City of Arlington
Transportation System Plan

Adopted August 1999

Prepared for:

The City of Arlington
Gilliam County
Oregon Department of Transportation

Prepared by:

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CHAPTER 1: INTRODUCTION

The City of Arlington Transportation System Plan (TSP) guides the management of existing transportation facilities and the design and implementation of future facilities within the city's Urban Growth Boundary (UGB) for the next 20 years. This TSP constitutes the transportation element of the city's comprehensive plan and satisfies the requirements of the Oregon Transportation Planning Rule (TPR) established by the Department of Land Conservation and Development. It identifies and prioritizes transportation projects for inclusion in the Oregon Department of Transportation's (ODOT's) Statewide Transportation Improvement Program (STIP).

PLANNING AREA

The City of Arlington's TSP planning area covers the entire area within the Arlington city limits as well as the city's broader UGB. The planning area for the City of Arlington TSP is shown on Figure 1-1 and clearly illustrates the city limits and the UGB which extends beyond, and parallel to, the southern city limits.

Arlington is located in the north-central portion of Gilliam County in the north-central portion of Oregon. The city was established in 1885 and serves as the second largest urban area in the county with a 1997 population of 500. This population represented nearly 26 percent of the entire county population in 1997. Arlington is situated in a valley that slopes fairly steep from southwest to northeast throughout the city limits. Development of the roadway network has resulted in a number of steep roads. The city is served by an interchange to I-84 (I-84) and has developed in a fairly linear north-south fashion south of I-84. Residential development is primarily based in the south-southwest quadrant of the city with retail and other commercial development concentrated in the north-central section of the city.

Roadways included in the TSP fall under several jurisdictions: the city, Gilliam County, and the State of Oregon. Arlington's local roadway network is small in scale but fairly well developed. The city has committed resources through recent years to ensure that the majority of city streets are paved and in good condition. Connectivity is somewhat fragmented, as evidenced from the relatively high number of dead-end streets, and is due primarily to topography.

The only county road within the UGB is Arlington Port Lane (County Road No. 506). This road runs primarily east-west along the north side of I-84, bordering the north side of the city's central marina/park, and providing access to the city's boat landing. This road is under county jurisdiction.

I-84 runs through the north portion of the city and serves as the primary east-west roadway through the city limits. OR 19 (John Day Highway) runs along the eastern portion of the city and serves as the primary north-south roadway throughout the city. The highway is referred to as S Locust Street within the city limits. Both highways are under the jurisdiction of ODOT.

One of Arlington's primary employers within the city limits is the Arlington School District. However, the largest regional employers are subsidiaries of Waste Management Inc.: Chemical Waste Management of the Northwest and Oregon Waste Systems, Inc., a regional state-of-the-art solid waste landfill. These companies employ many of Arlington's citizens. Regionally, Gilliam County's economy is based primarily in agriculture, with an average farm size of about 4,200 acres. Wheat, barley, and beef cattle form the principal crops. Hunting, fishing, and tourism are important secondary industries.

PLANNING PROCESS

The City of Arlington TSP was prepared as part of an overall effort in Gilliam County to develop TSPs for Gilliam County and two municipalities: the City of Arlington and the City of Condon. Each plan was developed through a series of technical analyses combined with systematic input and review by the county, the cities, the Transportation Advisory Committee (TAC), ODOT, and the public. The TAC consisted of staff, elected and appointed officials, residents, and business people from Gilliam County and the Cities of Arlington and Condon. Key elements of the process include:

- Involving the Arlington community (Chapter 1)
- Defining goals and objectives (Chapter 2)
- Review of existing plans and transportation conditions (Chapters 3 and 4; Appendices A and B)
- Developing population, employment, and travel forecasts (Chapter 5; Appendices C and D)
- Developing and evaluating potential transportation system improvements (Chapter 6)
- Developing the Transportation System Plan and Capital Improvement Program (Chapter 7)
- Developing Funding Options and a Financial plan (Chapter 8; Appendix E)
- Developing recommended policies and ordinances (submitted as a separate document)

Community Involvement

Community involvement is an integral component in the development of a TSP for Gilliam County, the City of Arlington, and the City of Condon. Since each of the communities needed to address similar transportation and land use issues, a public involvement program involving all the jurisdictions was used. Several different techniques were utilized to involve each local jurisdiction, ODOT, and the general public.

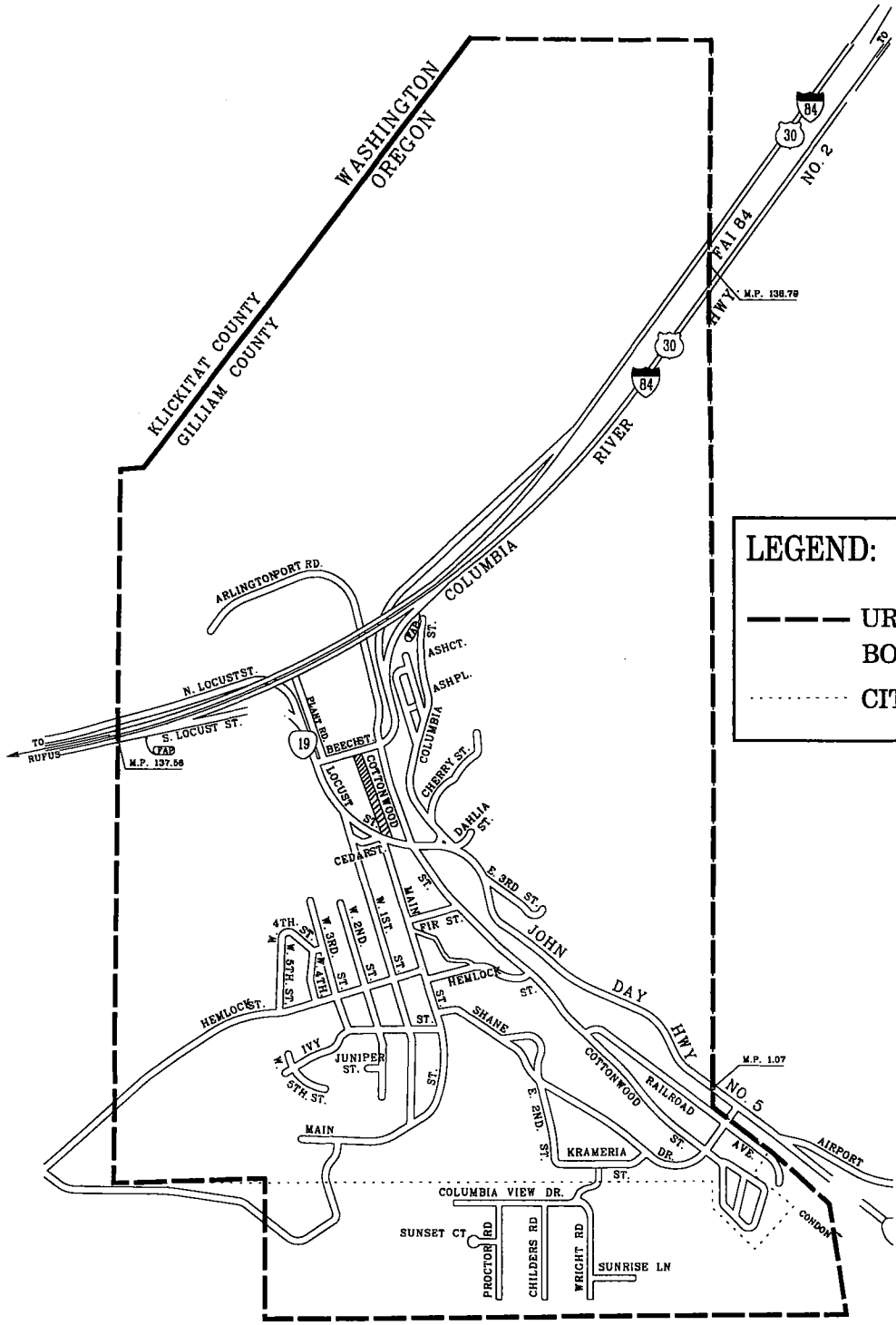
A combined management team and TAC provided guidance on technical issues and direction regarding policy issues to the consultant team. Staff members from each local jurisdiction, ODOT, and a local resident from each community served on this committee. This group met five times during the course of the project.

