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

NORTH
(NOT TO SCALE)

LEGEND

URBAN GROWTH BOUNDARY

CITY LIMITS

STUDY AREA

CITY OF UMATILLA, OREGON
TRANSPORTATION SYSTEM PLAN
FEBRUARY 1999

FIGURE
12.1-1

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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, A*lternatives 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 plan**s**. 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

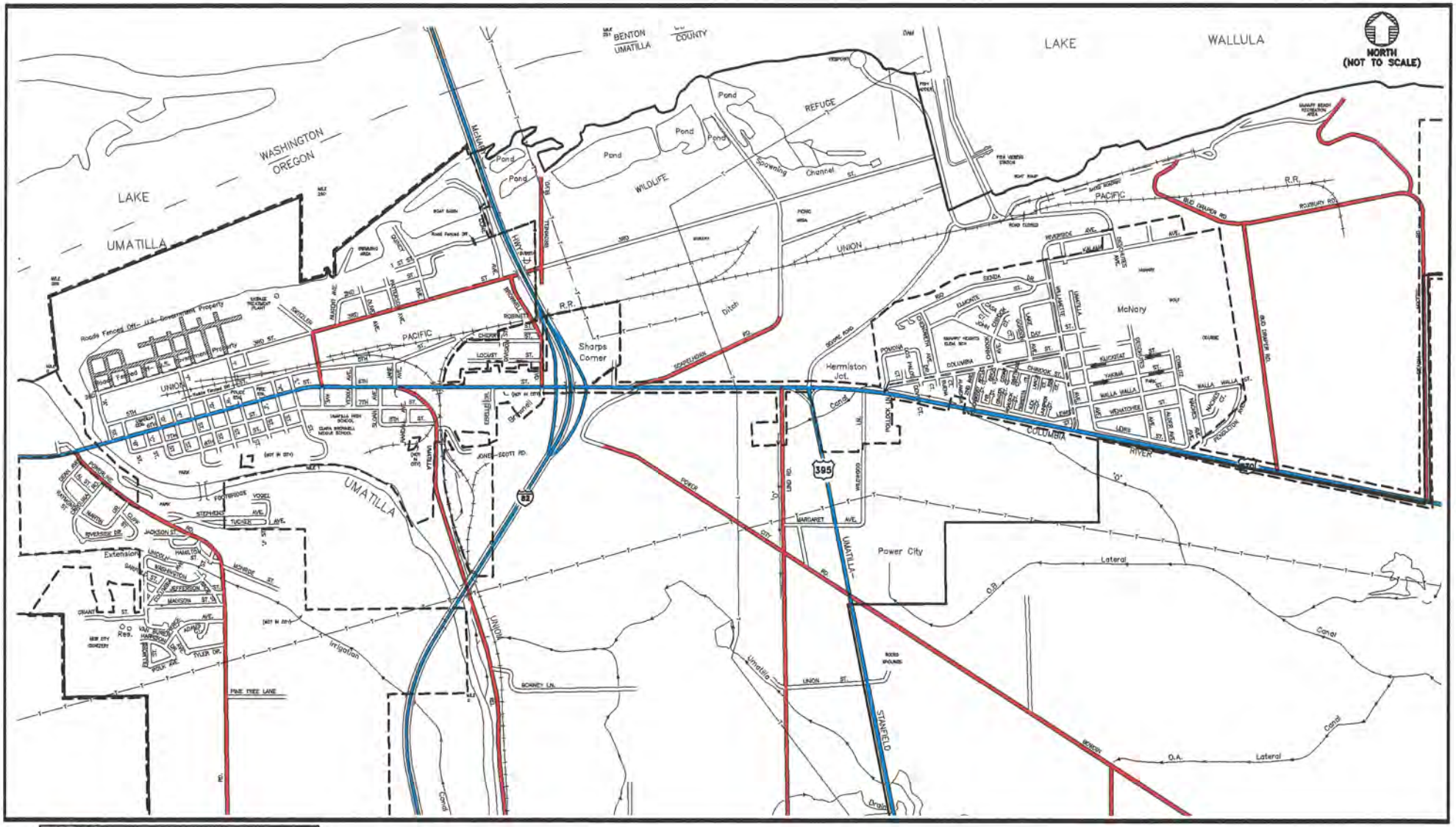
12.2.100 EXISTING ROADWAY TRANSPORTATION SYSTEM

