the City of Umatilla. These estimates were compared against recent development trends, planned developments, and forecast growth rates provided by local agencies to verify their appropriateness. The 20-year planning horizon was chosen to insure compliance with the TPR.

12.2.315 Population

The population of Umatilla County increased at an annual, compounded rate of 0.97 percent between 1960 (population 44,352) and 1990 (population 59,249). From 1990 to 1995, the County grew at an annual compounded rate of 1.9 percent (from 59,249 to 65,200). In contrast, between 1990 and 1998, the City of Umatilla's population grew at an annual compound rate of 1.8 percent (3,046 to 3,515 population). According to City of Umatilla staff, approximately 7,500 new residents are expected in the region in the near future in conjunction with the identified development activities. The HUES Growth Impact Study for Western Umatilla County (Reference 6) indicates that the City of Umatilla could realize approximately 719 new residents as a result of anticipated development activity. The acceleration in regional and local growth has been attributed to several new employment and development activities in the area and are summarized in Table 12.2-5.

12.2.320 *Planned Developments*

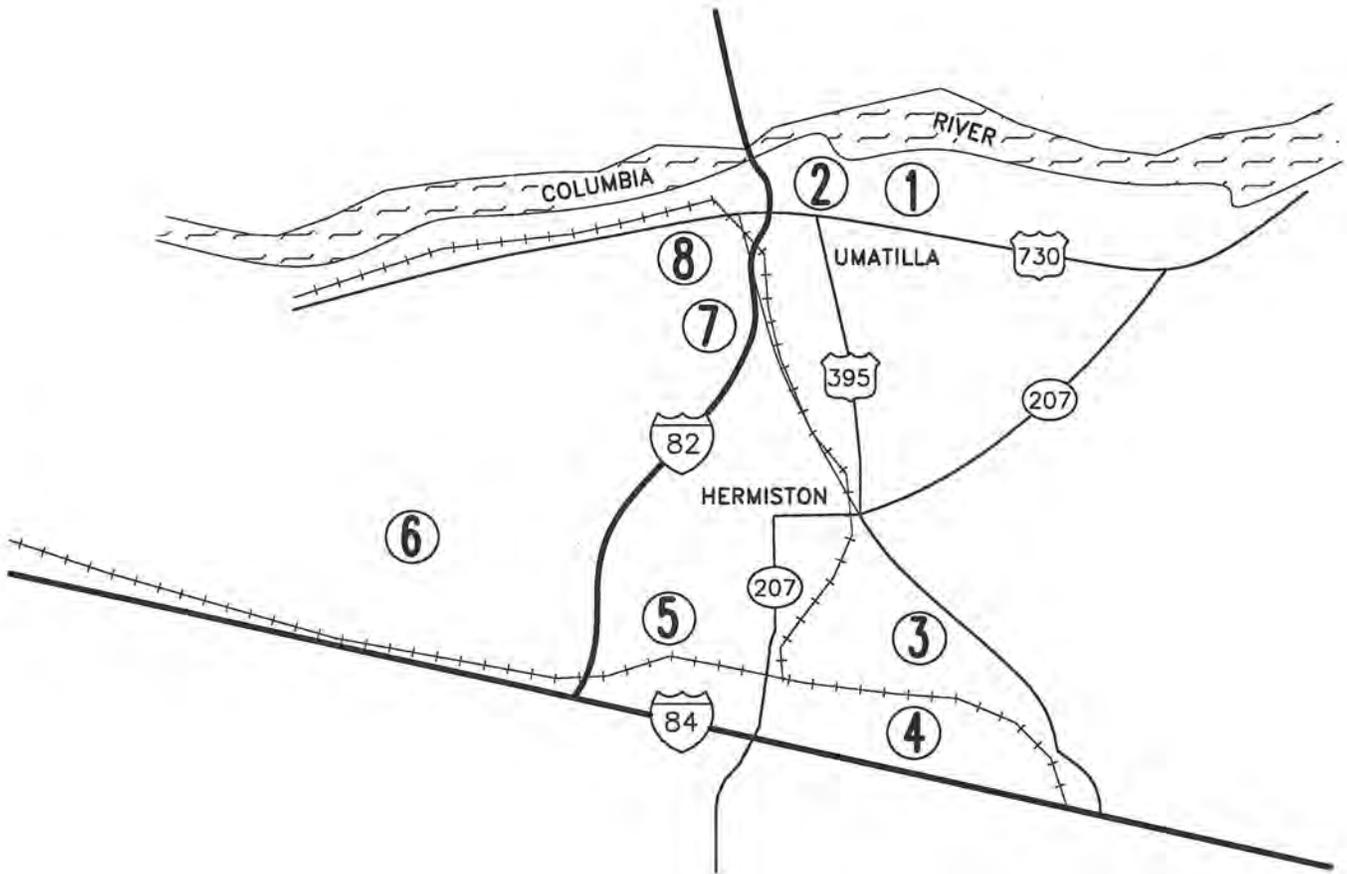
Umatilla area planning staff indicate that the region has experienced unprecedented growth. Conversations with the City’s Planning Department and ODOT identified eight potentially significant development projects in the area. Those developments are summarized in Table 12.2-5. It should be noted that no significant expansion of the local food processing and stockyard industries were identified (although an onion dehydration plant located within the Port of Umatilla was reactivated after a period of dormancy).

TABLE 12.2-5
PLANNED DEVELOPMENTS

Development	Location	Anticipated Size	Completion Date
Residential Housing	Dean Avenue/Carolina Street area	48 Lots	Unavailable
Residential Housing	Naches Avenue	Approximately 14 acres	Unavailable*
Two Rivers Correctional Facility	Port of Umatilla, East of Beach Access Road	1,600 Bed Prison 500 employees	2000
Wal-Mart Distribution Center	1 mile south of southern Hermiston City Limit, west side of U.S. 395	1998: 400 employees 2001: 500 employees	1998-First Phase 2000-Full Buildout
Union Pacific Railcar Repair Facility	Hinkle Railyard (south side of Hermiston)	225 employees	Fall 1998 –1999
Umatilla Army Depot Chemical Weapons Incinerator	Immediately north of Interstate 84 on Army Depot property (southwest of the City of Umatilla)	500-600 additional employees	2001-Full Buildout
Hayden River Estates	Powerline Road, south of Tyler Avenue	Approximately 319 lots	Phased development over five years
Cogeneration Plant	Adjacent to Route 207, south of Hermiston	Unavailable	Unavailable*

*No formal development applications have been received for these developments.

As indicated in Table 12.2-5 and illustrated in *Figure 12.2-6*, three residential housing developments and a state correctional facility are planned within the City of Umatilla and the remaining four developments are located south of Hermiston. With three exceptions, all of the developments identified in Table 12.2-5 were approved and/or under construction at the time this plan was drafted. The exceptions include the potential new cogeneration plant and the residential housing development near Naches Avenue (neither of which had been specifically proposed for development) and the residential development near Dean Avenue (for which approval was pending from the City).



LEGEND

- | | |
|---|--|
| ① TWO RIVERS CORRECTIONAL FACILITY | ⑥ UMATILLA ARMY DEPOT CHEMICAL WEAPONS INCINERATOR |
| ② POTENTIAL RESIDENTIAL HOUSING | ⑦ HAYDEN RIVER ESTATES |
| ③ WAL-MART DISTRIBUTION CENTER | ⑧ RESIDENTIAL HOUSING |
| ④ UNION PACIFIC RAILCAR REPAIR FACILITY | |
| ⑤ POTENTIAL NEW CONGENERATION PLANT | |

LOCATIONS OF ANTICIPATED DEVELOPMENT ACTIVITY

Except for the residential developments, the development sites will be accessed primarily via Interstates 84 and 82 as well as Highway 207. According to local planning officials, truck traffic associated with the Wal-Mart Distribution Center has been directed to access the center via routes that avoid U.S. 395. Truck traffic destined to, or originating from, points north and west of the site are to travel on a route linking Interstate 82 to 84, U.S. 207, and Feedville Road. Similarly, traffic associated with the Umatilla Army Depot Chemical Weapons Incinerator and the Union Pacific Railcar Repair Facility will have efficient access to Interstate 84. Based on these plans, the developments are not expected to result in large increases in truck traffic on Highway 730 or the portion of Highway 395 within the Umatilla UGB.

12.2.325 Employment

Local officials anticipate the creation of 2,500 new regional jobs in conjunction with the Two Rivers Correctional Facility, Wal-Mart's Distribution Center, the Union Pacific Railcar Repair Facility, and the Umatilla Army Depot Chemical Weapons Incinerator. Build-out dates of these facilities are summarized in Table 12.2-5. With the exception of the Umatilla Army Depot Chemical Weapons Incinerator (which is expected to be constructed, operated, and disassembled in a 12-year time frame), these new facilities are anticipated to be sources of long-term employment.

12.2.330 Historical Traffic Growth

In an effort to account for the traffic growth associated with the identified development projects (not including the Two Rivers Correctional Facility or the Hayden River Estates projects, for which long-term traffic forecast were available), an annual growth rate was chosen for the year 2017 traffic analysis. This rate was determined based on a review of historical traffic volume trends, anticipated population growth, regional population densities, and local knowledge of planned, near-term development.

A review of local Oregon Department of Transportation traffic volume data on Highway 730 indicated an historical 0.6 percent growth rate between 1960 and 1996 (Refer to Figure 9). The annual traffic growth rate of 0.6 corresponded to an annual population growth rate of 0.97 percent. Considering only the past five years and using additional data available for Interstate 82, the annual traffic growth rate was three percent. Based on the data available, it appears that the relationships between historical employment, population, and traffic growth trends in the study area have been relatively consistent.

12.2.335 Planned Transportation Improvements

ODOT is currently implementing a technology-based Commercial Vehicle Operations (CVO) program in conjunction with the Port of Entry weigh station located in the City of Umatilla. The program is expected to result in a reduction in the number of trucks passing through the weigh station. The CVO program is discussed in more detail in Section 12.2.400.

In an unrelated project, left- and right-turn lanes will be constructed on Highway 730 at the intersections of Bud Draper Drive and McNary Beach Access Road in conjunction with the construction of the Two Rivers Correctional Facility. The geometric improvements at these two intersections are scheduled for completion in 1999.

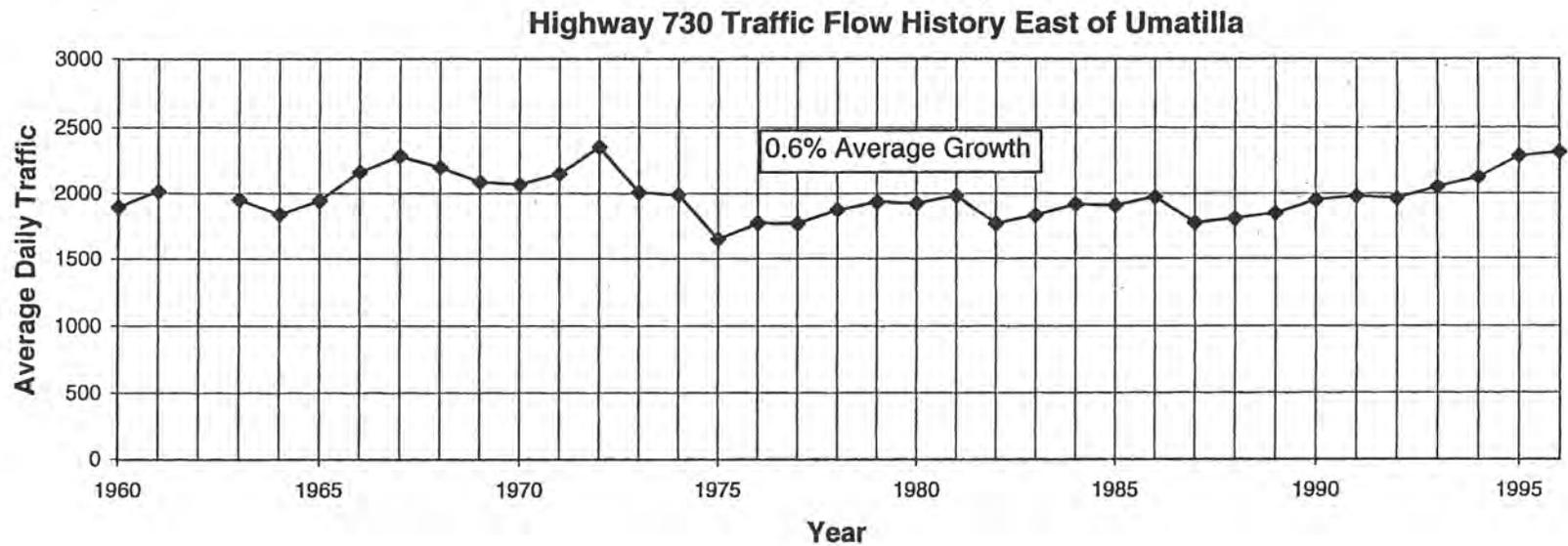
12.2.340 *Travel Demand Forecasting Methodology*

The growth rate for the 20-year design horizon was based on a review of historical traffic volume trends, anticipated population growth, regional population densities, and local knowledge of planned development. Given the area's historical 0.6 percent traffic growth rate between 1960 and 1996 (from the ODOT ATR data, refer to Figure 9) and the anticipated influx of development projects, a variable annual growth rate was chosen to model future conditions. The variable growth rate chosen is summarized in Table 12.2-6 and reflects the anticipated rapid development activity over the near-term and then a gradual moderation in the growth rate to slightly lower levels, resulting in a more sustainable rate for the long-term.

TABLE 12.2-6
20-YEAR TRAFFIC ANNUAL GROWTH PROJECTIONS

Analysis Period	Annual Growth Rate
1997-2002	5%
2002-2007	3%
2007-2012	2%
2012-2017	2%

The growth rates given in Table 12.2-6 are conservative and reflect discussions with, and information from, the City of Umatilla and ODOT. The five percent annual growth rate was chosen to represent traffic increases spurred by rapid development activities over the near-term future. The development information and long-term economic forecasts currently available suggest that development will not continue at the rapid pace that will be occurring over the next five years. Thus, it is assumed that the growth rate over the long-term horizon would return to its previous five-year rate of two to three percent per year. The suggested reduction in the long-term pace of development activity is supported by the anticipated closure of the Umatilla Army Depot Chemical Weapons Incinerator in approximately twelve years. This assumption is also consistent with the growth trend identified in *Figure 12.2-7*.



Source: Oregon Department of Transportation Traffic Volume Tables

HISTORIC GROWTH TRENDS ON HIGHWAY 730



12.2.345 Changing Demand for Transportation Options

Over the next 20 years, travel demand within the City of Umatilla will continue to evolve. Future travel demand is expected to reflect a gradually increasing component of non-automobile traffic and also the City's increasing self-sufficiency.

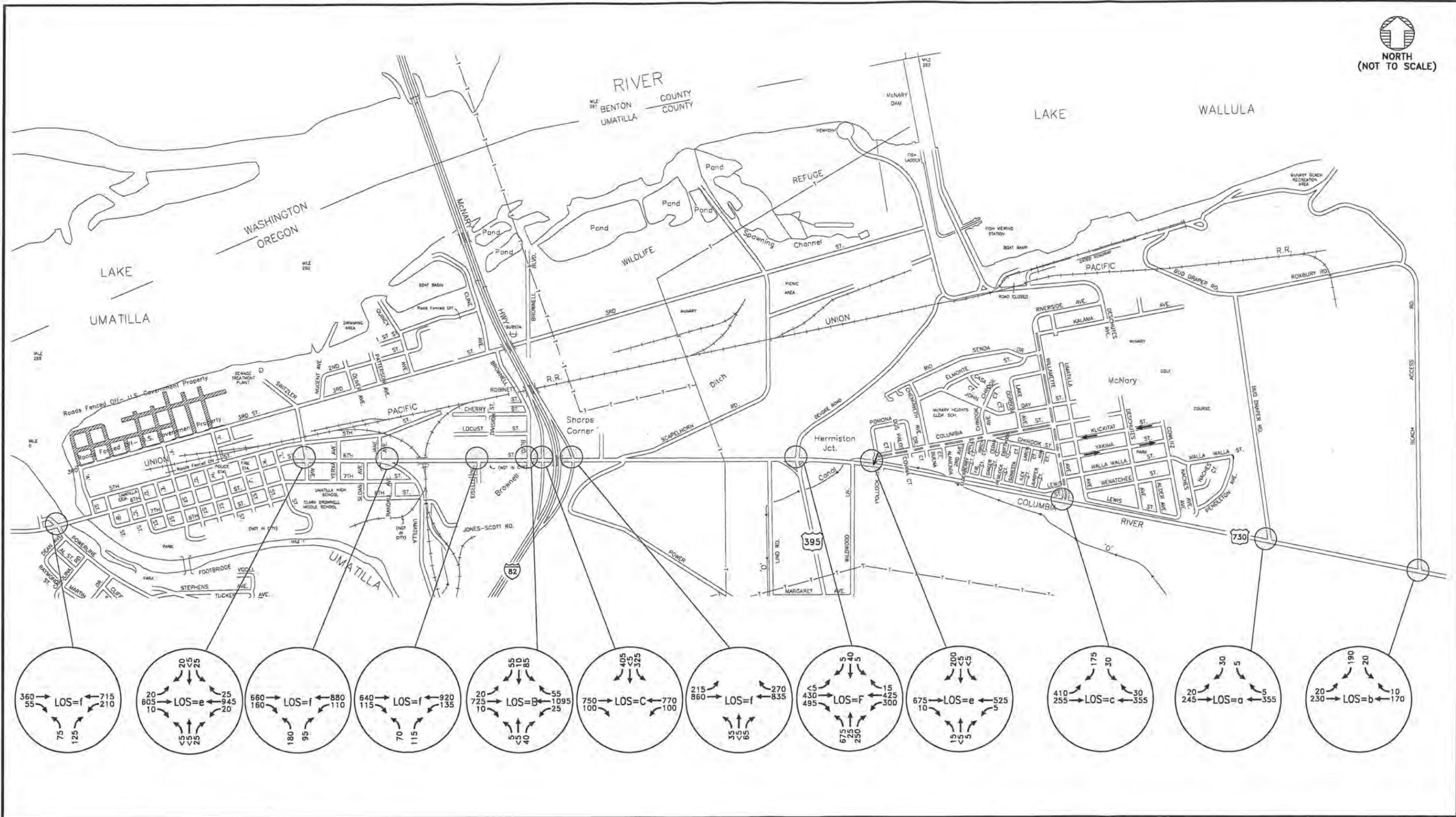
The City of Umatilla's TSP has provided for future facilities that will accommodate pedestrian, bicycle, and other modes of travel within the City. It is also expected that new technologies such as telecommuting will comprise a small but increasing part of the future transportation demand by the year 2017. In addition, technologies such as those associated with the ODOT CVO program are expected to reduce truck traffic within the City. These changes will create multi-modal transportation opportunities that should gradually reduce the existing dependence on automobile travel.

In addition to providing multi-modal transportation opportunities, the needs of the community itself will change travel demand patterns with time. It is generally understood that as smaller rural communities grow in population and employment they become more self-sufficient entities; better able to serve the full needs of their population. Citizens are able to find employment and services desired within the community, instead of having to travel to large urban areas located nearby. The benefit to the transportation system is in the potential for some of these trips (now local as opposed to long distance) to be made via modes other than the automobile; thus reducing demand on the overall network.

The future traffic volume forecast presented herein reflects the anticipated benefits of a more multi-modal transportation system as well as the changing character of travel demand.

12.2.350 Forecast Future Traffic Volumes

Future conditions within the City of Umatilla were considered under a "no-build" condition (i.e., no new roadways would be constructed in the 20-year horizon). *Figure 12.2-8* illustrates the forecast year 2017 weekday p.m. peak hour traffic volumes under the no-build condition. In reviewing the traffic volumes illustrated in *Figure 12.2-8*, it should be noted that the traffic volumes were balanced between intersections in areas where there are limited access points.



LEGEND
 LOS = INTERSECTION LEVEL OF SERVICE
 X : SIGNALIZED INTERSECTION
 x : UNSIGNALIZED INTERSECTION

**2017 FORECAST TRAFFIC VOLUMES
 WEEKDAY PM PEAK HOUR**

CITY OF UMATILLA, OREGON
 TRANSPORTATION SYSTEM PLAN
 FEBRUARY 1999

FIGURE
 12.2-8

12.2.355 *Level of Service Analysis*

Figure 12.2-8 summarizes the level of service results for signalized and unsignalized intersections. Signalized intersection level of service results are shown with a capital letter. Unsignalized intersection level of service results are shown with a lower case letter. Table 12.2-7 further details the forecast year 2017 traffic levels of service during the weekday p.m. peak hour at the signalized study area intersections.

TABLE 12.2-7
FORECAST YEAR 2017 PM PEAK HOUR LEVEL OF SERVICE,
SIGNALIZED STUDY INTERSECTIONS

Intersection	Highway Capacity Manual ⁽¹⁾			SIGCAP	
	V/C	Average Delay(sec/veh)	LOS	V/C	LOS
Brownell Boulevard/Highway 730	0.50	45.8	E	0.55	B
I-82 Southbound Ramp/Highway 730	0.75	37.3	D	0.64	C
Highway 395/Highway 730	0.89	25.3	D	> 1.0	F

Legend: LOS = Level of Service, V/C = Volume/Capacity Ratio

(1) Supplemented by use of NETSIM to model the effects of closely spaced signals in coordination.

Based on the forecast year 2017 travel conditions, it is expected that the intersections of Brownell Boulevard/Highway 730 and Highway 395/Highway 730 will require mitigation. Further, in reviewing Table 12.2-7, it should again be noted that the SIGCAP analysis methodology reports unrealistic levels of service at the two intersections near the Interstate 82/Highway 730 interchange because it cannot account for the signal coordination necessary to operate the two closely spaced intersections. (For example, because SIGCAP does not account for the interaction between traffic signals at the Interstate 82/Highway 730 interchange, it reports level of service B at the Brownell Boulevard/Highway 730 intersection. More detailed operational modeling with alternative analysis methodologies suggests that the intersection will in fact operate at level of service E).

12.2.360 *Unsignalized Intersections*

Table 12.2-8 summarizes the forecast level of service results for the unsignalized study intersections.

TABLE 12.2-8
FORECAST YEAR 2017 WEEKDAY PM PEAK HOUR LEVEL OF SERVICE,
UNSIGNALIZED INTERSECTIONS

Intersection	Critical Movement	V/C	Average Delay (sec/veh)	LOS
Powerline Road/Highway 730	Northbound	> 1.0	> 45	F
Switzler Avenue/Highway 730	Southbound	0.34	36.7	E
Umatilla River Road/Highway 730	Northbound Left	> 1.0	> 45	F
Eiselle Drive/Highway 730	Northbound Left	> 1.0	> 45	F
Interstate 82 Northbound Ramp/Highway 730	Northbound Left	> 1.0	> 45	F
Columbia Street (Polluck Lane)/Highway 730	Southbound Left	0.14	31.7	E
Willamette Avenue/Highway 730	Southbound	0.45	13.2	C
Bud Draper Drive/Highway 730	Southbound	0.05	4.7	A
McNary Beach Access Road/Highway 730	Southbound	0.04	6.7	B

Legend: LOS = Level of Service, V/C = Volume/Capacity Ratio

As Table 12.2-8 indicates, the critical movements of four unsignalized study area intersections will operate at “unacceptable” levels of service and two will operate at “marginally acceptable” levels of service, under forecast year 2017 weekday p.m. peak hour conditions. It should be emphasized that the levels of service shown in Table 12.2-8 reflect delay to the critical minor street movement; major street levels of service at the unsignalized study intersections are still expected to operate at acceptable levels.

The next section of the TSP presents an analysis of potential mitigation alternatives that address existing and future forecast deficiencies, including mitigation of the study intersections.

12.2.365 Summary

Several significant findings were identified through the future conditions analysis, most notably:

Traffic volumes are expected to increase approximately 60 percent over the 20-year planning horizon.

Traffic volumes are expected to increase more rapidly in the near-term due to higher-than-normal growth rates for population and employment during the same period.

Future travel demand within the City of Umatilla will continue to evolve and is expected to reflect a gradually increasing component of non-automobile traffic and also the City’s increasing self-sufficiency.

The capacity of the local transportation system is substantial enough to accommodate the forecast increases in demand with only minor operational deficiencies likely to occur at the locations noted below.

Based on the future traffic volume forecast, the signalized intersections of Highway 395/Highway 730 and Brownell Boulevard/Highway 730 (and because of the current signal interconnection, the Southbound Interstate 82 Ramp/Highway 730 intersection) are anticipated to

require mitigation measures. Similarly, the unsignalized intersections of Powerline Road/Highway 730, Umatilla River Road/Highway 730, Eiselle Drive/Highway 730, and the Northbound Interstate 82 Ramp/Highway 730 also are expected to require mitigation.

12.2.400 ROADWAY SYSTEM ALTERNATIVES ANALYSIS

This section is a summary of future transportation improvement alternatives that could be implemented to mitigate existing and projected future transportation system deficiencies. Potential roadway improvement alternatives are presented and recommendations are offered as to their feasibility. As potential deficiency mitigation projects were developed, consideration was given to how a multi-modal approach could contribute to individual projects. Thus, while the primary impetus for a given mitigation alternative may center on increasing vehicular capacity, provision of appropriate bicycle and pedestrian amenities was given equal consideration.

Special effort was provided in considering and recommending improvements to the pedestrian and bicycle systems. Recommendations were developed that create direct linkage to all identified pedestrian/bicycle generators and complete missing links identified in both the pedestrian and the bicycle systems. The alternative modes analysis and subsequent recommendations process were handled separately to ensure that a complete system for each mode was identified without constraint.

It should be noted that, in this section, formal alternatives development and analysis are only presented for the roadway network and its components. Other elements of the transportation system such as pedestrian access, bicycle access, rail access, etc., currently exist at a level such that either an entire network needs to be developed (for example, bikeways) or else current services are adequate for existing demand and capacity is unconstrained (for example, rail access).

12.2.410 Intersection Improvements

The need for mitigation of existing and future intersection operations within the study area was documented in Sections 12.2.100 and 12.2.300. The long-term future forecast for the study intersections under the “No-Build” scenario suggests that several intersection improvements will be necessary. Specifically, five of the study intersections were forecast to operate at unacceptable levels of service during the year 2017 weekday p.m. peak hour and will likely require mitigation.

The following sections describe potential intersection improvements and recommended mitigation measures. For organizational purposes, potential mitigation measures associated with intersections along Highway 730 between Eiselle Drive and the Northbound Interstate 82 Ramp are discussed as a separate subtopic.

12.2.411 Highway 395/Highway 730 Intersection

Analysis indicates that the Highway 395/Highway 730 intersection will operate at an unacceptable level of service during the year 2017 weekday p.m. peak hour. The forecast northbound left-turn volume of 675 vehicles and the substandard level of service suggest the

need to provide northbound dual left-turn lanes at this intersection to minimize queuing and delay (generally, left-turn traffic volumes in excess of 300 vehicles per hour are considered to justify more than one left-turn lane).

A) Potential Improvements

Two potential improvements were considered that would create additional capacity for the northbound left-turn movement. One option was the creation of a northbound fly-over connection that would allow northbound left-turn traffic to use a ramp over the existing intersection, effectively avoiding the signalized intersection and thereby reducing delay. The infrastructure cost associated with construction of the necessary fly-over ramp and supporting facilities effectively precludes this improvement option.

A second potential mitigation option would be the construction of an additional northbound left-turn lane. Provision of an additional northbound left-turn lane is expected to improve intersection operations to level of service “C”, which is considered to be acceptable by ODOT standards for the 20-year planning horizon. Because Highway 730 already has two westbound travel (receiving) lanes at the intersection and the signal timing uses a split phase on the north-south legs, there should be no significant geometric impediments to the provision of dual left-turn lanes on the northbound approach. Nevertheless, widening of the Highway 395 south approach would be required to accommodate the additional turn lane.

B) Conclusion

An additional left-turn lane should be provided on the south approach of the Highway 395/ Highway 730 intersection in the mid-to-long-term future. The additional northbound left-turn lane is forecast to reduce the intersection’s volume/capacity ratio and delay to within acceptable standards.

12.2.412 Umatilla River Road/Highway 730 Intersection

Umatilla River Road is serving growing traffic demands and is a subject of concern to the community. Analysis of the year 2017 traffic volume forecast suggests that the capacity of the intersection’s northbound approach will be exceeded in the long-term future and that the critical northbound movement will operate at level of service “F.” Compounding the operational problems at this intersection, the Umatilla River Road/Highway 730 intersection currently exhibits a sight distance restriction associated with the bridge structure that carries Highway 730 over the Union Pacific Railroad right-of-way. As documented in Section 12.2.100, northbound left-turn traffic must advance to the pavement edge of Highway 730 to see approaching westbound Highway 730 traffic.

A) Potential Improvements

Given the forecast over-capacity condition and the sight-distance limitation at the Umatilla River Road/Highway 730 intersection, the intersection was identified as a potential candidate for signalization. Based on the future traffic volume forecasts, the intersection will meet MUTCD signal warrants 1, 2 and 11, indicating that signalization of the intersection will be warranted in the long-term future.

Installation of a traffic signal at the Umatilla River Road/Highway 730 intersection would resolve the existing sight-distance issue by providing the northbound left-turn traffic with a protected movement. Introduction of a traffic signal at this location does not appear to appreciably degrade the carrying capacity of Highway 730. Further, the traffic signal can be coordinated with other traffic signals on the highway (spacing between this signal and the Brownell Boulevard signal would be approximately 1,950 feet). Signalization of the intersection would also include installation of pedestrian signals, thereby enhancing safety for persons crossing Highway 730 to reach Umatilla River Road.

In lieu of signalizing the intersection, the existing sight-distance limitation could be addressed through reconstruction of the intersection. More specifically, the height of the northbound approach leg of the Umatilla River Road/Highway 730 intersection could be raised to increase the available sight distance. While potentially feasible, raising the intersection approach would require a substantial amount of fill and could also have adverse consequences for the private residences located immediately west of the roadway. In addition, this improvement provides little to no benefit for pedestrians and bicyclists.

B) Conclusion

Introduction of a traffic signal at the Umatilla River Road/Highway 730 intersection would restore intersection operations to an acceptable level of service and would also resolve the existing sight-distance issue, by providing the northbound left-turn traffic with a protected movement. This improvement is viewed as being preferable because it addresses both the intersection's capacity and safety issues (as opposed to simply raising the intersection's northbound approach, which would not resolve the intersection's forecast capacity limitation), while also creating a safer environment for pedestrians and cyclists to cross Highway 730. (NOTE: *The addition or modification of a traffic signal on any ODOT facility requires the approval of the State Traffic Engineer. Identification and documentation of the need in this TSP does not guarantee the provision or modification will occur.*)

12.2.413 Powerline Road/Highway 730 Intersection

The Powerline Road/Highway 730 intersection exhibits capacity and safety deficiencies under existing conditions that will be exacerbated by future traffic volume growth in the study area. As documented in Section 12.2.100, northbound left-turn traffic at the intersection encounters sight distance restrictions looking to the east caused by the bridge structure that carries Highway 730 over the Umatilla River. The intersection also currently warrants a westbound left-turn lane with at least 75 feet of storage space. Analysis of forecast traffic volumes indicates that a traffic signal will be warranted at the Powerline Road/Highway 730 intersection in the near-term future.

Unfortunately, due to the intersection's location, the westbound Highway 730 approach to the Powerline Road/Highway 730 intersection does not currently have adequate room to provide a left-turn bay. The constrained width of the Umatilla River Bridge structure that carries Highway 730 over the Umatilla River and the proximity of Powerline Road to the bridge abutment effectively prohibit provision of a westbound approach left-turn bay without widening the bridge structure.

In addition to the local physical constraints, it should be recognized that the property located on the southwest quadrant of the Powerline Road/Highway 730 intersection is one of the few large undeveloped commercial properties (approximately 25-30 acres) within the City UGB. Given the large volume of new homes being constructed in the vicinity of Powerline Road south of Highway 730, it is likely that some form of commercial development activity will occur on this parcel of land over the course of the long-term future. Such commercial development has the potential to generate significant traffic volumes that may warrant installation of a traffic signal along Highway 730 to serve the development. The probable need to provide convenient and efficient access to the commercial property should be considered in the development and selection of potential improvement alternatives.

Finally, proximity to the Umatilla River presents several environmental issues that could limit the type and form of improvement that is ultimately realized. These issues include fish, wetlands, and riparian areas.

A) Potential Improvements

As evidenced by the previous discussion, several issues need to be addressed at the Powerline Road/Highway 730 intersection. These issues include reduction or elimination of existing sight-distance limitations, provision of at least 150 feet of storage length for westbound left-turn vehicles on Highway 730, and provision of separate left- and right-turn bays on the northbound Powerline Road approach. In addition, access for future development of vacant property adjacent to the intersection should be considered in evaluating relocation alternatives.

Given the many issues surrounding the Powerline Road/Highway 730 intersection, several potential mitigation options have been identified at this intersection and are illustrated in *Figure 12.2-9*. The general feasibility and ramifications of the options identified are presented below.

1) Option 1 - Signalize the Existing Intersection

The first potential mitigation measure considered was the signalization of the existing Powerline Road/Highway 730 intersection. This option offers the most economical solution but is only considered to be a near-term improvement. Signalization of the existing intersection would essentially result in the northbound Powerline Road approach becoming a protected movement. While the sight distance issue would not be geometrically rectified, the sight distance available would be less of a concern because drivers would be moving under protection by the signal.

Signalization of the intersection would not address the existing need for a westbound left-turn bay (though signal phasing could be developed to provide some assistance to the westbound left-turn movement), and thus is considered a short-term mitigation measure only. To satisfy the westbound left-turn lane needs, a jughandle could be constructed in the northwest quadrant of the intersection. Construction of a jughandle would likely require land acquisition and re-grading. It should be noted that the Powerline Road/Highway 730 intersection does not currently meet signal warrants based on traffic volumes, but is expected to as residential development activities on Powerline Road contribute additional traffic to the intersection. In the interim, signalization may be justifiable as a safety improvement.

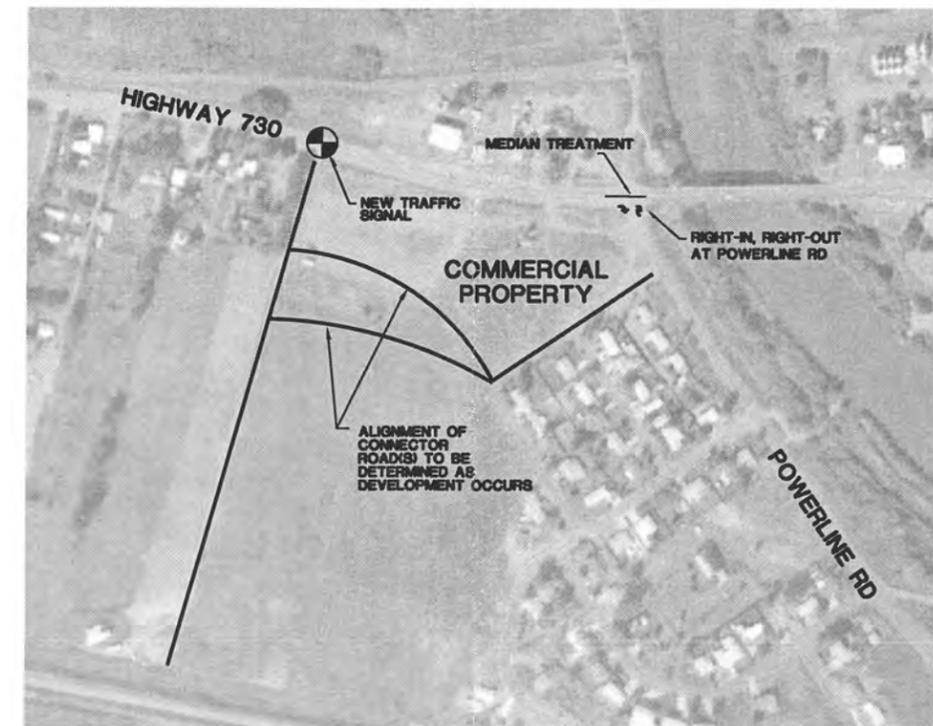
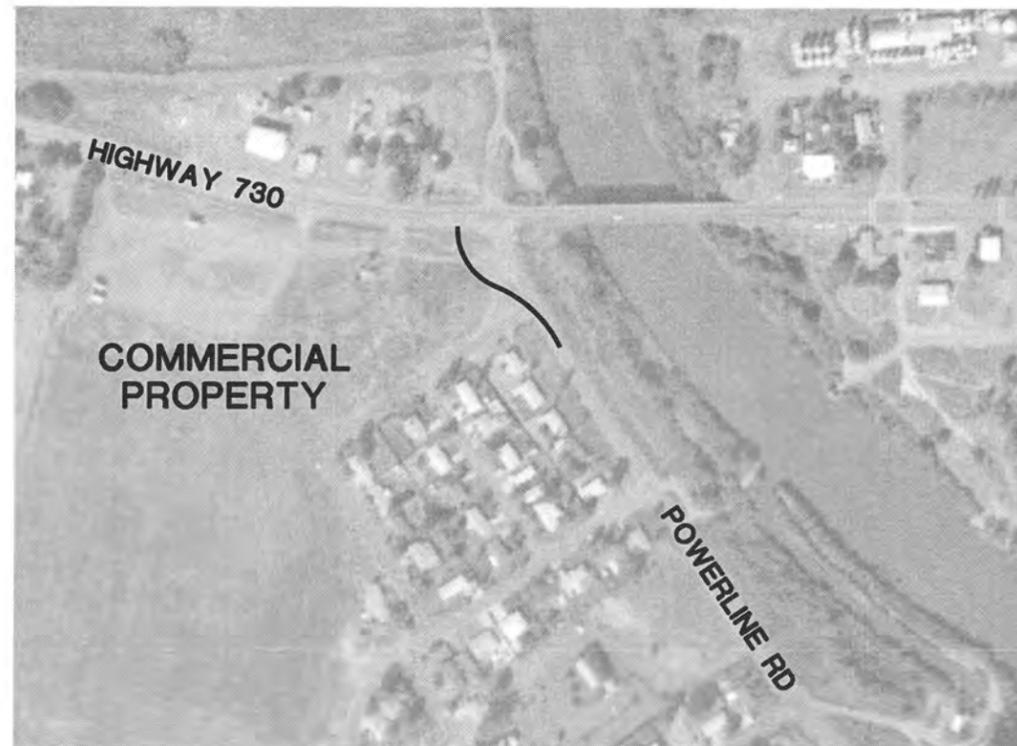
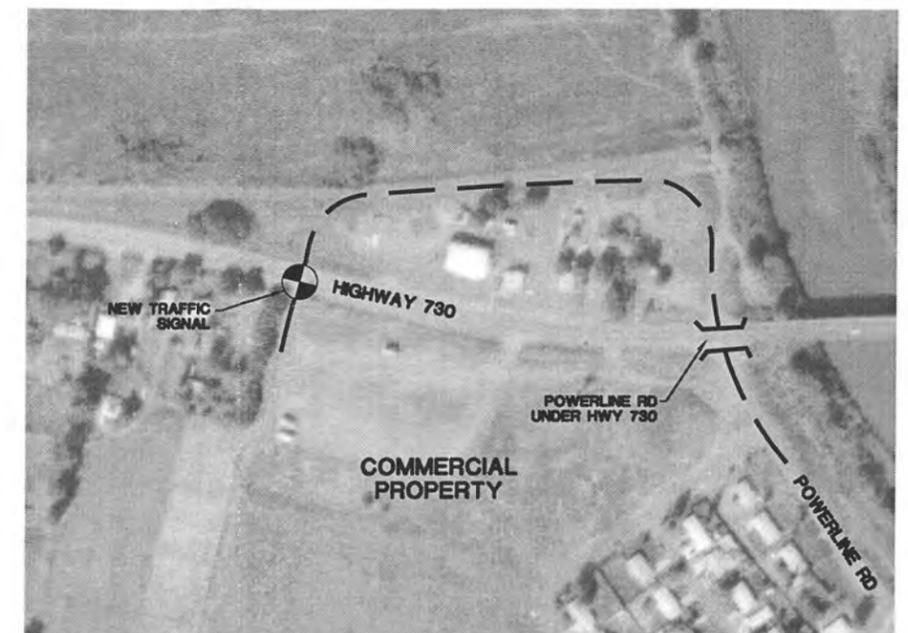
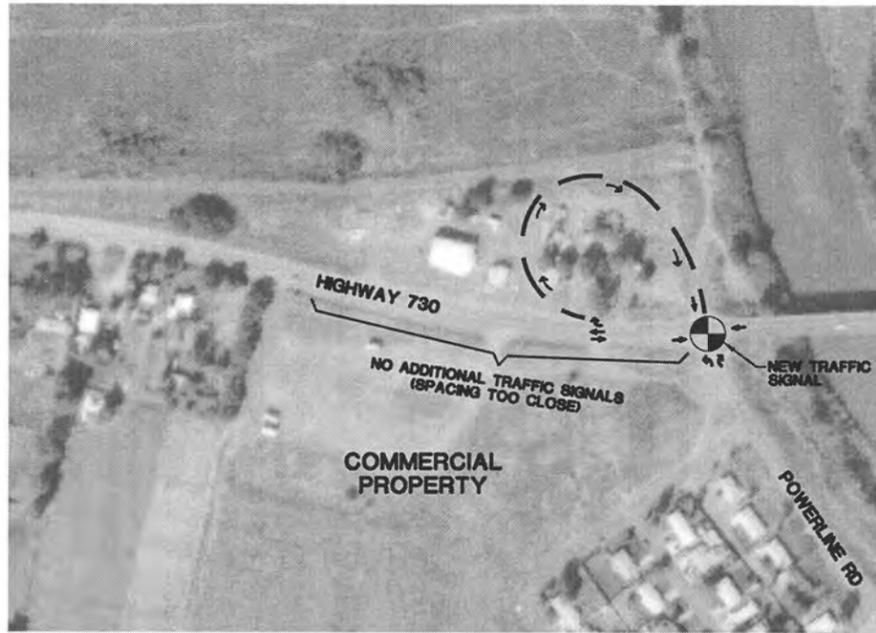
2) Option 2 - Widen/Replace the Highway 730 Bridge Crossing The Umatilla River

A second potential option that was identified involves either widening or replacing the Highway 730 bridge over the Umatilla River. The existing narrow bridge structure, which was constructed in the 1920's and widened in the 1930's, physically precludes the possibility of providing a westbound left-turn lane and is also the source of sight distance limitations for northbound traffic on Powerline Road. This bridge is not listed on any known historic registry.

The existing structure has recently been identified by ODOT as exhibiting a marginal load capacity for supporting legal loads. Further, recent bridge inspections by ODOT have revealed cracking and spalling of the concrete, as well as exposed steel reinforcement. Such inspection information suggests that there is a reasonable basis for ultimately replacing the bridge for structural reasons. Because of these recent findings, ODOT is reviewing its sufficiency rating for the bridge. An updated rating was not available at the time this plan was prepared.

To correct these deficiencies, the existing structure could be widened or replaced with a structure that accommodates a westbound left-turn lane, supplementary queue storage space, and adequate sight distance for vehicles on Powerline Road. As an alternative, a new bridge structure could be constructed parallel to the existing structure. The two bridges could then be operated as a couplet with the existing structure providing an eastbound lane (and full bicycle/pedestrian facilities) and the new structure providing westbound travel lanes (a through lane and a left-turn lane). Powerline Road could be connected via an at-grade signalized access or through grade-separation and a jughandle connection as described in Option 3.

Modification of the bridge structure, either through renovation of the existing structure or construction of a new bridge, is likely to be cost prohibitive. Such a project would likely require additional right-of-way, some relocation/re-grading of the Powerline Road intersection (to provide adequate sight distance and geometric alignment), potential re-alignment of the U.S. Highway 730 bridge approaches, and additional signing and striping on Highway 730. Further, signalization or relocation of the Powerline Road/Highway 730 intersection would still ultimately be required.



**POWERLINE ROAD/HIGHWAY 730
INTERSECTION POTENTIAL
IMPROVEMENT OPTIONS**

3) Option 3 – Grade-Separated Jughandle

A third option, identified as a grade-separated jughandle, would provide for a new traffic signal west of Powerline Road that could serve both the commercial property and Powerline Road. This option would require lowering Powerline Road such that it crossed under Highway 730. This option would also require right-of-way acquisition and could involve substantial structural work on the Umatilla River Bridge (potentially including the complete reconstruction of the bridge). This option would allow for a more strategic positioning of a traffic signal along Highway 730 that could serve Powerline Road traffic, the commercial property to the south, and other residential areas.

4) Option 4 - Relocate the Powerline Road/Highway 730 Intersection

A fourth option identified would involve relocating the existing Powerline Road/Highway 730 intersection to the west. Vacant land (zoned commercial) is located to the west and south of the existing Powerline Road/Highway 730 intersection that potentially could be used in developing a re-aligned intersection. Sight distance to the west of a re-aligned Powerline Road/Highway 730 intersection appears to meet requirements. Re-aligning Powerline Road would require the acquisition of additional right-of-way and potentially could involve re-alignment of the eastern end of Dean Avenue to properly intersect with the relocated Powerline Road.

Any re-alignment of Powerline Road would have to be constructed such that the new intersection minimizes skewed approaches on existing roads. Both sight distance and westbound left-turn lane requirements would also need to be addressed in developing the re-aligned intersection. Provision of a westbound Highway 730 left-turn bay will serve to reduce or eliminate potential problems involving interaction between eastbound through and westbound left-turn traffic, and should provide additional safety in making the left-turn maneuver onto Powerline Road. As previously noted, it is recommended that the westbound left-turn lane provide at least 150 feet of storage length for queued vehicles and that consideration be given to providing separate left- and right-turn bays on the northbound Powerline Road approach.

5) Option 5 - Develop a New North-South Roadway

Consideration was given to a fifth mitigation option that involves the potential alignment and construction of a new north-south roadway to parallel Powerline Road that would serve an arterial function. Essentially, the thought was to develop a new roadway that could be constructed to form a bypass of the existing Powerline Road alignment. In concept, the new roadway could break off from the existing Powerline Road alignment at a point north of Radar Road and then travel north to intersect with the western ends of the existing roadway network serving local developments. The new roadway might then continue north to intersect with Highway 730 at a point near Buell Lane. While the alignment appeared to have potential, a review of local physical and topographic features in the area revealed that this option would face significant constraints to implementation.

Another alignment option would be to develop a new north-south connection to Highway 730 on the western periphery of the commercial property. Potentially, this new roadway could traverse the commercial property as a frontage road, connect with Dean Avenue, and ultimately link with Powerline Road. The Powerline Road/ Highway 730 intersection could then be operated as an

unsignalized right-in, right-out intersection and a traffic signal would be installed at the new north-south roadway's intersection with Highway 730.

B) Conclusion

Improvements at the intersection of Powerline Road with Highway 730 should address both the existing sight distance and westbound Highway 730 left-turn lane storage limitations. In addition, any improvement of the Powerline Road approach should be constructed such that the intersection minimizes skewed approaches on existing roads and accommodates potential future capacity and access needs on both sides of Highway 730.

Given these concerns, remediation of the Powerline Road/Highway 730 intersection may be best addressed through a number of staged improvements to the intersection that are selected and implemented as development activities and local traffic conditions warrant. A potential strategy for introducing incremental improvements to the intersection is presented below.

C) Near-Term Improvements

Analysis of forecast traffic volumes indicates that a traffic signal will be warranted at the Powerline Road/Highway 730 intersection in the near-term future. Considering the potential improvement options that have been identified and the recent approval of major residential subdivisions that access Powerline Road, it appears that the intersection should be signalized in the near-term future. Signalization of the intersection will address the existing safety issues involving sight distance limitations and should be implemented as an interim mitigation. The new traffic signal should provide for protected/permitted operation of the westbound Highway 730 approach; thereby minimizing the extent to which westbound left-turning traffic impacts the signalized intersection's operations. In conjunction with the aforementioned improvements, consideration should be given to extending the 25 mph speed limit on Highway 730 further to the west to maintain reasonable speeds. (NOTE: *The addition or modification of a traffic signal or change in posted speed on any ODOT facility requires the approval of the State Traffic Engineer. Identification and documentation of the need in this TSP does not guarantee the provision or modification will occur.*)

D) Mid-Term Improvements

As traffic volumes on Powerline Road and Highway 730 continue to grow, it is expected that the westbound Highway 730 left-turn movements onto Powerline Road will become increasingly difficult to complete. Westbound Highway 730 left-turn movements will continue to block westbound through traffic on Highway 730; thereby resulting in increased delay and potentially contributing to safety problems at the intersection.

Delay will also increase for drivers on Powerline Road as left-turning vehicles in the single-lane northbound approach block vehicles from turning right-on-red to travel east on Highway 730. As traffic volumes on Powerline Road continue to grow, the northbound queue will lengthen and additional green time will need to be taken from the highway to service the northbound Powerline Road traffic. Under normal circumstances, the northbound approach to the intersection would be reconstructed to provide separate left- and right-turn lanes. In this instance, the long-term improvements necessary at the Powerline Road/Highway 730 intersection will likely require rebuilding the northbound Powerline Road approach, thereby

rendering near-term improvements as “throw-away” projects. In all likelihood, it would appear to be in the area’s interest to invest in substantial reconstruction of the intersection as opposed to implementing near-term measures that will have to be replaced themselves.

Given these concerns, and in lieu of replacing the bridge in the mid-term, it is recommended that provision of an at-grade jughandle be considered to service the westbound left-turn movement. The actual location of the jughandle is somewhat flexible in terms of operational performance, but will be heavily dependent on the availability of right-of-way on the north side of Highway 730. Location of the jughandle should consider provision for potential connections to future public streets on both the north and south sides of Highway 730. Regardless of the jughandle’s location, a median treatment would need to be developed on Highway 730 in conjunction with the jughandle in order to prohibit left-turn movements onto Powerline Road.

Provision of a jughandle in conjunction with an appropriate median treatment would enhance the traffic signal installed as a near-term improvement by eliminating the need for protected/permitted left-turn phasing on Highway 730. The elimination of the westbound Highway 730 left-turn movement is expected to result in a reduction in delay experienced at the intersection. The jughandle does not, however, address the need for separate northbound left- and right-turn lanes on Powerline Road. It is recognized that a jughandle treatment would require all westbound-to-southbound movements to enter the intersection twice to achieve the desired movement.

E) Mid- To Long-Term Improvements

The introduction of an at-grade jughandle at the Powerline Road/Highway 730 intersection is considered to be a temporary improvement. Construction of this particular roadway improvement will be dependent not only on the availability of adequate right-of-way, but also on the potential development of the commercial property located on the south side of Highway 730. As previously noted, it would be desirable to service both the commercial property and the Powerline Road user needs through development of a mutually beneficial alternative.

As previously indicated, it would be in the area’s best interest to invest wisely in improvements at the Powerline Road/Highway 730 intersection such that improvements are not future impediments or “throw-away” projects. That said, it is conceivable that mid- to long-term improvements to the intersection could be developed and staged to address capacity and safety issues surrounding the respective roadways, while also providing convenient access to the commercial property. Although the current lack of specific development plans for the commercial site limits the ability to develop refined mitigation alternatives, a generic plan has been developed as presented below.

Recently completed field inspections by ODOT of the Umatilla River bridge revealed indications of structural degradation. Although a revised bridge sufficiency rating is not yet available at the time of this writing, sources within ODOT who have been actively engaged in this project indicated that replacement of the bridge appears to be within the 20-year planning horizon. Based on advice provided by agency representatives from ODOT, Umatilla County, and the City of Umatilla, the long-term solution of bridge replacement was recommended.

The most feasible long-term option at this point appears to involve reconstruction of the Umatilla River Bridge, including grade-separation from Powerline Road and development of a new north-south connection to Highway 730 on the western periphery of the commercially zoned property. This mitigation option could potentially redevelop portions of the aforementioned jughandle alignment as Powerline Road. Powerline Road would travel under the new bridge and then loop into Highway 730 from the north. The new Powerline Road intersection with Highway 730 would align with the new north-south road to the south, creating a single signalized intersection to serve both Powerline Road traffic and local commercial/residential land uses. The new north-south roadway could traverse the commercial property as a frontage road, connect with Dean Avenue, and ultimately link back with Powerline Road.

The new bridge would be wider than the existing structure, accommodating pedestrian and bicycle facilities. If care is taken in designing the near-term Powerline Road/Highway 730 traffic signal, it is conceivable that large portions of the traffic signal could be retrofitted to the new intersection location. It should be noted that replacement of the bridge, with or without grade separation of Powerline Road, may ultimately be necessary for structural reasons alone.

Such improvements will require a significant amount of coordination with local landowners but appear to hold the most promise for long-term redevelopment of the Powerline Road/Highway 730 intersection and the surrounding property. Implementation of improvements of this magnitude will likely be driven by the pace of development activity on the properties surrounding the Powerline Road/ Highway 730 intersection. As a result, the implementation of improvement measures will likely require near-term planning and right-of-way reservations as development opportunities are proposed. Actual construction of the improvements will likely occur either in conjunction with major commercial developments or else in small increments as a consequence of smaller development projects that collectively require improvements in the long-term future.

12.2.414 Highway 730 Intersections Between Eiselle Drive and the Northbound Interstate 82 Interchange Ramps

There are four key study area intersections located along Highway 730 between the Eiselle Drive and the northbound Interstate 82 interchange ramps. The roadways intersecting with Highway 730 include Eiselle Drive, Brownell Boulevard, the southbound Interstate 82 interchange ramps, and the northbound Interstate 82 interchange ramps.

Based on Section 12.2.300, all four of these study intersections will ultimately require mitigation measures. This stretch of Highway 730 is unique in that each of the four intersections is directly affected by the current and potential future operations of the ODOT Port of Entry Weigh Station and the related truck traffic. Consequently, to develop appropriate mitigations for the intersections, it is first necessary to understand how current and future operations at the ODOT Port of Entry might be improved.

A) ODOT Port of Entry/Weigh Station Operations

As stated in Section 12.2.100, field observations made during the mid-summer weekday p.m. peak hour at the Brownell Boulevard/ Highway 730 intersection and the Southbound Interstate 82 Ramp/Highway 730 intersection identified several signal cycle failures that were a direct

consequence of Interstate 82 truck traffic destined to the Umatilla Port of Entry/ODOT truck weigh station. Further, because of the design of the weigh station and the operational characteristics of trucks, truck traffic was constantly queued on the northern Brownell Boulevard approach to Highway 730. This condition was noted to vary by season; a visual inspection of intersection operations made during the fall of 1997 identified no significant truck queuing at the intersections. Seasonal increases in truck traffic were attributed to peaking characteristics experienced by shipping interests and local harvest activities.

In the past, signal timing and phasing improvements have been developed to address congested operational conditions and safety concerns near the interstate interchange. Problems with pavement rutting and traffic signal detector failures have also been associated with the northern approach leg of the Brownell Boulevard/Highway 730 intersection due to the heavy truck traffic using the intersection. The concerns relating to pavement rutting and detection failure will be addressed later by the Port of Entry, which intends to reconstruct Brownell Boulevard with a concrete surface between Highway 730 and the weigh station's access driveway on Brownell Boulevard.

B) Potential Improvements

Although signal timing improvements and geometric improvements may provide marginal benefits to traffic operations along Highway 730 near the weigh station, significant modifications to the operations of the weigh station will likely be necessary in the long-term. Several potential mitigation options have been identified for consideration; the general feasibility and ramifications of these options are presented below.

1) Option 1 – Implement Intelligent Transportation System Technologies

One area of improvement rests with the promise of emerging technologies that reduce the need for trucks to physically stop at the weigh station for inspection. The Oregon Department of Transportation is in the process of implementing Intelligent Transportation System Commercial Vehicle Operation (ITS CVO) strategies through a program dubbed Operation Greenlight. In essence, the Operation Greenlight program seeks to implement new ITS CVO technologies such as weigh-in-motion scales and vehicle transponders capable of electronically relaying truck/cargo data in real time. In the case of the Umatilla Port of Entry, a weigh-in-motion system has been installed on the Interstate 82 bridge that traverses the Columbia River. This real-time scale allows trucks to be weighed on the Interstate at speed rather than requiring trucks to exit the interstate and use the stationary weigh station scales. The program is based on the voluntary participation of trucking companies.

In a broader sense, the Operation Greenlight program envisions trucks “checking in” at key points on the west coast. With a transponder capable of communicating cargo information and the weigh-in-motion scales measuring a given truck's weight while it is still on the interstate, there would be no need to route the truck through the weigh station unless some discrepancy was identified (i.e., overweight, missing data from transponder, etc.) or if a random safety check were to be completed. These ITS technologies already are in use at the weigh station on at least a limited basis and have the potential to reduce the percentage of trucks entering the weigh station by as much as 50 percent (according to ODOT personnel).

While ITS strategies may reduce demand, it should be recognized that continuing growth of commerce in general and trucking in particular may result in a large enough increase in overall truck traffic that the reductions offered by ITS technologies are effectively offset by the increase in net truck traffic. Consequently, it may be advisable to consider other supplementary mitigation measures.

It should also be noted that the implementation of ITS technologies at the weigh station has already resulted in a short-term increase in truck traffic using the weigh station as all trucks that are not equipped with the ITS technologies must stop at the weigh station. During the fall of 1998, the requirement of all non-ITS equipped trucks to pass through the weigh station created significant backups at the interchange and apparently resulted in near gridlock. Recognizing the need to allow the weigh station to regulate the number of trucks entering the weigh station at any given time (and thereby avoid repeating the extreme situations encountered in the fall of 1998), additional signing has been placed on Interstate 82. The new programmable signs allow personnel at the weigh station to indicate to truck drivers whether or not they are required to exit the interstate and pass through the weigh station. The weigh station personnel can then avert congestion at the interchange by simply using the signs to indicate that trucks do not have to stop at the weigh station as necessary.

2) Option 2 – Provide Additional Processing Capability at the Weigh Station

One straightforward improvement option that should be considered at the weigh station is the use of additional processing lanes and/or staffing at the weigh station. At least some of the “worst-case” traffic backups have occurred when only one of the two available processing lanes was open at the weigh station. Use of the second lane may require additional staffing allocations; however, this additional operational cost is substantially less than other infrastructure-based improvement options being considered.

3) Option 3 – Develop and Implement Alternative Circulation Plans at the Weigh Station

In an effort to enhance operations at the interstate interchange intersections, the on-site circulation of truck traffic was also evaluated. Based on discussions with ODOT staff, the critical design element of the existing site layout was the requirement for weigh station staff to be able to visually see the Highway 730/Interstate 82 interchange from within the weigh station office for enforcement reasons.

Given the need to improve operations at the Eiselle Street/Highway 730 intersection, it appears that a potential solution would be to reverse the flow of trucks into and out of the weigh station and tie the traffic flow into the Eiselle Street/Highway 730 intersection. Under a redesigned scenario, trucks would be routed into the weigh station via Brownell Boulevard and the existing traffic signal at the Brownell Boulevard/Highway 730 intersection could be eliminated. Truck traffic would circulate internally within the weigh station site in a manner that allows the existing weigh station structures to be retained. Truck traffic would then exit the site via a new traffic signal located at the Eiselle Street/Highway 730 intersection. The revised circulation plan would provide more flexibility in the coordination and operations of the traffic signals at the interstate interchange and would also accommodate any future redevelopment of the property located on the south side of Highway 730 across from the weigh station.

It should be noted that the loss of a traffic signal at the Brownell Boulevard/ Highway 730 intersection would likely result in longer delays for local traffic (vehicles travelling southbound on Brownell Boulevard desiring to turn left onto Highway 730), but would benefit from traffic signals being located both upstream and downstream on Highway 730. If the weigh station were rerouted, the functional classification of Brownell Boulevard should be changed to reflect a collector status.

4) Option 4 - New Roadway Connections Linking Interstate 82 Directly With The Weigh Station

It has been suggested that new roadway connections linking Interstate 82 directly with the weigh station should be considered as a means by which to remove or reduce the truck traffic's interaction with Highway 730. Given the grade differential between the interstate and the weigh station and other geographic limitations, it appears that the only way such connections could be developed would be through the construction of ramps directly to and from the interstate. The potential for developing such ramp connections was deemed to be very low due to the existing geographic constraints and the probable costs associated with infrastructure improvements of that magnitude.

5) Option 5 – Dual Right-Turn Lanes on the Southbound Interstate 82 Exit Ramp

During the final stages of the TSP process, a fifth improvement option was identified. In concept, an additional southbound right-turn lane would be added to the Southbound Interstate 82 Exit Ramp approach to Highway 730. This would allow two lanes of traffic to turn simultaneously from the exit ramp onto Highway 730 westbound. Of the two right-turn lanes, truck traffic would be restricted from using the leftmost lane. In that manner, truck traffic would be limited to one lane and local traffic would then be able to bypass trucks as they slow and/or queue while entering the ODOT weigh station.

The potential need for implementing this mitigation technique may very well be reduced or eliminated as the ODOT weigh station gradually becomes more effective in controlling the quantity of trucks diverted to the weigh station at any given time. Because this alternative was introduced well after the alternatives analysis and cost estimating were completed, no formal engineering operational/safety analyses were conducted. Nevertheless, the concept was considered worthy of noting for potential detailed future consideration.

12.2.415 Eiselle Avenue/Highway 730 Intersection

As presented in Section 12.2.300, the northbound approach of the unsignalized Eiselle Avenue/Highway 730 intersection is forecast to be operating in an over-capacity condition by the year 2017. Although short in length, Eiselle Avenue serves the Umatilla Post Office, a local gas station, and surrounding properties, making it a relatively heavily traveled roadway. Signal warrant analysis based on the long-term future volume forecasts indicate that the intersection will meet MUTCD signal warrants 1, 2 and 11, indicating that signalization will be warranted in the long-term future. This intersection should be monitored with respect to proposed developments in the area surrounding the intersection and in conjunction with updates to this plan.

12.2.416 Interstate 82 Interchange

Year 2017 level of service analysis results at the Interstate 82 interchange indicate that the northbound ramp/Highway 730 intersection will operate at level of service “F” during the weekday p.m. peak hour (refer to Section 12.2.300). The level of service analysis also indicates that the Highway 730/Brownell Boulevard intersection will operate at level of service “E” during the p.m. peak hour due to delays on the eastbound approach. The Oregon Department of Transportation policy for this section of Highway 730 is to maintain level of service “D”, or better.

A) Potential Capacity Improvements

As a result of the forecast substandard levels of service, the northbound ramp of Interstate 82/Highway 730 intersection was analyzed to determine if a traffic signal was warranted. Based on the future traffic volume forecasts, the intersection will meet MUTCD signal warrants 2 and 11. Given that the northbound ramp/Highway 730 intersection represents a critical component of the overall Interstate 82/Highway 730 interchange, the impacts of signalizing this intersection were closely examined for level of service improvements and impacts to the interchange’s queue storage.

The interchange’s operations are complicated by the Brownell Boulevard/ Highway 730 intersection located immediately west of the southbound interstate ramps. Currently, the southbound Interstate 82 ramp/Highway 730 intersection and the Brownell Boulevard/Highway 730 intersection are operated on a single timing plan for coordination purposes. The need to collectively coordinate the signal timing of the three intersections (Brownell Boulevard/Highway 730 intersection, southbound Interstate 82 ramp/Highway 730 intersection, and the northbound Interstate 82 ramp/Highway 730 intersection) was considered in the operational analysis. For analysis purposes, it was assumed that the Interstate 82 ramp intersections were coordinated and that the Brownell Boulevard/ Highway 730 signal timing was directly linked with the interchange signals.

The long-term analysis suggests that if the existing arrangement of the intersections of Highway 730 with Brownell Boulevard and the southbound Interstate 82 ramps is retained in conjunction with current circulation plans at the ODOT Weigh Station, there may also be a need to improve the capacity of the Highway 730/Brownell Boulevard intersection. The intersection’s capacity could be enhanced through provision of an additional eastbound through lane. This could be accomplished by adding a through/right-turn lane to the westbound intersection approach. The new through/right lane could be made an exclusive right-turn lane between Brownell Boulevard and the southbound on-ramp to Interstate 82.

B) Storage Lane Length Requirements

In the event that the Northbound Interstate 82 Ramp/Highway 730 intersection is signalized in the future and no other changes to the interchange area are made, vehicle queuing becomes a concern. Consequently, a vehicle queuing analysis was conducted for the Interstate 82 interchange to ensure that long-term operations would not be constrained by vehicular queuing. The analysis assumed that a traffic signal was installed at the Northbound Interstate 82 Ramp/Highway 730 intersection and that good signal coordination was maintained with the other

two interchange traffic signals. The analysis focused on vehicle queue distance between the traffic signals on Highway 730 and at the Highway 730/Northbound and Southbound Interstate 82 exit ramps. It should be noted that the queuing analysis assumed that the truck queuing problem associated with the weigh station is adequately mitigated before year 2017. Table 12.2-9 summarizes the results of the queuing stacking-distance analysis for the weekday p.m. peak hour.

TABLE 12.2-9
INTERSTATE 82 INTERCHANGE YEAR 2017 STACKING DISTANCE ANALYSIS

Intersection/Movement	Queue Length (feet)	Existing Storage (feet)
Southbound Through/Left-Turn Lane)	490	1000
Southbound Right-Turn Lane	540	1000
Westbound Left-Turn Lane (SB Ramp/Highway 730)	205	85*
Westbound Through Lanes (SB Ramp/Highway 730)	380	435
Northbound Through/Left Lane	130	1000**
Northbound Right-Turn Lane	155	100**
Eastbound Left-Turn Lane (NB Ramp/Highway 730)	280	100*
Eastbound Through Lanes (NB Ramp/Highway 730)	165	435
Queue length represents 95 th percentile queue, analysis assumes 120-second cycle, coordinated phasing between the signals located at Brownell Boulevard and the Interstate 82 ramp intersections, and no queue spillback from the ODOT truck weigh station onto Highway 730.		

*85 feet of storage space is currently delineated by pavement markings for the westbound Highway 730 left-turn bay (at the southbound ramp/Highway 730 intersection) and 100 feet for the eastbound Highway 730 left-turn bay (at the northbound ramp/Highway 730 intersection). Additional center left-turn space is available between the westbound left-turn lane and the eastbound left-turn lane serving the Interstate 82 northbound ramp section (This space is currently used as the left-turn taper striping area). The total distance between the northbound and southbound ramp intersections is approximately 435 feet; therefore, sufficient stacking distance is available, if proper phasing is used.

**The northbound Interstate 82 exit ramp serving Highway 730 currently begins with a single lane and tapers to two full lanes approximately 100 feet prior to the edge of Highway 730. Right-turn traffic shares the exit ramp with vehicles turning left and/or travelling through the intersection until reaching the additional lane space, of which it has exclusive use of one lane; therefore, sufficient stacking distance is available.

As shown in Table 12.2-9, queuing is not expected to present any operational constraints at the interchange, based on the assumptions stated above.

C) Conclusion

As outlined in the preceding discussion, there are several potential improvements that can be made along Highway 730 between Eiselle Avenue and the Interstate 82 Northbound Ramps. It is essential that any improvements to this segment of the City be made through a systems approach that considers the overall implications of changes to the roadways. Outlined below is a methodical approach for improving the transportation system within this subarea that considers both local impact and system impact.

D) Near-Term Improvements

As alluded to earlier, the first step in addressing improvement needs along this segment of roadway is to resolve operational issues associated with the ODOT Weigh Station. As a first step in improving operations, every reasonable effort should be made to ensure that the weigh

station is fully staffed during peak shipping periods so that truck traffic can be processed as rapidly as possible.

Expansion of the ITS CVO technologies made available through Operation Greenlight appears to be another avenue on which the weigh station should focus. Experience to date suggests that truckers are not yet embracing the program and mass participation in the program has not been forthcoming. Local shipping interests and farmers should be encouraged to participate in the Operation Greenlight program, thereby allowing the area to capitalize on these emerging technologies to the benefit of local citizens (who should see less truck traffic traveling to the weigh station) and the shippers themselves (who would no longer have to routinely exit Interstate 82 and wait in line at the weigh station). Participation may be increased simply by creating a greater awareness of the system's availability and the potential time and cost savings associated with use of the emerging technologies. The cost to equip a truck with the appropriate vehicle transponder is less than \$50.00 according to officials representing the Port of Entry.

E) Mid- To Long-Term Improvements

In the mid- to long-term future, if the near-term improvements (ITS technologies and additional staffing) do not result in improved operations at the weigh station, serious consideration should also be given to redesigning the circulation of the weigh station. There are several transportation system needs that could be addressed through a rework of on-site circulation. These issues include the existing problems associated with operating the closely spaced Brownell Boulevard and Southbound Interstate 82 Ramp intersections with Highway 730, the eventual need for a traffic signal to service Eiselle Drive, truck traffic on Brownell Boulevard, and potential access improvements for properties along the south side of Highway 730.

As previously alluded to, the existing traffic signal at the Brownell Boulevard/ Highway 730 intersection could be eliminated in favor of a new traffic signal at the Eiselle Drive/ Highway 730 intersection. The new traffic signal at Eiselle Drive would service both the weigh station and properties to the south of Highway 730. This would offer convenient access to the City's Post Office, as well as commercial activities to the south; potentially including the truck stop adjacent to the southbound Interstate 82 ramps via a frontage road. The relocated traffic signals and new circulation plans would also reduce the need for capacity improvements (i.e. additional travel lanes) at the Brownell Boulevard/Highway 730 intersection. Relocating the traffic signal to the Eiselle Drive/Highway 730 intersection would also allow for improved pedestrian access in the area and a safer pedestrian crossing of Highway 730, due to reduced truck/pedestrian conflicts (as compared with the Brownell Boulevard intersection).

Notwithstanding potential improvements to the weigh station, it is anticipated that the Northbound Interstate 82 Ramp/Highway 730 intersection will require signalization in the mid- to long-term future. The signalization project should incorporate continued signal coordination between the Interstate 82 ramp intersections and adjacent signalized intersections. Signal progression in this area would be enhanced if the Brownell Boulevard/Highway 730 intersection traffic signal were eliminated in favor of a signal at the Eiselle Drive/Highway 730 intersection, due to more favorable signal spacing that could be obtained. The desire for adequate signal spacing is further supported when considered in the context of a potential future traffic signal serving the Umatilla River Road/Highway 730 intersection. Regardless of where other traffic

signals are ultimately located in relation to the Interstate 82 interchange ramps, signal phasing sequences should be coordinated to minimize queuing.

It should also be noted that the public concern involving the visibility of the traffic signal heads at the Interstate 82 Southbound Ramp/Highway 730 intersection (refer to Section 12.2.100) would be addressed through signalization of the Northbound Interstate 82 Ramp/Highway 730 intersection. Signalization of the Interstate 82 Northbound Ramp/Highway 730 intersection would likely alleviate the visibility problem as westbound Highway 730 traffic would be exposed to a traffic signal on the east side of the Interstate 82 bridge. This new traffic signal would likely heighten drivers' awareness of the upcoming traffic signals located on the west side of the bridge deck.

12.2.417 Access To McNary Residential Area

The McNary Housing Area located on the eastern side of Umatilla currently is accessible via two intersections connecting with Highway 730; Columbia Street and Willamette Avenue. Each of these intersections has been identified as a potentially problematic location as described in Section 12.2.100.

Safety concerns at the intersections of Columbia Street/Highway 730 and Willamette Avenue/Highway 730 appear to be closely related to the overall character of access to the McNary Housing Area. With the current roadway network and access configuration, all ingress movements to the housing area are focused through Willamette Avenue while egress is served by Willamette Avenue and Columbia Street. The lack of connectivity to other roadway facilities is undesirable.

A) Potential Improvements

There are several potential alternatives that would enhance access to the McNary Housing Area. These alternatives include:

extending Chenoweth Avenue or Rio Senda Drive (or another existing local street) west to connect with Devore Road. This would provide the McNary Housing area residents with direct access to a signalized intersection on Highway 730 and Highway 395.

extending Cowlitz Avenue or Naches Avenue south to intersect with Highway 730 at a new unsignalized intersection. While the potential for such an extension exists, granting another unsignalized access point to Highway 730 is not necessarily desirable.

extending Walla Walla Street east to Bud Draper Drive. This option would provide McNary residents an alternative access to Highway 730, but more importantly, would provide direct access to a variety of land uses and activity areas to the east, without having to use Highway 730. The roadway would also provide for a much more direct emergency response to the area for the Umatilla Rural Fire District Station 2, located in the McNary Housing area. City and County staff indicate that this option is not viable due to a long-standing agreement between the two public entities not to connect the two roadways.

reconfiguring the Columbia Street/Highway 730 intersection to incorporate two-way operations. It should be noted that the reason the Columbia Street/Highway 730 intersection was made one-

way was to avoid potential problems with queuing on Highway 730. Accommodating such queuing would potentially require widening of Highway 730.

improving channelization on Willamette Avenue near the intersection with Highway 730, including the connection to Lewis Street. These improvements could include channelizing Lewis Street to right-in, right-out only access to Willamette Avenue.

B) Conclusion

Each of the identified potential improvements is considered to be viable; however, one of the identified alternatives is considered to be more preferable. The extension of Chenoweth Avenue west to connect with Devore Road is highly desirable because of the signalized access to both Highway 730 and Highway 395 that would be provided to residents of the McNary area. While desirable, it should be noted that the final alignment of such a connection will likely require right-of-way acquisition and the full cooperation of the City, the U.S. Army Corp. of Engineers, local property owners, and several other interested parties.

In contrast, the potential extension of Cowlitz Avenue and/or Naches Avenue south to intersect with Highway 730 was discounted by ODOT representatives. Similarly, extending Walla Walla Street east to Bud Draper Drive was eliminated as a potential option due to the City's and County's desire to separate the Port of Umatilla industrial area from the McNary Residential area. Improvements to either the Columbia Street/ Highway 730 intersection or the Willamette Avenue/Highway 730 intersection appear to remain feasible but were not deemed preferred based on community input.

12.2.418 Highway 730 Fire Signal

As part of the TSP process, input was solicited from local community members as to perceived transportation problems. One issue that was discussed several times was the need to provide a traffic signal or some other form of pre-emption device linked to the Umatilla Rural Fire District Station 1 on the west side of town. The existing fire station is located on the west side of "J" Street, just north of Highway 730. The fire department reports that its personnel have a difficult time accessing Highway 730 when responding to emergency calls. Fire Department staff cited partial obstruction of the view of the emergency vehicles by adjacent buildings and uncooperative drivers on Highway 730 as specific problems. Further, the department staff noted that the road between the fire station and Highway 730 is inclined, making it difficult for heavy emergency vehicles to accelerate from a stopped position.

The fire department has requested that a traffic control device (fire signal) be implemented to provide emergency vehicles with priority treatment, thereby expediting their access to Highway 730.

Conclusion

The fire department's request for a traffic control device on Highway 730 that can be pre-empted to facilitate emergency vehicle access is reasonable. Many communities around the state use such devices to ensure safe access and the timely response of emergency vehicles. (NOTE: *The addition or modification of a traffic signal on any ODOT facility requires the approval of the State Traffic*

Engineer. Identification and documentation of the need in this TSP does not guarantee the provision or modification will occur.)

12.2.420 Summary

This section has presented the alternatives that were developed and evaluated to address the near-term and long-range transportation deficiencies with the City of Umatilla urban growth boundary. Section 12.2.500, which follows, presents the recommended improvements for the City's roadway transportation system.

12.2.500 ROADWAY TRANSPORTATION SYSTEM AND ACCESS MANAGEMENT PLAN

At the commencement of the TSP process, the City of Umatilla had no roadway plan to provide guidance as to how best to facilitate travel within the City. Consequently, a critical component of the City's TSP is a Roadway System Plan that addresses two key issues:

a roadway functional classification system and corresponding roadway design standards, and new and improved streets to meet future capacity, circulation, and safety needs.

12.2.510 Functional Classification

The purpose of classifying roadways is to create a mechanism through which a balanced transportation system can be developed that facilitates mobility for all modes of transportation. A given roadway's functional classification determines its intended purpose, the amount and character of traffic that it is expected to carry, and commitment to serve and promote non-auto travel, and its design standards.

The classification of a given street is intended to convey the requirements, capabilities, and capacity of each respective roadway while recognizing that roadway's contribution to the overall transportation system. It is imperative that the classification of streets be considered in relation to adjacent properties, the land uses that they serve, and the modes of transportation that can be accommodated. Further, each roadway must be appropriately designed so as to accommodate vehicles local to the roadway (i.e., passenger cars, heavy trucks, pedestrians, and bicycles). The public right-of-way must also provide sufficient space for utilities to serve adjacent land uses.

The City of Umatilla TSP incorporates six functional categories; Freeways, Major Arterials, Minor Arterials, Collectors, Neighborhood Collectors, and Local Streets. The roadway cross-sections and features for classifications within the City of Umatilla are shown in *Figure 12.2-10* and described below.

12.2.510(1) Freeways

Freeways are generally considered to be limited-access facilities that primarily serve motorized vehicle traffic travelling through an area for statewide or interstate travel purposes. Freeways offer the highest level of mobility and, consequently, tend to be high-speed facilities with widely spaced access points and medians and limited or no access for pedestrians and bicyclists.

12.2.510(2) Major Arterials

Major arterials are roadways that are primarily intended to serve traffic entering and leaving the urban area. Major arterials tend to carry significant intra-urban travel between downtown areas and outlying residential areas. While major arterials may provide access to adjacent land, that function is subordinate to the travel service provided to major traffic movements. Next to freeways, major arterials are the longest distance, highest volume roadways within the urban growth boundary. Although focused on serving longer distance trips, pedestrian and/or bicycle activities can be associated with the Major Arterial streetscape.

12.2.510(3) Minor Arterials

Minor arterials are roadways intended to interconnect with and augment the major arterials. These facilities link major arterials and then distribute traffic to smaller geographic areas, thereby accommodating trips of moderate length at a somewhat reduced level of mobility. Minor arterials tend to have more relaxed access control than major arterials and operate at more moderate speeds. As opposed to major arterials, minor arterials would likely not be truck routes. Pedestrian/bicycle treatments tend to increase in scale on Minor Arterials, as compared with Major Arterials.

12.2.510(4) Collectors

Collector facilities link minor arterials with the local street system. As implied by their name, collectors are intended to collect traffic from local streets and sometimes from direct land access, and channel it to arterial facilities. Collectors are shorter than minor arterials and tend to have moderate speeds. Bicycle facilities are often provided as striped bike lanes and sidewalks can be more generous in width.

12.2.510(5) Neighborhood Collectors

Neighborhood collector facilities are a subset of collectors serving the objective of penetrating local neighborhoods to provide direct land access service and traffic circulation. These facilities tend to carry lower traffic volumes at slower speeds than typical collectors do. On-street parking is more prevalent and bike facilities may be exclusive or shared roadways.

12.2.510(6) Local Streets

Local streets are primarily intended to provide access to abutting land uses. Local street facilities offer the lowest level of mobility and consequently tend to be short, low-speed facilities. As such, local streets should primarily serve passenger cars, pedestrians, and bicyclists; heavy truck traffic should be discouraged. On-street parking is common and sidewalks are present on both sides of the road.