The second part of the community involvement effort consisted of community meetings within Gilliam County. The first public meeting was held in September 1998 in Arlington. The general public was invited to learn about the TSP planning process and provide input on transportation issues and concerns. A second public meeting was held in December 1998 in Condon to accomplish similar goals.

The third part of the community involvement process involved formal presentations before elected officials within the county. The first presentation to the planning commission was made in January 1999. The City of Lonerock held their own meeting to review and discuss the county TSP. The second presentation, held in February 1999, involved formal adoption of the county and city TSPs. The public was notified of the meetings through public announcements in the local newspapers.

Goals and Objectives

Based on input from the City of Arlington, the TAC, the county, and review of the Arlington and Gilliam County Comprehensive Plans, a set of goals and objectives were defined for the TSP. These goals and objectives were used to make decisions about various potential improvement projects. They are described in Chapter 2.



LEGEND:

- URBAN GROWTH BOUNDARY (U.G.B.)
- CITY LIMITS

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FIGURE 1-1

Arlington Planning Area

City of Arlington TSP

Review and Inventory of Existing Plans, Policies, and Public Facilities

To begin the planning process, all applicable City of Arlington and Gilliam County transportation and land use plans and policies were reviewed and an inventory of public facilities was conducted. The purpose of these efforts was to understand the history of transportation planning in the Arlington area, including the street system improvements planned and implemented in the past, and how the city is currently managing its ongoing development. A brief review of existing plans and policies are described in this chapter with a more detailed review presented in Appendix A of this report.

The inventory of existing facilities catalogs the current transportation system. The results of the inventory are described in Chapter 3, while Chapter 4 describes how the system operates under existing year traffic volumes. Appendix B summarizes the inventory of the existing arterial and collector street system.

Future Transportation System Demands

The State of Oregon's TPR requires the City of Arlington TSP to address a 20-year forecasting period. Future traffic volumes for the existing plus committed transportation systems were projected using ODOT's *Level 1 -- Trending Analysis* methodology. The overall travel demand forecasting process is described in Chapter 5.

Transportation System Potential Improvements

Once the travel forecasts were developed, it was possible to evaluate a series of potential transportation system improvements. The evaluation of the potential transportation improvements was based on a qualitative review of safety, environmental, socioeconomic, and land use impacts, as well as estimated cost. These improvements were developed with the help of the local working group, and they attempt to address the concerns specified in the goals and objectives (Chapter 2). The potential improvements were evaluated in Chapter 6.

Transportation System Plan

The TSP addresses each mode of transportation and provides an overall implementation program. The street system plan was developed from the forecasting and potential improvements evaluation described above. The bicycle and pedestrian plans were developed based on current usage, land use patterns, and the requirements set forth by the TPR. The public transportation, air, water, rail, and pipeline plans were developed based on discussions with the owners and operators of those facilities. Chapter 7 details the plan elements for each mode and presents the overall Capital Improvement Program (CIP) listing prioritized projects to be implemented over the 20-year planning horizon.

Funding Options

Arlington will need to work with Gilliam County and ODOT to finance new transportation projects over the 20-year planning period. An overview of funding and financing options that might be available to the community are described in Chapter 8.

Recommended Policies and Ordinances

A set of comprehensive plan policies and zoning and subdivision ordinances were developed to support and implement the TSP and satisfy the requirements of the TPR. These recommended policies and ordinances are included in a separate document titled: "Recommended Implementing Policies and Ordinances."

RELATED DOCUMENTS

The City of Arlington TSP addresses the regional and rural transportation needs in the city. There are several other documents which address specific transportation elements or areas in Arlington and Gilliam County. These documents were reviewed to ensure that the City of Arlington TSP is consistent with other transportation policies and plans already in effect or being developed. This section lists the applicable documents that were reviewed while a brief summary of the document elements that pertain to transportation planning, policies, and operations is outlined in Appendix A.

City and County Planning Documents

- City of Arlington Comprehensive Plan
- City Code of Arlington (zoning and subdivision regulations)
- Gilliam County Comprehensive Plan
- Gilliam County TSP
- Gilliam County Zoning and Land Development Ordinance
- Port of Arlington Expansion Study
- Arlington Area of Mutual Concern Conversion to an Urban Growth Boundary Report

Other State Plans

- Oregon Transportation Plan
- Oregon Highway Plan
- Oregon Bicycle and Pedestrian Plan

CHAPTER 2: GOALS AND OBJECTIVES

The purpose of the TSP is to provide a guide for the City of Arlington to meet its transportation goals and objectives. The following goals and objectives were developed from information supplied by the TAC, the local working group, city staff, and public response. Throughout the planning process, each element of the plan was evaluated against these parameters.

An overall goal was developed, then more specific goals and objectives were formulated. The goals and objectives are listed below are addressed in the following plan chapters.

OVERALL TRANSPORTATION GOAL

Develop a safe, convenient, and economic transportation system that enhances the livability of Arlington and accommodates growth and development through careful planning and management of existing and future transportation facilities.

Goal 1. Preserve the function, capacity, level of service, and safety of the state highways.

Objectives

A. Develop access management standards that will meet the requirements of the TPR and also consider the needs of the Arlington Community.

B. Promote alternative modes of transportation (e.g., walking, biking).

C. Promote transportation demand management programs (e.g., dial-a-ride transit, carpooling).

D. Promote transportation system management.

E. Examine need for specific pedestrian crossing locations in Arlington.

F. Develop procedures to minimize impacts to and protect transportation facilities, corridors, or sites during the development review process.

Goal 2. Improve and enhance safety and traffic circulation while preserving level of service on the local street system.

Objectives

A. Encourage future roadway development within a well connected grid system for Arlington.

B. Improve and maintain existing roadways to preserve the capacity, level of service, and safety of the existing transportation system.

C. Examine the need for speed reduction in specific areas.

D. Encourage citizen involvement in identifying and solving local problem spots.

E. Identify and enforce truck routes through the city.

F. Ensure planning coordination between the City of Arlington, Gilliam County, the state, the Port of Arlington, and the Union Pacific Railroad.

Goal 3. Identify the 20-year roadway system needs to accommodate developing or undeveloped areas without undermining the rural nature of the local community.

Objectives

A. Continue to develop the road system as a principal mode of transportation within Arlington.

B. Encourage and support the development of port and rail freight activities.

C. Preserve and enhance Arlington's municipal airport and support airport master planning efforts.

D. Adopt policies and standards that address street connectivity, spacing, and access management.

E. Improve access into and out of Arlington for goods and services.

F. Improve access onto and off of arterial roadways to encourage growth.

Goal 4. Encourage and support the use of alternative modes of transportation (walking, bicycling, and specialty transit) through improved access, safety, and service.