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

CITY OF UMATILLA, OREGON TRANSPORTATION SYSTEM PLAN FEBRUARY 1999	FIGURE 12.2-1

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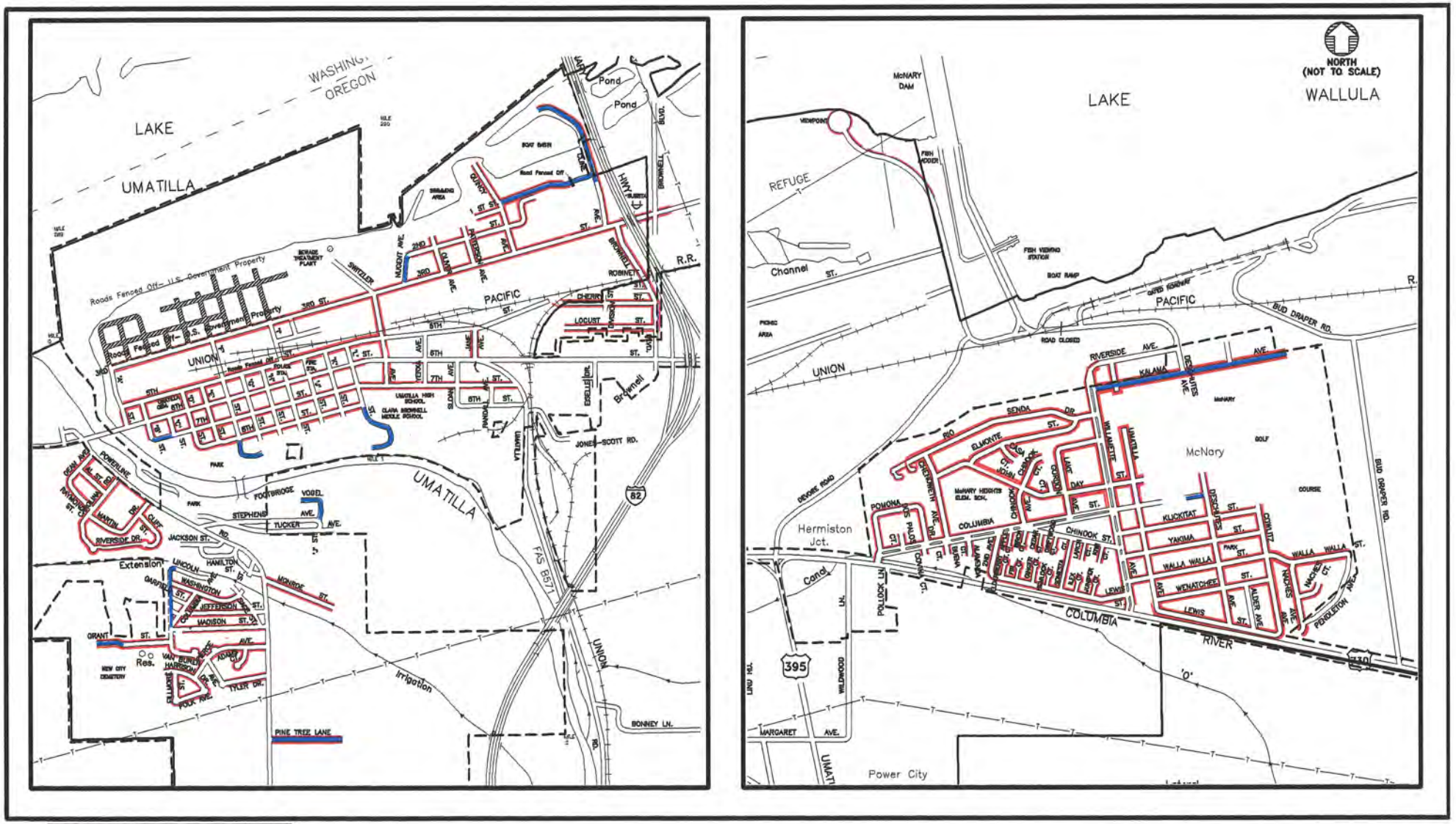


LEGEND

- ON-STREET PARKING
- UNPAVED
- CITY LIMITS
- URBAN GROWTH BOUNDARY
- NO PUBLIC ACCESS

LOCATIONS OF ON-STREET PARKING AND UNPAVED ROADWAYS

CITY OF UMATILLA, OREGON TRANSPORTATION SYSTEM PLAN FEBRUARY 1999	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 S*tatewide 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 S*tatewide* 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

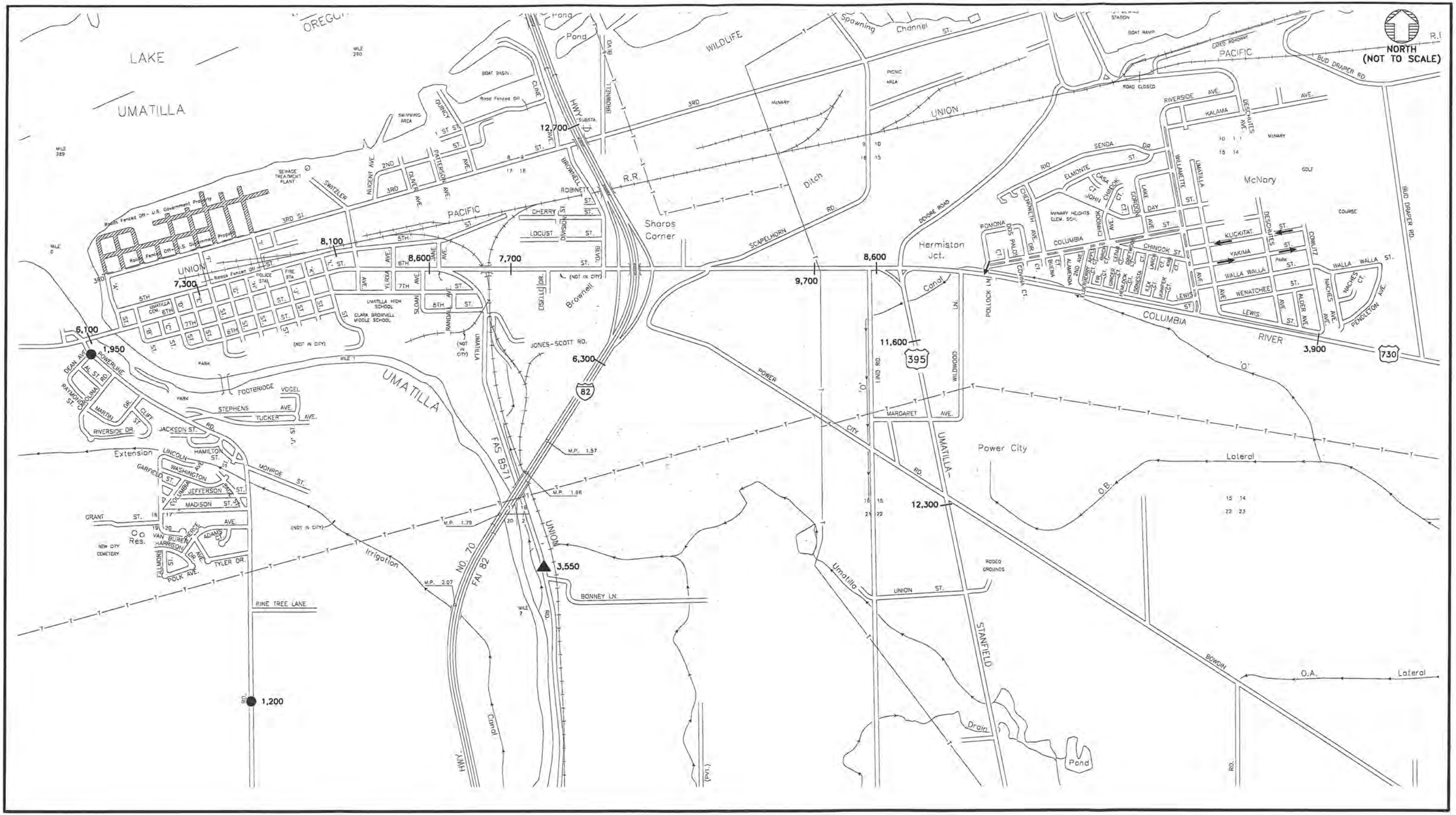
Willamette Avenue is the primary north-south road through the McNary residential area and is the only two-way street that offers a connection to Highway 730 from the McNary Housing Area. Willamette Avenue has a landscaped median between the northbound and southbound lanes and intersects with Highway 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