Figure 12.2-11 illustrates the functional classification plan for each of the roadways within the City of Umatilla urban growth boundary. The major roadway designations are as follows:

Freeway

Interstate 82

Major Arterials

Highway 730

Highway 395

Bud Draper Drive

Roxbury Road

Minor Arterials

Powerline Road

Umatilla River Road

Brownell Boulevard (Highway 730 to Third Street)

Collectors

Third Street

I Street

Switzler Avenue

Quincy Avenue

7th Street

Scapelhorn Road

Power City Road

Devore Road

Rio Senda Drive

Willamette Avenue

McNary Beach Access Road

Neighborhood Collectors

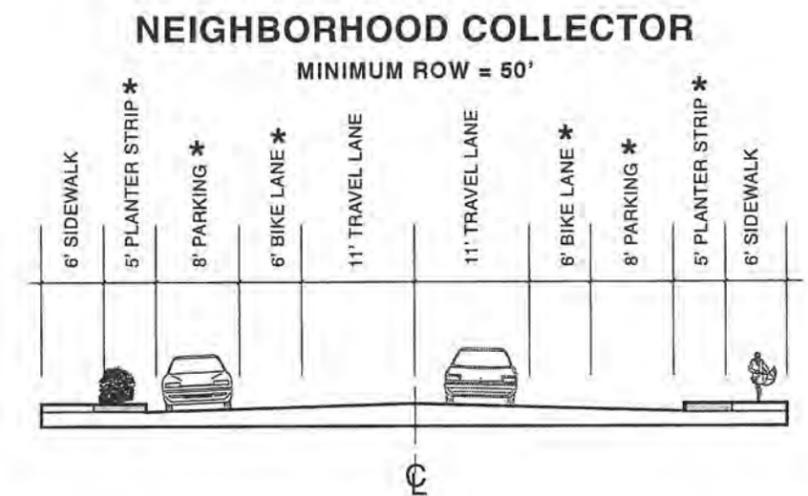
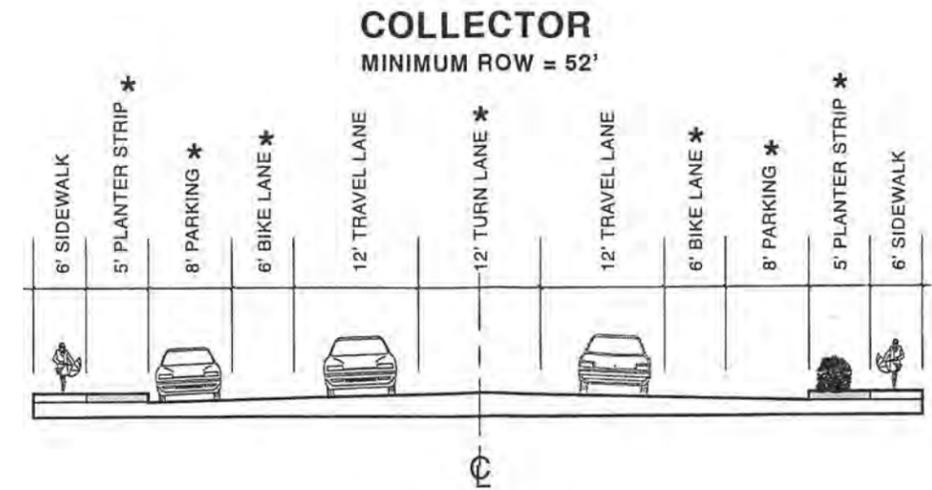
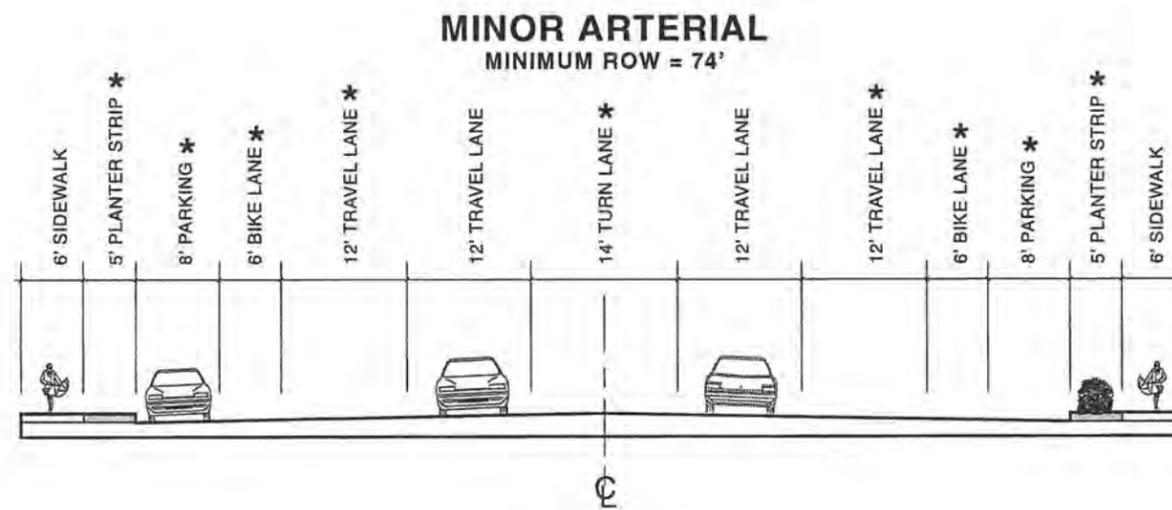
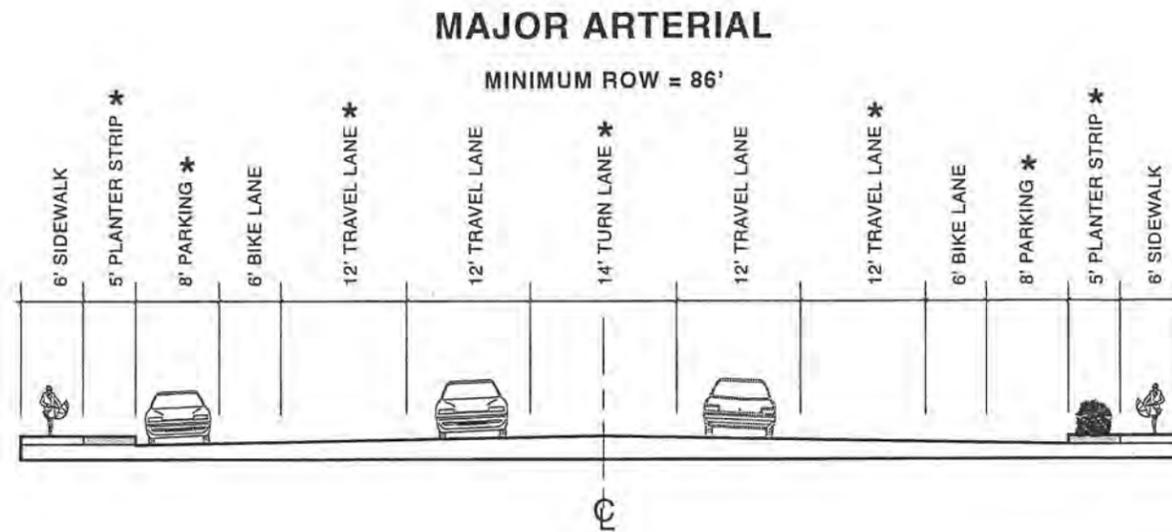
Madison Avenue

Stephens Avenue

Columbia Street

Chenoweth Avenue

Walla Walla Street



* Optional

Note: 5-foot bike lanes may be provided at locations where an adjacent on-street parking lane is provided.

ROW = Right-of Way

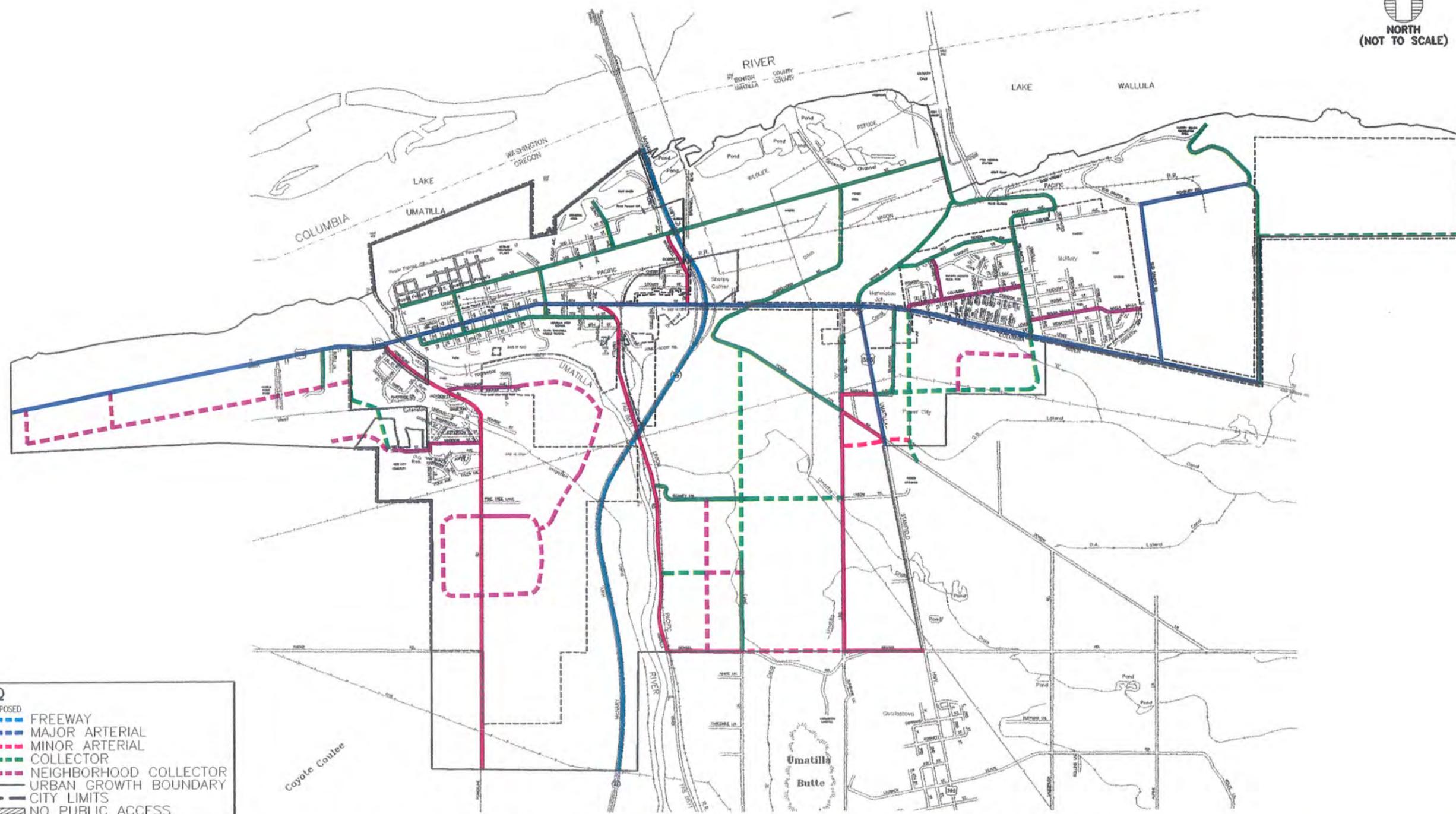
Note: Local Street ROW allows for 2' shy distance along curb face.

FUNCTIONAL CLASSIFICATION ROADWAY CROSS-SECTIONS

CITY OF UMATILLA, OREGON
TRANSPORTATION SYSTEM PLAN
FEBRUARY 1999

FIGURE
12.2-10





LEGEND		
EXISTING	PROPOSED	
		FREEWAY
		MAJOR ARTERIAL
		MINOR ARTERIAL
		COLLECTOR
		NEIGHBORHOOD COLLECTOR
		URBAN GROWTH BOUNDARY
		CITY LIMITS
		NO PUBLIC ACCESS

NOTE: PROPOSED ROADWAY ALIGNMENTS ARE CONCEPTUAL. FURTHER ENGINEERING IS REQUIRED TO DETERMINE FEASIBLE ALIGNMENT ALTERNATIVES.

ROADWAY NETWORK AND FUNCTIONAL CLASSIFICATION SYSTEM

CITY OF UMATILLA, OREGON
TRANSPORTATION SYSTEM PLAN
FEBRUARY 1999

FIGURE
12.2-11

12.2.520 Roadway Design Standards

Roadway design standards are based on the functional and operational characteristics of streets such as travel volume, capacity, operating speed, and safety. They are necessary to ensure that the system of streets, as it develops, will be capable of safely and efficiently serving the traveling public while also accommodating the orderly development of adjacent lands.

Figure 12.2-10 presents recommended typical cross sections for the various roadways identified in the functional classification system. The typical roadway cross sections comprise the following elements: right-of-way, number of travel lanes, bicycle and pedestrian facilities, drainage, and, in some cases, amenities such as planter strips.

The cross sections illustrated in Figure 12.2-10 reflect the desire to develop multi-modal roadway facilities within the City of Umatilla in the future, incorporating sidewalks and bike lanes where appropriate. The identified cross sections are intended for planning and design purposes for new road construction as well as for those locations where it is physically and economically feasible to improve existing streets. The typical cross sections present standards for roadways that allow for flexibility in defining the actual roadway width through optional features such as planter strips, on-street parking and in some instances, bike lanes.

The City of Umatilla would have the prerogative with city facilities, to allow narrower streets in their development projects, thereby creating an ability to reduce impervious surface and provide site-specific standards for roadway improvement projects that reflect local conditions. Narrower streets may also be desirable in some neighborhood areas for use as a deterrent to through or speeding traffic on local streets. Every reasonable effort to minimize required roadway widths was taken in development of these roadway standards, while maintaining necessary consistency for safety and driver expectation. Policy and code revisions will enable the City to apply sound engineering judgment to determine the appropriate functional classification designation and roadway width of new streets and extensions.

Table 12.2-10 summarizes the standards for the different roadway classifications.

TABLE 12.2-10
ROADWAY CLASSIFICATIONS AND STANDARDS

Classification	Cross Section	Minimum ROW	Turn Lanes	Travel Lanes	Bike Lane	Sidewalks	On-Street Parking	Planter Strip
Major Arterial	3-5 lane	86 feet	Option ¹	12 foot	Yes	Yes	Option	Option
Minor Arterial	3-5 lane	74 feet	Option ¹	12 foot	Option	Yes	Option	Option
Collector	2-3 lane	52 feet	Option ¹	12 foot	Option	Yes	Option	Option
Neighborhood Collector	2 lane	50 feet	None	11 foot	Option	Yes	Option	Option
Local Street	2 lane	40 feet	None	10 foot	None	Yes	Option	No

¹ Minimum width = 12 feet
ROW = Right of way

As indicated in Table 12.2-10, Major Arterials have a minimum right-of-way requirement of 86 feet and range in cross section from three to five travel lanes (36-60 feet). All Major Arterials have sidewalks and bike lanes which, in turn, serve as principal components to the Pedestrian

and Bikeway Plans presented later in this section. On-street parking and planter strips are optional, unless such amenities are required on a given street at the discretion of the City of Umatilla (and, in the case of state facilities, appropriate representatives from ODOT).

Minor Arterials have a minimum right-of-way requirement of 74 feet and also range in cross section from three to five travel lanes (36-60 feet). Similar to Major Arterials, all Minor Arterials have sidewalks; however, bike lanes, on-street parking, and planter strips are optional, unless such amenities are required on a given street at the discretion of the City of Umatilla (and, in the case of state facilities, appropriate representatives from ODOT). Both the Pedestrian Plan and the Bikeway Plan presented later utilize the flexibility inherent to the two plans to develop a comprehensive transportation network beyond the existing auto-oriented infrastructure.

Collector streets have a minimum right-of-way of 52 feet, a cross section consisting of two to three 12-foot travel lanes, and sidewalks. Bike lanes, on-street parking, and planter strips are optional unless required at the discretion of the City of Umatilla and with reference to the Pedestrian and Bikeway Plans.

Neighborhood Collectors have a cross section consisting of two 11-foot travel lanes and a minimum right-of-way of 50 feet. Although sidewalks are required, bike lanes are not.

Finally, Local Streets have a minimum right-of-way of 40 feet and a cross section consisting of two 10-foot travel lanes. Sidewalks are required on Local Streets, though bike lanes and planter strips are not required to be incorporated into their design. On-street parking may be allowed at the discretion of the City of Umatilla.

Access spacing standards for the respective roadway classifications are presented later within this section.

12.2.530 Evacuation Plan

Umatilla County Emergency Management, in conjunction with several local and state agencies, has developed response plans in the unlikely event of an incident at the Umatilla Ordnance Depot. According to county officials, in the event of an incident at the ordnance depot, area residents will be notified of the event and will have two response options.

The first response option will be to shelter in place. Emergency Management officials indicate that sheltering in place, by sealing up a room, may be safer than trying to evacuate in some instances. If, however, a decision is made by emergency coordinators to initiate an evacuation, the second response option is to conduct an orderly exodus from affected areas. County Emergency Management staff note that it is important for persons in an evacuation area not to enter into a “mindset” with only one course of action because specific evacuation routes are subject to change based on the nature of the emergency and climatic conditions such as temperature and wind speed.

If an evacuation were to be necessary, appropriate directions would be provided by local alarms, changeable message signs, and tone-alert radios. The directions would then instruct persons to a safe destination, potentially involving reception areas that have been designated in The Dalles, Heppner, and Pendleton.

12.2.540 Proposed New Roadways

As part of the TSP development process, conceptual alignments for future minor arterial, collector, and neighborhood collector roadways have been identified as shown in *Figure 12.2-11*. The purpose of identifying these potential future roadways was to:

provide for appropriate future roadway infrastructure to serve areas with future development potential,

increase the connectivity of future development with respect to existing neighborhoods and infrastructure,

provide access to property through multiple locations, and

provide the City with guidelines for roadway alignments as future development occurs.

The need for the proposed facilities identified in *Figure 12.2-11* will be driven by future development within the City's urban growth boundary. *It should be stressed that the location of the potential new roadways is approximate and that the actual roadway alignment will need to be determined based on identified constraints and specific development plans for individual areas.*

12.2.550 Roadway Improvements

Several roadway system improvements have been identified as part of the TSP process, including capacity improvements, signalization of intersections, and other related techniques as described in the following sections. It should be noted that the implementation portion of this section identifies specific projects as well as associated cost and scheduling.

12.2.560 Capacity/System Management Improvements

It is recommended that an additional northbound left-turn lane be provided at the Highway 730/Highway 395 intersection. In addition, it is recommended that the Powerline Road/Highway 730 intersection be enhanced and that operations at the ODOT weigh station be improved.

12.2.570 Future Intersection Signalization

Several study intersections have been identified for potential signalization by the year 2017. These intersections include:

Powerline Road/Highway 730;

Umatilla River Road/Highway 730;

Eiselle Avenue/Highway 730; and

Interstate 82 Northbound Ramp/Highway 730.

There are several points worthy of consideration with respect to potential signalization projects along Highway 730. To maintain the function and integrity of Highway 730, any new traffic signal installation must be carefully examined to ensure functional signal timing and coordination. Irregular spacing of traffic signals may make coordination of the signals along the corridor difficult and may result in a higher number of accidents and/or an increase in the

severity of accidents. Appropriately located signals provide reasonable progression, while allowing for adequate access. (NOTE: *The addition or modification of a traffic signal on any ODOT facility requires the approval of the State Traffic Engineer. Identification and documentation of the need in this TSP does not guarantee the provision or modification will occur*).

Care should also be exercised when installing traffic signals at isolated intersections with operating speeds above 40 miles per hour (such as west of Powerline Road). The ability of motorists to judge the safe stopping distance, coupled with an unexpected traffic signal at an isolated intersection location, has the potential to reduce the safety expected of a traffic signal installation. Ideally, any new traffic signals near the Interstate 82 interchange should be interconnected with the interchange signals to ensure safety and efficiency for both Interstate 82 and Highway 730.

12.2.580 Street Extensions

The extension of Chenoweth Avenue or Rio Senda Drive to Devore Road is considered to be a critical street extension that is part of the TSP. This street extension will improve access for local residents, improve neighborhood connectivity, reduce reliance on Highway 730 for local trips, and reduce total vehicle miles traveled on the transportation system.

12.2.600 ACCESS MANAGEMENT STRATEGIES

Access locations on roadway sections need to be properly located to ensure safe and efficient travel along a given transportation facility. Access locations should be placed appropriately to limit potential conflicting turning movements, weaving maneuvers over short distances, and congestion along facilities.

Access management standards vary depending on the functional classification and purpose of a given roadway. Roadways in the upper echelon of the functional classification system (i.e., arterials) tend to have stringent spacing standards, while facilities ranked lower in the functional classification system have more relaxed standards.

From a policy perspective, the Oregon Department of Transportation has legal authority to regulate access points along Highway 730 and Highway 395 within the City's urban growth boundary. The City of Umatilla will manage access on other arterial and collector streets within its jurisdiction, to ensure the efficient movement of traffic and enhance safety.

12.2.610 ODOT Standards

The *1999 Oregon Highway Plan* has classified Highway 730 as a regional highway and Highway 395 as a statewide highway.

As for Highway 730, within the *Oregon Highway Plan*, provisions have been made to accommodate central business districts and other activity centers oriented to non-auto travel in which growth management considerations outweigh access spacing policy. Such locations are identified as Special Transportation Areas (STAs). It is recommended that an STA be designated along Highway 730 between the Umatilla River Bridge and Umatilla River Road. More specific information regarding the STA is presented later in this chapter.

For the section of Highway 730 from the Umatilla River Road to I-82 interchange, it is recommended that Umatilla adopt an Urban Business Area (UBA) designation. The UBA is a designation for an area with existing commercial activity or future nodes of commercial activity. The primary objective of the UBA is to maintain existing traffic speeds while balancing the access needs of abutting properties with the need to move through traffic. Speeds within UBA's are 35 mph or less.

East of the Interstate 82 interchange, existing intersections with the highway have been reasonably regulated. There is no apparent reason to provide further access to Highway 730 east of the interchange except in such instances as Scapelhorn Road, Margaret Avenue, Willamette Avenue, Bud Draper Drive, and McNary Beach Access Road where it may be desirable to provide access south of Highway 730 in the future. At each of the above referenced locations, a southerly access road could be aligned with an existing intersection along Highway 730. Beyond the cited potential future roads to the south, there is no apparent reason to connect future public access roads to Highway 730 and the same access spacing standards in use today should continue to apply. Private driveways should be allowed to access the highway only as a last resort.

Table 12.2-11 summarizes the access spacing standards for Highway 730.

Table 12.2-11 1999 OHP Highway 730 Minimum Intersection Spacing Standards

Roadway Segment	Public Street	Private Access Drive	Signal Spacing
Umatilla River Bridge to I-82 northbound ramp	500 feet	150 feet	¼ mile
I-82 Northbound ramp to east city limits	½ mile	500 feet	½ mile

The following notes are associated with Table 7 in the 1999 OHP document:

”(1) Where a right of access exists, access will be allowed to a property at less than the designated spacing standard only if that property does not have reasonable access and the designated spacing cannot be accomplished. If possible, other options should be considered such as joint access.

Where the right of access exists, the number of approach roads (driveways) to a single property shall be limited to one, even when the property frontage exceeds the spacing standards. More than one approach road may be considered if, in the judgment of the Region Access Management Engineer, additional approach roads are necessary to accommodate and service the traffic to a property, and additional approach roads will not interfere with driver expectancy and the safety of the through traffic on the Highway.

Approach roads shall be located where they do not create undue interference or hazard to the free movement of normal Highway or pedestrian traffic. Locations on sharp curves, steep grades, areas of restricted sight distance or at points which interfere with the placement and proper functioning of traffic control signs, signals, lighting or other devices that affect traffic operation will not be permitted.

If a property becomes landlocked (no reasonable access exists) because an approach road cannot be safely constructed and operated, and all other alternatives have been explored and rejected, ODOT might be required to purchase the property. (Note: If a hardship is self-inflicted, such as by partitioning or subdividing a property, ODOT does not have responsibility for purchasing the property).

Note (1) has precedence over notes (2), (3) and (4).

(2) These standards are for unsignalized access points only. Signal spacing standards supercede spacing standards for approaches.

(3) Posted (or Desirable) Speed: Posted speed can only be adjusted (up or down) after a speed study is conducted and that study determines the correct posted speed to be different than the current posted speed. In cases where actual speeds are suspected to be much higher than posted speeds, ODOT reserves the right to adjust the access spacing accordingly. A determination can be made to go to longer spacing standards as appropriate for a higher speed. A speed study will need to be conducted to determine the correct speed.

(4) Minimum spacing for public road approaches is either the existing city block spacing or the city block spacing as identified in the local comprehensive plan. Public road connections are preferred over private driveways, and in STAs driveways are discouraged. However, where driveways are allowed and where land use patterns permit, the minimum spacing for driveways is 175 feet (55 meters) or mid-block if the current city block spacing is less than 350 feet (110 meters).”

In addition to the access management standards listed above, the 1999 *Oregon Highway Plan* (OHP) access standards and policies for interchanges shall also be followed by the City of Umatilla. The relevant 1999 OHP policy is Policy 3C. The City of Umatilla shall defer to these standards and enforce them for future developments on state highways. The interchange access management standards are contained in the Appendix for reference.

The following text was provided by the Oregon Department of Transportation for inclusion in the City of Umatilla’s transportation system plan document. This text has been edited to be appropriate to the state facilities within the Urban Growth Boundary of the City of Umatilla and is presented in *italics*.

Access management is an important tool for maintaining a transportation system. Too many access points along arterial streets lead to an increased number of potential conflict points between through vehicles and vehicles seeking ingress/egress at driveways 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. Research has shown a direct correlation between the number of access points and collision rates. Experience throughout the United States has also shown that a well-managed access plan for a street system can minimize local cost for transportation improvements needed to provide additional capacity and/or access improvements along unmanaged roadways. Therefore, it is essential that all levels of government maintain the efficiency of existing arterial streets through better access management.

The Oregon Transportation Planning Rule (TPR) defines access management as a set of measures regulating access to streets, roads, and highways, from public roads and private driveways. The TPR requires that new connections to arterials and state highways be consistent with designated access management categories.

As the City of Umatilla continues to develop, the arterial/collector/local street system will become more heavily used and relied upon for a variety of travel needs. As such, it will become increasingly important to manage access on the existing and future arterial/collector street system as new development occurs. One objective of the Umatilla TSP is to develop an access management policy that maintains and enhances the integrity (capacity, safety, and level-of-service) of the City's streets. Too many access points along a street can contribute to deterioration of its safety, and on some streets, can interfere with efficient traffic flow.

12.2.620 Access Management Techniques

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

restricting spacing between access points (driveways) based on the type of development and the speed along the arterial;

sharing of access points between adjacent properties;

providing access via collector or local streets where possible;

constructing frontage roads to separate local traffic from through traffic;

providing service drives to prevent spill-over of vehicle queues onto the adjoining roadways;

providing acceleration, deceleration, and right-turn only lanes;

offsetting driveways to produce T-intersections to minimize the number of conflict points between traffic using the driveways and through traffic;

installing median barriers to control conflicts associated with left-turn movements;

installing side barriers to the property along the arterial to restrict access width to a minimum; and,

developing and applying recommended Access Management Standards.

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. The table below describes recommended general access management guidelines by roadway functional classification.

It should be noted that existing developments and legal accesses on the transportation network will not be affected by the recommended access management techniques until either a land use action is proposed, a safety or capacity deficiency is identified that requires specific mitigation, a specific access management strategy/plan is developed, redevelopment of existing properties along the highway occurs, or a major construction project is begun on the street.

RECOMMENDED ACCESS MANAGEMENT STANDARDS				
Functional Classification	Intersections			
	Public Road		Private Drive ⁽²⁾	
	Type ⁽¹⁾	Spacing	Type	Spacing
Arterial (ODOT Facilities) See Table 12.2-11 and the Appendix for interchange spacing.				
Other Arterials within UGB	at-grade	250 ft.	L/R Turns	100 ft.
Collector	at-grade	250 ft.	L/R Turns	100 ft.
Residential Street	at-grade	250 ft.	L/R Turns	Access to Each Lot
Alley (Urban)	at-grade	100 ft.	L/R Turns	Access to Each Lot

Notes:

(1) For most roadways, at-grade crossings are appropriate.

(2) Allowed moves and spacing requirements may be more restrictive than those shown to optimize capacity and safety. Any access to a state highway requires a permit from the ODOT District Office. Access will generally not be granted where there is a reasonable alternative access.

*The Classification of Highway 395 is under review and a change is pending in the revised Oregon Highway Plan.

12.2.625 Application

These access management restrictions are generally not intended to eliminate existing intersections or driveways. Rather, they should be applied as new development occurs. Over time, as land is developed and redeveloped, the access to roadways will meet these guidelines. However, where there is a recognized problem, such as an unusual number of collisions, these techniques and standards can be applied to retrofit existing roadways.

To summarize, access management strategies consist of managing the number of access points and 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.

12.2.630 State Highways

Access management is important to promoting safe and efficient travel for both local and long distance users along US 395 and U.S. Highway 730 in Umatilla. The 1999 Oregon Highway Plan (OHP) specifies an access management classification system for state facilities. Future developments on state highways (zone changes, comprehensive plan amendments, redevelopment, and/or new development) will be required to meet the 1999 Access Management policies. Although Umatilla may designate state highways as arterial roadways within their transportation systems, the access management categories for these facilities should generally follow the guidelines of the Oregon Highway Plan. This section of the Transportation System Plan describes the state highway access categories and specific roadway segments where special access areas may apply.

Future developments on state highways (zone changes, comprehensive plan amendments, redevelopment, and/or new development) will be required to meet the 1999 Oregon Highway Plan Access Management policies and standards. Additional property frontage along the state highway does not guarantee that additional approach roads will be allowed. Proposed land use actions that do not comply with the designated access spacing policy will be required to apply for an access variance from the City of Umatilla and/or ODOT. In addition, according to the 1999 OHP, the impact in traffic generation from proposed land uses must allow a volume to capacity ratio of 0.80 or lower.

The existing legal driveway connections, public street intersection spacings, and other accesses to the state highway system are not required to meet the spacing standards of the assigned category immediately upon adoption of this transportation system plan. However, existing permitted connections not conforming to the design goals and objectives of the roadway classification will be upgraded as circumstances permit and during redevelopment. At any time, an approach road may need to be modified due to a safety problem or a capacity issue that exists or becomes apparent. By statute, ODOT is required to ensure that all safety and capacity issues are addressed.

A conditional access permit may be issued by ODOT and the City of Umatilla for a single connection to a property that cannot be accessed in a manner that is consistent with the spacing standards (shown in the previous table). These conditions typically apply to properties that either have no reasonable access or cannot obtain reasonable alternate access to the public road system. The permit should carry a condition that the access may be closed at such time that reasonable access becomes available to a local public street. In addition, approval of a conditional permit might require ODOT-approved turning movement design standards to ensure safety and managed access. Under special circumstances, ODOT may be required to purchase property in order to prevent safety conflicts.

12.2.640 Special Transportation Area

A Special Transportation Area (STA) is a designation that may be applied to a state highway, when a downtown, business district or community center straddles the state highway within a community's urban growth boundary. STAs can include central business districts but they do not apply to whole cities or strip development areas along individual highway corridors.

The primary objective of a STA is to provide access to community activities, businesses and residences, and to accommodate pedestrian, and bicycle movements along and across the highway in a compact central business district. A STA designation will allow reduced mobility standards, accommodate existing public street spacing and compact development patterns, and enhance opportunities to provide improvements for pedestrians and bicyclists in the downtown area. Inclusion in a STA allows for redevelopment with exception to the proposed access management standards.

Access management in STAs corresponds to the existing city block for public road connections and discourages private driveways. However, where driveways are allowed and land use patterns permit, the minimum spacing for driveways is 175 feet or mid-block if the current city

block spacing is less than 350 feet. In addition, the need for local street connections may outweigh the consideration of maintaining highway mobility within a STA.

In Umatilla, the area along Highway 730 between “A” Street (milepost (M.P.) 182.66) and Umatilla River Road (M.P. 183.52) exemplifies the design features that would be consistent of an urban downtown area designated as an STA. Within this mile segment, buildings are spaced close together, parking is on street, and the posted speed limit is 25 m.p.h. The compact development pattern qualifies this area for a STA highway segment designation.

Upon adoption of the TSP by the Umatilla City Council and a finding of compliance with the Oregon Highway Plan, the City of Umatilla and ODOT Region 5 may jointly designate this segment of Highway 730 as an STA through a Memorandum of Understanding (MOU). The MOU will incorporate by reference the TSP and the following STA Management Plan provisions.

12.2.645 Special Transportation Area Management Plan

The Umatilla STA is located on the portion of Highway 730 (6th Street) between the intersections of “A” Street (M.P. 182.66) and River Road (M.P. 183.52), which is located completely within the urban growth boundary and city limits of the City of Umatilla.

The primary objective of the Umatilla STA is to provide access to community activities, businesses and residences, and to accommodate pedestrian, and bicycle movements along and across the highway in the city’s central business district.

The designation of a STA in Umatilla is intended to accommodate the existing public street spacing and compact development pattern. Specific access management conditions for the Umatilla STA on Highway 730 include:

- A. Minimum spacing for public road connections at the current city block spacing of 200 feet.
- B. Public road connections are preferred over private driveways. Private driveways are discouraged in an STA.
- C. Where land use patterns permit, ODOT will work with the City and property owners to identify appropriate access to adjacent property owners within the STA.
- D. Where a right to access exists, access will be allowed to property at less than the designated spacing standard only if the property does not have reasonable alternative. If possible, other options should be considered, such as joint access.
- E. Where a right to access exists, the number of driveways to a single property shall be limited to one. ODOT will work with the City and property owners if additional driveways are necessary to accommodate and service the traffic to the property, and will not interfere with driver expectancy and the safety of through traffic on the highway.

- F. Driveways shall be located where they do not create undue interference or hazard to the free movement of normal highway or pedestrian traffic. Locations in areas of restricted sight distance or at points that interfere with the placement and proper functioning of traffic control signs, lighting or other devices that affect traffic operation will not be permitted.
- G. If a property is landlocked (no reasonable alternative exists) because a driveway cannot be safely constructed and operated and all other alternatives have been explored and rejected, ODOT might be required to purchase the property. However, if a hardship is self-inflicted, such as by partitioning or subdividing a property, ODOT has no responsibility for purchasing the property.

Today, traffic on the state highway operates at LOS C or better, which correlates to maximum volume to capacity ratio of 0.69. Increase in traffic volumes over the 20-year projection period is expected to increase significantly based on Umatilla's Transportation System Plan from February 1999. The level of service and correlating volume to capacity ratio is projected at LOS E and F which correlates to a volume to capacity ratio greater than 0.80 which is the maximum standard for Highway 730 within the city's urban growth boundary. This projection from the TSP is based on an aggressive growth assumption, which may not occur. The volume to capacity ratio of Highway 730 through the STA area of Umatilla should be monitored periodically to assure that the state highway is operating at or better than the established standard.

To maintain highway mobility through a STA in Umatilla, land use development decisions (within the urban growth boundary) shall not cause traffic flow to exceed a volume to capacity ratio of 0.80. The posted speed limit in the STA is currently and will remain at 25 miles per hour as allowed by state statute in a business district. Curb (parallel or perpendicular) parking is permitted in the STA, provided minimum sight distance requirements are met for all public road connections and private driveways. Parking in this area is adequate at this time. No signals or traffic control devices currently exist in this area.

To enhance Highway 730 for pedestrians and bicycles, there is a proposal to change the use of the existing street cross-section. Highway 730 is currently a three-lane roadway with parallel parking on both sides of the street. Sidewalks generally exist along the highway but no bike lanes exist. The proposal is to restripe Highway 730 to include one travel lane in each direction, maintain the on-street parking, and stripe bicycle lanes on both sides of the highway. In addition, medians are planned in place of the center turn lane in certain sections. The proposed cross-section described is depicted in *Figure 9.2-18* in the Downtown Revitalization and Circulation Plan section of Chapter 9 of the Comprehensive Plan.

The designation of a STA in Umatilla further identifies the need to accommodate pedestrian, and bicycle movements along and across the highway in the central business district. The urban arterial standard within the STA consists of an 80-foot right-of-way with a paved width of 60 feet that includes two 11-foot travel lanes, 6-foot bike lanes, 7-foot parking strip on each side of the road, and a center median of 12 feet. The standard includes 8- to 10-foot sidewalks on each side of the road that includes a four-foot furniture zone that can accommodate street lighting and street trees. To accommodate bicycle movements along the highway, bike lanes are planned

along the entire length of the STA boundary. Bulb-outs have also been proposed throughout most of the STA area. *Figure 9.2-23* of the Downtown Revitalization and Circulation Plan in Chapter 9 shows the locations where bulb-outs are planned. There are no other bicycle and pedestrian improvements identified in this area.

Another essential component to accommodate pedestrians in a STA is street crossings. There is one crosswalk enhancement proposed in the Downtown Revitalization and Circulation Plan in Chapter 9. *Figure 9.2-19* in Chapter 9 shows the proposed crosswalk improvements to the intersection of Highway 730 (6th Street) and “I” Street. There are no other specific crosswalk enhancements or safety improvements planned within the STA at this time other than the bulb-outs previously mentioned. Future improvements and modifications to the highway within the STA and within the curb line, or if no regular established curb, to the right-of-way utilized for highway purposes will be made in accordance with the Oregon Highway Design Manual and with ODOT approval.

Existing maintenance and operational strategies along Highway 730 will be employed within the STA, consistent with Oregon Revised Statute 373.020, as follows:

ODOT shall be responsible for the on-going maintenance of: a) the roadway surface between curbs, or if no regular established curb, to that portion of right-of-way utilized for highway purposes; b) painting centerline stripe; c) designated school crosswalk delineation, directional and regulatory signs except those signs described as the City’s responsibility; and d) plowing snow one blade-width of centerline stripe provided there are no conflicts with utilities.

City shall be responsible for the on-going maintenance of: a) storm sewer system; b) sidewalks; c) landscaping; d) luminaries; e) U-turn signs, parking signs, and street name signs; f) painting parking-stripes and other pavement delineation not described as ODOT’s responsibility; and g) snow removal from parking strip.

Future improvements and modifications to the highway within the STA will include maintenance and operational strategies with ODOT and City approval.

12.2.650 City Standards

Table 12.2-12 identifies minimum public street intersection and private access spacing standards for the City of Umatilla roadway network as they relate to new development and redevelopment. Table 12.2-13 identifies standards for private access driveway widths. In cases where physical constraints or unique site characteristics limit the ability for the access spacing standards listed in Tables 12.2-12 and 12.2-13 to be met, the City of Umatilla ~~should~~ retains the right to grant an access spacing variance. County facilities within the City’s UGB should be planned and constructed in accordance with these street design standards.

TABLE 12.2-12
MINIMUM INTERSECTION SPACING STANDARDS

Functional Classification	Public Street (feet)	Private Access Drive (feet)
Major Arterial	1000	400
Minor Arterial	800	300
Collector	600	150
Neighborhood Collector	400	100
Local	200	50

TABLE 12.3-13
PRIVATE ACCESS DRIVEWAY WIDTH STANDARDS

Land Use	Minimum (feet)	Maximum (feet)
Single Family Residential	12	25
Multi-Family Residential	20	35
Commercial	20	35
Industrial	20	40

12.2.660 Existing Driveway Conditions Analysis

To evaluate existing driveway spacing compared to current access management standards, the existing driveway locations along Highway 730 (6th Street) were inventoried from the Interstate 82 interchange to Umatilla River Bridge. The intent of this exercise was to compare the existing driveway spacing with current access spacing standard to identify access spacing deficiencies.

The existing driveway inventory for Highway 730 is in Appendix 12.2A. Appendix 12.2B contains a table documenting the driveway location in relation to the side streets. This information was translated to *Figures 12.2B-1, 12.2B-2, and 12.2B-3* in the Appendix to graphically show the driveways on Highway 730.

Seventeen blocks are within the Highway 730 corridor analyzed for existing driveway locations. Of the 17 blocks, 4 meet the 1999 OHP standards in STA and UBA areas. The four blocks that meet the current access spacing standards are E to F Streets, F to G Streets, H to I Streets, and Umatilla River Road to Eiselle Drive. The following seven other Highway 730 segments are within one or two driveways of complying with existing standards:

- A Street to B Street
- B Street to C Street
- C Street to D Street
- D Street to E Street
- I Street to J Street
- K Street to L Street
- L Street to Switzler Avenue

The remaining six segments along Highway 730 have three or more additional driveways than the standard specifies. These segments are G to H Streets, J to K Streets, Switzler Avenue to

Yerxa Avenue, Yerxa Avenue to Sloan Avenue, Sloan Avenue to Umatilla River Road, and Eiselle Drive to Brownell Boulevard. In those situations, the application of the crossover easements and conditional access policy concepts depicted later in *Figure 12.2-12*, would work well to consolidate accesses over time as redevelopment occurred. Eventually, by practicing those concepts, the existing access spacing standards for Highway 730 could be met. Also, over time in the proposed STA area, the overall goal is to have the local grid system provide access to businesses and not individual driveways.

12.2.670 Management Techniques

From an operational perspective, the City of Umatilla should consider implementing the following access management measures:

- planning for and developing intersection improvement programs in order to regularly monitor intersection operations and safety problems;
- purchasing right-of-way and closing driveways; and
- installing positive channelization and driveway access controls as necessary.

It should be noted that purchasing right-of-way and closing driveways without a parallel road system and/or other local access could seriously affect the viability of the businesses impacted. Thus, if this approach is taken, either a parallel road system or shared access needs to be developed prior to “land-locking” a business.

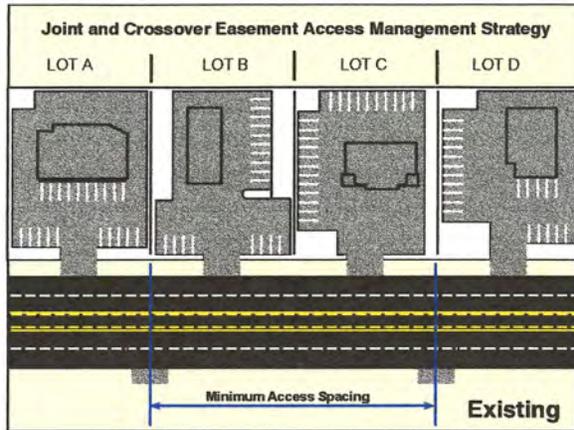
As part of every land use action, the City of Umatilla should evaluate the potential need for conditioning a given development proposal with the following items, in order to maintain and/or improve traffic operations and safety along the arterial and collector roadways:

Crossover easements should be provided on all compatible parcels (topography, access, and land use) to facilitate future access between adjoining parcels. *Figure 12.2-12* illustrates how this process would, in the long run, facilitate compliance with access management objectives.

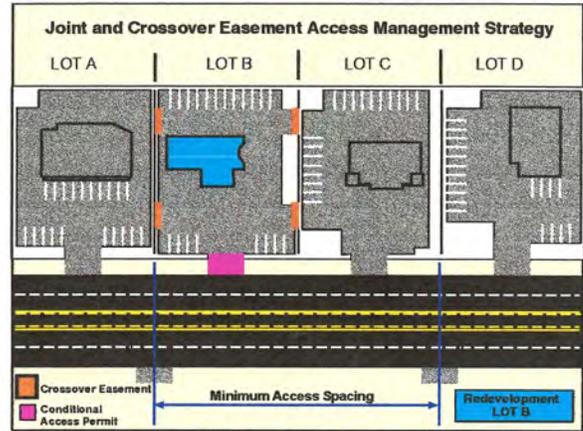
Conditional access permits should be issued to developments having proposed access points that do not meet the designated access spacing policy and/or have the ability to align with opposing driveways.

Right-of-way dedications should be provided to facilitate the future planned roadway system in the vicinity of proposed developments.

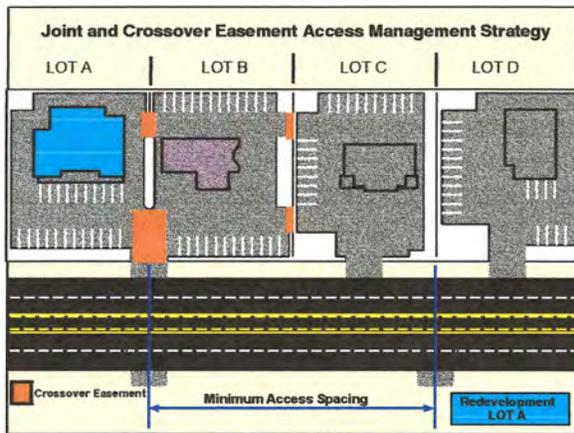
Proposed Access Management Strategy



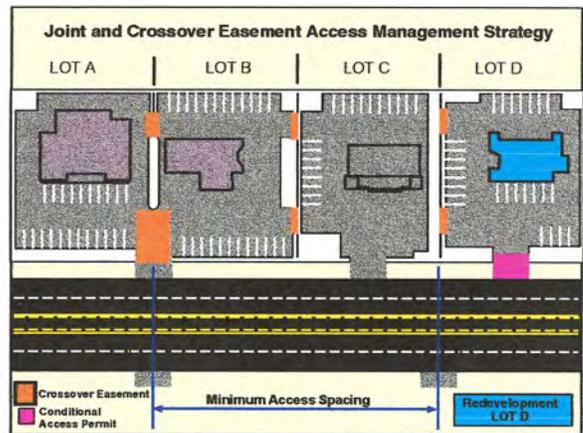
Step 1



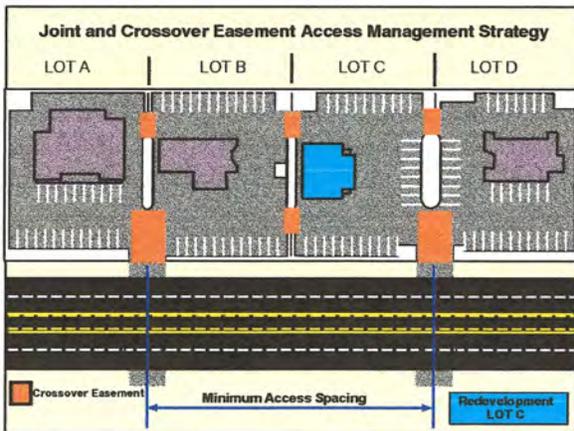
Step 2



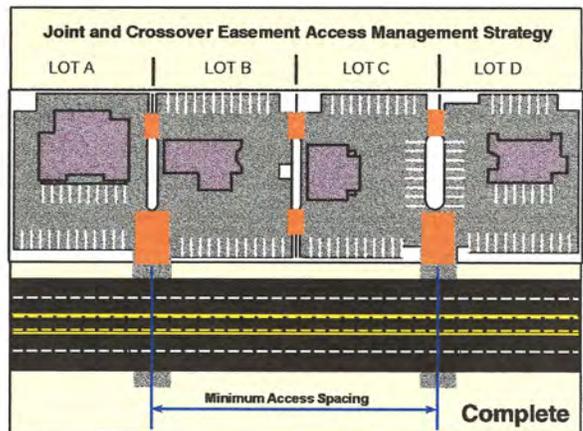
Step 3



Step 4



Step 5



Step 6

EXAMPLE OF CROSS-OVER EASEMENTS AND CONDITIONAL ACCESS POLICY/PROCESS

CITY OF UMATILLA, OREGON
TRANSPORTATION SYSTEM PLAN
FEBRUARY 1999

FIGURE
12.2-12



Half-street improvements (sidewalks, curb and gutter, bike lanes/paths, and/or travel lanes) should be provided along site frontages that do not have full-buildout improvements in place at the time of development.

12.2.680 Implementation Plan

The implementation of the transportation system improvements detailed in Section 12.11 is a summary of improvement projects and a timeline for making appropriate infrastructure investments. The sequencing plan presented is not detailed to the point of a schedule identifying specific years when infrastructure should be constructed, but rather ranks areas to be developed over a 10-year, near-term horizon and an 11- to 20-year, long-term horizon.

The construction of roads, water, sewer, and electrical facilities in conjunction with local development activity should be coordinated if the City of Umatilla is to develop in an orderly and efficient way. Consequently, the plans proposed in the TSP should be considered in light of developing infrastructure sequencing plans, and may need to be modified accordingly.

Implementation of roadway improvements, the Pedestrian System Plan, and the Bikeway System Plan has been staged to spread investment in this infrastructure over the 20-year life of the plan.

12.2.690 Summary

The adoption and implementation of this Transportation System Plan will enable the City of Umatilla to rectify existing transportation system deficiencies while also facilitating growth in the study area population and employment levels assumed in this study.

12.2.700 ROADWAY TRANSPORTATION SYSTEM PLAN & ACCESS MANAGEMENT ELEMENT FINDINGS (RESERVED FOR EXPANSION)

12.2.800 ROADWAY TRANSPORTATION SYSTEM PLAN & ACCESS MANAGEMENT ELEMENT POLICIES

12.2.801 The City shall maintain a street classification system identifying principal arterials, collectors, and local streets and a plan for the vehicle, pedestrian and bicycle circulation system in the Transportation System Plan.

12.2.802 The City will promote adequate transportation linkages between residential, commercial and industrial use areas. This will be done through street improvements, new streets, well marked turning lanes, warning signs and/or speed reduction. Problems identified in the plan have first priority.

12.2.803 The City will support efforts to construct a street connection between Powerline Road and US Highway 395.

12.2.804 The City will promote the development of a bridge that should be located between “B” Street and Umatilla River Road as part of a proposed major collector between

Powerline Road and Sixth Street on Hamilton Street and “J” Street south of the Umatilla River and “I” Street north of the river.

- 12.2.805 The City will require uses fronting on arterial and collector streets to limit the points of access consistent with the traffic needs of the proposed use and physical features of the subject site.

SECTION 12.3 INTERCHANGE AREA MANAGEMENT PLAN

An Interchange Area Management Plan (IAMP) has been prepared for the Interstate-82 (I-82)/US 730 Interchange in Umatilla, Oregon. The following section provides an overview of the purpose and intent of the IAMP and defines: the interchange function, the project goals and objectives, and the study area. These elements have been defined through a collaborative effort between the project Technical Advisory Committee (TAC) and Public Advisory Committee (PAC).



12.3.100 PURPOSE AND INTENT

The IAMP is a strategic transportation plan that is designed to protect the long-term function of the Interstate 82 (I-82)/US 730 interchange by preserving the capacity of the interchange while providing safe and efficient operations between connecting roadways. The IAMP will identify land use management strategies, short-term and long-term transportation improvements, access management goals, and strategies to fund identified improvements.

The intent is that the IAMP planning efforts will result in policies, ordinances, and other provisions that will be adopted into the City of Umatilla and Umatilla County's Transportation System Plan (TSP) and Comprehensive Plan. The IAMP will also be adopted by the Oregon Transportation Commission (OTC) as an amendment to the Oregon Highway Plan.

12.3.110 Problem Statement

The signalized intersections of Brownell Boulevard/US 730 and the southbound I-82/US 730 terminal are located within close proximity of one another resulting in undesirable operations. The signals have been coordinated in an effort to improve intersection operations. Nevertheless, queuing problems associated with truck traffic accessing the Umatilla Port of Entry (POE) weigh station continue to occur at the two intersections. This condition varies by season due to increase of trucks during mid-summer and fall harvests.

The Port of Entry and weigh station is located on the northwest corner of Brownell Boulevard/US 730 intersection which coincides with the northwest quadrant of the I-82/US 730 interchange. A truck stop, restaurant, fueling station and other commercial development is located in the southwest quadrant. East of the interchange is primarily vacant land within the City of Umatilla Urban Growth Area. This land is zoned exclusive farm use, tourism commercial or public facilities. The City is interested in the economic development potential of this area and would like to develop a local street network plan that supports the safe and efficient operation of the interchange and the US 730/US 395 intersection located within the interchange influence area.

12.3.120 Interchange Description

The I-82/US 730 interchange is an urban interchange that connects US 730 and US 395 with I-82. It is the only interchange serving Umatilla. The interchange is also important for interstate freight travel, as it provides access to the Umatilla POE for trucks entering Oregon from Washington and US 395, a designated freight route. US 730, which is also locally known as 6th Street through Umatilla, provides one of two east-west connections between downtown Umatilla and the McNary area of Umatilla, making it a vital connection to the city. Beyond Umatilla, US 730 connects to I-84 southwest of Irrigon and to US 12 in Washington to the east.

The land uses within the immediate vicinity of the interchange are primarily commercial on the west side and vacant on the east side.

12.3.121 Interchange Function Statement

Following is the function and policy definition for the I-82/US 730 Interchange:

“The primary function of the I-82/US 730 interchange is to facilitate statewide and inter-urban and inter-regional travel to/from the I-82 corridor. A secondary function is to provide east-west interregional connectivity across I-82 for the City of Umatilla and surrounding rural land uses. I-82 is a short, but significant interstate highway that connects the state of Washington to the I-84 corridor.”

12.3.130 Interchange Management Study Area

To provide a comprehensive study and to achieve effective results, the Interchange Management Study Area (IMSA) includes developable and re-developable properties and major roadways that would significantly affect the interchange function over the next 20 years. The IMSA includes properties within ½-mile, and in some cases beyond, from the existing I-82 interchange as defined by the IAMP Guidelines. The IMSA also takes into account facilities and properties that will impact the operations of the interchange and any natural or cultural resources in the vicinity of the interchange.

The IMSA map is shown in *Figure 12.3-1*. *Figure 12.3-1* identifies key features and boundaries of the area included in the IAMP. As shown on the IMSA map, two study boundaries are identified: the IAMP Operations and Access Study area and the Land Use Study Area. The following describes the criteria used to create the IMSA map.



H:\proj\file\10369 - I-82 US 730 IAMP\GIS\UmatillaBaseMap.mxd

LEGEND

-  Minimum 1320' IAMP Limits
-  Land Use Study Area
-  Operations/Access Study Area
-  Umatilla UGB

**INTERCHANGE MANAGEMENT STUDY AREA
UMATILLA, OREGON**

FIGURE

12.3.131 Operations and Access Study Area

The Operations and Access Study Area includes all access points and intersections within ¼-mile of the existing I-82/US 730 interchange and encompass key intersections that have potential to affect traffic operations in the interchange area over the planning period. This study boundary identifies the area for which operational analysis will be completed and the area that will be considered in the Access Management Plan element of the IAMP. The study intersections include:

I-82/US 730 Northbound Terminal

I-82/US 730 Southbound Terminal

US 730 / US 395

US 730 / Lind Road

US 730 / Scaplehorn Road

US 730 / Private Driveway (Umatilla Self Storage business) between Scaplehorn Road and Northbound I-82 ramp

US 730 / Brownell Boulevard

US 730 / Port or Entry Entrance Driveway

US 730 / two private business driveways (Crossroads)

US 730 / Eisele Drive

US 730 / River Road

US 395 / Margaret Avenue

US 395 / Power City Road

12.3.132 Land Use Study Area

The Land Use Study Area includes all properties located roughly within a ½-mile of the interchange. The Land Use Study Area extends beyond a ½-mile in places to incorporate developable and re-developable properties that are expected to significantly affect the interchange function over the next 20 years. Properties identified with potential to affect the interchange include those that are expected to utilize the interchange as their primary connection to I-82 or those that may be necessary to examine to improve local circulation.

12.3.140 Goals and Objectives

The primary goal of the IAMP process is to protect the function of the interchange by anticipating changes in land use and traffic patterns and planning for necessary improvements over a 20-year planning horizon. As stated in Policy 3C of the 1999 Oregon Highway Plan, “*it is the policy of the State of Oregon to plan for and manage grade-separated interchange areas to ensure safe and efficient operation between connecting roadways.*” From this definition, the objectives of the I-82 / US 730 IAMP are to:

- Refine and prioritize improvements needed to maintain acceptable traffic operations at the interchange while providing safe access to adjacent land uses;

- Provide for efficient connectivity, right-of-way, and access control in the Interchange Management Study Area (IMSA);
- Consider the surrounding contextual land use and roadway network;
- Provide plans for improved local street connectivity in the IMSA (see definition below) while limiting cul-de-sacs or other non-connected streets;
- Evaluate existing and potential land use designations, intensities, conditions, and actions that could have favorable effect on the facility or an adverse effect on the facility;
- Collaborate throughout the planning process with design professionals, jurisdictional representatives, developers, and local property owners.
- Comply with the intent of Statewide Planning Goal 1: Public Involvement, 2: Land Use Planning, 5: Natural Resources, 6: Air, Water and Land Resources Quality, 7: Areas Subject to Natural hazards, 8: Recreation Needs, 9: Economic Development, 12: Transportation, and 14: Urban Growth Boundaries.
- Develop policies and implementation measures that support the goals of this project for local consideration and adoption into the City and County comprehensive plans, transportation system plans, and zoning ordinances, as appropriate.

12.3.150 Evaluation Criteria

Based on the above objectives, the following evaluation criteria were assembled to ensure that each concept developed throughout the project would be evaluated for consistency with the overall intent of the community and the project. The six evaluation criteria categories are outlined below:

- **Transportation Operations:** This category consists of those criteria that assess the ability for all modes to travel through and within the study area. Special considerations within this category include safety, local connectivity and mobility, including freight mobility.
- **Land Use:** This category consists of those criteria that assess right-of-way impacts, consistency with adopted land use and economic development plans, transportation capacity impacts of changes in land use intensity, impacts to utilities, and impacts to existing and proposed developments.
- **Economic Development:** This category consists of those criteria that assess the potential for short-term (1-5 years), mid-term (5-15 years), and long-term growth (15-25 years) for areas within the vicinity of the interchange.
- **Cost:** This category consists of those criteria that assess the practicality of a design concept from a construction cost and feasibility perspective.

- Environmental, Social, and Equity factors: This category consists of those criteria that assess the degree to which a concept is compatible with the natural and built environment including environmental (i.e., storm water drainage and hazardous waste) and socioeconomic (i.e., stakeholders' needs) impacts.
- Accessibility: This category consists of those criteria that assess the ability to access properties and businesses within the IMSA to/from the regional infrastructure network including the balance between local access and roadway function, future access for undeveloped properties, and adherence to the access spacing standards.

12.3.160 Development of the IAMP

The I-82/US 730 IAMP was guided by the Technical Advisory Committee (TAC) and Public Advisory Committee (PAC), as well as area residents and business owners. Regular TAC and PAC meetings held throughout the course of the project provided opportunities for the two committees to review and guide the technical analysis prepared by the consultant team and the overall project direction.

12.3.161 Public Involvement

In addition to the regular TAC and PAC meetings, local citizens, property owners, and business owners provided their input by participating in three public workshops. The first workshop provided participants with background information on the project and then gave them the opportunity to develop and present their ideas for design concepts. At the second workshop, participants provided their input on the design concepts that had previously been developed. The third workshop focused on a review of the draft IAMP. Members of the public also submitted comments directly to the project management team either through correspondence or by attending a TAC or PAC meeting. In addition, adoption of the plan included public hearings before the City of Umatilla Planning Commission and Council and the Oregon Transportation Commission.

12.3.170 IAMP Organization and Methodology

The development of the I-82/US 730 IAMP began in January 2010 with the first meeting of the consultant team and City and ODOT staff. Work with the TAC and PAC began shortly thereafter in February 2010. These groups participated in an extensive process that involved reviewing existing and future transportation conditions, future land use analyses, interchange design and local access and circulation concepts, and financing options.

Sections 12.3.100 through 12.3.900 provide the main substance of the plan. These are supplemented by Technical Appendices in Volume 2 of the original final document prepared by Kittleson & Associates, Inc. which contains the technical memoranda documenting each step in the process and is included in this plan as a separate document and made a part hereof by this reference.

12.3.200 INTERAGENCY AND PUBLIC INVOLVEMENT PROGRAM

As part of the I-82/US 730 Interchange Area Management Plan (IAMP), interagency and public involvement occurred through: a kick-off meeting with agency staff; a Technical Advisory Committee (TAC) and a Public Advisory Committee (PAC) that had regular meetings; three public workshops involving local citizens, property owners, and business owners; a joint work session of the City of Umatilla Planning Commission and City Council that was open to the public; and public adoption hearings in front of the City of Umatilla Planning Commission and Council and the Oregon Transportation Commission. An overview of the TAC and PAC meetings and public workshops is summarized below.

12.3.210 Technical Advisory and Public Advisory Committees

The TAC and PAC guided the planning work and were responsible for reviewing all work products, providing input on all planning recommendations, such as the IMSA, goals and objectives, technical analysis, and the proposed concepts. Ultimately the TAC and PAC helped select the preferred interchange form, local circulation/access, land use management, and coordination elements of the IAMP. In addition, a Project Management Team (PMT) performed a coordination function, planning and executing project management tasks related to project schedule and meeting logistics. The PMT included representation from ODOT, the City of Umatilla, and the consultant team and were all members of the TAC.

Membership on the TAC and PAC was established through input from City and ODOT representatives. A proposed TAC and PAC membership roster was presented and finalized at a project kick-off meeting held January 6, 2010.

The TAC members were selected in order to provide representation from key components of interested government agencies. PAC members were selected in order to provide a good representation of City officials, area property and business owners, and other interested citizen groups. In addition to the PAC members, a number of area property and business owners attended PAC meetings and participated in the process.

12.3.220 Public Involvement Plan

To ensure that adequate project coordination and public participation occurred throughout the development of the I-82/US 730 IAMP, a series of TAC and PAC meetings, public workshops, and public joint work sessions were held over the course of the project. The City of Umatilla also conducted public hearings to adopt the plan.

12.3.300 PLAN AND POLICY REVIEW

One of the project objectives of the IAMP is to ensure that the plan is consistent with local and state transportation policies and standards. To meet this objective, a review and evaluation of existing plans, policies, standards, and laws that are relevant to the IMSA was conducted. A summary of the documents reviewed is provided below. Detailed information from this review can be found in the Technical Appendix.

12.3.310 Documents Reviewed

The following transportation and land use plans were reviewed for policies and regulations applicable to the I-82/US 730 Interchange.

12.3.310(1) State/ODOT

Statewide Planning Goal 1 (Public Involvement), Goal 2 (Land Use Planning), Goal 3 (Agriculture), Goal 5 (Natural Resources, Scenic and Historic Areas, and Open Spaces), Goal 6 (Air, Water and Land Resources Quality), Goal 7 (Areas Subject to Natural Hazards), Goal 8 (Recreational Needs), Goal 9 (Economic Development), Goal 12 (Transportation), and Goal 14 (Urbanization)

Oregon Transportation Plan (2006)

Oregon Highway Plan (1999)

Oregon Bicycle and Pedestrian Plan (1995)

Oregon Rail Plan (2001)

Oregon Administrative Rule 660, Division 12 (Transportation Planning Rule)

Oregon Administrative Rule 731, Division 15 (Coordination Rules)

Oregon Administrative Rule 734, Division 51 (Access Management Rule)

Oregon Revised Statute Title 31, Highways, Roads, Bridges, and Ferries

Highway Design Manual (2003)

12.3.310(2) Local

Join Management Agreement, City of Umatilla and Umatilla County (1996)

Umatilla County Comprehensive Plan (1983, Amended)

Umatilla County Transportation System Plan (2002)

Umatilla County Development Code (Revised, 2009)

City of Umatilla Comprehensive Plan

City of Umatilla Transportation System Plan (2001)

City of Umatilla Zoning Code

12.3.320 Consistency with Existing Plans

The IAMP was developed to be consistent with local and state transportation policies. The review of local policies and regulations did not reveal conflicts with the primary goal of the IAMP to protect the function of the interchange, but at the same time, the existing regulatory tools also do not adequately address the future transportation needs in the area. Additional requirements regarding access management, local street connectivity, and transportation financing must be adopted if the transportation system in this area of Umatilla is going to support future planned growth.

12.3.400 EXISTING TRANSPORTATION/LAND USE CONDITIONS

This section provides a review of existing land uses and transportation facilities as well as natural and cultural resources within the vicinity of the I-82/US 730 interchange. As shown in *Figure 12.3-2*, this is the first full interchange for southbound traffic entering from Washington and the only interchange serving Umatilla. The information identified in this section provides a basis for identifying opportunities and constraints for meeting the goals and objectives of the IAMP.

12.3.401 Interchange Management Study Area

The Interchange Management Study Area (IMSA), depicted in *Figure 12.3-3*, defines the extent of the land use and traffic operations review. As the figure shows, the study includes an Operations and Access Study Area and a Land Use Study Area. The Land Use Study Area includes the areas with trip generation potential that are expected to have a direct affect on the design and function of the interchange. Generally speaking, land uses outside of the IMSA area are not anticipated to directly impact the function of the interchange. This is because these properties do not directly access the interchange, have other travel route options within Umatilla besides US 730, or have limited potential to generate new trips (e.g. the land is already



LEGEND

-  Interchange Management Study Area
-  Umatilla City Limits

**STUDY AREA VICINITY
UMATILLA, OREGON**

FIGURE

Figure 12.3-2

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LEGEND

-  Minimum 1320' IAMP Limits
-  Land Use Study Area
-  Operations/Access Study Area
-  Umatilla UGB

**INTERCHANGE MANAGEMENT STUDY AREA
UMATILLA, OREGON**

FIGURE

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developed, the land has limited redevelopment potential, or the land is outside of Umatilla's Urban Growth Boundary [UGB]).

Figure 12.3-3 also outlines the Interchange Operations/Access Review Area. The operations and access management of intersections and driveways within this area is the subject of analysis described later in this section.

12.3.410 Existing Land Use

Pursuant to the requirements stated in the Oregon Administrative Rule 734-051-0155 for the preparation of an IAMP, a land use inventory was prepared for the IMSA. This section provides a description of the existing land-use patterns and zoning regulations that currently exist within the IMSA.

12.3.411 Existing Zoning

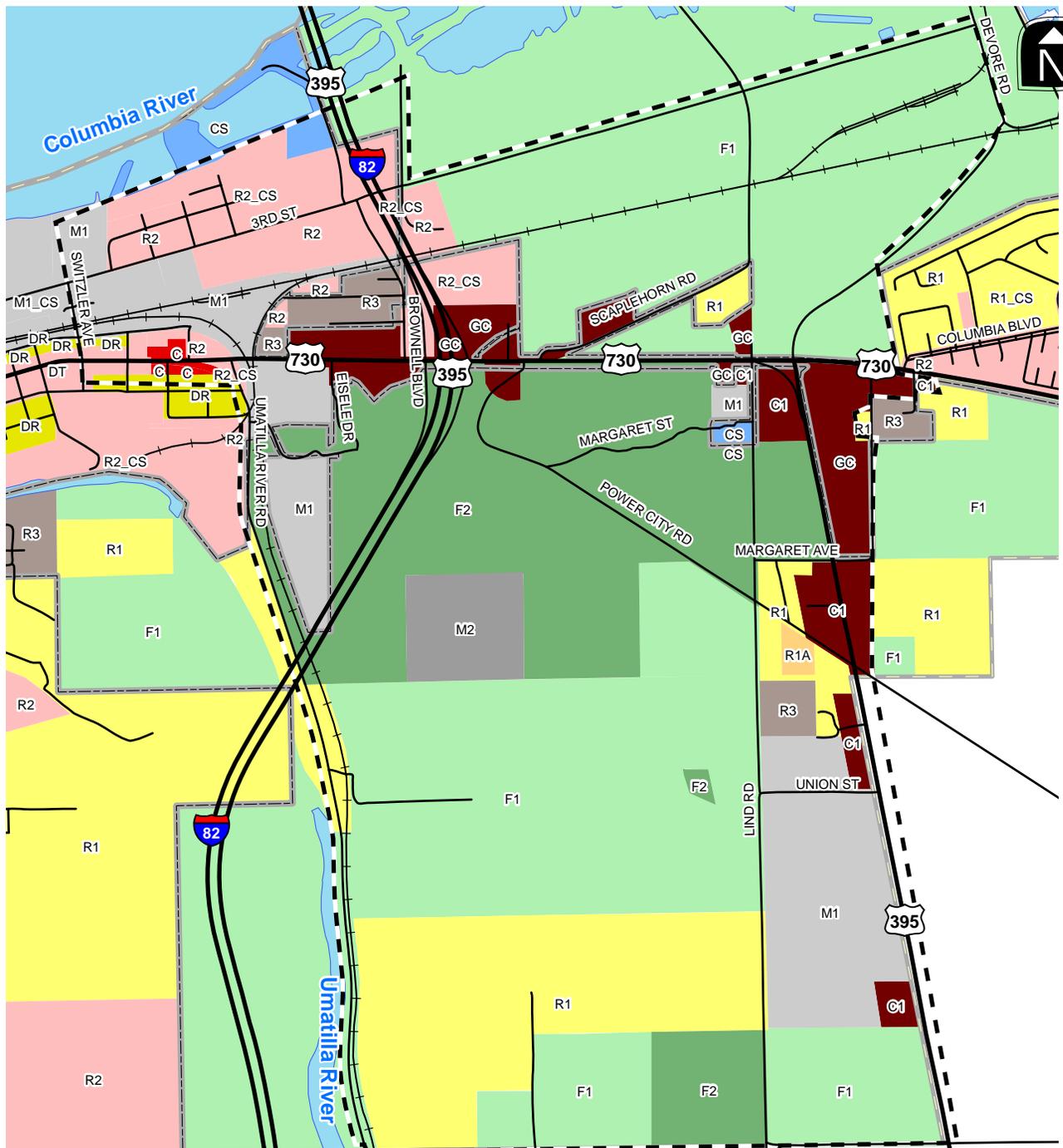
As shown in *Figure 12.3-4*, land within the IMSA is a patchwork of incorporated parcels, unincorporated land within the City of Umatilla's urban growth boundary (UGB), and unincorporated county land. A large portion of the IMSA is county zoned, but within the city's UGB, and governed by a Joint Management Agreement (JMA). Areas within the UGB that are not yet annexed to the city are considered part of the Urban Growth Area (UGA).⁴⁴

12.3.411(1) Umatilla County Zoning

For unincorporated areas within the IMSA, County zoning and development regulations apply. County zoning within the City's UGB lies east of I-82 and west of Devore Road (north of US 730) and west of US 395 (south of US 730). While it is clear from the inclusion of these areas in the UGB that urban uses are intended, until which time land is annexed to the City and City zoning is applied, development and redevelopment are dictated by what is allowed by County ordinances. In the case of areas governed by the JMA, the County's 1972 Zoning Ordinance is the regulating document. Below is an overview of County zone designations in the IMSA.

Exclusive Farm Use (FI) - EFU zoning is designed to maintain the agricultural economy of the county by reserving farmland for exclusive agricultural use. In addition to the propagation and harvesting of farm or forest products and associated residential and farm buildings, schools and churches are permitted outright in this zone. Uses permitted conditionally include commercial activities associated with farm and forest uses, parks and playgrounds, golf courses, and personal use airports.

⁴⁴Areas outside city limits within the UGB retain county zoning, but are governed by the JMA and future urban zoning would be determined by the City of Umatilla's Comprehensive Plan Map land use designations. A locally adopted "City of Umatilla Plan Map" depicts both City zoning and plan map designations. However, the plan designations more closely resemble existing (i.e., low intensity rural) uses and do not reflect the City's future growth needs. The City is in the process of developing a work program that will analyze the City's future economic development and employment needs. A legislative amendment updating the City's plan map is expected to be one of the outcomes of the work program, but this City-initiated process is not expected to be complete prior to the completion of the IAMP.



LEGEND

- Land Use Study Area
- Umatilla UGB
- Umatilla City Limits
- Zone**
- Commercial (C)
- Community Service (CS)
- Downtown Residential (DR)
- Downtown Transitional (DT)
- Exclusive Farm Use (F1)
- General Commercial (C1, GC)
- General Rural (F2)
- Heavy Industrial (M2)
- Light Industrial (M1)
- Residential, Multi-Family - Apartments (R3)
- Residential, Multi-Family (R2)
- Single Family Residential (R1)
- Two Acre Residential (R1A)

STUDY AREA ZONING UMATILLA, OREGON FIGURE

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General Rural (F2) - Land zoned F2 is so designated to maintain the “openness and rural nature of the country-side” and is applied to land not suited for EFU classification. The F2 zoning is intended to provide areas “appropriate for most kinds of typical rural development” and where the Planning Commission has the ability to attach special conditions (i.e., dimensional standards) to certain uses to minimize potentially detrimental effects on neighboring lands. Single-family dwelling units, as well as planned unit developments are permitted outright. The minimum lot size for the “principal dwelling unit” is 19 acres, with the Department of Environmental Quality determining all other lot sized based on public health. Other permitted uses include farm and forest product propagating, harvesting, and processing (using portable equipment for forest products), veterinary services, boarding houses, schools, churches, playgrounds, and golf courses. Conditional uses include airports, dog kennels, hog farms, landfills, livestock lots, asphalt plants, and mobile home parks.

Agricultural-Residential Zone (R-1) - This zone is intended to provide areas suitable for very low density residential along with the continuation of agricultural uses. Other uses permitted conditionally include commercial greenhouses and nurseries, nursing homes, and mobile home parks. Utilities are not anticipated to be available to these areas “in the foreseeable future.” Minimum lot area is four acres for residential uses; for non-residential uses the code states that minimum lot area will be determined by what is necessary “for the protection of public health,” as determined by the Department of Environmental Quality.

Two Acre Residential (R-1A) – The R-1A zone is intended to provide land for low density residential development within farming areas where City utilities are not anticipated “in the foreseeable future” and where conditions necessitate “spaced residential uses.” Two-acres is the minimum lot area for residential uses in this zone; minimum lot area for nonresidential uses is determined by the Department of Environmental Quality. In addition to single-family residential and farm uses, other uses permitted outright include noncommercial outdoor recreation, schools, noncommercial greenhouses and nurseries, and public or semi-public uses. Uses allowed conditionally include boarding houses, churches, mobile home parks, community centers, veterinary clinics, horse boarding stables, nursing and convalescence homes, and commercial nurseries.

General Commercial (C-1) - The C-1 zone district provides areas for rural retail and commercial services. A diversity of commercial uses are permitted, including eating and drinking establishments, banking institutions, hotel/motels, office buildings, sporting goods stores, automotive service stations, amusement parks, and greenhouses and nurseries. Conditional uses expand what is allowed in the C-1 to include such uses as mobile home parks, veterinarians, mini-warehouses, and welding shops. Minimum lot area is determined by the Department of Environmental Quality based on what is necessary to protect public health.

Light Industrial (M-1) - The County’s M-1 zone is intended to provide land for industrial uses which are compatible with nearby homes, businesses or farm operations. Locational criteria in the code also state that M-1 zoning is appropriate near major transportation facilities. A wide variety of industrial uses are permitted, including mini-warehouses, bottling, food products manufacturing (including meat processing and storage), machine shops, and the manufacturing, compounding, and assembling of products made from a specified list of prepared materials.

Conditional uses expand the list of uses that may be permitted in the M-1 zone to include some uses more commercial in nature (such as greenhouses and nurseries, commercial gravel pits, and eating and drinking establishments), support services (such as financial institutions and veterinarians), and any type of major industrial use if it meets threshold criteria (employs more than 200, has land needs of over 20 acres of land, or uses a given number of energy BTUs). Junkyards and wrecking yards are also permitted conditionally. Minimum lot area is determined by the Department of Environmental Quality based on what is necessary to protect public health.

Heavy Industrial (M-2) - The intent of the County M-2 zoning is to provide for areas where industrial development with “potential nuisances” will have a minimum negative effect on adjacent property. With a few limitations, all manner of manufacturing, repairing, compounding, fabricating, assembling, processing, treating and storage of products is permitted in this zone. Sand and gravel yards, welding, and materials storage is permitted. Conditional uses are similar to those allowed in the M-1 zone. Minimum lot area is determined by the Department of Environmental Quality based on what is necessary to protect public health.

12.3.411(2) City of Umatilla Zoning

The City of Umatilla’s Zoning Ordinance implements zoning “districts” to regulate land use (see Chapter 2, Plan Designations and Map, in Title 10). Chapters 2 through Chapter 5 of the Zoning Ordinance establish permitted uses and development standards for residential, commercial, and industrial zones. Below is an overview of these provisions for the zoning districts within the study area.

Single-Family Residential (R-1) - R-1 is the City’s low density, single-family residential zone. Besides single-family dwellings, family daycare providers and residential homes are permitted uses. Community services uses are permitted conditionally (see below for types of uses). The minimum lot area is 8,000 square feet and maximum building height is 35 feet.

Medium Density Residential (R-2) - R-2 zoning is intended for medium density (one dwelling per 3,500 square feet) residential uses. In addition to single-family detached houses, attached residences on smaller lots, two-family, and multi-family housing is permitted. Boarding houses, manufactured home parks, and limited office use (office or clinic for doctor, dentist or other practitioner of the healing arts, attorney, architect, engineer, surveyor or accountant) are permitted conditionally. Maximum residential density in this zone is one dwelling per three thousand five hundred (3,500) square feet; minimum lot area is 5,000 square feet and the height limit is 35 feet.

Multi-family Residential (R-3) - R-3 zoning permits residential housing types that include apartments, townhouses, and cluster developments at a density of one dwelling per two thousand (2,000) square feet. Family daycare providers, residential homes and residential facilities are also permitted outright. Conditional uses include boarding houses, community services (see below for types of uses), and professional offices, including medical, law, accountant, architect, and engineering. Minimum lot area in this zone is 5,000 square feet and the height limit is 35 feet.

Downtown Residential (DR) - The purpose of the downtown residential district is to accommodate higher density residential developments and office uses in the downtown area. Permitted housing types include attached housing, apartments, and townhouses. Existing single-family houses are permitted and may be improved. Expansion of existing commercial businesses is also permitted, with restrictions. Family daycare providers, residential homes, and residential facilities are permitted outright, as are professional offices (financial, business, medical/dental), with restrictions. Community services uses are permitted conditionally (see below for types of uses). For residential uses, the maximum allowable density is one dwelling unit per two thousand (2,000) square feet. For freestanding dwellings or structures the minimum lot area is 5,000 square feet; minimum lot area for attached structures is 2,000 square feet.

Downtown Commercial (DC) - The purpose of the downtown commercial district is to provide a concentrated central business district centered on 6th Street (US 730). This zone allows a mix of civic, retail, service, office and residential uses. Any commercial use is permitted, provided it is conducted wholly within an enclosed building, and residential uses are allowed above or behind ground-floor, street-frontage retail. Community services uses are permitted conditionally (see below for types of uses). There is no minimum lot area requirement and 100% building coverage is allowed. Residential uses are permitted at a density of one dwelling per two thousand (2,000) square feet (R-3 requirements).

General Commercial (C-1) - The stated purpose of the General Commercial District is to provide areas for a full range of commercial uses and, in particular, to accommodate uses which require large sites and high visibility. The Zoning Code directs that General Commercial areas should be located along major travel routes and at major intersections. Commercial uses that are both conducted wholly within an enclosed building, as well as those that require outdoor storage or display of products such as lumberyards, motor vehicle sales lots, and plant nurseries, are allowed. Beyond this description, a list of permitted uses is not provided. Automobile service stations, community services (see below and Zoning Ordinance Chapter 6) and recreational vehicle parks are called out as conditional uses. In addition to commercial uses, apartments are permitted in multi-storied buildings on the second floor or above, provided the ground floor is occupied by a commercial use. The minimum lot area requirement is 5,000 square feet and the maximum site coverage is 90 percent; there is no maximum lot area requirement. Building height is limited to 35 feet.

Downtown Transitional (DT) - Downtown commercial uses are permitted in this district and subject to the some standards and limitations. General commercial uses are permitted conditionally and are listed in Article D (Downtown Transitional) as including the following:

- a. Commercial uses that are not conducted wholly within an enclosed building, including a use that requires outdoor storage or display of products, such as lumberyards, motor vehicle sales lots, and plant nurseries.
- b. Commercial uses that are conducted wholly within an enclosed building.
- c. Temporary outside displays and promotional activities directly related and subordinate to the primary business.

d. Drive through windows for any use.

There is no minimum or maximum lot area requirement and the maximum site coverage is 100 percent. Building height is limited to 35 feet.

Light Industrial (M-1) - The M-1 district allows for a variety of industrial uses, including manufacturing, processing, packing, assembly, distribution, repair, finishing or refinishing, testing, fabrication, research and development, warehousing, and servicing activities. Minimum lot size is 5,000 square feet; maximum site coverage is 60%. Up to one hundred percent (100%) of the total floor area may consist of these manufacturing and distribution uses; storage area may not exceed fifty percent (50%) of the site. In addition to permitted uses listed above, Community Services are a conditional use in all the zones within the IMSA. As stated in the Zoning Ordinance, the CS designation provides “a procedure and standards for the review of special uses which, by reason of their public convenience, necessity, unusual character, technical need or effect on the neighborhood, may be appropriate in any district but not suitable for listing within the other sections of the code.”

12.3.420 Land Use Inventory

For purposes of describing existing zoning and land uses within the IMSA, the narrative below will consider each “quadrant” that is formed by the interchange and the study area boundary.

12.3.420(1) Northwest of the Interchange

The northwest quadrant of the IMSA extends north to the Columbia River and west to Switzler Avenue. The majority of the land in this quadrant is within the city limits. This area includes Community Service zoning on land owned by the Port of Umatilla. South from the Port there is an area zoned Downtown Transitional. Land surrounding Union Pacific Railroad’s “Umatilla Turn” is zoned Light Industrial. General Commercial lies north of US 730, west of the interchange.

Existing uses in the northwest quadrant include a combination of residential, recreation, and transportation-related uses. The ODOT Port of Entry weigh station directly northwest of the interchange is probably the most significant use in the quadrant. The facility takes access on US 730 at a distance that is less than spacing standards for interchange ramps and the nearest intersections. The sub-standard spacing is exacerbated by the heavy volume of large truck traffic using this access.

Older single-family homes are located directly north of the Port of Entry, a high retaining wall separating the two sets of uses. The railroad borders the other side of this cluster of homes. North of the railroad and 3rd Street, which parallel the Columbia River, is Port of Umatilla land with an RV camp and boat launch.

The area to the west and occupying the rest of the northwest quadrant is a mixture of predominantly low-density, single-family residential uses and multi-family residential uses, where buildings are in fair to poor condition. Amongst the residential uses and closer to US 730

are self-storage units, which are sometimes used as a way of reserving land for future development.

12.3.420(2) Northeast of the Interchange

Land in the northeast quadrant of the interchange is within the city's UGB and lies both within and outside of the current city limits. A large portion of this quadrant, west to Devore Road, is zoned EFU. The pockets of city land include General Commercial zoning in Sharps Corner, just northeast of the interchange, and along Scaplehorn Road and General Commercial zoning just west of US 395, north of 3rd Street and east of Brownell Boulevard.