Objectives

A. Provide sidewalks and safe crossings on urban arterial, collector, and high pedestrian use streets.

B. Provide adequate shoulders on rural collector and arterial streets.

C. Provide appropriate bikeways and safe bike storage facilities where high use occurs or may occur.

D. Preserve and enhance dial-a-ride and charter transit service for seniors and transportation disadvantaged patrons.

E. Promote alternative modes and carpool programs through community awareness and education.

Goal 5. Improve coordination among Arlington, Gilliam County, ODOT, the Port of Arlington, and Union Pacific Railroad.

Objectives

A. Work with Gilliam County and ODOT in establishing cooperative road improvement programs, funding alternatives, and schedules.

B. Continue to coordinate with Gilliam County for specialty services such as maintenance of select roads and snow removal.

C. Encourage and support the Port of Arlington's development as a source of freight transport.

CHAPTER 3: TRANSPORTATION SYSTEM INVENTORY

As part of the planning process, DEA conducted an inventory of the existing transportation system in the City of Arlington. This inventory covered the street system as well as the pedestrian, bikeway, public transportation, rail, air, water, and pipeline systems.

STREET SYSTEM

The most common understanding of transportation is of roadways carrying cars and trucks. Most transportation dollars are devoted to building, maintaining, or planning roads to carry automobiles and trucks. The mobility provided by the personal automobile has resulted in a great reliance on this form of transportation. Likewise, the ability of trucks to carry freight to nearly any destination has greatly increased their use.

Encouraging the use of cars and trucks must be balanced against costs, livability factors, the ability to accommodate other modes of transportation, and negative impacts on adjacent land uses; however, the basis of transportation in nearly all American cities is the roadway system. This trend is clearly seen in the existing Arlington transportation system, which consists almost entirely of roadway facilities for cars and trucks. Because of the rural nature of the area, the street system will most likely continue to be the basis of the transportation system for at least the 20-year planning period; therefore, the emphasis of this plan is on improving the existing street system for all users.

Street Layout

The City of Arlington has a very small scale road network that has developed in a fairly linear fashion extending south from the I-84 interchange. Although many of the city's roadways dead-end, and the city has not developed into a distinct grid pattern, adequate connectivity appears to exist to serve this small community of nearly 500 people.

Existing Street Standards

Existing roadway development standards for the City of Arlington include requirements for minimum right-of-way and minimum pavement widths for arterial, collector, and minor (local) streets. Standards for the number and width of travel lanes, parking lanes, and planting/sidewalk strips are also detailed. Table 3-1 presents the existing street standards.

TABLE 3-1
EXISTING STREET DESIGN STANDARDS

	ROW[1] Width (ft)	Pavement Width (ft)	Travel Lanes No./width per lane(ft)	Parking Lanes number/width (ft)	Planting, Utility, sidewalks (each side)
Arterials					
Option 1	60	44	2/12	2/10	8 (no walk)
Option 2	70	44	2/12	2/10	13
Option 3	80	56[3]	4/11	none	12
Option 4	80	56	4/11	1/12	12
Collectors					
Option 1	60	44	2/12	2/10	8 (no walk)
Option 2	70	44	2/12	2/10	13
Minor Streets[2]	50	24	2/12	none	none

[1] Right-of-way
[2] May require on-street parking if parking cannot otherwise be accommodated.
[3] Includes 12-foot divider for left-turn refuge lane.

Arlington's Comprehensive Plan does not contain current standards for cul-de-sac streets or alleys. The Plan does not specify the need for sidewalks except where listed in the roadway design standards outlined in Table 3-1 and does not contain designated bikeway requirements.

Inventory

The existing street system inventory was conducted for all roads within Arlington. Inventory elements include:

- Street classification and jurisdiction
- Street width, shoulder width, and right-of-way
- Number of travel lanes
- Presence of on-street parking, sidewalks, or bikeways
- Speed limits
- Presence of curb and gutter
- General pavement conditions

Figure 3-1 shows the roadway functional classification and jurisdiction. Appendix B lists the complete inventory.

City Street Classification

The current comprehensive plan for the City of Arlington provides functional classifications for the streets within the city. All roadways within the city's UGB are classified as either limited access freeways, arterials, collectors or minor streets. The city's designation of arterials follows ODOT's classification of highways through the city. The classification system includes city, county, and state roadways within the city limits.

Freeways

Freeways provide for the movement of high traffic volumes at relatively high speeds between intrastate and interstate population centers and among regional destinations. Access is limited and generally grade separated. I-84 serves as the primary east-west route through the Arlington urban area with full directional interchange access.

Arterials

Arterials form the primary roadway network within and through a region. They provide a continuous road system which distributes traffic between cities, neighborhoods and districts. Generally, arterials are high capacity roadways which carry high traffic volumes entering or leaving the city.

Arlington has designated six roadways as arterials:

- Beech Street: Locust Street to Birch Street and the east and westbound ramps to/from I-84.
- Cottonwood Street: Arlingtonport Road to Locust Street
- John Day Highway (Locust Street): I-84 to south city limits (including on/off ramps to I-84).
- Main Street: Locust Street to Hemlock Street.
- Hemlock Street: Main Street to W. 5th Street and the Hemlock extension from W. 5th Street to W. 8th and "D" Streets to accommodate future development (this extension does not currently exist).
- Arlingtonport Road