CITY OF UMATILLA, OREGON TRANSPORTATION SYSTEM PLAN FEBRUARY 1999	FIGURE 12.2-3

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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.

NORTH
(NOT TO SCALE)

LEGEND
- TRAFFIC SIGNAL
- STOP SIGN

EXISTING LANE CONFIGURATIONS AND TRAFFIC CONTROL DEVICES

CITY OF UMATILLA, OREGON TRANSPORTATION SYSTEM PLAN FEBRUARY 1999	FIGURE 12.2-4

2613F06

NORTH
(NOT TO SCALE)

RIVER
BENTON COUNTY
UMATILLA COUNTY
WASHINGTON
OREGON
LAKE
UMATILLA
LAKE
WALLULA
McNARY DAM
REFUGE
WILDLIFE
Pond
Spawning Channel
VIEWPOINT
FISH LADDER
FISH VIEWING STATION
BOAT RAMP
McNARY BEACH RECREATION AREA
ROAD CLOSED
BOAT BASIN
Roads Fenced Off
SWIMMING AREA
SEWAGE TREATMENT PLANT
Roads Fenced Off – U.S. Government Property
PICNIC AREA
McNARY
GOLF COURSE
McNARY HEIGHTS ELEM. SCH.
UMATILLA HIGH SCHOOL
CLARA BRIDWELL MIDDLE SCHOOL
POLICE STA.
FIRE STA.
PARK
FOOTBRIDGE
POWERLINE
Ditch
Canal
R.R.
PACIFIC
UNION
3RD
5TH
6TH
7TH
8TH
ST.
AVE.
BLVD.
RD.
DR.
CT.
LN.
PL.
CIR.
TER.
WAY
ALDER
ALDER AVE
ALISTAIR CT
ALLEN CT
ALMOND CT
ALTA VISTA
ANNE AVE
BIRCH
BLOCK
BRIDGE
BROWNELL
CAMAS
CAMPBELL
CAPELHORN
CASA CHINOOK
CHERRY
CHINOOK
CHINOOK ST
CLINE
COLUMBIA
COMMERCIAL
COMSTOCK
CONDIT
CONDIT LN
COWLITZ
DAY
DEVORE ROAD
DIVISION
DOUGLAS
DUNCAN
EDWARDS
ELEMONTE
ESELUN
FAIRGROUNDS
FAIRWAY
FOWLER
GARDEN
GARDENSMITH AVE
GEORGE
GRANT
HARRISON
HWY 730
JAMES
JOHN DAY
JONES-SCOTT RD.
KALAMA
KLICKITAT
LAKE
LEWIS
LIND RD.
LOCUST
MADISON
MAPLE
MARGARET
MARTIN
MEADOW
MEADOWLARK
MILL
MONTANA
NEWBERRY
OAK
OLIVE
OREGON
PALMER
PARK
PATTERSON
PENDLETON
POMONA
POWER
QUINCY
RANDOLPH
RIDGE
ROBINETT
ROXBURY RD.
SCENIC
SEMINOLE
SENDA
SHERIDAN
SIOUX
SLOAN
SUNSET
SWITZLER
TAMARACK
TUCKER
VERNA
VOGEL
WALLA WALLA
WASHINGTON
WENATCHEE
WILDWOOD
WILLAMETTE
YAKIMA
YOUNG
Sharps Corner
Hermiston Jct.
Brownell
BUD DRAPER RD.
ACCESS TO BEACH
MILE 293
MILE 292
MILE 291
MILE 290
MILE 0
MILE 1
MILE 777
82
395
730