The City's R-2 zoning lies north of Sharps Corner, between the railroad tracks and the commercial uses in the northeast quadrant of the interchange. Another residential area is accessed off of Scaplehorn Road and is zoned R-1.

Existing uses identified in a site visit consist mainly of public facilities or utilities and open space. There is a small cluster of single-family homes directly northeast of the interchange in Sharps Corner and along Scaplehorn Road to the east, the only areas of the northeast quadrant within the city limits. An irrigation ditch runs northeast/southwest under the interchange. Land in this quadrant slopes from US 730 down to the river. The McNary substation and an Army Corps of Engineers park and trails are found north of the railroad, leading up to the river. There is a large concentration of Bonneville Power Authority (BPA) electricity transmission lines north of US 730 in the central portion of the northeast quadrant.

12.3.420(3) Southwest of the Interchange

The area in the southwest quadrant of the study area is within the city's UGB and lies both within and outside of the current city limits. City zoning here includes Light Industrial and a small portion of General Commercial directly west of the interchange, on both sides of US 730. South of this commercial area and west of I-82 is General Rural County zoning.

There is a heavy concentration of highway- and motor vehicle-oriented commercial uses along US 730 west of the interchange. The Crossroads Lounge, gas station, convenience stores, and restaurants found here are largely oriented toward the freight truck traffic passing through the interchange and using the Port of Entry across US 730. A post office is also located amongst these uses, which is federally owned or leased.

The Union Pacific Railroad travels along the western edge of the study area in this quadrant, and a spur line passes under US 730 on the north side of the quadrant and under I-82 on the east side. Land along US 730 and east of the railroad spur line is within the city limits in the quadrant. The railroad spur line also parallels the Umatilla River and Umatilla River Road. The riverfront, wetlands, and woodland areas are predominant in this corridor with sparse residential uses, which are mostly manufactured single-family homes.

12.3.420(4) Southeast of the Interchange

The southeast quadrant contains the largest portion of the IMSA. This area east of the I-82/US 730 interchange is mostly vacant or underdeveloped and is almost entirely within Umatilla's

UGB. Land in the immediate vicinity of the US 730/US 395 intersection is included in this quadrant, and south of Power City Road, US 395 forms the eastern boundary of the IMSA, south to the city's UGB line.

This is the largest quadrant in the IMSA and it is mostly unincorporated, vacant land. On its eastern end, the quadrant includes part of the intersection of US 730 and US 395, Buck's Corner. Land directly south of US 730 slopes up from the highway, is vacant, and has a heavy concentration of transmission lines. The City is interested in the economic development potential of this area and intends to develop a local street network plan that supports the safe and efficient operations of the interchange and the US 730/US 395 intersection.

County zoning in this area includes General Commercial and Light Industrial uses at the intersection of US 730 and US 395. City General Commercial zoning is concentrated south of US 730, in a small parcel west of existing County commercial land. A small flag-lot of land zoned Community Service is also in this area. The unincorporated community of Power City lies to the east of US 395; Power City Road cuts diagonally through the southeast quadrant of the interchange, starting at US 730 and heading south to US 395.

Farmland and aggregate mining are the predominant uses in the southern portion of southeast quadrant. There are a few scattered homes closer to I-82 and a cluster of rural low-density single-family homes in the southeast corner of the quadrant. Transmission lines are massed directly south of US 730 in this quadrant branch and thin out in the southern portion of the quadrant.

12.3.430 Existing Transportation Inventory

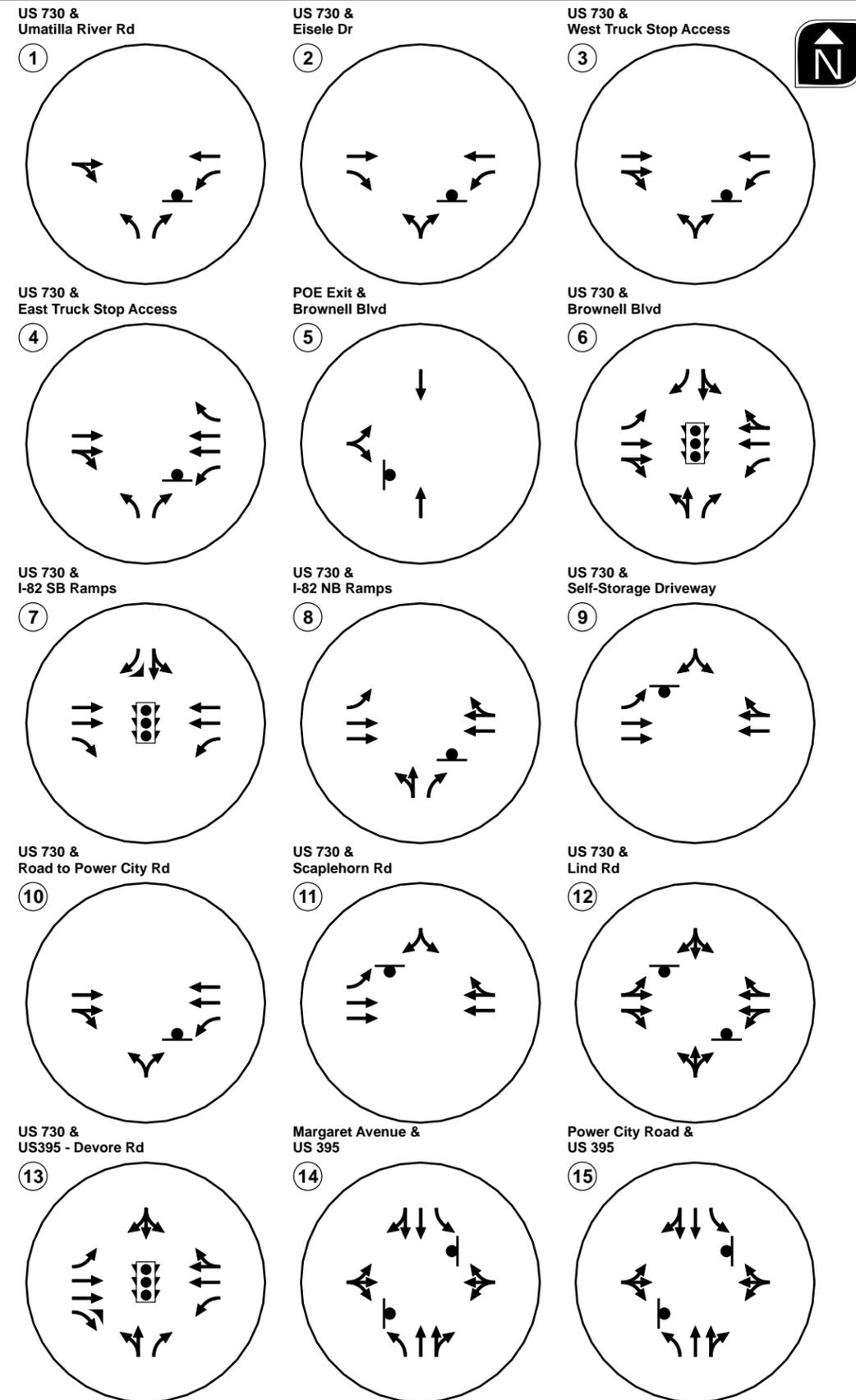
The second major component of the I-82/US 730 IAMP existing conditions evaluation process is the transportation system. The existing transportation inventory provides a detailed description of all transportation facilities and travel modes within the IMSA. In addition, the inventory identifies the current operational, traffic control, and geometric characteristics of roadways and other transportation facilities.

12.3.431 Roadway Facilities

The roadways within the IMSA include state and city roadways. A description of each of the functionally classified roadway facilities is summarized in Table 12.3-1. *Figure 12.3-5* illustrates the existing lane configurations and traffic control devices at the respective study intersections

12.3.431(1) Interstate-82

Interstate 82 is a four-lane interstate highway that runs north-south through Umatilla. It connects I-84 in Oregon to I-90 in Washington and travels through Yakima and the Tri-Cities in Washington. I-82 is part of the National Highway System and is designated in the 1999 Oregon Highway Plan (Reference 1) as an Interstate Highway, Freight Route, and Truck Route.



LEGEND

- STOP SIGN
- TRAFFIC SIGNAL

EXISTING LANE CONFIGURATIONS AND TRAFFIC CONTROL DEVICES UMATILLA, OREGON FIGURE

Figure 12.3-5

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12.3.431(2) Interstate-82/US 730 Interchange Ramps

The I-82/US-730 interchange ramps are configured in a diamond interchange form. The southbound ramp terminal is signalized, while the northbound ramp terminal is stop-controlled on the off-ramp approach. Due to the area’s topography, I-82 is elevated over US 730. South of US 730, I-82 has an uphill grade from north to south. Consequently, vehicles, many of which are trucks, entering I-82 southbound must travel up a grade while accelerating to merge onto I-82.

Table 12.3-1 EXISTING TRANSPORTATION FACILITIES AND ROADWAY DESIGNATIONS

Roadway	Existing Roadway Ownership/ Functional Classification ¹	Cross-section	Posted Speed (mph)	Sidewalks?	Bicycle Lanes?	On-Street Parking?
Interstate-82	ODOT/ Interstate Highway	4-lane	65	No	No	No
US 730 (6th Street)	ODOT/ Statewide/Regional Highway-Freight Routes ³ -STA-UBA ²	4/5-lane	45/35/25	Partial	Shoulder s	No
US 395	ODOT/ Statewide Highway – Freight Route ³	4/5-lane	55	No	Shoulder s	No
Umatilla River Road	County/Minor Arterial	2-lane	25/30	Partial	No	No
Brownell Boulevard	County/ Minor Arterial	2-lane	None	No	No	Yes
Power City Road	County/Minor Arterial – Collector ⁴	2-lane	None	No	No	No
Scaplehorn Road	County/Collector	2-lane	None	No	No	No
Lind Road	County/Minor Arterial-Collector-Local Street ⁵	2-lane	None	No	No	No
Devore Road	City/Collector	2-lane	25	No	No	No
Margaret Avenue	County/Minor Arterial	2-lane	None	No	No	No
Eisele Drive	City/Local	2-lane	None	No	No	No

¹ County-owned roadways within the City of Umatilla’s Urban Growth Boundary retain the City’s functional classification.

² US 730 is classified as a regional highway west of the I-82 ramps and a statewide highway from the SB I-82 ramp to US 395. The STA designation applies west of Sloan Avenue, the UBA designation applies from Sloan Avenue to Brownell Boulevard, and the Freight Route designation applies from US 395 to the NB I-82 ramp.

³ As Freight Routes, US 730 and US 395 are subject to the provisions of ORS 366.215 which states that Oregon “may not permanently reduce the vehicle-carrying capacity of an identified freight route when altering, relocating, changing or realigning a state highway unless safety or access considerations require the reduction.”

⁴ Power City Road is classified as a collector from west of Lind Road and a minor arterial from Lind Road to US 395.

⁵ Lind Road is classified as a minor arterial south of Margaret Avenue, a collector north of Margaret Avenue to the canal, and a local street north of the canal to US 730.

Operations at the southbound ramp terminals intersection with US 730 are directly influenced by nearby intersections. Exhibit 12.3-1, displayed below, shows the spacing between the I-82 ramp terminals and the neighboring intersections. As the exhibit shows, the signalized US 730/Brownell Boulevard intersection is located approximately 170 feet west of the southbound ramp terminal. Furthermore, the entrance to the Umatilla Port of Entry (POE) is

located only 150 feet west of the Brownell Boulevard intersection. Spacing this close presents the opportunity for vehicular queues to spillback from one intersection into the other intersection(s). While the POE entrance is not signalized at US 730, its flow is controlled by the internal weigh station, which can cause queues to back-up during peak periods. A significant portion of the traffic volume in the outer lanes of US 730 in both directions between the southbound ramp terminal and Brownell Boulevard is made up of heavy trucks traveling between I-82 southbound and the POE.

Exhibit 12.3-1 Intersection Spacing Near I-82 SB Ramp Terminals



12.3.431(3) US 730 (6th Street)

US 730, the Columbia River Highway, is classified by the Oregon Highway Plan as a Statewide Highway from the southbound I-82 ramp terminal east to US 395. West of the southbound terminal, it is classified as a Regional Highway and is not a National Highway System (NHS) route. Between the I-82 northbound ramp and US 395, it is designated as a Freight Route and a Truck Route. It travels primarily east-west along the Columbia River from I-84 east of Boardman to US 12 in Washington, passing through Irrigon and Umatilla along the way. Locally, it is also known as 6th Street through Umatilla. 3rd Street and US 730 provide the only east-west connections between downtown Umatilla and the McNary area of Umatilla, making US 730 a vital connection to Umatilla. Within the study area, US 730 has signalized intersections at the southbound I-82 ramp terminal, Brownell Boulevard, and US 395.

12.3.431(4) US 395

US 395, the Umatilla-Stanfield Highway, is classified as a Statewide Highway by the Oregon Highway Plan. It is also a designated Freight Route and Truck Route. This highway provides a connection between US 730, the cities of Hermiston and Stanfield, and I-84.

12.3.431(5) Umatilla River Road

Umatilla River Road is a County roadway that runs along the Umatilla River and provides a connection between US 730 and Hermiston, essentially serving as a parallel route to US 395 through this area. It is a two-lane roadway with narrow shoulders that are partially paved and partially gravel. There are a handful of residential and farm properties that connect to Umatilla

River Road. It is classified as a minor arterial by the City of Umatilla Transportation System Plan (TSP, Reference 2). The TSP notes that this roadway is the first choice for many residents traveling between Umatilla and Hermiston.

12.3.431(6) Brownell Boulevard

Brownell Boulevard is a two-lane County roadway connecting US 730 to 3rd Street on the west side of I-82. East of I-82 (the roadway was divided due to the construction of I-82), Brownell Boulevard continues north from 3rd Street to a wildlife refuge on the Columbia River shore. All traffic from the Umatilla Port of Entry exits the facility onto Brownell Boulevard before returning to US 730 and I-82. It is classified as a minor arterial. On-street parking is permitted on Brownell Boulevard.

12.3.431(7) Power City Road

Power City Road provides access to the gravel quarries in the southeast quadrant of the I-82/US 730 interchange and to residential areas west of US 395. Access to US 730 is provided via a private driveway between I-82 and Scaplehorn Road. Power City Road is a two-lane roadway and is classified as a minor arterial east of Lind Road to US 395 and as a collector west of Lind Road. The roadway is not paved west of Lind Road.

12.3.431(8) Scaplehorn Road

Scaplehorn Road is a two-lane County roadway that provides access to several home sites and a number of undeveloped parcels that have the potential for commercial development. Scaplehorn Road is classified as a collector.

12.3.431(9) Lind Road

Lind Road parallels US 395 from US 730 to Bensel Road, which is located at the southern boundary of the IMSA. Lind Road is two-lane County roadway classified as a minor arterial from Bensel Road to Margaret Avenue, a collector from Margaret Avenue to the irrigation canal, and then as a local street from the canal to US 730.

12.3.431(10) Devore Road

Devore Road is a two-lane City roadway and is the northern approach of the US 730/US 395 intersection. Devore Road is a collector and provides access to 3rd Street and the McNary Dam.

12.3.431(11) Margaret Avenue

Margaret Avenue provides access to residential properties on the west side of US 395. It is two-lane roadway and is classified as a minor arterial.

12.3.431(12) Eisele Drive

Eisele Drive is a two-lane City roadway. It provides access to commercial properties and the Post Office south of US 730. Eisele Drive is also sometimes referred to as Draper Street.

12.3.432 Public Transportation Facilities

There are no fixed line public transportation facilities that operate within the IMSA. Regional dial-a-ride providers, such as RSVP of Eastern Oregon, provide limited service for elderly and/or disabled Umatilla residents. These providers are located outside of Umatilla. Intercity bus service is provided by Greyhound. Daily service is provided at a stop located at the US 730/Switzler Avenue intersection on an as-needed basis, meaning passengers waiting at the stop must flag-down the bus. There is no shelter or obvious markings at the stop location. The service provides connections to Portland and Pendleton, Oregon, and Tri-Cities, Washington.

12.3.433 Pedestrian and Bicycle Facilities

Sidewalks and shoulders make up the exclusive pedestrian and bicycle facilities inventory along the study roadways. Sidewalks are present on both sides of US 730 west of the Umatilla River and on the south side only from the bridge over the river to Brownell Boulevard. There is also a sidewalk on the west side of Umatilla River Road between US 730 and 7th Street. Generally, pedestrian activity in the study area is the highest on US 730 between the Umatilla River and Brownell Boulevard (it should be noted that pedestrian counts were not conducted on US 395 except at its intersection with US 730). The western driveway from the truck stop onto US 730 had the highest amount of pedestrian activity, with 27 pedestrians walking through the intersection from 6 a.m. to 10 p.m. The highest hour occurred from 2:00 to 3:00 p.m. when 6 pedestrians were observed.

Marked bicycle lanes are not present on any of the study roadways. Shoulders are provided along the majority of US 730 and US 395, as well as sections of Umatilla River Road and Devore Road, though they are often either narrow or gravel. The highest bicycle volumes were observed at the US 730/Brownell Boulevard intersection, where 12 bicycles passed through between 6 a.m. and 10 p.m. Six bicycles passed through US 730/Lind Road and the Port of Entry exit onto Brownell Boulevard as well. No bicycles were observed along US 395, during the count months.

12.3.440 Existing Traffic Volumes and Peak Hour Operations

Manual intersection turning movement counts were obtained from ODOT at each of the study intersections to assess the operational performance and characteristics within the study area. These counts were conducted on mid-week days in June and September 2009, as well as January 2010. A description of the analysis conducted with this data is summarized in the following sections.

12.3.441 Peak Hour Intersection Volumes

Turning movement counts at each intersection were recorded from 6:00 a.m. to 10:00 p.m. Because of the close proximity of the intersections, a system-wide peak hour is identified based on the volumes at all study intersections. The weekday p.m. peak hour in the IMSA occurs from 4:30–5:30 p.m. The turning movement volumes at each study intersection are balanced during this hour to account for the differences in data collection dates and locations where some data is missing.

12.3.441(1) Seasonal Adjustments

Following the methodology outlined by ODOT's Analysis Procedures Manual (APM, Reference 3), a seasonal adjustment factor was applied to the traffic counts collected for the existing conditions analysis in order to estimate 30th highest hour volumes. The counts were collected in June, September, and January, so seasonal adjustment factors were calculated for all three months. An exception to this is that volumes for I-82 were taken from ODOT automatic traffic recorder (ATR) #30-025, 0.58 mile south of the Washington border. These volumes are from the month of August, so no seasonal adjustment was necessary. There is not an ATR on a section of US 730 or US 395 in the vicinity of the study area that exhibits similar characteristics to the highways within the study area. In consultation with ODOT staff, ATR #05-006, located at milepost 53.33 on US 30 near Rainier, was determined to have the most similar characteristics to US 730 within the study area. The factors for US 730 and US 395 for June and September are 1.08, while the factor for January is 1.39. To ensure that these factors adequately represent the peak harvest period traffic volumes experienced in this area, they were compared to factors calculated from nearby ATR #30-025 on I-82. This comparison showed that the factors calculated from the US 30 ATR are similar to those that would be calculated from the I-82 ATR. Generally factors greater than 1.30 are to be avoided according to the APM; however, in this instance the January counts are balanced against neighboring June and September counts (e.g. if a seasonally adjusted January count is different than a seasonally adjusted June or September count, then the January count is corrected). Furthermore, the exiting volume from the Port of Entry was verified with Port of Entry staff to ensure it accurately reflects a peak volume experienced during the peak season.

Exhibits 12.3-2 through 12.3-4 illustrate the 16-hour volume peaking characteristics of the I-82 ramp traffic and I-82 through traffic. Exhibits 12.3-5 and 12.3-6 illustrate the 16-hour volume peaking characteristics of US 730 on either side of I-82. The volumes shown in these exhibits have been seasonally adjusted.

Traffic traveling to and from I-82 significantly influences traffic volumes on US 730. As the exhibits show, the peak hour volumes on each of the I-82 ramps are approximately 40-50% of the volumes on US 730 during that same period. Essentially, nearly half of the traffic on US 730 in the proximity of I-82 is traveling to or from the interstate.

Exhibits 12.3-2 and 12.3-3 show that the I-82 ramps each have a dominant traffic pattern that lasts throughout the day. Traffic volumes on the I-82 southbound off-ramp are significantly higher than volumes on the southbound on-ramp throughout the 16-hour period that counts were conducted. The exact reverse pattern occurs on the northbound ramps, where the off-ramp has significantly lower volumes than the on-ramp. These patterns are indicative of the region-wide, and even statewide, travel that is served by US 730 and US 395. Southbound traffic on I-82 that exits at this interchanges utilizes US 730 and US 395 to reach other regional (e.g. Hermiston and Irrigon) and statewide (e.g. I-84) destinations. Traffic entering northbound I-82 at this interchange reaches the interchange in a reverse pattern along these same routes.

Exhibit 12.3-2 Daily Traffic Volume Profile for I-82 Southbound Ramps at US 730

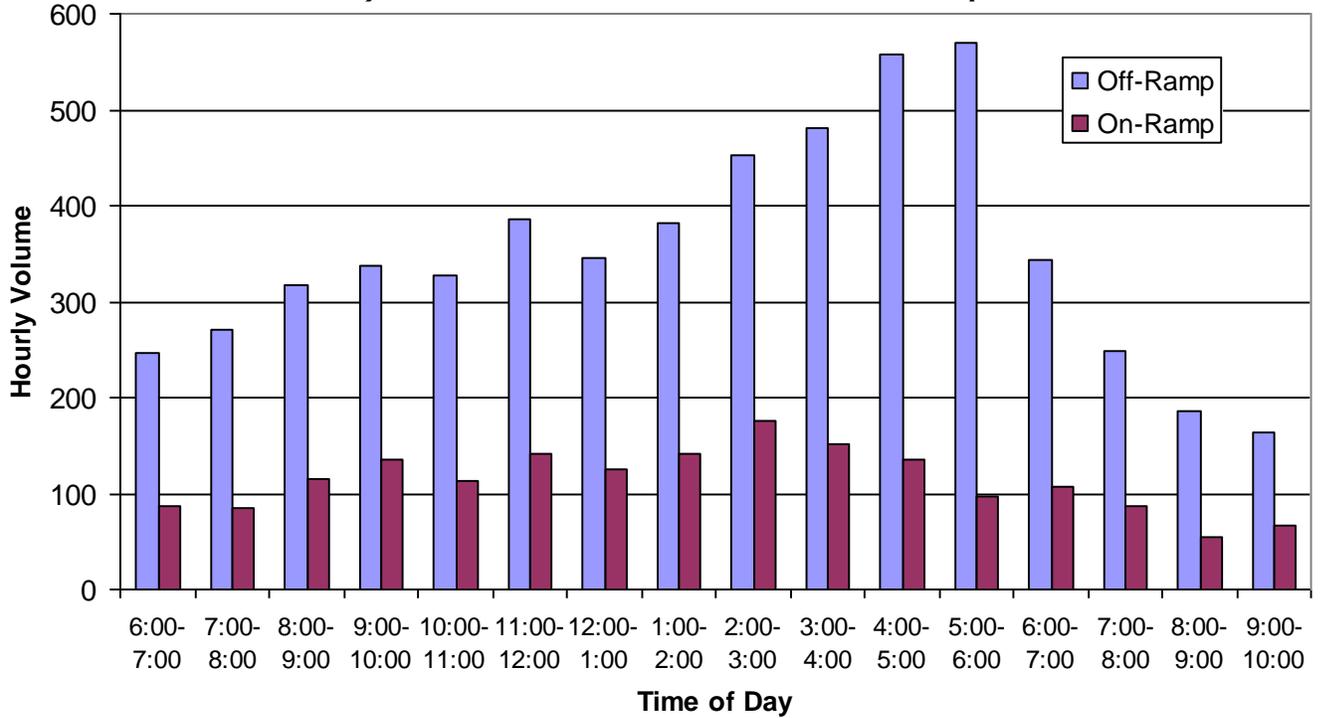


Exhibit 12.3-3 Daily Traffic Volume Profile for I-82 Northbound Ramps at US 730

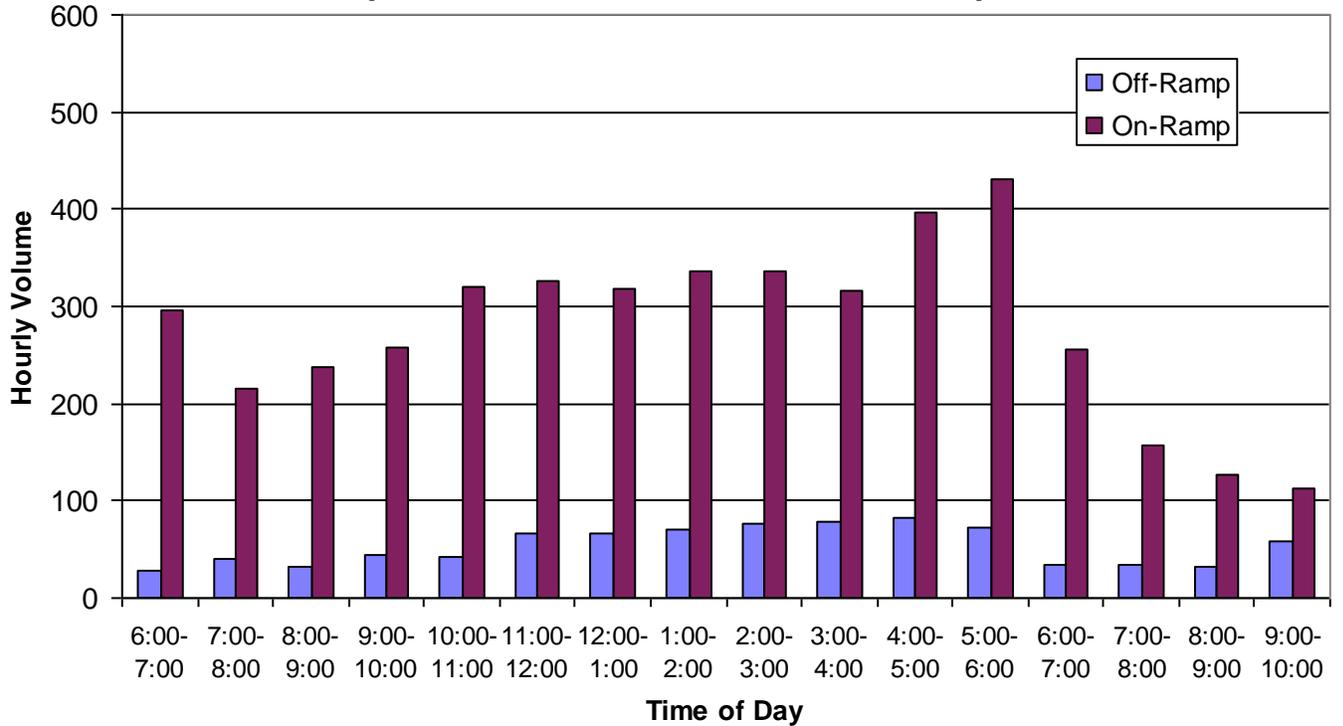


Exhibit 12.3-4 Daily Traffic Volume Profile for I-82 North of US 730

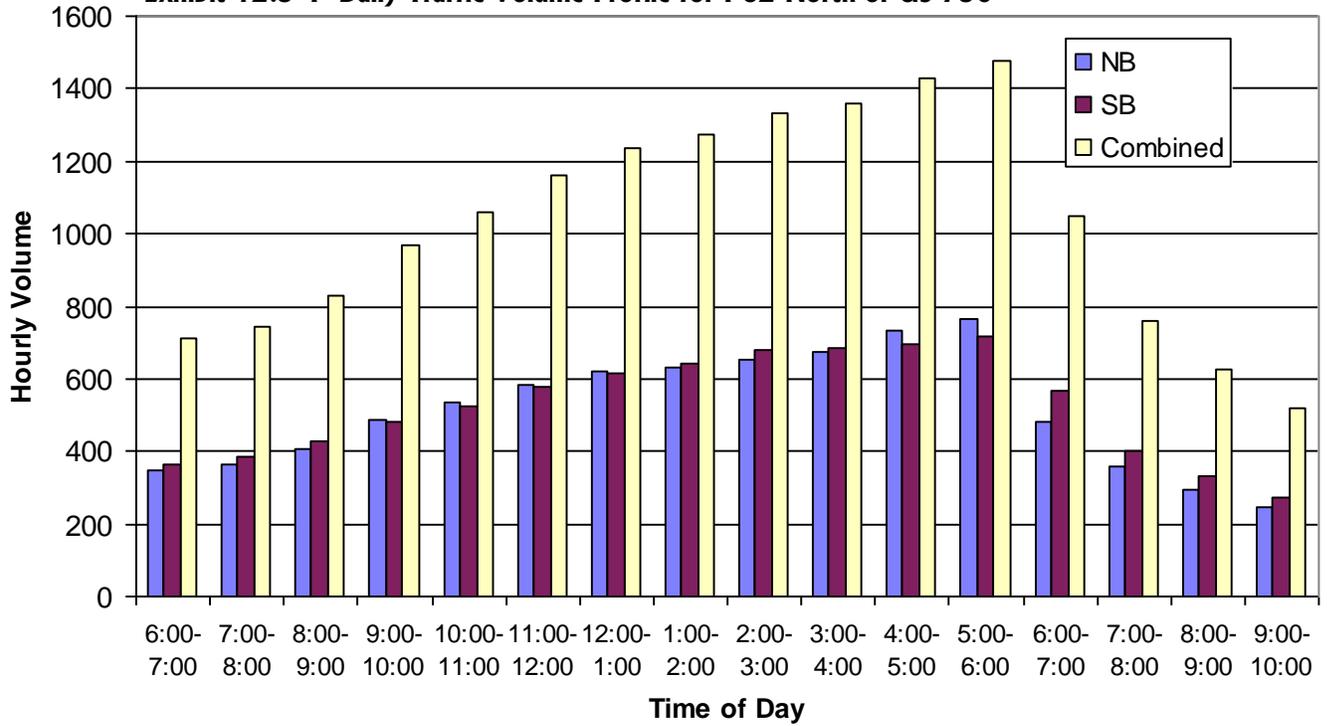
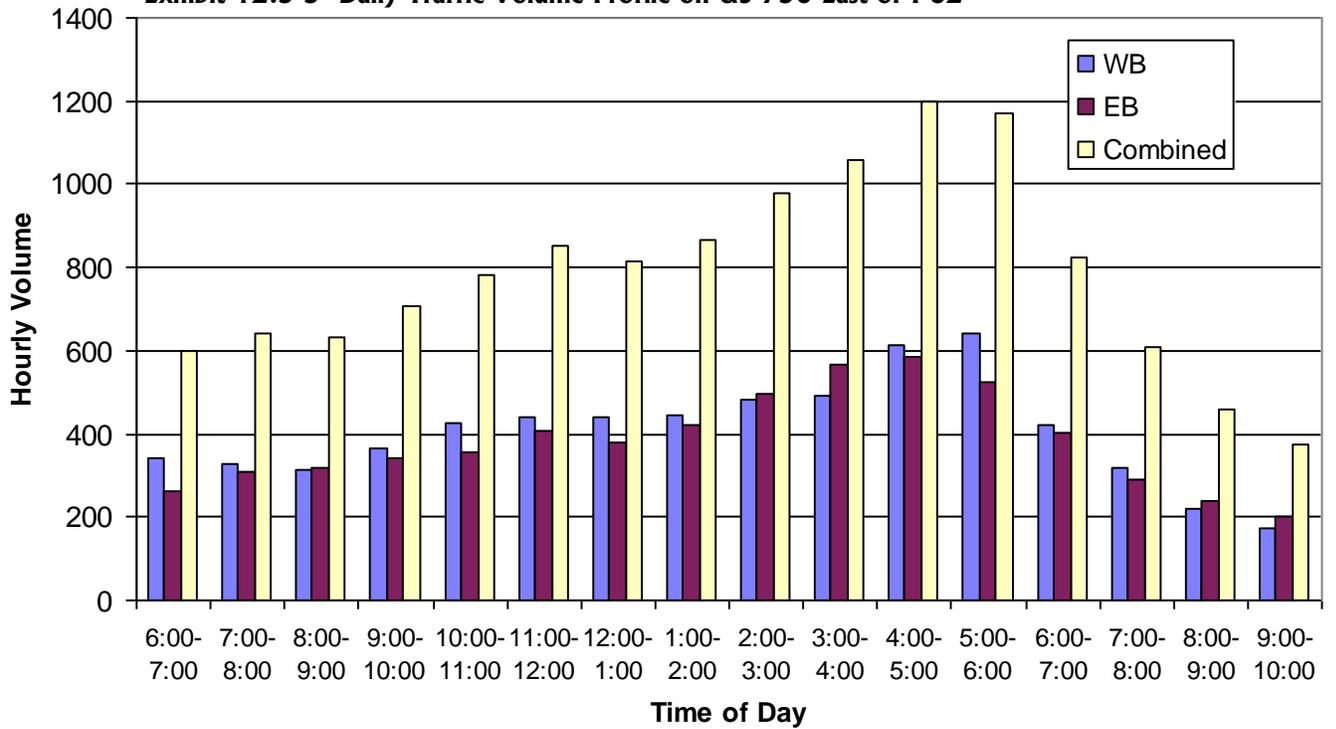
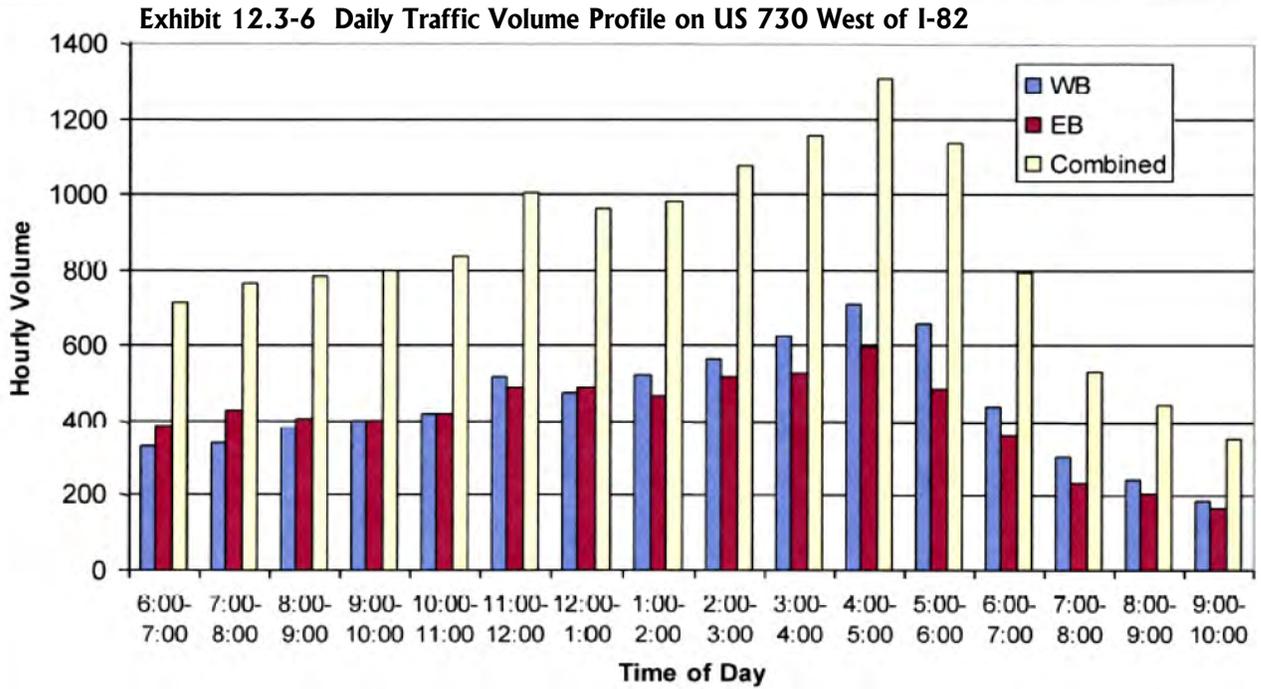
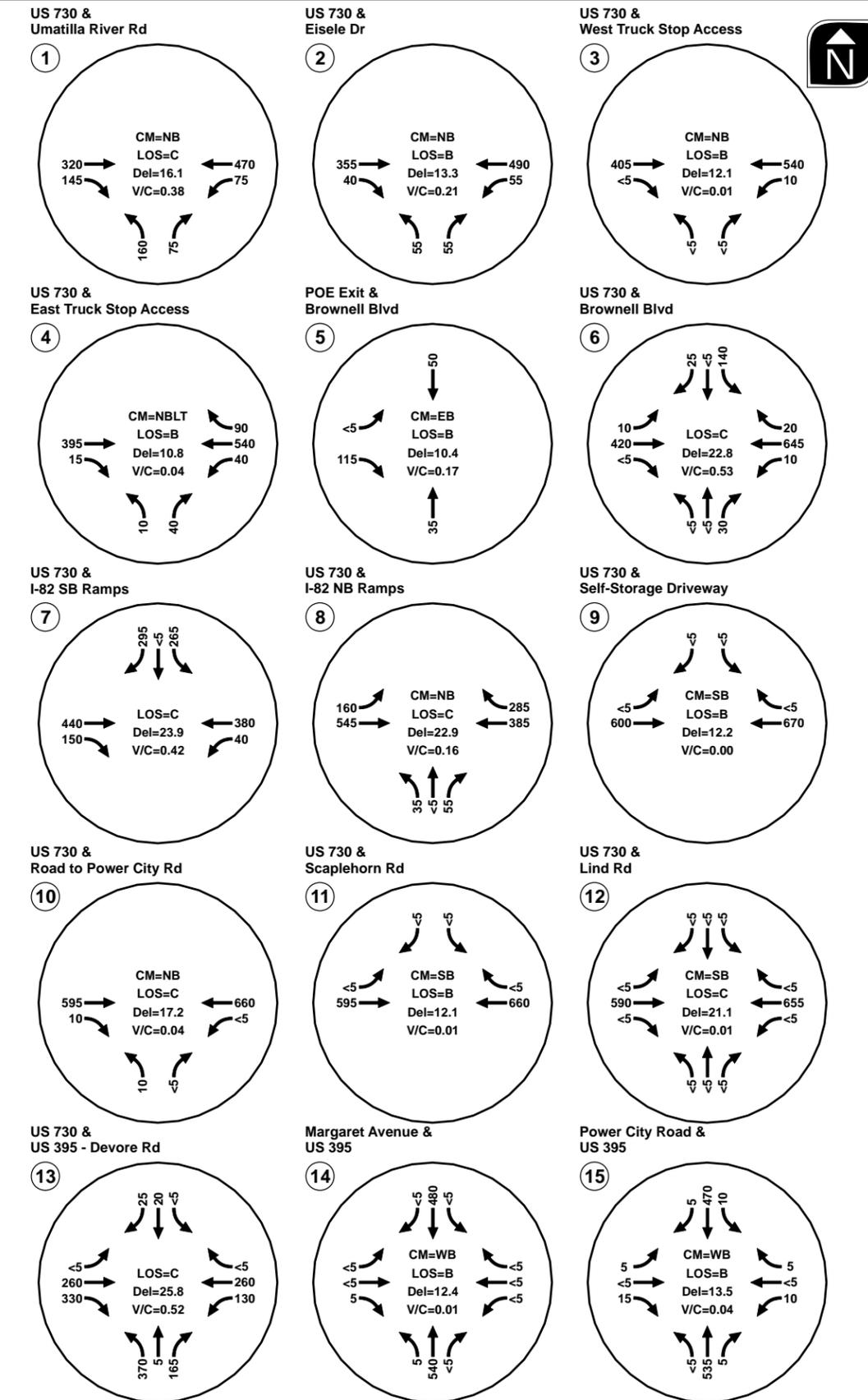


Exhibit 12.3-5 Daily Traffic Volume Profile on US 730 East of I-82





The weekday 30th highest hour intersection turning movement counts used for the existing conditions analysis are shown in *Figure 12.3-6*.



LEGEND

CM = CRITICAL MOVEMENT (UNSIGNALIZED)
 LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
 Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/CRITICAL MOVEMENT CONTROL DELAY (UNSIGNALIZED)
 V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

**EXISTING TRAFFIC CONDITIONS
 30TH HIGHEST HOUR
 UMATILLA, OREGON** FIGURE

H:\p\proj\10369 - I-82 US 730 IAMP\GIS\ExOps2.mxd

12.3.442 Existing Intersection Operations

All level of service analyses described in this analysis was performed in accordance with the procedures stated in the 2000 *Highway Capacity Manual* (Reference 4). The OHP sets operational standards based on volume-to-capacity (v/c) ratios for the interchange ramp terminals (v/c of 0.80 for the northbound ramp terminal and 0.85 for the southbound ramp terminal), intersections of US 730 (v/c of 0.85 between Brownell Boulevard and Sloan Avenue and v/c of 0.70 east of I-82), and US 395 (v/c of 0.70). These standards apply to the overall v/c ratio at the signalized intersections and to the state highway approaches at unsignalized intersections. The minor street approaches that are stop-controlled at signalized intersections have a standard of a v/c ratio of 0.90.

As shown in *Figure 12.3-6*, all study intersections currently meet applicable operation standards when evaluated in isolation. The existing conditions operations worksheets are provided in the *Technical Appendix*. While overall intersection standards are met, there are operational and queuing concerns associated with the closely spaced signalized intersections on US 730 at Brownell Boulevard and the I-82 Southbound ramp terminal.

12.3.442(1) Brownell Boulevard and I-82 Southbound Ramp Terminal Intersections

The US 730 signalized intersections of Brownell Boulevard and the US 730/I-82 Southbound ramp terminal are located within close proximity, with approximately 170 feet between them (only approximately 110 feet between the southbound right-turn from the I-82 ramp to Brownell Boulevard). The signals have been coordinated and operate using the same controller as one signal in an effort to improve intersection operations. Nevertheless, queuing problems associated with truck traffic accessing the Umatilla Port of Entry weigh station continue to occur at the two intersections. This condition varies by season due to increase of trucks during mid-summer and fall harvests. During these times, it is not uncommon for sudden spikes in truck traffic to cause significant queuing from the Port of Entry station back onto US 730 and further back onto the Interstate 82 SB off-ramp. These situations force the Port of Entry staff to close down their weigh scales for a short period in order for the back-up to dissipate. Additionally, many of these trucks exit the Port of Entry and return to I-82 SB (see Exhibit 12.3-7). Only a few trucks are able to make the maneuver from Brownell Boulevard onto I-82 SB per signal cycle; therefore, queues on Brownell Boulevard back up to the Port of Entry exit during these peak times.

Exhibit 12.3-7 Trucks Exiting the Port of Entry to Return to I-82 Southbound



12.3.442(2) Weigh-in-Motion

As was mentioned above, commercial truck traffic exiting I-82 to be weighed at the POE influences traffic operations in the interchange vicinity. Commercial truck traffic must be weighed when entering Oregon from another state. Historically, this has primarily occurred at weigh stations, which has required trucks to exit the mainline of the highway in order to be weighed. For trucks entering Oregon from Washington via I-82, this has occurred at the Umatilla POE. This process adds to the time it takes to transport goods, and in the case of Umatilla, contributes heavy truck traffic to the non-Interstate system. In order to facilitate this process and reduce its impacts, ODOT implemented the Oregon Green Light program in 1997. This program allows commercial truck drivers that register with the program and install the supplied transponder to weigh-in-motion on the roadway and bypass the off-system weigh station. Such a bypass exists on I-82 at Umatilla, which reduces the amount of truck traffic utilizing the POE. In September 2009, approximately 30,700 trucks were weighed at Umatilla, with approximately 14,300 trucks, or approximately 47% of all trucks, being granted a bypass by the Green Light system. These are trucks that would have otherwise had to stop at the Umatilla POE. Statewide, the use of the Oregon Green Light program is steadily increasing, with the number of trucks being granted bypasses increasing by nearly 20% from 2006 to 2009. ODOT staff expect use of the program to continue to rise until the industry is saturated.

12.3.443 Traffic Safety

The crash histories at the study area intersections and along the study area highways (i.e. I-82, US 730, and US 395) were reviewed in an effort to identify potential safety issues. Crash records were obtained from ODOT for the five-year period from January 1, 2004 through December 31, 2008. Table 12.3-2 contains the summary of reported crashes at these intersections and Table 12.3-3 contains the summary of reported crashes along the roadways.

Table 12.3-2 Intersection Crash Histories (January 1, 2004 through December 31, 2008)

Intersection	# of Crashes	Crash Rate ¹	Crash Type				Severity		
			Angle	Rear-End	Turning	Other	PDO	Injury	Fatality
I-82 SB Ramp Terminal/ US 730	11	0.3	2	8	0	1	10	1	0
I-82 NB Ramp Terminal/ US 730	2	0.1	2	0	0	0	0	2	0
Umatilla River Rd/ US 730	3	0.1	1	0	0	1	2	1	0
Eisele Dr/US 730	1	0.1	0	0	0	1	0	1	0
West Truck Stop Access/US 730	None Reported								
East Truck Stop Access/US 730	None Reported								
Brownell Blvd/US 730	8	0.3	1	5	1	1	4	4	0
Self Storage Driveway/US 730	None Reported								
Road to Power City Road/US 730	None Reported								
Scaplehorn Rd/US 730	None Reported								
Lind Rd/US 730	None Reported								
US 395-Devore Rd/ US 730	11	0.4	5	3	2	1	7	4	0
Margaret Ave/US 395	None Reported								
Power City Rd/US 395	2	0.1	0	0	1	1	1	1	0

¹Crash rate is expressed in terms of crashes per million entering vehicles

Table 12.3-3 Roadway Segment Crash Histories (January 1, 2004 through December 31, 2008)

Roadway	# of Crashes	Crash Rate ¹	Crash Type					Severity		
			Angle/ Turning	Rear-End	Sideswipe	Fixed Object	Other	PDO	Injury	Fatality
I-82: WA State Line –Umatilla River Bridge	23	0.37	1	0	1	13	8	10	12	1
US 730: Sloan Ave – Columbia Blvd	46	1.32	14	23	4	1	4	29	17	0
US 395: US 730 – Union St	15	0.76	4	4	1	3	3	11	4	0

¹Crash rate is expressed in terms of crashes per million entering vehicles

The US 395-Devore Rd/US 730 intersection exhibits the highest crash rate in Table 12.3-2. Seven of the eleven reported crashes are angle or turning crashes. The majority of these seven crashes involve the southern US 395 approach. This approach is controlled using split-phasing, so no other movements on the other approaches at the intersection are permitted during the same phase. Field observations did not reveal any notable sight distance deficiencies. A more detailed

review of the crash data at this intersection did not reveal any weather-related or time of day patterns. That the southern US 395 approach is involved in the majority of the turning and angle crashes reported at this intersection is consistent with the higher traffic volumes and higher speeds on US 395.

The US 730/I-82 Southbound ramp terminal also had 11 reported crashes. The predominant crash pattern at this intersection is rear-end crashes. Five of the rear-end crashes occurred on the westbound approach, while the other three occurred on the southbound off-ramp. These patterns are fairly typical at signalized intersections, especially where traffic on certain approaches has been traveling uncontrolled for some distance (e.g. on I-82 or US 730 between US 395 and I-82). It is also worth noting that the I-82 bridge over US 730 obstructs the view of the traffic signal heads at this intersection for westbound traffic. Motorists traveling westbound on US 730 are generally not able to see the signal heads until US 730 begins to flatten just east of the northbound ramp terminals. This may be a contributing factor to rear-end crashes on the westbound approach.

Vehicular queues on the westbound approach at the US 730/I-82 Southbound ramp terminal do sometimes back up in front of the northbound ramp terminals during peak periods. The crash data at this intersection does not indicate that this is currently causing a significant number of crashes. However, this may become more of a safety issue as traffic volumes increase, and in turn, so do these instances of blockage.

As Table 12.3-3 shows, US 730 has the highest crash rate of the roadway segments within the study area. This is likely due to the greater presence of signalized intersections and driveways on this roadway compared to other two roadways. Rear-end and angle/turning crashes are the most common crash type along US 730, and the majority of these crashes were reported at one of the three signalized intersections. The fatality crash on I-82 occurred when the driver of a passenger car traveling northbound overturned. According to the crash report, the driver was traveling too fast for conditions, over-corrected, and skidded off the road. Pavement conditions were dry at the time, though it was at night. No other vehicles were involved in this crash.

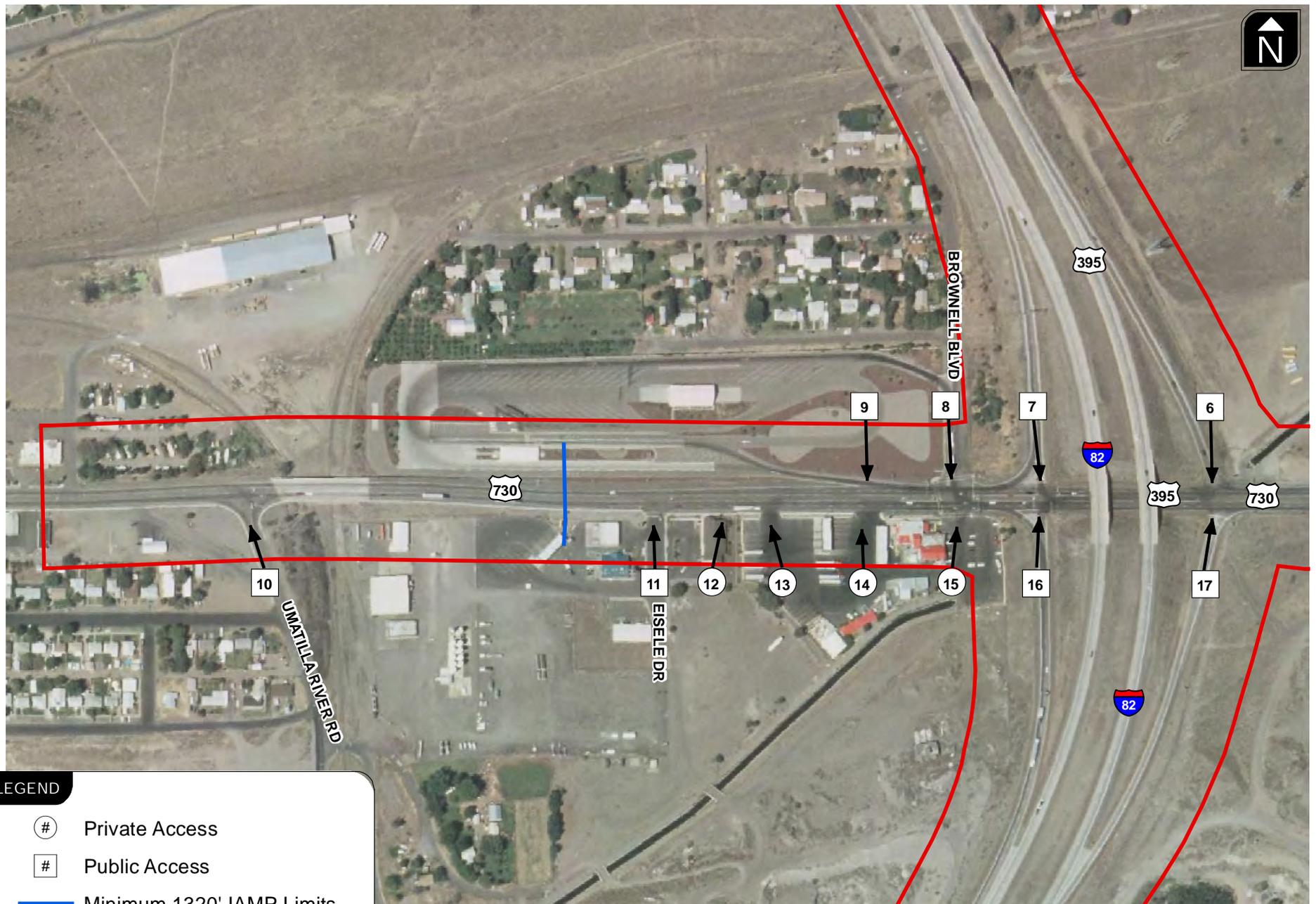
12.3.450 Existing Roadway Access Conditions

Along the US 730 study corridor, there is no existing access control. There are currently 21 public and private access points (excluding the interchange ramp terminals) located within the US 730 Operations and Access Study Area (roughly ½ mile to the east and west of the interchange). Of these access points, 8 are located west of the interchange, while the remaining 13 access points are located east of the interchange. Access is somewhat limited on the west side by the presence of the Umatilla River, the Umatilla Port of Entry, which occupies the entire northern frontage along US 730 between Brownell Boulevard and the river, and the railroad tracks. *Figures 12.3-7 and 12.3-8* illustrate the location and type (public or private) of each of the access locations within the Operations and Access Study Area. Table 12.3-4 summarizes the tax lots and existing businesses served by each of the access points as well as other miscellaneous descriptive information such as driveway width, mile point location, and permit number (if applicable).

Oregon Administrative Rule 734, Division 51 and the Oregon Highway Plan (OHP) identify ODOT's access management standards within the vicinity of interchanges. Based on an outright application of the standards, no full public or private access is allowed within 1,320 feet (¼ mile) from the ramp terminals. *Figures 12.3-7 and 12.3-8* show the 1,320 feet access control area as measured from the Interstate-82 ramp terminal intersections. As shown, 6 private and 4 public accesses are located within the 1,320-foot control area on either side of the interchange. The presence of the signalized Brownell Boulevard intersection located less than 200 feet west of the southbound ramp terminal, along with the existing private driveways and Port of Entry entrance, will be important access planning elements to be explored as part of future alternatives analyses.

Table 12.3-4 EXISTING PUBLIC/PRIVATE ACCESS APPROACH INVENTORY

Figure ID	Roadway	Approach Type	Side of Roadway	Serves Tax Lot Number	Property Owner/ Business Name	Mile Point	Approach Width	Permitted?/ Permit #	Date of Permit
1	US 730	Public	North	-	DeVore Road	184.87	83'	19417	1/14/1972
2	US 730	Private	North	5N 28 16AA, 1100, 1101, 1102, 1103	Residential	184.779	16'	Not Permitted	-
3	US 730	Private	North	5N 28 16AA, 102	Residential	184.695	25'	Not Permitted	-
4	US 730	Public	North	-	Scaplehorn Road	184.32	67'	Not Permitted	-
5	US 730	Private	North	5N 28 16 , 700, 800, 900, 1000, 1100	Commercial (Umatilla Self Storage)	184.248	38'	22356	4/16/1976
6	US 730	Public	North	-	I-82 NB Ramp Terminal (On-ramp)	184.17		-	-
7	US 730	Public	North	-	I-82 SB Ramp Terminal (Off-ramp)	184.08		-	-
8	US 730	Public	North	-	Brownell Boulevard	184.03	111'	Not Permitted	-
9	US 730	Public	North	5N 28 16BC, 100	Port of Entry Entrance	184.01	130'	Not Permitted	-
10	US 730	Public	South	-	Umatilla River Road	183.66	105'	Not Permitted	-
11	US 730	Public	South	-	Eisele Drive	183.88	50'	Not Permitted	-
12	US 730	Private	South	5N 28 16BC, 500	Commercial (US Post Office Employee Entrance)	183.92	18'	12A35034	10/01/1993
13	US 730	Private	South	5N 28 16, 1300, 1400	Commercial (Crossroads Truck Stop)	183.94	40'	29165	5/10/1986
14	US 730	Private	South	5N 28 16, 1300, 1400	Commercial (Crossroads Truck Stop)	183.991	67'	29165	5/10/1986
15	US 730	Private	South	5N 28 16, 1500	Commercial (Crossroads Truck Stop)	184.03	65'	Not Permitted	-
16	US 730	Public	South	-	I-82 SB Ramp Terminal (On-ramp)	184.08	-	-	-
17	US 730	Public	South	-	I-82 NB Ramp Terminal (Off-ramp)	184.17	-	-	-
18	US 730	Private	South	5N 28 16, 1700	Commercial (Road to Rock Pit)	184.29	44'	Not Permitted	-
19	US 730	Private	South	5N 28 16AD, 400	ODOT Stockpile site	184.692	23'	Not Permitted	-
20	US 730	Private	South	5N 28 16AD, 200	Commercial (closed fruit stand)	184.696	20'	Not Permitted	-
21	US 730	Private	South	5N 28 16AD, 200	Commercial (closed fruit stand)	184.731	48'	Not Permitted	-
22	US 730	Private	South	5N 28 16AD, 100	Residence	184.771	29'	Not Permitted	-
23	US 730	Public	South	-	Lind Road	184.78	29'	Not Permitted	-
24	US 730	Public	South	-	Connection to US 395	184.81	-	Not Permitted	-
25	US 730	Public	South	-	US 395	184.87	-	Not Permitted	-



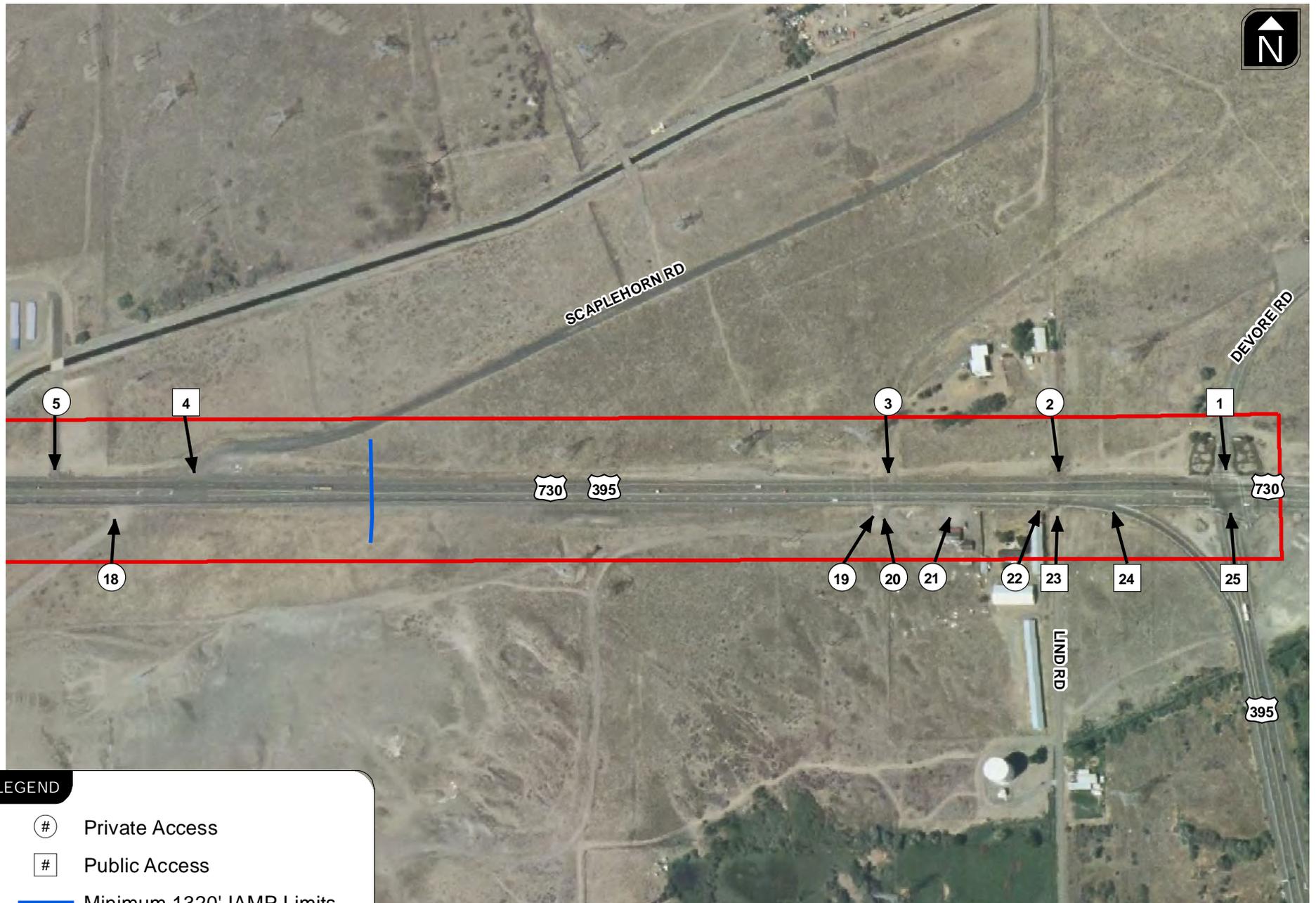
LEGEND

- # Private Access
- # Public Access
- Minimum 1320' IAMP Limits
- ▭ Operations/Access Study Area

ACCESS INVENTORY WEST OF I-82 AND I-82 RAMPS UMATILLA, OREGON

FIGURE

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LEGEND

- # Private Access
- # Public Access
- Minimum 1320' IAMP Limits
- Operations/Access Study Area

ACCESS INVENTORY EAST OF I-82 UMATILLA, OREGON **FIGURE**

12.3.460 Existing Roadway Deficiencies

No significant existing roadway deficiencies were identified within the IMSA along the paved sections of roadway.

12.3.470 Environment

The existing environmental conditions and potential issues were identified. The following is a summary of potential environmental issues, permits, and additional actions that may be required as the project moves forward. A more detailed description of these items and the baseline conditions may be found in the Technical Appendix.

12.3.470(1) Clean Water Act Section 404/Wetlands/Waters of US

A Section 404 Permit and a Removal/Fill Permit may be needed if the project crosses the Brownell Ditch or impacts the wetlands on the north end of the IAMP study area. Clear-spanning the Brownell Ditch would be the preferred option to avoid impacts and eliminate the need for the permits.

12.3.470(2) Cultural Resources

The SHPO records search revealed nearly 30 cultural resources sites within a 1-mile radius of the IAMP study area. Locations of known cultural resources sites, along with coordination with the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) should be included as part of the alternative design process to avoid known sites to the extent possible.

12.3.470(3) Section 4(f)

Given the amount of cultural resources and the Lewis and Clark Commemorative Trail within and adjacent to the IAMP study area, a Section 4(f) analysis will be required as part of the environmental review for the project if these facilities are impacted. These resources should be considered during the alternative design to avoid impacting them to the extent possible.

12.3.470(4) HAZMAT

There is a HAZMAT site in the southeast quadrant of the US 730/US 395-Devore Road intersection. This property and the potential issues associated with impacting it should be taken into consideration when designing any projects for this intersection.

12.3.480 Summary

The primary roadways within the Interchange Management Study Area (IMSA) include Interstate-82, US 730 and US 395.

All of the study intersections meet their respective ODOT mobility standard; however, the primary issue in the area is truck traffic circulation to and from the Umatilla Port of Entry. For inbound truck traffic, the problem is the close spacing of the Brownell Boulevard and I-82 Southbound terminal signalized intersections and the Umatilla Port of Entry entrance. Queues back up from the Port of Entry onto US 730 and the I-82 SB off-ramp, which forces the Port of

Entry to close its weigh scales to allow the queue to clear. Outbound truck traffic queues up on Brownell Boulevard back to the Port of Entry exit during peak times, as well.

There are no identified safety issues within the study area based on a review of the most recent five years of available crash data. However, it has been noted that there is a sight line issue for vehicles traveling westbound on US 730 and the ability to see in advance the traffic signal heads at the SB ramp terminal.

Pedestrian and bicycle facilities are limited in the study area.

There are currently 21 access points located within the Operations and Access Study Area (roughly ½-mile to the north and south of the interchange) along US 730. The existing access points are a combination of public and private approaches.

ODOT's access spacing standard within the vicinity of the interchange is 1,320 feet (¼-mile) from the ramp terminals to any type of access (partial or full). Within this ¼-mile control area there are 6 private access points and 4 public accesses.

Potential impacts to cultural resources and the Brownell Ditch will need to be identified as the project moves forward.

12.3.500 2030 FUTURE CONDITIONS

This section documents the future land use as well as the forecast traffic operations in the vicinity of the I-82/US 730 interchange. The future traffic projections are based on anticipated future land uses. Future land use information was determined through working with the City. Two future land use scenarios were developed for the purposes of projecting traffic conditions, in addition to the assumed regional growth outside of the Interchange Management Study Area (IMSA). The first land use scenario (Land Use Scenario #1) focuses on a reasonable full build-out of all vacant or re-developable land within the study area using the current City of Umatilla and Umatilla County zoning. Recognizing the potential for future City annexation and land use intensification in various parts of the study area, a second future sensitivity land use scenario (Land Use Scenario #2) was developed for informational purposes and to help the City establish future annexation thresholds. Land Use Scenario #1 is described and analyzed in this section. Information on and analysis of Land Use Scenario #2 can be found in the Technical Appendix.

12.3.510 Future Land Uses

The analysis of future land uses within the vicinity of the I-82 / US 730 interchange was focused on parcels that are expected to have development or redevelopment potential that would generate traffic within the I-82/US 730 interchange study area. The IMSA defined in *Figure 12.3-2* includes land both inside and outside the city limits and contains a variety of land uses, including commercial, residential, light industrial, general rural, and exclusive farm use.

12.3.511 Sub-Area Analysis

For the purposes of forecasting future development potential and access alternatives, the study area has been divided into six sub-areas, as illustrated in *Figure 12.3-9*. The sub-areas were

defined based on current zoning (shown in *Figure 12.3-10*), the travel-shed served, and point of primary access to the regional transportation network.

12.3.511(1) Sub-Area “A”

Sub-area “A” is located in the northwest corner of the IMSA and is bordered by I-82 to the east, US 730 to the south, the Columbia River to the north, and Switzler Avenue to the west. The majority of land within Sub-Area “A” is within the City of Umatilla city limits and is zoned R-2 (Multi-Family Residential), M-1 (Light Industrial), or GC (General Commercial). A small section of land that is Umatilla County zoned R-3 (Multi-Family Residential) resides just north of the GC zone. Vacant/redevelopable land in Sub-Area “A” is limited to the R-2 and M-1 zones.

12.3.511(2) Sub-Area “B”

Sub-Area “B” is located in the southwest corner of the IMSA and is bordered by I-82 to the east, US 730 to the north, and Umatilla River Road to the south and west. With the exception of City zoned GC and M-1 land along the US 730 and Umatilla River Road corridors, the majority of the remaining land in Sub-Area “B” is Umatilla County zoned F-2 (General Rural).

12.3.511(3) Sub-Area “C”

Sub-Area “C” is located in the northeast corner of the IMSA and is bordered by US 730 to the south, I-82 to the west, the Columbia River to the north, and the McNary residential area to the east. The vast majority of Sub-Area “C” is comprised of Umatilla County zoned F-1 (Exclusive Farm Use) land. Some smaller pockets of City zoned R-1 (Single-Family Residential), R-2, and GC land exists along the US 730 corridor and along Scaplehorn Road.

12.3.511(4) Sub-Area “D”

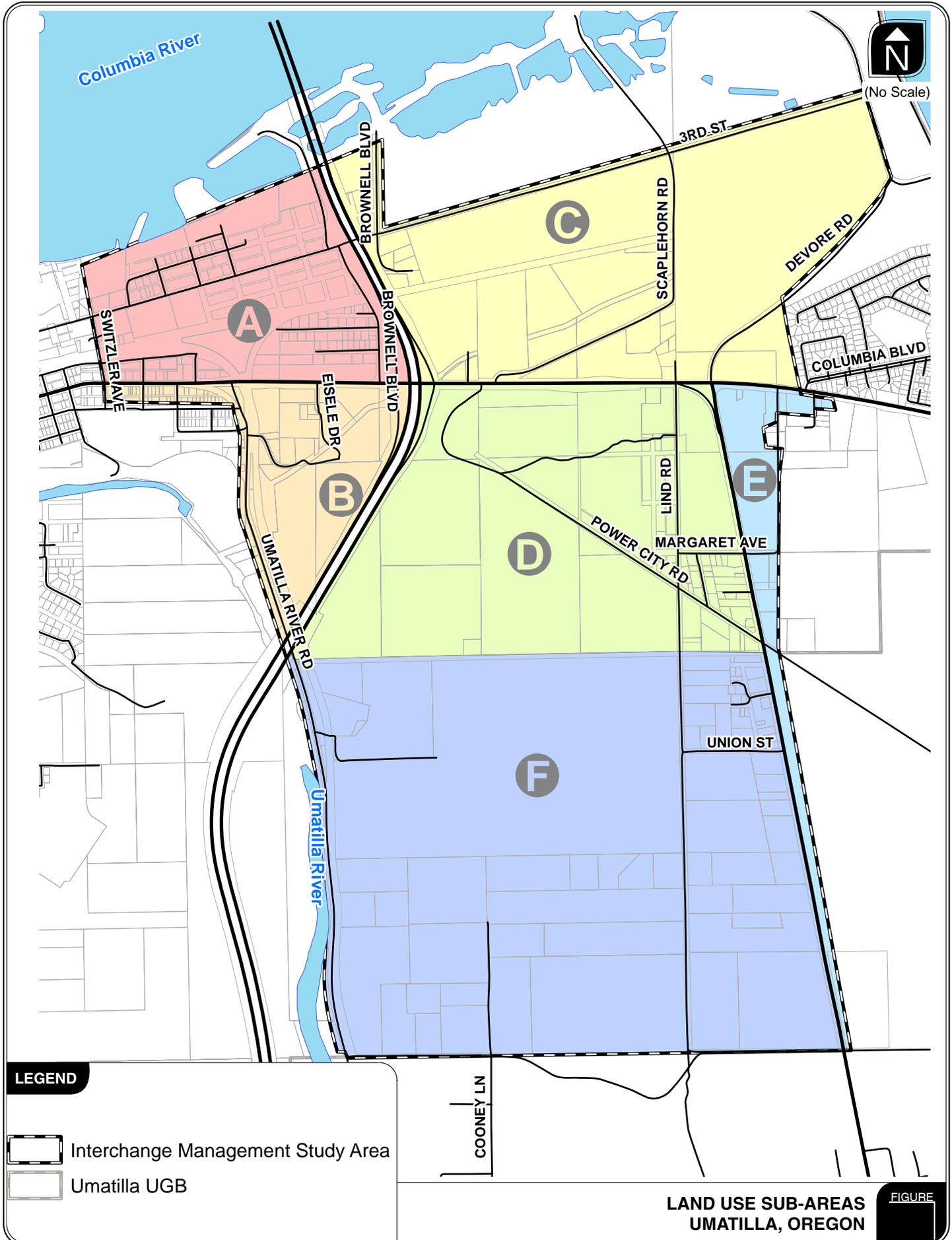
Sub-Area “D” is located in the southeast corner of the IMSA and is bordered by US 730 to the north, I-82 to the west, US 395 to the east, and Union Street to the south. Almost all of the land within Sub-Area “D” is outside the Umatilla City limits and is zoned primarily under the Umatilla County F-1, M-1, M-2, and C-1 (Commercial) zones.

12.3.511(5) Sub-Area “E”

Sub-Area “E” is located in the southeast quadrant of the US 730/US 395 intersection. Known locally as Buck’s Corner, all of the land within this Sub-Area is located in the Umatilla City limits and is zoned GC.

12.3.511(6) Sub-Area “F”

Sub-Area “F” is located directly south of Sub-Area “D” and is bordered on the west by Umatilla River Road, on the south by Bensel Road, and on the east by US 395. Much of this land is Umatilla County zoned F-1 and F-2 and is not likely to develop or redevelop within the timeframe of this study. Therefore no additional development or redevelopment was examined in this sub-area.

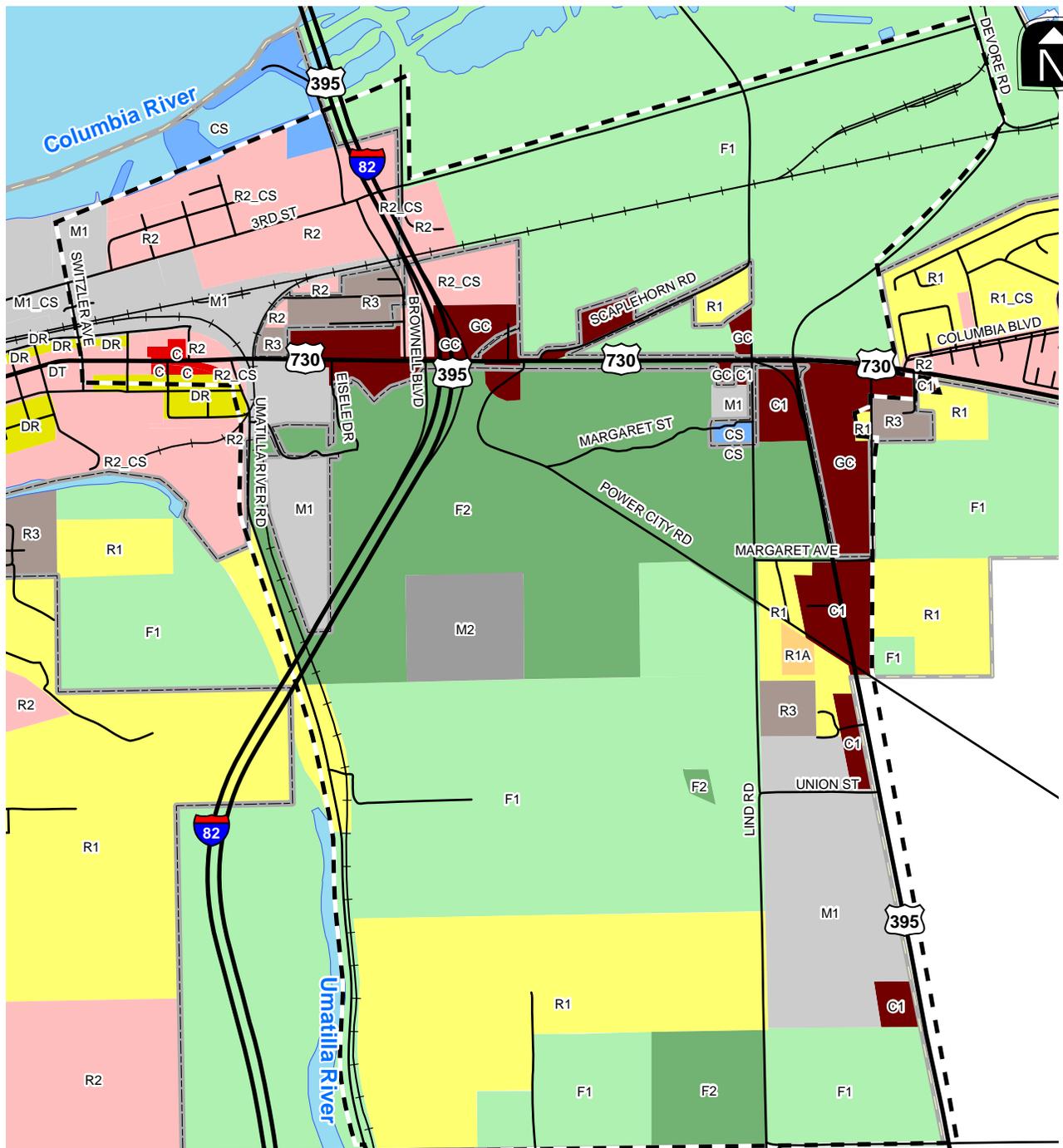


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LEGEND

- Interchange Management Study Area
- Umatilla UGB

**LAND USE SUB-AREAS
UMATILLA, OREGON** **FIGURE**



LEGEND

- Land Use Study Area
- Umatilla UGB
- Umatilla City Limits
- Zone**
- Commercial (C)
- Community Service (CS)
- Downtown Residential (DR)
- Downtown Transitional (DT)
- Exclusive Farm Use (F1)
- General Commercial (C1, GC)
- General Rural (F2)
- Heavy Industrial (M2)
- Light Industrial (M1)
- Residential, Multi-Family - Apartments (R3)
- Residential, Multi-Family (R2)
- Single Family Residential (R1)
- Two Acre Residential (R1A)

STUDY AREA ZONING UMATILLA, OREGON FIGURE

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12.3.520 Future Traffic Conditions

Based on the potential levels of development and redevelopment in the land use sub-areas described above, and factoring in regional growth from outside the IMSA, future year 2030 traffic conditions were estimated along the study area roadways.

12.3.521 Year 2030 No-Build Traffic Volumes Forecast Methodology

Year 2030 “No-Build” traffic volume forecasts for intersection turning movements and street segments were developed in order to analyze the effects of traffic growth on the I-82 / US 730 interchange and the surrounding transportation system. The year 2030 No-Build scenario was developed based on the currently adopted City of Umatilla and Umatilla County comprehensive plans. The remainder of this section describes the methodology and assumptions used to develop year 2030 forecasts.

Future year 2030 no-build traffic volumes were developed by considering the following traffic growth through year 2030:

- Future traffic growth related to development and redevelopment of land in the vicinity of the I-82/US 730 Interchange (including sub-areas ”A” through “E”).
- Future traffic related to regional growth within the larger context of the City of Umatilla, Umatilla County, and along the US 730, US 395, and I-82 corridors.

The specific assumptions used in each of these traffic growth components are summarized below.

12.3.521(1) Development and Redevelopment Traffic

Based on a detailed review of the study area and conversations with City staff, Table 12.3-5 identifies the estimated re-developable acreage in each sub-area, its corresponding zoning, and the primary points of access to the regional transportation network.

As shown in Table 12.3-5, portions of sub-areas ‘A’, ‘C’, and ‘E’ have the greatest potential for development and each gain access to the I-82/US 730 interchange via direct or indirect connections to US 730. To account for local traffic growth attributed to the development in these sub-areas, the project team assumed future land uses based on current zoning and calculated the reasonable build-out trip-generating potential of the properties.

The reasonable build-out trip-generation potential of each parcel was estimated using a two-step approach. Step one included reducing the developable or re-developable area (summarized in Table 12.3-5) by 20 percent to account for utility and roadway right-of-way. Step two applied a Floor Area Ratio (FAR) of 0.25 for commercial zones and 0.40 for industrial lands. Table 12.3-6 provides a summary of the development assumed to occur under this process.

Table 12.3-5 Future Conditions Sub-Area Analysis Zones

Sub-area	Zoning Classifications	Estimated Re-Developable Land (Acres)	Non-Buildable (Acres)	Net Total Re-Developable Land (Acres)	Primary Access
A	GC (City)	0 ¹	0	0	
	R-2 (City)	31.00	0	31.00	Brownell Boulevard and 3 rd Street
	M-1 (City)	25.63	12.15 ³	13.48	3 rd Street
	R-3 (County)	0 ²	0	0	
B	GC (City)	0 ²	0	0	
	M-1 (City)	0 ²	0	0	
	F-2 (County)	57.04	49.42 ⁴	7.62	Eisele Drive
C	GC (City)	15.10	9.00 ²	6.10	US 730 and Scaplehorn Road
	R-2 (City)	13.09	10.90 ⁵	2.19	3 rd Street
	R-1 (City)	6.40	0	6.40	Scaplehorn Road
	F-1 (County)	453.20	453.20 ²	0	
D	F-1 (County)	34.30	0	34.30	Power City Road & Lind Road
	F-2 (County)	175.50	175.50 ^{2,5}	0	
	M-1 (County)	4.80	4.80 ²	0	
	M-2 (County)	35.70	35.70 ⁶	0	Power City Road & Margaret St
	C-1 (County)	7.80	0	7.80	Lind Road
E	GC (City)	27.00	10.00 ³	17.00	US 730 and US 395
Total		886.56	760.67	125.89	

¹ This land is currently occupied by the Port of Entry.
² Land is currently built out or owned/occupied by an existing use that is likely to remain in the long-term.
³ Portion of the land is likely constrained by geographic, environmental, or cultural resources.
⁴ Future intensification of development likely inhibited due to lack of access across irrigation canal.
⁵ Future development likely limited by presence of utility towers and power line easements.
⁶ Future intensification of development likely inhibited due to lack of water infrastructure.

Based on the information contained in Table 12.3-6, the trip generation potential for each of the land uses was calculated for the weekday p.m. peak hour using the 8th Edition of *Trip Generation*, published by the Institute of Transportation Engineers (ITE, Reference 5). The total trip generation potential of the land use scenario shown above was estimated to be 832 total net new trip ends (371 incoming and 461 outgoing) during the weekday p.m. peak hour. The Technical Appendix contains the estimates of net new trips generated by each sub-area. The assumed distribution patterns of trips generated within each sub-area were based on the existing zoning, existing travel patterns, and relative attractions within the overall study area.

12.3.521(2) *Background Traffic Growth*

Proposed annual growth rates were determined for the various roadways within the study area. The proposed annual growth rates were determined based on a review of ODOT’s Future Year Volume Tables, historical ADT counts, and future development assumptions within the study area. The growth was applied to the existing traffic volumes shown in the *Existing Transportation/Land Use Conditions* section to obtain future year forecast volumes.