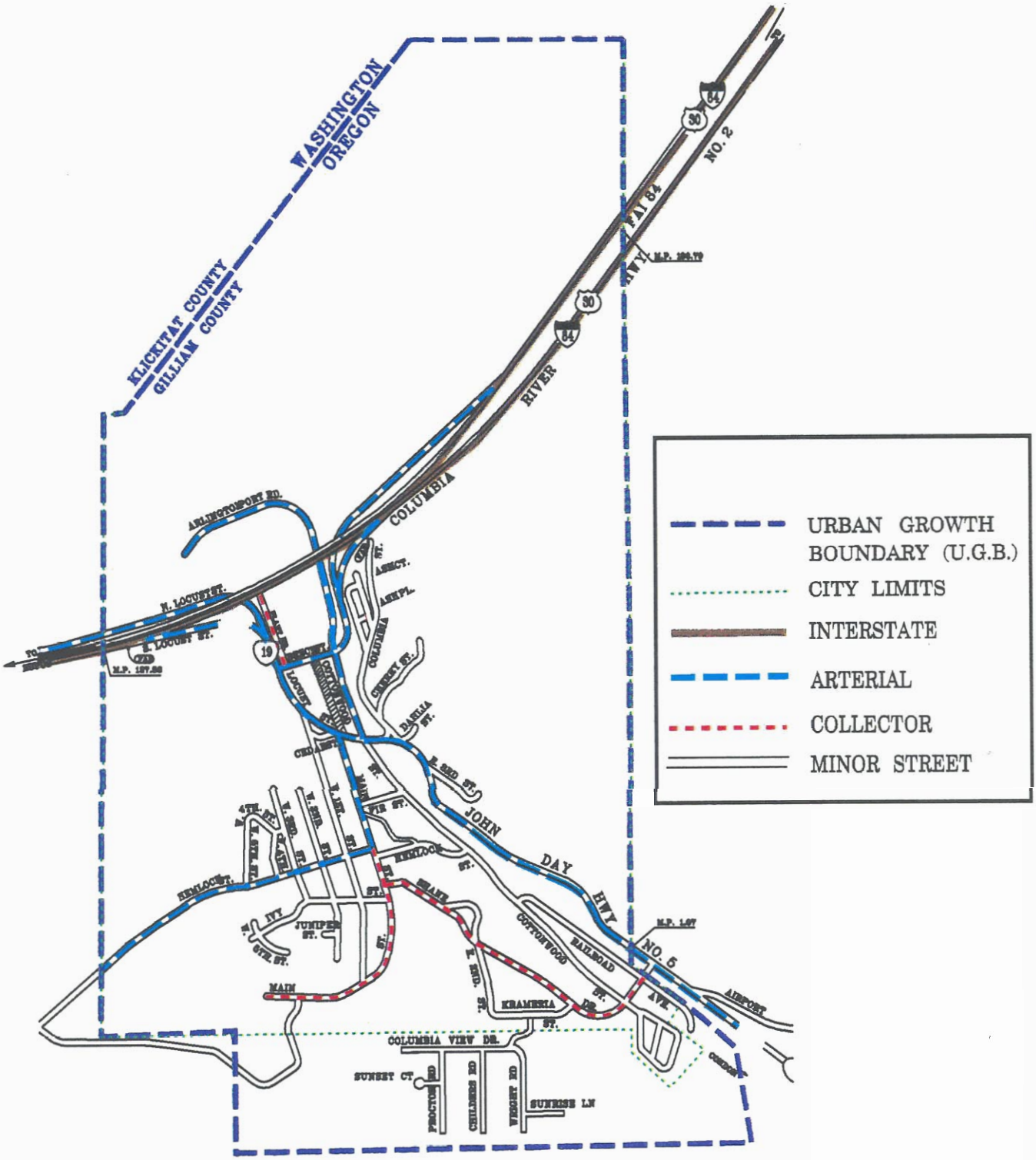

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FIGURE 3-1

Existing Street Classification

These roadways carry the highest traffic volumes in the city and OR 19 (Locust Street) and Beech Street serve as the focus for most of the commercial development in and around the city.

Collectors

Collectors serve traffic within the commercial, industrial and residential neighborhood areas. They connect local neighborhoods or districts to the arterial network. Collectors help form part of the grid system; however, they are not intended to function as alternate routes to the arterial system.

Arlington has designated three streets as functioning as collectors:

- Main Street: Hemlock to reservoir site.
- Shane Drive: Main Street to John Day Highway.
- Plant Road: Beech Street to sewage treatment plant.

Local Streets

Local Streets provide access to all parcels of land and serve travel over relatively short distances. They are designed to carry the very low traffic volumes associated with the local uses which abut them. Through traffic movements are discouraged on local streets.

The local streets in Arlington are comprised of all streets not classified as either arterials or collectors.

County Roads

Gilliam County does not have jurisdiction over any roads within Arlington's UGB. Although the County has previously contracted to maintain certain roadways within the UGB upon request of the city or Port, the County has no requirement to maintain these streets.

State Highways

State highways often function as major arterial streets, forming the primary roadway network within and through a region. They provide a continuous road system which distributes traffic between cities. Generally, major arterial streets are high capacity roadways which carry high traffic volumes with minimal localized activity. In Arlington, the state highways/major arterial streets also serve statewide, regional, and local traffic demands.

Discussion of the Arlington street system must include the state highways that traverse the planning area. Although Arlington has no direct control over the state highways, adjacent development as well as traffic patterns are heavily influenced by the highways. Arlington is served by two state highways: I 84 and OR 19. These highways serve as the major routes through the city with commercial and industrial development focused along the corridors.

The *1991 Oregon Highway Plan* (OHP) classifies the state highway system into four levels of importance (LOI): interstate, statewide, regional, and district. ODOT has established primary and secondary functions for each type of highway and objectives for managing the operations for each one.

Arlington has one highway of interstate importance, I 84; and one highway of regional importance, OR 19.

According to the OHP, the primary function of an interstate highway is to "provide connections and links to major cities, regions of the state, and other states." The management objective for interstate highways is to "provide for safe and efficient high-speed, continuous-flow operation in urban and rural areas."

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." A secondary function is to serve land uses in the vicinity of these highways. The management objective for regional highways is to "provide for safe and efficient high-speed, continuous-flow operation in rural areas, except where there are significant environmental constraints, and moderate to low-speed operation in urban and urbanizing areas with moderate interruptions to flow."

I-84

I-84 (Columbia River Highway) is a highway of interstate importance. Beginning in Portland at the junction of Interstate 5 near the Willamette River, the highway winds through the Columbia River Gorge and Eastern Oregon before continuing into Idaho. I 84 is the main east-west highway through Gilliam County. Arlington has full interchange access to I-84. Throughout Arlington, I 84 operates as a four-lane freeway with two travel lanes in each direction. The posted speed is 55 mph for trucks and 65 mph for passenger vehicles. Roadway shoulders on the left side of the highway in each travel direction are generally two to four feet wide and paved. Roadway shoulders on the right side of the highway in each travel direction are generally eight to ten-feet wide, paved, and more than adequate to accommodate bicyclists. Shoulders on both sides constrict to two to four feet wide when crossing most bridges.

OR 19

OR 19 (John Day Highway) begins at the connection to I 84 in the City of Arlington and runs north-south through the City of Condon and into Wheeler County. OR 19 is a highway of regional importance and serves as the primary freight route between Gilliam County's two largest cities; Arlington and Condon. The highway shares alignment with S. Locust Street in Arlington and serves as the main city street in Arlington carrying the highest traffic volumes within the city.

Throughout Arlington's city limits, the highway is a two-lane roadway with a posted speed of 25 mph throughout most of the city. The speed increases to 35 mph south bound near Dahlia St. and to 55 mph north of Shane Dr. near the southeast city limits. Sidewalks border the highway between Beech and Cottonwood Streets. South of Dahlia Street to the city limits, the highway is bordered by paved six-foot shoulders.

General Pavement Conditions

City Streets

The ODOT Pavements Unit published a 1994 report titled, *Pavement Rating Workshop, Non-National Highway System.* This report thoroughly defines the characteristics that pavements must display to be categorized as Very Good and so on. The report also provides color photographs of roadways that display these characteristics, which aids in field investigation and rating of pavement condition. These established guidelines were employed by DEA in conducting a subjective evaluation of pavement condition for all roadways within the City of Arlington in May 1998.

An inventory of Arlington's roadways was conducted in May 1998 by David Evans and Associates, Inc. (DEA). Arlington has focused recently on improving pavement condition throughout the city, and the results were evident during DEA's inventory. Of the 28 local streets under Arlington's jurisdiction, 25 are paved and three are primarily or totally gravel. Of the 25 paved streets inventoried, DEA classified 10 as being primarily or totally in Very Good condition, another 13 in Good condition, and the remaining two in Fair condition. ODOT's standard for state highway pavement condition is to maintain 90 percent of

the state's highway pavement in "fair or better" condition for safety and in part due to the cost effectiveness gained by maintaining (e.g., sealing, overlay, etc.) versus rehabilitating (e.g., rebuilding) pavements. Arlington currently exceeds this standard by maintaining 100 percent of local streets in fair or better condition. In fact, Arlington very nearly maintains all local streets in "good or better" pavement condition. The two streets listed in fair condition were Beech Street and Plant Road. A complete listing of local street pavement condition is provided in Appendix B.