200 → LOS=b ← 370
25 → 80
40 ↓ 50

10 → 15
335 → LOS=c ← 500
5 → 10
<5 ↓ 20
15 <5 20

300 → LOS=c ← 440
90 → 60
100 ↓ 40

340 → LOS=d ← 445
65 → 75
55 ↓ 80

20 → 30
395 → LOS=B ← 580
5 → 15
<5 ↓ 15
45 10 65

420 → LOS=A ← 400
55 → 25
225 <5 180

120 → 150
480 → LOS=d ← 405
20 ↓ 35
<5 <5 35

<5 → 10
240 → LOS=C ← 175
275 → 135
375 ↓ 210
5 30 5

445 → LOS=b ← 195
10 → 5
10 ↓ <5
115 <5 <5

335 → LOS=b ← 15
115 → 80
120 25

10 → 5
130 → LOS=a ← 80
15 5

10 → 5
130 → LOS=a ← 80
5 5

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	FIGURE 12.2-5	K

2613F07

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

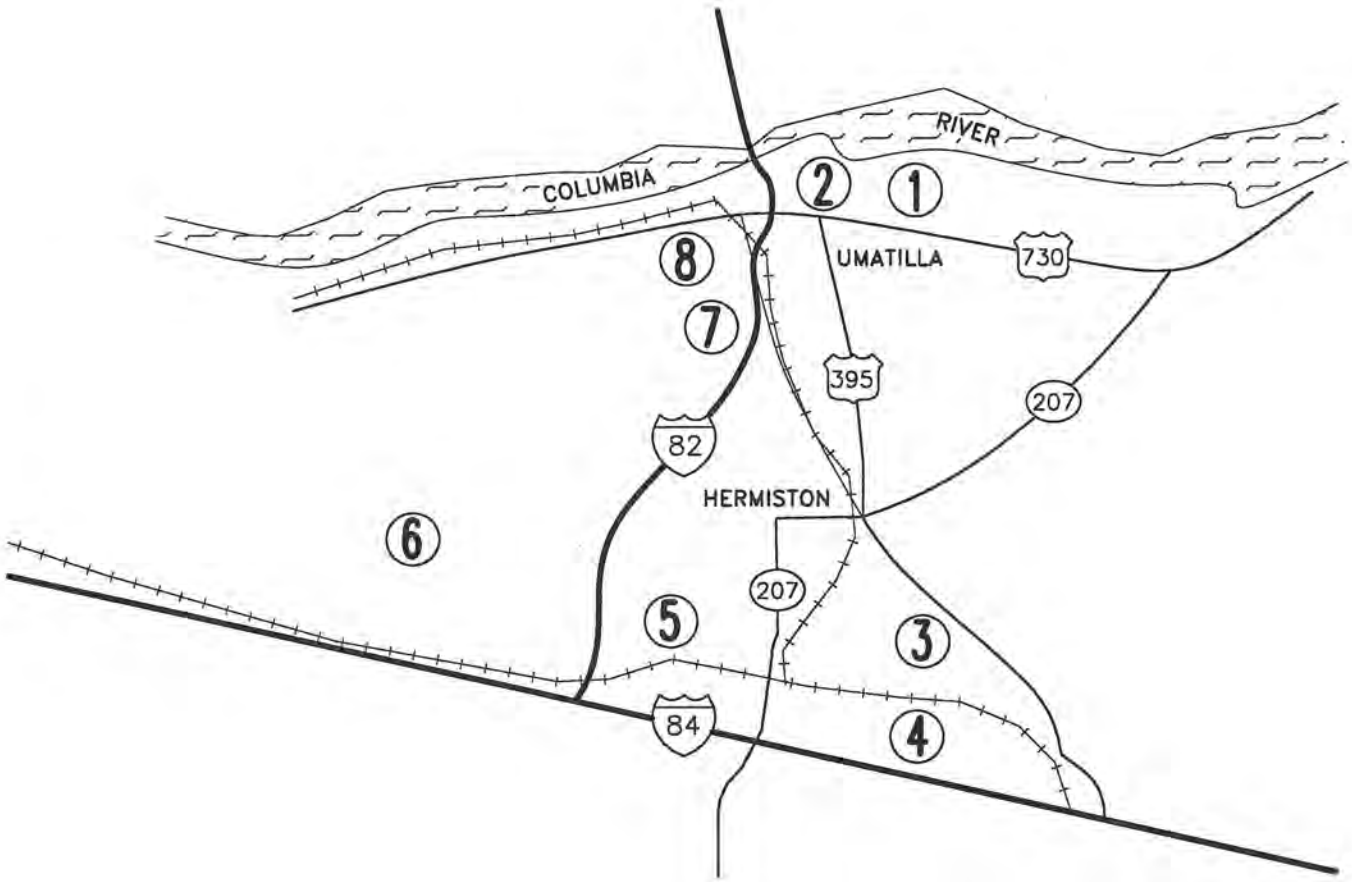
Umatilla area planning staff indicate that the region has experienced unprecedented growth. Conversations with the City's Planning Department and ODOT identified eight potentially significant development projects in the area. Those developments are summarized in Table 12.2-5. It should be noted that 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
2. POTENTIAL RESIDENTIAL HOUSING
3. WAL–MART DISTRIBUTION CENTER
4. UNION PACIFIC RAILCAR REPAIR FACILITY
5. POTENTIAL NEW CONGENRATION PLANT
6. UMATILLA ARMY DEPOT CHEMICAL WEAPONS INCINERATOR
7. HAYDEN RIVER ESTATES
8. RESIDENTIAL HOUSING

LOCATIONS OF ANTICIPATED DEVELOPMENT ACTIVITY

CITY OF UMATILLA, OREGON TRANSPORTATION SYSTEM PLAN FEBRUARY 1999	FIGURE 12.2-6	

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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.

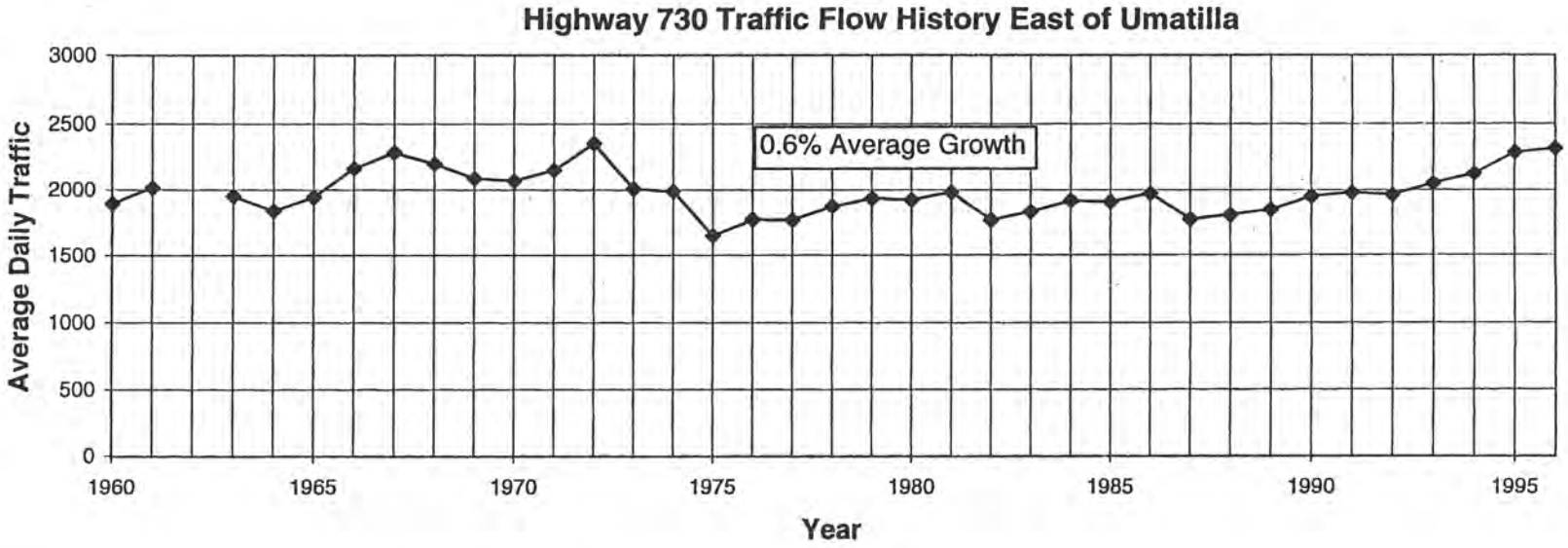
12.2.340 Travel Demand Forecasting Methodology