Table 12.3-6 I-82 / US 730 Development Assumptions

Land Use	Total Re-Developable Land (Acres)	Industrial or Commercial				Residential	
		Utilities and ROW (20%)	Net Re-developable Land Area (Acres)	FAR	Size (1,000 Sq. Feet GLA)	Allowable Density	Units
<i>Sub-Area "A"</i>							
R-2 Multi-Family	31.00					1	31-acre Athletic Field Complex ¹
M-1 Light Industrial	13.48	(2.70)	10.78	0.40	188		
<i>Sub-Area "B"</i>							
F-2 (County General Rural)	7.62					0.05 unit/acre	10,000 of Industrial Storage Yard ²
<i>Sub-Area "C"</i>							
GC General Commercial	6.10	(1.22)	4.88	0.25	53		
R-2 Multi-Family Residential	2.19					12.4 units/acre	27 Apartments
R-1 Single Family Residential	6.40					5.4 units/acre	34 homes
<i>Sub-Area "D"</i>							
F-1 Exclusive Farm use	34.30					0.05 units/acre	2 homes
C-1 General Commercial	7.80	(1.56)	6.24	0.25	68		
<i>Sub-Area "E"</i>							
GC General Commercial	17.00	(3.40)	13.60	0.25	148		
Total	125.89	(8.88)	35.50		457		

¹ Although zoned for multi-family residential, discussions with City staff concluded that this site is likely better suited for recreational athletic fields which is an allowed conditional use under the R-2 zoning.

² Given the location of the F-2 zoned land near the US 730 corridor, it was assumed that the site is less desirable for residential uses and more appropriate for a higher intensive use such as an industrial storage yard.

12.3.521(3) US 730 & US 395

An annual Local Growth rate was applied to the existing through volumes along US 730, all turning movements at the I-82 ramp terminals, and turning movements to/from US 395. Based on a review of ODOT’s Future Volume Tables (which are based on historic traffic volumes), a Local Growth rate was estimated for the I-82/US 730 IMSA based on three data point locations along the US 730 corridor as shown in Table 12.3-7. Upon reviewing the data points, the project team and ODOT staff concluded that an annual growth rate of 1.3% was the most reasonable and conservative estimate for the study corridor given the degree of variation in the other two data points. Therefore, through traffic volumes on US 730 from 2009 were increased by 27% to the forecast year 2030.

Table 12.3-7 Background Growth Rate Calculations on US 730

Mile Point	Location	Average Annual Daily Traffic		R-Squared Value	Per Year Growth Rate (2008-2028) ¹
		2008	2028		
183.63	0.50 mile west of I-82	8,300	9,600	0.58	0.8%
184.63	0.50 mile east of I-82	10,100	12,800	0.76	1.3%
184.97	0.10 mile east of US 395	7,700	10,100	0.89	1.6%

¹ Per Year Growth Rate = [(2028 AADT– 2008 AADT) / (2008 AADT)] / (2028 – 2008)

12.3.521(4) I-82

The I-82 Traffic Growth rate was applied to the existing through traffic volumes to forecast future traffic projections for I-82. A review of Traffic Volume Tables on I-82 north and south of the I-82 / US 730 interchange indicates that the interstate traffic volume have been increasing over the past 10 years. Based on a review of ODOT’s Future Volume Tables (which are based on historic traffic volumes), a background growth rate was estimated for I-82 near the US 730 interchange. Two data points on I-82 were used in the calculation, one on each side of the interchange. To determine a growth rate estimate, volumes for the year 2008 were compared with ODOT’s 2028 estimates. Table 12.3-8 illustrates the estimated growth rates.

Table 12.3-8 Background Growth Rate Calculations on I-82

Mile Point	Location	Average Annual Daily Traffic		R-Squared Value	Per Year Growth Rate (2008-2028) ¹
		2008	2028		
0.58	Umatilla Bridge ATR 0.58 mile south of Oregon-Washington State line	16,400	18,700	0.96	0.7%
1.30	0.30 mile south of US 730	10,400	12,400	0.90	1.0%
Average					0.85%

¹ Per Year Growth Rate = [(2028 AADT– 2008 AADT) / (2008 AADT)] / (2028 – 2008)

The R-Squared Value indicates the degree of correlation between the dependent variable (historical traffic volume) and the independent variable (time). ODOT’s Analysis Procedures Manual (Reference 3) states that values over 0.75 are preferred, which indicates that the chosen locations are acceptable for this analysis. As shown in Table 12.3-8, a 0.85% annual growth rate was identified for background traffic volumes on I-82 in the vicinity of the US 730 Interchange. Therefore, through traffic volumes on I-82 from 2009 will be increased by 18% to the forecast year 2030.

12.3.522 Planned Transportation Improvements

In general, there are no transportation improvements inside the IMSA that are identified in ODOT’s Statewide Transportation Improvement Plan (STIP) or Umatilla County’s Transportation System Plan. However, the City of Umatilla’s Transportation System Plan has identified the need for signalization of the US 730/Umatilla River Road intersection when

warranted by traffic volumes. There are currently no plans to install a traffic signal at this location in the near future.

12.3.523 Year 2030 No-Build Traffic Conditions

Future year 2030 No-Build weekday p.m. peak hour traffic volumes were determined for each future scenario by applying growth rates and trip generation estimates to the existing traffic network. The resulting year 2030 No-Build weekday p.m. peak hour traffic volumes for are shown in *Figure 12.3-11*.

All operational analyses were performed in accordance with the procedures stated in the 2000 *Highway Capacity Manual* (Reference 4). The OHP (Reference 1) sets operational standards based on volume-to-capacity (v/c) ratios for the interchange ramp terminals (v/c of 0.80 for the northbound ramp terminal and 0.85 for the southbound ramp terminal), intersections of US 730 (v/c of 0.85 between Brownell Boulevard and Sloan Avenue and v/c of 0.70 east of I-82), and US 395 (v/c of 0.70). These standards apply to the overall v/c ratio at signalized intersections and to the state highway approaches at unsignalized intersections. The minor street approaches that are stop-controlled at unsignalized intersections have a standard of a v/c ratio of 0.90.

Traffic operations analyses were performed for the study intersections using the forecast year 2030 “No-Build” weekday p.m. peak hour traffic volumes as shown in *Figure 12.3-11*. Table 12.3-9 below summarizes the deficiencies projected. The Technical Appendix contains the detailed analysis worksheets.

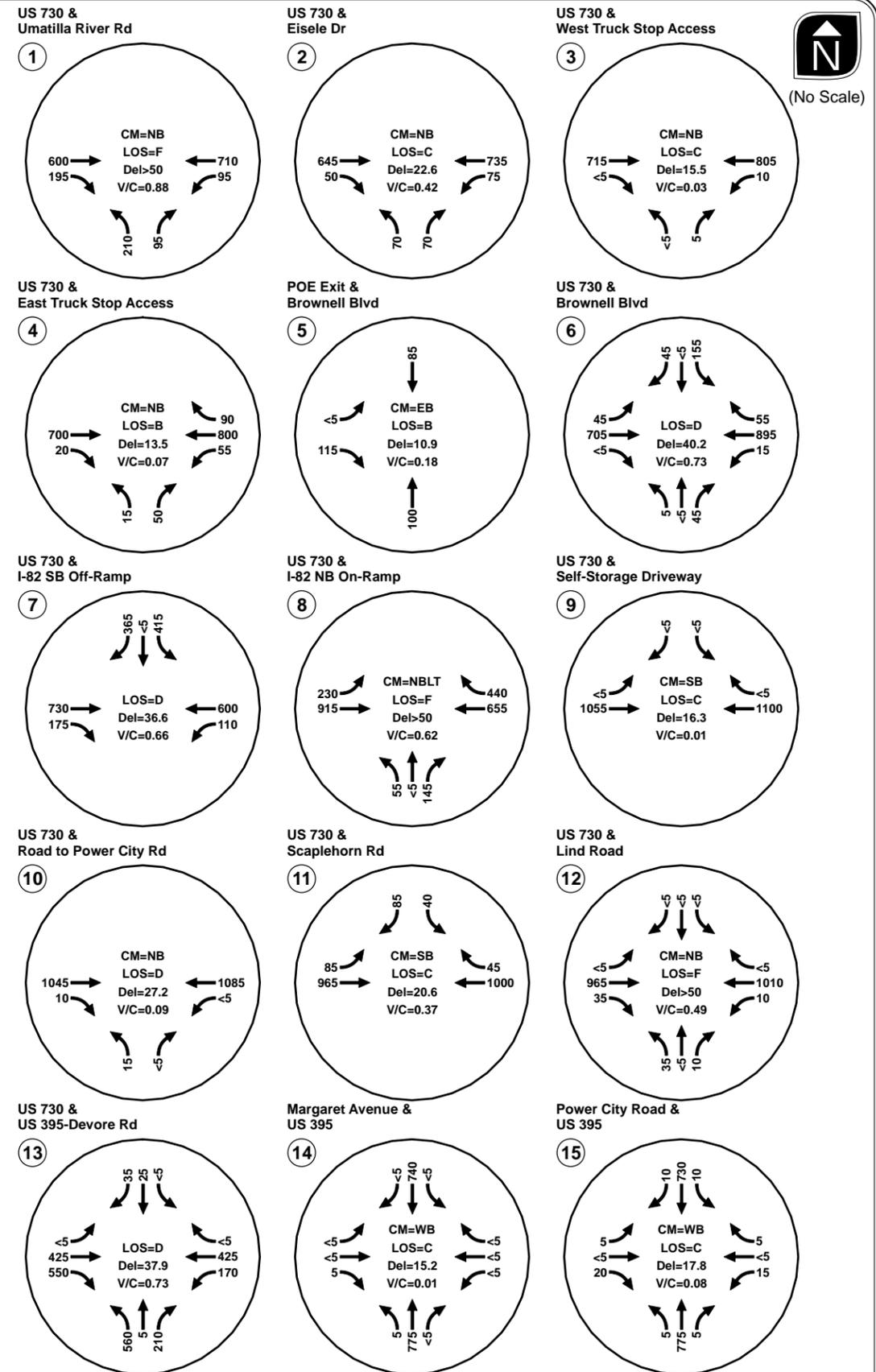
As Table 12.3-9 shows, the US 730/US 395-Devore Road intersection is forecast to operate over the applicable OHP mobility standard. The left-turn from the I-82 Northbound ramp terminal onto US 730 is forecast to operate with lengthy delays (LOS “F”). However, the OHP mobility standard is based on v/c ratio and this movement is forecast to have an acceptable v/c ratio.

Table 12.3-9 Forecast Deficiencies

Intersection	Fails to Meet Applicable OHP Standard ¹	Meets Standard, but Lengthy Delays ²
US 730/Umatilla River Rd		X
US 730/Brownell Blvd		X
US 730/I-82 SB Ramps		X
US 730/I-82 NB Ramps		X
US 730/Lind Rd		X
US 730/US 395-Devore Rd	X	

¹ Source: 1999 Oregon Highway Plan including Amendments November 1999 through January 2006 - Table 6 (Maximum Volume to Capacity Ratios Outside Metro) as amended August 2005, OHP Amendment 05-16

² Level-of-Service “D” or worse for signalized intersection and LOS “E” or worse for unsignalized intersection.



LEGEND

15,000 = APPROXIMATE ADT VOLUME

CM = CRITICAL MOVEMENT (UNSIGNALIZED)

LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)

Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/CRITICAL MOVEMENT CONTROL DELAY (UNSIGNALIZED)

V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

YEAR 2030 TRAFFIC CONDITIONS 30TH HIGHEST HOUR UMATILLA, OREGON FIGURE

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It is important to note that these results examine the intersections in isolation. Issues related to queue spillback and signal coordination between the closely spaced signalized I-82 Southbound ramp terminals and Brownell Boulevard intersections were discussed in the *Existing Transportation/Land Use Conditions* section. These problems that exist will be exacerbated by the increasing traffic volumes at these intersections if no improvements are made.

12.3.600 IAMP CIRCULATION AND ACCESS CONCEPT DEVELOPMENT AND ANALYSIS

This section documents the development and evaluation of the local circulation and access concepts for the IAMP. Twelve unique concepts, plus five variations on certain concepts, were developed and taken through a thorough screening process that included input from Technical Advisory Committee (TAC), Public Advisory Committee (PAC), local property and business owners, and the public at-large. Based on results of the initial screening, a refined analysis was conducted that resulted in the identification of the preferred transportation improvement plan. The following subsections document the concepts that were evaluated and the results of the screening process.

12.3.610 Concept Development Process

The development of the initial concepts for the I-82/US 730 Interchange began with three separate design workshops. The first two workshops were held for members of the TAC and PAC committees, while the third workshop was held for interested citizens, business owners, and landowners in a public open house setting. All three workshops were held on April 21, 2010.

Within each workshop, participants were presented with an overview of the existing and future traffic demand within the Interchange Management Study Area (IMSA), the identified operational and safety deficiencies, and the applicable interchange design forms and basic design parameters. Following these presentation overviews, participants were asked to sketch their ideas for improving circulation at the interchange and within the IMSA.

After the completion of the TAC, PAC, and public workshops, the project team took all of the individual design ideas and grouped them into various interchange forms. Each group was further sorted into common and unique interchange form and local circulation concepts. Based on this process, the project team made some technical refinements to the interchange form and local circulation concepts to ensure basic design parameters and principles were being met.

Following the initial design workshops, additional variations to concepts were developed beyond the original designs. These concepts were based on feedback from members of the TAC and PAC, local property and business owners, the general public, and City Council. The additions included:

- Concept 8b was further refined to create Concepts 8c, 8d, and 8e in order to provide access to the relocated POE in such a manner that would meet Federal guidelines and provide the POE staff with the ability to monitor trucks bypassing the POE;
- Concept 3 was refined to allow for the potential relocation of the POE as a second phase; and

- Concept 13 was developed to provide an option where the POE is relocated further south on the I-82 corridor.

The concepts listed above were developed by members of the TAC and PAC, the general public, and the project team.

12.3.620 IAMP Circulation and Access Concept Summaries

Each of the concepts developed for the I-82/US 730 Interchange and their key design components are described below. Improvements to the east side of the interchange and to the sidewalk network along US 730 are essentially the same between all concepts and are described in greater detail in Section 12.3.700. Detailed double-line drawings of concepts that passed the initial screening and moved forward for more detailed analysis can be found later in this section. Single-line illustrations of the other concepts can be found in the Technical Appendix.

12.3.620(1) Concept #1a:

This concept would involve the following changes/improvements:

- The existing southbound off-ramp would be modified to accommodate trucks entering the POE. This would involve disconnecting the off-ramp from US 730 and keeping it elevated to cross over Brownell Boulevard before touching down in the POE near the existing weigh scales. The internal POE circulation system and weigh scales would need to be modified as a result.
- A new southbound exiting loop ramp and on-ramp would be constructed in the southwest quadrant of the intersection.
- Brownell Boulevard would be disconnected from US 730 and rerouted along the Locus Street corridor, travel under US 730 via a widened underpass (currently utilized by the adjacent rail line), and routed along a new roadway that would connect to Eisele Drive on the south side of US 730.
- A new north-south roadway would be constructed along the east side of I-82 to provide better north-south connectivity between US 730 and 3rd Street.
- A new backage road accessed via Eisele Drive would be constructed to provide access and circulation for properties along the south side of US 730.

12.3.620(2) Concept #1b:

This concept would involve the following changes/improvements:

- The existing southbound off-ramp would be modified to accommodate trucks entering the POE. This would involve disconnecting the off-ramp from US 730 and keeping it elevated to cross over Brownell Boulevard before touching down in the POE near the existing weigh

scales. The internal POE circulation system and weigh scales would need to be modified as a result.

- Trucks leaving the POE would continue to access Brownell Boulevard via the current method.
- A new southbound exiting loop ramp and on-ramp would be constructed in the southwest quadrant of the intersection.
- A new north-south roadway would be constructed along the east side of I-82 to provide better north-south connectivity between US 730 and 3rd Street.
- A new backage road accessed via Eisele Drive would be constructed to provide access and circulation for properties along the south side of US 730.

12.3.620(3) Concept #2

This concept would involve the following changes/improvements:

- A new on-ramp to I-82 southbound would be constructed for trucks exiting the POE. This on-ramp would be elevated coming out of the POE in order to clear the existing southbound off-ramp and connect to I-82.
- The existing southbound on-ramp would be lengthened in order to provide the necessary separation from the new southbound POE on-ramp.
- Brownell would be disconnected from US 730 and gain access via 3rd Street to US 730 both east and west of I-82.
- A new north-south roadway would be constructed along the east side of I-82 to provide better north-south connectivity between US 730 and 3rd Street.
- A new backage road accessed via Eisele Drive would be constructed to provide access and circulation for properties along the south side of US 730.

12.3.620(4) Concept #3

This concept would involve the following changes/improvements:

- The existing southbound off-ramp would be closed.
- A new exiting loop ramp and on-ramp would be constructed in the southwest quadrant of the intersection.
- Brownell Boulevard would be realigned to the east to connect to US 730 in the approximate location of the existing southbound ramp terminal. As part of this, the existing Brownell Boulevard intersection with US 730 would be closed.

- A new exiting roadway would be provided from the POE to the realigned Brownell Boulevard.
- A new backage road accessed via Eisele Drive would be constructed to provide access and circulation for properties along the south side of US 730.

12.3.620(5) Concept #3 with Potential POE Relocation

This is a variation of the original Concept 3 to allow for the potential future relocation of the POE south of the interchange. To accommodate a relocated POE at some point in the future, the original Concept 3 would need to be modified as follows:

- A new southbound exit ramp would need to be constructed further north along I-82 just south of the 3rd Street overpass.
- This exit ramp would parallel I-82 (requiring a separate railroad overpass structure) where it would then split, providing access to the exiting loop ramp (depicted in Concept 3) and access to a separate POE access road.
- To accommodate the exit ramp split, the location of the exiting loop ramp would need to be shifted further to the west where it would likely have more substantial impacts to the Crossroads restaurant parking lot.
- The I-82 southbound on-ramp depicted in Concept 3 would need to be relocated further to the west in order to accommodate the future POE. The relocated ramp would need a separate bridge structure over the Umatilla River.
- The Eisele Drive extension as a back-door out of the relocated POE would need to be grade separated (under or over) from the I-82 southbound on-ramp. Due to the anticipated flat grade, grade separation may be difficult to accomplish.
- The I-82 southbound exit out of the relocated POE would require a widening of the existing Umatilla River bridge.

12.3.620(6) Concept #4

This concept would involve the following changes/improvements:

- A new driveway for exiting POE trucks would be constructed along the western side. This new exiting roadway would travel under US 730 via a widened underpass (currently utilized by the adjacent rail line), and routed along a new roadway that would connect to Eisele Drive south of US 730.
- The existing traffic signal at the Brownell Boulevard/US 730 intersection would be removed and Brownell Boulevard would be restricted to right-in/right-out movements.

- A new backage road accessed via Eisele Drive would be constructed to provide access and circulation for properties along the south side of US 730.

12.3.620(7) Concept #5

This concept would involve the following changes/improvements:

- Brownell Boulevard would be disconnected from US 730 and gain access via 3rd Street to US 730 both east and west of I-82.
- A new on-ramp to I-82 southbound would be constructed for trucks exiting the POE. This on-ramp would begin at the POE and travel under US 730 and parallel the existing southbound on-ramp before merging onto I-82.
- A new north-south roadway would be constructed along the east side of I-82 to provide better north-south connectivity between US 730 and 3rd Street.
- A new backage road accessed via Eisele Drive would be constructed to provide access and circulation for properties along the south side of US 730.

12.3.620(8) Concept #6

This concept would involve the following changes/improvements:

- A single point diamond interchange would be constructed at the existing I/82/US 730 interchange.
- A new backage road accessed via Eisele Drive would be constructed to provide access and circulation for properties along the south side of US 730.

12.3.620(9) Concept #7

This concept would involve the following changes/improvements:

- A new exiting loop ramp and on-ramp would be constructed in the southwest quadrant of the intersection with a connection to US 730 at the existing Eisele Drive intersection.
- Brownell Boulevard would be disconnected from US 730 and gain access via 3rd Street to US 730 both east and west of I-82.
- The existing southbound off-ramp would be modified for POE entry traffic. Rather than exit onto US 730, a new alignment would be constructed that would access the POE at the approximate location of the existing POE exiting driveway. This would be accompanied by an internal modification to the POE.
- A new backage road accessed via Eisele Drive would be constructed to provide access and circulation for properties along the south side of US 730.

12.3.620(10) Concept #8a

This concept would involve the following changes/improvements:

- The POE would be relocated to the southwest quadrant of the interchange south of the irrigation canal.
- A new extension and widening of Eisele Drive would provide access to the relocated POE from US 730.
- The existing Brownell Boulevard intersection with US 730 would be closed.
- A new roadway would be constructed through the old POE site and connect Brownell Boulevard to the US 730/Eisele Drive intersection.
- A new backage road accessed via Eisele Drive would be constructed to provide access and circulation for properties along the south side of US 730.

12.3.620(11) Concept #8b

This concept would involve the following changes/improvements:

- The POE would be relocated to the southwest quadrant of the interchange south of the irrigation canal.
- A new extension and widening of Eisele Drive would provide access to the relocated POE from US 730.
- A new truck entrance to the relocated POE would be constructed off of the existing southbound on-ramp. For trucks exiting the POE, a new southbound on-ramp would be constructed to I-82.
- The existing Brownell Boulevard intersection with US 730 would be closed.
- A new roadway would be constructed through the old POE site and connect to Brownell Boulevard to the US 730/Eisele Drive intersection.
- A new backage road accessed via Eisele Drive would be constructed to provide access and circulation for properties along the south side of US 730.

12.3.620(12) Concept #8c

This concept is essentially the same as Concept 8b, with the difference being that Concept 8c eliminates inbound access to the POE from US 730.

12.3.620(13) Concept #8d

Like Concept 8c, Concept 8d relocates the POE south of US 730, Brownell Boulevard is realigned to intersect US 730 across from Eisele Drive, and Eisele Drive extended south to the relocated POE to accommodate egress movements. However, Concept 8d includes a direct access ramp from I-82 Southbound to the relocated POE. As this connection would need to work within the configuration of the existing interchange, it would likely need a new overpass structure over US 730 and then another overpass structure over the existing I-82 Southbound on-ramp.

12.3.620(14) Concept #8e

Concept 8e builds upon Concept 8d by including a secondary connection to the POE from the existing I-82 southbound on-ramp.

12.3.620(15) Concept #9

This concept would involve the following changes/improvements:

- A new truck only slip lane would be constructed off of the existing southbound off-ramp forming a separate westbound travel lane on US 730. This new westbound travel lane would cross Brownell Boulevard and feed into the POE.
- A new exiting loop ramp on on-ramp would be constructed in the southwest quadrant of the intersection with a new ramp terminal constructed at the existing Brownell Boulevard intersection with US 730.
- A new backage road accessed via Eisele Drive would be constructed to provide access and circulation for properties along the south side of US 730.

12.3.620(16) Concept #10

This concept would involve the following changes/improvements:

- A new southbound off-ramp would be constructed for POE traffic. This off-ramp would be elevated over Brownell Boulevard and the adjacent railroad tracks and touch down along the west side of the adjacent residential neighborhood and POE.
- Internal circulation within the POE would be modified to accommodate the new off-ramp and a new exiting driveway that would be routed along the Cherry Street corridor.
- A new backage road accessed via Eisele Drive would be constructed to provide access and circulation for properties along the south side of US 730.

12.3.620(17) Concept #11

This concept would involve the following changes/improvements:

- A new split diamond interchange would be constructed along I-82 with a new northbound off-ramp and southbound on-ramp being located approximately 1,600 feet south of US 730.
- The new ramp terminal would connect to US 730 via an extension of Eisele Drive.
- Internal circulation within the POE would be modified to accommodate a new entering and exiting driveway to US 730 across from the existing Eisele Drive intersection.
- At the Eisele Drive/US 730 intersection, a roundabout would be constructed to facilitate traffic along Eisele Drive and the POE driveway.
- The Brownell Boulevard intersection would be limited to right-in/right-out movements.
- A new backage road accessed via Eisele Drive would be constructed to provide access and circulation for properties along the south side of US 730.

12.3.620(18) Concept #12

This concept would involve the following changes/improvements:

- A double roundabout would be constructed at the southbound ramp terminal and Brownell Boulevard intersection with US 730.
- A new backage road accessed via Eisele Drive would be constructed to provide access and circulation for properties along the south side of US 730.

12.3.620(19) Concept #13

This concept would involve the following changes/improvements:

- The POE would be relocated to the I-82 corridor and a permanent weigh station on US 730 (location to be determined via a separate study) and a temporary truck scale on US 395 (location to be determined via a separate study) would be constructed.
- A new backage road accessed via Eisele Drive would be constructed to provide access and circulation for properties along the south side of US 730.
- The existing Brownell Boulevard intersection with US 730 would be closed.
- A new roadway would be constructed through the old POE site and connect to Brownell Boulevard to the US 730/Eisele Drive intersection

12.3.630 Concept Screening

In order to arrive at the preferred transportation improvement plan, the concepts went through three levels of screening. The first level was a high-level screening to determine if any of the concepts did not meet the basic purpose of the project. After this, a second level was applied to

the concepts involving a qualitative assessment of each concept based on the project's adopted evaluation criteria. Following this screening, the remaining concepts were examined quantitatively to determine the final preferred concepts.

The following section provides detailed explanation of this screening process and identifies which concept was selected by the TAC and PAC as the preferred transportation improvement plan. The Technical Appendix contains more details about the screening process.

12.3.631 Preliminary Purpose and Problem Statement Screening

The project team first performed a preliminary assessment to determine if any of the concepts were not meeting the basic intent of the project purpose and problem statement. The official Purpose and Problem Statement, as approved by the TAC and PAC is outlined below:

Purpose of the Project:

The IAMP is a strategic transportation plan that is designed to protect the long-term function of the Interstate 82 (I-82) / US 730 interchange by preserving the capacity of the interchange while providing safe and efficient operations between connecting roadways. The IAMP will identify land use management strategies, short-term and long-term transportation improvements, access management goals, and strategies to fund identified improvements.

Problem Statement:

The signalized intersections of Brownell Boulevard/US 730 and the southbound I-82/US 730 terminal are located within close proximity of one another resulting in undesirable operations. The signals have been coordinated in an effort to improve intersection operations. Nevertheless, queuing problems associated with truck traffic accessing the Umatilla Port of Entry weigh station continue to occur at the two intersections. This condition varies by season due to increase of trucks during mid-summer and fall harvests.

The Port of Entry (POE) is located on the northwest corner of Brownell Boulevard/US 730 intersection which coincides with the northwest quadrant of the I-82/US 730 interchange. A truck stop, restaurant, fueling station and other commercial development is located in the southwest quadrant. East of the interchange is primarily vacant land within the City of Umatilla Urban Growth Area. This land is zoned exclusive farm use, tourism commercial or public facilities. The City is interested in the economic development potential of this area and would like to develop a local street network plan that supports the safe and efficient operation of the interchange and the US 730/US 395 intersection located within the interchange influence area.

Based on the project's purpose, it was generally concluded that all of the interchange concepts met the basic intent of the project purpose and problem statement.

12.3.632 Basic Qualitative Concept Screening

After the initial Purpose and Problem Statement screening, a basic qualitative screening of the concepts was conducted. To assist in the evaluation process, the adopted evaluation criteria was reviewed and a screening level evaluation process by which each of the interchange form and local circulation concepts could be evaluated at a high level qualitative perspective was

developed. As a part of this process, it was recognized that at this particular level of evaluation, certain evaluation criteria could not be applied to each concept because the criterion was determined to be too specific, required a higher level of detailed information, or was a non-differentiating factor. In these instances, a screening level evaluation was not applied to the concepts. The following outline lists the five screening level categories and the selected evaluation criteria within each category that were investigated as part of this process.

Category #1 – Transportation

Evaluation Criteria – Addresses the existing operational performance issues created by the close spacing between Brownell Boulevard and the southbound ramp terminal

Evaluation Criteria – Improves non-vehicular east-west travel through the interchange

Category #2 – Land Use

Evaluation Criteria – Level of right-of-way (ROW) impacts

Evaluation Criteria – Supports businesses and future economic development

Category #3 – Cost/Implementation

Evaluation Criteria – Level of construction costs

Evaluation Criteria – Construction feasibility

Category #4 – Environmental/Livability

Evaluation Criteria – Level of environmental impacts

Evaluation Criteria – Livability impacts

Category #5 – Accessibility

Evaluation Criteria – Meets or moves in the direction of the access spacing standards

Evaluation Criteria – Supports the development of a complimentary local circulation network that minimizes local travel demand through the interchange and maintains or improves access to the marina.

Based on the criteria outlined above, an evaluation matrix for each concept was created. These matrices are contained within the Technical Appendix. A summary of the qualitative screening process is provided in Table 12.3-10 below. (Note: In general, a + indicates the interchange concept is positively meeting the basic parameters of the evaluation criterion, a - indicates the interchange concept is not meeting the basic parameters of the evaluation criteria, and a 0 indicates the interchange concept is neither positively nor negatively meeting the basic intent of the evaluation criterion. See the Technical Appendix for more detailed information about the scoring criteria).

Table 12.3-10 Summary of Qualitative Screening Process

Evaluation Criteria	Concept														
	#1a	#1b	#2	#3	#4	#5	#6	#7	#8a	#8b-e	#9	#10	#11	#12	#13
Operations	+	+	+	+	+	+	-	+	+	+	+	-	+	-	+
Non-Vehicular Travel	+	+	0	0/+	0	0	0	+	+	+	+	+	+	-	+
ROW Impacts	-	-	+	0/	-	+	+	-	-	-	0	-	-	0	0
Cost	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-
Construction Feasibility	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+
Environmental Impacts	0	0	+	+	+	-	+	0	0	0	0	+	0	+	+
Livability Impacts	-	+	+	+	+	+	+	-	+	+	+	-	-	+	+
Access Spacing	0	0	+	+	+	+	-	0	+	+	0	-	+	-	+
Local Circulation	+	+	-	+	-	-	+	-	+	+	+	+	+	+	+

Based on this qualitative screening process, a number of concepts were eliminated from consideration. A summary of these findings is provided below.

12.3.632(1) Concepts with Significant Constructability Challenges or Fatal Flaws

Through the evaluation process, the following concepts were deemed to have significant constructability challenges or fatal operational flaws. As such, these concepts were not recommended for further evaluation.

- Concepts #1a and #4 would require a US 730 underpass widening adjacent to the railroad. A preliminary assessment from ODOT indicates that it may not be feasible to make this connection due to the way the bridge is constructed. Access to/from Brownell Boulevard is also limited.
- Concept #2 would have a constructability challenge associated with ramp length and grades needed to develop the direct-connect access ramp to I-82 southbound. This concept also cuts off Brownell Boulevard from US 730.
- Concept #5 cannot be realistically constructed as the underpass associated with the POE exit road would conflict with the Brownell irrigation ditch. This concept also cuts off Brownell Boulevard from US 730.
- Concepts #6, #10, and #12 are operationally challenged, have some significant physical constraints, and don't address the intersection spacing issues between Brownell Boulevard and the southbound ramp terminal.

12.3.632(2) Concepts with Cost, Policy, and Right-of-Way Constraints

Through the evaluation process, the following concepts were deemed to have significant cost, policy, and right-of-way constraints. As such, these concepts were not recommended for further evaluation.

- The freeway exit ramp serving the POE in Concept #1b would necessitate a complete reconstruction of the POE that may not be possible given the need to accommodate acceptable ramp grades and truck queuing lanes.
- Concept #7 would require a complete widening of the Umatilla River overpass while other loop ramp concepts would only require a partial widening. This coupled with the need for a new US 730 overpass bridge, a railroad overpass bridge widening, and POE reconfiguration would be a costly concept with minimal operational and access management benefits.
- Concept #8a would funnel a large amount of truck and vehicular traffic through US 730/Eisele Drive intersection, necessitating a large widening to this intersection.
- Concept #11 would be the most expensive concept with the split diamond and the need to widen both sides of the Umatilla River overpass.

Based on these findings and feedback from the PAC and TAC, Concepts 3, 8b/c/d/e, 9, and 11 were moved forward for detailed evaluation. These concepts are shown in *Figures 12.3-12 through 12.3-21*.



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I-82/US 730 INTERCHANGE AREA
MANAGEMENT PLAN
CONCEPT 3

FIGURE
12.3-12





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I-82/US 730 INTERCHANGE AREA
MANAGEMENT PLAN
CONCEPT 8b

FIGURE
12.3-14

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I-82/US 730 INTERCHANGE AREA
MANAGEMENT PLAN
CONCEPT 8e

FIGURE
12.3-17



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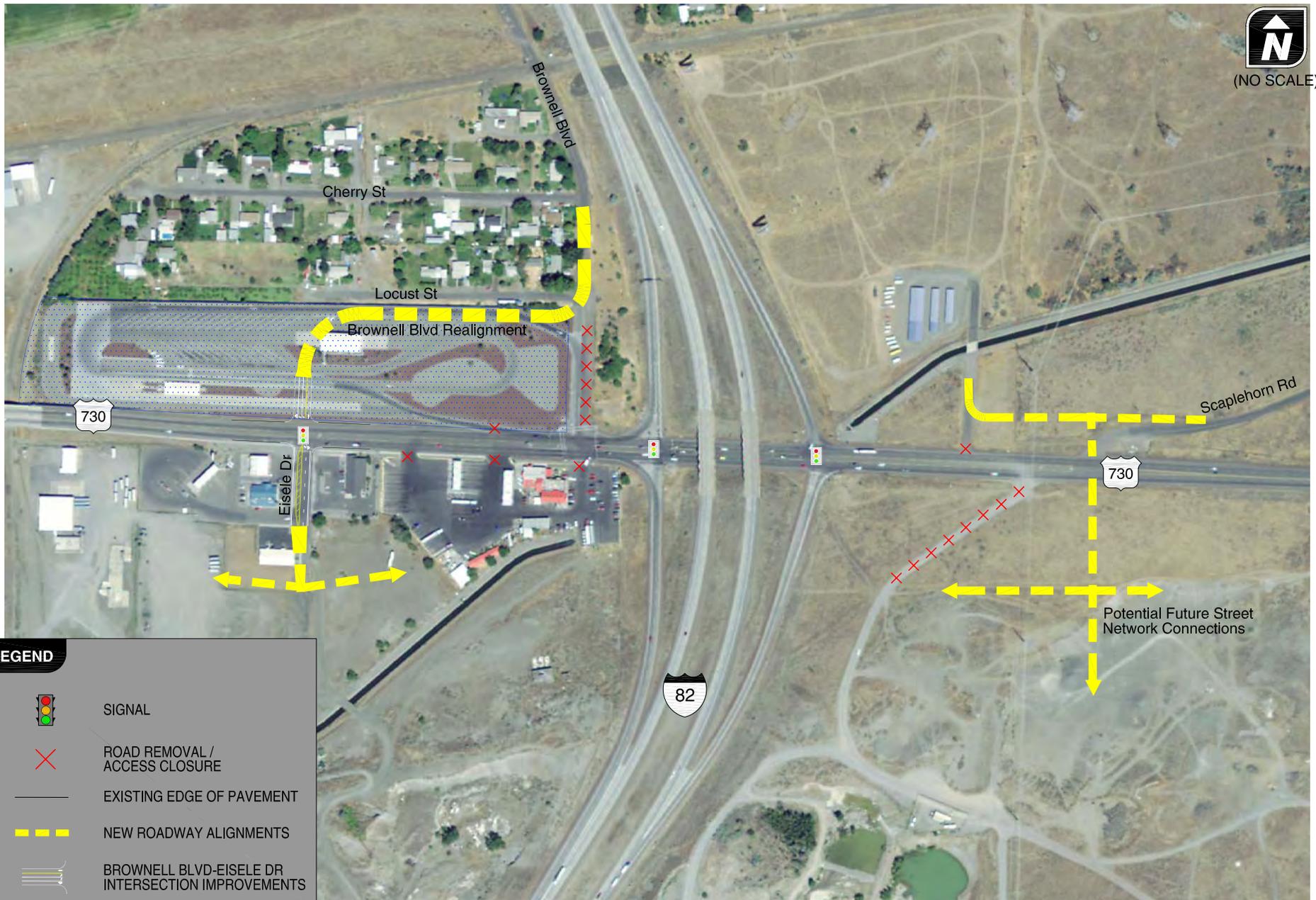
**I-82/US 730 INTERCHANGE AREA
MANAGEMENT PLAN
CONCEPT 9**

**FIGURE
12.3-18**



(NO SCALE)

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LEGEND

-  SIGNAL
-  ROAD REMOVAL / ACCESS CLOSURE
-  EXISTING EDGE OF PAVEMENT
-  NEW ROADWAY ALIGNMENTS
-  BROWNELL BLVD-EISELE DR INTERSECTION IMPROVEMENTS

CONCEPT 13
I-82/US 730 INTERCHANGE AREA
UMATILLA, OREGON FIGURE



(NO SCALE)



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**RELOCATED POE AND NECESSARY ACCESSORY WEIGHING FACILITIES
UMATILLA, OREGON**

CONCEPT 13

FIGURE

Figure 12.3-21

12.3.633 Detailed Quantitative Evaluation of Selected Concepts

A more detailed evaluation was performed of the concepts remaining after the basic qualitative screening process was completed. This analysis consisted of quantitative operational and cost evaluations. *A more detailed description of this evaluation process may be found in the I-82/US 730 IAMP Technical Appendix.*

12.3.634 Transportation Operations Analysis of Selected Concepts

A transportation operations analysis was performed on the remaining concepts according to the methodologies and standards previously outlined in Section 12.3.400, with one exception: concepts that completely reconfigure the interchange (e.g. Concepts 3 and 9) must meet the more stringent volume-to-capacity ratio of 0.70 or better standard from the Oregon *Highway Design Manual* (HDM, Reference 6).

There are some common results between all concepts. The US 730/Umatilla River Road and US 730/US 395-Devore Road intersections are forecast to operate above their applicable standards. This is consistent with the future conditions analysis described in Section 12.3.500. Neither intersection was addressed by these concepts due to their distance from the I-82 ramp terminals. The unsignalized US 730/Scaplehorn Road and US 730/Bucks Lane intersections are forecast to operate with high delays for the stop-controlled side-street approaches. However, both are forecast to operate well under the applicable v/c ratio standard of 0.90 due to the relatively low volumes that are forecast to utilize those approaches.

The following subsections summarize the highlights of this analysis for each concept.

12.3.634(1) Concept 3

In Concept 3, the reconfigured I-82 Southbound ramp terminal will require dual left-turns from the Southbound off-ramp onto US 730. The dual left-turn lanes will allow the intersection to meet the HDM v/c standard and will help prevent vehicular queues from stacking back into the curve of the loop ramp. Relocating the POE would likely remove the need for dual left-turns, although they would significantly enhance its ability to accommodate long-term growth.

12.3.634(2) Concepts 8b/c/d/e

Concepts 8b and 8c will require that the I-82 Southbound off-ramp be widened from its existing configuration to include an exclusive left-turn lane in addition to the existing through/left-turn lane.

The additional lane will help prevent vehicles from stacking back on the off-ramp to the mainline of the freeway. This lane is necessitated by the shift of truck volumes from the right-turn lane to the through/left-turn lane since the POE is in a new location south of US 730 and accessed from the I-82 Southbound on-ramp. Concepts 8d and 8e may also warrant this lane to reduce the potential for queue spillback towards the mainline of the freeway. Assuming this lane is in place, the capacity is increased by approximately ten percentage points due to the removal of truck traffic from the US 730 ramp terminal.

12.3.634(3) Concept 9

Similar to Concept 3, this concept would reconfigure the I-82 Southbound ramp terminal. However, under Concept 9, truck traffic bound for the POE is provided with its own off-ramp that becomes a third westbound lane onto US 730 feeding directly into the POE. Since this traffic is removed from the ramp terminal intersection, dual left-turn lanes onto US 730 are not needed in order to meet the HDM v/c ratio standard.

12.3.634(4) Concept 11

Several variations of this concept were discussed. The first variation involves the US 730/ Eisele Drive-POE access intersection as either a roundabout or a full access traffic signal. The second variation is the connection from the POE underneath US 730 to Eisele Drive and whether this is needed or not. The results indicate that removing this underpass connection does not significantly affect operations at the traffic signal. However, a single-roundabout would be sufficient assuming that this underpass is in place. If the underpass is not in place, then a double-lane roundabout would be required due to the introduction of the truck traffic exiting the POE.

12.3.634(5) Concept 13

Under this scenario, southbound truck traffic would no longer exit I-82 at the US 730 interchange to access the POE. This would result in a significant reduction in truck volumes on portions of US 730 and at the US 730/Brownell Boulevard intersection. Relocating the Brownell Boulevard intersection to increase the spacing from the I-82 Southbound ramp terminal would still likely be necessary in order to prevent queues from spilling back in front of the ramp terminal.

12.3.635 Cost

Preliminary cost estimates were prepared for each concept. The project team developed the construction cost estimates, while ODOT prepared approximate right-of-way (ROW) estimates. These estimates are preliminary and subject to change as the concepts move into more detailed development. Table 12.3-11 provides a summary of the total cost estimate for each concept. More detailed information on the cost estimates may be found in the Technical Appendix.

Table 12.3-11 shows that concepts that relocate the POE within the existing interchange area (i.e. Concepts 3 (total) and 8b/c/d/e) are generally anticipated to have the highest costs. Concepts 3 (short-term and original) and 9 are estimated to have the lowest costs. The short-term phase of Concept 3 with the POE relocation is expected to cost slightly more, approximately \$1.5 million, than the original Concept 3 due to additional ramp construction work that would be necessary to allow for the future relocation of the POE. Concepts 8d and 8e cost more than 8b and 8c due to the additional ramps that would be constructed into the POE from I-82. Concept 13's cost is slightly higher than Concepts 3 (short-term and original) and 9, but less than the other concepts.

Table 12.3-11 Preliminary Cost Estimates

Concept	Preliminary Cost Estimate		
	Construction	ROW	Total
3 (original)	\$17,600,000	\$600,000	\$18,200,000
3 (total w/ POE relocation)	\$39,800,000	\$3,500,000	\$43,300,000
3 (short-term)	\$19,100,000	\$600,000	\$19,700,000
3 (POE relocation, long-term)	\$20,700,000	\$2,900,000	\$23,600,000
8b/8c	\$24,000,000	\$2,900,000	\$26,900,000
8d	\$33,600,000	\$2,900,000	\$36,500,000
8e	\$34,600,000	\$2,900,000	\$37,500,000
9	\$18,100,000	\$2,400,000	\$20,500,000
11	\$25,100,000	\$800,000	\$25,900,000
13	\$21,100,000	\$2,200,000	\$23,300,000

After reviewing these analyses, the TAC and PAC came to the following conclusions:

- Concept 9 is not desirable given that it eliminates the westbound right-turn from US 730 onto Brownell Boulevard;
- Concept 11 has significant costs and construction challenges compared to its benefits;
- Concepts 8b/c/d/e have significant hurdles in terms of cost and the fact that FHWA will not allow any connection from the POE to US 730, thereby limiting the practicality of these concepts, especially Concepts 8b and 8c;
- Concept 3 does solve the problems this project was originally intended to address; however relocating the POE is also important for potential future economic development in the City; and
- Concept 13 addresses the existing transportation issues, while also helping the City achieve its economic development goals.

Generally the TAC and PAC supported moving forward with Concept 13. Their feedback was taken into consideration by the project steering committee when selecting the recommended improvement plan. Ultimately, the project steering committee selected Concept 13 as the preferred transportation improvement plan.

12.3.636 *Concept Development and Screening Summary*

Table 12.3-12 summarizes the reasoning for concepts being dismissed from consideration.

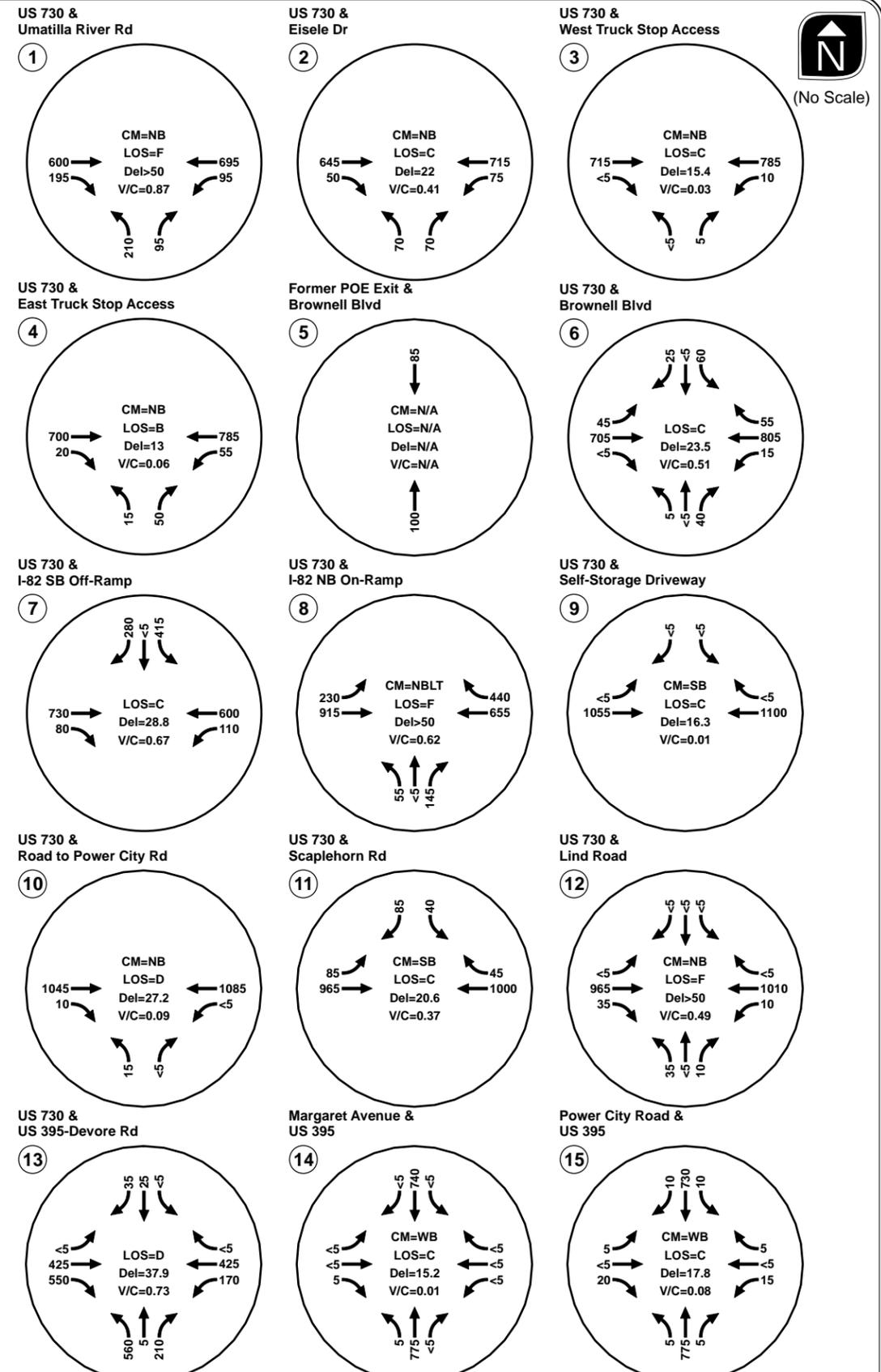
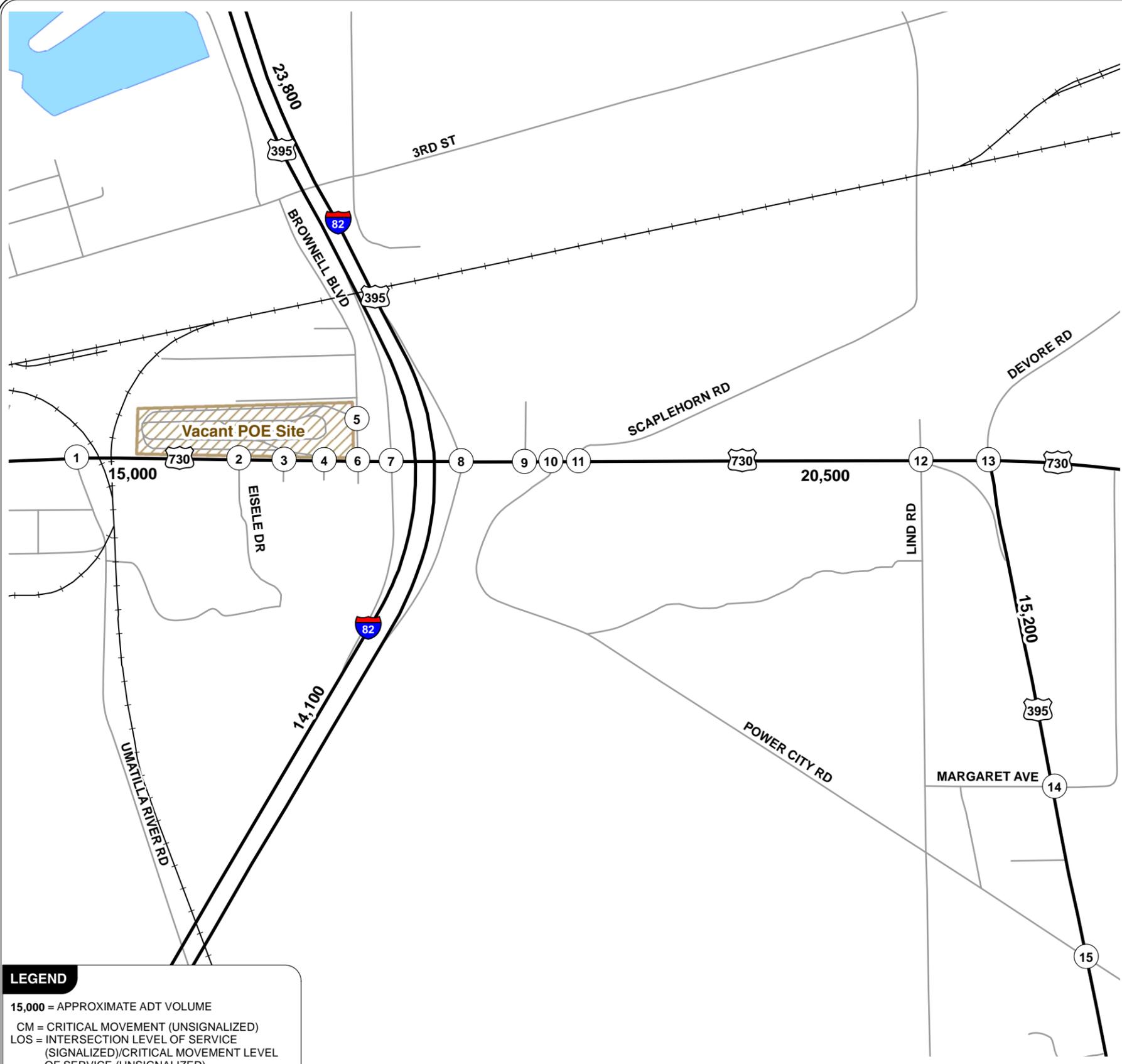
Table 12.3-12 Concept Development and Screening Summary

Concept	Recommended for Inclusion in the IAMP by the TAC/PAC	Final Selection/ Primary Disadvantages to Concept
1a	No	No – Constructability
1b	No	No – Constructability
2	No	No – Constructability, Circulation
3 (original)	No	No – Does not allow POE relocation
3 (w/ POE relocation)	No	No -Cost
4	No	No – Constructability
5	No	No – Constructability
6	No	No – Constructability, Capacity
7	No	No – Cost
8a	No	No – Capacity
8b	No	No – Constructability, Circulation, Cost
8c	No	No – Constructability, Circulation, Cost
8d	No	No – Constructability, Circulation, Cost
8e	No	No – Constructability, Circulation, Cost
9	No	No – Circulation
10	No	No – Constructability, Capacity
11	No	No – Constructability, Cost
12	No	No – Constructability, Capacity
13	Yes	Yes

Figures 12.3-20 and 12.3-21 (previous) show the preferred concept.

12.3.640 *Preferred Concept Detailed Capacity Analysis*

The concept screening process described above resulted in the selection of Concept 13 as the preferred improvement plan. A detailed capacity analysis of this concept is presented in Figure 12.3-22, assuming no other changes to the infrastructure network and that the existing POE site is not redeveloped.



LEGEND

15,000 = APPROXIMATE ADT VOLUME

CM = CRITICAL MOVEMENT (UNSIGNALIZED)

LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)

Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/CRITICAL MOVEMENT CONTROL DELAY (UNSIGNALIZED)

V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

YEAR 2030 CONCEPT 13 OPERATIONS 30TH HIGHEST HOUR - EXISTING POE SITE VACANT UMATILLA, OREGON

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Table 12.3-13 compares the anticipated year 2030 traffic operations with the POE (taken from analysis summarized in Section 12.3.500) to the results shown in *Figure 12.3-22* without the POE.

Table 12.3-13 Operational Analysis Comparison

Scenario	US 730/I-82 Southbound Ramp Terminal			US 730/Brownell Boulevard		
	V/C ¹ Ratio	LOS	Delay (s)	V/C ¹ Ratio	LOS	Delay (s)
2030 Future (w/o POE relocation)	0.66	D	36.6	0.73	D	40.2
2030 Future (w/ POE relocation)	0.67	C	28.8	0.51	C	23.5

¹V/C Ratio = volume-to-capacity ratio

The table shows that traffic operations are expected to improve in the vicinity of the I-82 Southbound ramp terminal as a result of the relocation of the POE.

The results of the analysis east of I-82 are consistent with the findings discussed in Section 12.3.500 as this area is insignificantly affected by the relocation of the POE. Truck traffic passing through them will likely continue to exit I-82 at the US 730 interchange in order to travel on US 730 or US 395 as they do today.

12.3.641 Queuing

A particular concern in the vicinity of the I-82 Southbound ramp terminal is for queues of vehicles to back up from the nearby Brownell Boulevard intersection into the ramp terminal intersection. This occasionally happens and will likely occur more frequently in the future as traffic volumes increase. Removing the truck traffic associated with the POE will help alleviate queuing by not only reducing the total number of vehicles traveling through the Brownell Boulevard intersection, but also reducing the average size of those vehicles, as heavy trucks occupy more space than passenger vehicles. A queuing analysis was performed along with the traffic operations analysis. This analysis indicates that queues are not expected to exceed two vehicles at one time, which would be a length between 50 to 150 feet, depending on the types of vehicles in the queue. The latter length is about the maximum length of queue that can be accommodated in the space between the two intersections. These results are similar, though slightly improved, to those seen in the analysis of existing conditions, so the queue lengths may be underestimated in this analysis. Relocating the Brownell Boulevard intersection to increase the spacing from the I-82 Southbound ramp terminal would still likely be necessary in order to prevent queues from spilling back in front of the ramp terminal. More information about this analysis can be found in the Technical Appendix.

12.3.642 Development Potential of POE Site

In order to fully assess the potential impacts of the relocation of the POE, a separate analysis was performed assuming that site fully redevelops under its current zoning designation. The current POE site is zoned by the City of Umatilla as General Commercial (GC). This zoning designation

allows a variety of commercial uses, with limited exceptions. Given the location’s proximity to the I-82/US 730 interchange and location adjacent to US 730, it was conservatively assumed that the site would develop with commercial retail uses. Table 12.3-14 documents the project team’s assumptions for this analysis regarding potential build-out of the POE site under the GC zoning designation, along with the trip generation potential of such development. The trip generation potential for each of the land uses was calculated for the weekday p.m. peak hour using the 8th Edition of *Trip Generation*, published by the Institute of Transportation Engineers. All trip ends in Table 12.3-14 have been rounded to the nearest five.

Table 12.3-14 POE Site Redevelopment and Trip Generation Potential

Land Use	Size (Sq. Ft.)	Weekday Daily Trips	Weekday PM Peak Hour Trips		
			Total	In	Out
Shopping Center		6,810	590	290	300
<i>Pass-By Trips</i>	158,560	2,320	200	100	100
Total Net New Trips		4,490	390	190	200

As Table 12.3-14 shows, this level of development would be expected to generate approximately 6,810 trips on an average weekday, with 4,490 of those trips being new to the transportation system and approximately 390 net new trips (190 in and 200 out) during the weekday p.m. peak hour.

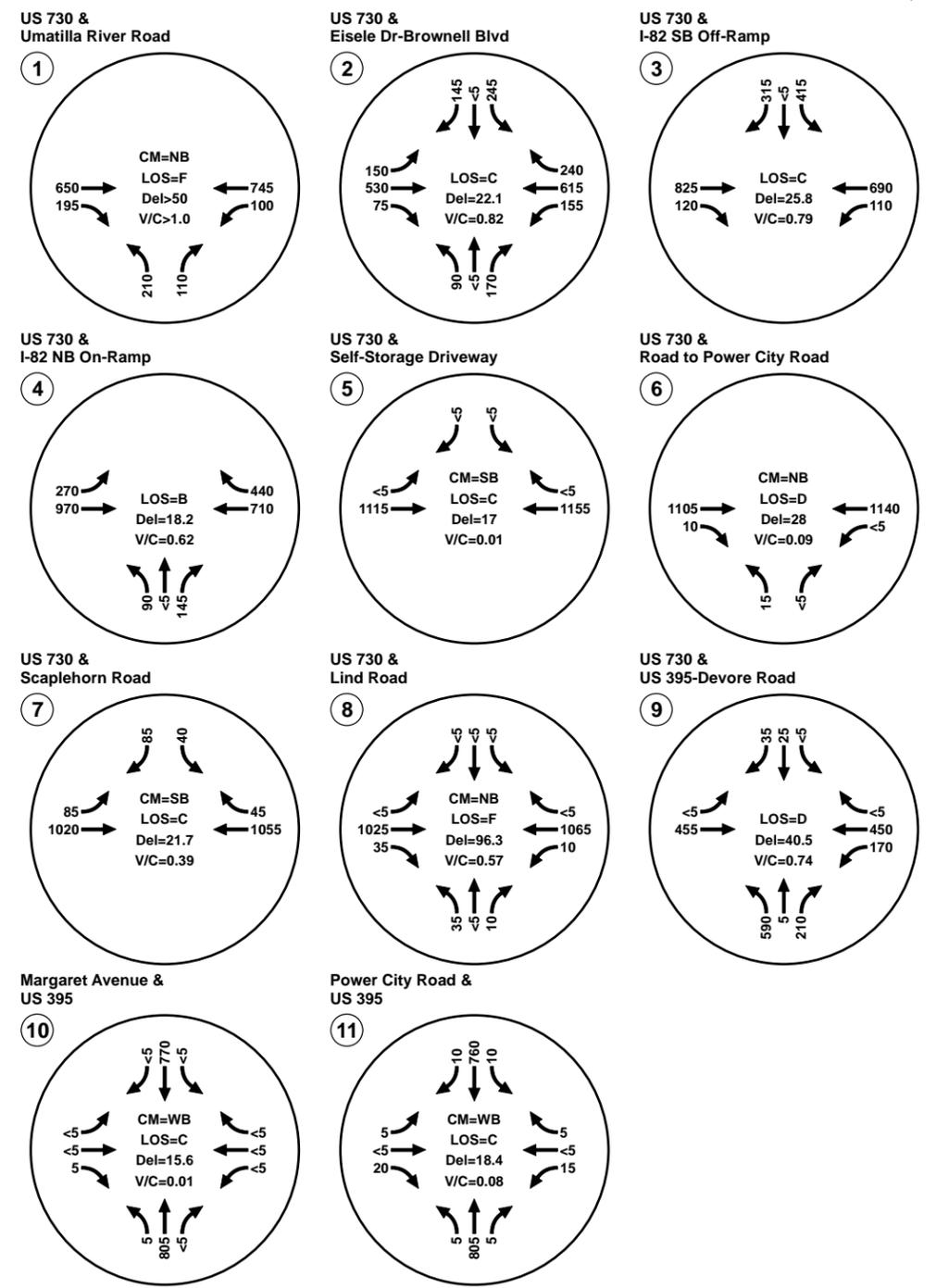
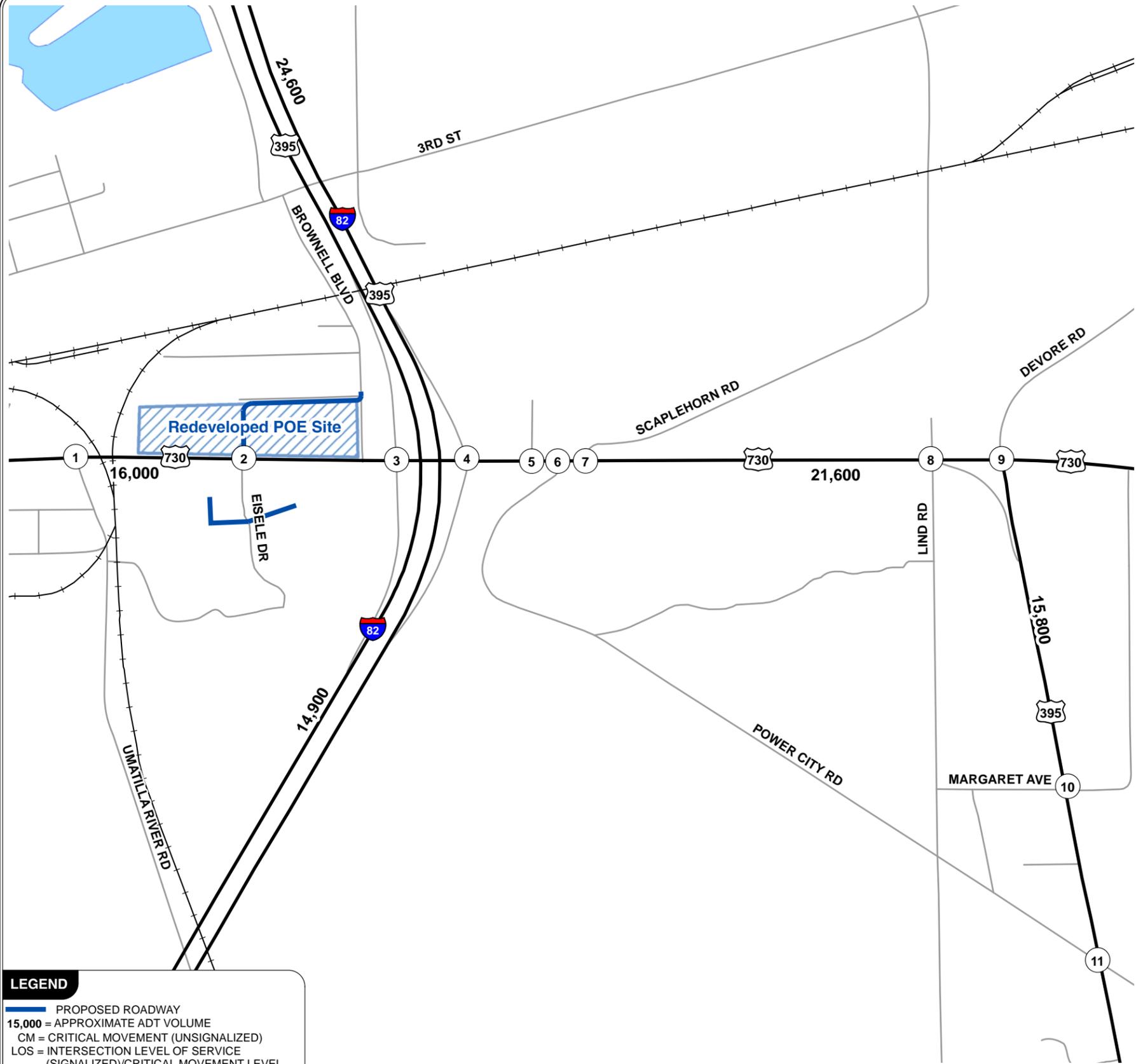
12.3.642(1) *Traffic Operations*

The new trips shown in Table 12.3-14 are assigned to the surrounding roadway network based on existing traffic patterns and attractions. These volumes are added to the traffic volumes from *Figure 12.3-22* in order to estimate the impacts that redevelopment of the POE site would have on the surrounding roadway system. In conducting this analysis, it is assumed that Brownell Boulevard is realigned to access US 730 across from Eisele Drive at a signalized intersection as part of the redevelopment of the site, with dual southbound left-turns and a shared through/right-turn lane from Brownell Boulevard onto US 730 provided. It is also assumed that access to properties on the south side of US 730 is provided via a backage road with a connection to Eisele Drive and that Eisele Drive has a dedicated left-turn lane and a shared through/right-turn lane for northbound traffic turning left onto US 730. The US 730 approaches would be configured as they are today, except that an eastbound left-turn lane would also be provided.

Figure 12.3-23 shows the results of the traffic operational analysis for the year 2030 assuming that the POE is relocated and that the site it currently occupies is redeveloped as shown in Table 12.3-14. The analysis reveals that the realigned Brownell Boulevard-Eisele Drive intersection with US 730 would operate just below the OHP mobility standard of a v/c ratio of 0.85, assuming the lane configurations described above. The interchange ramp terminals are also forecast to meet the applicable OHP mobility standard.



(No Scale)



LEGEND

- PROPOSED ROADWAY
- 15,000 = APPROXIMATE ADT VOLUME
- CM = CRITICAL MOVEMENT (UNSIGNALIZED)
- LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
- Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/CRITICAL MOVEMENT CONTROL DELAY (UNSIGNALIZED)
- V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

**YEAR 2030 CONCEPT 13 OPERATIONS
30TH HIGHEST HOUR - EXISTING POE SITE REDEVELOPED
UMATILLA, OREGON**

FIGURE

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12.3.650 East Side of Interchange Improvements

All of the concepts considered included a common set of improvements to be made to the east of the I-82/US 730 interchange. The primary purpose of these improvements is to improve local circulation and access spacing along US 730. The geography of the area precludes moving the Scaplehorn Road access east to better meet access spacing standards. Instead, as development occurs north of US 730 on the east side of the interchange, the perpendicular section of the Scaplehorn Road approach to US 730 will be lengthened to approximately 200 feet to provide stacking distance for vehicles turning onto US 730. Scaplehorn Road will also be extended to serve as a frontage road that provides access for these properties. Similarly, as development occurs on the south side of US 730 on the east side of the interchange, a local street network that accesses US 730 at the Scaplehorn Road intersection will need to be constructed. These circulation and access connections are shown in *Figure 12.3-20*.

12.3.660 Pedestrian Improvements

Pedestrian facilities along US 730 in the study are limited to the south side of US 730 on the west side of the interchange. Sidewalks along with curb and gutter will be constructed on the north side of US 730 from the interchange to the bridge over the Umatilla River as development occurs and/or roadway improvements are made. They will also be constructed on both sides of US 730 east of the interchange to the US 395 intersection as development occurs and/or roadway improvements are made.

12.3.700 INTERCHANGE AREA MANAGEMENT PLAN

The I-82/US 730 IAMP provides a transportation improvement plan and an Access Management Plan (AMP). The transportation improvement plan includes interchange and local circulation improvements, as well as a phasing schedule. The AMP contains an access management plan and documents the justification for the necessary deviations to ODOT's access management standards.

Through adoption by the City of Umatilla, Umatilla County, and ODOT, future development located within the Interchange Management Study Area (IMSA) will be required to make circulation and access improvements, as identified in this plan. Implementation of the IAMP is expected to preserve the functional integrity of the interchange over time and ensure viable access to existing and future land uses. Finally, the action items contained within the implementation plan (Section 12.3.800) will ensure proper coordination between the various stakeholders and that the IAMP remains a dynamic long-term planning tool.

12.3.701 Transportation Improvement Plan Overview

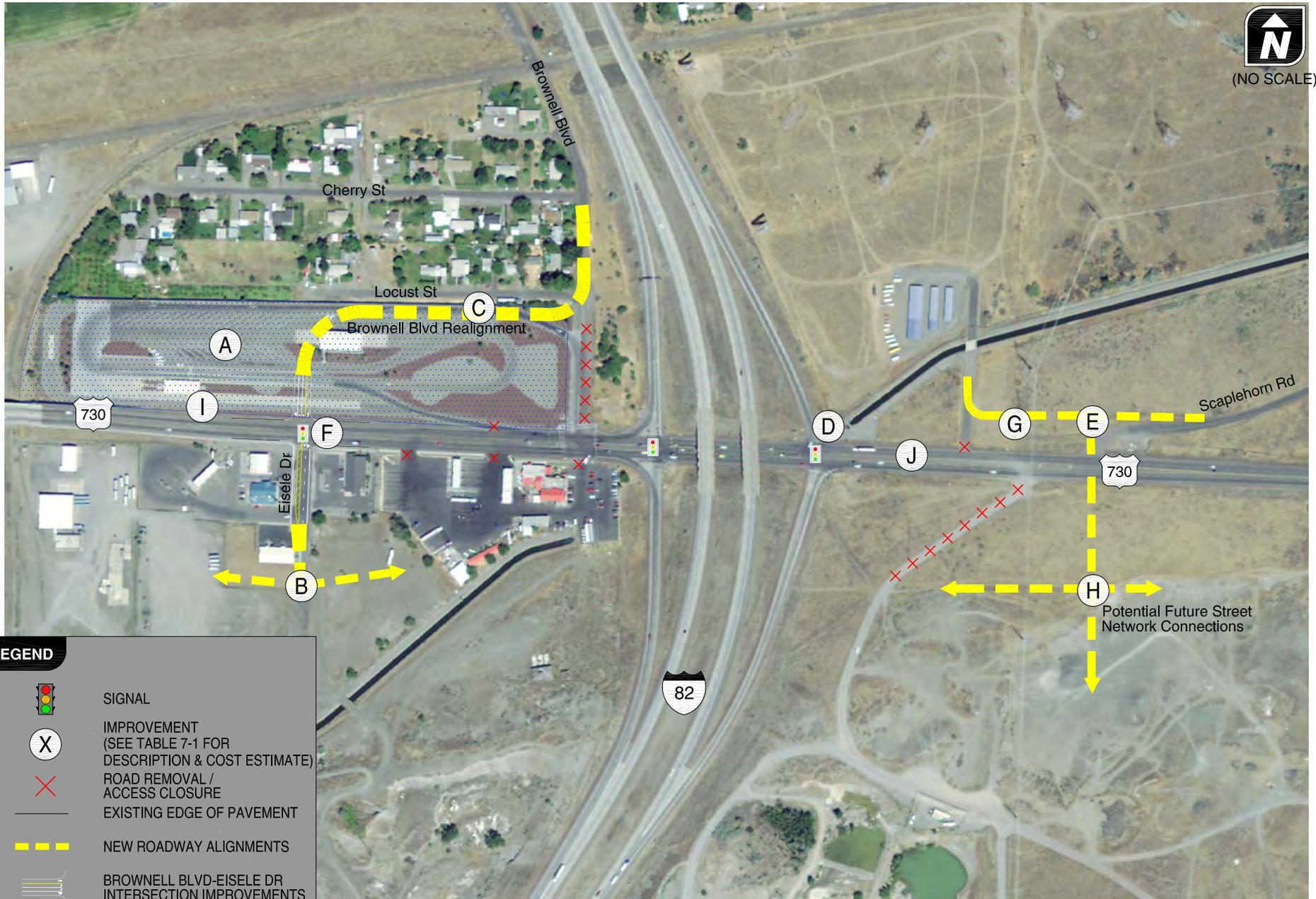
A comprehensive transportation improvement plan including a local circulation and access plan within the interchange management study area (IMSA) was developed based on the concept screening and evaluations outlined in Section 12.3.600. *Figures 12.3-24* and *12.3-25* illustrate the transportation improvement plan. This plan includes the relocation of the Port of Entry (POE) to a new location along I-82, alignments of new roadways and intersections, and modifications to existing roadways and intersections. Each transportation improvement identified in the two figures is described in Table 12.3-15. *Figure 12.3-26* illustrates the lane

configurations and traffic control devices associated with the improvement plan. This table also contains preliminary cost estimates for the improvements.



(NO SCALE)

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LEGEND

-  SIGNAL
-  IMPROVEMENT
(SEE TABLE 7-1 FOR DESCRIPTION & COST ESTIMATE)
-  ROAD REMOVAL / ACCESS CLOSURE
-  EXISTING EDGE OF PAVEMENT
-  NEW ROADWAY ALIGNMENTS
-  BROWNELL BLVD-EISELE DR INTERSECTION IMPROVEMENTS

**TRANSPORTATION IMPROVEMENT PLAN
I-82/US 730 INTERCHANGE AREA
UMATILLA, OREGON**

FIGURE



(NO SCALE)

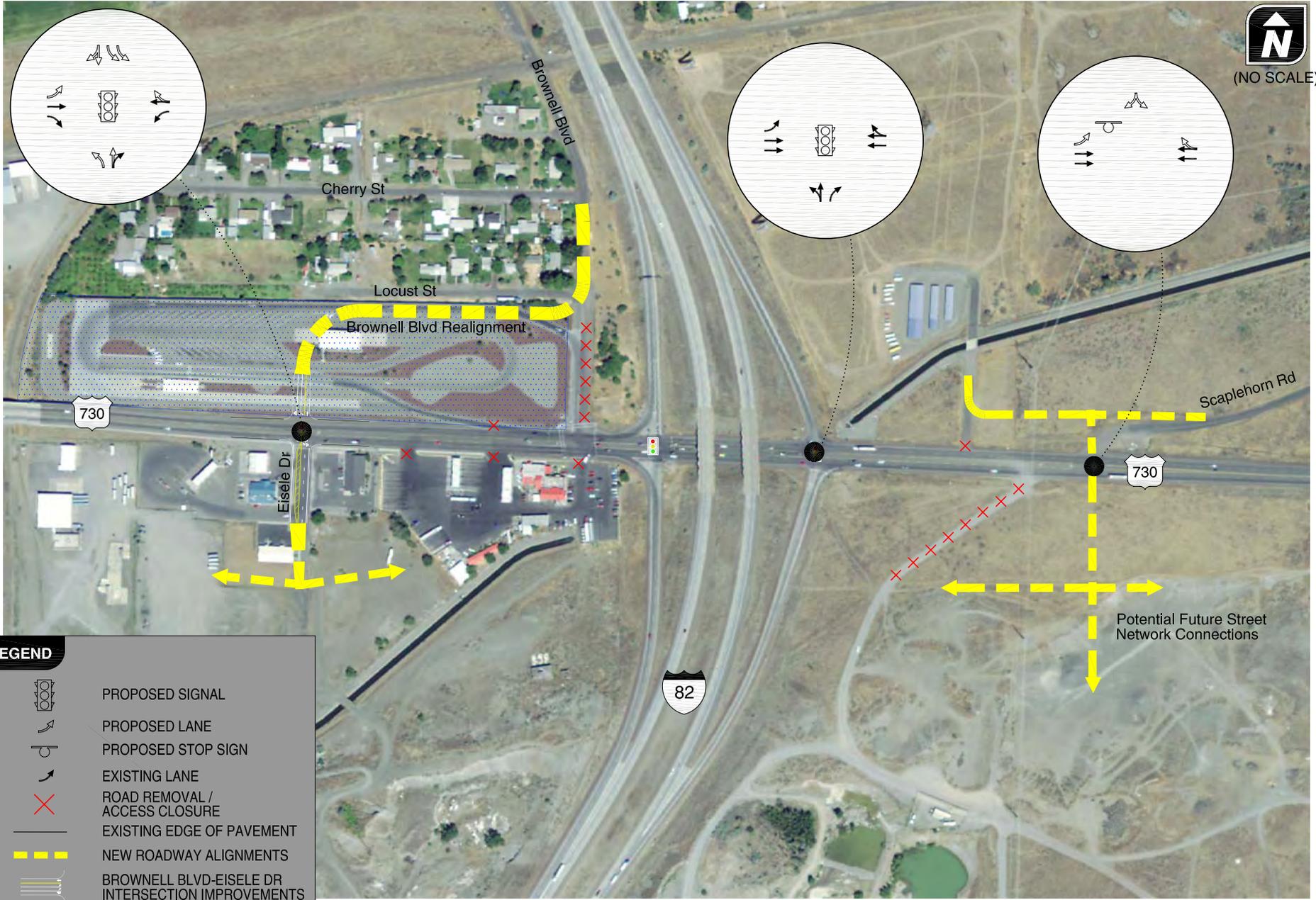


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**IAMP TRANSPORTATION IMPROVEMENT PLAN
RELOCATED POE AND NECESSARY ACCESSORY WEIGHING FACILITIES
UMATILLA, OREGON**

FIGURE

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**TRANSPORTATION IMPROVEMENT PLAN LANE CONFIGURATIONS AND TRAFFIC CONTROL DEVICES
I-82/US 730 INTERCHANGE AREA
UMATILLA, OREGON**

FIGURE

Table 12.3-15 IAMP Transportation Improvements

	Improvement/Description	Trigger for Improvement	Estimated Cost¹	Potential Funding Source
A	Relocate the POE to the I-82 corridor (see Figures 12.3-24 and 12.3-26) and construct a permanent weigh station on US 730 (location to be determined via a separate study) and a temporary truck scale on US 395 (location to be determined via a separate study).	Relocation of POE	\$21M	STIP
B	Construct a new backage road accessed via Eisele Drive to provide access and circulation for properties along the south side of US 730.	Redevelopment of parcels along the south side of US 730.	\$0.7M	PDF
C	Realign Brownell Boulevard to connect to US 730 across from Eisele Drive (exact alignment of Brownell Boulevard to be determined based on future development or City project).	The need to realign Brownell Boulevard will be evaluated in a TIS when 95th-percentile westbound queues (at the existing US 730/Brownell Boulevard intersection) exceed two vehicles and spillover into the I-82 Southbound ramp terminal. Based on a sensitivity analysis of traffic operations, this condition is forecast to occur when the total entering volume at the current intersection exceeds approximately 1,950 vehicles.	\$0.65M	PDF
D	Signalize the I-82 Northbound ramp terminal.	When signal warrants are met.	\$0.3M	STIP PDF
E	Realign Scaplehorn Road to provide a longer perpendicular section.	Redevelopment of parcels along the north side of US 730.	\$0.15M	PDF
F	Signalize the US 730/Eisele Drive/Brownell Road intersection.	When Brownell Boulevard is realigned and when signal warrants are met.	\$0.3M	PDF
G	Extend Scaplehorn Road west to create a frontage road.	Redevelopment of parcels along the north side of US 730.	\$0.2M	PDF
H	Develop a network of local streets that align across from the new Scaplehorn Road intersection.	Redevelopment of parcels along the south side of US 730.	TBD ²	PDF
I	Construct sidewalks on the north side of US 730 from the Umatilla River bridge to the I-82 Southbound ramp terminal	Redevelopment of parcels along the north side of US 730 and roadway improvement projects along US 730	\$0.4M	STIP City PDF
J	Construct sidewalks on both sides of US 730 from the I-82 Southbound ramp terminal to US 395	Redevelopment of parcels and roadway improvement projects along US 730	\$2.0M	STIP City PDF

¹ Includes preliminary construction and right-of-way cost estimates based on 2010 dollars.

² Improvements to be constructed by future development.

STIP – Statewide Transportation Improvement Program
 (ODOT) PDF – Private Development Funds (Private Parties)
 TIS – Traffic Impact Study

The following section provides details on the major improvements identified in the Transportation Improvement Plan, including possible deviations from standards that may be required.

12.3.710 Major Improvements

Relocating the existing POE is the central component of this plan. As was discussed in greater detail in Section 12.3.600, the POE in its current location serves as a gateway to Umatilla. The amount of truck traffic it brings into the area during peak harvest times is a significant factor behind the existing traffic issues at the interchange. It was determined that relocating the POE would likely cost as much or less than modifying the interchange to continue to accommodate the POE in the long-term. As such, the plan identifies a potential relocation site for the POE, shown in *Figure 12.3-25*, south of the I-82/US 730 interchange along the I-82 corridor. This location would allow for the POE to be rebuilt with a larger footprint capable of accommodating more overnight truck parking than the current location allows. The relocated POE would have dedicated on- and off-ramps via I-82 southbound. *Figure 12.3-27* provides a detailed conceptual drawing of the relocated POE.

Given that the relocated POE would only have direct access via I-82 Southbound, this single site is no longer able to effectively serve and enforce the weigh process for trucks traveling along the US 395 and US 730 corridors. As such, this plan necessitates the development of a permanent weigh station on US 730 (somewhere west of Umatilla) and a truck scale to be used as needed along US 395 (somewhere south of US 730). The identification of sites for these facilities has not been completed as part of this process, and therefore no locations are shown. However, rough cost estimates of these facilities (based on a typical design shown in *Figure 12.3-28*) are included in the estimate shown in Table 12.3-15.