State Highways

The Oregon Department of Transportation's (ODOT) Pavement Unit surveys the State Highway System on an annual basis. Observed severity levels of certain distress types are used to determine a pavement condition rating score. These scores are used to stratify pavement segments into five condition categories: (1) Very Good, (2) Good, (3) Fair, (4) Poor, and (5) Very Poor. The *Gilliam County Transportation System Plan* briefly defines these condition categories in Chapter Three.

According to the most recent 1997 ODOT Pavement Condition Report, the section of I-84 throughout Arlington's city limits (milepost 137.56) to Morrow County (milepost 149.50) is in Poor pavement condition. OR 19 between I-84 and E. 3rd Street in Arlington is rated as being in Good condition while the segment between E. 3rd Street and the southeast city limits is in Very Good condition.

Bridges

The Oregon Department of Transportation maintains an up to date inventory and appraisal of Oregon bridges. Part of this inventory involves the evaluation of three mutually exclusive elements of bridges. One element identifies which bridges are structurally deficient. This is determined based on the condition rating for the deck, superstructure, substructure, or culvert and retaining walls. It may also be based on the appraisal rating of the structural condition or waterway adequacy. Another element identifies which bridges are functionally obsolete. This element is determined based on the appraisal rating for the deck geometry, under clearances, approach roadway alignment, structural condition, or waterway adequacy. The third element summarizes the sufficiency ratings for all bridges. The sufficiency rating is a complex formula which takes into account four separate factors to obtain a numeric value rating the ability of a bridge to service demand. The scale ranges from 0 to 100 with higher ratings indicating optimal conditions and lower ratings indicating insufficiency. Bridges with ratings under 55 may be nearing a structurally deficient condition.

There is only one bridge in Arlington listed under ODOT's bridge maintenance inventory. The bridge (ODOT Bridge No. 08820) is located along I-84 at milepost 17.91 and spans the OR 19 junction and Union Pacific Railroad Arlington Branch. This bridge has been identified by ODOT as being functionally obsolete. However, no bridge improvements are scheduled for this bridge under ODOT's final 1998-2001 Statewide Transportation Improvement Program (STIP) published in December 1997.

PEDESTRIAN SYSTEM

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

An average trip length for a pedestrian is around 1/2 mile. The relatively small size of Arlington indicates that walking could be employed regularly to reach a variety of destinations in the area.

The presence of sidewalks is generally lacking in Arlington. Where sidewalks are present, they are generally fragmented and often not on both sides of a street. Sidewalks are primarily located in the vicinity of community resources that generate higher levels of pedestrian traffic such as along Beech Street which is near the pedestrian mall and boat basin and near Arlington's schools along Main Street. South Locust Street (OR 19) is bordered by sidewalks between Beech and Cottonwood Streets.

On the low volume, primarily residential, local roadways, pedestrians and autos can both share the roadway without safety being a critical issue. Figure 3-2 illustrates the existing sidewalk system in Arlington.

BIKEWAY SYSTEM

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

In a typical city, a short trip that would be taken by bicycle is around two miles. Judging from the size of Arlington, many bicycle trip lengths would be shorter.

Arlington currently has no sanctioned bikeways. On low volume roadways, such as many of the local streets, bicyclists and autos can both safely and easily use the roadway. On a higher volume roadway, such as OR 19, safety for the bicyclists should be an important issue.

Another impediment to bicycle use is the lack of parking and storage facilities for bikes throughout the City of Arlington.

PUBLIC TRANSPORTATION

There is no established fixed-route public transportation system anywhere in Arlington or Gilliam County. The Mid-Columbia Bus Company operates home-to-school bus service for Arlington's school district. Mid-Columbia maintains an office and storage facility for its five buses located in Arlington. Since the state requires school bus coverage for elementary students that live more than three-quarters of a mile from school and for high school students that live more than one-mile from school, Mid-Columbia's bus coverage is widespread.

Mid-Columbia also operates charter bus service within the county and much of Oregon to various destinations including Seattle, Washington. Mid-Columbia operates 10 charter buses out of Condon with stops in Arlington. This service is targeted to adult passengers and serves only Arlington and Condon within the County.

Demand responsive, otherwise referred to as "dial-a-ride," transit is available in Arlington. Arlington operates one 14-passenger handicapped-access van and a 6-passenger mini-van. This volunteer program is provided as a special transportation service primarily for seniors. Arlington has a transit coordinator that works in cooperation with Gilliam County and the Mid-Columbia Council of Governments who manage the provision of the service.