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

CITY OF UMATILLA, OREGON TRANSPORTATION SYSTEM PLAN FEBRUARY 1999	FIGURE 12.2-7

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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.

NORTH
(NOT TO SCALE)

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

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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) <u>Conclusion</u>

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.

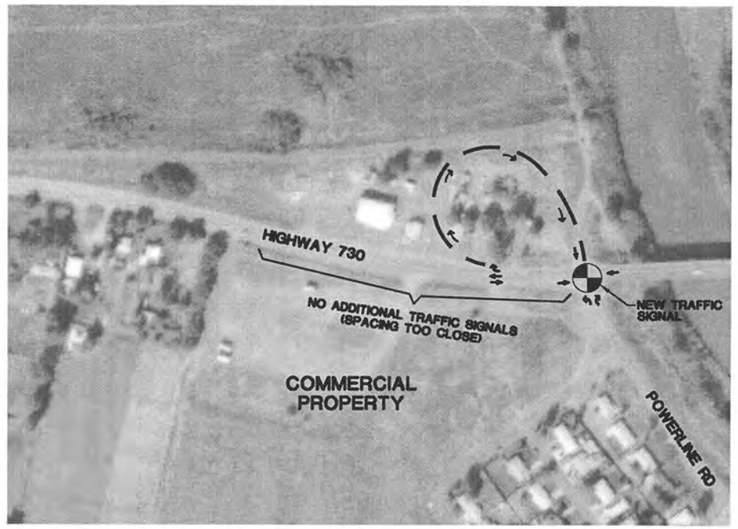
2) Option 2 - Widen/Replace the Highway 730 Bridge Crossing The Umatilla River

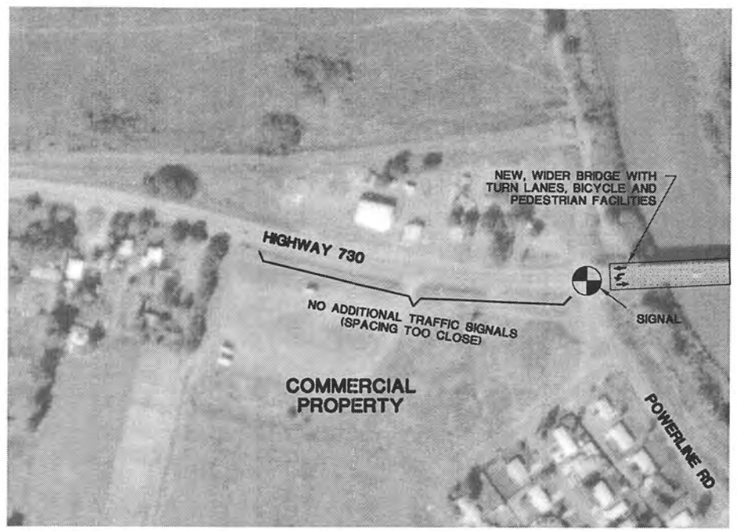
A second potential option that was identified involves either widening or replacing the Highway 730 bridge over the Umatilla River. The existing narrow bridge structure, which was constructed in the 1920's and widened in the 1930's, physically precludes the possibility of providing a westbound left-turn 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.

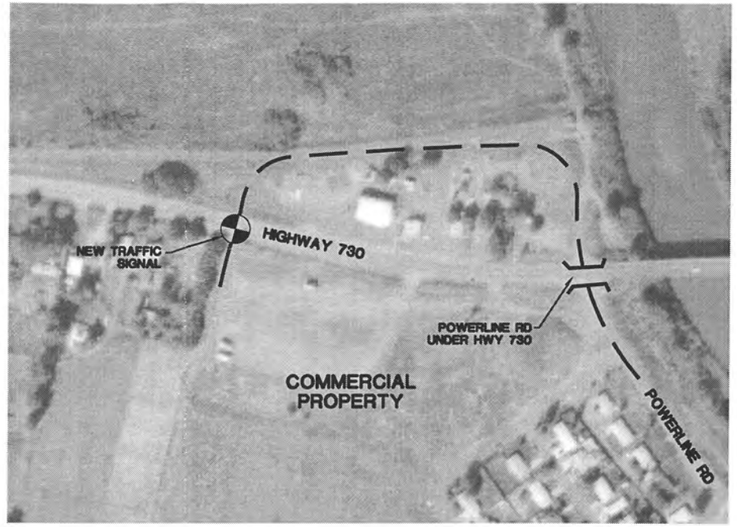
The existing structure has recently been identified by ODOT as exhibiting a marginal load capacity for supporting legal loads. Further, recent bridge inspections by ODOT have revealed cracking and spalling of the concrete, as well as exposed steel reinforcement. Such inspection information suggests that 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.