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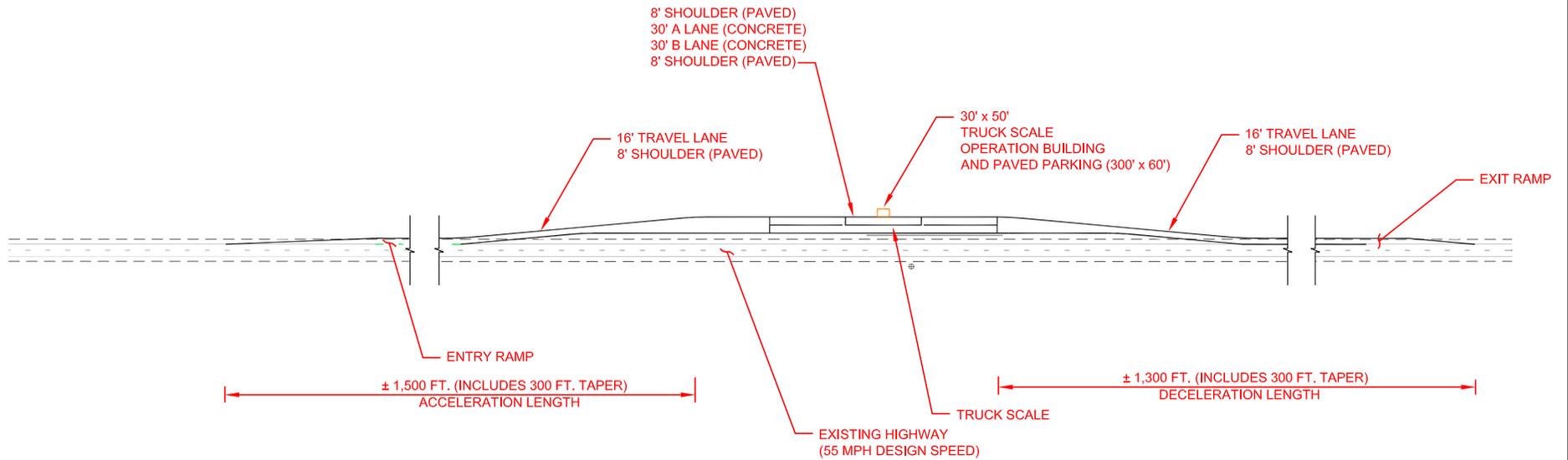


**RELOCATED POE
CONCEPTUAL DRAWING
UMATILLA, OREGON**

FIGURE



(NO SCALE)



PRELIMINARY COPY
INFORMATION ONLY

DRAWING PROVIDED BY
ANDERSON-PERRY & ASSOCIATES

NOTE:
ACCELERATION AND DECELERATION
LENGTHS BASED ON AN ASSUMED
HIGHWAY DESIGN SPEED OF 55 MPH.

**TYPICAL TRUCK SCALE
CONCEPTUAL DRAWING
UMATILLA, OREGON**

FIGURE

12.3.710(1) *Brownell Boulevard*

Relocating the POE allows for Brownell Boulevard to be realigned through the site and intersect US 730 directly across from Eisele Drive. Such realignment would significantly improve the intersection spacing between Brownell Boulevard and the I-82 SB ramp terminal and move in the direction of achieving the desirable ¼-mile spacing standard. This Brownell Boulevard realignment is envisioned to occur over time, but only after the POE is potentially relocated. To ensure that the realignment occurs as envisioned, the IAMP has laid out the following steps that ODOT, the City of Umatilla, and Umatilla County should take following POE relocation:

A. ODOT and the City of Umatilla will enter into a memorandum of understanding (MOU) that establishes parameters for the sale of the POE site. Specific details of the agreement should include the following:

- 1). ODOT will go through a process to surplus the property.
- 2) Sale of the POE property will exclude the land necessary to establish the right-of-way to establish the Brownell Boulevard realignment as illustrated in *Figure 12.3-24*.
- 3) The excluded property should be sufficient to accommodate the Minor Arterial standard in the City's Transportation System Plan. This includes two 12 foot travel lanes, a 14 foot center turn lane, two 6 foot bike lanes, two 5 foot planting strips, and two 6 feet sidewalks. In addition to this cross-section, *Figure 12.3-26* illustrates the recommended Brownell Boulevard approach to US 730 based on the traffic analysis (dual southbound left-turn lanes and a shared through/right-turn lane onto US 730, with approximately 125 feet of storage for the left-turn lanes).

B. Construction of the actual Brownell Boulevard realignment will occur as part of future redevelopment of the POE site. A trigger point for the realignment should occur when 95th percentile westbound queues (at the existing US 730/Brownell Boulevard intersection) exceed two vehicles and spillover into the I-82 Southbound ramp terminal. Based on a sensitivity analysis of traffic operations, this condition is forecast to occur when the total entering volume at the current intersection exceeds approximately 1,950 vehicles. This is the equivalent of year 2030 traffic conditions with the POE relocated and approximately 50,000 square-feet of retail development on the current POE site.

C. After full realignment of Brownell Boulevard, the City of Umatilla will take over ownership and maintenance responsibility from Umatilla County.

12.3.710(2) *Eisele Drive and Backage Road*

To better manage access along the south side of US 730, right-of-way should be acquired as part of future redevelopment projects to the east and west of Eisele Drive. A new backage road would then be constructed to link all of the properties on the south side of US 730. This backage road will be constructed as part of future redevelopment to a Collector standard in the City's transportation system plan. This includes two 12 foot travel lanes, a 12 foot center turn lane, two 6 foot bike lanes, two 5 foot planting strips, and two 6 feet sidewalks.

The US 730/Eisele Drive intersection will be signalized with the realignment of Brownell Boulevard. At this point, or when development of the backage road occurs, whichever is first, the Eisele Drive approach should be widened to provide an exclusive left-turn lane.

12.3.710(3) I-82/US 730 Northbound Ramp Terminal

On the east side of the interchange, signalize the I-82/US 730 Northbound ramp terminal. Signalization is anticipated to be needed to accommodate peak hour travel demand from continued traffic growth at the interchange.

12.3.710(4) Scaplehorn Road and Local Circulation

The geography of the area precludes moving the Scaplehorn Road access east to better meet access spacing standards. Instead, as development occurs north of US 730 on the east side of the interchange, the perpendicular section of the Scaplehorn Road approach to US 730 will be lengthened to approximately 200 feet to provide stacking distance for vehicles turning onto US 730. Scaplehorn Road will also be extended to serve as a frontage road that provides access for these properties. Similarly, as development occurs on the south side of US 730 on the east side of the interchange, a local street network that accesses US 730 at the Scaplehorn Road intersection will need to be constructed. These circulation and access connections are illustrated in *Figure 12.3-24*.

12.3.710(5) Pedestrian Improvements

Pedestrian facilities along US 730 in the study are currently limited to the south side of US 730 on the west side of the interchange. Sidewalks along with curb and gutter will be constructed on the north side of US 730 from the interchange to the bridge over the Umatilla River as development occurs and/or roadway improvements are made. They will also be constructed on both sides of US 730 east of the interchange to the US 395 intersection as development occurs and/or roadway improvements are made.

12.3.711 Possible Exceptions/Deviations from Standards

The deviations that will be required for the near-term improvements are related to the access spacing standards outlined under Oregon Administrative Rule 734, Division 51 and the Oregon Highway Plan (OHP). These deviations are discussed in the access management subsection below.

12.3.720 Access Management Plan

Access locations within the IMSA were evaluated based on ODOT's Division 51 Access Management standards and an assessment of traffic operations and safety as described in Action 3C.3 of the 1999 Oregon Highway Plan. Accordingly, an Access Management Plan (AMP) is developed to preserve the operational integrity and safety of primary roadways (e.g. US 730) serving the interchange area, while maintaining viable access to all parcels in the IMSA. The AMP contains both a plan for actions to be taken on City and County of Umatilla roadways (i.e. SW Eisele Drive and Brownell Boulevard) and adopted into the City's and County's TSPs, respectively, and a plan, which is implemented by ODOT on state highway facilities (i.e., I-82, US 730) and adopted into the OHP as part of the facility plan.

An AMP is identified for the near-, medium-, and long-term timeframes. The overall AMP is illustrated in *Figure 12.3-29*. Justification is also provided for locations where deviations from ODOT's access management standards are necessary. Access management will be implemented as part of ODOT, City, and County project development and delivery processes or as future land use changes occur.

12.3.721 General Access Management Implementation

Under ODOT's current access management policy, the 1999 Oregon Highway Plan stipulates that the desired distance between an interchange ramp terminal and the first full approach (public or private) on the crossroad should be a minimum of 1,320 feet (¼-mile). The first right-in/right-out access should be a minimum of 750 feet from the ramp terminal. Currently there are 4 private approaches and 3 public street approaches on the west side of the interchange and 2 private and 1 public approaches on the east side within 1,320 feet of the interchange ramp terminals, as was previously documented in *Figures 12.3-7* and *12.3-8*.

12.3.722 Existing Private Approach Policy

ODOT guarantees Access Permit protection, as allowed within ORS 374.305 & 310, to all existing private accesses. Each will remain a valid access as long as the existing uses remain on property/site and there is no capital improvement project that would trigger review of the access (per OAR 734.051.0285). An access evaluation will be required when any of the following land use actions leads to a peak hour increase in 50 trips or more over the prior use, a daily increase of 500 trips or more over the prior use, or the increase represents a 20 percent or more increase in trips on a typical day/peak hour; if there is an identified safety or operational problem related to the approach; if the approach does not meet sight distance requirements; or if the daily traffic using the approach increases by 10 or more vehicles with a gross vehicle weight equal to or greater than 26,000 pounds:

Modifications to existing zoning,

Changes to plan amendment designations;

Construction of new buildings;

Increases in floor space of existing buildings;

Division or consolidation of property boundaries;

Changes in the character of traffic using the driveway/approach;

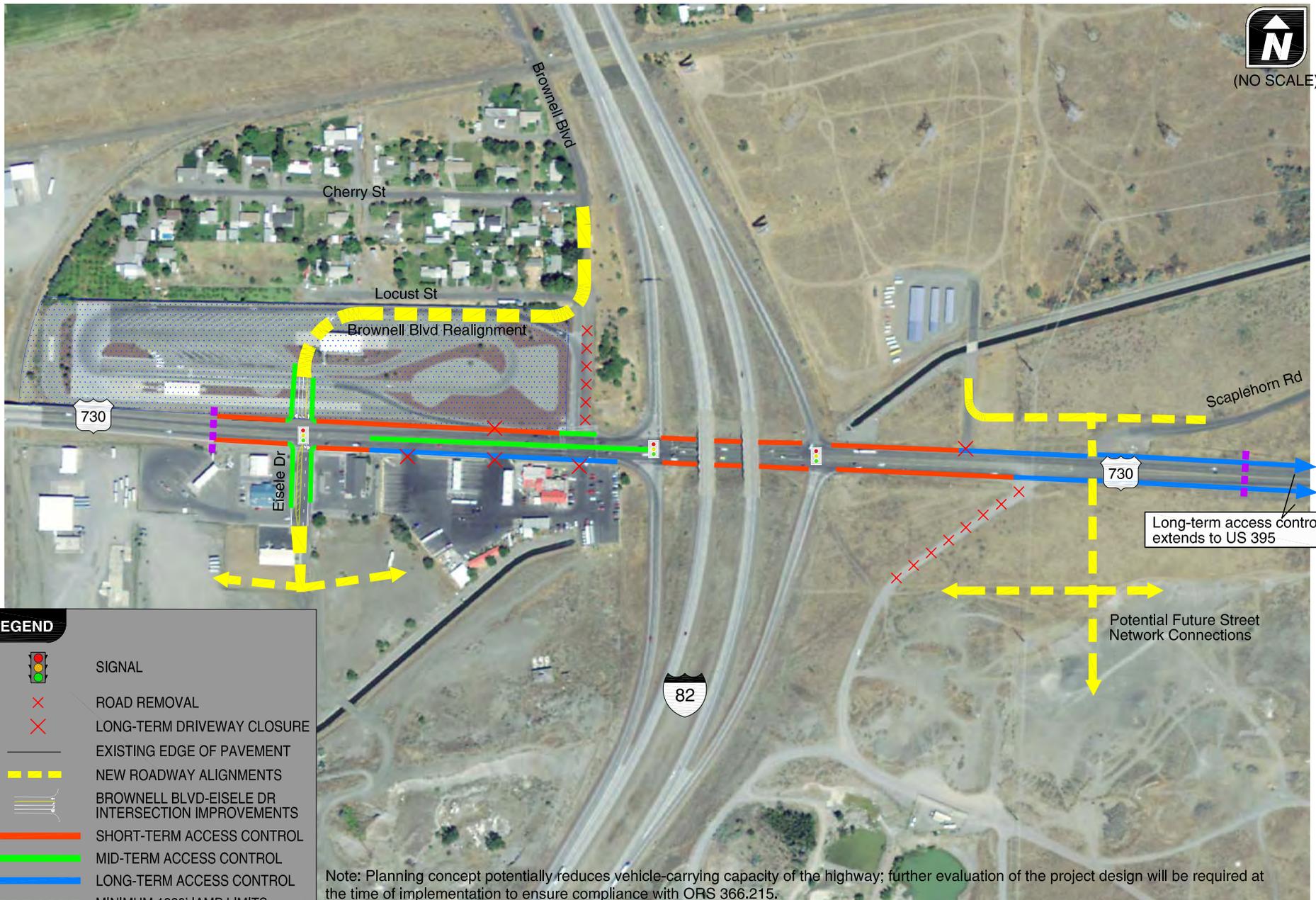
Changes to internal site circulation design or inter-parcel circulation; or

Re-establishment of a property's use (after discontinuance for four years or more that trigger a Traffic Impact Assessment as defined below) that occurs on the parcels served by the approaches.



(NO SCALE)

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LEGEND

-  SIGNAL
-  ROAD REMOVAL
-  LONG-TERM DRIVEWAY CLOSURE
-  EXISTING EDGE OF PAVEMENT
-  NEW ROADWAY ALIGNMENTS
-  BROWNELL BLVD-EISELE DR INTERSECTION IMPROVEMENTS
-  SHORT-TERM ACCESS CONTROL
-  MID-TERM ACCESS CONTROL
-  LONG-TERM ACCESS CONTROL
-  MINIMUM 1320' IAMP LIMITS

Note: Planning concept potentially reduces vehicle-carrying capacity of the highway; further evaluation of the project design will be required at the time of implementation to ensure compliance with ORS 366.215.

**ACCESS MANAGEMENT PLAN
UMATILLA, OREGON** FIGURE

In general, the types of improvements identified for accesses within the IMSA include:

Modifying, mitigating, consolidating, or removing existing approaches pursuant to an access management plan as part of the highway project development and delivery process (OAR 734-051);

Improving traffic safety and operations by improving the local street network to provide alternate access and reduce conflict points; and,

Restricting highway access but improving local roadway access by introducing shared access, cross-over easements, and/or consolidated access when separate parcels are assembled for redevelopment, and access via collector or local streets.

The time period over which the following measures will be implemented will depend on the rate of redevelopment within the IMSA and when the transportation improvement plan projects identified previously are constructed. As each parcel redevelops, or upon capital improvement, accesses will be evaluated to determine how they will be modified in order to move in the direction of meeting the access spacing standards and long-term vision of driveway consolidation while still providing access as defined in OAR 734-051.

12.3.723 Access Management

Figure 12.3-29 illustrates the AMP for the IMSA. The AMP is divided into three time-frames: near-term, mid-term, and long-term. The near-term plan illustrates how access will be controlled with the initial construction of identified near-term improvements. After the near-term improvements are constructed, ODOT and the City could then begin implementing the mid-term plan, based upon parcels redeveloping or safety and operational needs warranting access restrictions. The long-term plan would be implemented once the long-term improvements are constructed. The following is a description of the AMP for each major roadway.

12.3.723(1) US 730

The AMP for US 730 is primarily focused on not allowing new private accesses to the highway within ¼-mile of the interchange ramps. It also focuses on minimizing existing approach connections over time through closures, and consolidations, supported by alternate access provided via a backage road connecting to Eisele Drive. This plan will be implemented in the near-, mid-, and long-term time-frames as outlined in *Figure 12.3-29*. In the mid-term, Brownell Boulevard will be realigned across from Eisele Drive in order to improve access spacing and provide access to the potential future redevelopment of the current POE site. Brownell Boulevard will be the closest full access to the interchange on the north side of US 730. In the long-term, the remaining accesses in this segment of US 730 between the interchange and Umatilla River Road may be restricted to right-in/right-out access by a raised center median that will be constructed to address future operational and/or safety issues. The existing accesses onto the south side of US 730 on the west side of the interchange may remain as right-in/right-out accesses after the backage road is constructed and until redevelopment occurs. At this time a review of the accesses will determine whether they remain.

A similar approach is taken on the east side of the interchange as well. Access points will be consolidated when possible as properties redevelop. When possible, access will be provided via public street connections, including both existing roadways and the future south side street network shown on *Figure 12.3-29*.

12.3.723(2) Eisele Drive

The access management plan for Eisele Drive is to move accesses as far south as is practical over time in order to minimize conflicts near its signalized intersection with US 730.

12.3.723(3) Brownell Boulevard

The access management plan for Brownell Boulevard is to not allow any accesses within the 250 feet of storage needed for left-turning traffic onto US 730 when it is realigned.

12.3.724 Deviations to the Division 51 Access Management Standards

A few accesses will not meet the applicable OAR Division 51 access spacing standard, and as such, deviations are required to address them. These deviations will be reviewed by the Region Access Management Engineer. Under the provisions, the Region Access Management Engineer may approve a deviation if:

- (a) Adherence to spacing standards creates safety or traffic operation problems;*
- (b) The applicant provides a joint approach that serves two or more properties and results in a net reduction of approaches to the highway;*
- (c) The applicant demonstrates that existing development patterns or land holdings make joint use approaches impossible;*
- (d) Adherence to spacing standards will cause the approach to conflict with a significant natural or historic feature including trees and unique vegetation, a bridge, waterway, park, archaeological area, or cemetery;*
- (e) The highway segment functions as a service road;*
- (f) On a couplet with directional traffic separated by a city block or more, the request is for an approach at mid-block with no other existing approaches in the block or the proposal consolidates existing approaches at mid-block; or*
- (g) Based on the Region Access Management Engineer's determination that:*
 - (A) Safety factors and spacing significantly improve as a result of the approach; and*
 - (B) Approval does not compromise the intent of these rules as set forth in OAR 734-051-0020 (Which states: The purpose of Division 51 rules is to provide a safe and efficient transportation system through the preservation of public safety, the improvement and development of transportation facilities, the protection of highway traffic from the hazards of unrestricted and unregulated entry from adjacent property, and the elimination of hazards due to highway grade intersections.)*

The following is a description of the justification for deviation for each of the public accesses requiring a deviation.

12.3.724(1) Public Access to Eisele Drive

A deviation to the access spacing requirements identified in OAR Division 51 is required at the US 730/Eisele Drive (and future Brownell Boulevard) intersection, which is located approximately 1,050 feet west of the I-82 Southbound ramp terminal, as shown in *Figure 12.3-29*. As was mentioned above, a deviation may be approved if:

(b) The applicant provides a joint approach that serves two or more properties and results in a net reduction of approaches to the highway;

Response: Eisele Drive will provide access to properties on the south side of US 730, which will facilitate the consolidation of private accesses onto US 730. Brownell Boulevard will provide access to properties on the north side of US 730, ensuring that new accesses onto US 730 are not needed.

(g) Based on the Region Access Management Engineer's determination that:

(A) Safety factors and spacing significantly improve as a result of the approach; and

(B) Approval does not compromise the intent of these rules as set forth in OAR 734-051-0020 (Which states: The purpose of Division 51 rules is to provide a safe and efficient transportation system through the preservation of public safety, the improvement and development of transportation facilities, the protection of highway traffic from the hazards of unrestricted and unregulated entry from adjacent property, and the elimination of hazards due to highway grade intersections.)

Response: This access management plan improves the existing spacing to the nearest signalized intersection and meets the intent of the Division 51 rules as it reduces vehicle turning conflicts within the interchange access management area, and protects the flow of highway traffic traveling to/from the interchange by facilitating the consolidation of accesses.

12.3.724(2) Public Access to Scaplehorn Road

A deviation to the access spacing requirements identified in OAR Division 51 is required at the US 730/Scaplehorn Road (and future south side circulation road) intersection, which is located approximately 800 feet east of the I-82 Northbound ramp terminal, as shown in *Figure 12.3-29*. As was mentioned above, a deviation may be approved if:

(b) The applicant provides a joint approach that serves two or more properties and results in a net reduction of approaches to the highway;

Response: Scaplehorn Road provides access to properties on the north side of US 730, which will facilitate the consolidation of private accesses onto US 730 and ensure that new accesses are not needed. The new circulation roadway will provide access to properties on the south side of US 730, consolidating existing access and ensuring that new accesses onto US 730 are not needed.

12.3.800 IMPLEMENTATION PLAN

This section describes the IAMP implementation strategy, which includes an I-82/US 730 Interchange Function and Policy Definition and Management Area. The Implementation Plan also includes adoption and monitoring procedures that will ensure transportation improvements are constructed and funded as development occurs and that the improvement plan is updated as needed over time.

To ensure that the IAMP remains dynamic and responsive to changes to the adopted land use and transportation plans, the City of Umatilla, Umatilla County, and ODOT should, at a minimum:

- Amend their respective Transportation System Plans and Comprehensive Plans;
- Amend the Oregon Highway Plan (OHP);
- Codify and map an IAMP Management Area that defines the area wherein regulations and requirements associated with protecting the interchange apply;
- Coordinate planning activities pursuant to the Transportation Planning Rule (OAR 660-012);
- Review the IAMP and mobility standards for the interchange prior to adopting local plan amendments.

12.3.810 Plan Elements

In addition to adoption of the IAMP described in Section 12.3.700, implementation of the I-82/US 730 IAMP requires adoption of an “Interchange Function and Policy Definition” and IAMP Management Area.

12.3.811 Interchange Function and Policy Definition

The City of Umatilla and Umatilla County should adopt a clear definition of the I-82/US 730 Interchange function into their respective comprehensive plan and TSP as a policy to provide direction for management of the interchange area and achieve the objectives and goals of this IAMP. This will help to ensure consistency between future policy decisions with the interchange’s intended function.

The I-82/US 730 interchange provides connections between the I-82, US 730, and US 395 corridors. I-82 is a short, but significant interstate highway that connects the state of Washington to the I-84 corridor. I-82 is classified as an Interstate Highway by the Oregon Highway Plan (OHP) and designated as an Expressway and Statewide Freight Route. US 730 is a Regional Highway that provides regional connectivity between numerous local jurisdictions and the Interstate 82/I-84 interstate highways.

Based on this description, the following function and policy definition was developed for the I-82/US 730 Interchange:

“The primary transportation function of the I-82/US 730 interchange is to facilitate statewide, interurban, and inter-regional travel between I-82, US 730, and US 395. In

addition to this primary function, the I-82/US 730 interchange provides east-west inter-regional connectivity across I-82 for the City of Umatilla and surrounding land uses. Beyond these primary functions, the interchange provides an inter-regional connection that supports local, regional, and state business interests.”

12.3.812 IAMP Management Area

The City of Umatilla is the land use regulatory authority for most of the IMSA; for land that is located outside of the City’s UGB, Umatilla County is the land use regulatory authority. To ensure the continued operation and safety integrity of the interchange, both the City of Umatilla and Umatilla County should adopt an IAMP Management Area. Future development and land use actions within the IAMP Management Area will be monitored to ensure that volume-to-capacity ratios do not exceed the adopted Oregon Highway Plan mobility standards at the ramp terminals. This can be accomplished through Development Review guidelines included within the proposed amendments to the City’s Land Use and Development Ordinances as described in the following sections.

12.3.820 Adoption Elements

Implementation of the I-82/US 730 IAMP will occur at several levels of government. As required by OAR 734-051, the City of Umatilla and Umatilla County will be required to legislatively amend their Transportation System Plans and Comprehensive Plans to incorporate elements of the I-82/US 730 IAMP. In addition, new ordinances or amendments to existing ordinances, resolutions, and Inter-Governmental Agreements (IGAs) will be required to ensure that the access management, land use management, and coordination elements of the IAMP are achieved. This adoption process will include Planning Commission/City Council hearings at the city level and Planning Commission/County Board of Commissioners hearings at the County level. Following successful adoption at the City and County levels, the I-82/US 730 IAMP will be presented to the Oregon Transportation Commission (OTC) for its review and adoption. This should occur prior to transportation improvements as described in this IAMP being constructed.

To implement the I-82/US 730 IAMP, the following actions shall occur:

1. The City of Umatilla shall adopt the I-82/US 730 IAMP as part of the City of Umatilla Transportation System Plan and Comprehensive Plan. The IAMP, and more specifically the transportation improvements identified in Table 12.3-15 of Section 12.3.700, shall serve as the long range comprehensive management plan for providing the transportation facilities that are specifically addressed in this plan, as well as the Access Management Plan and the planned local street network for the area.
2. Umatilla County shall adopt the I-82/US 730 IAMP as part of the Umatilla County Transportation System Plan and Comprehensive Plan. The IAMP shall serve as the long range comprehensive management plan for providing the transportation facilities that are specifically addressed in this plan, as well as the Access Management Plan and the planned local street network for the area.

3. The City of Umatilla shall amend its Comprehensive Plan Map and Zoning Map to include the IAMP Management Area boundary. In addition, the City shall amend the Land Use and Development Ordinance to include development and land use application requirements pertaining to transportation impact analysis, access management, and agency coordination.
4. Umatilla County shall amend its Comprehensive Plan Map and Zoning Map to include the IAMP Management Area boundary. In addition, the County shall amend the Land Use and Development Ordinance to include development and land use application requirements pertaining to transportation impact analysis, access management, and agency coordination.
5. ODOT Regional Access Management Engineer will review and approve the access deviations described in the IAMP.
6. The Oregon Transportation Commission shall amend the Oregon Highway Plan to include the I-82/US 730 IAMP.
7. The City of Umatilla, Umatilla County, and ODOT shall develop a Memorandum of Understanding (MOU) that specifies how the improvements identified in Table 12.3-15 of Section 12.3.700 will be addressed.

12.3.821 TSP Amendments

The following outline discusses the major Transportation System Plan amendments that will need to occur at the city, county, and state levels to support adoption of the I-82/US 730 IAMP.

12.3.822 City of Umatilla

The City shall adopt the I-82/US 730 Interchange Area Management Plan as an element of the City's Transportation System Plan.

The following interchange policy statement shall be included in the City of Umatilla Transportation System Plan: *“The primary transportation function of the I-82/US 730 interchange is to facilitate statewide, inter-urban, and inter-regional travel between I-82, US 730, and US 395. In addition to this primary function, the I-82/US 730 interchange provides east-west inter-regional connectivity across I-82 for the City of Umatilla and surrounding land uses. Beyond these primary functions, the interchange provides an inter-regional connection that supports local, regional, and state business interests.”*

The IAMP Transportation Improvement Plan, as illustrated in *Figure 12.3-24* and listed in Table 12.3-15, shall be included in the recommended transportation improvements project list of the Transportation System Plan.

12.3.823 Umatilla County

The County shall adopt the I-82/US 730 Interchange Area Management Plan by reference as an element of the County's Transportation System Plan.

Upon the County's adoption of the IAMP, parcels within the IMSA and outside the UGB will be subject to the IAMP's Access Management Plan.

The following interchange policy statement should be included in the Umatilla County Transportation System Plan: *"The primary transportation function of the I-82/US 730 interchange is to facilitate statewide, inter-urban, and inter-regional travel between I-82, US 730, and US 395. In addition to this primary function, the I-82/US 730 interchange provides east-west inter-regional connectivity across I-82 for the City of Umatilla and surrounding land uses. Beyond these primary functions, the interchange provides an inter-regional connection that supports local, regional, and state business interests."*

The IAMP transportation improvement plan elements located on County facilities, as illustrated in *Figure 12.3-24* and listed in *Table 12.3-15*, shall be included in the recommended transportation improvements project list of the Umatilla County Transportation System Plan.

The IAMP Access Management Plan elements, as illustrated in *Figure 12.3-29*, shall be included in the transportation improvement project list of the Transportation System Plan.

12.3.824 Oregon Transportation Commission

The I-82/US 730 IAMP shall be adopted by the Oregon Transportation Commission as part of the Oregon Highway Plan.

12.3.825 Other City Amendments

The following outlines other major amendments that will need to occur at the city level to support adoption of the I-82/US 730 IAMP.

The City shall amend the Umatilla Code to establish a Gateway Sub-District under the General Commercial (GC) zone that addresses potential future redevelopment of the Port of Entry (POE) site. This sub-district will require specific development standards and specify restricted uses.

12.3.830 Monitoring Elements

The purpose of the IAMP is to ensure that capacity at the interchange is preserved for its intended function. While a long-range plan, the IAMP needs to remain dynamic and responsive to development and changes to the adopted land use and transportation plans and may need to be periodically reviewed and updated. To accomplish this goal, a monitoring program is included that identifies triggers for reviewing the IAMP and assessing how development approval within the IAMP Management Area will be reviewed and coordinated

12.3.831 IAMP Review Triggers

Periodically, the implementation program shall be evaluated by the City, ODOT, and County to ensure it is accomplishing the goals and objectives of the IAMP. Events that may trigger an IAMP review include:

- Plan map and zone changes within the IAMP Management Area that have a "significant affect" pursuant to the Transportation Planning Rule (TPR), Section -0060 and impact the

Interstate 82/US 730 Interchange, or proposed actions that meet the Traffic Impact Analysis conditions within the I-82/US 730 Interchange Overlay Zone.

- Designation of any proposed Multi-Modal Mixed Use Area (MMA) as defined in the TRP, Section -0060 that is located within the IAMP Management Area.
- Following relocation of the POE.
- The 95th-percentile westbound vehicle queue on US 730 exceeds two vehicles or backs into the I-82/US 730 Southbound ramp terminal.
- Mobility measures at the I-84 ramp terminals exceed the adopted volume-to-capacity ratios.

In addition to the established triggers for IAMP review, the agencies may request a review of the IAMP at any time if, in their determination, specific land use or transportation changes warrant a review of the underlying assumptions and/or recommendations within the IAMP. If the participants in the IAMP review meeting agree that, once the impacts of the “trigger” that necessitated the review are examined, an IAMP amendment is not warranted, a recommendation of “no action” may be documented and submitted in the form of a letter to the City of Umatilla City Council, Umatilla County Board of Commissioners, and the Oregon Transportation Commission.

If the findings and conclusions from the IAMP review meeting demonstrate the need for an update to the plan, review participants will initiate an IAMP update process. Initial steps in updating the IAMP will include scoping the planning process, identifying funding, and outlining a schedule for plan completion. Once completed, IAMP updates will be required to be legislatively adopted, requiring a City Council public hearing, as an amendment to the City of Umatilla Transportation System Plan and will be adopted by Umatilla County Board of Commissioners (if affected) and the Oregon Transportation Commission as an update to the Oregon Highway Plan

12.3.832 Development Review within the Overlay District

The following outlines the transportation requirements for development and zone change applications within the I-82/US 730 Interchange Overlay Zone and describes how the City of Umatilla and Umatilla County will coordinate with ODOT.

12.3.832(1) Traffic Impact Analysis

All development applications located within the I-82/US 730 Interchange Management Area that meet the following conditions are required to prepare and submit a Transportation Impact Analysis (TIA) to demonstrate the level of impact of the proposed development on the surrounding street system:

- A. A change in zoning or plan amendment designation; and

- B. The proposal is projected to cause one or more of the following effects, which can be determined by field counts, site observation, traffic impact analysis or study, field measurements, crash history, Institute of Transportation Engineers *Trip Generation* manual; and information and studies provided by the local reviewing jurisdiction and/or ODOT:
- i) An increase in site traffic volume generation by 250 average daily trips (ADT) or more (or as required by the City Engineer). The latest edition of the *Trip Generation* manual, published by the Institute of Transportation Engineers (ITE) shall be used as standards by which to gauge average daily vehicle trips; or
 - ii) An increase in use of adjacent streets by vehicles exceeding the 20,000 pound gross vehicle weights by 10 vehicles or more per day; or
 - iii) The location of the access driveway does not meet minimum intersection sight distance requirements, or is located where vehicles entering or leaving the property are restricted, or vehicles queue or hesitate, creating a safety hazard; or
 - iv) A change in internal traffic patterns that may cause safety problems, such as back up onto the highway or traffic crashes in the approach area; or.
 - v) For development in the I-82/US 730 Interchange Area Management Plan (IAMP) Management Area, the location of the access driveway is inconsistent with the Access Management Plan in Section 12.3.700 of the IAMP

The determination of impact or effect, and the scope of the TIA, shall be coordinated with the City of Umatilla, Umatilla County, and ODOT. The developer shall be required to mitigate impacts attributable to the project.

12.3.832(2) ODOT Coordination

The City shall consult the Oregon Department of Transportation (ODOT) on TIA requirements when the site of the proposal is adjacent to or otherwise affects a State roadway.

The City shall provide written notification to ODOT once the application is deemed complete.

ODOT shall have at least 20 days, measured from the date notice to agencies was mailed, to provide written comments to the City. If ODOT does not provide written comments during this 20-day period, the City staff report will be issued without consideration of ODOT comments.

The County shall invite ODOT to participate in a pre-filing conference for applications within an Interchange Management Area Plan (IAMP) Management Area or within a ¼ mile of any ODOT facility.

12.3.840 POE Relocation Related Actions

A major component of the I-82/US 730 IAMP centers on a potential future relocation of the POE. Given the uncertainty of the timing and the numerous logistical details that come with the relocation, it is expected that additional actions will need to be taken by the City of Umatilla, ODOT, and Umatilla County. For guidance purposes, the Implementation section of the IAMP has identified these likely next steps.

12.3.841 Surplus Process

When funding becomes available and the POE is relocated, the State of Oregon will be in a position to potentially sell the existing POE site for future redevelopment. In order for this to occur, the State will first have to declare the POE site as surplus property. It is recognized that declaring the POE site as surplus property is an important first step to ensuring redevelopment of the site and some of the associated infrastructure projects envisioned in the IAMP. The most significant infrastructure change involves the realignment of Brownell Boulevard. To ensure that the realignment takes place as envisioned, ODOT will follow the policies and procedures established in Chapter 9 of ODOT's Right-of-Way Manual.

12.3.842 Brownell Realignment

Because the necessary steps for a long-term Brownell realignment involve ODOT (owner of the POE site), City (governing jurisdiction), and Umatilla County (owner of the existing Brownell Boulevard), it is anticipated that all three jurisdictions will need address the following issues when the POE site is formally relocated and redevelopment of the POE site take place.

- Timing of jurisdictional transfer of the realigned Brownell Boulevard to the City. This jurisdictional transfer is outlined in Chapter 9 of ODOT's Right-of-Way Manual.
- The City will establish a funding mechanism that will ensure construction of the Brownell Boulevard re-alignment as part of the future redevelopment of the POE.
- Land Use Permitting for the POE site.

12.3.850 Disclaimer

The inclusion of proposed projects and actions in this plan does not obligate or imply obligations of funds by any jurisdiction for project level planning or construction. The inclusion of proposed projects and actions does serve as an opportunity for the projects to be included, if appropriate, in the State Transportation Improvement Program (STIP) and the local Capital Improvement Program (CIP), but such inclusion is not automatic. It is incumbent on the state, county, city, and general public to take action to encourage and support inclusion in the STIP or CIP at the appropriate time. Because a project must have actual identified funding to be included in the STIP or CIP, the ultimate number of projects that can be included in these documents is constrained by available funding. The state transportation system improvement projects that are expected to be funded by ODOT that are listed on the transportation improvement project list have no guaranteed funding at this time and are not reasonably likely to be funded during the identified planning horizon for the purpose of addressing OAR 660-0012-0060.

12.3.900 OAR AND OHP COMPLIANCE

The following section discusses the Oregon Administrative Rule (OAR) and 1999 Oregon Highway Plan (OHP) policy based compliance issues that pertain to the development of the I-82/US 730 IAMP.

12.3.910 OAR Compliance

The I-82/US 730 IAMP was developed in collaboration with the City of Umatilla, Umatilla County, and ODOT and was developed in accordance with the guidelines set forth in the State of Oregon’s Oregon Administrative Rules for Interchange Access Management Planning and Interchange Area Management Planning. Table 12.3-16 identifies the required planning elements from OAR 734-051 and documents how the I-82/US 730 IAMP satisfies the requirements.

Table 12.3-16 OAR 734-051 Issues Addressed

OAR 734-0051-0155 Requirement	How Addressed	Report Reference
Should be developed no later than the time the interchange is being developed or redeveloped -0155(7)(a)	This plan was developed in order to determine the future improvements that would enhance the efficiency and safety of the interchange. The plan was completed before any of the identified improvements to the interchange moved into project development phases.	Section 12.3.100
Should identify opportunities to improve operations and safety in conjunction with roadway projects and property development or redevelopment and adopt strategies and development standards to capture those opportunities - 0155(7)(b)	The access management, transportation improvement plan, and overlay district elements identified in this plan will result in operational and capacity improvements.	Section 12.3.700 Section 12.3.800
Should include short, medium, and long-term actions to improve operations and safety in the interchange area -0155(7)(c)	The IAMP includes a phasing plan for the transportation system improvements and access management elements that cover the short, medium, and long-term time timeframes.	Section 12.3.700 Section 12.3.800
Should consider current and future traffic volumes and flows, roadway geometry, traffic control devices, current and planned land uses and zoning, and the location of all current and planned approaches -0155(7)(d)	A full analysis of existing and forecast (2030) operational and geometric conditions was conducted for this planning effort. The future volumes were developed based on current zoning and comprehensive plan designations. All approaches, existing and planned, were examined.	Section 12.3.400 Section 12.3.500 Section 12.3.600
Should provide adequate assurance of the safe operation of the facility through the design traffic forecast period, typically 20 years -0155(7)(e)	The forecast analysis shows that safe operations will be achieved for the interchange through 2030.	Section 12.3.600
Should consider existing and proposed uses of all property in the interchange area consistent with its comprehensive plan designations and zoning -155(7)(f)	A thorough analysis of surrounding land uses and land use potential was performed based on the current comprehensive plan designations and zoning.	Section 12.3.400 Section 12.3.500 Section 12.3.600 Section 12.3.700

OAR 734-0051-0155 Requirement	How Addressed	Report Reference
Is consistent with any applicable Access Management Plan, corridor plan or other facility plan adopted by the Oregon Transportation Commission 0155(7)(g)	The I-82/US 730 Interchange Area Management Plan is consistent with the 1999 OHP. (See following subsection). No other applicable plans adopted by the OTC were identified.	Section 12.3.300 Section 12.3.800
Includes polices, provisions and standards from local comprehensive plans, transportation system plans, and land use and subdivision codes that are relied upon for consistency and that are relied upon to implement the Interchange Area Management Plan. -155(7)(h)	Implementation of the IAMP is reliant upon the City of Umatilla and Umatilla County amending their respective Transportation System Plans to incorporate the transportation improvements associated with the IAMP. In addition, implementation of the IAMP will occur through the City of Umatilla and Umatilla County amending their Land Use and Development Ordinances to include an IAMP overlay district. The overlay district contains the submittal requirements and review standards for land use amendment and development proposals within the district; access management standards and local street connectivity requirements will be based on the IAMP. Amendments will ensure that future development and land use actions within the interchange management area do not degrade the interchange terminal volume to capacity ratios below the adopted OHP mobility standards. These amendments include coordination between agencies, traffic impact analysis requirements, monitoring of traffic operations, and access management requirements.	Section 12.3.300 Section 12.3.700 Section 12.3.800

THE PLAN WILL DETERMINE		
OAR 734-051-0155 Requirement	Determination	Report Reference
Driveway and roadway spacing and connections	The operational analysis considered all access points and intersections within approximately ½ mile from the existing I82/US 730 Interchange, including all key intersections that have potential to affect traffic operations in the interchange area over the planning period. The resulting Access Management element moves toward the ¼ mile spacing requirement.	Section 12.3.700
Local street connections to ensure adequate access to properties and off-highway circulation	The IAMP maintains much of the existing local circulation network and includes improvements to it (Figure 12.3-24).	Section 12.3.700
Median treatments	Median treatments are proposed for US 730 to meet ODOT access management standards (Figure 12.3-29).	Section 12.3.700
Location and type of traffic control devices needed to ensure safe and efficient operations in the operational area of the interchange	The I-82 Northbound ramp terminal will be signalized as part of the short-term improvements. Figure 12.3-24 shows all necessary traffic control within the IMSA.	Section 12.3.700
Location of sidewalks and bicycle lanes	Sidewalks and bicycle lanes will be constructed with roadway improvements. Figure 12.3-24 shows the locations of future sidewalks and bicycle lanes.	Section 12.3.600 Section 12.3.700
Sidewalk and bicycle lane crossings (highway and ramp crossings)	See above.	See above
Location of potential transit facilities (turnouts, shelters, park and ride areas)	Transit facilities were not considered as part of the IAMP because fixed route transit service does not exist nor is planned within the IMSA.	NA

THE PLAN WILL DETERMINE		
OAR 734-051-0155 Requirement	Determination	Report Reference
Is new policy language needed in the City of Umatilla and Umatilla County Comprehensive Plans to support adequate long-term interchange operations?	The City of Umatilla and Umatilla County will amend their respective comprehensive plans to include the overlay district. In addition, the City and County will amend its land use and development ordinance to implement the overlay district.	Section 12.3.800
Are any land use changes/comprehensive plan (including TSP) amendments needed to implement the Interchange Area Management Plan?	The City of Umatilla and Umatilla County will amend their respective Transportation System Plans to incorporate the transportation improvements associated with the IAMP. The City of Umatilla and Umatilla County will amend their respective Land Use and Development Ordinances to include an Interchange Area Management Plan Overlay District that contains the submittal requirements and review standards for land use amendment and development proposals within the district. Amendments will ensure that future development and land use actions within the interchange management area do not degrade the interchange terminal volume to capacity ratios below the adopted OHP mobility standards. These amendments include coordination between agencies, traffic impact analysis requirements, monitoring of traffic operations, and access management requirements.	Section 12.3.800
Are any deviations from OHP and OAR 731-051 standards and requirements needed?	Deviations to the OHP access spacing standards are required, as described under Section 12.3.700 and subsections. The Access Management element describes how each of the necessary deviations meets the requirements of Division 51. The IAMP and Implementation Plan define all the necessary standards and requirements.	Section 12.3.700 Section 12.3.800

12.3.920 Oregon Highway Plan Compliance

The I-82/US 730 IAMP was developed in accordance with the policies set forth in the Oregon Highway Plan (OHP). The following identifies the OHP policies that pertain to the I-82/US 730 IAMP and how the IAMP satisfies the requirements.

Policy 1A: State Highway Classification System. The state highway classification system includes five classifications: Interstate, Statewide, Regional, District, and Local Interest Roads. In addition, there are four special purpose categories that overlay the basic classifications: special land use areas, statewide freight route, scenic byways, and lifeline routes.

Within the IMSA, there are three ODOT highways. Interstate-82 is an Interstate Highway and is part of the National Highway System (NHS). US 730 is a Statewide Highway from the southbound I-82 ramp terminal east to US 395 and a Regional Highway west of the southbound terminal. US 395 is a Statewide Highway.

How Addressed: The I-82/US 730 IAMP recognized the respective functions of each highway. Relocating the POE will allow US 730 to serve its regional role, instead of all truck traffic. The

plan also includes accessory weigh facilities along US 730 and US 395, recognizing their need to serve freight traffic.

Policy 1B: Land Use and Transportation. This policy recognizes the role of both the State and local governments related to the state highway system and calls for a coordinated approach to land use and transportation planning.

How Addressed: The IAMP was developed through a cooperative planning effort between the City of Umatilla, Umatilla County, ODOT, and DLCD. The IAMP will be implemented by the City of Umatilla through an Interchange Management Overlay District that will require coordinated agency review on all future development or land use actions within the District.

Policy 1C: State Highway Freight System. This policy recognizes the need for the efficient movement of freight through the state. Interstate-82, US 395, and sections of US 730 are designated freight routes.

How Addressed: The transportation improvement plan improves traffic operations and safety along US 730 and at the interchange, which will ensure that freight mobility is preserved along the US 730 and US 395 corridors. The relocated POE along I-82 will also be able to more efficiently serve freight traffic than it is able to at its current location.

Policy 1F: Highway Mobility Standards Access Management Policy. This policy addresses state highway performance expectations, providing guidance for managing access and traffic control systems related to interchanges.

How Addressed: The I-82/US 730 IAMP demonstrates that the interchange will be able to meet ODOT mobility standards through the 20-year horizon. It also provides an access management element that improves access management within the IMSA.

Policy 1G: Major Improvements. This policy requires maintaining performance and improving safety by improving efficiency and management before adding capacity.

How Addressed: The I-82/US 730 IAMP provides measures to increase efficiency through access management and provides improvements to the local street system.

Policy 2B: Off-System Improvements. This policy recognizes that the state may provide financial assistance to local jurisdictions to make improvements to local transportation systems if the improvements would provide a cost-effective means of improving the operations of the state highway system.

How Addressed: Section 12.3.800 identifies a series of procedural steps that the City, County, and ODOT will take regarding improvements to the local circulation network, including the realignment of Brownell Boulevard. Specific access management responsibilities have been set according to State and City responsibilities.

Policy 2F: Traffic Safety. This policy emphasizes the state’s efforts to improve safety of all uses of the highway system. Action 2F.4 addresses the development and implementation of the Safety Management System to target resources to sites with the most significant safety issues.

How Addressed: The potential safety issues identified within the IMSA relate to queues spilling back from other intersections into the ramp terminals. The transportation improvement plan outlined in Section 12.3.700 addresses these issues. The access management element was also developed to ensure the long-term safety of the interchange area.

Policy 3A: Classification and Spacing Standards. This policy addresses the location, spacing and type of road and street intersections and approach roads on state highways. The adopted standards can be found in Appendix C of the Oregon Highway Plan.

How Addressed: See Policy 3C below.

Policy 3C: Interchange Access Management Areas. This policy addresses management of grade-separated interchange areas to ensure safe and efficient operation between connecting roadways. Action items include developing interchange area management plans to protect the function of the interchange to provide safe and efficient operations between connecting roadways and to minimize the need for major improvements of existing interchanges. The local jurisdiction’s role in access management is stated in Policy 3C as follows: “necessary supporting improvements, such as road networks, channelization, medians and access control in the interchange management area must be identified in the local comprehensive plan and committed with an identified funding source, or must be in place (Action 3C.2).”

Access management standards are detailed in Policy 3C and include the distance required between an interchange and approaches and intersections. The most stringent standards apply in interchange areas. Table 17 of the OHP contains the minimum spacing standards applicable to the I-82/US 730 Interchange, a freeway interchange that has a multi-lane crossroad. The spacing standards in an urban area for this type of interchange are:

- 1 miles (3.2 km) Distance between the start and end of tapers of adjacent interchanges.
- 750 feet (230 m) Distance to the first approach on the right (right in/right out only)
- 1,320 feet (400 m) Distance to the first major intersection or approach (left turns allowed).
- 990 feet (300 m) Distance between the last right in/right out approach road and the start of the taper for the on-ramp.

How Addressed: The I-82/US 730 IAMP includes an access management element that consolidates access points and improves access spacing over the existing conditions. Ultimately, upon land redevelopment, access on either side will be improved but it will not meet the standards outlined above. Section 12.3.700 outlines where deviations will be necessary and describes how each of the necessary deviations meets the requirements of Division 51.

Policy 4A: Efficiency of Freight Movement. This policy emphasizes the need to maintain and improve the efficiency of freight movement on the state highway system. Interstate-82, US 395, and sections of US 730 are designated Freight Routes.

How Addressed: The transportation improvement plan improves traffic operations and safety along US 730 and at the interchange, which will ensure that freight mobility is preserved along the US 730 and US 395 corridors. The relocated POE along I-82 will also be able to more efficiently serve freight traffic than it is able to at its current location.

Policy 5B: Scenic Resources. This policy applies to all state highways and commits the State to using best management practices to protect and enhance scenic resources in all phases of highway project planning, development, construction, and maintenance.

How Addressed: This policy was considered as part of the plan development.

12.3.950 INTERCHANGE AREA MANAGEMENT PLAN FINDINGS (RESERVED FOR EXPANSION)

12.3.970 INTERCHANGE AREA MANAGEMENT PLAN POLICIES (RESERVED FOR EXPANSION)

12.3.999 REFERENCES

1. Oregon Department of Transportation. *1999 Oregon Highway Plan*. 1999
2. City of Umatilla. *City of Umatilla Transportation System Plan*. 1999.
3. Oregon Department of Transportation. *Analysis Procedures Manual*. 2006.
4. Transportation Research Board. *Highway Capacity Manual*. 2000.
5. Institute of Transportation Engineers. *Trip Generation (8th Edition)*. 2008.
6. Oregon Department of Transportation. *Highway Design Manual*. 2003.

SECTION 12.4 PEDESTRIAN AND BICYCLE TRANSPORTATION SYSTEM PLAN ELEMENTS

12.4.010 Existing Pedestrian and Bicycle Transportation Systems

The City of Umatilla's existing pedestrian network system includes shared roadways along minor local streets and sidewalks along many of the arterial streets. A map of the existing pedestrian facilities is shown in *Figure 12.4-1* that illustrates the roadways within the City of Umatilla UGB that currently have sidewalks on one or both sides of the street. The condition of these pedestrian facilities vary from poor to good, with facilities in poor condition generally being located in the downtown and McNary residential areas of the community.

As is typical with many cities, the existing sidewalk system in Umatilla is relatively complete along the core city area, in this case Highway 730. Outside of the core city area however, most of the sidewalk system is incomplete and tends to appear in areas of recent development. In general, there are a lack of sidewalks and pedestrian crossings along several key roadway facilities in the study area. Local roads tend to exhibit disjointed sidewalks in the city, especially in areas where lots or subdivisions are not fully developed. No sidewalk facilities currently connect the east and west sides of the City. Further, many arterial and collector level roadways such as Powerline Road, Willamette Avenue, Columbia Street, and 3rd Street have limited or no sidewalk facilities.

The City of Umatilla has a pedestrian foot bridge crossing the Umatilla River that was constructed to provide a connection between the residential area south of the Umatilla River and the school facilities located along 7th Street on the north side of the river. The bridge was originally installed after school bus service was terminated for portions of the residential areas on the south side of the river. The bridge was constructed to provide students with a convenient walking path that also effectively prohibits the use of bicycles and other motorized vehicles on the bridge. Pedestrian connections to this bridge are provided by gravel-based pathways that are poorly maintained and partially overgrown with brush.

Figure 12.4-1 also illustrates the existing bicycle network within the study area. As shown in *Figure 12.4-1*, the network is limited to two basic facilities and there is a lack of connectivity throughout the city with respect to the bicycle network. There is only one roadway with striped, on-street bike lanes, Columbia Street. An additional multi-use path is provided for bicycle traffic to cross the Columbia River via the northbound Interstate 82 bridge; however, no striped on-street bike lanes connect to this facility on either side of the Columbia River.

With the exception of a short bikeway paralleling the Columbia River, the City of Umatilla does not have a designated bicycle trail system. The City and County of Umatilla have discussed the possibility of a future bikeway, but there are no plans under formal consideration.

The City of Umatilla is located along the south shore of the Columbia River. Marina facilities and a beachfront park located along the shore offer scenic views of the area and serve as generators of recreational traffic. The only pedestrian facilities located along the waterfront are provided adjacent to the McNary Dam on property owned by the Army Corps of Engineers.

12.4.020 1999 TSP Pedestrian and Bicycle System Plans

The pedestrian system plan includes both sidewalk facilities and multi-use paths as shown in *Figure 12.4-2*. The key objective in the development of the pedestrian plan element is to provide connectivity between major activity centers, such as housing, schools, post office, government buildings, and recreation areas. As shown in *Figure 12.4-2*, sidewalks need to be provided throughout the City to develop and maintain a comprehensive sidewalk system. Under the pedestrian plan, sidewalks are planned along all major roadways, and on both sides of a given roadway.

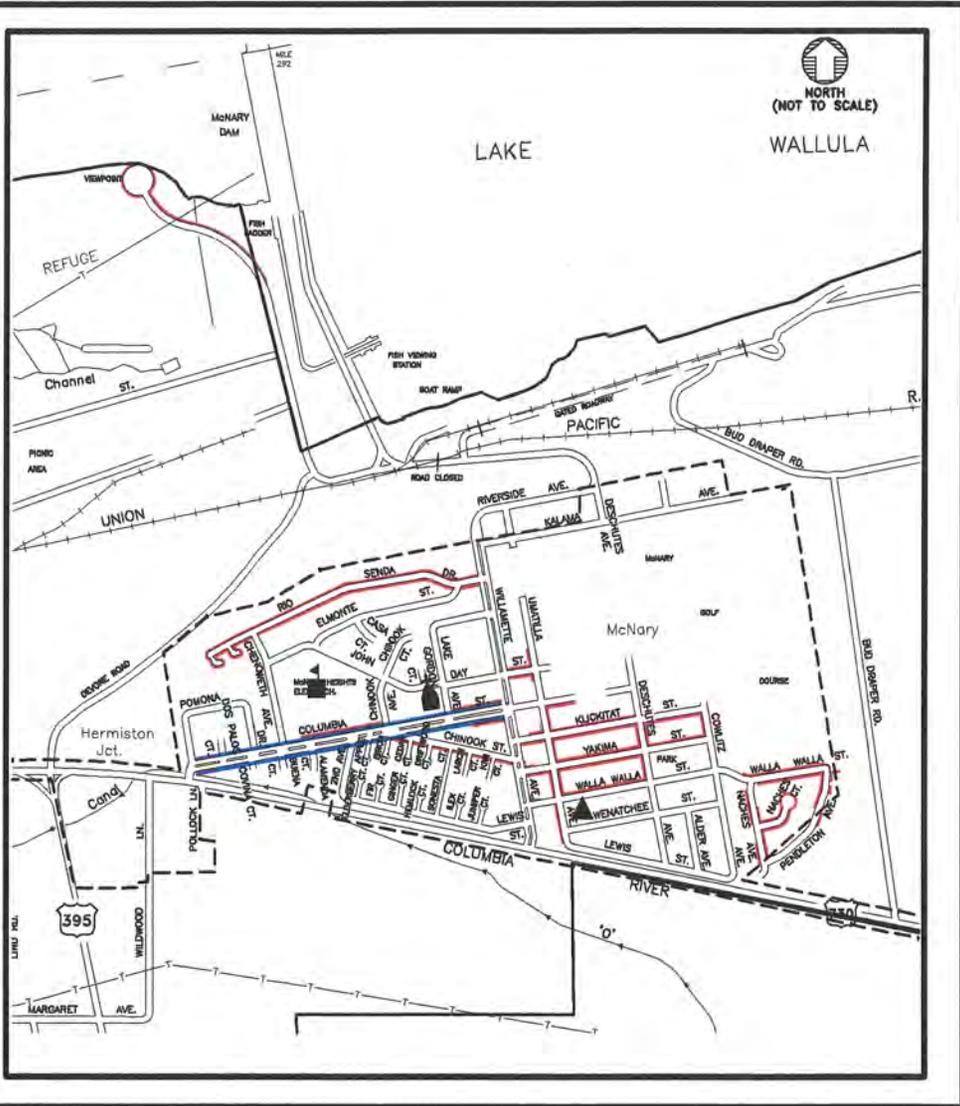
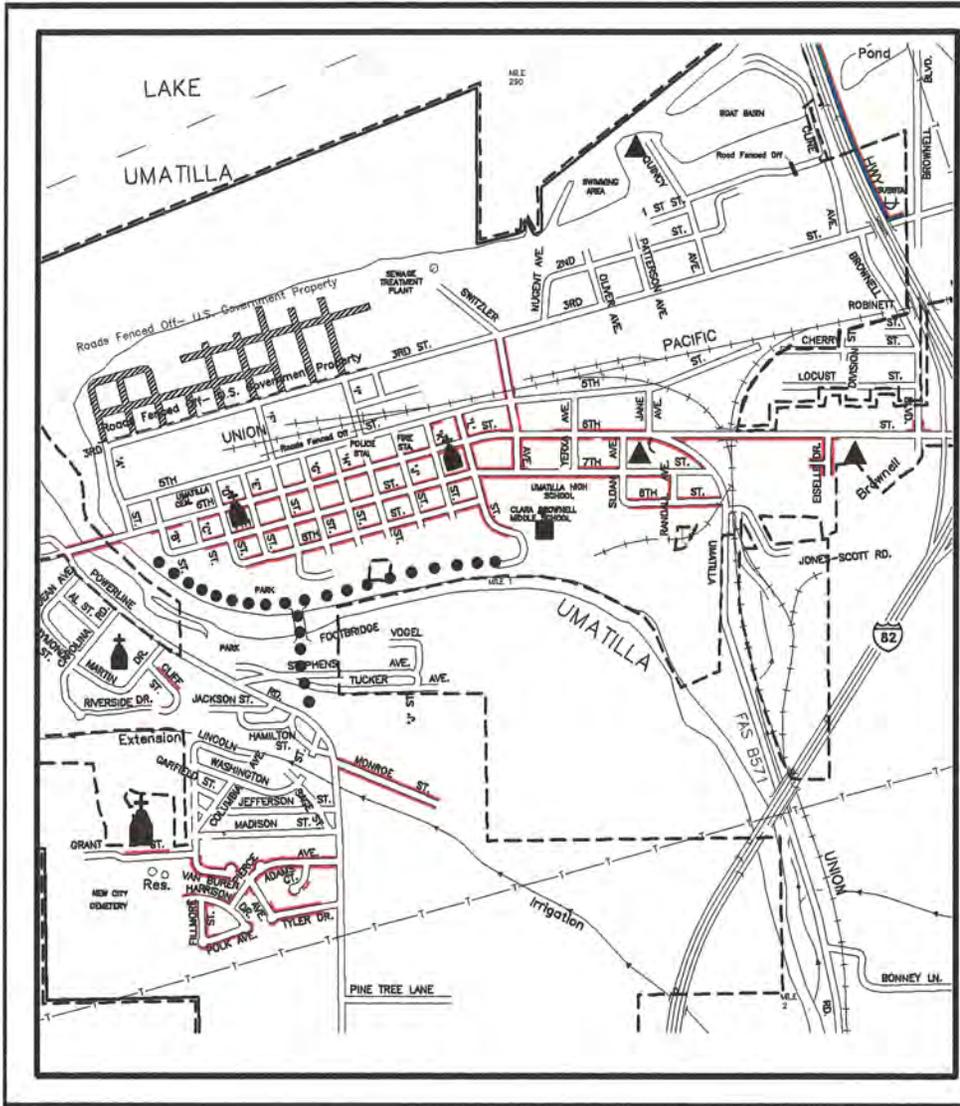
In order to evaluate the adequacy of the sidewalk system and bicycle network, a survey of existing connections between pedestrian and bicycle “generators” and the arterial- and collector-level roadways was conducted in the field. Pedestrian and bicycle generators were defined to be facilities that typically attract high levels of pedestrian or bicycle activity on a regular basis. A listing of typical generators is provided below:

- Schools and colleges
- Churches
- Parks
- Open spaces
- Shopping centers
- Cemeteries
- Libraries
- Municipal swimming pools
- Community centers
- Government offices
- Museums
- Historical landmarks
- Urban downtown core districts

Figure 12.4-1 illustrates the locations of existing pedestrian and bicycle generators. Ideally, at least one sidewalk connection and one reasonably direct bike facility should be provided between each of these generators and the existing arterial- and collector-level roadways in order to enhance the safety and attractiveness of pedestrian and bicycle travel throughout the city.

The roadway design standards (refer to *Figure 12.2-10*) ensure that pedestrian facilities are provided in conjunction with all new or substantially reconstructed neighborhood collectors and local streets. It is essential that existing sidewalks are connected to new sidewalks as new developments are constructed or as road improvements are made. Sidewalks should be included in any full reconstruction of arterials or collectors. The implementation plan in Section 12.11.300 identifies specific pedestrian projects as well as associated cost and scheduling.

The public input process during the development of the TSP identified community concerns involving pedestrian crossings along Highway 730 between the western city limits and the Interstate 82 interchange. These concerns predominantly reflect increasing traffic volumes on Highway 730 and the effect those traffic volumes have on pedestrians' ability to safely cross the highway.



LEGEND

SIDEWALKS	SCHOOL	PUBLIC BUILDING
BIKE LANES	CHURCH	FOOTPATH
UGB	CITY LIMITS	NO PUBLIC ACCESS

EXISTING SIDEWALK AND BICYCLE FACILITIES
 CITY OF UMATILLA, OREGON
 TRANSPORTATION SYSTEM PLAN
 FEBRUARY 1999

FIGURE 12.4-1



- LEGEND**
- SIDEWALK ON ARTERIAL/COLLECTOR
 - MULTI-USE PATH
 - LOCAL STREET SIDEWALK
 - - - URBAN GROWTH BOUNDARY
 - - - CITY LIMITS
 - NO PUBLIC ACCESS

NOTE: ALIGNMENTS FOR FUTURE FACILITIES ARE CONCEPTUAL ONLY.
SIDEWALKS MAY BE SUBSTITUTED FOR THE MULTI-USE PATH ON HIGHWAY 395.

PEDESTRIAN PLAN

CITY OF UMATILLA, OREGON TRANSPORTATION SYSTEM PLAN FEBRUARY 1999	FIGURE 12.4-2	
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The combination of traffic volumes and the commercial orientation of Highway 730 in this area confirm the need for additional pedestrian amenities. In addition to providing a continuous sidewalk system, there are several other potential enhancements that should be considered along Highway 730 including:

- provision of additional street lighting to provide clear visibility of pedestrians at night;
- provision of curb extensions that provide for the existing on-street parallel parking while reducing the exposed crossing distance pedestrians must walk; and
- use of median treatments that provide pedestrians with a “safe-haven” at a mid-crossing.

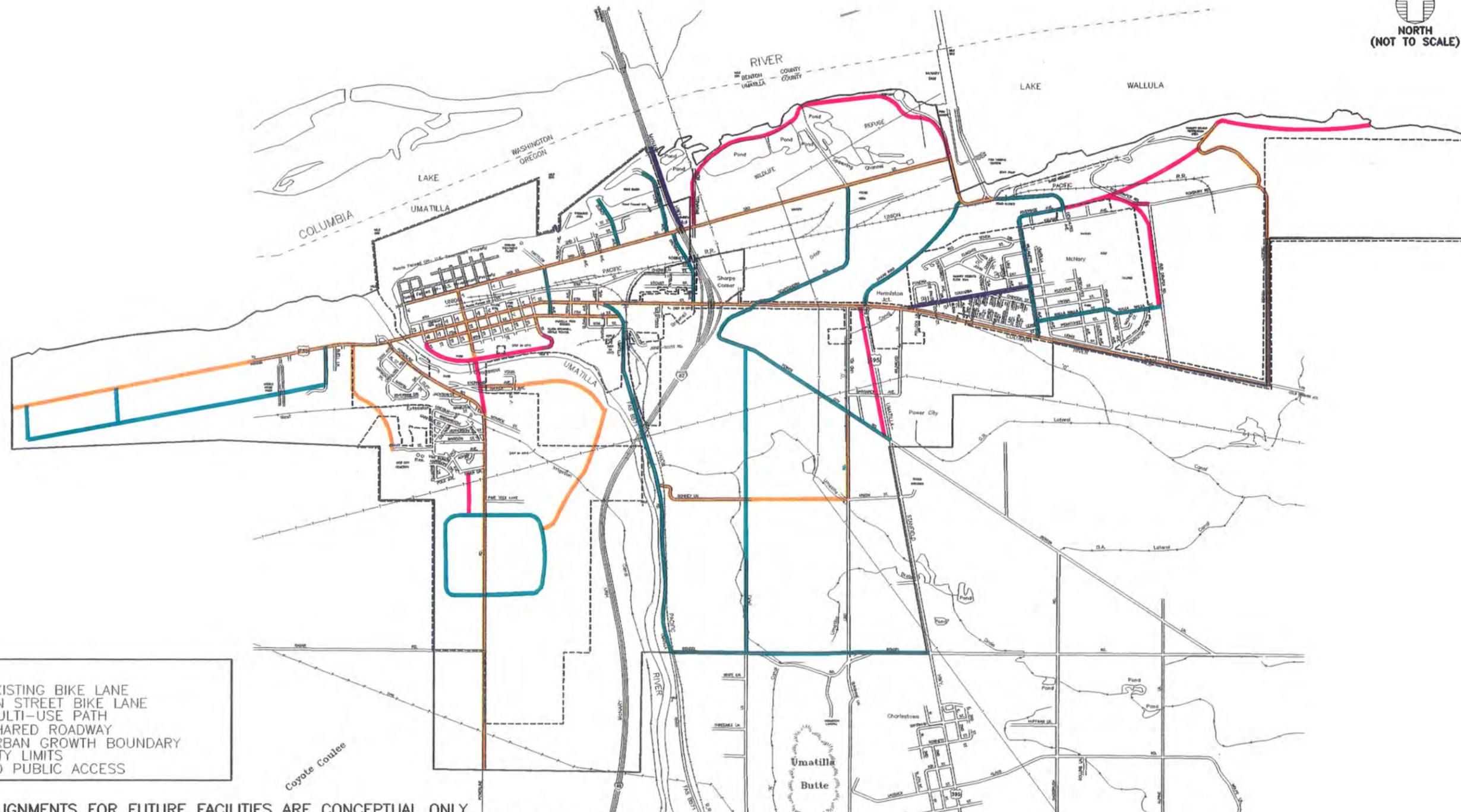
It should be noted that pedestrian crosswalks and signals will be provided in conjunction with potential future intersection signalization projects along Highway 730. The new traffic signals will create an opportunity for pedestrians to safely cross Highway 730 at the signalized intersections and will also create gaps in the traffic stream that should enhance the ability of pedestrians to safely cross Highway 730 at unsignalized intersections. (NOTE: *The addition or modification of a traffic signal on any ODOT facility requires the approval of the State Traffic Engineer. Identification and documentation of the need in this TSP does not guarantee the provision or modification will occur*).

Figure 12.4-3 illustrates the bikeway plan. As with the pedestrian plan, the key objective in the development of the bikeway plan element is to provide connectivity between major activity centers, such as housing, schools, post office, government buildings, and recreation areas. Because of the varying roadway design standards, the bikeway plan incorporates exclusive bike lanes on major roadways (e.g. arterials), whereas minor roadways (e.g., collectors and local streets) allow for shared use of roadway facilities. For some bike routes, additional facilities are planned to enhance the safety of bicyclists.

In addition to sidewalks and bike lanes, the TSP seeks to make use of shared pedestrian/bicycle facilities in key locations where it is desirable to provide connections in an environment free of vehicular traffic. The cross sections of these multi-use pathways would consist of 10-foot wide paved paths.

One of the multi-use pathways is located to make use of the existing pedestrian foot bridge crossing the Umatilla River, near the community’s school facilities located along 7th Street, on the north side of the river. The bikeway plan incorporates an existing dirt path traversing down the east side of the “South Hill” residential area and across the Umatilla River as a multi-use path. It should be recognized that the elevation difference along the trail may be too great to meet current American’s with Disability Act (ADA) design requirements. Consequently, a “switch back” route may need to be designed, if this requirement is applicable.

Another multi-use pathway is designated along the Columbia River between the McNary Beach Recreation Area and McNary Dam. This facility is intended to provide convenient access to recreational areas while ensuring the separation of bike/pedestrian traffic from industrial truck traffic traveling to the port area. Final alignment of this facility will require cooperation with the Port of Umatilla to ensure that a safe travel environment is provided.



LEGEND

-  EXISTING BIKE LANE
-  ON STREET BIKE LANE
-  MULTI-USE PATH
-  SHARED ROADWAY
-  URBAN GROWTH BOUNDARY
-  CITY LIMITS
-  NO PUBLIC ACCESS

NOTE: ALIGNMENTS FOR FUTURE FACILITIES ARE CONCEPTUAL ONLY.
ON-STREET BIKE LANES MAY BE SUBSTITUTED FOR THE MULTI-USE PATH ON HIGHWAY 395.

BIKEWAY PLAN

CITY OF UMATILLA, OREGON
TRANSPORTATION SYSTEM PLAN
FEBRUARY 1999

FIGURE
12.4-3



Portions of the Highway 395 corridor (primarily south of Hermiston) have a multi-use path that is potentially available for further extension. The provision of multi-use paths and/or bicycle facilities along Highway 395 will be addressed through the ongoing Highway 395 corridor study. Findings and recommendations from the Highway 395 corridor study should be incorporated into the City of Umatilla Comprehensive Plan upon completion and adoption of the corridor study.

Finally, an opportunity exists to create a multi-use pathway along an existing trail that follows the Columbia River shore from the McNary Beach Recreational Area east for approximately six miles. Although this trail is not paved and is not entirely within the City of Umatilla urban growth boundary, it should be considered for future use as a recreational bicycle and pedestrian facility.

The implementation plan in Section 12.11.300 further identifies specific multi-use path projects as well as associated cost and scheduling.

12.4.100 2003 PEDESTRIAN AND BICYCLE MASTER PLAN

In 2003, the City adopted the Umatilla Pedestrian & Bicycle Master Plan, included in the following sections, which refines the pedestrian and bicycle elements of the City's adopted 1999 Transportation System Plan and furthers the work of the completed Downtown Revitalization and Circulation Study adopted in 2002. It combines on-street bikeways and sidewalks with off-street paths to:

- ◆ Connect the community.
- ◆ Improve access to local destinations.
- ◆ Provide opportunities for healthy exercise.
- ◆ Reduce dependence on cars for short trips.
- ◆ Reduce conflicts between travel modes.
- ◆ Meet the needs of the those not using a car.
- ◆ Support local land uses.
- ◆ Help implement the Lewis & Clark Commemorative Trail.

The process included:

- ◆ Scoping tour with the technical advisory committee.
- ◆ Periodic meetings with the advisory committee.
- ◆ Review of existing plans and materials.
- ◆ Stakeholder interviews.
- ◆ Children's workshop.
- ◆ Two community workshops.
- ◆ Task-oriented draft documents:
 - Base map and inventory.
 - Opportunities and constraints.
 - Project feasibility analysis.
 - Code revisions.
 - System development charge example.

- Updated highway traffic counts.
- Preliminary engineering design standards.
- Capital improvement program.

Seven appendices, 12.4A-12.4G, provide supporting material including a glossary of terms and system maps.

12.4.200 BACKGROUND RESEARCH

12.4.210 Sources

The inventory consisted of identifying, researching, field-checking, and analyzing opportunities and constraints within the Umatilla Urban Growth Boundary. Initial sources used included:

- 1999 City of Umatilla Transportation System Plan (TSP)
- 2001 City of Umatilla Downtown Revitalization and Circulation Study (Downtown Study)
- 2002 Lewis and Clark Pathway Land Memorandum of Understanding (MOU)
- 1999 City of Umatilla Comprehensive Plan and Zoning Map
- 2000 U.S. Census data
- 1991 USGS topographical map
- 1996 USGS satellite photos

Using a base map provided by ODOT, the identified opportunities and constraints were mapped in layers to reveal the location of possible bikeway and walkway alignments.

12.4.220 Area Description

From the 2002 Census update, Umatilla had a population of 5990, similar to other cities such as Eagle Point, Scappoose, Madras and Sandy, but with less density within its 3.72 square miles. The elevation is about 300 feet and is relatively flat with a few short hills. The region gets only 9 inches of rain per year. Average temperatures range from 26 in January to 88 in July. Overall, the area has an excellent environment for walking and bicycling.

According to the 2000 Census, the population includes 1830 workers over age 15 (37% of population) and 1325 students (27%). Among the workers, 93% reported that their usual mode of transportation was a car. About 2.3% usually commuted by walking or bicycling, and 2.5% worked at home, both about half the state average. There is no public transit available. The average travel time to work for those who did not work at home was 19 minutes, below the state average of 21 minutes. (Note that work trips comprise only one in five trips nationally, and do not include trips to school, shopping or recreation).

12.4.230 Jurisdictions

Land and transportation facilities in or adjacent to the City are under full or partial control of many agencies:

- City of Umatilla (local streets)
5th Street

7th Street
Switzler Avenue (shown as a County road on *Figure 12.2-1*)
Willamette Avenue
Columbia Street

Note: There are no sidewalks or bicycle facilities on County roads except for a section of sidewalk on the west side of Powerline Road at the south end.

- Umatilla County (regional roads within the City)
Powerline Road
Umatilla River Road
Brownell Boulevard
3rd Street (east of I-82)
Bud Draper Drive
McNary Beach Access Road
Power City Road
Roxbury Road (shown on TSP Figure 2)

Note: There are no sidewalks or bicycle facilities on Highway 395. Interstate 82 has an unmarked access path from 3rd Street to a multi-use path on the Columbia River Bridge. Highway 730 has some sidewalks west of I-82, primarily in the downtown area, and paved shoulders elsewhere.

- Oregon Department of Transportation, District 12 (highways)
Interstate 82
Highway 730
Highway 395
- Umatilla School District (3 schools)
- Port of Umatilla
- Union Pacific Railroad
- U.S. Army Corps of Engineers, Portland and Walla Walla Districts
Devore Road
Riverside Avenue (not mentioned in TSP but important street)
- Bonneville Power Administration (power line corridor)
- West Extension Irrigation District, Irrigon, OR (irrigation canal)

12.4.240 Non-motorized Traffic Generators

The following important non-motorized traffic generators and trip destinations exist in Umatilla.

Schools

- McNary Heights Elementary School
- Clara Brownell Middle School
- Umatilla High School
- Elementary school on Powerline Road (planned)

Parks/Sport Fields/Recreation

- Lewis & Clark Commemorative Trail
- High School-Middle School track and ball fields
- Umatilla River
- McNary Wildlife Nature Area
- West Park
- Port of Umatilla Marina and RV Park
- McNary Golf Course
- Recreational routes (see list at right)
- Future ballfield on Bud Draper Road
- Old Umatilla townsite (potential)

Commercial/Work Destinations

- Downtown core (Highway 730 west of “J” Street)
- Highway 730 at I-82
- Columbia Red Apple Market (Highway 730 near Yerxa Avenue)
- McNary Market (Highway 730 at Willamette Avenue)
- Highway 730 & 395 (potential)
- South Powerline Road (potential)

Industrial/Work Destinations

- Port of Umatilla
- McNary Dam and Locks
- Two Rivers Correctional Institution

Other Traffic Generators

- Post Office (1900 6th Street)
- Public Library (911 7th Street)
- Welcome Center (100 Cline Avenue)
- Umatilla Museum & Historical Foundation (911 6th Street)
- Senior Center (7th & “B” Street)
- “I” Street (future pedestrian-oriented street per Downtown Study)

In addition to identifying major traffic generators and trip destinations, the areas of higher residential densities are considered to have higher potential to generate trips; namely, South Hill, McNary and Downtown.

Trip generators are important because every trip, even those counted as an automobile trip, involves a walking component. Furthermore, efficient walkway and bikeway systems can substitute pedestrian or bicycle trips for auto trips, especially for shorter distances (one-half to five miles). In addition to reducing auto trips, non-motorized trips have other benefits:

- They provide healthy exercise.
- They tie the community together in ways that motorized travel cannot.

- They reduce the amount of hydrocarbons released into the atmosphere by motor vehicle emissions. About 60% of hydrocarbon emissions occur within a mile of the motor vehicle trip origin, nearly 85% of the emissions occur within the first five miles after starting an automobile.

Because many trips are of short distance, a system for non-motorized transportation could have a significant impact on the air quality of the community. According to the 1990 Nationwide Personal Transportation Survey (NPTS), 27% of travel trips are one mile or less, 40% are two miles or less, and 63% are five miles or less.

While the NPTS data cover all trips in the nation, the 2000 Census data provide a look at how Umatilla residents commute (the survey was taken in March 2000). Travel time to work was less than 5 minutes for 4% of workers, less than 10 minutes for 14%, and less than 15 minutes for 30%. Many of these trips would be suitable for walking or bicycling if a comprehensive network of pathways, sidewalks, and bicycle facilities existed.

12.4.250 Implementation Plan

The 20-year Transportation Improvement Program outlined in Section 12.11.300 lists 54 projects estimated to cost nearly \$15 million as shown in Table 12.4-1. By far the greatest need identified was sidewalks with 37 projects totaling \$9.35 million. There are another 8 multi-use path projects totaling \$1.33 million.

Over half of the roadway project cost is for replacing the Umatilla River bridge. The remainder of the roadway system needs relatively minor improvements. However, many county roads were not included, most of which have less than 24 feet of pavement width -- far below the standard for arterial and collector streets. The additional width is particularly important to bicyclists and pedestrians.

Section 12.11.110 notes that the City's annual Street Fund of \$250,000 is dedicated entirely to the operation and maintenance of the existing facilities. The few capital improvement projects realized were funded primarily by the developer or by a Local Improvement District. Section 12.11.110 recommends the City study the possibility of adopting a transportation system development charge.

Recreational Routes		
from www.umatilla.org		
Route #1 - 2.0 miles	Easy	45 Minutes
3rd St. at Marina, east to Brownell Ave., south on Brownell, west on 6th St. (Main St.) to Switzler; north to 3rd to start.		
Route #2 - 2.0 miles	Easy	45 Minutes
Start at fountain below McNary Dam and follow trail signs around wildlife area. Many shorter trails also.		
Route #3 - 3.0 miles	Strenuous	75 Minutes
McNary Market to Columbia Street, west to Hwy 730, north to McNary Dam, uphill east to golf course and Willamette Ave., south to McNary Market.		
Route #4 - 1.5 miles	Easy	30 Minutes
McNary Market to Columbia Street, west to Chenowith St., north to Rio Senda leading east back to Willamette and south to McNary Market.		
Route #5 - School Track	Moderate	
Access from South Hill area across Stevens Ave. to Footbridge Trail leading to school, or walk from south end of I Street to the track.		
Route #6 - 0.7 miles	Moderate	30 Minutes
Start at basketball court (W. Columbia/Van Buren) on South Hill, east on Van Buren St. to Pierce St., north on Powerline to Jefferson St. and west to West Columbia St.		

Table 12.4-1 - TSP Implementation Plan

Project Category	Short-Term (1998-2007)		Long-Term (2008-2017)		Total	
	Projects	Cost, \$M	Projects	Cost, \$M	Projects	Cost, \$M
Roadway	2	\$0.29	7	\$3.40	9	\$3.69
Sidewalk	13	\$1.16	24	\$8.19	37	\$9.35
Multi-Use Path	0	0	8	\$1.33	8	\$1.33
Total	15	\$1.45	39	\$12.92	54	\$14.37

12.4.300 INVENTORY

12.4.310 Street System

A priority of the Pedestrian & Bicycle Master Plan elements is to extend the off-street pathways and connect them to on-street bicycle and pedestrian facilities. Successful pathway networks connect with good on-street facilities; this connectivity provides the kind of access and mobility needed to make non-motorized modes attractive.

The existing city street system, excluding I-82, is summarized in Table 12.4-2. There are roughly 7.7 miles of arterial streets and 12.7 miles of collector streets. There are about 5.1 miles of sidewalks on the 20.4 miles of arterial and collector streets, so 12% have sidewalks (counting both sides of the street).

- There are approximately 1.0 miles of bike lanes, or about 3% of the arterial and collector streets that have bike lanes (counting both sides of the street).
- There are at least 25 intersections with crosswalks, most of these downtown. Looked at from one perspective, there are over 20 feet of major roadway from 2 to 5 lanes for every resident, but there are only 5 feet of sidewalk.

Table 12.4-2 – EXISTING STREET SYSTEM

Street	Length,	Walkways	Bikeways
Major Arterials — 26,250 ft (5.0 mi)			
Highway 730 (6th Street)	16250	Partial (25%)	Wide lane or shoulder
Highway 395	3300	No	Shoulder
Bud Draper Drive	4000	No	Shared
Roxbury Road	2700	No	Shared
Minor Arterials — 14,000 ft (2.7 mi)			
Powerline Road	8900	Partial (5%)	Shared
Umatilla River Road	3200	No	Shared
Brownell Blvd. (3rd to 6th St.)	1900	No	Shared
Collectors — 55,650 ft (10.5 mi)			
3rd Street ("I" Street to east)	11800	No	Shared
"I" Street	1050	No	Shared
Switzler Avenue	1200	No	Partial bike lane (20%)
Quincy Avenue	1300	No	Shared
7th Street	5100	Partial (20%)	Shared
Scapelhorn Road	4400	No	Shared
Power City Road	6100	No	Shared
Devore Road	3600	No	Shared
Rio Senda Drive	2250	Yes	Shared
Willamette Avenue	3000	Partial (40%)	Shared
Riverside Avenue	4900	No	Shared
McNary Beach Access Road	7700	No	Shared
Margaret Avenue	3350	No	Shared
Neighborhood Collectors — 11,700 ft (2.2 mi)			
Madison Avenue & Grant Street	2400	Partial (10%)	Shared
Monroe Street	1000	Yes	Shared
Stephens Avenue	1550	No	Shared
Columbia Avenue	2900	Partial (15%)	Partial bike lane (85%)
Chenoweth Avenue	1050	No	Shared
Walla Walla Street	2800	Partial (45%)	Shared

12.4.320 *Pedestrian Facilities*

12.4.320(1) *Existing Walkways*

Existing pedestrian facilities consist primarily of sidewalks, crosswalks, multi-use paths, trails, and bridges. The walkways are described under Section 12.4.010. Some facilities have been constructed since the 1999 TSP was adopted.