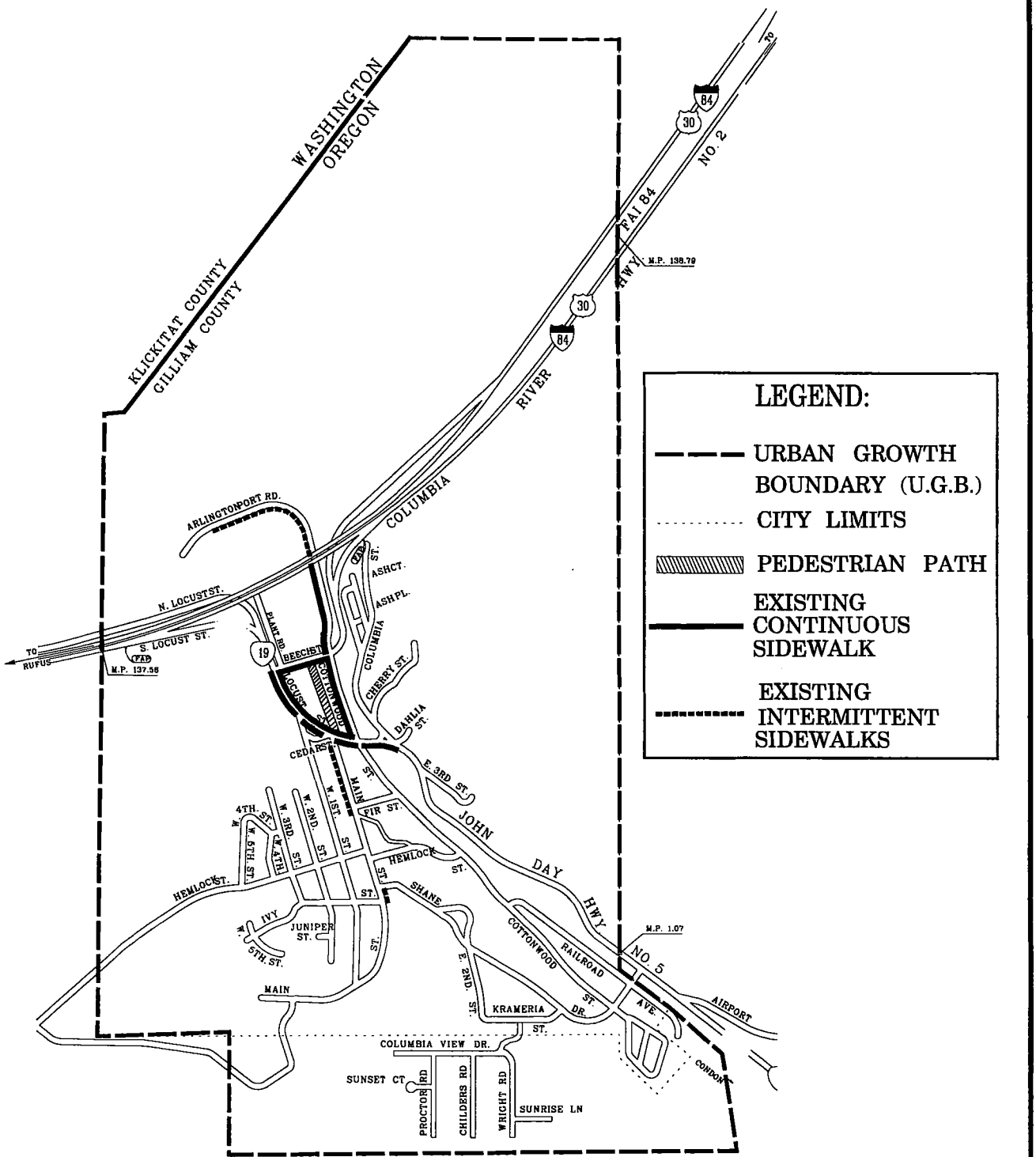

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FIGURE 3-2

Existing Pedestrian Facilities

City of Arlington TSP

ODOT0277/ARL13-2.DGN/JXD/11-20-98

RAIL SERVICE

The Union Pacific Railroad maintains a rail line along the I-84 corridor throughout Arlington with a spur that runs through Arlington approximately 11 miles south along OR 19 to the Arlington Waste Management facility located on Cedar Springs Road. The Waste Management facility generates one outgoing 60 to 90 car freight train daily during the week with occasional service on Saturday. The daily roundtrip train service brings a loaded train into the landfill site in the morning from Seattle, WA which upon off-load, returns empty at night. This freight operation represents the extent of rail service in Arlington and Gilliam County.

Approximately five years ago, Union Pacific Railroad ceased rail operations between Arlington and Condon and along the OR 74 corridor. Both rail lines have been physically removed. Freight operations between Arlington and Condon are now primarily accommodated via truck.

AIR SERVICE

The City of Arlington is served by the Arlington Municipal Airport which is owned by the city and operates for private and agriculture use only. The airport is not staffed and consists of a turf and loose gravel runway measuring 3,000 feet by 50 feet. Arlington's airport is not lit, precluding nighttime operations. If needed, the airport property could support development of additional land-slide facilities and could support extension of the runway to 5,000 feet in length. However, the city has no plans to further develop the airport at this time.

A Master Plan has not been developed for the airport. However, Gilliam County recognizes the importance, existing and future, of maintaining these two airport facilities. According to *Gilliam County's Comprehensive Plan*, the county will follow policies to "...protect these airports from hazards to navigation and to otherwise encourage the development of adjacent lands and facilities in a manner conducive to increased utilization."

The nearest passenger-use airport is located in Pendleton. Eastern Oregon Regional Airport in Pendleton is a tower controlled airport with 40,600 annual operations. Passenger service includes 16 scheduled flights per day by Horizon Airlines, with flights to Portland and Seattle. The airfield is also home to 60 locally owned fixed-wing aircraft, four rotor, and eight CH-47 Chinook helicopters with the Oregon Army Air Guard.

The Portland International Airport is located about 140 miles to the west of Arlington. Most people probably use this airport for air travel.

PIPELINE SERVICE

Although not often considered as transportation facilities, pipelines carry liquids and gases very efficiently. The use of pipelines can greatly reduce the number of trucks and rail cars carrying fluids such as natural gas, oil, and gasoline. There are no pipeline facilities located within Arlington. However, two natural gas pipelines maintained by Pacific Gas Transmission traverse the central portion of Gilliam County. Although the County is not currently served by the pipelines, future natural gas service within the county has been discussed. Although a substation location has not been addressed, large commercial operations and Port operations within the Arlington area support future development in the Arlington area.

WATER TRANSPORTATION

Water transportation in Arlington consists of river cargo operations and marina operations which are both managed through the Port of Arlington. The two primary sources of information used by DEA to research water transportation include review of the *Port of Arlington Expansion Study*, March 1998 and a personal interview with representatives of Cargill Enterprises, the Port of Arlington's single tenant and operator of the Port's grain elevator.

Cargo Operations

The Port of Arlington is located within Arlington's city limits on the north side of I-84 and abutting the Columbia River. The Port is presently engaged in grain export only and Port facilities consist of a single 703,000 bushel capacity grain elevator with one leg (or loading conveyor). The Port also maintains an 80-foot slip on the river to moor barges awaiting loading. There is currently only one marine cargo operator in the Port District— Cargill Enterprises, Inc. Cargill has been a long term tenant with the Port and leases use of the grain elevator.

The export of grain is critical to Gilliam County's largely agriculture-based economy. The County is a leading grain producer in the state. The only cargo, historically and currently, exported from Arlington is grain. Historically, no cargo has been imported to Arlington by water. Exported grain from Arlington travels via barge to Portland for export internationally.

Demand on the Port facility varies throughout the year. Farmers harvest their grain in the summer months, transporting a portion for immediate sale and export through the Port and storing some for sale later. The three peak periods of export volume through the Port are from late June to late September following harvest, November and December as farmers sell some of the grain they've been storing for money to get through the winter, and from February to March as farmers empty their storage bins in preparation for the next harvest and earn money to pay taxes. During these peak periods, which cover nearly seven months of the year, truck traffic through the Port averages approximately 100 trucks per day. Cargill representatives have indicated that at times, the Port exceeds the storage capacity of its existing bins and the capacity of its single loading conveyor. Although results of the *Port of Arlington Expansion Study* concluded that, "there is inadequate grain production in Arlington's service area to justify establishment of a second grain terminal" Cargill has indicated a potential future need to have the Port build additional bins and install an additional loading conveyor to keep up with demand.

Truck circulation through the Port facility has not been a problem in the past. Trucks enter the Port district on Arlingtonport Road and proceed to the west end of the Port where they drive eastbound through the truck scale and off-load site. Upon being off-loaded, trucks proceed eastbound out of the Port district. While trucks circulate along Arlingtonport Road, they share the roadway with motorists accessing the marina and recreational boat launch facilities and those parking near the east tip of the Port site to access the Columbia River to windsurf or engage in other recreational activities. Cargill representatives at the Port perceive recent increases in recreational traffic and have indicated a concern that continued increases in traffic could hinder continued safe traffic circulation through the facility.

Expansion of cargo operations within the Port facility other than grain transport appears limited. According to the *Port of Arlington Expansion Study*, the very limited developable area available to support cargo operations (about 2 acres adjacent to the grain elevator) is inadequate to support either rock or container activities which are the only two identified potential cargos for movement through the Port. Although the report indicates that future throughput of cargo to the landfill is a potential business opportunity, the report also indicates that Waste Management is not pursuing this option.

Marina Operations

The Port of Arlington owns and operates a marina which is part of the riverfront complex. The riverfront complex also includes a recreational boat launch and recreational vehicle park. The marina is served by an inlet from the Columbia River and offers about 800 gross frontage feet for tie-up and moorage. Services provided include: lighting, sewer dump, parking, and restrooms. The marina site is located adjacent to the Earl Snell Memorial Park located to the south which is a popular swimming and picnic destination. According to the *Port of Arlington Expansion Study*, the Port has excess moorage capacity and has not historically had, and does not currently have, a waiting list. Based largely on these facts, the study concludes that marina expansion is not warranted.

CHAPTER 4: CURRENT TRANSPORTATION CONDITIONS

As part of the planning process, the current operating conditions for Arlington's transportation system were evaluated. This evaluation focused primarily on street system operating conditions since the automobile is by far the dominant mode of transportation in Arlington. This involved analysis of existing traffic volumes, street capacity, and street safety. Census data was also examined to determine where local residents work and the mode of transportation used to get to work.