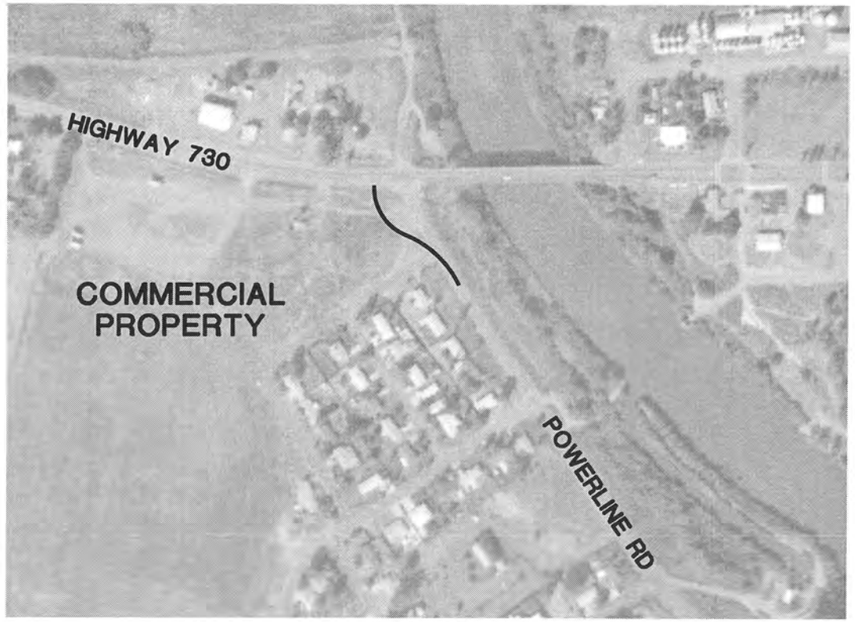
To correct these deficiencies, the existing structure could be widened or replaced with a structure that accommodates a westbound left-turn lane, supplementary queue storage space, and adequate sight distance for vehicles on Powerline Road. As an alternative, a new bridge structure could be constructed 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

CITY OF UMATILLA, OREGON TRANSPORTATION SYSTEM PLAN	FIGURE 12.2-9
FEBRUARY 1999	

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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 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 95th 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

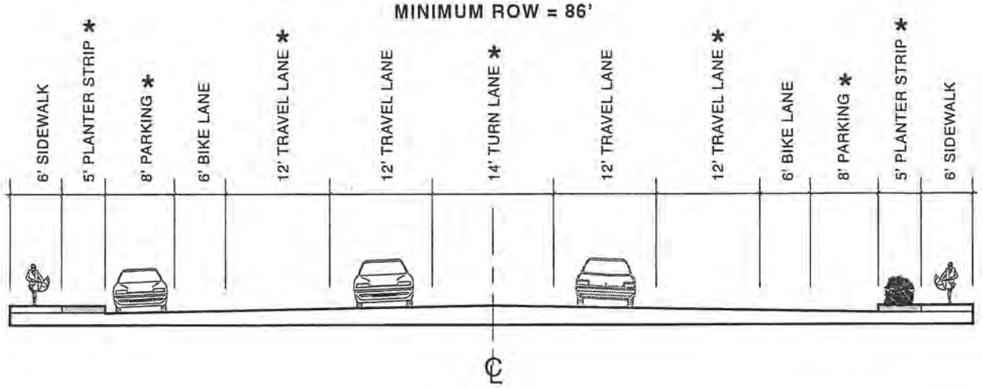
Third Street
I Street
Switzler Avenue
Quincy Avenue
7th Street
Scapelhorn Road
Power City Road
Devore Road
Rio Senda Drive
Willamette Avenue
McNary Beach Access Road

Neighborhood Collectors

Madison Avenue
Stephens Avenue
Columbia Street
Chenoweth Avenue
Walla Walla Street

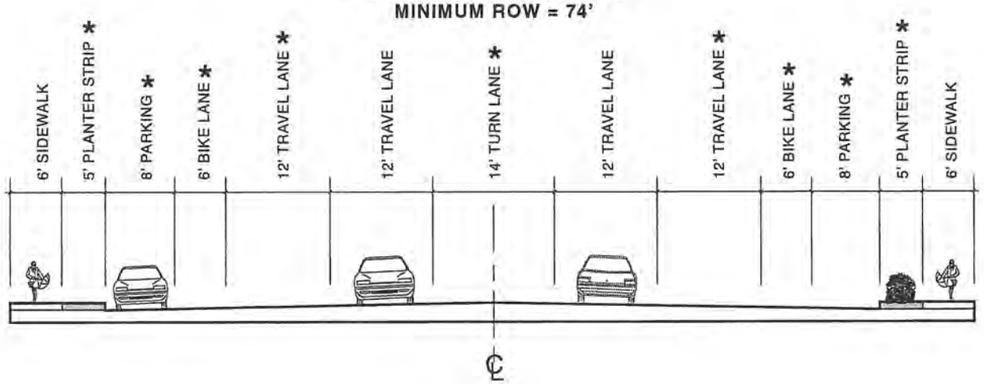
MAJOR ARTERIAL

MINIMUM ROW = 86'



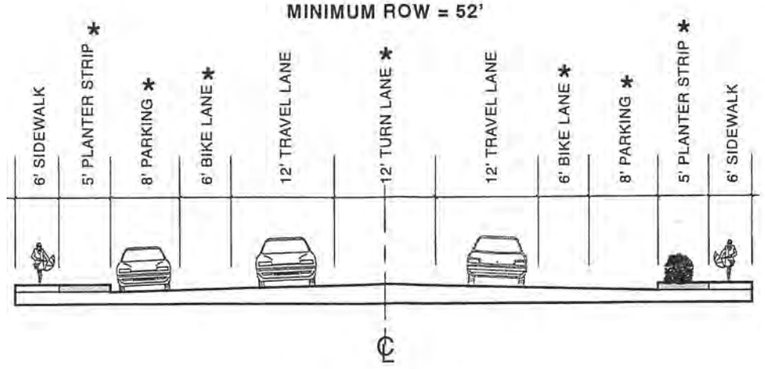
MINOR ARTERIAL

MINIMUM ROW = 74'