Existing sidewalks and crosswalks are summarized in Section 12.4.310, and shown on the maps in Appendix 12.4B.

In addition, there are three multi-use paths:

- 1) A path on the east side of the I-82 bridge over the Columbia River; accessed at 3rd Street.
- 2) A 10-ft wide asphalt path along the north side of the Umatilla River for roughly 2100 feet; accessed from the park parking lot at the south end of “B” Street and from the high school track.
- 3) A 10-ft wide asphalt path along the south side of 3rd Street between Switzler Avenue and Brownell Boulevard; roughly 3200 feet long; accessed from end points and from several points along 3rd Street.

A pedestrian bridge across the Umatilla River connects the multi-use path on the north side to Stephens Avenue on the south side (south approach unpaved).

Numerous user trails (beaten paths created by people walking) exist. A prominent user trail connects the pedestrian bridge to Power-line Road. Another connects the north end of Willamette Avenue to the base of the hill on Riverside Avenue.

An extensive developed and maintained trail system exists at the McNary Wildlife Nature Area.



Downtown core sidewalks should be 10 to 12 feet wide

The system has trailheads on Brownell Boulevard, Scapelhorn Road and Devore Road.

12.4.320(2) Planned Walkways

As noted in Section 12.4.250, there are 37 sidewalk and 8 multi-use path projects. Also, the Lewis & Clark Commemorative Trail is being planned to connect new and existing walkways in a signed trail that spans the entire City.

12.4.321 Pedestrian Access Routes

The Americans with Disabilities Act (ADA) requires that access for persons with disabilities is provided wherever a pedestrian way is newly built or altered, and that the same degree of convenience, connection, and safety afforded the public generally is available to pedestrians with disabilities. The basic requirement is for a continuous, unobstructed route. Guidelines cover pedestrian access to sidewalks and streets, including crosswalks, curb ramps, street furnishings, parking, and other components of public rights-of-way. The guidelines can be found at the U.S. Access Board website <www.access-board.gov>.

Within the City, very few public walkways are accessible for more than a few feet.

12.4.330 Bicycle Facilities

12.4.330(1) Existing Bikeways

1. Existing bicycle facilities consist of striped lanes, shoulder bikeways and multi-use paths. Most bicycle travel within the city occurs on the roadways as built with no special provisions for bicyclists.



The bikeways are described under Section 12.4.010 (see *Figure 12.4-1*). The 3rd Street path was constructed since the 1999 TSP was adopted.

Existing bicycle facilities are shown on the maps in Appendix 12.4B. The vast majority of streets in the City are ridden as built with no special bicycle accommodation.

12.4.330(2) Planned Bikeways

Figure 12.4-3 shows a recommended bikeway system that includes bike lanes on:

- Columbia Street -- existing
- 3rd Street
- Highway 730 (6th Street)
- 7th Street
- “A” Street (south of Highway 730)
- “F” Street
- “L” Street (south of 7th Street)
- Sections of Devore Road and Riverside Avenue near 3rd Street
- Beach Access Road
- Powerline Road
- Lind Road (Power City Road to Union Street)
- Bonney Lane
- 2 future streets in South Hill

Eight planned multi-use paths could also be used by cyclists. This leaves several major streets without appropriate bikeways as required by the TPR:

- Roxbury Road (major arterial)
- Umatilla River Road (minor arterial)
- Brownell Boulevard (minor arterial)
- “I” Street (collector)
- Switzler Avenue (collector)
- Quincy Avenue (collector)
- Scapelhorn Road (collector)
- Power City Road (collector)
- Devore Road (collector)
- Rio Senda Drive (collector)
- Willamette Avenue (collector)
- Riverside Avenue (collector)
- Margaret Avenue (collector)

Some of the collectors may have traffic volumes below 2000 ADT at the end of the 20-year planning period at the end of 2017, so that it could be argued that a shared roadway is sufficient. However, volumes on these streets were not provided.

12.4.331 *Regional Connections*

While the focus of the Pedestrian and Bicycle Plan elements is to identify and rank walkways and bikeways within the UGB, the importance of regional bikeway connections should not be overlooked. Many Umatilla residents travel to work, shopping or other purposes in the nearby cities of Irrigon, Hermiston and the Tri-Cities in Washington. Facility segments which provide an opportunity for the community to access areas outside of the UGB should be preserved and improved. The major regional links for bicyclists include I-82, Highway 395, Highway 730, and

Umatilla River Road. Only Umatilla River Road lacks adequate shoulders.



Bike lane on Columbia Street is dropped a block before the school

12.4.400 SYSTEMWIDE FACTORS

Many community characteristics and policies affect the ability of people to walk and bicycle. Some are physical barriers, whereas others are political or institutional. These factors affect all projects to some degree and are influenced by local policies and priorities.

12.4.410 Natural and Manmade Barriers

Physical barriers to bicycling and walking can force people to make longer trips or to resort to taking a car. People without access to a car may have to forgo the trip entirely.

Some barriers, such as waterways, require bridges for convenient travel. The pedestrian bridge over the Umatilla River is a good example. The bridge on Washington Street over an irrigation canal is another important connection for pedestrians and bicyclists.

Highways including I-82, 395 and 730 are usually thought of as connecting areas but they can be a significant barrier to non-motorized traffic. Where there are no sidewalks, as on Highway 395



Angled tracks with a rough irregular flange opening can easily cause a cyclist to fall

and the east half of Highway 730, pedestrians lack mobility. Where safe crossings are few or poorly designed, such as on these same highways, pedestrians and bicyclists lose access.

Railroad tracks, whether active or inactive, are further barriers. There are several at-grade rail crossings in the City that have angled tracks, damaged pavement and no sidewalks.

Both irrigation canals and rail corridors can potentially provide excellent trail facilities. Each has its own challenges in terms of convincing property owners and agencies that risks can be managed.

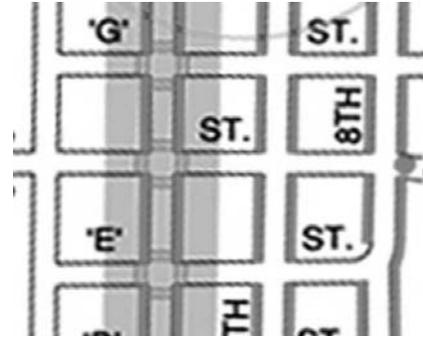
12.4.420 Development Pattern

The City of Umatilla has a unique development pattern, consisting of three somewhat separated nodes: McNary, Downtown, and South Hill. Each of these areas forms a distinct neighborhood. The most significant constraints to walking and bicycling created by this land use pattern are not within each of these three distinct areas, but between them.

Most new residential development is occurring in South Hill which has no commercial services or employers and limited access via a single major road. The City has recognized that the current land use pattern in South Hill has drawbacks to pedestrian and bicycle traffic, among other things. Long-term, some of the problems in South Hill will be solved by the inclusion of small commercial areas and a school, reducing the need for trips into the Downtown area.

However, it appears that housing is being created at a faster rate than other types of development. The City may wish to consider incentives for developing the neighborhood commercial area.

The City is also supporting mixed use zoning in the Downtown, which should eventually lead to more people living and shopping in the downtown core.



A dense grid of streets maximizes access and route choices, both critical to walking

12.4.430 Street Standards and Development Codes

12.4.431 Transportation System Plan

The City of Umatilla adopted its Transportation System Plan (TSP) in 1999. The 1999 TSP includes street functional classifications and cross-sections, which are addressed here. There are several opportunities for revision to these classifications as discussed below.

12.4.431(1) Major Arterials

This roadway cross-section (see *Figure 12.2-10*) shows a five-lane arterial with an 86-foot wide optional continuous center turn lane and optional outer lanes. Five-lane arterials are the most hazardous street configuration for pedestrians because of the distance and the complex intersections required. In addition, this lane configuration tends to result in a greater number of vehicle crashes, mainly due to the continuous center turn lane. Based on the 20-year capacity analysis, concerns center around the Highway 730/I-82 interchange and truck weigh station. Therefore, it is unlikely that a five-lane configuration would actually be needed within the Umatilla urban boundaries within the 20-year planning period.

It is recommended that the City reconsider the likelihood and desirability of a five-lane major arterial within the urban boundaries. Some modifications to the adopted cross-section might include the optional or required provision of a center median to restrict turns and provide a pedestrian crossing refuge, or limiting the lane configuration to three lanes.

The Major Arterial cross-section also makes the planting strip an optional component, with a six-foot sidewalk required. Given the volumes and speeds of traffic on a typical major arterial and the safety and comfort impacts of that traffic on pedestrians, it is recommended that either the planting strip be made a required component, or the minimum sidewalk width increased to at least 10 feet.

12.4.431(2) Minor Arterials

There appear to be two major differences between the Major and Minor Arterial: the required right-of-way is 12 feet lesser, and bike lanes are optional. In the 1999 TSP, planned minor arterials along with collectors provide the most connectivity within the urban area. The Transportation Planning Rule requires bikeways along all arterials and major collectors (OAR 660-0120945(b)(B)). It is not evident that planned separated pathways can provide the same level of connectivity (although pathways are also important). It is recommended that the Minor Arterial cross-section be revised to require bike lanes.

In addition, the comments on five-lane sections and planter strips for Major Arterials also apply to Minor Arterials.

12.4.431(3) Collectors

Comments on bike lanes for Minor Arterials also apply to Collectors. The City's Collector and Neighborhood Collector classifications are equivalent to Major Collector and Minor Collector.

12.4.432 Land Division Code (Title 11)

Umatilla's Land Division Code (Title 11) includes minimum street standards for new streets. These standards largely reflect the City's adopted 1999 Transportation System Plan. Major arterials and some minor arterials and collectors must include six-foot bike lanes. As discussed above, it is recommended that bike lanes be required on all arterials (major and minor) and collectors, in order to provide connectivity.

Title 11, as recommended in the 1999 TSP, also states that, "Bikeways shall be designed and constructed consistent with the design standards in the Oregon Bicycle Plan, 1992, and AASHTO's "Guide for the Development of Bicycle Facilities, 1991." The correct reference is the current edition of the Oregon Bicycle and Pedestrian Plan; the most recent edition was published in 1995 and a revision is due out next year. It is not necessary to reference AASHTO because the Oregon Plan incorporates relevant parts of it and supersedes the rest.

All street types identify sidewalks as a required element. Sidewalk width ranges from six feet on major arterials to five feet on other public streets.

However, although the TSP allows the option of a "planting strip" on arterials and collectors, the code specifies that sidewalks should be curb-tight rather than setback at the property line. For pedestrian safety and comfort, it is optimal to place sidewalks further back from the road edge on streets. This is particularly true where vehicle speeds exceed 25 mph, where there are no parked cars or bicycle lanes to buffer pedestrians from the noise and proximity of vehicles, and where sidewalk widths are narrower than 10 feet.

Some jurisdictions have been concerned that the setback area or "landscape strip" will not be maintained and may become an eyesore. The benefits to pedestrians largely outweigh these concerns, even where the buffer strip is not maintained. Outside of the downtown area, where landscaping is more desirable and likely to be maintained, many eastern Oregon cities have found that gravel base and a regular weed maintenance program is sufficient.

12.4.433 Downtown Study

A Downtown Revitalization and Circulation Plan was completed in 2001, which modified the street standards for the area between "A" Street and Umatilla River Road. This Plan is incorporated under Section 9.2. In this area, sidewalks are recommended to be from eight to ten feet wide, on-street parking is required, traffic lane width is limited to 11 feet, crosswalks are high-visibility ladder stripes, bike lanes are added, and a center median is included on some blocks. These features will improve walking and bicycling conditions.

12.4.434 Zoning Code (Title 10)

The City of Umatilla's Zoning Code (Title 10) was revised in 1999 and 2002 to update aspects of the code that relate to the Transportation Planning Rule and the TSP. Many of these changes support the City's desire to promote a more attractive pedestrian and bicycling environment. For example, the Code allows mixed uses in the downtown, requires that primary entrances be street-oriented, limits drive-through uses, and provides the Planning Commission with the option to exact pedestrian accessways or easements.

The parking section of the Code includes standards for bicycle parking as well as such often-overlooked details as requiring bumper-rails in parking lots that abut walkways to prevent vehicle overhang from obstructing pedestrians. Site Plan Review is thorough, addressing pedestrian enhancing design issues such as building orientation and setbacks, location of off-street parking, orientation of drive-through windows, and internal circulation.

Several minor changes could be made to clarify or strengthen the Zoning Code:

- Add definitions for bicycle, bicycle facilities (i.e., lane, path, shared, etc.), pedestrian, pedestrian facilities (i.e., walkway, sidewalk, path, accessway, easement). Note: Most of these are defined in Title 11.
- Prohibit drive-through windows in the downtown core entirely (rather than making them conditionally allowed uses).
- Set a maximum percentage of allowed parking spaces (i.e., 150% of the minimum).
- Clarify the conditions under which a pedestrian easement or accessway might be required.

12.4.440 Funding

This section discusses a number of funding sources potentially available to Umatilla to fund portions of the Bicycle & Pedestrian Plan elements. These funding sources most likely will need to be combined over a length of time to fully implement the Plan.

Projects occurring on the highway may be financed by ODOT, the City, or a combination of the two. Any project funded by ODOT must be included on the State Transportation Improvement Program (STIP), which is updated biannually, unless other, short-term or one-time funds are available through ODOT, such as the one-time pedestrian safety improvement fund.

12.4.441 Local Revenue Sources

12.4.441(1) Capital Improvement Program

Many jurisdictions use some form of Capital Improvement Program (CIP) to schedule and budget resources for improvement projects, such as road, sewer, or waterline construction. A CIP usually extends out at least five years, although only one year's worth of projects may be actually funded. CIPs are typically updated on an annual or biannual basis. The City of Umatilla does not have a written Capital Improvement Program. Implementing a CIP would allow Umatilla to identify and prioritize projects over the long term.

12.4.441(2) Gas Tax Revenues

The state collects gas taxes, vehicle registration fees, and overweight and overheight taxes, and returns a portion of the revenues to cities and counties. This funding is typically used for roadway construction and maintenance, but it can be used to make other transportation-related improvements as long as they are located within the public right of way. This may include sidewalks, intersection enhancement for pedestrians, and bike lanes.

12.4.441(3) System Development Charges

System development charges (SDCs) are used by some communities to fund public works infrastructure needed for new developments. SDCs allocate portions of the costs associated with capital improvements to the development that increases demand on transportation, sewer, water, and parks.

Sidewalks and trails can be considered as reimbursable expenses under a transportation SDC. (Reimbursable means that the new user has to pay a proportionate share of what existing users already have for infrastructure already in place). SDCs can only be applied to new development based on the increase in traffic that they will create, and cannot include addressing existing deficiencies.

Umatilla's current SDC ordinance applies to sewer and water only. The City may consider adopting a new ordinance for a transportation SDC or a parks SDC (potentially used for paths), which would apply to new development just as the current sewer and water SDCs do.

12.4.441(4) Local Improvement Districts

Typically, the type of public realm projects identified in this plan are funded by one of several different types of local funding districts: Local Improvement Districts (LID), Economic Improvement Districts (EID), Business Improvement Districts (BID), or an Urban Renewal District (URD), which provides tax increment financing and tax exempt bonding.

LIDs provide funds for local types of capital improvements, such as sidewalks or other street improvements. Individual property owners usually have the option of paying the LID assessment in cash or applying for financing through the city. The assessment formula is typically based on criteria such as property frontage or trip generation.

EIDs typically base assessments on property values. EIDs cannot be used to fund capital improvements, but can be used to fund smaller project that complement or support larger downtown improvements. EIDs are often managed by a downtown development board or group, and are limited to a five-year duration.

BIDs are similar to EIDs; however, assessments are paid by business owners rather than property owners. BIDs cannot be used to pay for capital improvements, but can fund smaller projects. BIDs can be time limited or perpetual.

12.4.441(5) Bonds

Bonds provide a means for obtaining immediate capital financing of infrastructure project. A

bond is a formalized agreement by which the bond issuer promises to repay the bond issuers a certain amount of money at a stated interest rate on a certain date. Government debt can be incurred at lower interest rates than commercial, because the interest is generally exempt from state and federal income taxes.

Measure 50 placed additional limits on bonded debt over those that were established by Measure 5. For debt that had been exempt under Measure 5, capital construction now excludes reasonably anticipated maintenance and repairs, supplies and equipment not intrinsic to the structure, and furnishings. The bond levy may be imposed for no more than the expected useful life of the project.

Several different bond types are available to municipalities and special districts: general obligation, revenue, assessment, refunding, and certificates of participation.

General obligation bonds are typically secured by the issuer's promise to levy a property tax to pay the bonded debt principal and interest. They can typically be sold at a lower rate of interest than other bonds. General obligation bonds require voter approval, and proceeds may be only used for capital construction and improvements. Revenue bonds generally secure a higher interest rate than general obligation bonds. Revenue bonds are secured by a commitment of system user fees for facility revenues, and fees can be increased if needed to pay debt.

With assessment bonds, also known as Bancroft bonds, benefited properties are assessed to pay for a portion of the cost of local improvements. Once the assessment procedure has been completed, owners of assessed properties have the right to apply to pay their assessment over a period as determined by the municipality (with a minimum of 10 years).

Refunding bonds may be sold at a lower interest rate than the bonds outstanding, and the proceeds may be used to redeem the outstanding bonds. This allows the issuer to continue to pay the original debt at a lower interest rate. Alternatively, it may allow the debt service on the original bonds to be spread out over a longer period of time. Advance refunding bonds may be issued in advance of maturity or date of redemption. Proceeds from the sale of the advance refunding bonds are placed in an escrow account and invested so there is sufficient money to pay bondholders at the earliest possible redemption date.

Certificates of participation, also called lease purchase revenue bonds, are a financing technique for facilities, property, or equipment that uses the leasing power of local governments. Unlike general obligation bonds, no new tax levy is authorized. Therefore, no voter approval is necessary. Generally, certificates of participation represent participation in a tax-exempt lease, which is an agreement between a municipal government and a bank trust department or governmental agencies. Revenues to pay the certificate of participation can come from a number of sources, depending on the type of project financed. For example, a certificate of participation issued to finance a community facility may be paid back from special taxes such as room taxes or business license fees. When the certificate is retired, the local government owns the project.

12.4.441(6) Short-Term Debt

There are three types of short-term debt: tax and revenue anticipation notes, bond anticipation

notes and warrants (Bancroft), and public improvement notes. In all cases, short-term debt is incurred upon and secured by anticipated future revenues and a line of credit. Issuing short-term notes allows the issuer to delay long-term financing until the market is more stable.

12.4.442 State and Federal Sources

There are a number of state and federal grant and loan programs available for economic development or specific transportation projects. Most programs require a match from the local jurisdiction. Most of the programs available for transportation projects are administered through Oregon Department of Transportation (ODOT) or the Oregon Economic and Community Development Department (OECDD). Several of these are described below. It should be noted that funding sources are continuously changing and this list will need to be updated every several years to remain relevant.

12.4.442(1) ODOT-Administered Programs

State Pedestrian and Bicycle Grants, administered by ODOT, are grants for pedestrian or bicycle improvements on state highways or local streets. Grant amounts are up to \$200,000, with a local match encouraged. The grants require the applicant to administer the project, and projects must be situated in road or highway rights-of-way. Projects include sidewalk infill, handicap access, street crossings, intersection improvements, and minor widening for bike lanes. The grant cycle is every two years, coinciding with State Transportation Improvement Program (STIP) update cycle. Cities and counties may apply.

The *Special Small City Allotment Program* is restricted to cities with populations under 5,000. No locally funded match is required for participation. Grant amounts are limited to \$25,000 and must be earmarked for surface projects such as drainage, curbs, and sidewalks. The program allows cities to leverage local funds on non-surface projects if the grant is used specifically to repair the affected area.

The *Federal Surface Transportation Program* is used to construct, re-construct, and restore roads and complete operational improvements on federal aid highways. In particular, *Transportation Enhancement* activities consist of projects that improve the cultural, aesthetic and environmental value of the state's transportation system. Twelve eligible activities, including bicycle and pedestrian projects, historic preservation, landscaping and scenic beautification, mitigation of pollution due to highway runoff, and preservation of abandoned railway corridors. A 10.27% minimum match is required. The funding cycle is every two years in conjunction with the STIP update process. Local governments, other public agencies (state, federal, tribal) and the five ODOT regions can apply.

The *Oregon Transportation Infrastructure Bank* provides loans and other financial assistance to local jurisdictions for federal-aid eligible highway and transit capital projects. Loans can cover all or a portion of an eligible project. Cities, counties, special districts, transit districts, tribal governments, ports, state agencies, and private for-profit and non-profit organizations can apply.

The *Highway Bridge Rehabilitation or Replacement* provides funding for local bridge rehabilitation or replacement, administered by ODOT, with a two-year funding cycle coinciding with the STIP update cycle. Any city or county with a structurally deficient or functionally

obsolete bridge meeting criteria established by federal regulations or Federal Highway Administration policies may apply.

The *Hazard Elimination Program* carries out safety improvement projects to reduce the risk, number, or severity of accidents at highway locations, sections, and elements on any public road or public transportation facility. Applications are accepted at any time. Once the agency identifies a safety problem they should contact the appropriate Region staff and forward accident records, justification documents, and other pertinent project information. Region staff will then prepare a draft prospectus and send it to the Traffic Management Section to determine program eligibility. State and local agencies may apply.

The mission of the *Transportation and Growth Management Program* is to enhance Oregon's livability, foster integrated transportation and land use planning and development that result in compact, pedestrian, bicycle, and transit friendly communities. The program offers grants to local governments for transportation system planning and development assistance through the Quick Response and Community Outreach programs. The funding cycle is every two years.

The *Public Lands Highways Discretionary Program* is for projects that improve access to or within federal lands of the nation. The program can fund engineering or construction of highways and roads, transportation planning and research, and other facilities related to public travel on roads to or through federal lands. This program provides reimbursement rather than grants. This is a nationwide program with no guaranteed minimum for Oregon. The funding cycle is annual, with applications due in May. Selections in the following December are candidate projects to enter in the nationwide competition for funds. Any public agency may apply.

12.4.442(2) *OECD-Administered Programs*

The *Immediate Opportunity Fund* provides street and road improvements to influence location or retention of firms providing primary employment or revitalize business or industrial centers where the investment is not speculative.

The *Special Public Works Fund* has money targeted from lottery bond proceeds for loan and grant assistance to eligible public entities for the construction of infrastructure that leads to business location or expansion and the creation or retention of jobs. These are defined as providing "educational, commercial, recreational, cultural, social, or similar services to the public. This is a program for which cities and counties may apply. The infrastructure must be needed primarily to support economic development, and 30% of jobs created or retained must be family wage jobs.

The *Oregon Bond Bank* pools municipal loans made under the Special Public Works Fund and Water/Wastewater Financing programs into state revenue bonds. The purpose of the bond bank is to provide small communities access to financial markets to finance infrastructure projects at lower rates.

Oregon Tourism Commission provides matching grants up to \$100,000, coordinated with OECD's Needs and Issues process in order to give applicants more exposure to a greater

number of potential funders. The focus is on tourism-related projects within a larger economic development strategy, with funds are for tourism projects such as marketing materials, market analyses, signage, visitor center development planning, etc., but not for construction of infrastructure. Nonprofit agencies, municipalities, tribes, and ports may apply.

OECD administers the state's annual federal allocation of *Community Development Block Grants* (CDBG) for non-metropolitan cities. The notational objective of the program is "the development of viable urban communities, by providing decent housing and a suitable living environment and expanding the economic opportunities, principally for persons of low and moderate income." Eligible projects include downtown revitalization projects such as clearance of abandoned buildings or improvement to publicly owned facilities or infrastructure such as curbs, gutters, storm drainage, sidewalks, streetlights, landscaping, water and sewer, and permanent benches. Matching funds are required.

12.4.500 NEIGHBORHOOD ANALYSIS

Potential projects in the three distinct neighborhoods — South Hill, Downtown and McNary — as well as the central area between Downtown and McNary are discussed in this section. For each project, the opportunities and constraints are examined, and the major objectives are listed.

12.4.510 Project Evaluation Criteria

The projects from the Opportunities & Constraints report were looked at in terms of 7 criteria:

1. Relevance to plan goals — High is best

Projects that strongly support multiple transportation and community goals are preferable.

- Is the project part of the city's transportation plan?
- Is there a bicycle or pedestrian transportation problem that the project will solve or alleviate?
- Will the project support business, health or other community goals?

2. Level of service (LOS) need — Low is best

Areas or corridors that serve pedestrians and bicyclists poorly are better candidates for projects than those that already have facilities.

- Is the existing road a deterrent to bicycling or walking? Roads with narrow lanes and heavy traffic, or that are difficult to cross, receive priority treatment. Other factors include high truck volumes, poor sight distance, dangerous intersections or other obstacles to direct travel by bicyclists and walkers.
- Does the project upgrade a major roadway (arterial or major collector street), bridge an obstacle, provide a more direct route (reducing significant out-of-direction travel), or provide access to important destinations such as schools?
- Will the facility link, complete or extend the system? Are there clear origin and destination points along the corridor served?

3. Realistic cost — Low is best

Projects that provide a good return on investment are preferable.

- Are the estimated engineering and construction costs typical for this type of project?
- Are expected maintenance costs reasonable?
- Are there secondary benefits that help mitigate the cost such as economic vitality, lower crime or improved safety?

4. Available funding — All is best

Projects that have identified funding sources are preferable.

- Can the project be funded from existing transportation sources?
- Are special grants or loans available?
- Are private or community interests willing to invest in the project?
- Can the project be timed to take advantage of other road work being performed?

5. Technical implementation — Simple is best

Straightforward projects with standard designs are preferable.

- Is the project the appropriate treatment for the problem?
- Does the project meet current design standards?
- Are highway design exceptions needed?
- Are there any unusual engineering problems such as a steep slope, poor drainage, or constrained right-of-way?
- Does the project involve many elements or complex phasing?

6. Political implementation — Easy is best

Non-controversial projects with strong support are preferable.

- Is a substantial amount of public involvement necessary?
- Does the project require additional right-of-way?
- Is removal of on-street parking necessary?
- Has the public shown support for the project?
- Do affected or adjacent property owners agree to the project?
- Does the business community support the project?
- Do government officials support the project?
- Does the responsible agency agree to maintain the facility?
- Is there a willing party to see the project through to completion?

7. Potential use — High is best

Projects that attract large numbers of pedestrians and bicyclists are preferable.

- Is the potential use high compared to similar facilities? Factors to consider include proximity to residential areas, schools, parks, shopping centers, business, and industrial districts.
- Does the project consider the needs of both bicyclists and pedestrians? In most cases, bicyclists and pedestrians require separate facilities. If the project provides for only one mode, the design should not preclude use by the other mode, where appropriate.
- Does the project help meet the needs of the young, the elderly, the low-income, and the disabled?
- Does the project provide connectivity to other modes? Facilities that provide bicycle and pedestrian access to existing or future bus stops and park-and-ride sites enhance intermodal transportation.

There is no particular weighting to these criteria. In general, if the majority of criteria rate well above average, then the project is a good candidate. However, one extremely negative criterion tends to offset several positive ones.

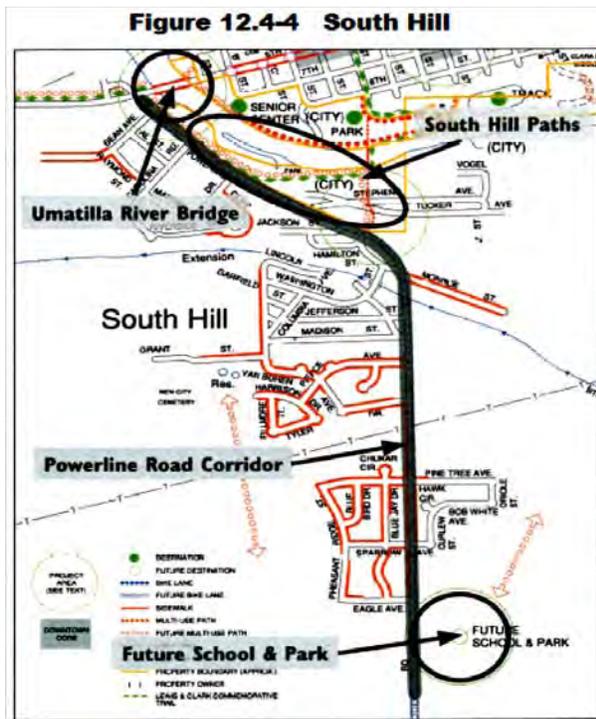
A given project may have alternative designs with different trade-offs. In particular, it may be tempting to accept a design with low standards to avoid confrontation with affected property owners, to avert perceived inconvenience to motorists, or to simply keep construction costs down. Except in special circumstances, minimum standards in the Oregon Bicycle and Pedestrian Plan should be used, and attention should always be paid to long-term goals. The liability and waste of investment in inadequate facilities outweigh any temporary gains.

Table 12.4-3 shows a qualitative rating of these criteria. The last column shows the overall feasibility of the project. The following text examines each project in more detail and establishes the period of completion (near-term, long-term), the cost, the funding authority, and potential funding. Complicated projects such as the Powerline Road Improvements are broken down into elements.

Because these projects span a wide range of needs and level of development, it is difficult to compare them directly. Some are specific facility projects (such as the various path segments), others cover an area or corridor (such as downtown walkway infill or 3rd Street corridor), while yet others are planning initiatives (such as the Umatilla River Bridge). Together, they represent system needs over the next 20 years.

Table 12.4-3 Project Rating Mix

Project	①	②	③	④	⑤	⑥	⑦	Feasibility
	Relevance	LOS	Cost	Funding	Technical	Political	Use	
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin-bottom: 10px;"> ♦ = Poor ♦♦ = Fair ♦♦♦ = Good </div>								
South Hill								
☞ Ped. Bridge to Powerline Rd Path	♦♦♦	♦♦♦	♦♦	♦♦	♦♦	♦♦♦	♦♦♦	High
☞ Lower South Hill Extension Path	♦♦♦	♦♦♦	♦♦♦	♦♦	♦♦♦	♦♦♦	♦♦♦	High
☞ Umatilla Bridge Undercrossing Path	♦♦	♦♦♦	♦♦♦	♦♦	♦♦	♦♦♦	♦♦	High
☞ Powerline Road Improvements	♦♦♦	♦♦♦	♦	♦	♦♦	♦♦	♦♦♦	Medium
☞ Future Elementary School and Park	♦♦♦	♦♦	♦♦	♦	♦♦	♦	♦♦♦	Medium
☞ Umatilla River Bridge	♦♦	♦♦	♦♦♦	♦	♦♦	♦♦	♦♦	Medium
Downtown Umatilla								
☞ 3rd Street Path to River Path	♦♦♦	♦♦	♦♦	♦♦	♦♦	♦♦♦	♦♦♦	High
☞ Walkway Infill	♦♦♦	♦♦	♦♦	♦♦	♦♦	♦♦	♦♦♦	Medium
☞ Old Umatilla Connectors	♦♦	♦♦♦	♦♦	♦	♦	♦	♦♦	Low
Central Area								
☞ 3rd Street Corridor	♦♦	♦♦	♦♦	♦	♦♦♦	♦♦	♦	Medium
☞ Crossroads Intersection	♦♦	♦♦♦	♦♦♦	♦♦	♦♦	♦	♦	Medium
McNary								
☞ Devore Road Connection	♦♦	♦	♦♦♦	♦	♦♦	♦	♦	Low
☞ Dam Overlook Improvements	♦♦	♦♦	♦♦♦	♦	♦♦	♦♦	♦♦	Medium
☞ Future Park Connectors	♦♦	♦♦♦	♦♦	♦	♦♦	♦♦♦	♦♦♦	Medium



12.4.520 South Hill Projects

The South Hill area is the newest residential area of Umatilla. Located roughly along the top of the plateau above Umatilla, its development pattern is typical of more recent subdivisions, with large lots and long blocks that feed onto one major street, Powerline Road. Newer streets have sidewalks. There are no commercial services or schools currently available within the South Hill area, although an elementary school and park are planned for the near future and some areas are zoned for neighborhood commercial.

Downtown and South Hill are separated by the Umatilla River. Two bridges connect the neighborhoods, an aging structure to the north on Highway 730 and a conveniently located pedestrian bridge. Neither bridge is well connected by sidewalks, although the

pedestrian bridge has a multi-use path on the Downtown (north) side.

Major opportunities in South Hill include improving access to the pedestrian bridge, constructing sidewalks and bike lanes on Powerline Road, developing a bicycle-friendly and walkable school/park site, and eventually acquiring the historic highway bridge for pedestrian and bicycle use. The four primary projects described below are related but can be pursued independently. These four projects received the highest interest of any projects at the public workshop.

12.4.521 Lower South Hill Paths

The pedestrian bridge over the Umatilla River below “F” Street provides a key shortcut between South Hill and the downtown and schools. Its utility has been limited by a poor connection to Powerline Road. Three path segments provide an opportunity to greatly improve access to the bridge.

12.4.521(1) Connector Path from Pedestrian Bridge to Powerline Road

- ◆ **Description:** construct a paved path between the existing pedestrian bridge over the Umatilla River and Powerline Road at Hamilton Street.
- ◆ **Period of completion:** near-term.
- ◆ **Cost:** 1560 ft 10-ft wide path, \$105k including excavation.
- ◆ **Ownership:** City.
- ◆ **Funding authority:** City.
- ◆ **Funding sources:** general funds, grants, school transportation fund.
- ◆ **Feasibility:** high.

South approach to pedestrian bridge — unpaved, overgrown, opening not bicycle-friendly.



Trail from Powerline Road down to pedestrian bridge, looking northwest

Many users reach the bridge from Powerline Road via a steep, unimproved trail which trespasses over a corner of private property. The remainder of the trail is on City property and crosses two paved easements used by residents of a small development.

A paved path connecting to a marked crosswalk on Powerline would greatly improve access and steer users away from private property. The technical challenge is to find a suitable route that maintains a moderate slope. Such a path would probably not meet ADA maximum slope nor AASHTO bike path recommendations; however, there is alternate paved access via Stephens Avenue to the west that is less steep although not as direct, and the Lower South Hill Extension Trail (see following text) will provide another access.

A possible path design is shown in *Figure 12.4-5*. It switchbacks down the hill at less than 8% slope and is entirely on City property.

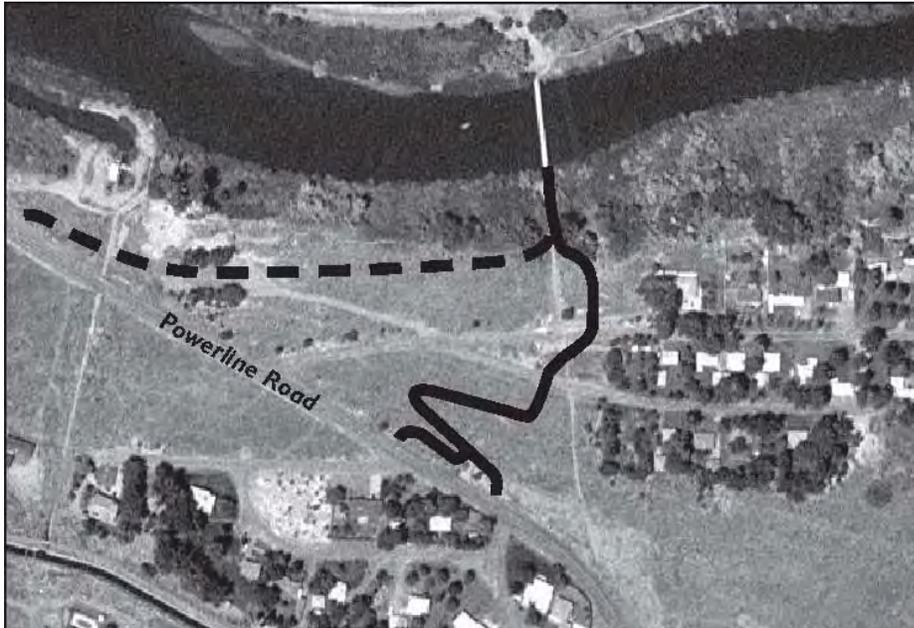


Figure 12.4-5 Proposed Connector (solid) & Extension (dashed) Paths - Aerial Photo

12.4.521(2) Lower South Hill Extension Path

- ◆ **Description:** construct a path (unpaved initially but paving planned) between the existing pedestrian bridge over the Umatilla River and Powerline Road at Martin Drive.
- ◆ **Period of completion:** near-term.
- ◆ **Cost:** paved path, 1200 ft at \$22/ft, \$26k.
- ◆ **Ownership:** City, Army Corps of Engineers/Bureau of Land Management.
- ◆ **Funding authority:** City.
- ◆ **Funding sources:** general funds, grants.
- ◆ **Feasibility:** high.

This short path segment would follow a sewer easement. The western end of the path would connect to the north side of Powerline Road at Martin Drive. The eastern end would join the connector path described above and would serve residents at the north end of South Hill. The Lewis and Clark Trail would be routed along this path.

12.4.521(3) Umatilla Bridge Undercrossing Path

- ◆ **Description:** construct an unpaved path north from the Lower South Hill Extension Trail under the Umatilla River Bridge.
- ◆ **Period of completion:** long-term.
- ◆ **Cost:** unpaved path, 1500 ft at \$12/ft, \$18k.
- ◆ **Ownership:** Army Corps of Engineers/Bureau of Land Management, ODOT.
- ◆ **Funding authority:** City.
- ◆ **Funding sources:** general funds, grants.
- ◆ **Feasibility:** high.

A path under the Umatilla River Bridge would allow the Lewis and Clark Trail to avoid the intersection of Highway 730 and Powerline Road.

Figure 12.4-6 shows a preliminary engineering design and typical section.

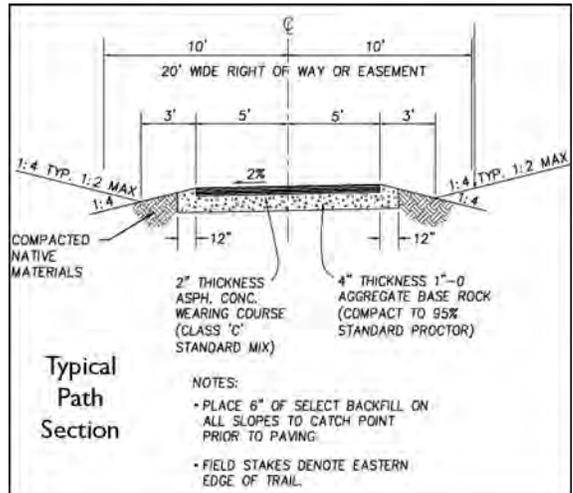
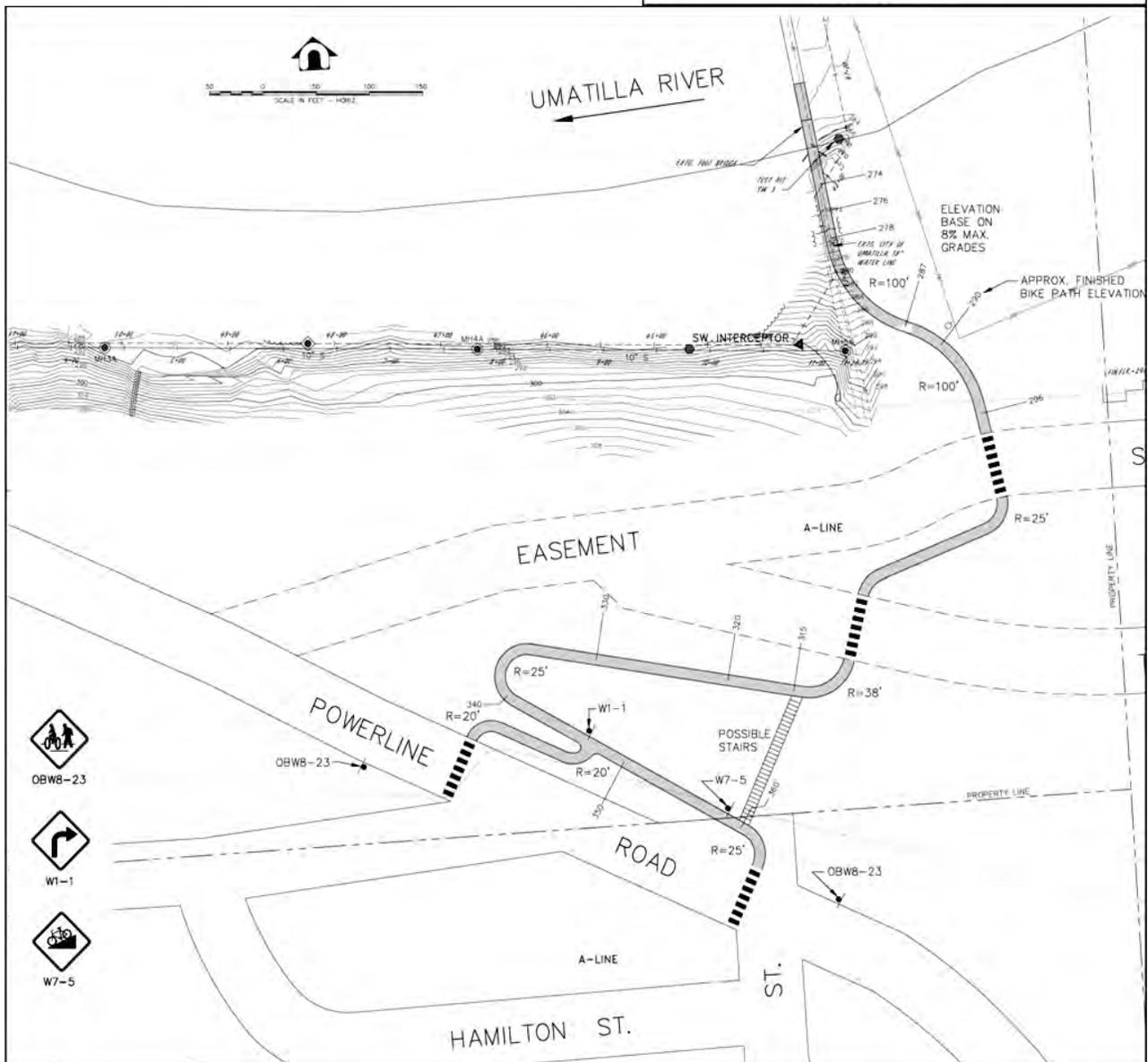


Figure 12.4-6 Proposed Path & Design Details



12.4.522 *Powerline Road Improvements*

This minor arterial received the highest interest at the public workshop with concerns about safety, comfort, speeding, crossing, and the lack of alternate routes. The road covers about 1.7 miles within the City and provides the only motorized vehicle access to South Hill. (A secondary access to Highway 730 may be developed in the future but will not change the corridor needs.)

The existing pavement is 20 to 22 feet wide without curbs and sidewalks, except for the south end which has a curb-tight sidewalk adjacent to new development. The posted speed is 35 mph. Traffic volume was estimated to be 1,950 vehicles/day in 1997 (see *Figure 12.2-4*), increasing to 4,650 vehicles/day in 2017. Improving this single street will have a large influence on travel choices and safety.

The overall objective is to develop a bicycle-friendly and walkable design consistent with the residential neighborhood. Potential improvements include:

- Redesign of the intersection with Highway 730.
- Adding sidewalks and bike lanes throughout.
- Calming the traffic to reduce speeds.
- Providing comfortable crossings at key intersections and where the path from the river joins Powerline.

Overall, the feasibility of improving this corridor is medium as discussed for each of the individual elements below.

12.4.522(1) *Intersection of Powerline Road and Highway 730*

- ◆ **Description:** improve intersection for pedestrians and bicyclists.
- ◆ **Period of completion:** phased over near- and long-term.
- ◆ **Cost:** small part of intersection improvement for motor vehicles — signal, \$150k (TSP); bridge and intersection, \$2M (TSP).
- ◆ **Ownership:** ODOT, City.
- ◆ **Funding authority:** ODOT.
- ◆ **Funding sources:** ODOT.
- ◆ **Feasibility:** medium.

Five options for this intersection were analyzed under Section 12.2.410(C) to mitigate motor vehicle delay. Because of the proximity of the Umatilla River Bridge there is insufficient room for adding turn lanes. The preferred approach is a series of staged improvements starting with an interim signal; the signal is listed in Section 12.11.310(A) as one of only two roadway projects during the near-term (first 10-year period, 1999-2008).

The intersection's motor vehicle capacity was re-assessed based on traffic counts taken by ODOT in January 2003. The capacity has diminished considerably since the 1997 counts, but remains acceptable for the time being.

An interim signal might be followed by an at-grade jughandle (a type of intersection that redirects left turns) and eventually by a grade-separated crossing in conjunction with a new bridge; the bridge replacement is a focus of the long-term projects (second 10-year period, 2009-2018) listed in Section 12.11.320(A). The major concern for pedestrians and bicyclists is ensuring that any intersection improvements include standard sidewalks, marked crosswalks and integration with bike lanes.



Powerline Road intersection with Highway 730 functions poorly for pedestrians and other users

12.4.522(2) *Powerline Road Sidewalks and Bike Lanes*

- ◆ **Description:** construct sidewalks and bike lanes from Highway 730 to Eagle Avenue.
- ◆ **Period of completion:** phased over near- and long-term.
- ◆ **Cost:** sidewalk and curbs on 4400 ft of roadway, \$310k; widening 4400 ft of roadway from 20 to 36 ft at \$48/ft, \$215k plus \$200k contingency; total \$725k+. Note that the northern 2500 feet of road could make do with a sidewalk on one side because of the one-sided development, reducing total cost by about \$90k.
- ◆ **Funding authority:** County.
- ◆ **Funding sources:** City, County, developers.
- ◆ **Feasibility:** medium.

Section 12.11.320(B) lists installing a sidewalk on Powerline Road during the long-term at a cost of \$823k to the southern UGB, about 2.2 miles; there is no mention of bike lanes. The majority of the road is substandard at 20 to 22 feet wide without curbs, sidewalks or paved shoulders. A segment of the road in the south has been widened with curbs and sidewalks where there is new development, and future development may eventually result in most of the southern half of the road being improved. However, the northern 0.6 mile is largely built up so that new development cannot be depended on for improvements.

Other considerations in the north end that will complicate the engineering are the cross-slope, road alignment to the side of the right-of-way, a narrow bridge over a culvert, and the fact that there are no alternate routes during construction. The road is under County jurisdiction (Road 1225) although it functions primarily as a City street. The City evidently has an agreement with developers to fund some local projects.



Powerline Road (north section) - primary access to South Hill has narrow, unpaved shoulders

12.4.522(3) Traffic Calming and Crossings

- ◆ **Description:** manage traffic speed and driver attention on Powerline Road.
- ◆ **Period of completion:** phased over near- and long-term.
- ◆ **Cost:** 6 crosswalks, \$1800; 6 refuge islands, \$12k; roundabout, \$150K; about \$165k total.
- ◆ **Funding authority:** County.
- ◆ **Funding sources:** City, County, developers, safety or bike-ped grants.
- ◆ **Feasibility:** medium.

There is an existing crosswalk on the north leg of Powerline Road at Carolina Road and at Monroe Street. Other potential locations are:

- Umatilla River Path connection near Washington Street and Hamilton Street.
- Pine Tree Avenue.
- Sparrow Avenue.
- Eagle Avenue.

Traffic calming can be incorporated into arterial street design to reduce speed, increase safety, eliminate barriers that impede walking and bicycling, and improve the roadway environment. Some typical measures suitable for Powerline Road are shown in *Figure 12.4-7*.

For example, one approach is a combination of measures including narrowing travel lanes from 12 feet to 10 feet (this would also reduce project cost), striping high-visibility crosswalks with lighting for night, installing refuge islands at crosswalks (perhaps two of them near the Umatilla River Path connection), and converting the future school intersection (probably Eagle Avenue) to a modern roundabout. If these measures prove insufficient, more aggressive traffic calming such as neckdowns, speed tables and mini-roundabouts at other intersections could be considered.

Figure 12.4-7
Typical Traffic Calming Measures

Horizontal alignment:

- Raised median
- Roundabout

Vertical alignment:

- Raised intersection or crosswalk
- Speed hump
- Speed table



Refuge island with speed hump.

Narrow (real or perceived):

- Neck down
- Curb extension (if on-street parking)
- Curb radius reduction
- Gateway
- Landscaping
- Lane width reduction
- Raised median
- On-street parking
- Pavement texture
- Roadway striping and
- Delineation



Refuge island with speed table and high-visibility crosswalk.

Regulate and enforce:

- 4-way stop (if warrants met)
- High-visibility crosswalk
- Pedestrian signal
- Truck restriction
- Speed reader



Modern roundabout is superior to a signal or stop signs for many intersections.

12.4.523 Future Elementary School and Park Planning

- ◆ **Description:** design an accessible neighborhood school and park that are integrated into future development.
- ◆ **Period of completion:** near-term.
- ◆ **Cost:** design team, \$50k.
- ◆ **Ownership:** City.
- ◆ **Funding authority:** City.
- ◆ **Funding sources:** City, School District, developers, grants.
- ◆ **Feasibility:** low.

This is a planning initiative rather than a specific project. For example, a design team involving city representatives, school officials, developers, urban planners, and the interested public could develop a specific neighborhood design that would be more walkable than what would occur otherwise. *Figure 12.4-8* shows a result of two such initiatives.



Powerline Road (south section) — new residential development with curb-tight sidewalks; planned elementary school and park will be to the right (east).

city representatives, school officials, developers, urban planners, and the interested public could develop a specific neighborhood design that would be more walkable than what would occur otherwise. *Figure 12.4-8* shows a result of two such initiatives.

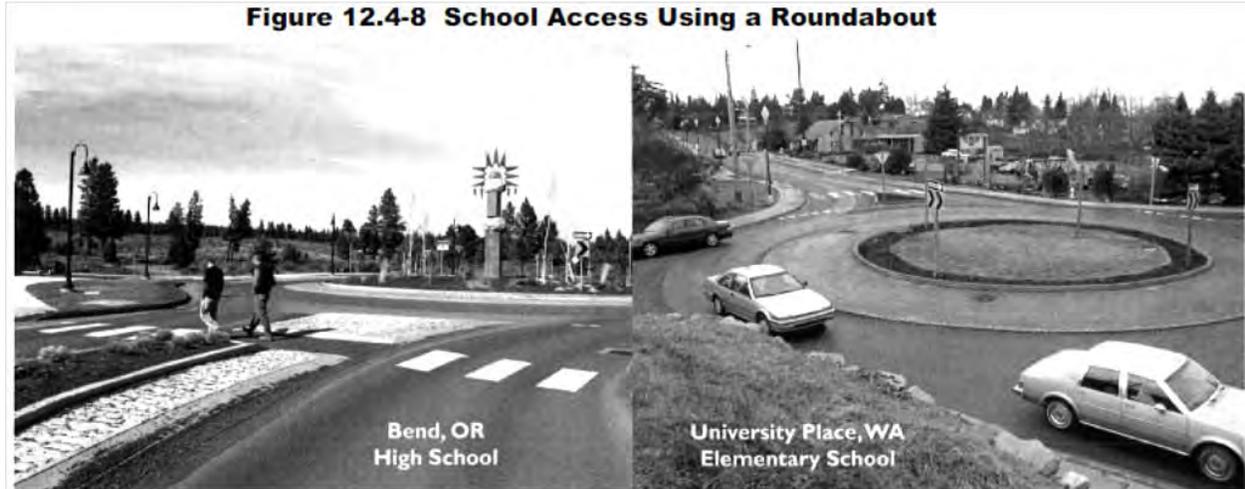
Appendix Figures 12.4B-1 and B-2 show an elementary school and park are planned for South Hill, east of Powerline Road about a mile south of Downtown — within walking distance of most students. The site design is not determined, but *Figures 12.2-11* and *12.4-2* show several new streets and a short connector path in the area.

If the school is designed as an integral part of the neighborhood with a local street grid including well-connected walkways and bikeways, it has the potential for greatly enhancing access for children from South Hill and Downtown. If coordinated with shared park facilities, the school could be a neighborhood center, accessible to South Hill residents by walking or biking.

Many other communities have allowed “big box” schools on large, fenced grounds with buildings set well back from the street and accessible primarily by car and bus. The schools may even be located purposely on arterial streets to aid access by car, even though these streets are difficult for children to cross.

Because a lack of planning in these communities has often resulted in inadequate pedestrian and bicycle facilities, some school districts discourage walking and bicycling for safety reasons. In addition, they may close the grounds to the public at all times. These policies result in public facilities that are not integrated into neighborhoods and create a significant barrier to walking and bicycling. This has proven to have negative consequences, especially for children who tend

to develop a lifetime habit of inadequate physical activity.



12.4.524 Convert Historic Umatilla River Bridge

- ◆ **Description:** convert bridge to nonmotorized use when new bridge is constructed.
- ◆ **Period of completion:** long-term.
- ◆ **Cost:** depends on future connections but negligible.
- ◆ **Ownership:** City.
- ◆ **Funding authority:** ODOT.
- ◆ **Funding sources:** State and Federal.
- ◆ **Feasibility:** unknown, depends on new bridge construction.

The Umatilla River Bridge on Highway 730 was analyzed in Section 12.2.410(C)(1)(b) with several options ranging from reconstruction to building a new bridge to the north where a railroad bridge used to be. The existing structure is not adequate to support a wider deck, so a new bridge is the most promising alternative. If a new bridge is built, the existing bridge could

Umatilla Bridge from fishing platform on River Trail.



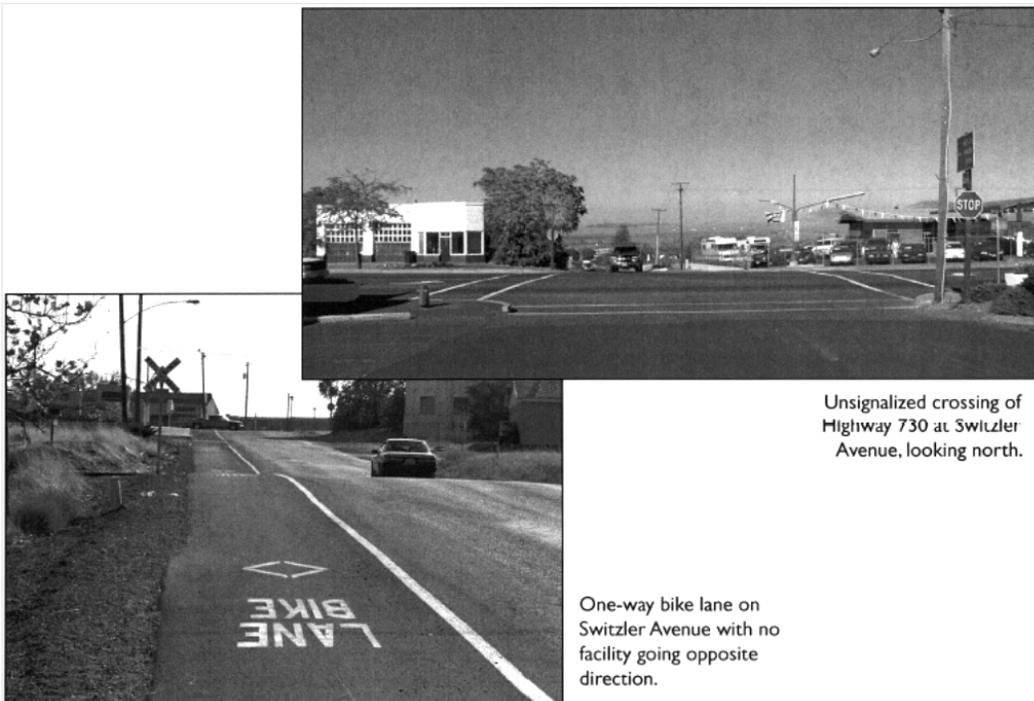
be converted to non-motorized use and easily tied into the sidewalk and trail system. This would provide a scenic amenity and preserve an historic structure.

The need for a new bridge is well established, but Highway 730

- ◆ **Cost:** 400 ft of 6-ft wide sidewalks (both sides) and bike lanes (one side) on Switzler Avenue, \$37k; 5000 ft bike lanes on Highway 730 in downtown at \$0.80/ft, \$10k; 500 ft of 5-ft sidewalks on “F” Street, \$25k; zebra crosswalks with median islands at Switzler, \$6k; signage, \$1k; \$79k total.
- ◆ **Ownership:** City.
- ◆ **Funding authority:** City, ODOT.
- ◆ **Funding sources:** City, grants, ODOT, developers.
- ◆ **Feasibility:** high.

Two existing paths, the 3rd Street Path and the Umatilla River Path, are separated by a 0.5-mile gap in the downtown. (Note that this is also the route of the Lewis and Clark Trail). Although creating a separated path is not feasible in the downtown core, several things can be done to make it easier for people to continue from one path to the other:

- Construct sidewalks and bike lanes on Switzler Avenue to connect the 3rd Street Path to 6th Street (Highway 730). At present there is a bike lane on only the east side of Switzler and the sidewalks extend only a short distance north of 6th Street.
- Develop a connection of the Umatilla River Path to the intersection of Switzler Avenue with 6th Street, such as on “F” Street to 6th Street and then on 6th Street to Switzler. There would be sidewalks and a signed, on-street, shared bikeway on “F” Street, and sidewalks and bike lanes on 6th Street.
- Improve the crossing of 6th Street at Switzler in a similar manner as to what is planned for the east end of downtown: curb extensions, a median refuge, high-visibility zebra crosswalk, and pedestrian-oriented lighting. The intersection is two-way stop controlled with a 60-ft crossing distance. If enough pedestrian and bicycle traffic can be generated, the intersection



Unsignalized crossing of Highway 730 at Switzler Avenue, looking north.

One-way bike lane on Switzler Avenue with no facility going opposite direction.

might eventually meet signal warrants.

Although the Lewis & Clark Trail would be on 6th Street where the facilities and services are located, users could choose to use any of several other parallel routes in the downtown street grid.

Another potential connection of the Umatilla River Path with downtown is “L” Street up from the high school track where the path currently ends. However, this option was dropped at the school’s request because they have other plans for the area.

Also, “F” Street could be a way to connect downtown and the Umatilla River Trail to Old Umatilla if that area were developed.

12.4.532 Walkway Infill

- ◆ **Description:** upgrade existing sidewalks and fill in gaps within the downtown core.
- ◆ **Period of completion:** phased near- and long-term.
- ◆ **Cost:** TSP lists about \$400k of sidewalks in the downtown area (not including the walkways and bikeways in 3.3.1 above); 700 ft of path at \$22/ft, \$15k; \$415k total.
- ◆ **Ownership:** City, ODOT.
- ◆ **Funding authority:** City, ODOT.
- ◆ **Funding sources:** City, ODOT, grants, developers.
- ◆ **Feasibility:** medium.



Downtown walkways have many obstacles, few curb ramps, and long crossings. Curb extensions would address all these problems.

The Downtown Revitalization and Circulation Plan, Section 9.2, discusses the core area in detail, while Sections 12.11.310 and 320 list many sidewalk projects, including all major streets downtown as well as many minor streets. Other potential improvements on Highway 730

(6th Street) downtown include:

- The City is planning a median on Highway 730 at east end of downtown.
- The City plans to install curb ramps at 36 corners from a grant plus City contribution.
- Stripe bike lanes when the street is re-surfaced or re-striped (included as part of path connection project described in Section 12.5.531).
- Install curb extensions when the street is re-paved (no re-pave scheduled as the surface is relatively new).

Most streets in the downtown area have sidewalks, but they are inconsistent and handicapped accessibility is low. There are few bicycle racks and Highway 730 lacks bike lanes although there is ample width. Many potential improvements to the downtown for bicyclists and pedestrians are described in Section 9.2 and should be pursued as opportunities present themselves. In particular, missing sidewalk segments should be constructed and unused driveways consolidated during building construction or refurbishment. Installation of curb extensions, curb ramps, parking bays, and medians should be coordinated with ODOT in



Missing or inadequate sidewalk segments, such as this at-grade corner behind an extruded curb, should be fixed.

conjunction with highway resurfacing or reconstruction.

There is much to do and it may be difficult to focus on where to start. The many underdeveloped lots do not support an active pedestrian environment. Promoting changes on the highway will require a long-term commitment to get the project on the State Transportation Improvement Program (STIP) and to coordinate with new development.

Off the highway, many other needs have been identified to support the downtown. Besides sidewalks, two multi-use paths are shown on the map:

- Extend the Umatilla River Path 700 ft to the northwest under the Umatilla River Bridge and to a small park north of the bridge.
- Construct a multi-use path along the old railroad grade west of Umatilla River Road to south end of “L” Street. This would be roughly 2400 ft long with the eastern 500 ft through private land.

12.4.533 *Old Umatilla Townsite and Connectors*

- ◆ **Description:** develop site as park with trails, paths and interpretive center.
- ◆ **Period of completion:** long-term.
- ◆ **Cost:** initial planning, \$25k.
- ◆ **Ownership:** City, Army Corps of Engineers (Portland)/Bureau of Land Management.
- ◆ **Funding authority:** Corps of Engineers.
- ◆ **Funding sources:** Federal, City.
- ◆ **Feasibility:** low.

The original Umatilla townsite is next to the Columbia River (what is now called Lake Umatilla) just north of the present downtown. There are roughly 16 square blocks of streets and vacant, overgrown land -- the buildings were removed when the downstream dam was built -- under control of the U.S. Army Corps of Engineers, Portland District.

The Old Umatilla townsite is closed to public access by the Army Corps of Engineers.

The area would make an excellent park and would reconnect the downtown with the Columbia River. Both “F” and “I” Streets are logical corridors, and there is also the potential for a trail along the Umatilla River.

The area is fenced off to protect a Umatilla Indian burial site. It was listed on the National



Register of Historic Places in 1981, one of only 22 such listings in Umatilla County and the only one in the City of Umatilla. This puts significant restrictions on how the land can be developed. Any proposals would have to consider the important archaeological features of the site and coordinate with the Corps’ Real Estate Branch and the Confederated Tribes of the Umatilla Indian Reservation (CTUIR). Funding development would be a major undertaking.

The original listing notes the functions of the site as landscape, recreation, culture, and park, so a return to this status would seem reasonable.

The potential of developing this area is recognized but there have been limited discussions with the Army Corps of Engineers. The Umatilla Tribes are concerned about protection of cultural resources on this site. A full master plan of the area, including details on the protection of these resources, would be necessary before the Tribes would be willing to provide public access.

The controlling land owner, the Army Corps of Engineers, would seek concurrence from the Tribes. It is recommended that a steering committee including representatives of the Tribes and Corps be formed to move forward with planning for the Old Umatilla area. This plan includes some general suggestions for plausible trail connections.

Conceptual drawing of how Old Umatilla might be developed into a public park.



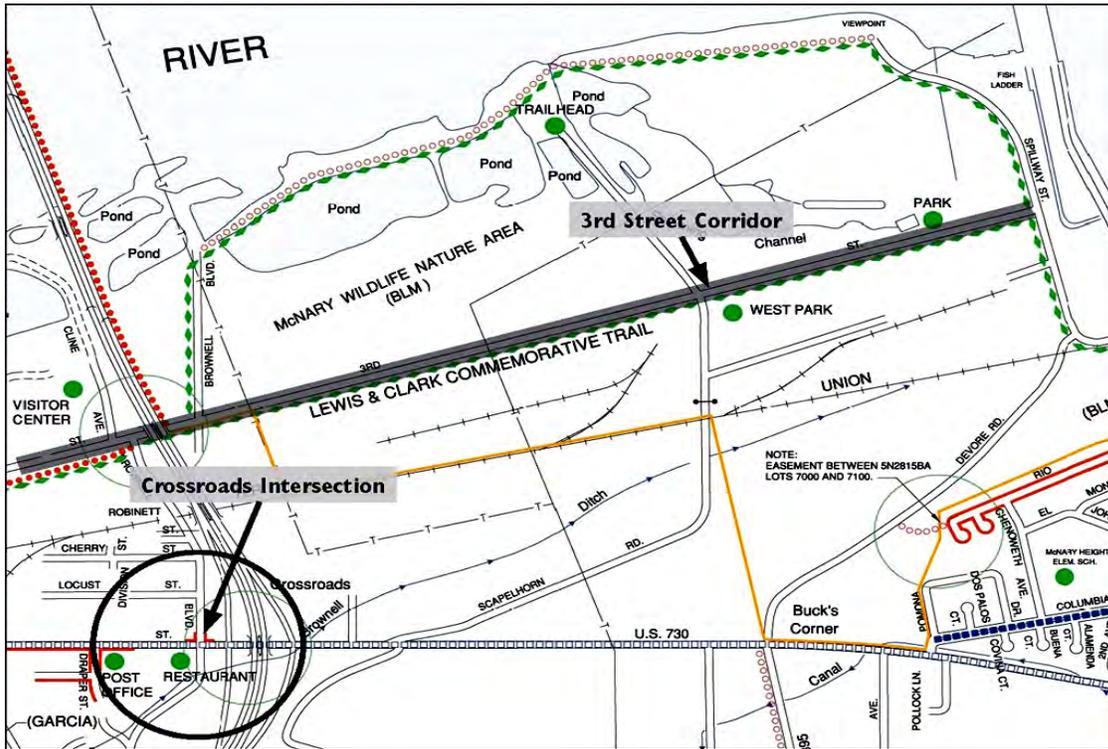
12.4.540 Central Area Projects (Between Downtown and McNary)

McNary and Downtown are separated by approximately two miles. A portion of this area is zoned Public Facilities and is associated with the dam and Army Corps of Engineers land, including a large wetland reserve. It is unlikely that this area will see significant infill development over the next 20 years to expand the urban area. Therefore, connection between McNary and Downtown will remain an important transportation consideration.

The area is bisected by I-82 which can be crossed in only two places: the 3rd Street underpass and the Highway 730 interchange.

Although most of Highway 730 includes shoulders, there is little lighting, especially for nonmotorists, and intersections are all difficult to traverse. Opportunities for improvements to Highway 730 and its intersections are described in Section 9.2 and elsewhere in the TSP.

Figure 12.4-10 – Central Area



Parallel to Highway 730 runs 3rd Street which is a 2-lane County road without paved shoulders. It is part of the future Lewis & Clark Trail and connects to numerous destinations.

There are three north-south connectors between 3rd Street and Highway 730: Brownell Boulevard, Scapelhorn Road and Devore Road. A near-term sidewalk project is identified for Brownell Boulevard. Devore Road could provide another connection to the McNary neighborhood (refer to Section 12.5.551).

12.4.541 3rd Street Corridor

- ◆ **Description:** provide walkway along 3rd Street and path through McNary Wildlife Nature Area.
- ◆ **Period of completion:** long-term.
- ◆ **Cost:** 7000 ft of hard-pack, unpaved surface one side of 3rd Street at \$10/ft, \$70k; 6000 ft through Nature Area, \$60k; \$130k total.
- ◆ **Ownership:** Corps of Engineers (Walla Walla)/Bureau of Land Management, Bonneville Power Admin.
- ◆ **Funding authority:** Corps of Engineers.



- ◆ **Funding sources:** Corps of Engineers, City, grants.
- ◆ **Feasibility:** medium.

As part of the Lewis & Clark Trail, some type of improvements are desired on 3rd Street. Objectives include:

- Establish safe connections to multi-use paths.
- Provide a walkway along 3rd Street east of the multi-use path.
- Develop signing and pavement markings for Lewis & Clark Trail.

This is a key street for bicycling and walking because it accesses many destinations and provides an alternative to Highway 730. East of Switzler Avenue, 3rd Street is part of the future Lewis & Clark Trail. Destinations on or near 3rd Street include: residences, the McNary Wildlife Nature Area and its trails, the dam's fish viewing station, two parks, the Visitor Center, the Marina, and potentially Old Umatilla if that area is opened up.



The pavement is about 20 feet wide without curbs and sidewalks and is in fair condition; traffic appears to be light (no volume data available). A multi-use path was recently constructed parallel to the south side of 3rd Street between Switzler Avenue and Brownell Boulevard, about 3200 feet long. On the east side of the underpass of I-82, an unmarked path leads to a multi-use path on the I-82 bridge across the Columbia River.



The adjacent 3rd Street path west of Brownell provides an alternate to the street for walkers but has little advantage for cyclists, especially considering that the entry and exit points are at conflict points near intersections. The marina and RV campground generate large-vehicle traffic which can make the narrow road unpleasant. Since most RV traffic probably uses the street segment between Quincy Avenue and Brownell Boulevard, this should be widened first.

The remainder of the street will probably have to wait some time to be improved as there are many other priorities on more heavily traveled streets. It may be possible to create a hard surface side path parallel to the street for pedestrians. The Army Corps of Engineers has shown support; the Bonneville Power Administration (BPA) which has facilities along 3rd Street and influences

road access, has not. However, if the BPA chose to close the road to public motorized traffic, that would make pedestrian and bicycle use easier to accommodate.

An improved trail through the Nature Area that connects to the northern segment of Brownell Blvd. is a likely improvement although this is not a substitute for a facility on 3rd Street. Feasibility rates medium because potential use is relatively low for the size of the project.

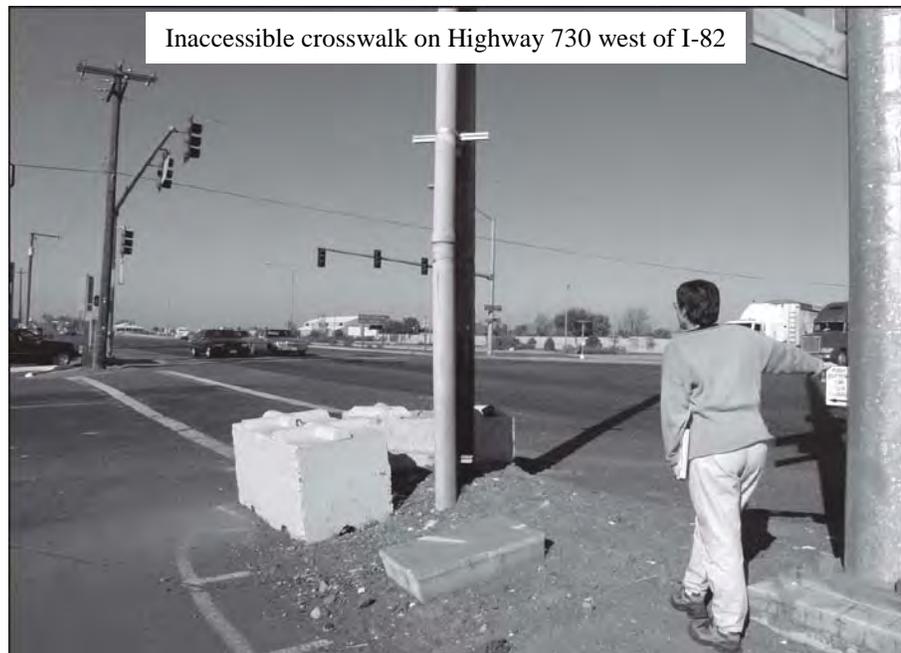
12.4.542 Crossroads Intersection (Highway 730 at I-82)

- ◆ **Description:** improve intersection for pedestrians and bicyclists.
- ◆ **Period of completion:** near-term.
- ◆ **Cost:** 400 ft curb & 6-ft wide sidewalk south side at \$40/ft, \$16k; 2 driveways at \$2k./ each, \$4k; 1800 ft of 5-ft wide sidewalk on west side of Brownell Blvd., \$54k; \$74k total.
- ◆ **Ownership:** ODOT, County (Brownell Blvd.).
- ◆ **Funding authority:** ODOT.
- ◆ **Funding sources:** ODOT, adjacent landowners.
- ◆ **Feasibility:** medium.

This major intersection is the most direct east-west route between the downtown and McNary, and is close to the Post Office and a popular restaurant. There are signalized crosswalks on the west and south legs of the Brownell-Highway 730 intersection although they are not easily reached. Sidewalks are missing or intermittent and lighting east of the interchange is poor. There is much that can be done to improve the area.

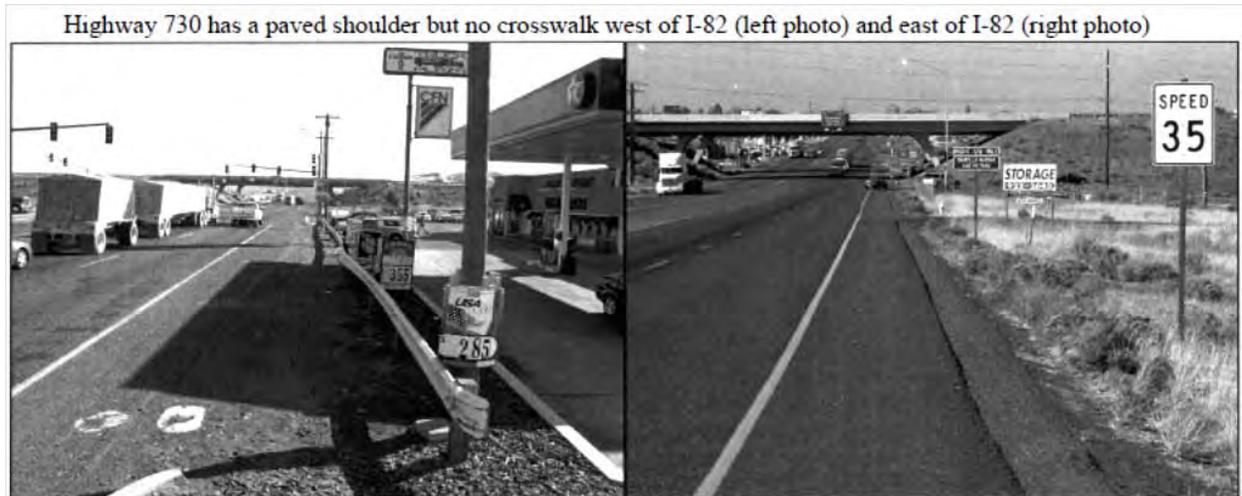
The interchange has a high number of vehicle turning movements and trucks because of the ODOT truck weigh station on the northwest corner. Section 12.2.410(D) discusses some improvements that could be made to expedite truck movements. The nearby restaurant, gas station and post office have wide driveways with many conflict points that add to the gauntlet a pedestrian or bicyclist must negotiate. Concrete barriers have been installed at some driveways to control vehicle movement but create an extremely unpleasant pedestrian environment.

This intersection is below basic standards for pedestrian accessibility. It should be improved to at least ODOT's basic pedestrian standards (curbs, sidewalks, accessible crosswalks) at the first available opportunity such as during repaving or a change in adjacent land



use. Other desirable improvements include:

- Install bike lanes.
- Add pedestrian lighting.
- Clean up and consolidate property access points.
- Provide connecting sidewalks on Brownell Blvd.
- Move Post Office downtown.



12.4.550 McNary

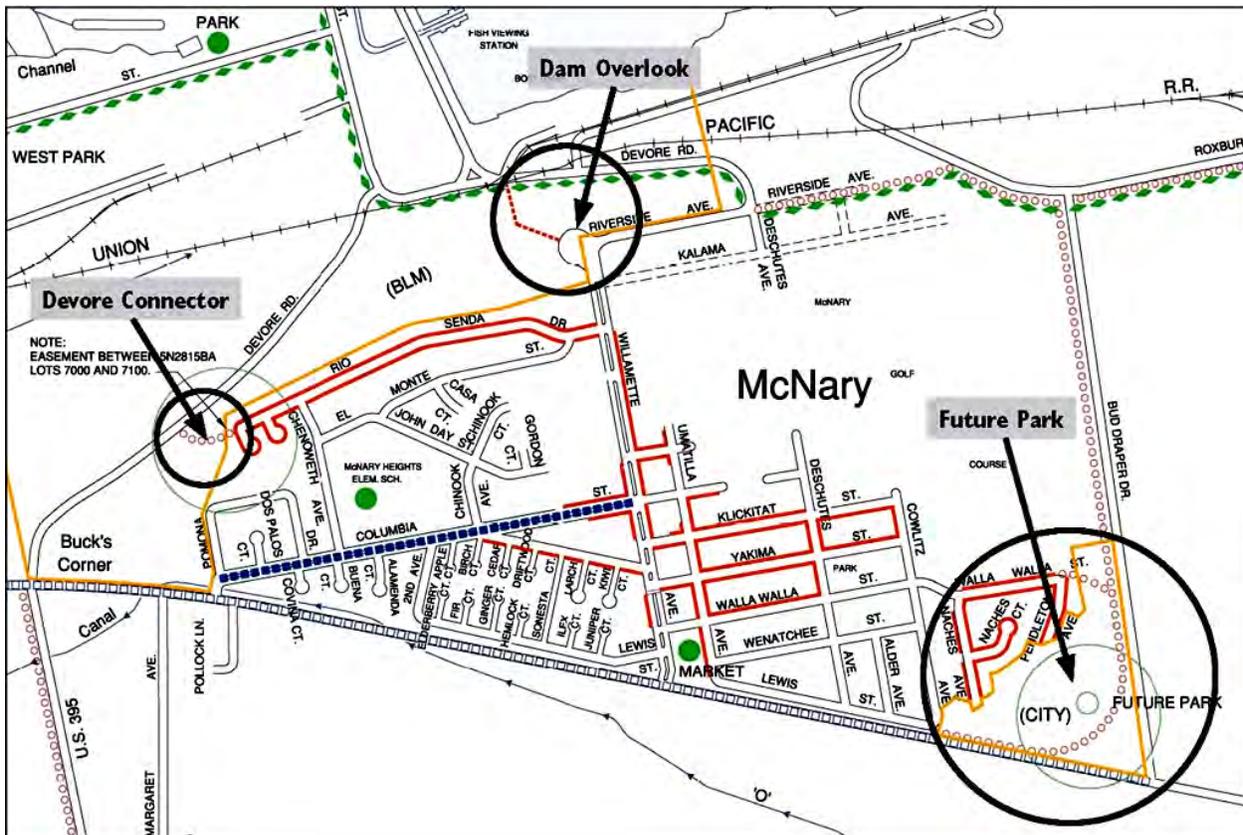
“We must plan towns in the name of our great nation, for the United States of America, and we must do the very best that we can within the limitations imposed by the yardsticks of economics and human values — placing all possible emphasis upon the latter. Anyway, if we can afford it, if we can come reasonably near to monitoring its cost, what is wrong with Utopia?” – John M. Allison, McNary Town Manager, 1946

The McNary Townsite was area platted and developed by the Army Corps of Engineers in conjunction with the dam construction from 1947-53. Streets were named for tributaries of the Columbia River. McNary constitutes a somewhat self-sufficient neighborhood with a school, golf course and small commercial area including a market.

There are two broad “boulevards” and a grid of local streets characteristic of traditional towns. Although there are few sidewalks or bicycle lanes, residents of McNary are reportedly comfortable walking and bicycling on the local streets. The difficulty comes in traveling outside the town.

Section 12.11.310(B) lists \$600,000 in near-term sidewalk projects in McNary for Willamette Avenue, Columbia Street, John Day Street, Chinook Avenue, Lake Gordon Avenue, and Chenoweth Avenue. These are mostly around the elementary school.

Figure 12.4-11 McNary



12.4.551 *Devore Road Connector*

- ◆ **Description:** develop short link (hard-surface path) from McNary to Devore Road.
- ◆ **Period of completion:** long-term.
- ◆ **Cost:** trail, 400 ft at \$15/ft, \$6k; plus 150 ft right-of-way, unknown cost.
- ◆ **Ownership:** private, Army Corps of Engineers (Walla Walla)/Bureau of Land Management, City.
- ◆ **Funding authority:** Army Corps of Engineers, City.
- ◆ **Funding sources:** Army Corps of Engineers, City.
- ◆ **Feasibility:** low.

This project is listed as a street connection to help divert traffic from the Highway 730 intersections (Willamette and Columbia Avenues). It could benefit bicyclists and pedestrians, too, although there was no support for it from either the technical advisory committee nor the



User trail down from subdivision lot

Rio Senda means river footpath



Devore Road west of McNary

public workshop. Instead, a trail is suggested as a way to benefit pedestrians and bicyclists

without causing additional motorized traffic in the neighborhood.

A lot at the west end of Rio Senda Drive is undeveloped. It may be possible to obtain a narrow strip (at least 14 ft wide) of land for 150 ft between two existing subdivision lots for the trail, either through purchase or negotiation.