TRAFFIC VOLUMES

The 1997 Average Daily Traffic (ADT) volumes for state highways within Arlington were collected by ODOT and summarized in the *1997 ODOT Traffic Volume Tables*. ADT volumes are defined as the average amount of two-way traffic recorded on a roadway over a 24-hour period.

Average Daily Traffic

State Highways

The 1997 ADT volumes on the state highways in Arlington are shown on Figure 4-1. These volumes are average volumes for the year. Summertime is the season when volumes are highest. ODOT data on OR 19 south of Arlington indicated that during the summer season, volumes are about 15 to 20 percent higher than average volumes. Similar increases are expected within Arlington. Summertime variations along I-84 east of Arlington ran as high as 36 percent. The summertime variations are due, in part, to increases in freight movement related to agricultural harvesting, as well as increased tourism and recreational travel.

I-84

ADT volumes along I-84 reach 9,900 vehicles per day (vpd) at the Sherman/Gilliam County line, peaking at 10,000 vpd between the Quinton interchange and OR 19, and tapering down to 9,400 vpd at the Gilliam/Morrow County line. With the exception of a slight dip in 1996, traffic along I-84 has steadily increased over the last ten years. No specific ADT counts are reported within Arlington's city limits. However, the nearest recorded ADTs measured one-half mile west of the OR 19 junction and east of the city limits at ODOT's permanent recorder station, respectively, were 10,000 vpd and 9600 vpd in 1997.

OR 19

OR 19 (John Day Highway) carries the second highest traffic volumes in the county behind I-84. Volumes within Arlington are balanced and range from 1,800 to 1,900 vpd between the I-84 junction and the southeast city limits.

Truck Volumes

Truck traffic information was also collected on I-84 at the Arlington automatic traffic recorder, and along OR 19 at the Shutler recorder station, approximately 4 miles south of Arlington. The I-84 recorder indicated that in 1997, approximately 33 percent of the ADT was truck traffic. With an ADT volume of 9,600 vehicles recorded at the counter, this would equate to nearly 3,200 trucks per day. The OR 19 recorder indicated that, in 1997, approximately 41 percent of the ADT was truck traffic. It is likely that a majority of this truck traffic is related to operations at the Waste Management facilities in Arlington, which are located along Cedar Springs Road south of the recorder site.

Roadway Capacity

Transportation engineers have established various standards for measuring traffic capacity of roadways or intersections. Each standard is associated with a particular level of service (LOS). The LOS concept requires consideration of factors that include travel speed, delay, frequency of interruptions in traffic flow, relative freedom for traffic maneuvers, driving comfort and convenience, and operating cost. Six standards have been established ranging from Level A where traffic flow is relatively free-flowing, to Level F, where the street system is totally saturated with traffic and movement is very difficult. Table 4-1 presents the level of service criteria for facilities encountered in Arlington including freeways and unsignalized intersections.

TABLE 4-1
LEVEL OF SERVICE CRITERIA FOR ROADWAY FACILITIES AND TRAFFIC CONTROL

Level of Service	Type of Roadway or Traffic Control Device	
	Freeways	Unsignalized Intersections
	Minimum Speed (mph)	verage Delay (seconds/vehicle)
A	65.0	≤ 5
B	65.0	> 5 and ≤ 10
C	64.5	> 10 and ≤ 20
D	61.0	> 20 and ≤ 30
E	39.3 -43.4	> 30 and ≤ 45
F	varies	> 45

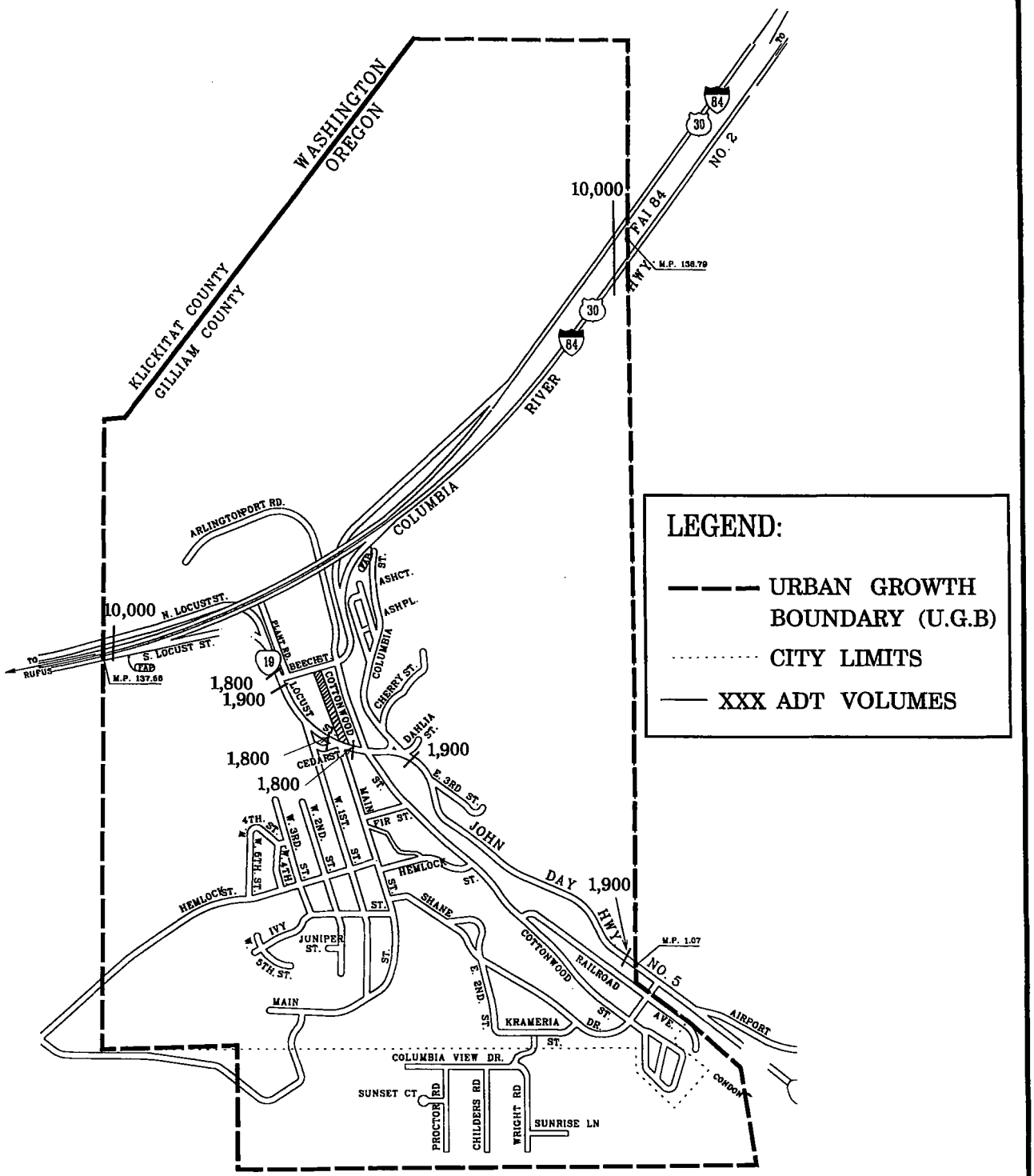
Source: Transportation Research Board, Highway Capacity Manual, Special Report 209. National Research Council, 1994.