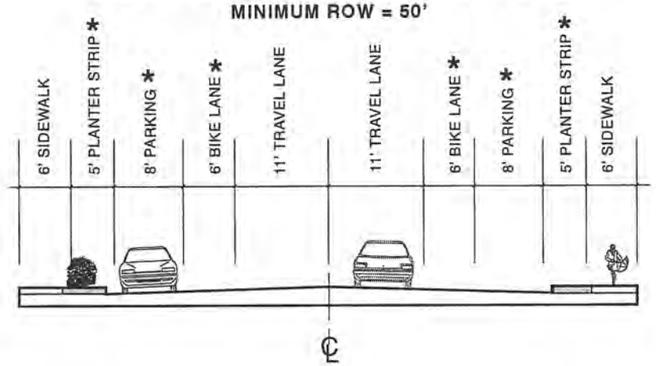
COLLECTOR

MINIMUM ROW = 52'



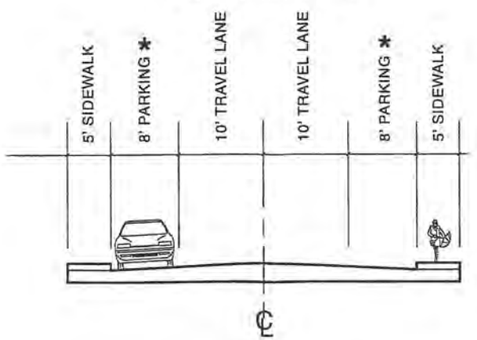
NEIGHBORHOOD COLLECTOR

MINIMUM ROW = 50'



LOCAL STREET

MINIMUM ROW = 40'



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

* Optional

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

ROW = Right-of Way

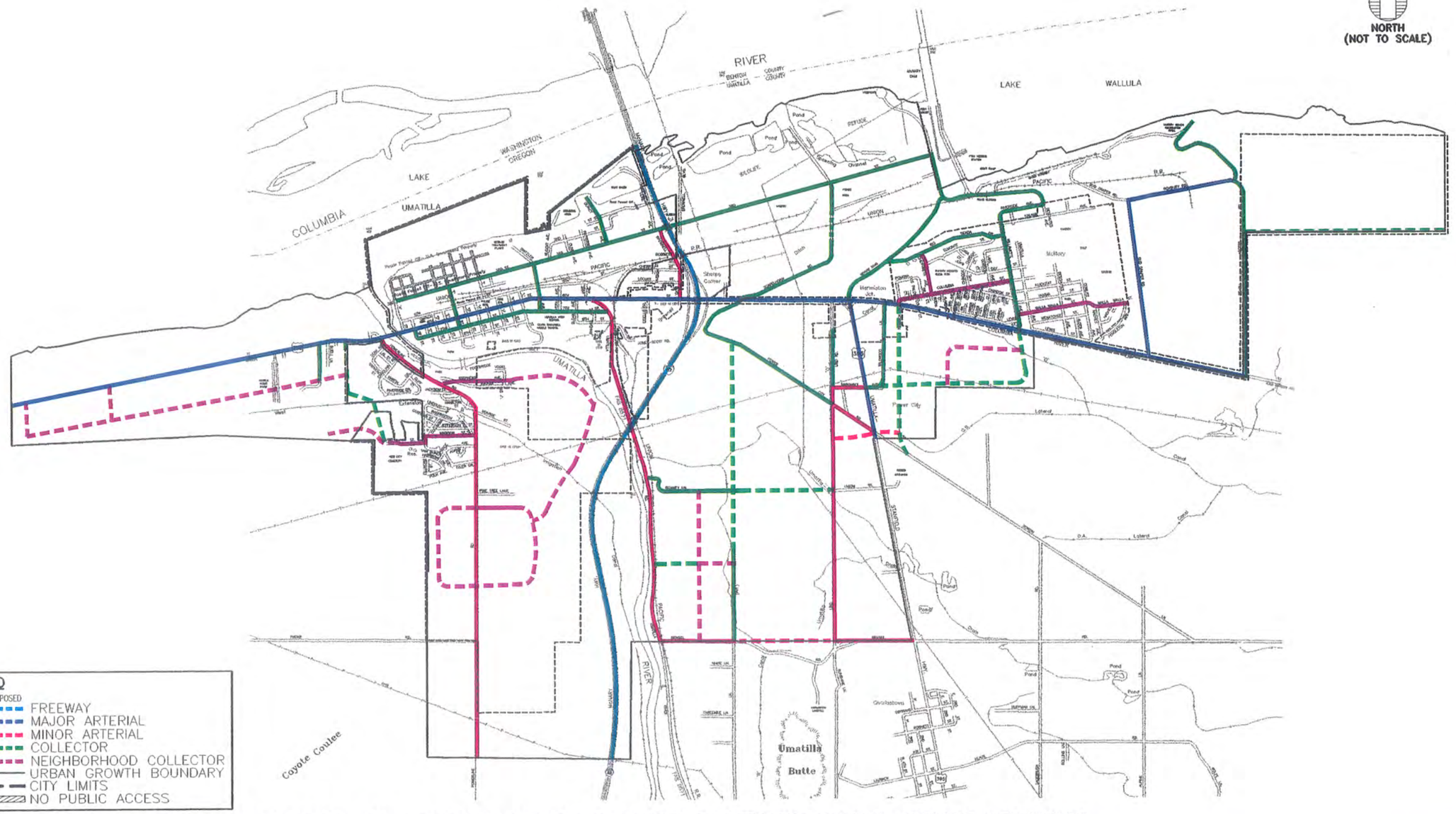
FUNCTIONAL CLASSIFICATION
ROADWAY CROSS-SECTIONS

CITY OF UMATILLA, OREGON
TRANSPORTATION SYSTEM PLAN
FEBRUARY 1999

FIGURE 12.2-10

2613\DWGS\2613F000.CDR

NORTH
(NOT TO SCALE)



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

2613\DWGS\UMAT3 - LM(COLLECTOR)

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~~ retain**s** 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.