12.4.552 Dam Overlook Improvements

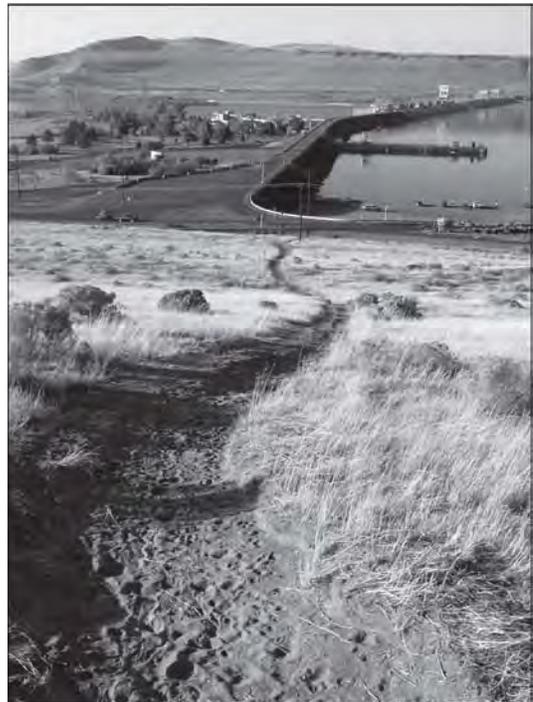
- ◆ **Description:** improve overlook at north end of Willamette Avenue and access to the dam area below.
- ◆ **Period of completion:** long-term.
- ◆ **Cost:** trail, 600 ft at \$15/ft, \$9k; overlook, unknown but small improvements (picnic table, shelter, interpretive sign, outhouse, etc.) could be made incrementally as interest is developed; railroad crossings repair, \$100k; \$114k total.
- ◆ **Ownership:** City, Army Corps of Engineers (Walla Walla)/Bureau of Land Management.
- ◆ **Funding authority:** City, Army Corps of Engineers, Port of Umatilla (rail crossing).
- ◆ **Funding sources:** City, Army Corps of Engineers, grants.
- ◆ **Feasibility:** medium.

The City controls part of the overlook while the Corps controls the slope and Devore Road to the north. The location has potential as an excellent waypoint on the Lewis & Clark Trail. It would also serve local residents. Objectives are to:

- Improve trail down slope for pedestrians.
- Route Lewis & Clark Trail on Riverside Avenue and Devore Road.
- Improve railroad crossings on Devore Road.
- Improve overlook for users.

Northern access to the McNary neighborhood is via Willamette Avenue above the McNary Dam. From a paved overlook at the north end of Willamette Avenue, the dam is reached by traveling east on Riverside Avenue and then turning left (north) down the hill at an intersection where the Lewis & Clark Trail will join from the east.

The hill section is moderately steep with a 140-foot elevation change, is narrow (22 feet pavement width) without curbs and sidewalks; and the posted speed is 25 mph. At the base of the hill, two angled railroad tracks with pavement heaving present an additional obstacle to bicyclists. The crossing should be made smooth, the flange openings minimized, and signs and pavement markings installed to warn cyclists.



User trail down from overlook

Pedestrians have created a user trail straight up the hill to the overlook which not only avoids the narrow road but saves nearly a half-mile in distance. This trail could be improved to primitive standards for low cost. An opening in the guard rail at the top should be provided. Better still, the large expanse of pavement at the viewpoint could be converted into a picnic and interpretive area.



Large paved overlook could be made into an attractive stop near the Lewis & Clark Trail

The road near the dam eventually intersects the east end of 3rd Street where the Lewis & Clark Trail continues west. Traffic throughout appears to be light (there is no traffic volume data for these roads).

Any road widening would be expensive because of the slope. There do not appear to be any other logical alignments for a path except for the railroad right-of-way which would be unacceptable to the Port.

Angled railroad crossing with damaged flangeways on Devore Road at base of hill.



Devore Road hill below overlook.



12.4.553 *Future Park Connectors*

- ◆ **Description:** develop paths to future park.
- ◆ **Period of completion:** long-term.
- ◆ **Cost:** path, 5300 ft at \$22/ft, \$117k.
- ◆ **Ownership:** City, private, Port of Umatilla.
- ◆ **Funding authority:** City.
- ◆ **Funding sources:** City, grants.
- ◆ **Feasibility:** medium.

A park with ballfields is planned for the intersection of Highway 730 and Bud Draper Drive in the southeast corner of the McNary neighborhood. It would presumably be reached by short paths from Walla Walla Street and Lewis Street, and by a multi-use path parallel to Bud Draper Drive as shown on the map. The park design has not been determined. The TSP lists a street connection from Walla Walla Street to Bud Draper Drive, although the City indicated that this is no longer viable.



Site of future park and paths at corner of Highway 730 and Bud Draper Drive

12.4.600 CAPITAL IMPROVEMENT PROGRAM

The TSP implementation plan, summarized in Table 12.4-4 (repeat of Table 12.4-1 for convenience), is a starting point for a specific pedestrian and bicycle Capital Improvement Plan (CIP). The 20-year plan outlined under Section 12.11.300 lists 54 projects estimated to cost nearly \$15 million. By far the greatest need identified was sidewalks with 37 projects totaling \$9.35 million. There are another 8 multi-use path projects totaling \$1.33 million.

Table 12.4-4 – TSP Implementation Plan

Project Category	Short-Term (1998-2007)		Long-Term (2008-2017)		Total	
	Projects	Cost, \$M	Projects	Cost, \$M	Projects	Cost, \$M
Roadway	2	\$0.29	7	\$3.40	9	\$3.69
Sidewalk	13	\$1.16	24	\$8.19	37	\$9.35
Multi-Use Path	0	0	8	\$1.33	8	\$1.33
Total	15	\$1.45	39	\$12.92	54	\$14.37

Over half of the roadway project cost is for replacing the Umatilla River bridge. The remainder of the roadway system needs relatively minor improvements. However, many county roads, such as Powerline Road, are not included, and most have less than 24 ft of pavement width — far below the standard for arterial and collector streets. The additional width is particularly important to bicyclists and pedestrians.

The City’s annual Street Fund of \$250,000 is dedicated entirely to the operation and maintenance of existing facilities. The few capital improvement projects realized in the past were funded primarily by the developer or by a Local Improvement District.

Funding responsibilities of roughly \$5.3M for ODOT (including most roadway projects), \$5.6M for the County, \$3.0M for the City, and \$0.5M for the Army Corps of Engineers are identified under Sections 12.11.310 and 320. This demonstrates a large number of roads in the urban area that are under County jurisdiction. The County has no plans and very limited funding to improve these facilities, so any projects must be undertaken by the City.

Because the City has no Capital Improvement Program, the list of projects in Table 12.4-5 is derived from the discussion in Section 12.4.500. These are considered the most promising pedestrian and bicycle projects for the City to undertake. Although the projects focus on specific facilities such as sidewalks and multi-use paths, they also include the key Powerline Road and 3rd Street corridors. Many of the projects support the Lewis & Clark Trail.

The estimated cost of these capital improvement projects is \$2140k, assuming a signal installation at the Powerline Road-Highway 730 intersection. The cost is evenly split between near- and long-term projects. About \$1600k would be City funded or about \$80k per year over 20 years.

Left out of the list are potential projects that did not make the cut but were included on the system map for planning purposes and future consideration. Some of these may become practical sooner than anticipated if unexpected development occurs or a project advocate

appears.

Finally, several multi-jurisdictional planning initiatives should be included in the City’s efforts:

- South Hill school and park.
- Umatilla River Bridge replacement.
- Old Umatilla park and trail development.

Table 12.4-5 – Proposed Pedestrian/Bicycle CIP

Project	Description	Period	Cost, \$k	Authority
<i>Umatilla River Paths</i>				
Ped. Bridge to Powerline Rd. Path	1560 ft multi-use path 10-ft wide	Near	105	City
Lower South Hill Extension	1200 ft multi-use path 10-ft wide	Near	26	City
Umatilla Bridge Undercrossing	1500 ft multi-use path 10-ft wide	Long	18	City
Umatilla River Path Extension	700 ft multi-use path 10-ft wide	Near	15	City
<i>Powerline Road Improvements</i>				
Intersection with Highway 730	Signal near-term; bridge long-term	Near-Long	150–2000	ODOT
Sidewalks & Bike Lanes	4400 ft sidewalks & curbs both sides; 16-ft roadway widening	Near-Long	725	County
Traffic Calming & Crossings	6 crosswalks & islands; 1 roundabout	Near-Long	165	County
<i>Downtown</i>				
Link 3rd St. & Umatilla River Paths	900 ft sidewalks & curbs; 5000 ft bike lanes; crossing treatments	Near	79	City, ODOT
Walkway Infill	Various sidewalk segments; 700 ft multi-use path	Near-Long	415	City, ODOT
<i>Central Area</i>				
3rd St. Corridor	13,000 ft unpaved path	Long	130	USACE
Crossroads Intersection	2200 ft sidewalk & curb one side	Near	74	ODOT
<i>McNary</i>				
Devore Rd. Connector	400 ft unpaved path	Long	6	City, USACE
Dam Overlook	600 ft trail; RR Xing repair	Long	114	City, USACE, Port (RR)
Future Park Connectors	5300 ft multi-use path	Long	117	City

12.4.700 PEDESTRIAN AND BICYCLE SYSTEM PLAN ELEMENTS FINDINGS

12.4.701 Development should occur in such a manner as to encourage and facilitate pedestrian movements.

12.4.800 PEDESTRIAN AND BICYCLE SYSTEM PLAN ELEMENTS POLICIES

12.4.801 The City will review pedestrian circulation problems in the Central Business District (CBD) and in regard to the north/south division created by US 730, along with bikeway and pathway systems.

- 12.4.802 The City will use that portion (at least 1%) of its State of Oregon Gas and Tax Revenue for bicycle and footpath development as required by ORS 366.514. Such monies will be placed in a fund to be used as stated, within a ten-year period.
- 12.4.803 It is the City's intention to promote safe, convenient, and direct bicycle and pedestrian circulation within the community consistent with the pedestrian and bicycle circulation plans.
- 12.4.804 The City will promote safe, direct and convenient pedestrian circulation by including sidewalks on all new streets within the Urban Growth Boundary, except on limited access freeways. Retrofitting existing streets with sidewalks shall proceed on a prioritized schedule. Priority shall be given to developing sidewalks and access ways to major activity centers within the Urban Growth Boundary such as the downtown commercial center, schools, neighborhood commercial centers, and community centers.
- 12.4.805 Bikeways shall be included on all new arterials and collectors within the Urban Growth Boundary, except on limited access freeways. Retrofitting of existing arterials and collectors with bike lanes shall proceed on a prioritized schedule as practical and appropriate.
- 12.4.806 Bicycle parking facilities shall be provided for all new multi-family developments of four or more dwelling units, commercial, industrial, recreational, and institutional facilities.

SECTION 12.5 PUBLIC TRANSPORTATION SYSTEM PLAN ELEMENT

12.5.100 EXISTING PUBLIC TRANSPORTATION SYSTEM

The City of Umatilla neither provides nor subsidizes public transportation services within its boundaries. Only para-transit services are available in the City of Umatilla and on a limited basis.

12.5.110 Para-Transit Service

Limited Dial-a-Ride services (pre-arranged taxi/van service) are provided in the area, though all operate from points outside the City of Umatilla and are primarily intended to service elderly and/or disabled persons. Some of the regional dial-a-ride providers include Foster Grandparent/Senior Companions, RSVP of Eastern Oregon, and the Umatilla County Mental Health Program. Foster Grandparent/Senior Companions is an operation based in Pendleton at the hospital. Their service is intended for low income seniors and seniors with children. Both RSVP of Eastern Oregon and the Umatilla County Mental Health Program provide service to the Umatilla area on a limited basis.

12.5.120 Intracity Bus

No intracity bus service is provided in the City of Umatilla.

12.5.130 Intercity Bus

Greyhound provides intercity bus service to the City of Umatilla, making daily stops at the intersection of Switzler Avenue and Highway 730. No shelter is provided at the bus stop and, while the bus travels through town daily, stops are made only on an as-needed basis (flag stop). This service provides connections to Hermiston, the Tri-Cities (Washington), and Portland, Oregon.

12.5.200 PUBLIC TRANSPORTATION SYSTEM PLAN

Public transportation within the City of Umatilla is limited to demand-responsive transit service and Greyhound Bus service. While increased usage of these services is desirable, there are no current or pending plans to expand public transportation services to the area.

Discussions with staff from the participating agencies and meetings with the public confirmed the adequacy of the current demand-responsive transit service facilitated by Umatilla County; although it was noted that the public's awareness of these services is lacking. No segment of the City's population was specifically identified as being without transportation service. Nonetheless, improvements can be made that will benefit the community as it grows.

The City of Umatilla should continue to monitor the adequacy of the transit service provided to the community and work with the County to extend service as necessary. Both the City and County should also promote a greater public awareness of the available public transit services. With the exception of available Greyhound Bus service, the population under the driving age is particularly under served and as the community grows in geographic size, their overall accessibility will be diminished.

Subsidized taxi transportation is an efficient method of public transportation for smaller communities such as the City of Umatilla, while still being cost effective. Such a service, while not currently available, can be provided at relatively low cost and supported by state grants and local funding.

12.5.300 PUBLIC TRANSPORTATION SYSTEM PLAN ELEMENT FINDINGS (RESERVED FOR EXPANSION)

12.5.400 PUBLIC TRANSPORTATION SYSTEM PLAN ELEMENT POLICIES

12.5.401 The City will support efforts to secure a regional mass transit system.

SECTION 12.6 RAILROAD TRANSPORTATION SYSTEM PLAN ELEMENT

12.6.100 EXISTING RAILROAD TRANSPORTATION SYSTEM

Union Pacific Railroad operates a local freight rail line through portions of the City of Umatilla. The “Umatilla Turn” connects local manufacturers with Union Pacific’s Hinkle Yard and main rail trackage to the south in Hermiston. From Umatilla, the rail line travels south roughly parallel to Umatilla River Road until reaching downtown Hermiston, where the line turns to the southwest and travels towards Union Pacific’s main facilities at the Hinkle Rail Yard. Union Pacific operates an unloading ramp and truck-to-rail terminal at Hinkle Rail Yard.

Because the rail line terminates along the banks of the Columbia River at the Port of Umatilla, it is operated as a spur and the frequency of freight trains varies based upon demand. Currently, service is provided on Mondays, Wednesdays, and Fridays during the evening hours. Typically, trains depart Hermiston for Umatilla at approximately 2:30 p.m. and arrive in Umatilla between 5:00 p.m. and 8:00 p.m., depending on the number of local switching operations in route. The frequency of trains can be increased should shipping demand warrant additional service in the future.

12.6.200 RAILROAD TRANSPORTATION SYSTEM PLAN

Freight rail service will continue to be a prominent component of the City’s transportation system. Union Pacific’s Hinkle Railyard located to the south in Hermiston is expected to serve as a major western freight hub for the foreseeable future. Further, there is adequate rail capacity to increase the frequency of trains that travel north from Hinkle Railyard to the Port of Umatilla. It is recommended that future development in the Port of Umatilla’s industrial area be planned to interface with the adjacent rail system to promote the safe and efficient transportation of freight.

12.6.300 RAILROAD TRANSPORTATION SYSTEM PLAN ELEMENT FINDINGS (RESERVED FOR EXPANSION)

12.6.400 RAILROAD TRANSPORTATION SYSTEM PLAN ELEMENT POLICIES (RESERVED FOR EXPANSION)

SECTION 12.7 MARINE TRANSPORTATION SYSTEM PLAN ELEMENT

12.7.100 EXISTING MARINE TRANSPORTATION SYSTEM

The Columbia River borders the City of Umatilla to the north and serves as a means of transportation for both commercial and recreational traffic. The McNary Dam, operated by the U.S. Army Corps of Engineers, is located approximately one mile east of Interstate 82 and serves both commercial barge traffic and recreational boats traveling along the Columbia River past the City of Umatilla. A lock located alongside the dam allows river traffic to bypass the dam.

The Port of Umatilla maintains two marine facilities along the Columbia River. The Umatilla Marina Park, located immediately west of Interstate 82, is located on property owned by the U.S. Army Corp of Engineers, though the marine facilities are operated and maintained by the Port. Approximately 124 slips are available at the marina as well as a boat launch ramp, a fueling dock, a 38-space recreational vehicle parking area, and restroom facilities.

The second marine facility operated by the Port is located on the east side of the McNary Dam and is used for commercial cargo handling purposes. A container terminal (shallow draft/barge dock) at this location is used to transfer containerized frozen potatoes using a 50-ton crane. Weekly barge service is provided to the area for potato shipments and electrical service is available at the docks to support up to 100 refrigerated containers. In addition, Pendleton Grain Growers operate a grain transfer facility and Tidewater Terminal Company operates a tank farm that provides for liquid fertilizer and fuel transfers. The port also serves as a terminal for transferring diesel fuel to a pipeline owned by Kaneb Pipeline Corporation, which in turn supplies Hinkle Rail Yard. The marine facilities at the port have access to rail service provided by Union Pacific, via the “Umatilla Turn.”

Although recreational river traffic is generally limited to private vessels operating in the area, river cruise lines call at the Umatilla Marina Park for tourist related activities. Typically, the river cruise ships dock so that passengers can travel to Pendleton or Patterson to partake in regional tourist attractions. The Umatilla Marina Park is not considered a base of operations for the river cruise lines and does not serve as an origin for their trips.

12.7.200 MARINE TRANSPORTATION SYSTEM PLAN

The Port of Umatilla’s two marine facilities are capable of accommodating future expansion and are expected to continue to grow with the surrounding community, though no formal expansion plans have been identified.

It is recommended that future development in the port’s industrial area also be planned to interface with the Columbia River to allow for continued marine transportation service. In addition, the City of Umatilla should actively support the continued presence and operation of the Port as an effective means of transportation. Finally, the creation of multi-use paths and other facilities that promote the multi-modal use of marine recreational areas along the shore of the Columbia River should be encouraged.

12.7.300 MARINE TRANSPORTATION SYSTEM PLAN ELEMENT FINDINGS (RESERVED FOR EXPANSION)

12.7.400 MARINE TRANSPORTATION SYSTEM PLAN ELEMENT POLICIES (RESERVED FOR EXPANSION)

SECTION 12.8 AIR TRANSPORTATION SYSTEM PLAN ELEMENT

12.8.100 EXISTING AIR TRANSPORTATION SYSTEM

No commercial or private aviation facilities are located within the City of Umatilla. Regional freight cargo and air passenger services are provided at the Eastern Oregon Regional Airport at Pendleton, located approximately 35 miles southeast of Umatilla via I-84 and in Pasco, Washington, located approximately 30 miles to the north. Both the Eastern Oregon Regional Airport and the Tri-Cities Airport provide regional passenger air service, connecting to national and international air service at the Portland International Airport. In addition, the City of Hermiston owns and operates a general aviation municipal airport. Hermiston's airport does not offer commercial flights but charter service is available and several local businesses make use of the facility. This airport provides facilities for crop dusting aircraft that serve farmers/foresters in the area.

12.8.200 AIR TRANSPORTATION SYSTEM PLAN

Existing regional air service for passengers and freight is provided via a full service commercial airport in neighboring Pendleton and also at the Tri-Cities Airport located in Pasco, Washington. Air transport charter service is also available through the Hermiston Municipal Airport. The City of Umatilla should work with the County to achieve an intermodal connection to one or both airports, via demand-responsive transit service, subsidized taxi service, or other mutually agreeable means. The continued use of these facilities is recommended.

12.8.300 AIR TRANSPORTATION SYSTEM PLAN ELEMENT FINDINGS (RESERVED FOR EXPANSION)

12.8.400 AIR TRANSPORTATION SYSTEM PLAN ELEMENT POLICIES (RESERVED FOR EXPANSION)

SECTION 12.9 IRRIGATION CANALS/WATER TRANSPORTATION SYSTEM PLAN ELEMENT

12.9.100 EXISTING IRRIGATION CANALS/WATER TRANSPORTATION SYSTEM

The West Extension Irrigation District operates an irrigation canal that travels through western portions of the City of Umatilla. The canal carries water from the Three-Mile Dam on the Umatilla River north roughly paralleling Interstate 82. The canal then travels to the west (roughly parallel to Highway 730) to its ultimate destination in Boardman, Oregon. Lateral lines from the canal are available to some users within the City of Umatilla. The West Irrigation District has no expansion plans at this time.

The Hermiston Irrigation District operates several irrigation canals within the City of Umatilla's UGB. The "O" Canal transports water from the Umatilla River north through Echo, Stanfield, Hermiston, and ultimately up to the McNary Area of the City of Umatilla. The canal crosses under Highway 730 at two points east of Highway 395. The "OB" and "OA" laterals break off from the "O" canal to serve district customers south of Highway 730. Similarly, the "R" canal travels north to Umatilla providing irrigation service to the area. Minor expansion of lateral lines to serve new customers in the Umatilla area is possible, though the irrigation district tends to service customers needing irrigation for parcels encompassing two or more acres, as opposed to small homeowners.

12.9.200 IRRIGATION CANALS/WATER TRANSPORTATION SYSTEM PLAN

The irrigation canals operated by the West Extension Irrigation District and the Hermiston Irrigation District have adequate capacity to serve minor expansion of lateral lines to serve new customers. The continued use of these facilities is recommended.

12.9.300 IRRIGATION CANALS/WATER TRANSPORTATION SYSTEM PLAN ELEMENT FINDINGS (RESERVED FOR EXPANSION)

12.9.400 IRRIGATION CANALS/WATER TRANSPORTATION SYSTEM PLAN ELEMENT POLICIES (RESERVED FOR EXPANSION)

SECTION 12.10 PIPELINE TRANSPORTATION SYSTEM PLAN ELEMENT

12.10.100 EXISTING PIPELINE TRANSPORTATION SYSTEM

A four-inch diesel line owned and operated by the Kaneb Corporation and servicing Union Pacific Railroad's Hinkle Railyard originates at the Port of Umatilla and carries fuel south.

12.10.200 PIPELINE TRANSPORTATION SYSTEM PLAN

The four-inch diesel line owned and operated by the Kaneb Corporation and servicing Union Pacific Railroad's Hinkle Railyard is the only identified pipeline facility within the City's UGB. The continued use of this pipeline is recommended.

12.10.300 PIPELINE TRANSPORTATION SYSTEM PLAN ELEMENT FINDINGS (RESERVED FOR EXPANSION)

12.10.400 PIPELINE TRANSPORTATION SYSTEM PLAN ELEMENT POLICIES (RESERVED FOR EXPANSION)

SECTION 12.11 TRANSPORTATION SYSTEM PLAN FUNDING ELEMENT

12.11.010 INTRODUCTION

The Transportation Planning Rule (OAR 660-12-040) requires that the City of Umatilla Transportation System Plan (TSP) include a transportation financing program. These programs are to include:

- a list of planned transportation facilities and major improvements;
- a general estimate of the timing for planned transportation facilities and major improvements;
- determination of rough cost estimates for the transportation facilities and major investments identified in the TSP (intended to provide an estimate of the fiscal requirements to support the land uses in the acknowledged comprehensive plan(s) and allow jurisdictions to assess the adequacy of existing and possible alternative funding mechanisms); and,
- a discussion of existing and potential financing sources to fund the development of each transportation facility and major improvement (which can be described in terms of general guidelines or local policies).

The timing and financing provisions in the transportation financing program are not considered a land use decision as defined by the TPR and ORS 197.712(2)(e) and, therefore, cannot be the basis of appeal under State law. In addition, the transportation financing program is intended to implement the comprehensive plan policies, which provide for phasing of major improvements to encourage infill and redevelopment of urban lands, prior to facilities that would cause premature development of urbanizable areas or conversion of rural lands to urban uses.

12.11.100 CITY OF UMATILLA FUNDING HISTORY

12.11.110 Composition of the Street Fund

The Street Fund for the City of Umatilla provides an annual budget of approximately \$250,000 that is dedicated entirely to the operation and maintenance of the City's transportation facilities. Maintenance and preservation are the major work activities performed on the local street system by the City's Public Works Department. Virtually all of the annual Street Fund budget is derived from the City's share of the state-wide gasoline tax and motor vehicle fees. This revenue sharing is based on population and distributed on a proportional share basis to all cities and counties.

Rarely have capital improvement projects been accomplished in the City and when realized, they have been funded by Local Improvement Districts or by the developer. The opportunity to make incremental improvements to the existing system is only facilitated by development/redevelopment. When a building permit is requested, the City examines the needs of the transportation facilities along the site frontage and identifies what should be improved/provided in association with the issuance of the permit.

On the expenditure side, a steady stream of about \$250,000 per year is anticipated to be spent on City street capital projects. It is expected that for the foreseeable future whatever funding is made available to the City through state and county resources, is and will be applied to the maintenance and preservation of the existing street system. This practical approach has served

the community well; however, the recommendations and requirements of the Transportation Planning Rule will influence this approach. Should the City obtain funds in excess of the budget necessary to maintain the existing system, the TPR will seek to balance the application of these funds across all modes of travel. Therefore, the list of identified needs provided herein, should be the primary source for future projects to be implemented.

The City of Umatilla currently does not have a transportation system development charge, which would be assessed to developers. This charge could be implemented by the City, with both a "reimbursement fee" and an "improvement fee" element built into its structure. The reimbursement fee places a value on the amount of capacity on an existing street that is utilized by new site development traffic. The improvement fee is an assessment for the added traffic impact associated with new development that triggers new roadway improvements. As a follow up to the Umatilla TSP study, it is recommended that the City undertake a study to consider the appropriateness of a transportation SDC structure that would further facilitate the development of a multi-modal charge where funds could be spent on pedestrian, bicycle, transit improvements, and street improvements.

12.11.200 OREGON TRANSPORTATION FUNDING HISTORY

12.11.210 Road-Related Funding

In 1992, Oregon received \$704 million, or 67 percent of its highway revenues, from the collection of user taxes and fees. The second largest source of these revenues is almost entirely comprised of fees resulting from National Forest timber sales. In 1992, these timber receipts raised roughly \$115 million. The remaining revenue sources -- road and crossing tolls, general fund appropriations, property taxes, miscellaneous receipts, and bond receipts -- accounted for \$223.5 million or roughly 21 percent of total transportation revenues.

The most significant portion of Oregon's highway user taxes and fees come from federal fuel and vehicle taxes, state taxes, and general motor vehicle fees. These categories account for 32 percent, 34 percent, and 25 percent, respectively, of all highway user taxes and fees collected in the State. During the 1980's, Oregon's transportation budget was bolstered by a series of two-cent annual gas tax increases. At the same time, the Federal Government was increasing investment in highways and public transportation. The situation is different today. The last three Oregon Legislatures failed to increase the gas tax and federal budget cuts are reducing transportation funding available to Oregon. The State Highway Fund is further losing buying power because the gas tax is not indexed to inflation, and increased fuel efficiency of vehicles reduces overall consumption.

Oregon Highway Trust Fund revenues are distributed among State (60.22 percent), County (24.38 percent) and City (15.40 percent) governments to fund their priority road needs. In 1995-96, the state estimated it would collect \$575 million in state highway funds. Counties and cities would then receive about \$140 and \$90 million, respectively.

Oregon law allows local government, in addition to receiving state highway trust fund revenues, to levy local fuel taxes for street related improvements. Multnomah and Washington Counties, and some small cities (Tillamook, The Dalles, Woodburn) have used this authorization. Several

attempts have been made by other jurisdictions, but have not been supported by the local electorate. As few local governments have implemented this option, non-user road revenues tend to be relied upon, to supplement the funds received from state and federal user revenues. Other local funding sources have included property tax levies, local improvement district assessments, bonds, traffic impact fees, road user taxes, general fund transfers, receipts from other local governments, and other miscellaneous sources.

Oregon's basic vehicle registration fee is \$15 per year, regardless of the type of private, personal-use vehicle being registered. Oregon law permits local governments (counties) and governmental entities to impose local option vehicle registration fees. To date, no county has implemented this tax.

Cities in Oregon have relied more on transfers from their general funds to support roadway improvements, than have counties. Ballot Measure 5, however, approved by the voters in 1990, reduced the range of funding and financing options available to both cities and counties. Measure 5 limited the property tax rate for purposes other than for payment of certain general obligation indebtedness to \$15 per \$1,000 of assessed value. The measure further divided the \$15 per \$1,000 property tax authority into two components: \$5 per \$1,000 dedicated to the public schools; the remaining \$10 dedicated to other local government units, including cities, counties, special service districts, and other non-school entities. The tax rate limitation for cities and counties went into effect in 1992. The school portion of the measure was phased in over a five-year period beginning in FY 1992. In 1996, voters again approved a property tax limitation measure, Ballot Measure 47, which will further impact the ability of cities and counties to pay for needed infrastructure through historic or traditional means.

At the same time that increased growth and increased transportation demands are occurring, cities and counties have lost another traditional source of revenue for infrastructure construction and modernization -- timber harvest receipts. Under a 1993 negotiated mitigation plan, federal forest receipts to support county roads are decreasing 3 percent per year. In 1996, counties received 74 percent of their 1986-90 average receipts, and by 2003 they will receive 55 percent of the late 1980s average receipts.

Given this funding environment, current funding levels and sources are not adequate to meet the transportation needs of the State, counties, or cities, for the next 20 years. In response to this gap between needs and funding, Governor Kitzhaber organized the Oregon Transportation Initiative to look at statewide transportation needs and to develop a program to address how these needs will be met. Through a public process led by business and civic leaders across the State, findings and recommendations on the state of transportation needs and methods to address those needs was submitted to the Governor in July 1996.

A result of these recommendations was appointment of a committee to develop a legislative proposal to the 1997 Legislature regarding transportation funding. Part of that proposal included a process for identifying a "base" transportation system, with a priority of maintenance, preservation, and operation of a system of transportation facilities and services that ensures every Oregonian a basic level of mobility within and between communities. Other components included provisions for realizing efficiencies resulting from better intergovernmental cooperation

(shared resources and equipment, better communication on project needs and definition), and elimination of legislative barriers to more efficient and cost-effective methods of providing transportation services. Unfortunately, the State Legislature was unable to reach consensus on the means to collect and distribute the funds, and the package failed.

A part of future transportation funding will include identification of relationships and responsibilities relative to delivery of projects and services. In Oregon, the primary state role has been to construct and maintain the state highway system and to assist local government with funding of other modes. The State also has a role in intercity passenger services and airports. This has historically been minor but would grow significantly, if serious efforts were put into intercity transportation improvements. Local governments provide local transit and airport support, in addition to providing maintenance, preservation, and construction for local roads, streets, and bridges. The Federal Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) began moving decision-making for federal programs to states and this program and other state policies incorporated in the Oregon Transportation Plan (OTP) encourage reassessment of responsibilities and obligations for funding. The Transportation Equity Act for the 21st Century (TEA21), passed in 1998, has continued the efforts first initiated by ISTEA.

These changing relationships have resulted in two significant issues for State and local governments. First, there is no clear definition of State responsibility. At one time, the State operated on an informal consensus that it should provide one-half the match on federally funded, local, and other projects that served statewide needs. No similar consensus seems to exist today. The State's responsibility for transit, airports, and other local transportation infrastructure and services is not clear. The question of regional equity is raised in considering especially high-cost project needs, such as the Bend Parkway or the Portland area light rail program. Regional equity will probably require consideration of all modes together, because different regions may have different modal needs and financial arrangements.

Given this dynamic transportation funding environment, it is clear that local governments need to reassess traditional methods of funding projects and look creatively at ways to meet public expectations of high quality transportation services.

12.11.220 Transit Funding

Transit service in Oregon has evolved from private development and reliance on user fees for operating revenue, to public ownership with public subsidy for operations. No clear philosophy of the State role in providing transit services is evident and the State is discussing how it should raise revenue in support of transit. The State has used general funds, lottery funds, stripper well funds, cigarette tax revenue, and other funds at various times to support transit service. These efforts have largely been targeted towards supplying half the required match to federal capital improvement grants. To date, the State has provided no operating funds for transit, other than the elderly and disabled program. The State role has been one of granting authority to local governments to raise locally-generated operating revenue.

12.11.230 Freight Rail Funding

The vast majority of rail freight spending is funded by privately-owned railroads. The Federal Local Rail Freight Assistance program is a small program that funds the rehabilitation of both

publicly- and privately-owned rail lines, primarily branch lines. Congress is considering proposals to eliminate the program. If this occurs, there will be no program to provide on-going railroad rehabilitation. Occasional support might be obtained through State lottery-funded economic development programs.

12.11.240 Potential Transportation Funding Sources

There are a variety of methods to generate revenue for transportation projects. Funding for transportation improvement projects are derived from three sources: federal, state, and local governments. Appendix A (Table A-1) provides a summary of federal, state, and local highway, bridge, sidewalk, and bicycle funding programs respectively, which have typically been used in the past. Although property tax is listed as a possible revenue source, the impacts of Ballot Measure 47 severely limit the opportunities for this funding source.

Appendix A (Table A-2) presents details of the revenue sources for streets, bridges, sidewalks, and bicycle facilities currently used by cities. The information is summarized by type of facility, and indicates the percent of revenue each funding source represents for all cities in Oregon, likely trends for the source, known constitutional or other limitations, and their respective rates.

A similar list of transportation funding sources for transit projects is included in Appendix A (Table A-3). This is summarized with the general status of each funding source in Table A-4.

(Note: As of July 2012, the appendix and associated tables referenced in this section could not be located in any of the draft or final TSP documents on file with the City of Umatilla).

12.11.300 PROPOSED TRANSPORTATION IMPROVEMENT PROGRAM

The required transportation improvements in the City of Umatilla over the next 20 years, to meet both short- and long-term needs, are listed below. Projects are divided into two time periods, 0-10 years and 11-20 years. For each of the time periods, projects are packaged into the following categories:

- Roadway Projects (includes widenings, extensions, and intersection improvements)
- Pedestrian Projects
- Multi-Use Pathway Projects

Nearly \$15 million in transportation improvements is included in the 20-year improvement program. This total is comprised of approximately \$3.69 million in roadway improvements, \$9.35 million in pedestrian improvements, and \$1.33 million in multi-use pathway improvements. On an average annual basis, this translates to approximately \$185,000 for auto-related improvements and \$535,000 for non-auto-related improvements. The following is a summary of the projects by type, in each of the transportation program intervals.

12.11.310 First Ten-Year Program

The first ten-year program totals approximately \$1.45 million and consists of two roadway projects totaling approximately \$0.29 million, and 13 sidewalk projects totaling approximately

\$1.16 million (in 1998 dollars). Due to the safety aspects associated with the roadway projects, it is recommended that these two improvement projects receive priority over the remaining projects listed in the first ten-year program. The remaining projects are not listed in a priority, but rather, by general geographic area. The projects recommended for completion within the first ten-year program include:

12.11.310(1) Roadway Projects

1. Install a full traffic signal at the existing Powerline Road/Highway 730 intersection. *(Construction Cost Estimate: \$150,000; Primary Funding Agency: ODOT)*
2. Install a “Fire Signal” at the “J” Street/Highway 730 intersection for the Fire Station. *(Construction Cost Estimate: \$140,000; Primary Funding Agency: ODOT) (NOTE: The addition or modification of a traffic signal on any ODOT facility requires the approval of the State Traffic Engineer. Identification and documentation of the need in this TSP does not guarantee the provision or modification will occur).*

12.11.310(2) Pedestrian Projects

1. Install sidewalk on Highway 730, between Switzler Avenue and Brownell Boulevard. *(Construction Cost Estimate: \$131,000; Primary Funding Agency: ODOT)*
2. Install sidewalk on “D” Street, between 5th Street and 8th Street. *(Construction Cost Estimate: \$47,000; Primary Funding Agency: City of Umatilla)*
3. Install sidewalk on “F” Street, between 3rd Street and the park. *(Construction Cost Estimate: \$117,000; Primary Funding Agency: City of Umatilla)*
4. Install sidewalk on “T” Street, between 5th Street and 8th Street. *(Construction Cost Estimate: \$47,000; Primary Funding Agency: City of Umatilla)*
5. Install sidewalk on “L” Street, between 7th Street and 8th Street. *(Construction Cost Estimate: \$8,000; Primary Funding Agency: City of Umatilla)*
6. Install sidewalk on 7th Street, between “B” Street and Umatilla River Road. *(Construction Cost Estimate: \$72,000; Primary Funding Agency: City of Umatilla)*
7. Install sidewalk on Brownell Boulevard, between 3rd Street and Highway 730. *(Construction Cost Estimate: \$134,000; Primary Funding Agency: City of Umatilla)*
8. Install sidewalk on Willamette Avenue, between Riverside Avenue and Highway 730. *(Construction Cost Estimate: \$207,000; Primary Funding Agency: City of Umatilla)*
9. Install sidewalk on Columbia Street, between Highway 730 and Willamette Avenue. *(Construction Cost Estimate: \$139,000; Primary Funding Agency: City of Umatilla)*
10. Install sidewalk on John Day Street, between Chenoweth Avenue and Willamette Avenue. *(Construction Cost Estimate: \$137,000; Primary Funding Agency: City of Umatilla)*
11. Install sidewalk on Chinook Avenue, between John Day Street and Columbia Street. *(Construction Cost Estimate: \$30,000; Primary Funding Agency: City of Umatilla)*

12. Install sidewalk on Lake Gordon Avenue, between John Day Street and Columbia Street. (*Construction Cost Estimate: \$17,000; Primary Funding Agency: City of Umatilla*)
13. Install sidewalk on Chenoweth Avenue, between Rio Senda Drive and Willamette Avenue. (*Construction Cost Estimate: \$70,000; Primary Funding Agency: City of Umatilla*)

The summary of planning-level, construction cost estimates by primary funding agency, reveals that ODOT would be responsible for approximately \$0.42 million in improvements and the City of Umatilla would be responsible for approximately \$1.03 million during the first ten-year program. This is an annual average expenditure of approximately \$103,000 (in constant 1998 dollars) for the City of Umatilla, to accomplish the first ten-year program.

The entire first ten-year program of improvements, for which the City is identified as the primary funding agency, consists of pedestrian-related improvements. These improvements have been identified to improve pedestrian safety, provide access to key pedestrian generators within the City, and begin to complete a primary network of pedestrian facilities throughout the community.

12.11.320 Second Ten-Year Program

During the second ten-year program, a total of 39 projects totaling over \$12.92 million are identified. This includes 24 sidewalk projects (\$8.19 million), 8 multi-use pathway projects (\$1.33 million), and 7 roadway-related projects (\$3.40 million). Significant elements of the second program include replacing the Umatilla River bridge (\$2 million), completing a continuous sidewalk on Highway 730 (two projects totaling \$1.92 million), and building a new street connection from the McNary Housing Area to DeVore Road (\$0.42 million).

Although the second ten-year program is not prioritized, emphasis is placed on the need to reconstruct the Umatilla River bridge, grade separate the Highway 730/Powerline Road intersection, and provide additional northbound left-turn capacity at the Highway 395/Highway 730 intersection. The overall safety and capacity of the transportation system is most substantially impacted by the future deficiencies that will occur at these locations. The remaining street extensions, intersection improvements, and pedestrian/bicycle improvements will complete a transportation system that is safe, balanced, and less dependent on the state highway system for local trip-making activities. The projects recommended for completion within the second ten-year program include:

12.11.320(1) Roadway Projects

1. Reconstruct the Umatilla River bridge and grade separate the Highway 730/Powerline Road intersection. (*Construction Cost Estimate: \$2,000,000; Primary Funding Agency: ODOT*)
2. Construct a second northbound left-turn lane at the Hwy 395/Hwy 730 intersection. (*Construction Cost Estimate: \$270,000; Primary Funding Agency: ODOT*)
3. Signalize the Interstate 82 Northbound Ramp terminal/Highway 730 intersection. (*Construction Cost Estimate: \$150,000; Primary Funding Agency: ODOT*) (NOTE: *The*

addition or modification of a traffic signal on any ODOT facility requires the approval of the State Traffic Engineer. Identification and documentation of the need in this TSP does not guarantee the provision or modification will occur).

4. Signalize the Umatilla River Road/Highway 730 intersection. (*Construction Cost Estimate: \$130,000; Primary Funding Agency: ODOT*) (NOTE: *The addition or modification of a traffic signal on any ODOT facility requires the approval of the State Traffic Engineer. Identification and documentation of the need in this TSP does not guarantee the provision or modification will occur).*)
5. Modify the ODOT Weigh Station internal circulation and relocate the Brownell Boulevard/Highway 730 intersection signal to the Eiselle Drive/Weigh Station entrance intersection. (*Construction Cost Estimate: \$350,000; Primary Funding Agency: ODOT*)
6. Construct a street connection from the McNary Housing Area to DeVore Road. (*Construction Cost Estimate: \$415,000; Primary Funding Agency: City of Umatilla*)
7. Extend Walla Walla Street to Bud Draper Drive. (*Construction Cost Estimate: \$87,000; Primary Funding Agency: City of Umatilla*)

12.11.320(2) Pedestrian Projects

1. Install sidewalk on Highway 730, from the west Urban Growth Boundary to “D” Street. (*Construction Cost Estimate: \$795,000; Primary Funding Agency: ODOT*)
2. Install sidewalk on Highway 730, between Brownell Boulevard and Beach Access Road. (*Construction Cost Estimate: \$1,120,000; Primary Funding Agency: ODOT*)
3. Install sidewalk on Bensel Road, from Umatilla River Road to Highway 395. (*Construction Cost Estimate: \$442,000; Primary Funding Agency: Umatilla County*)
4. Install sidewalk on Bud Draper Road, from Roxbury Road to Highway 730. (*Construction Cost Estimate: \$67,000; Primary Funding Agency: Umatilla County*)
5. Install sidewalk on Roxbury Lane, from Bud Draper Road to Beach Access Road. (*Construction Cost Estimate: \$181,000; Primary Funding Agency: Umatilla County*)
6. Install sidewalk on Beach Access Road, from McNary Beach Recreation Area to Highway 730. (*Construction Cost Estimate: \$522,000; Primary Funding Agency: Umatilla County*)
7. Install sidewalk on Powerline Road, from Highway 730 to south Urban Growth Boundary. (*Construction Cost Estimate: \$823,000; Primary Funding Agency: Umatilla County*)
8. Install sidewalk on Umatilla River Road, from Highway 730 to Bensel Road. (*Construction Cost Estimate: \$642,000; Primary Funding Agency: Umatilla County*)
9. Install sidewalk on Ford Road, from “O” Canal to Bensel Road. (*Construction Cost Estimate: \$522,000; Primary Funding Agency: Umatilla County*)
10. Install sidewalk on 3rd Street, between “A” Street and DeVore Road. (*Construction Cost Estimate: \$963,000; Primary Funding Agency: City of Umatilla/Umatilla County*)

11. Install sidewalk on Scapelhorn Road, from 3rd Street to Highway 730. (*Construction Cost Estimate: \$302,000; Primary Funding Agency: City of Umatilla/Umatilla County*)
12. Install sidewalk on Power City Road, from Highway 730 to Highway 395. (*Construction Cost Estimate: \$415,000; Primary Funding Agency: Umatilla County/City of Umatilla*)
13. Install sidewalk on DeVore Road, from 3rd Street to Highway 730. (*Construction Cost Estimate: \$335,000; Primary Funding Agency: City of Umatilla*)
14. Install sidewalk on Quincy Avenue, from Lake Umatilla to 3rd Street. (*Construction Cost Estimate: \$94,000; Primary Funding Agency: City of Umatilla*)
15. Install sidewalk on Wildwood Lane, from Highway 730 to Margaret Avenue. (*Construction Cost Estimate: \$147,000; Primary Funding Agency: City of Umatilla*)
16. Install sidewalk on Walla Walla Street, from Willamette Avenue to Pendleton Avenue. (*Construction Cost Estimate: \$94,000; Primary Funding Agency: City of Umatilla*)
17. Install sidewalk on Riverside Avenue, from Willamette Avenue to Deschutes Avenue. (*Construction Cost Estimate: \$70,000; Primary Funding Agency: City of Umatilla*)
18. Install sidewalk on Deschutes Avenue, from DeVore Road to Riverside Avenue. (*Construction Cost Estimate: \$184,000; Primary Funding Agency: City of Umatilla*)
19. Install sidewalk on Dean Avenue, from Raymond Street to Powerline Road. (*Construction Cost Estimate: \$30,000; Primary Funding Agency: City of Umatilla*)
20. Install sidewalk on Grant Street-Madison Street, west UGB to Powerline Road. (*Construction Cost Estimate: \$132,000; Primary Funding Agency: City of Umatilla*)
21. Install sidewalk on Margaret Avenue, from Ford Road to Wildwood Lane. (*Construction Cost Estimate: \$90,000; Primary Funding Agency: City of Umatilla*)
22. Install sidewalk on Carolina Road, from Martin Drive to Powerline Road. (*Construction Cost Estimate: \$37,000; Primary Funding Agency: City of Umatilla*)
23. Install sidewalk on Martin Drive, from Carolina Road to Powerline Road. (*Construction Cost Estimate: \$74,000; Primary Funding Agency: City of Umatilla*)
24. Install sidewalk on Cline Avenue, from 1st Street to 3rd Street. (*Construction Cost Estimate: \$47,000; Primary Funding Agency: City of Umatilla*)

12.11.320(3) Multi-Use Pathway Projects

1. Highway 395 Pathway (*Construction Cost Estimate: \$235,000; Primary Funding Agency: ODOT*)
2. Umatilla Refuge Pathway (*Construction Cost Estimate: \$510,000; Primary Funding Agency: US Army Corps of Engineers*)
3. Bud Draper Pathway (*Construction Cost Estimate: \$180,000; Primary Funding Agency: Umatilla County*)
4. McNary Beach Recreation Area Pathway (*Construction Cost Estimate: \$200,000; Primary Funding Agency: Umatilla County*)

5. Powerline Road to “F” Street Pathway (*Construction Cost Estimate: \$83,000; Primary Funding Agency: Umatilla County*)
6. Powerline Road Pathway (*Construction Cost Estimate: \$50,000; Primary Funding Agency: Umatilla County*)
7. Riverfront/Park Pathway (*Construction Cost Estimate: \$180,000; Primary Funding Agency: City of Umatilla*)
8. McNary Pathway (*Construction Cost Estimate: \$180,000; Primary Funding Agency: City of Umatilla*)

The summary of planning-level, construction cost estimates by primary funding agency, reveals that ODOT would be responsible for approximately \$2.90 million in roadway improvements, \$1.92 million in pedestrian improvements, and has no obligation for multi-use pathway improvements; or a total of approximately \$4.82 million during the second ten-year program. The City of Umatilla would be responsible for approximately \$0.50 million in roadway improvements, \$2.18 million in pedestrian improvements, and \$0.36 million in multi-use pathway improvements; or a total of approximately \$3.04 million during the second ten-year program. This is an annual average expenditure of approximately \$304,000 (in constant 1998 dollars) for the City of Umatilla, to accomplish the second ten-year program.

12.11.400 POTENTIAL FUNDING SOURCES

Potential funding sources in the 20-year program are grouped into general categories. This includes potential federal, state, and local funding, where local funding will require institution of a major, new funding source to supplement funds from a potential transportation system development charge. This could include added street bonding, local improvement districts, a local gas tax, hotel/motel tax, and/or a street utility fee. A combination of these funding sources could very easily produce the revenue stream necessary to accommodate the 20-year capital improvement needs of the community.

12.11.500 TRANSPORTATION SYSTEM PLAN FUNDING ELEMENT FINDINGS (RESERVED FOR EXPANSION)

12.11.600 TRANSPORTATION SYSTEM PLAN FUNDING ELEMENT POLICIES (RESERVED FOR EXPANSION)

Access Management Spacing Standards for Interchanges

The following tables show the access spacing standards for interchanges as discussed in Goal 3, Policy 3C: Interchange Access Management Areas.

Table 16: 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

Figure 18: Measurement of Spacing Standards for Table 16

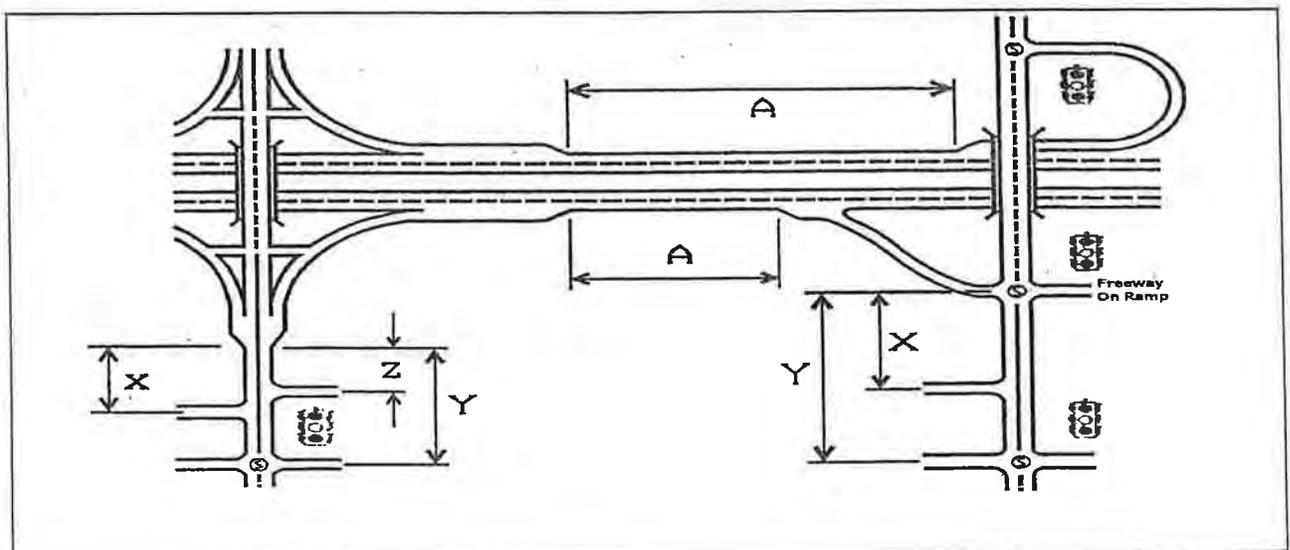


Table 17: Minimum Spacing Standards Applicable to Freeway Interchanges with Multi-Lane Crossroads

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 nontraversable medians to the first major intersection

Figure 19: Measurement of Spacing Standards for Table 17

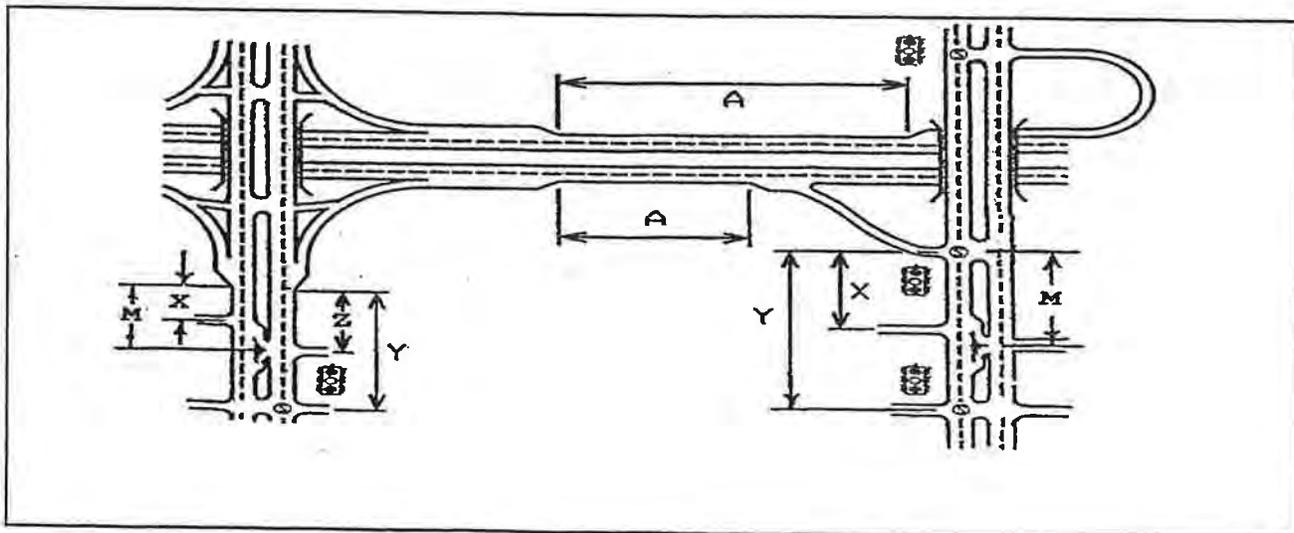


Table 18: Minimum Spacing Standards Applicable to Non-Freeway Interchanges with Two-Lane Crossroads

Category of Mainline	Type of Area	Speed of Mainline	Spacing Dimension				
			B	C	X	Y	Z
EXPRESSWAY	Fully Developed Urban	45 mph (70 kph)	2640 ft. (800 m)	1 mi. (1.6 km)	750 ft. (230 m)	1320 ft. (400 m)	750 ft. (230 m)
	Urban	45 mph (70 kph)	2640 ft. (800 m)	1 mi. (1.6 km)	1320 ft. (400 m)	1320 ft. (400 m)	990 ft. (300 m)
	Rural	55 mph (90 kph)	1 mi. (1.6 km)	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 intersection may be placed between ramp terminals and the first major intersection.
- 3) Use four-lane crossroad standards for urban and suburban locations that are likely to be widened.
- 4) No at-grade intersections are permitted between interchanges less than 5 miles apart.

B = Distance between the start and end of tapers

C = Distance between nearest at-grade and ramp terminal intersections or the end/start of the taper section

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

Y = Distance to first major intersection

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

Figure 20: Measurement of Spacing Standards for Table 18

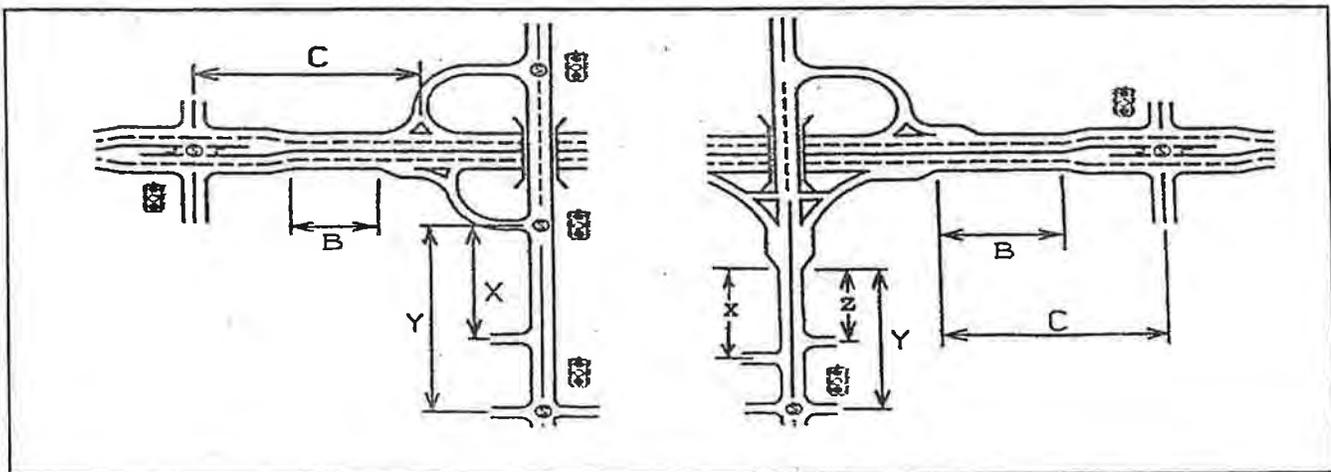


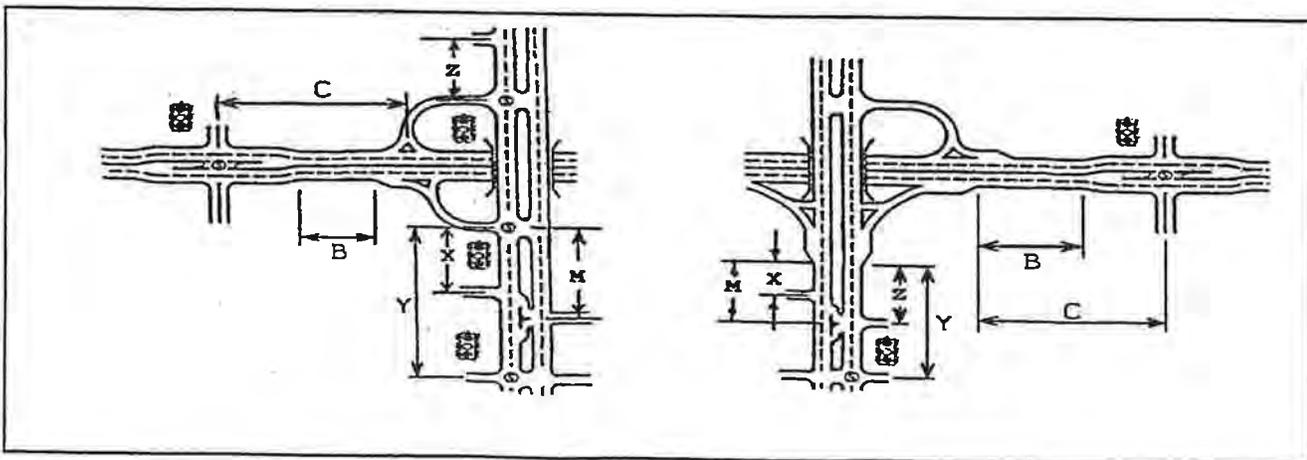
Table 19: Minimum Spacing Standards Applicable to Non-Freeway Interchanges with Multi-Lane Crossroads

Category of Mainline	Type of Area	Speed of Mainline	Spacing Dimension					
			B	C	X	Y	Z	M
EXPRESSWAY	Fully Developed Urban	45 mph (70 kph)	2640 ft. (800 m)	1 mi. (1.6 km)	750 ft. (230 m)	1320 ft. (400 m)	990 ft. (300 m)	1320 ft. (400 m)
	Urban	45 mph (70 kph)	2640 ft. (800 m)	1 mi. (1.6 km)	1320 ft. (400 m)	1320 ft. (400 m)	1320 ft. (400 m)	1320 ft. (400 m)
	Rural	55 mph (90 kph)	1 mi. (1.6 km)	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.
- 3) No at-grade intersections are permitted between interchanges less than 5 miles apart.

- B = Distance between the start and end of tapers
 C = Distance between nearest at-grade and ramp terminal intersections or the end/start of the taper section
 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 nontraversable medians to the first major intersection

Figure 21: Measurement of Spacing Standards for Table 19



Appendix 12.2-B

Driveway Inventory Table

Street Segment	Location	Driveway Width	Block Length
US 730 - South Side			
A Street to B Street	No Driveways	-	222 feet
B Street to C Street			
driveway	135 to 159 feet from C Street	24	233 feet
driveway	85 to 115 feet west of C Street	30	233 feet
driveway	19 to 43 feet west of C Street	24	233 feet
C Street to D Street			
driveway	141 to 173 feet west of D Street	32	218 feet
D Street to E Street			
driveway	107 to 120 feet west of E Street	13	230 feet
driveway	143 to 164 feet west of E Street	21	230 feet
E Street to F Street	No Driveways	-	234 feet
F Street to G Street	No Driveways	-	236 feet
G Street to H Street			
driveway	84 to 136 feet west of H Street	52	230 feet
driveway	149 to 190 feet west of H Street	41	230 feet
H Street to I Street	No Driveways	-	230 feet
I Street to J Street			
driveway	107 to 120 feet west of J Street	13	243 feet
driveway	148 to 167 feet west of J Street	19	243 feet
J Street to K Street			
driveway	85 to 122 feet west of K Street	37	254 feet
driveway	192 to 228 feet west of K Street	36	254 feet

Driveway Inventory Table

Street Segment	Location	Driveway Width	Block Length	
K Street to L Street	driveway	94 to 175 feet west of L Street	81	240 feet
	driveway	212 to 242 feet west of L Street	30	240 feet
L Street to Swizler Avenue	driveway	81 to 115 feet west of Swizler Avenue	34	438 feet
Swizler Avenue to Yerxa Avenue	driveway	140 to 158 feet west of Yerxa Avenue	18	466 feet
	driveway	168 to 186 feet west of Yerxa Avenue	18	466 feet
	driveway	211 to 230 feet west of Yerxa Avenue	19	466 feet
	driveway	265 to 285 feet west of Yerxa Avenue	20	466 feet
Yerxa Avenue to Sloan Avenue	driveway	57 to 130 feet west of Jane Avenue	73	421 feet
	driveway	268 to 310 feet west of Jane Avenue	42	421 feet
Sloan Avenue to Umatilla River Road	driveway	575 to 598 feet west of Umatilla River Rd	23	656 feet
	driveway	461 to 487 feet west of Umatilla River Rd	26	656 feet
	driveway	253 to 296 feet west of Umatilla River Rd	43	656 feet
Umatilla River Road to Eiselle Drive	No Driveway	-	1091 feet	
Eiselle Drive to Brownell Boulevard	driveway	176 to 196 feet east of Eiselle Drive	20	781 feet
	driveway	270 to 314 feet east of Eiselle Drive	44	781 feet
	driveway	520 to 590 feet east of Eiselle Drive	70	781 feet
US 730 North Side				
A Street to B Street	driveway	18 to 49 feet east of A Street	31	222 feet
	driveway	159 to 190 feet east of A Street	31	222 feet

Driveway Inventory Table

Street Segment	Location	Driveway Width	Block Length
B Street to C Street	No Driveway	-	233 feet
C Street to D Street driveway	73 to 94 feet east of C Street	21	218 feet
D Street to E Street driveway	65 to 85 feet east of D Street	20	230 feet
E Street to F Street	No Driveway	-	234 feet
F Street to G Street driveway	49 to 76 feet east of F Street	27	236 feet
G Street to H Street driveway	43 to 75 feet east of G Street	32	230 feet
driveway	96 to 121 feet east of G Street	25	230 feet
driveway	135 to 156 feet east of G Street	21	230 feet
H Street to I Street	No Driveway	-	230 feet
I Street to J Street	No Driveway		243 feet
J Street to K Street driveway	118 to 142 feet east of J Street	24	254 feet
driveway	182 to 199 feet east of J Street	17	254 feet
K Street to L Street	No Driveway	-	240 feet
L Street to Swizler Avenue driveway	178 to 240 feet east of L Street	62	438 feet
driveway	350 to 390 feet east of L Street	40	438 feet

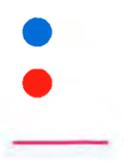
Driveway Inventory Table

Street Segment	Location	Driveway Width	Block Length	
Swizler Avenue to Yerxa Avenue	driveway	23 to 53 feet east of Swizler Avenue	30	466 feet
	driveway	103 to 134 feet east of Swizler Avenue	31	466 feet
Yerxa Avenue to Sloan Avenue	driveway	25 to 60 feet east of Yerxa Avenue	35	421 feet
	driveway	87 to 148 feet east of Yerxa Avenue	61	421 feet
	driveway	198 to 226 feet east of Yerxa Avenue	28	421 feet
	driveway	317 to 338 feet east of Yerxa Avenue	21	421 feet
Sloan Avenue to Umatilla River Road	driveway	78 to 125 feet east of Sloan Avenue	47	656 feet
Umatilla River Road to Eiselle Drive	No Driveway	-	1091 feet	
Eiselle Drive to Brownell Boulevard	Port of Entry Driveway	immediately west of Brownell Boulevard		781 feet



LEGEND

Wheelchair Ramp
 No Wheelchair Ramp
 Missing Sidewalk



Bulbouts
 Street Trees
 Median

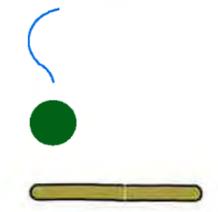
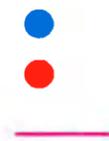


Figure 12.2-C-1 Existing Driveway Locations



LEGEND

Wheelchair Ramp
 No Wheelchair Ramp
 Missing Sidewalk



Bulbouts
 Street Trees
 Median

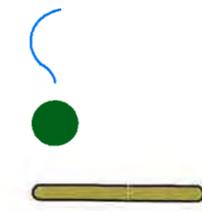
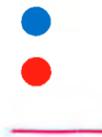


Figure 12.2-C-2 Existing Driveway
 Locations

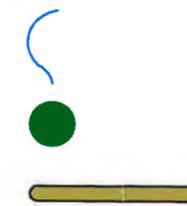


LEGEND

Wheelchair Ramp
No Wheelchair Ramp
Missing Sidewalk



Bulbouts
Street Trees
Median



Appendix 12.3

I-82/US 730 IAMP

Technical Appendix

The Technical Appendix for the I-82/US 730 Interchange Area Management Plan (IAMP), prepared by Kittelson & Associates, Inc. in association with Angelo Planning Group and Anderson-Perry & Associates, Inc., is included as part of the City of Umatilla Comprehensive Land Use Plan and is contained in a separate 3-ring binder and located in the City of Umatilla Planning Department.

A

Appendix 12.4 - A

Glossary

AASHTO – American Association of State Highway and Transportation Officials. They publish national road and bicycle facility design guidelines which have been used by the State with modifications.

ADA – The Americans with Disabilities Act. Civil rights legislation passed in 1990, became effective July 1992.

ADAAG – Americans with Disabilities Act Accessibility Guide.

ADT – Average daily traffic. The average traffic volume in both directions of travel at a given point on a road.

Arterial street – A higher classification of street designated to carry traffic, mostly uninterrupted, through an urban area, or to different neighborhoods within an urban area. Arterial streets may be further broken down into major and minor categories, major often referring to State highways.

Bicycle – A vehicle having two tandem wheels, a minimum of 14 inches in diameter, propelled solely by human power, upon which any person or persons may ride. Three-wheeled adult tricycles and four-wheeled quadracycles are considered bicycles; tricycles for children are not.

Bicycle facilities – A general term denoting improvements and provisions made to accommodate or encourage bicycling, including parking and storage facilities, and shared roadways not specifically designated for bicycle use.

Bicycle lane (or bike lane) – A portion of the roadway which has been designated by striping, signing and pavement markings for the preferential or exclusive use of bicyclists.

Bikeway – A generic term for a facility that is created when a road has the appropriate design treatment for bicyclists, based on motor vehicle traffic volumes and speeds; shared roadway, shoulder bikeway and bike are the most common. Another type of facility is separated from the roadway: multi-use path.

BPAC – Bicycle and Pedestrian Advisory Committee.

BID – Business Improvement District.

CBD – Central business district. A traditional downtown area usually characterized by established businesses fronting the street, sidewalks, slow traffic speeds on-street parking and a compact grid system.

CDBG – Community Development Block Grant

CENWP – Corps of Engineers, Portland District

CENWW – Corps of Engineers, Walla Walla District

CIP – Capital Improvement Program

Collector street – A street designated to carry traffic between local streets and arterials, or from local street to local street.

CPTED – Crime Prevention Through Environmental Design.

Cross-slope – Lateral slope across a road or path, typically designed for drainage.

Crosswalk – Portion of a roadway designated for pedestrian crossing, marked or unmarked. Unmarked crosswalks are the natural extension of the shoulder, curb line or sidewalk.

EID – Economic Improvement District

Enhancement funds – Set aside funds for certain transportation projects including bicycle and pedestrian facilities and paths.

DLCD – Department of Land Conservation and Development.

Grade – A measure of the steepness of a roadway, bikeway or walkway, expressed as a ratio of vertical rise per horizontal distance, usually in%. For example, a 5% grade equals a 5 unit rise over a 100 unit horizontal distance.

Grade separation – The vertical separation of conflicting travelways with a structure. Overpasses and tunnels are examples of common grade separations used to avoid conflicts.

IGA – Intergovernmental Agreement.

Interchange – A system of interconnecting roadways providing for traffic movement between two or more highways that are grade separated.

LID – Local Improvement District.

Local street – A street designated to provide access to and from residences and businesses.

MOA – Memorandum of Agreement.

MOU – Memorandum of Understanding.

Multi-use path – A path physically separated from motor vehicle traffic by an open space or barrier and either within a highway right-of-way or within an independent right-of-way, used by bicyclists, pedestrians, joggers, skaters and other non-motorized travelers. Sometimes called a shared-use path.

MUTCD – Manual on Uniform Traffic Control Devices. The national standard, approved by the Federal Highway Administration, for selection and placement of all traffic control devices on or adjacent to all highways open to public travel.

O&C – Opportunities and constraints.

ODOT – Oregon Department of Transportation.

OECD – Oregon Economic and Community Development Department

ORS – Oregon Revised Statute, the laws that govern the state of Oregon, as proposed by the legislature and signed by the Governor.

OTC – Oregon Transportation Commission, a five-member, Governor-appointed commission, whose primary duty is to develop and maintain a state transportation policy and a comprehensive, long-term plan for a multimodal transportation system.

OTIB – Oregon Transportation Infrastructure Bank

OTP – Oregon Transportation Plan.

Path (or pathway) – a sidewalk, trail or shared-use path.

Paved shoulder – The portion of a shoulder which is paved.

Pavement markings – Painted or applied lines or legends placed on a roadway surface for regulating, guiding or warning traffic.

Pedestrian – A person on foot, in a wheelchair, or walking a bicycle.

Pedestrian facilities – A general term denoting improvements and provisions made by public agencies to accommodate or encourage walking, including walkways, crosswalks, signs, signals, illumination and benches. -

Rail trail – A shared use path, either paved or unpaved, built within the right-of-way of an existing or former railroad.

Rail with trail – A shared-use path, either paved or unpaved, built within the right-of-way of an active railroad.

Right-of-way – A general term denoting land, property, or interest therein, usually in a strip, acquired for or devoted to transportation purposes.

Roadway – The paved portion of the road.

Shared roadway – A type of bikeway where bicyclists and motor vehicles share a travel lane.

SDC – System Development Charge.

SHPO – State Historic Preservation Office.

Shoulder – The portion of a road that is contiguous to the travel lanes and provided for pedestrians, bicyclists, emergency use by vehicles and for lateral support of base and surface courses.

Shoulder bikeway – A type of bikeway where bicyclists travel on a paved shoulder.

Sidewalk – A walkway separated from the roadway with a curb, constructed of a durable, hard and smooth surface, designed for preferential or exclusive use by pedestrians.

STIP – State Transportation Improvement Program

TEA-21 – Transportation Efficiency Act for the 21st Century. Federal legislation that guides the expenditure of federal highway funds from 1998 through 2002, replaced ISTEA.

TPR – Transportation Planning Rule 12 (OAR 660-12).

Traffic – Pedestrians, ridden or herded animals, vehicles, streetcars and other conveyances either singly or together while using any highway for purposes of travel.

Traffic volume (see ADT) – The given number of vehicles that pass a given point for a given amount of time (hour, day, year).

Trail – a path of travel within a park, natural environment or designated corridor.

Travelway (also traveled way) – The portion of a roadway provided for the movement of vehicles, exclusive of shoulders.

TSP – Transportation System Plan, the overall plan for all transportation modes for the City

UGB – Urban Growth Boundary, the area surrounding an incorporated city in which the city may legally expand its city limits.

URD – Urban Renewal District.

USACE – US Army Corps of Engineers.

USGS – United States Geological Survey.

Vehicle – Every device in, upon or by which any person or property is or may be transported or drawn upon a highway, including vehicles that are self-propelled or powered by any means.

Walkway – A transportation facility built for use by pedestrians, including persons in wheelchairs. Walkways include sidewalks, paths and paved shoulders.

Wide curb lane (also wide outside lane) – A wide travel lane adjacent to a curb, parking lane or shoulder provided for ease of bicycle operation where there is insufficient room for a bike lane or shoulder bikeway.

B

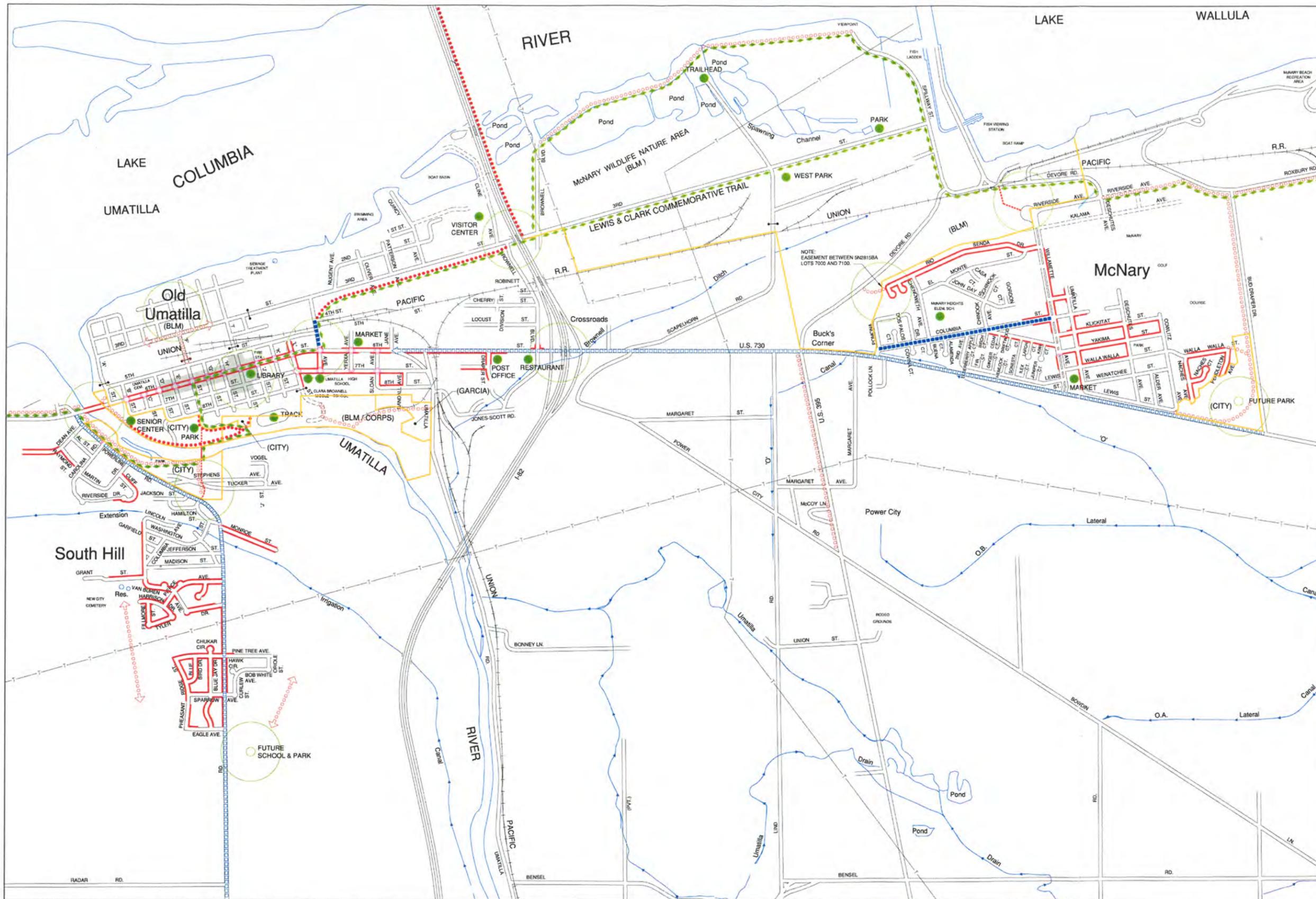
Appendix 12.4-B

Pedestrian & Bicycle System Maps

- Fig. B-1 City Map**
- Fig. B-2 South Hill Map**
- Fig. B-3 Downtown Map**
- Fig. B-4 Central Area Map**
- Fig. B-5 McNary Map**

Figure B-1 is the full map of the city showing existing and planned facilities. Projects areas are noted. Future sidewalks are not shown because they are largely dependent on development and on street construction or reconstruction. This figure has also been provided in color as a separate foldout for readability.

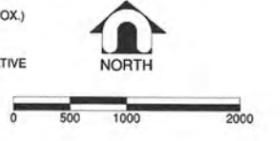
Figures B-2 through B-5 zoom in on four neighborhood areas. Property lines and ownerships relevant to projects are shown. Roads are shown at right-of-way width.