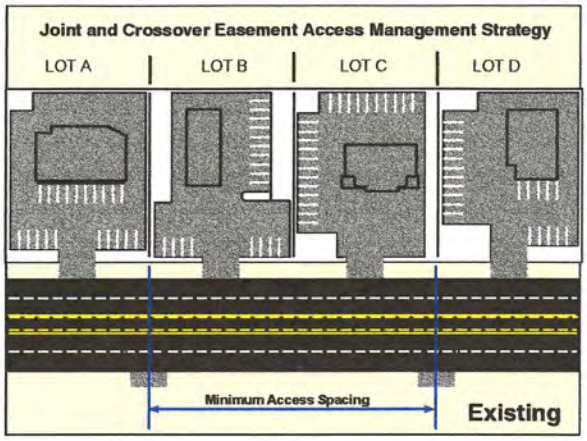
As part of every land use action, the City of Umatilla should evaluate the potential need for conditioning a given development proposal with the following items, in order to maintain and/or improve traffic operations and safety along the arterial and collector roadways:

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.

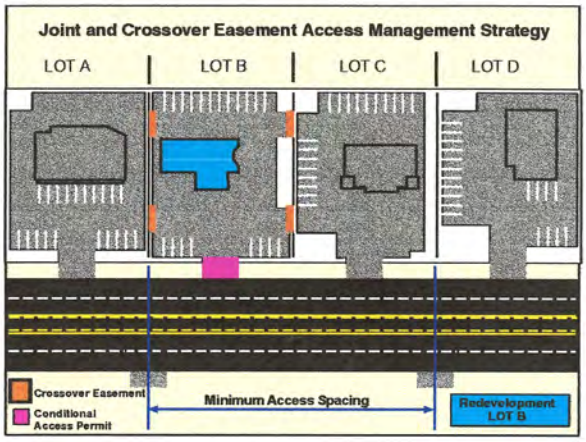
Conditional access permits should be issued to developments having proposed access points that do not meet the designated access spacing policy and/or have the ability to align with opposing driveways.

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



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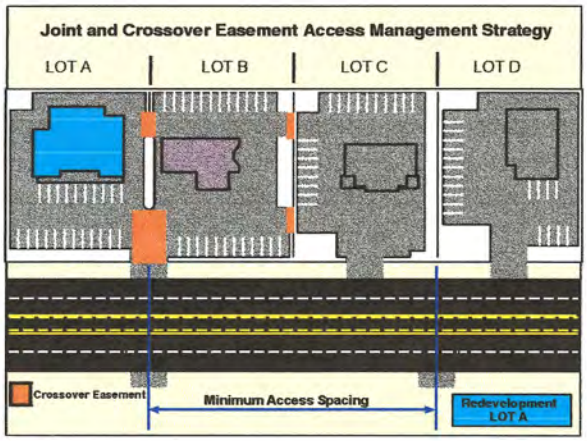

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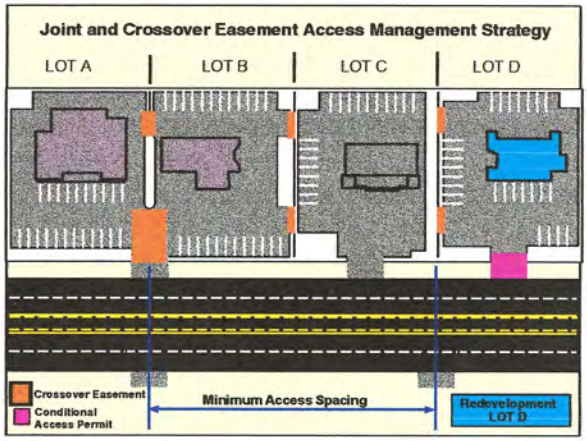

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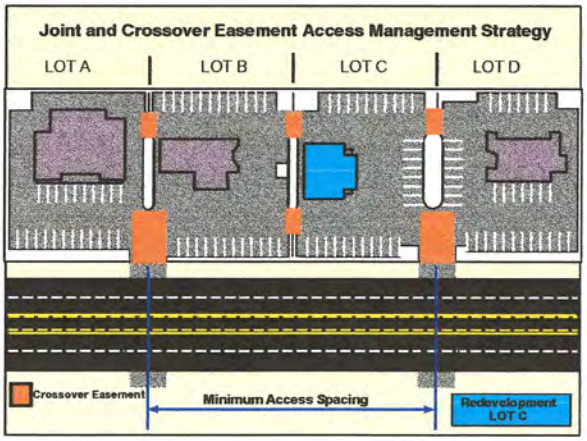

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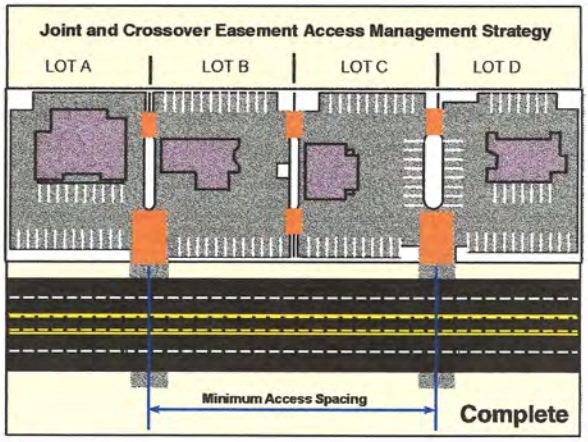

Step 6

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

CITY OF UMATILLA, OREGON TRANSPORTATION SYSTEM PLAN	FIGURE 12.2-12
FEBRUARY 1999	

DWGS\2613F016.CDR

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.