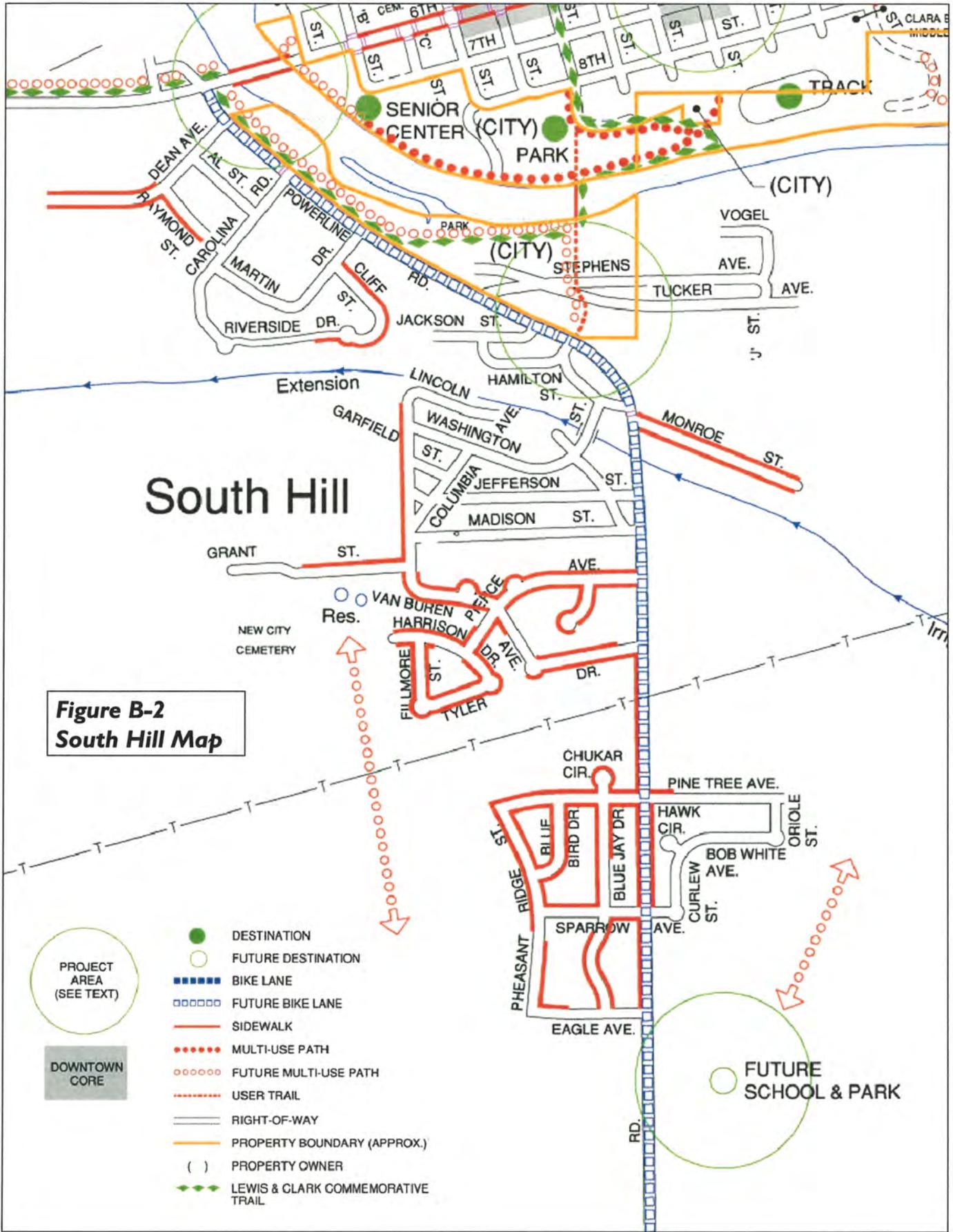


CITY OF UMATILLA PEDESTRIAN AND BICYCLE PLAN EXISTING AND FUTURE FACILITIES

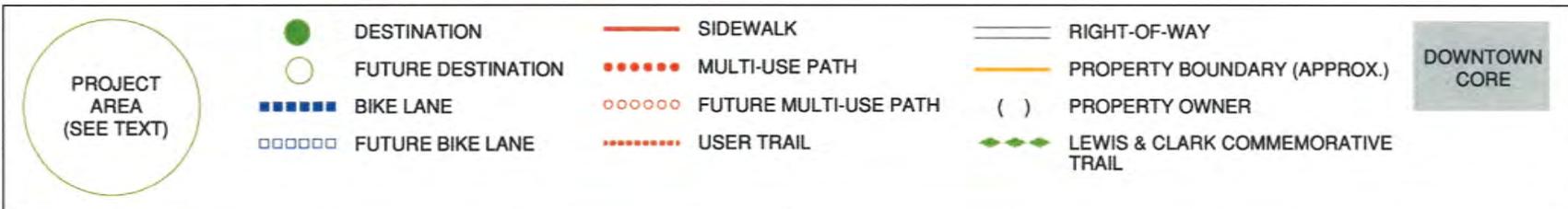
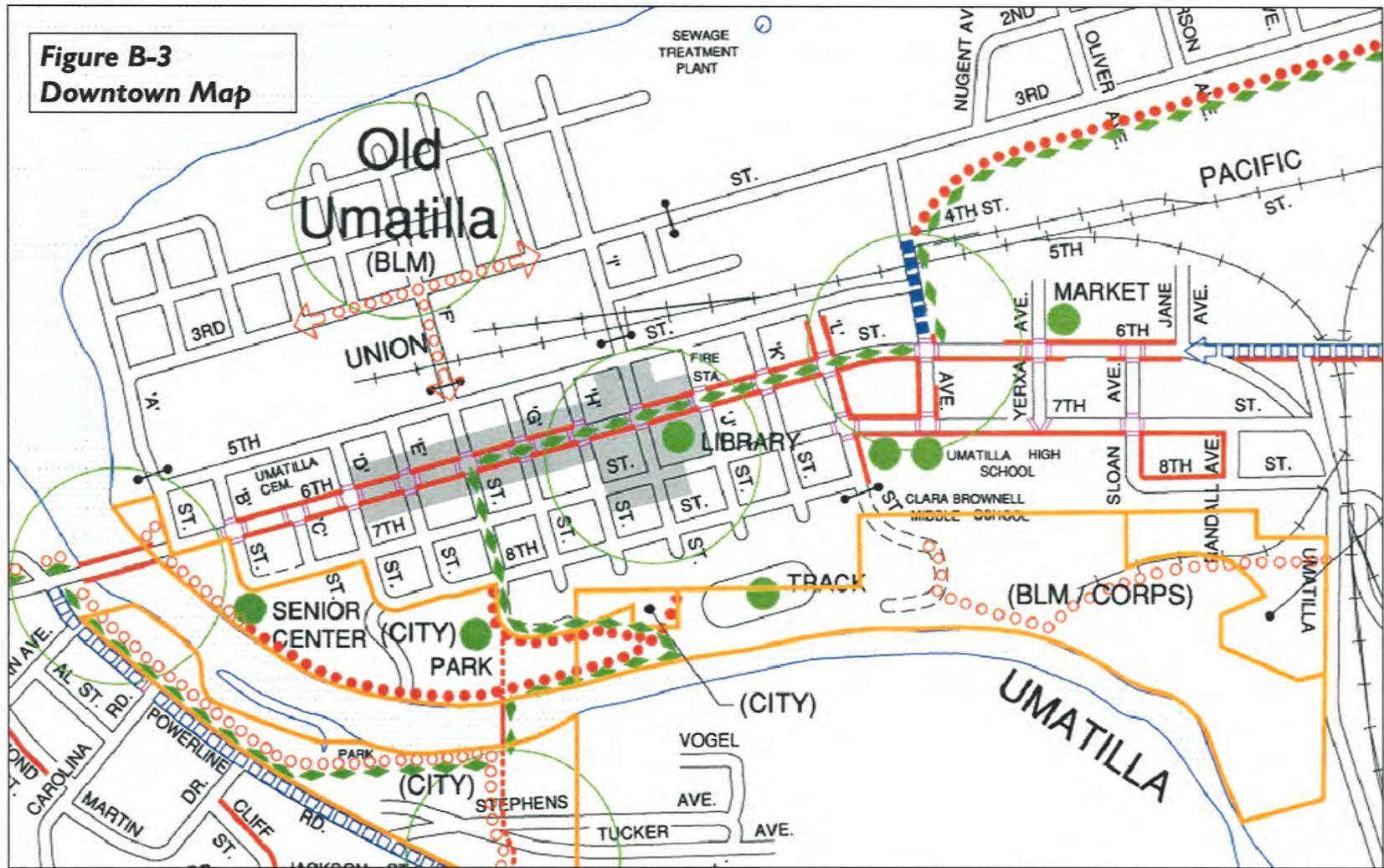

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 709 NW Wall Street, Suite 102
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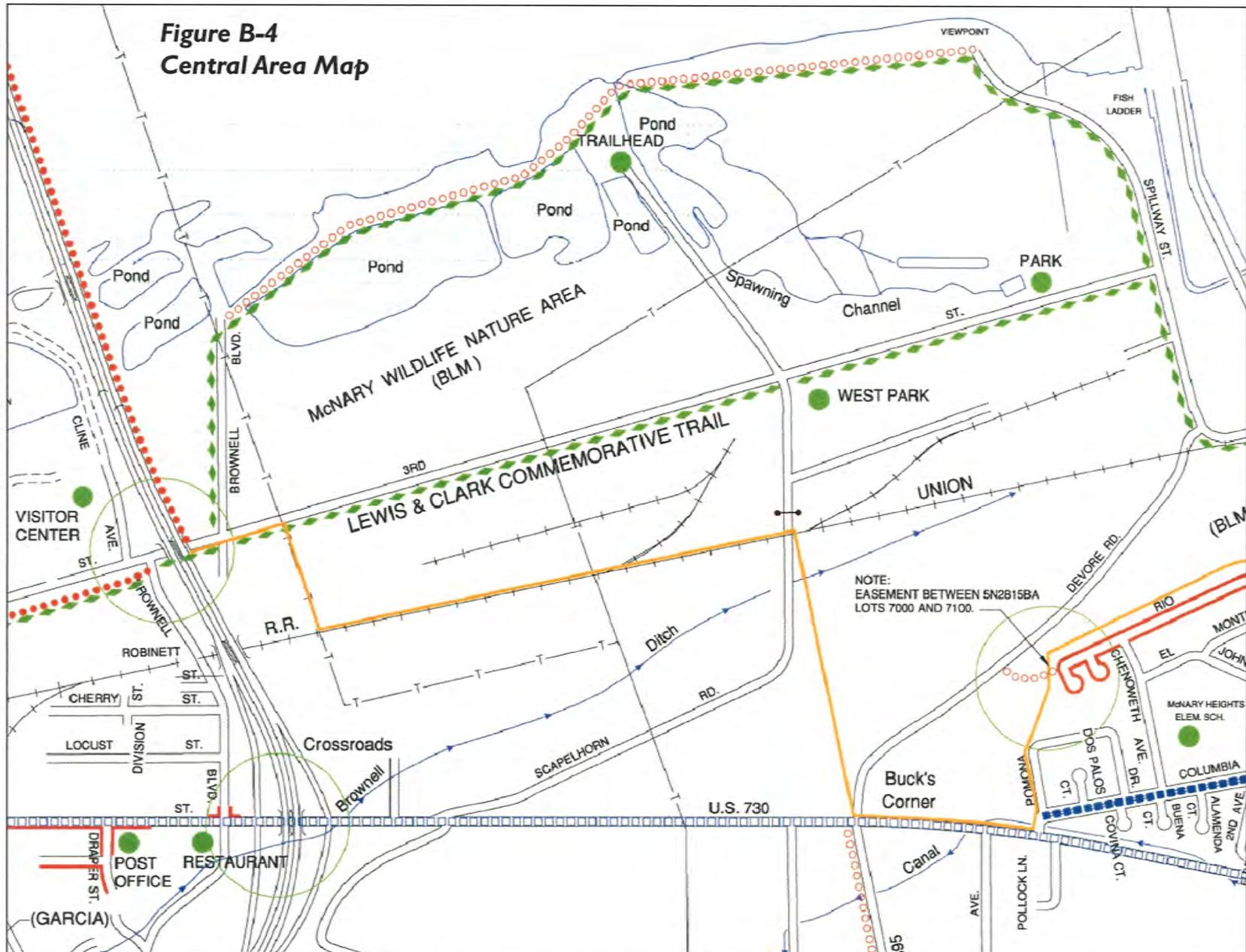
- | | | |
|--|--|--|
| <ul style="list-style-type: none"> PROJECT AREA (SEE TEXT) DOWNTOWN CORE | <ul style="list-style-type: none"> ● DESTINATION ○ FUTURE DESTINATION — BIKE LANE - - - FUTURE BIKE LANE — SIDEWALK - - - MULTI-USE PATH - - - - - FUTURE MULTI-USE PATH - - - - - USER TRAIL | <ul style="list-style-type: none"> RIGHT-OF-WAY PROPERTY BOUNDARY (APPROX.) PROPERTY OWNER - - - - - LEWIS & CLARK COMMEMORATIVE TRAIL |
|--|--|--|



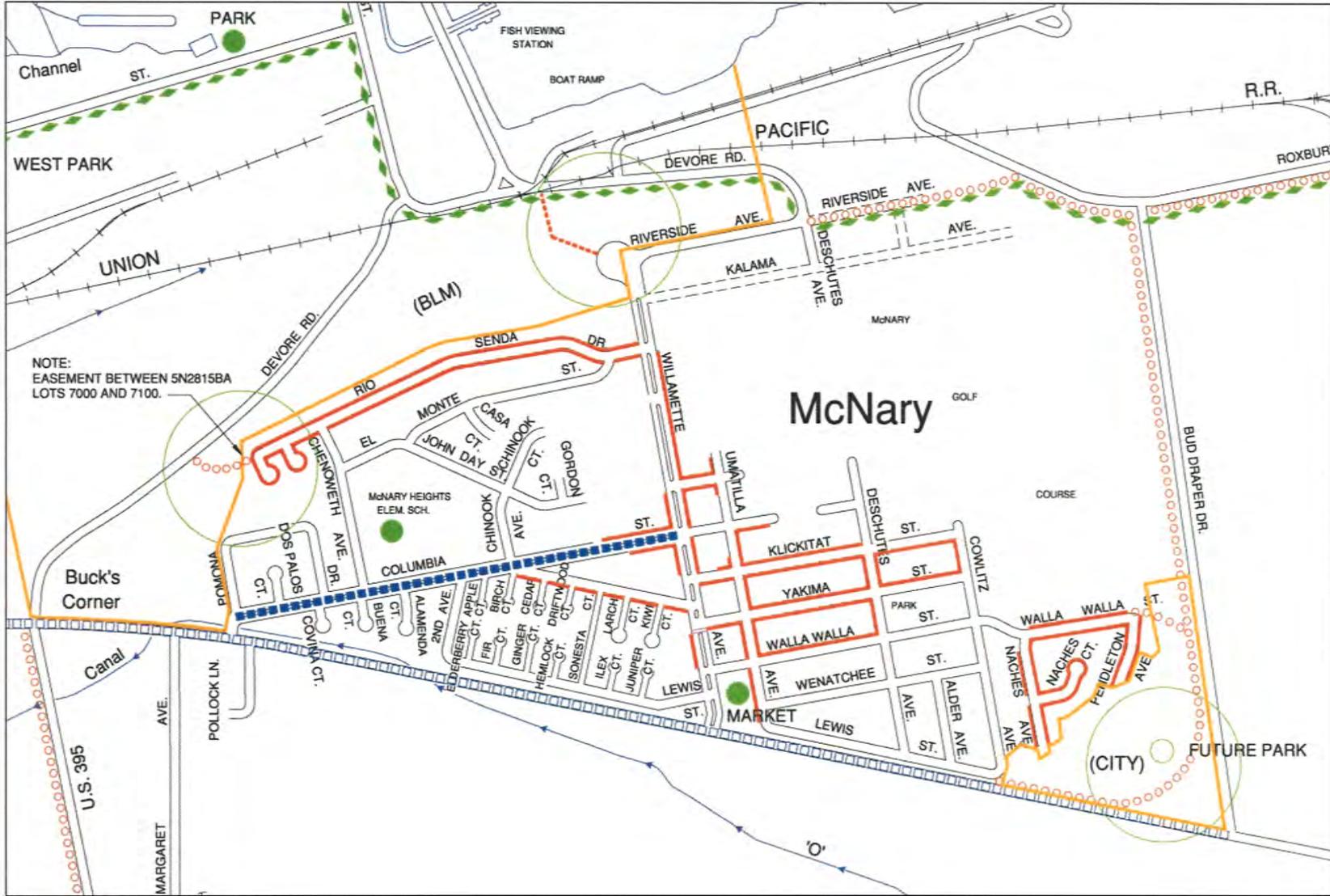


**Figure B-3
Downtown Map**





**Figure B-5
McNary Map**



C

Appendix 12.4-C

Transportation SDC Example

Appendix 12.4-C-1

* If your city did not enact the previous SDC model ordinance, please be aware of the additions and deletions.

Sample System Development Charge Ordinance (suggested **additions**, or [deletions] from previous SDC sample ordinance)

League of Oregon Cities
May, 2002

{City' s Ordaining Clause}

Section 1. Purpose. The purpose of the system development charge is to impose a portion of the cost of capital improvements for water, wastewater drainage, streets, flood control, and parks upon those developments **and redevelopments** that create the need for or increase the demands on _____ (*specify capital improvement for which the SDC is being enacted*).

Section 2. Definitions. For purposes of this ordinance, the following mean:

NOTE: if a separate ordinance is used to establish each SDC, one of the following capital improvements should be specified – See accompanying commentary.

- 1) Capital improvements. **Public** Facilities or assets used for (*specify one of the following*):
 - a) Water supply, treatment [and] **or** distribution, **or any combination**;
 - b) Waste water collection, transmission, treatment [and] **or** disposal **or any combination**;
 - c) Drainage [and] **or** flood control;
 - d) Transportation; or
 - e) Parks and recreation.

- 2) Development means all improvements on a site, including buildings, other structures, parking and loading areas, landscaping, paved or graveled areas, and areas devoted to exterior display, storage or activities (*optional: "which have the effect of _____" specific to the ordinance or SDCs being enacted*). Development includes redevelopment of property. Development includes improved open areas such as plazas and walkways, but does not include natural geologic forms or unimproved lands.

- 3) Improvement fee. A fee for costs associated with capital improvements to be constructed after the date the fee is adopted pursuant to section 4 of this ordinance.

- 4) Land area. The area of a parcel of land as measured by projection of the parcel boundaries upon a horizontal plane with the exception of a portion of the parcel within a recorded right-of-way or easement subject to a servitude for a public street or **for a public scenic or preservation purpose**.
- 5) Owner. The owner or owners of record title or the purchaser or purchasers under a recorded **land** sales agreement, and other persons having an interest of record in the described real property.
- 6) Parcel of land. A lot, parcel, block or other tract of land that **in accordance with city regulations** is occupied or may be occupied by a structure or structures or other use, and that includes the yards and other open spaces required under the zoning, subdivision, or other development ordinances.
- 7) Permittee means the person to whom a building permit, development permit, a permit or plan approval to connect to the sewer or water system, or right-of-way access permit is issued.
- 8) Qualified public improvements. A capital improvement that is:
 - a) Required as a condition of [residential] development approval;
 - b) Identified in the plan adopted pursuant to section 8 of this ordinance; and either:
 - 1) Not located on or contiguous to a parcel of land that is the subject of the development approval; or
 - 2) Located in whole or in part on or contiguous to property that is the subject of development approval and required to be built larger or with greater capacity than is necessary for the particular development project to which the improvement fee is related.
 - 3) For purposes of this definition, contiguous means in a public way which abuts the parcel.
- 9) Reimbursement fee. A fee for costs associated with capital improvements constructed or under construction on the date the fee is adopted pursuant to section 4 of this ordinance
- 10) System development charge. A reimbursement fee, an improvement fee or a combination thereof assessed or collected at the time of increased usage of capital improvement (*specify*), at the time of issuance of a development permit or building permit, or at the time of connection to the capital improvement (*specify*).
 - a) (*If applicable*) A system development charge includes that portion of a

sewer or water system connection charge that is greater than the amount necessary to reimburse the city for its average cost of inspecting and stalling connections with water and sewer facilities.

- b) A system development charge does not include fees assessed or collected as part of a local improvement district or a charge in lieu of a local improvement district assessment, or the cost of complying with requirements or conditions imposed by a land use decision.

Section 4. System Development Charge Established.

- 1) System development charges shall be established and may be revised by resolution of the council. The resolution shall set the amount of the charge, the type of permit to which the charge applies, and, if the charge applies to a geographic area smaller than the entire city, the geographic area subject to the charge.
- 2) Unless otherwise exempted by the provisions of this ordinance or the other local or state law, a system development charge is hereby imposed upon all development within the city, upon the act of making a connection to the city water or sewer system within the city, and upon all development outside the boundary of the city that connects to or otherwise uses the sewer facilities, storm sewers, or water facilities of the city.

Section 5. Methodology

- 1) The methodology used to establish **or modify** the reimbursement fee shall consider the cost of then-existing facilities **including without limitation design, financing and construction costs**, prior contributions by then-existing users, **gifts or grants from federal or state government or private persons**, the value of unused capacity **available to future system users**, rate-making principals employed to finance publicly owned capital improvements, and other relevant factors identified by the council. The methodology shall promote the objective that future systems users shall contribute no more than an equitable share of the cost of then-existing facilities.
- 2) The methodology used to establish **or modify** the improvement fee shall consider the **estimated** cost of projected capital improvements needed to increase the capacity of the systems to which the fee is related. **The methodology shall be calculated to obtain the cost of capital improvements for the projected need for available system capacity for future system users.**
- 3) The methodology used to establish **or modify** the improvement fee or the reimbursement fee, or both, shall be contained in a[n ordinance] **resolution** adopted by the council.

Section 6 Authorized Expenditures

- (1) Reimbursement fees shall be applied only to capital improvements associated with the system for which the fees are assessed, including expenditures relating to repayment

of indebtedness.

[(a)] (2) Improvement fees shall be spent only on capacity increasing capital improvements **associated with the system for which the fee is assessed**, including expenditures relating to repayment of future debt for the improvements. An increase in system capacity occurs if a capital improvement increases the level of performance or service provided by existing facilities or providing new facilities.

- a) The portion of the capital improvements funded by improvement fees must be related to demands created by current or projected development. A capital improvement being funded wholly or in part from revenues derived from the improvement fee shall be included in the plan adopted by the city pursuant to section 8 of this ordinance.

(3) Notwithstanding subsections (1) and (2) of this section, system development charge revenues may be expended on the direct costs of complying with the provisions of this ordinance, including the costs of developing system development charge methodologies and providing an annual accounting of system development expenditures.

Note: See accompanying commentary. Municipalities should consider including specific uses of SDC revenues and reference to specific planning documents in their ordinances. The following is an example taken from a Transportation SDC Context:

A. *There is created a dedicated account entitled the "Transportation SDC Account." All monies derived from the transportation SDC shall be placed in the Transportation SDC Account. Funds in the Transportation SDC Account shall be used solely to provide the SDC-Capital Improvement Plan (CIP) listed capacity increasing improvements according to the SDC-CIP as it currently exists or as hereinafter amended, and eligible administrative costs. In this regard, transportation SDC revenues may be used for purposes which include:*

- 1) *Design and construction plan preparation;*
- 2) *Permitting;*
- 3) *Right-of-way acquisition, including any costs of acquisition and condemnation;*
- 4) *Construction of new through lanes for vehicular transit, or bicycle use;*
- 5) *Construction of turn lanes;*
- 6) *Construction of bridges;*
- 7) *Etc.*
- 8) *Demolition that is part of the construction of any of the improvements on this list;*
- 9) *Payment of principal and interest, necessary reserves and costs of issuance under any bonds or other indebtedness issued by the City to provide money to construct or acquire transportation*

- facilities;*
- 10) *Direct costs of complying with the provisions of ORS 223.297 to 223.314, including the costs of developing SDC methodologies and providing an annual accounting of SDC expenditures.*

Section 7. Expenditure Restrictions.

- 1) Systems development charges shall not be expended for costs associated with the construction of administrative office facilities that are more than an incidental part of other capital improvements.
- 2) System development charges shall not be expended for costs of the operation or routine maintenance of capital improvements.

NOTE: See accompanying commentary - If the municipality wishes to be more specific, consider more specific language such as follows:

- 1) *Money on deposit in the SDC account shall not be used for:*
 - a) *Any expenditure that would be classified as a maintenance or repair expense; or*
 - b) *Costs associated with the construction of administrative office facilities that are more than an incidental part of other capital improvements; or*
 - c) *Costs associated with acquisition or maintenance or rolling stock.*

Section 8. Improvement Plan.

- (1) Prior to the establishment of a system development charge, the council shall adopt a plan that includes a list of:**
 - a) The capital improvements that may be funded with improvement fee revenues;
 - b) The estimated cost and time of construction of each improvement; and
 - c) **[Describes] A description of the process for modifying the plan.**
- (2) In adopting this plan, the council may incorporate by reference all or a portion of any public facilities plan, master plan, capital improvements plan or similar plan that contains the information required by this section. The council may modify such plan and list at any time.**
- (3) A change in the amount of a reimbursement fee or an improvement fee is not a modification of the system development charge if the change in amount is based on the periodic application of an adopted specific cost index or a modification to any of the factors related to the rate that are incorporated in the established**

methodology.

Section 9. Collection of Charge.

NOTE: This section would be revised if a separate ordinance is used to establish each SDC – See accompanying commentary.

- (1)** The system development charge is payable upon the issuance of:
 - a) A building permit;
 - b) A development permit;
 - c) A development permit for development not requiring the issuance of a building permit;
 - d) A permit or approval to connect to the water system;
 - e) A permit or approval to connect to the sewer system; or
 - f) A right-of-way access permit.
- (2)** If no building, development, or connection permit is required, the system development charge is payable at the time the usage of the capital improvement is increased based on changes in the use of the property unrelated to seasonal or ordinary fluctuations in usage.
- (3)** If development is commenced or connection is made to the water or sewer systems without an appropriate permit, the system development charge is immediately payable upon the earliest date that a permit was required.
- (4)** The (appropriate city official) shall collect the applicable system development charge from the permittee when a permit that allows building or development of a parcel is issued or when a connection to the water or sewer system of the city is made.
- (5)** The (appropriate city official) shall not issue such permit or allow such connection until the charge has been paid in full, or until provision for installment payments has been made pursuant to section 11 of this ordinance, or unless an exemption is granted pursuant to section 12 of this ordinance.

(optional) Section 10. Installment Payment.

- (1)** When a system development charge of \$(_) or more is due and collectible, the owner of the parcel of land subject to the development charge may apply for payment in 20 semi-annual installments, to include interest on the unpaid balance, in accordance with ORS 223.208.

- (2) The (appropriate city official) shall provide application forms for installment payments, which shall include a waiver of all rights to contest validity of the lien, except for the correction of computational errors.
- (3) An applicant for installment payments shall have the burden of demonstrating the applicant's authority to assent to the imposition of a lien on the parcel and that the **property** interest of the applicant is adequate to secure payment of the lien.
- (4) The (appropriate city official) shall report to the (appropriate city official) the amount of the system development charge, the dates on which payments are due, the name of the owner, and the description of the parcel.
- (5) The (appropriate city official) shall docket the lien in the lien docket. From that time the city shall have a lien upon the described parcel for the amount of the system development charge, together with interest on the unpaid balance at the rate established by the council. The lien shall be enforceable in the manner provided in ORS Chapter 223.
- (6) Upon written request of the (appropriate city department), the (appropriate city official) is authorized to cancel assessments of SDCs, without further Council action, where the new development approved by the building permit is not constructed and the building permit is cancelled.
- (7) For property that has been subject to a cancellation of assessment of SDCs, a new installment payment contract shall be subject to the code provisions applicable to SDCs and installment payment contracts on file on the date the new contract is received by the city.

Section 11. Exemptions

- (1) Structures and uses established and **legally** existing on or before (effective date of ordinance) are exempt from a system development charge, except water and sewer charges, to the extent of the structure or use then existing and to the extent of the parcel of land as it is constituted on that date. Structures and uses affected by this subsection shall pay the water or sewer charges pursuant to the terms of this ordinance upon the receipt of a permit to connect to the water or sewer system.
- (2) Additions to single-family dwellings that do not constitute the addition of a dwelling unit, as defined by the State Uniform Building Code, are exempt from all portions of the system development charge.
- (3) An alteration, addition, replacement or change in use that does not increase the parcels or structures use of the public improvement facility are exempt from all portions of the system development charge.

Section 12. Credits

- (1) When a development occurs that is subject to a system development charge, the system development charge for the existing use, if applicable, shall be calculated and

if it is less than the system development charge for the use that will result from the development, the difference between the system development charge for the existing use and the system development charge for the proposed use shall be the system development charge. If the change in the use results in the system development charge for the proposed use being less than the system development charge for the existing use, no system development charge shall be required. No refund or credit shall be given unless provided for by another subsection of this Section.

- (2) A credit shall be given to the permittee for the cost of a qualified public improvement upon acceptance by the city of the public improvement. The credit shall not exceed the improvement fee even if the cost of the capital improvement exceeds the applicable improvement fee and shall only be for the improvement fee charged for the type of improvement being constructed.
- (3) If a qualified public improvement is located in whole or in part on or contiguous to the property that is the subject of the development approval and is required to be built larger or with greater capacity than is necessary for the particular development project, a credit shall be given for the cost of the portion of the improvement that exceeds the city's minimum standard facility size or capacity needed to serve the particular development project or property. The applicant shall have the burden of demonstrating that a particular improvement qualifies for credit under this subsection. The request for credit shall be filed in writing no later than 60 days after acceptance of the improvement by the city.
- (4) When the construction of a qualified public improvement located in whole or in part or contiguous to the property that is the subject of development approval gives rise to a credit amount greater than the improvement fee that would otherwise be levied against the project, the credit in excess of the improvement fee for the original development project may be applied against improvement fees that accrue in subsequent phases of the original development project.
- (5) Notwithstanding subsections 1-4, when establishing a methodology for a system development charge, the city may provide for a credit against the improvement fee, the reimbursement fee, or both, for capital improvements constructed as part of the development which reduce the development's demand upon existing capital improvements and/or the need for future capital improvements, or a credit based upon any other rationale the council finds reasonable.
- (6) Credits shall not be transferable from one development to another.
- (7) Credits shall not be transferable from type of system development charge to another.
- (8) Credits shall be used within 10 years from the date the credit is given.

Section 13. Notice.

- (1) The city shall maintain a list of persons who have made a written request for notification prior to adoption or [amendment] **modification** of a methodology for any

system development charge. Written notice shall be mailed to persons on the list at least [45] **90** days prior to the first hearing to [adopt or amend] **establish or modify** a system development charge. The methodology supporting the [adoption or amendment] **system development charge** shall be available at least [30] **60** days prior to the first hearing to adopt or amend a system development charge. The failure of a person on the list to receive a notice that was mailed [shall] **does** not invalidate the action of the city.

- (2) The city may periodically delete names from the list, but at least 30 days prior to removing a name from the list, the city must notify the person whose name is to be deleted that a new written request for notification is required if the person wishes to remain on the notification list.

Section 14. Segregation and Use of Revenue.

- (1) All funds derived from a particular type of system development charge are to be segregated by accounting practices from all funds of the city. That portion of the system development charge calculated and collected on account of a specific facility system shall be used for no purpose other than set forth in section 6 of this ordinance.
- (2) The appropriate city official shall provide the city council with an annual accounting, **by January 1 of each year**, [based on the city' s fiscal year,] for system development charges showing the total amount of system development charge revenues collected for each type of facility and the projects funded from each account [.] **in the previous fiscal year. A list of the amount spent on each project funded in whole or in part, with system development charge revenues shall be included in the annual accounting.**

Section 15. Refunds.

- (1) Refunds may be given by the Administrator upon finding that there was a clerical error in the calculation of the SDC.
- (2) Refunds shall not be allowed for failure to timely claim credit or for failure to timely seek an alternative SDC rate calculation at the time of submission of an application for a building permit.
- (3) The city shall refund to the applicant any SDC revenues not expended within ten (10) years of receipt.

Section 16. Implementing Regulations; Amendments.

- 1) The city council delegates authority to the (department administering the SDC program) to adopt necessary procedures to implement provisions of this ordinance including the appointment of an SDC program administrator. All rules pursuant to this delegated authority shall be filed with the office of (the appropriate city official) and be available for public inspection.

Section 17. Appeal Procedure.

(1) A person challenging the propriety of an expenditure of system development charge revenues may appeal the decision or the expenditure to the city council by filing a written request with the (appropriate city official) describing with particularity the decision of the (appropriate city official) and the expenditure from which the person appeals. An appeal of an expenditure must be filed within two years of the date of the alleged improper expenditure.

(optional) (2) Appeals of any other decision required or permitted to be made by the (appropriate city official) under this ordinance must be filed **in writing with (the appropriate city official)** within 10 days of the decision.

(3) After providing notice to the appellant, the council shall determine whether the (appropriate city official' s) decision or the expenditure is in accordance with this ordinance and the provisions of ORS 223.297 to 223.214 and may affirm, modify, or overrule the decisions. If the council determines that there has been an improper expenditure of system development charge revenues, the council shall direct that a sum equal to the misspent amount shall be deposited within one year to the credit of the account or fund from which it was spent. The decision of the council shall be reviewed only as provided in ORS 34.010 to 34.100, and not otherwise.

(4) A legal action challenging the methodology adopted by the council pursuant to section 5 shall not be filed later than 60 days after adoption. A person shall contest the methodology used for calculating a system development charge only as provided in ORS 34.010 to ORS 34.100, and not otherwise.

(optional) (5) **A person who wishes to challenge the calculation of a system development charge must make a written challenge to the calculation of the system development charge and file the challenge with the (appropriate city official) within X days of receiving the calculation. The written challenge must describe with particularity the calculation which the person appeals.**

(a) The written challenge shall state:

- 1) The name and address of the appellant;**
- 2) The nature of the calculation being appealed;**
- 3) The reason the calculation is incorrect; and**
- 4) What the correct determination of the appeal should be or how the correct calculation should be derived.**

A person who fails to file such a written challenge within the time permitted waives his/her objections, and his/her objections shall be dismissed.

(b) After providing timely notice to the challenger, the (appropriate city official or council) shall determine whether the calculation is in accordance with the

resolution containing the methodology used to establish or modify the system development charge adopted by the city council. *And/Or:*

- (c) Unless the challenger and the city agree to a longer period, a written challenge to the calculation of the system development charge shall be heard by a hearings officer within X working days of the receipt of the written challenge. At least X working days prior to the hearing, the city shall mail notice of the time and location thereof to the person who made the written challenge.
- (d) The hearings officer shall hear and determine the challenge on the basis of the person's written challenge and any additional evidence he/she deems appropriate. At the hearing the challenger may present testimony and oral argument personally or by counsel. The rules of evidence as used by courts of law do not apply.
- (e) The person challenging the calculation shall carry the burden of proving that the calculation being appealed is incorrect and what the correct calculation should be or how a correct calculation should be derived.
- (6) After exhausting the city's administrative review procedure pursuant to section 17 (5) of this ordinance, the person challenging the calculation of the system development charge may then petition for review of the (appropriate city official's/hearings officer or council's) determination pursuant to ORS 34.010 to 34.100.

Section 18. Prohibited Connection. No person may connect to the water or sewer systems of the city unless the appropriate system development charge has been paid or the lien or installment payment method has been applied for and approved.

Section 19. Penalty. Violation of section 18 of this ordinance is punishable by a fine not to exceed \$_____.

Section 20. Construction. [The rules of statutory construction contained in ORS Chapter 174 are adopted and by this reference made a part of this ordinance.] **For the purposes of administration and enforcement of this ordinance, unless otherwise stated in this ordinance, the following rules of construction shall apply:**

- A. In case of any difference of meaning or implication between the text of this ordinance and any caption, illustration, summary table, or illustrative table, the text shall control.
- B. The word "shall" is always mandatory and not discretionary; the word "may" is permissive.
- C. Words used in the present tense shall include the future; and words used in the singular number shall include the plural and the plural the singular, unless the context clearly indicates the contrary.

- D. The phrase “used for” includes “arranged for,” “designed for,” “maintained for,” or “occupied for.”
- E. Where a regulation involves two or more connected items, conditions, provisions, or events:
- 1) “And” indicates that all the connected terms, conditions, provisions or events shall apply;
 - 2) “Or” indicates that the connected items, conditions, provisions or events may apply singly or in any combination.
- F. The word “includes” shall not limit a term to the specific example, but is intended to extend its meaning to all other instances of like kind or character.

Section 21. Severability. [The invalidity of a section or subsection of this ordinance shall not affect the validity of the remaining sections or subsections.] **The provisions of this ordinance are severable, and it is the intention to confer the whole or any part of the powers herein provided for. If any clause, section or provision of this ordinance shall be declared unconstitutional or invalid for any reason or cause, the remaining portion of this ordinance shall be in full force and effect and be valid as if such invalid portion thereof had not been incorporated herein. It is hereby declared to be the council’s intent that this ordinance would have been adopted had such an unconstitutional provision not been included herein.**

(optional) **Section 22. Classification.** The city council determines that any fee, rates or charges imposed by this ordinance are not a tax subject to the property tax limitations of Article XI, section 11(b) of the Oregon Constitution.

(optional) **Section ____.** **Repeal.** Ordinance No. _____, enacted _____, is repealed.

(optional) **Section ____.** **Saving Clause.** Ordinance No. _____, repealed by this ordinance, shall remain in force for prosecution, conviction, and punishment of persons who violate Ordinance No. _____, before the effective date of this ordinance.

(optional) **Section ____.** **Effective Date.** This ordinance shall become effective ___ days after its passage by the council and approval by the mayor.

Appendix 12.4-C-2

CITY ORDINANCE NO. 1086 CITY OF PRINEVILLE

AN ORDINANCE ESTABLISHING SYSTEMS DEVELOPMENT CHARGES (SDC's), PROCEDURES, AND POLICIES FOR SEWER, WATER AND TRANSPORTATION WITHIN THE CITY OF PRINEVILLE

THE PEOPLE OF THE CITY OF PRINEVILLE, OREGON, DO ORDAIN AS FOLLOWS:

SECTION 1.0. GENERAL PROVISIONS

- 1.1. TITLE. This Ordinance shall be known as the Systems Development Charge Ordinance of 2000 for the City of Prineville, Oregon.
- 1.2. AUTHORIZATION. Systems Development Charges (SDC's) are authorized by Oregon Revised Statutes (ORS) Chapters 223.297 to 223.314 and by Sections 4 and 39 of the Prineville City Charter.
- 1.3. PURPOSE. It is the purpose of this Ordinance to provide for the basic framework for the imposition of System Development Charges for the recovery of certain capital improvement costs deemed necessary for the City to provide sewer, water and transportation services.
- 1.4. DEFINITIONS. As used in this Ordinance, the following words and phrases, unless the context of this Ordinance requires or provides otherwise, shall have the meaning set forth herein:
 - 1.4.1. "Capital Improvement" means facilities or assets used for the following:
 - (a) Water supply, treatment, storage and distribution;
 - (b) Waste water collection, transmission, treatment, storage and disposal;
 - (c) Drainage and flood control; or
 - (d) Transportation.
 - 1.4.2. "Capital Improvement" does not include costs of the operation or routine maintenance of capital improvements.
 - 1.4.3. "Improvement fee" means a fee for costs associated with capital improvements to be constructed.
 - 1.4.4. "Reimbursement fee" means a fee for costs associated with capital improvements associated with capital improvements already constructed or under construction.
 - 1.4.5. "System Development Charge" or "SDC" means a reimbursement fee, an improvement fee or a combination thereof assessed or collected at the time of increased usage of a capital improvement or issuance of a development permit, building permit or connection to the capital improvement.

Section 1.0. General Provisions; 1.4. Definitions; Contd.

- 1.4.6. "System Development Charge" or "SDC" does not include any fees assessed or collected as part of a Local Improvement District (LID), Reimbursement District, or a charge in lieu of an LID assessment, or the cost of complying with requirements or conditions imposed upon a land use decision, expedited land division or limited land use decision as provided for in this Ordinance or the implementing Resolution No. 875.
- 1.4.7. Terminology: The word "City" shall mean the City of Prineville, Oregon. The words "City Council" and "Council" shall mean the City Council of Prineville. The words "City Planning Commission" and "Commission" shall mean the City Planning Commission for the City of Prineville as duly appointed by the City Council. The words "City Recorder," "City Manager," "City Planning Official or Director," "Fire Chief," "City Legal Counsel, City Counsel or City Attorney," and "City Public Works, Sewer, Water or Street Superintendent," shall mean such respective positions for the City of Prineville as applicable.

SECTION 2.0. CAPITAL IMPROVEMENT PLANS REQUIRED

- 2.1. As required by ORS Chapter 223.309, the City has prepared and adopted the following Public Facility Master Plans. Said Plans, as may be amended, are hereby adopted by reference as though set forth in full herein. Said Plans are available for public inspection at the office of the City Manager of the City of Prineville, 400 NE 3rd Street, Prineville, Oregon.
- (a) Transportation System Plan of 1999 as prepared for the City of Prineville by W&H Pacific Consulting Engineers, Inc.;
 - (b) Water Facility Plan of 2000 as prepared for the City of Prineville by ACE Consultants, Inc.; and
 - (c) Wastewater Facility Plan of 2000 as prepared for the City of Prineville by ACE Consultants, Inc.
- 2.2. Plans identified in Subsection 2.1 of this Section may be modified, revised, amended and/or updated by the City only on an annual basis except in the case of emergencies. The City shall conduct one or more public hearings on all Plan modifications, revisions, amendments and/or updates. At least one(1) such hearing shall be conducted by the City Council prior to adoption of such Plan modifications, revisions, amendments and/or updates.
- 2.3. Copies of all such proposed modifications, revisions, amendments and/or updates to such Plans shall be available for public inspection not less than ten(10) days prior to any public hearing thereon.

SECTION 3.0. DETERMINATION OF AMOUNT OF SDC's

- 3.1. Reimbursement fees shall be established by City Council Resolution setting forth a methodology that considers the cost of the existing facility or facilities, prior contributions by existing users, the value of unused capacity, rate-making principles employed to finance publicly owned capital improvements and other relevant factors identified by the City. The methodology shall promote the objective of the future system users contributing to no more than an equitable share to the cost of existing facilities. The methodology for establishing such fees shall be available for public inspection.
- 3.2. Improvement fees shall be established by City Council Resolution setting forth a methodology that considers the cost of projected capital improvements needed to increase the capacity of the systems to which the fee is related. The methodology for establishing such fees shall be available for public inspection.

SECTION 4.0. CERTAIN SDC's AND METHODOLOGIES ARE PROHIBITED.

- 4.1. As used in this Section, "employer" means any person who contracts to pay remuneration for, and secures the right to direct and control the services of, any person.
- 4.2. The City may not establish or impose a SDC that requires an employer to pay a reimbursement fee or an improvement fee based on:
 - (a) The number of individuals hired by the employer after a specified date; or,
 - (b) A methodology that assumes that costs are necessarily incurred for capital improvements when an employer hires an additional employee.
- 4.3. A methodology set forth in a Resolution that establishes an improvement fee or a reimbursement fee shall not include or incorporate any method or system under which the payment of the fee is determined by the number of employees of an employer without regard to new construction, new development or new use of an existing structure by the employer.

SECTION 5.0. CREDITS AGAINST SDC's

- 5.1. The City Council Resolution that establishes an improvement fee shall also provide for a credit against said SDC fees for the construction of a qualified public improvement as provided for by ORS Chapters 223.297 to 223.314.

Section 5.1; Contd.

A "qualified public improvement" means a capital improvement that is required as a condition of development approval in a Public Facility Plan adopted by the City as referenced by Section 2.0. of his Ordinance and either:

- (a) Not located on or contiguous to property that is the subject of development approval; or
- (b) Located in whole or in part on or contiguous property that is the subject of development approval and required to be built larger or with greater capacity than is necessary for the particular development project to which the improvement fee is related.

- 5.2. (a) The credit provided for in Subsection 5.1 of this Section shall be only for the improvement fee charged for the type of improvement being constructed, and credit for qualified public improvements under Subsection 5.1 of this Section may be granted only for the cost of that portion of such improvement that exceeds the City's minimum standard facility size or capacity needed to serve the particular development project or property. The applicant shall have the burden of demonstrating that a particular improvement qualifies for credit under Subsection 5.2(b) of this Section.
- (b) When the construction of a qualified public improvement as defined in Subsection 5.1 of this Section gives rise to a credit amount greater than the improvement fee that would otherwise be levied against the project receiving development approval, the excess credit may be applied against improvement fees that accrue in subsequent phases of the original development project, subject to City approval.
- (c) Credits shall be used in the time specified by the City but not later than 5-years from the date the credit is given.

- 5.3. The Resolution that establishes an improvement fee shall also provide for a credit against said SDC fees for qualifying local improvement districts. A "qualified local improvement district" means a local improvement district ("LID") that has been approved by the City prior to 2000 and:
- (a) Applies for and receives building permits to complete planned LID and/or development construction within five(5) years of the date of original LID and/or development approval unless otherwise approved by the City; and
 - (b) Pays all required LID fees on schedule in compliance with the original LID conditions.
 - (c) The credit provided for in this Subsection shall only be for the LID fee charged, but shall not exceed the applicable SDC fee that would otherwise be levied against properties in the LID project, in part of in

Section 5.3(c); Contd.

- whole, accruing in subsequent phases or the original LID project, subject to City approval.
- (d) Credits shall be used in the time specified by the City but not later than 5 years from the date the credit is given unless otherwise approved by the City.

SECTION 6.0. EXEMPTIONS TO SDC CHARGES.

The SDC charges imposed by this Ordinance or the implementing Resolution shall not apply to the following:

- (a) Developments for which applications and fees for building permits, sewer and water connections, and/or manufactured home park use permits have been filed and paid prior to the effective dates of this Ordinance and the implementing Resolution, providing the information accompanying such applications was sufficiently complete to meet the requirements of issuance of permits and connections for said developments.
- (b) Reconstruction or repair of a building or structure, or portion thereof, which was damaged or destroyed by earthquake, fire, flood, or other natural causes over which the owner had no control, but only if:
- (1) Such reconstruction or repair is done pursuant to a building permit issued within one year after such damage or destruction - unless such has been delayed by applicable regulations beyond the control of the owner; and
 - (2) There is no change in water meter or development size.
- (c) Replacement structures for any forced acquisition wherein a building or Structure is acquired for public purposes through eminent domain provided that:
- (1) The owner obtains a building permit for the replacement structure within two(2) years of the acquisition, and
 - (2) There is no change in water meter or development size.
- (d) Any public use or development which is or by agreement will be undertaken by the City of Prineville. Such an exemption for any other public entity shall be subject to City approval on a case-by-case basis.
- (e) Any housing unit which is located in a housing project of one or more housing units, if the project receives federal housing funds or tax credits and is affordable to families at or below the City's 80% median family income level as defined by the US Department of Housing and Urban Development, provided such unit or units were duly approved by the City prior to the effective date of this Ordinance and the implementing Resolution and construction commences within 3 years of approval.

Section 6.0. Exemptions; Contd.

- (f) Replacement units within a duly approved manufactured home park on spaces which have previously been occupied and for which sewer and water connections have previously been installed and in use prior to the effective date of this Ordinance and the implementing Resolution.
- (g) Original placement units within a duly approved manufactured home Park for which sewer and water connection fees have been paid in full to the City prior to the effective dates of this Ordinance and the implementing Resolution provided such units are placed within 3 years of the effective dates of this Ordinance and the implementing Resolution.
- (h) New units within duly approved and platted subdivisions or other developments provided that sewer and water connection fees have been paid in full to the City prior to the effective dates of this Ordinance and the implementing Resolution and that the construction of such units commences within 3 years of the effective dates of this Ordinance and the implementing Resolution.

SECTION 7.0. AUTHORIZED EXPENDITURE OF SDC's

- 7.1. Reimbursement fees shall be spent only on capital improvements associated with the systems for which the fees are assessed including expenditures relating to repayment of indebtedness.
- 7.2. Improvement fees shall be spent only on capacity increasing capital improvements, including expenditures relating to repayment of debt for such improvements. An increase in system capacity may be established if a capital improvement increases the level of performance or service provided by existing facilities or provides new facilities. The portion of such improvements funded by improvement fees must be related to current or projected development.
- 7.3. System development charges shall not be expended for costs associated with the construction of administrative office facilities that are more than an incidental part of other capital improvements.
- 7.4. Any capital improvement being funded wholly or in part with SDC revenues shall be included in the Capital Improvement Plans adopted by the City as set forth in Section 2.0 of this Ordinance as may be modified, revised, amended or updated .

Section 7.0. Authorized Expenditures; Contd.

- 7.5. Notwithstanding Subsections 7.1 and 7.2 of this Section, SDC revenues may be expended on the direct costs of complying with the provisions of ORS Chapters 223.297 to 223.314, including the costs of developing SDC methodologies and providing an annual accounting of SDC expenditures.

SECTION 8.0. DEPOSIT AND ACCOUNTING OF SDC REVENUES

- 8.1. SDC revenues shall be deposited only in accounts designated for such moneys.
- 8.2. The City shall provide an annual accounting for SDC's showing the total amount of SDC revenues collected for each system and the projects that were funded thereby.
- 8.3. Copies of the annual accounting reports for SDC's shall be available for public inspection at the offices of the City Manager, City Hall, 400 NE 3rd Street, Prineville, Oregon.

SECTION 9.0. CONTESTING SDC's METHODOLOGIES OR EXPENDITURES

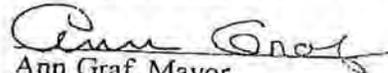
- 9.1. Any legal action intended to contest the adoption of System Development Charges and the methodologies used for calculation the SDC's shall be filed within sixty (60) days following City Council adoption of a Resolution adopting SDC's and the methodologies therefor and shall be by Writ of Review as provided in ORS Chapters 34.010 to 34.100 and not otherwise.
- 9.2. No legal action intended to contest the methodology used for calculating a SDC shall be filed after 60 days following adoption or modification of the SDC Resolution or methodologies therefor by the City Council.
- 9.3. The City shall, by City Council Resolution, adopt administrative review procedures by which any citizen or other interested person may challenge an expenditure of SDC revenues. Such procedures shall provide that such a challenge must be filed within two years of the expenditure of the SDC revenues. The decision of the City Council shall be reviewed only as provided in ORS Chapters 34.010 to 34.100 and not otherwise. Such administrative review procedures shall be adopted prior to the expenditure of any SDC revenues.

SECTION 10.0. ENACTMENT

This Ordinance shall be in full force and effect thirty (30) days from and after its approval by the City Council and the Mayor.

APPROVED BY THE CITY COUNCIL ON THE 28th DAY OF December, 2000.

APPROVED BY THE MAYOR ON THE 28th DAY OF DECEMBER, 2000.


Ann Graf, Mayor

ATTEST:


City Manager

12-28-00
Date

D

Appendix 12.4-D (Omitted - previously adopted)

Code Amendments

***Recommended Revisions to Title 10, Umatilla
Zoning Code***

***Recommended Revisions to Title 11, Umatilla
Land Development Code***

E

Appendix 12.4-E

Inter-Jurisdictional Agreements

Background Information

Recommendations for the Umatilla Pedestrian and Bicycle Plan

Background Information

One of the most common methods for neighboring jurisdictions use to cooperate is entering into agreements. These agreements may take a variety of forms, ranging from the informal understood contract, most commonly called a Memorandum of Understanding (MOU), to more formal Memorandum of Agreement (MOA), to the most formal intergovernmental agreement (IGA). The three basic types of agreements are described as follows:

- **Understood Contract:** Its most common use occurs between two smaller neighboring towns or a town and the county or special district. This usually takes the form of a MOU. Typically, a MOU has no definite contract but is a statement of an informal understanding. For example, an informal arrangement might be set up between a city and county under which the city agrees to remove snow or sweep county roads that are within the city. An example of a MOU (Lewis and Clark Commemorative Trail) is attached to this memorandum.
- **Service Contract:** Under this arrangement, one jurisdiction contracts with another to provide one or more services for a stated amount. The terms of the contract are negotiated and formalized in a written agreement. One city or other entity is the supplier of the service and the other pays for the service. This is the most common method of intergovernmental contracting. Using the previous example, the county would pay the city an agreed-upon fee for sweeping its streets. An example of a MOA (City of Bend & COCAAN) is attached to this memorandum.
- **Joint Agreement:** This method is distinguished from the service contract in that responsibility for the performance of a particular function or the operation and construction of a facility would be shared through the creation of an administrative vehicle to handle service responsibilities; e.g., a board consisting of representatives of each participating governmental unit (this can be the existing City Council or similar body). An example IGA (City of Bend & Bend Metro Park and Recreation) is attached to this memorandum.

The joint agreement may be spelled out through a contract, generally authorized by ordinance, following procedures established in the Oregon Administrative Rules, which spell out the details of local discretion. This approach leaves a good deal of flexibility so that local officials can tailor the program to reflect their own needs and sensitivities. IGAs are most often used for real construction projects or provision of long-term services. In Oregon, cities and counties may have an IGA to determine which jurisdiction governs the Urban Growth Boundary area. Projects shared by ODOT and a city will also typically have a formal IGA,

Projects to improve conditions for pedestrians and bicyclists often cross jurisdictional boundaries and have one of the types of agreements outlined above. Coordination between jurisdictions is a key component for successful projects. The issue of intergovernmental coordination takes on greater significance in areas, such as Umatilla, that have one or more agencies that could potentially participate in projects, each with its own policies and budgets. In Umatilla, the major affected agencies include the City, Umatilla County, and the Army Corps of Engineers. Other jurisdictions include the Port of Umatilla, Umatilla Tribes, Bonneville Power Administration, Umatilla School District, and West Extension Irrigation District.

**UMATILLA PEDESTRIAN AND BICYCLE PLAN:
RECOMMENDATIONS FOR INTER-JURISDICTIONAL AGREEMENTS**

Recommendations for the Umatilla Pedestrian and Bicycle Plan

The Umatilla Pedestrian and Bicycle Plan includes several projects that have multi-jurisdictional ownership. The following are recommendations for formalizing the relationships between these agencies as pertains to projects identified in the Umatilla Pedestrian and Bicycle Plan.

- The City and County should consider formalizing the existing verbal agreement to participate in improving the 1.2 miles at the north end of Powerline Road with curbs, sidewalks and bikelanes.
- Also related to Powerline Road improvements, the City should consider formalizing the agreement between the private land developers and the City for contributions to improvements along the southern portion of Powerline Road. It may be beneficial to connect the timing of improvements or contributions to improvements to the number of units developed in each phase of development or similar method. Because of the effect of the planned development on South Hill on Powerline Road, it may be appropriate to involve the County in this process.
- The City should maintain its existing MOU to establish the Lewis and Clark Commemorative Trail.
- The City should develop an IGA with ODOT to bring the pedestrian crossing facilities at the Crossroads Intersection to ODOT's basic standards. The City may contribute such items as removal of concrete barriers in exchange for ODOT providing correct access (curbs, sidewalk, ADA ramp) to the pedestrian push buttons.
- The City should establish an IGA with the Army Corps of Engineers to provide and maintain an unpaved hard surface path between Brownell Blvd. and Spillway St. along Third St.
- The City and the Army Corps of Engineers should establish a MOU to provide right-of-way or easement, development of a surface, and maintenance for the two trails in the McNary area (Devore extension and Riverside trail).
- The City should set up a Stakeholder Committee to develop plans and, eventually, an IGA between the City, Army Corps of Engineers, and the Umatilla Tribes to provide public access to the Old Town area. The stake holder committee should include a representative of the Umatilla Tribes, Army Corps of Engineers, City of Umatilla, and Chamber of Commerce.

F

Appendix 12.4-F

Traffic Analysis

Traffic Count Update (Preliminary)

TRAFFIC COUNT UPDATE

During the course of the Umatilla Pedestrian and Bicycle Plan development, ODOT requested that traffic counts be updated at several intersections along Highway 730 to determine if changes in traffic could potentially affect the outcome of the Plan. ODOT conducted the counts at US 730 and Umatilla River Road, US 730 and Brownell Blvd., and US 730 and Powerline Road in the Spring of 2003. This data was provided to David Evans and Associates, Inc. (DEA), where it was analyzed. The results are shown in Table 1.

Table 1 - Intersection Performance Summary

Intersection	Traffic Control	Critical Approach	LOS	V/C
US 730 and Umatilla River Road	Unsignalized	Northbound Left	F	1.42
US 730 and Brownell Blvd.	Signalized	Westbound Left	E	0.58
US 730 and Powerline Road	Unsignalized	Northbound	E	0.74

Abbreviations: LOS = Level-of-Service, V/C = Volume-to-Capacity Ratio

The results of this survey show a significant increase in traffic over previous traffic counts done in 1998 by Kittelson and Associates, Inc. (KAI), as shown in Table 2. It is unclear whether these increases reflect an actual increase in traffic or are an artifact of different analysis techniques, or some combination of these.

Table 2 - Comparison of 1997 and 2003 Traffic Counts

Intersection	Traffic Control	Critical Approach	1997 ¹		2003 ²	
			LOS	V/C	LOS	V/C
US 730 & Umatilla River Rd	Unsignalized	Northbound	C	0.35	F	1.62
US 730 & Brownell Blvd.	Signalized	Westbound Left	C	0.3	E	0.58
US 730 & Powerline Rd	Unsignalized	Northbound	B	0.12	E	0.74

1. *Kittelson Assoc., Umatilla*

2.. *Counts taken by ODOT in February 2003, analyzed by David Evans and Associates, Inc.*

Abbreviations: LOS = Level-of-Service, V/C = Volume-to-Capacity Ratio

There are several reasons why the analyses conducted by DEA and KAI result in significantly different volume-to-capacity (V/C) ratios and levels of service (LOS) for the three intersections in the City of Umatilla. These are explained below:

1. Traffic Volumes

The traffic volumes used by DEA for the capacity analysis are significantly higher than those used by KAI. The traffic volumes on US 730 that were used by DEA are roughly 20% to 100% higher than those that were used by KAI. The traffic volumes on the

sidestreets that were used by DEA are roughly 35% to 300% higher than those that were used by KAI.

The most likely reason for the discrepancy in the traffic volumes is that DEA used a 30th highest hour analysis and KAI did not. ODOT now requires that capacity analysis on state highways be performed for the 30th highest hour (also known as the Design Hour Volume).

For this analysis, ODOT provided 24-hour manual turning movement counts that were conducted in January 2003. DEA converted the 24-hour January count to a 30th highest hour count using data from ODOT's permanent Automatic Traffic Recorder (ATR) number 30-002, which is located on US 730, 0.2 miles east of US 395.

First, the 24-hour January count was converted to a 2003 Average Daily Traffic (ADT) volume by applying a seasonal adjustment factor. According to the ATR data, January traffic volumes represent 76 percent of ADT volumes. Therefore, the 24-hour January traffic volumes were divided by 0.76 to convert them to 2003 ADT volumes.

Then, the 2003 ADT volumes were converted to 2003 30th highest hour volumes. According to the ATR data, the 30th highest hour volumes represent 10.3 percent of ADT volumes. Therefore, the 2003 ADT volumes were multiplied by 0.103 to convert them to 2003 30th highest hour volumes. KAI used PM peak hour traffic counts from May 1997, which were not seasonally adjusted and were not converted to 30th highest hour volumes in their analysis.

A second reason for the discrepancy in the traffic volumes is the different analysis years. DEA analyzed conditions for the year 2003. KAI analyzed conditions for the year 1997. According to the City of Umatilla TSP (Table 6 on page 37), traffic volumes in the study area were predicted to increase at 5% per year between the years 1997 and 2002, and at 3% per year between the years 2002 and 2007. Applying those growth rates to year 1997 traffic volumes would result in year 2003 traffic volumes that would be roughly 30% higher than those in the year 1997.

A third reason for the discrepancy in the traffic volumes is the truck factor. According to the ATR data, roughly 40% of the traffic on US 730 is comprised of trucks. Therefore, DEA used a truck factor of 40% in the capacity analysis. KAI provided no explanation of what (if any) truck factor was applied in the capacity analysis.

2. Lane Configurations

The lane configurations used by DEA at two of the intersections are slightly different than those used by KAI.

At the intersection of US 730 and Umatilla River Road, DEA used a one-lane approach (shared left/right turn lane) on the northbound approach (the critical approach). KAI used a two-lane approach (separate left and right turn lanes) on the northbound approach. Substituting a two-lane approach into DEA's analysis returns a slightly better V/C ratio and LOS; however, the intersection still operates with a V/C ratio over 1.00 and LOS F.

At the intersection of US 730 and Brownell Road, DEA used a one-lane approach (shared left/through/right lane) on the northbound approach. KAI used a two-lane approach (separate left and through/right lanes) on the northbound approach. Substituting a two-lane approach into DEA's analysis has no effect on the V/C ratio and LOS because the critical turn movement at this intersection is the westbound left turn.

3. Signal Phasing

KAI provided no explanation of what traffic signal phasing at the intersection of US 730 and Brownell Road was used in the TSP. DEA assumed that the signal phasing consisted of a 90-second, three phase cycle consisting of: protected east-west left turns, east-west through and right, and north-south left, through, and right. DEA optimized the signal timing based on the existing traffic volumes.

CONCLUSIONS

ODOT is currently evaluating the data and analyses for this study. If the DEA analysis is accurate, this means that traffic has significantly increased along Highway 730 and its side streets since the Umatilla TSP was completed. However, the TSP identified improvement projects for all three of these intersections. No additional projects are proposed in the Umatilla Pedestrian and Bicycle Plan that would alter the recommendations of the TSP.

G

Appendix 12.4-G

Engineering Design Standards

- G.1 Pedestrian Facilities
- G.2 On-Road Bicycle Facilities
- G.3 Multi-Use Paths
- G.4 Signs, Pavement Markings and Signals

Standard Sidewalk Dimensions

Width (varies by type of street, larger number preferred):

- Local = 5 to 6 ft
- Commercial area outside downtown = 8 to 10 ft
- Downtown = 10 to 12 ft

Horizontal Clear Space = 3 to 5 ft

Vertical Clear Space = 7 to 8 ft

Planting Strip (buffer zone) Between sidewalk and street = 4 to 8 ft

Surface vertical change (abrupt, such as sidewalk cracks) = 1/4 in. maximum

Surface gap = 1/2 in. maximum

Slope in direction of travel = 5 percent maximum (1:20)

Cross-slope across direction of travel = 2 percent maximum (1:50)

Standard Bikeway Width

(One-way travel; recommended width depends on motor vehicle speed and volume.)

Bike Lane = 4 to 6 ft

Paved Shoulder = 4 to 6 ft

Wide Curb Lane (shared by cars and bikes) \geq 14 to 16 ft

G.1 Pedestrian Facilities

G.1.1 Sidewalks

Location

Commercial centers and downtowns: both sides of all streets.

Major residential streets: both sides.

Local residential streets: preferably both sides, but at least one side.

Low-density residential (1-4 units/ac): preferably both sides, but at least one side with shoulder on other side.

Rural residential (less than 1 unit/ac): preferably one side with shoulder on other side, but at least a shoulder on both sides.

Width

Local streets outside central business district:
1.8 to 2.4 m (6 to 8 ft) [1.5 m (5 ft) minimum].

Commercial areas outside central business district:
2.4 to 3.0 m (8 to 10 ft) [1.5 m (6 ft) minimum].

Central business areas including downtowns and commercial centers:

3.0 m (10 ft) [2.4 m (8 ft) minimum];

More width in areas of high pedestrian activity; sidewalk cafes and transit stops.

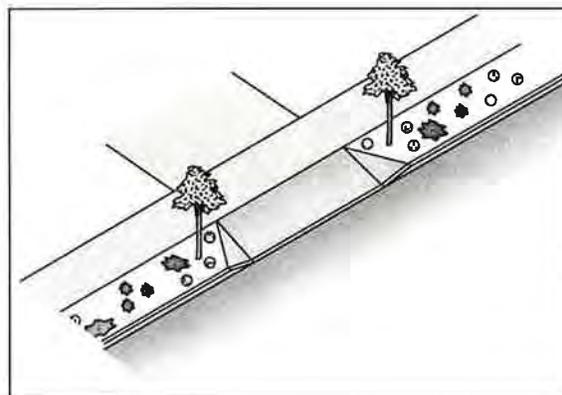
Buffer zone (aka landscape strip) between sidewalk and roadway:

0.6 to 1.2 m (2 to 4 ft) on local and collector streets;

1.5 to 1.8 m (5 to 6 ft) on arterial and major streets;

1.5 to 2.4 m (5 to 8 ft) with street trees, high speeds, high truck use, or where space exists;

1.5 m (5 ft) minimum for uncurbed sidewalk including 0.9 m (3 ft) minimum green strip.



Buffer zone enhances the walking environment and allows the sidewalk to remain level at driveways.

Horizontal Clearance

Accessibility:

1.5 m (5 ft) [0.9 m (3 ft) minimum] unobstructed width.

Additional 0.6 to 0.9 m (2 to 3 ft) for shoulder-high barriers such as walls, railings and fences.

On-street parking:

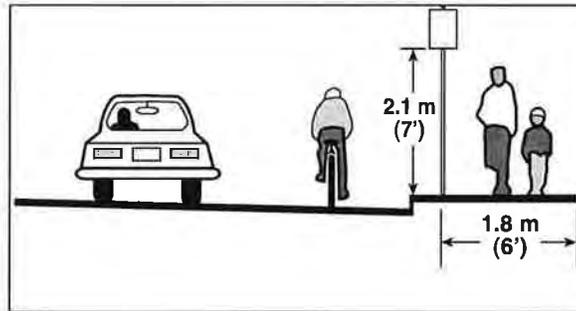
0.6 m (2 ft) for parallel parking stalls;

0.9 m (3 ft) for angled or perpendicular parking stalls.

Ditch or swale:

0.6 m (2 ft) minimum.

Ditch side slope should not exceed a 3:1.



Sidewalk clearances. Add an additional 2' horizontal clearance to shoulder-high barriers such as walls and fences.

Vertical Clearance

2.4 m (8 ft) to continuous structures such as undercrossings and permanent canopies.

2.1 m (7 ft) to spot items such as traffic signs and tree branches.

Surface

Minimum slope consistent with roadway.

5% (1:20) running slope.

2% maximum cross-slope including driveways.

Stable, firm, and slip-resistant.

6 mm (0.25 in.) maximum vertical change in level; 13 mm (0.5 in.) if beveled.

13 mm (0.5 in.) maximum gratings/gaps in direction of travel.

65 mm (2.5 in.) maximum gap at rail flangeway.

Continuity across driveways.

Sidewalk Buffer

Local or collector streets: 0.6 to 1.2 m (2 to 4 ft).

Arterial or major streets: 1.5 to 1.8 m (5 to 6 ft).

Street trees or high speeds: 1.5 to 2.4 m (5 to 8 ft).

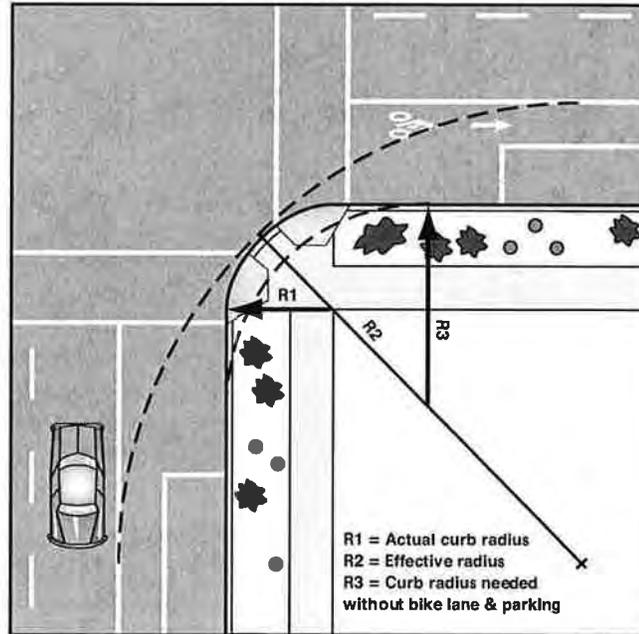
G.1.2 Corner Radius

No turning movements: 1.2 m (4 ft).

On-street parking or bike lanes: 1.5 m (5 ft).

Minor street with minimal truck and bus turning: 4.5 to 7.5 m (15 to 25 ft).

Major street with occasional trucks: 9.0 m (30 ft).



Sharp corners shorten and align crosswalks, improve pedestrian visibility, and reduce vehicle turning speed.

On-street parking and bike lanes permit a tighter corner, often as little as a 25 ft radius.

G.1.3 Curb Ramps

One at each crossing perpendicular to curb line.

Within crosswalk at foot of ramp.

No exposure to moving traffic lane.

Maximum running slope:

1:12 (8.33%) in new construction.

1:10 (10%) for 15 cm (6 in.) rise in existing retrofit.

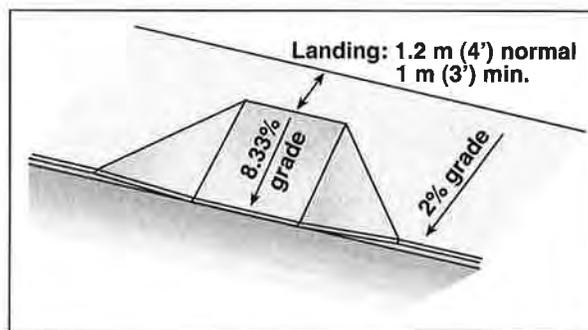
1:8 (16.67%) for 75 mm (3 in.) rise in historic retrofit.

1:48 (2%) maximum cross-slope.

1:20 (5%) maximum counter-slope at gutter.

1:10 (10%) side flare slope.

0.9 m (3 ft) minimum width.



Curb ramp clearance, grade and crossslope.

Length:

0.9 m (3 ft) long if toe room available.

1.2 m (4 ft) long if constrained.

1.5 m (5 ft) long if between ranges.

Level landing at top and bottom:

1.5 m (5 ft) [1.2 m (4 ft) minimum] landing length at perpendicular curb ramp.

1.5 m (5 ft) minimum landing length at parallel curb ramp.

1:48 (2%) maximum slope in the two perpendicular directions of travel.

Flush (no lip) connection at street.

0.6 m (2 ft) detectable warning full width of the curb ramp.

G.1.4 Crosswalks

Location (Marked)

All open legs of a signalized intersection.

Across a roadway approach controlled by a STOP or a YIELD sign if there is a sidewalk or a shoulder on both sides of the approach.

At intersections on roadway approaches not regulated by signals, STOP signs or YIELD signs if the speed limit is 60 km/h (40 mph) or less, and there are sidewalks or shoulders on both sides of the approach.

Mid-block as needed.

Unmarked crosswalks at other intersections.

Striping

2.4 m (8 ft) [1.8 m (6 ft) minimum] width.

Extra width for high pedestrian volumes or to increase conspicuity of crossing.

Zebra-type patterns:

300 to 600 mm (12 to 24 in.) wide stripes.

300 to 600 mm (12 to 24 in.) stripe spacing.

Stop lines (when used) 3.0 m (10 ft) [1.2 m (4 ft) minimum] in advance.

Use curb extensions with on-street parking.

No parking within 6 m (20 ft) from crosswalk without curb extension.



Zebra crosswalks are more visible to drivers than standard double lines.

G.2 *On-Road Bicycle Facilities*

G.2.1 *Bicycle Lanes*

Location

General: one-way facilities not physically separated from travel lanes.

Urban areas: both sides of most highways, arterial streets and collector streets (generically referred to as “streets” below).

Rural areas: typically not used (paved shoulders or shared lanes preferred).

Width

Curbed street without on-street parking:

1.8 m (6 ft) [1.2 m (4 ft) minimum];

1.8 m (6 ft) where use is high, in-line skaters are expected, or grades exceed 5%.

Curbed street with on-street parking:

1.8 m (6 ft) [1.5 m (5 ft) minimum];

1.8 m (6 ft) where use is high, in-line skaters are expected, or grades exceed 5%.

Uncurbed street without parking:

1.8 m (6 ft) where use is high, in-line skaters are expected, or grades exceed 5%.

1.8 m (6 ft) where speeds exceed 55 km/h (35 mph).

1.5 m (5 ft) where speeds are 55 km/h (35 mph) or less.

1.2 m (4 ft) minimum.

Uncurbed street with parking:

2.1 m (7 ft) where use is high, in-line skaters are expected, or grades exceed 5%.

2.1 m (7 ft) where speeds exceed 55 km/h (35 mph).

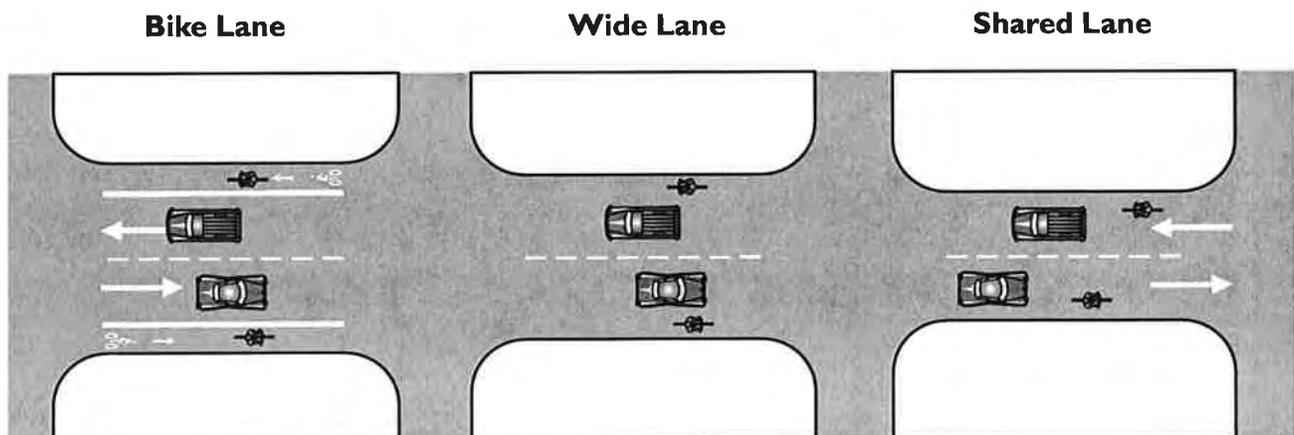
1.8 m (6 ft) where speeds are 55 km/h (35 mph) or less.

1.5 m (5 ft) minimum.

Add 0.3 m (1 ft):

on bridges, or

where there are 30 or more heavy vehicles per hour in the outside lane.



Striping

150 mm (6 in.) solid white stripe standard; or (optional) 200 mm (8 in.) solid white stripe.

On-street parking (right side of lane) marked with 100 mm (4 in.) solid white stripe or tick marks.

Do not extend striping through intersections (except across from T-intersection) and crosswalks.

Dotted guidelines [0.6 m (2 ft) dots and 1.8 m (6 ft) spaces] may be extended through complex intersections.

At intersections controlled by signals or stop signs and where right-turn lanes exist, use a dotted line with 0.6 m (2 ft) dots and 1.8 m (6 ft) spaces for the approach in lieu of solid striping for 15 to 60 m (50 to 200 ft).

Where sufficient width exists, place a separate through bicycle lane between the right-turn lane and the through travel lane.

At ramps and dedicated right-turn slip lanes, use a minimal turning radius or a compound curve to reduce entry speed.

Marking

Bicycle symbol with directional arrow on pavement; or (optional) word legend "BIKE ONLY" with directional arrow.

Symbol with arrow on far side of each intersection no closer than 20 m (65 ft) from intersection; additional symbols placed periodically along uninterrupted sections.

Signing

MUTCD signs R3-16 and R3-17 designate the presence of a bike lane. Many other signs are available for special situations; refer to MUTCD Part 9 and the Oregon Bicycle and Pedestrian Plan.

G.2.2 Wide Curb Lanes

Urban streets with insufficient width for bike lanes.

4.0 m (13 ft) wide without on-street parking and 4.3 m (14 ft) wide with on-street parking.

Where 4.6 m (15 ft) or more width is available, consider striping bicycle lanes or shoulders.

G.2.3 Paved Shoulders

Location

Rural: most roads and highways.

Urban areas: both sides of lower volume major streets where bike lanes are not appropriate.

Width

1.5 m (5 ft):

on steep up-grades where bicyclists require maneuvering room or where downgrades exceed 5% for 1 km (0.6 mi);

where there are 30 or more heavy vehicles per hour in the outside lane; or

where motor vehicle posted speeds exceed 80 km/h (50 mph).
1.2 m (4 ft) against guardrail, curb or other roadside barrier.
1.0 m (3 ft) minimum.

Striping

100 mm (4 in.) solid white edge line.

G.2.4 Shared Lanes

Roads are as they exist with no special provisions for bicyclists. Common on neighborhood streets, low-volume (< 500 ADT) rural roads and highways, and commercial and downtown centers with constrained right-of-way.

G.2.5 Marginal Improvements

Add usable riding surface to right of roadway edge stripe by:
paving extra width—as little as 0.6 m (2 ft) extra width is beneficial,

reducing travel lane width,
eliminating unneeded travel lanes, or
eliminating parking on one or both sides.

Bicycle-safe drainage grates.

Bicycle-friendly railroad crossings.

Pavement surfaces free of irregularities.

Bicycle-oriented signs and bicycle-sensitive traffic detection devices.

Roadway maintenance including removal of accumulated dirt, broken glass and other debris.

Reducing and enforcing posted speed limits.

G.3 Multi-Use Paths

G.3.1 Location

Within highway right-of-way or within an independent right-of-way. Physically separated from motorized traffic by open space or barrier.

Shortcuts between neighborhoods, parks, schools, and business areas.

Access to areas served only by controlled-access highways where pedestrians and bicycles are prohibited; otherwise, not a substitute for on-road facilities.

Access to areas not well served by roads such as streams, lakes, rivers, greenways, abandoned or active railroad and utility rights of way, school campuses, and planned unit developments and community trail systems.

G.3.2 Path Design

Width

Paved shared use:

3.0 to 4.3 m (10 to 14 ft) [2.4 m (8 ft) minimum (rare)];

4.3 m (14 ft) or more with separated bicycle, horse or running lanes.

Unpaved shared use: 2.4 to 3.0 m (8 to 10 ft) [2.4 m (8 ft) minimum].

One-way shared use (rare): 1.8 m (6 ft) [1.5 m (5 ft) minimum].

Paved pedestrian only: 1.8 m (6 ft) [1.5 m (5 ft) minimum].

Shoulders

Width on both sides: 0.6 m (2 ft).

Side slope: 4%.

Recovery Area

If side slope greater than 1:4:

1.5 m (5 ft) recovery area at maximum 1:6 slope from edge of path; or barrier.

Clearance

Lateral: 1.8 m (6 ft) [1.5 m (5 ft) minimum].

Vertical 3.0 m (10 ft) [2.5 m (8 ft) minimum, 3.6 m (12 ft) minimum for equestrians].

Separation from Roadway

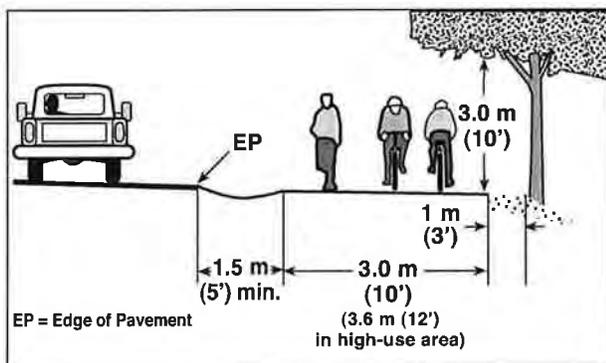
Curbed section: 1.2 m (4 ft) minimum.

Uncurbed section: 1.5 m (5 ft) minimum, at least 0.9 m (3 ft) of which is a buffer zone or landscape strip.

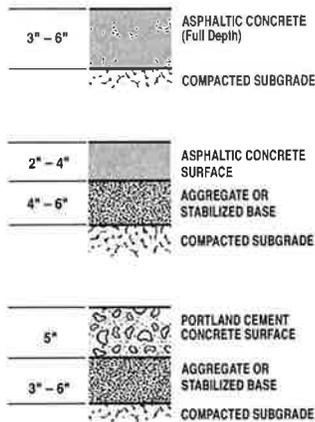
Surface

Stable, firm, and slip-resistant.

Standard multi-use path dimensions.



Multi-Use Path Pavement Alternatives



Source: Oregon Bicycle and Pedestrian Plan

At unpaved roadway or driveway crossings of paved paths, pave the roadway or driveway at least 3.0 m (10 ft) on each side of crossing.

Unpaved surface: 10 cm (4 in.) layer of granular stone no larger than 8 mm (3/8 in.) in diameter over prepared subgrade of at least 15 cm (6 in.) of crushed gravel (top layer) and 20 cm (8 in.) of gravel (bottom layer), roller compacted.

Grade

5% for up to 240 m (800 ft).

8% for up to 90 m (300 ft).

11% or more for up to 15 m (50 ft).

Running grade over 8.33% less than 30% of the total path length.

Cross Slope

Slopping in one direction instead of crowning preferred.

Paved: 2% maximum.

Unpaved: 5% maximum.

Superelevation: 2% maximum.

Summary of Surface Materials for Multi-Use Paths

Surface Material	Firmness	Stability	Slip Resistance (dry)
Asphalt	firm	stable	slip resistant
Concrete	firm	stable	slip resistant*
Soil with Stabilizer	firm	stable	Slip resistant
Soil with High Organic Content	soft	unstable	Not slip resistant
Crushed rock (3/4" minus) with Stabilizer	firm	Stable	Slip resistant
Crushed Rock w/o Stabilizer	firm	stable	Not slip resistant
Wood Planks	firm	stable	Slip resistant
Engineered Wood Fibers – that comply with ASTM F1951	Moderately firm	Moderately stable	Not slip resistant
Grass or Vegetative Ground Cover	Moderately firm	Moderately stable	Not slip resistant
Engineered Wood Fibers that do not comply with ASTM F1951	soft	unstable	Not slip resistant
Wood Chips (bark, cedar, generic)	Moderately firm to soft	Moderately stable to unstable	Not slip resistant
Pea Stone or 1-1/2" minus Aggregate	soft	unstable	Not slip resistant
Sand	soft	unstable	Not slip resistant

Source: Adapted from Federal Highway Administration Designing Sidewalks and Trails for Access, Part II, Best Practices Design Guide.

Design Speed

Paved: 30 km/h (20 mph); 50 km/h (30 mph) for downgrades over 4% for 245 m (800 ft).

Unpaved: 25 km/h (15 mph).

G.3.3 Barriers

Purpose: Safety and security, protection from falls, screening of adjacent uses, separation from adjacent roadway or other uses, vertical or grade separation, or enhanced aesthetics.

Need: Protective barrier use based on clear area, side slope steepness and material, and type of hazard.

Types: Fences, walls, vegetation, guardrails, jersey barrier, and railing.

Retaining walls no closer than 0.6 m (2 ft) from path edge.

Railings should be at least 1.1 m (3.5 ft) high.

G.3.4 Crossings

Marking: Either none, crosswalk stripes, or dotted guidelines.

At-grade:

Mid-block: Not near intersection, angled 75 degrees maximum.

Parallel path: Near intersection

Complex intersection: highly skewed or multiple-leg, often with two-step crossing.

Refuge island:

Necessary with marked crossing of more than 2 lanes.

3.7 m (12 ft) [2.4 m (8 ft) minimum] wide.

Cut-through angled 30 degrees towards oncoming traffic.

G.3.5 Bridges

Width: approach width plus 0.6 m (2 ft) on each side.

Vertical clearance: same as for path.

Loading: H10 or a 10-ton load for a two-axle vehicle.

Approach railing: Extend 4.5 m (15 ft) from end of bridge and flared.

Decking: Transverse (90 degrees to the direction of travel).

G.4 *Signs, Pavement Markings And Signals*

G.4.1 *General Application*

Warranted by use and need per latest Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD).

All signs and markings retroreflective or illuminated.

G.4.2 *Pedestrian Facilities*

Signs

Intended for motorists: warning signs for pedestrian crossings.

Intended for pedestrians: regulatory signs for pedestrian signals; special wayfinding signs.

Intended for all users: most guide signs.



Markings

Crosswalks, detectable warnings and vertical markers per Oregon Bicycle and Pedestrian Plan.

Signals

Timing:

Adult pedestrian clearance interval of 1.2 m/s (4 fps) measured from the curb-to-curb or edge-of-roadway to edge-of-roadway distance.

Child or elderly pedestrian clearance interval of 0.9 m/s (3 fps) measured from the curb-to-curb or edge-of-roadway to edge-of-roadway distance.

Options to address slower walking speeds include:

- increase crossing time,
- decrease crossing distance,
- subdivide crossing distance (medians or refuge islands, with separate pedestrian controls), or
- provide a pedestrian-actuated control that permits extended-time crossing on demand.

Midblock Pedestrian Activated:

Based on MUTCD Warrants 4 (Pedestrian Volume), 5 (School Crossing), or 7 (Crash Experience).

Note if any potential users not reflected in the data because the lack of a signal discourages them from crossing.

Accessibility:

Refer to Section 4G.06 of the MUTCD and U.S. Access Board guidelines.

G.4.3 *On-Road Bicycle Facilities*

Most signs, pavement markings, signals, and delineators for motorists apply to bicycles.

Part 9 of the MUTCD covers specific traffic controls for bicycles.