The 1991 Oregon Highway Plan (OHP) establishes operating level of service standards for the state highway system[1]. Highways of interstate importance, such as I-84, should operate at LOS C or better (i.e., minimum speed of 65 mph for passenger cars and 55 mph for trucks as posted) in urban and urbanizing areas and at LOS B or better in rural areas (i.e., same speed standards as for urban areas).

Operations at Intersections

Analysis of the street system capacity in Arlington is primarily focused on intersection operations along OR 19 through town where traffic volumes are the greatest. Currently, all intersections along the highway are unsignalized and STOP-controlled on the minor approaches, with continuous flow on the highway. The LOS was determined at the busiest intersection on the highway to determine the worst possible traffic operations.

[1]1991 *Oregon Highway Plan*, Appendix A, Table 1, Operating Level of Service Standards for the State Highway System.



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FEET

FIGURE 4-1

1997 Average Daily Traffic Volumes on State Highways

City of Arlington TSP

ODOT0277/ARL14-1.DGN/JXD/11-23-98

The intersection of Main Street at OR 19 (S. Locust Street) was determined to be the busiest intersection in the city. Daily traffic volumes along OR 19 matched the highest recorded ADT volumes along the highway within the city limits at 1,900 vpd. To determine the worst possible traffic operations at this intersection, the ADT was increased by 20 percent to reflect an ADT for the peak summer month. Traffic operations were then analyzed using a peak hour traffic volume of roughly 10 percent of the adjusted daily traffic, which is typical for most cities. Also, a 60/40 directional split was used to reflect the distribution of traffic on the highway during the peak hour. Traffic data on the Main Street approach was not available. Therefore, a conservative approach volume equal to one-half the highway volume was used (114 vehicles during the peak hour).

Under these assumptions, the OR 19/Main Street intersection operates at LOS A for all movements at the intersection. This indicates that all other lower-volume roads or driveways accessing the highway within Arlington are operating at LOS A as well.

Freeway Operations

Analysis of freeway operations is based on traffic volumes and composition (i.e., percent trucks), lane widths, lateral clearance between the edge of the travel lane and the nearest roadside or median obstacle or object influencing traffic behavior, and driver population (i.e., regular and familiar users of the facility).

Freeway operations were analyzed along I-84 east of Arlington near ODOT's automatic traffic recorder at MP 146.16. This segment of the freeway was chosen to represent operations within Arlington's city limits due to the combination of high ADT volumes, and the high percentage of truck traffic which produce a worst-case freeway analysis. The freeway was analyzed using 1997 ADT volumes representing average daily conditions, and using the same 1997 ADT volumes, increased by 36 percent to represent traffic levels during peak summer conditions. Peak hour traffic was assumed to be ten percent of the 24-hour ADT volumes used and the directional split was assumed to be 60/40.

The resulting freeway LOS for average and peak summer conditions in the Arlington area under the assumptions outlined above was LOS A.

TRANSPORTATION DEMAND MANAGEMENT MEASURES

Transportation Demand Management (TDM) measures consist of efforts taken to reduce the demand on an area's transportation system. TDM measures include such things as alternative work schedules, carpooling, and telecommuting.

Alternative Work Schedules

One way to maximize the use of the existing transportation system is to spread peak traffic demand over several hours instead of a single hour. Statistics from the 1990 US Census show the spread of departure to work times in Arlington over a 24-hour period (see Table 4-2). Thirty-three percent of the total employees depart for work between 7:00 and 8:00 a.m. Another 32 percent depart in either the hour before or the hour after the peak.

TABLE 4-2
ARLINGTON DEPARTURE TO WORK DISTRIBUTION

	1990 Census	
Departure Time	Trips	Percent
12:00 a.m. to 4:59 a.m.	5	2.5
5:00 a.m. to 5:59 a.m.	24	12.8
6:00 a.m. to 6:59 a.m.	24	12.8
7:00 a.m. to 7:59 a.m.	62	33.0
8:00 a.m. to 8:59 a.m.	36	19.1
9:00 a.m. to 9:59 a.m.	14	7.6
10:00 a.m. to 10:59 a.m.	2	1.0
11:00 a.m. to 11:59 a.m.	4	2.1
12:00 p.m. to 3:59 p.m.	8	4.3
4:00 p.m. to 11:59 p.m.	9	4.8
Work at home	5	na
Total (out of home)	188	100.0

Source: US Bureau of Census, 1990 Census.

Assuming an average nine-hour work day, the corresponding afternoon peak can be determined for work trips. Using this methodology, the peak work travel hour would occur between 4:00 and 5:00 p.m.

Travel Mode Distribution

Although the automobile is the primary mode of travel for most residents in Arlington, other modes are used as well. Modal split data are not available for all types of trips; however, the 1990 Census data does include statistics for journey to work trips as shown in Table 4-3 and travel time to work as shown in Table 4-4. The census data reflects the predominance of automobile use.

Most Arlington residents travel to work by private vehicle. In 1990, 93 percent of all trips to work were in an auto, van, or truck. Trips in single-occupancy vehicles accounted for 81 percent of all trips and carpooling accounted for 12 percent.

TABLE 4-3
ARLINGTON JOURNEY TO WORK TRIPS

	1990 Census	
Trip Type	**Trips**	**Percent**
Private Vehicle	175	93.0
Drove Alone	*152*	*80.9*
Carpooled	*23*	*12.1*
Public Transportation	0	0.0
Motorcycle	0	0.3
Bicycle	0	0.0
Walk	10	5.3
Other	3	1.7
Work at Home	5	na
Total (outside home)	**188**	100.0

Source: US Bureau of Census, 1990 Census.

TABLE 4-4
ARLINGTON TRAVEL TIME TO WORK DISTRIBUTION

	1990 Census	
Departure Time	**Trips**	**Percent**
Less than 5 minutes	61	32.4
5 to 9 minutes	45	23.9
10 to 14 minutes	10	5.3
15 to 19 minutes	27	14.4
20 to 29 minutes	22	11.7
30 to 39 minutes	6	3.2
40 to 59 minutes	8	4.3
60 to 89 minutes	6	3.2
more than 90 minutes	3	1.6
Work at home	5	na
Total (outside home)	**188**	100.0

Use of the automobile for commuting is not surprising for people with home-to-work travel times exceeding five minutes, since a five minute automobile trip could cover a number of miles while a five minute walking trip will likely cover about one-quarter to one-half mile. However, while 32 percent of work trips in Arlington took less than five minutes as of 1990, only slightly more than 5 percent were made by walking. A commonly used threshold for acceptable walking distances is one-quarter mile. At a reasonable walking pace of 240 feet per minute, an average person can walk one-quarter mile in 5.5 minutes. Therefore, the opportunity for increased walking appears to exist in Arlington. However, for walking to occur safely and efficiently, there needs to be acceptable infrastructure (e.g., sidewalks, roadway shoulders) in place to support it. Although Arlington's pedestrian infrastructure is fragmented, the city is one of only two areas of the county where much pedestrian use is expected. Condon is the other area.

The complete lack of reported bicycle usage as a commute mode was lower than many other primarily rural Oregon counties in 1990. Since the census data do not include trips to school or other non-work activities, overall bicycle usage may be higher. There are no roadways in Arlington with dedicated bicycle lanes on them, however, portions of state highways do have adequate shoulders to accommodate bicycle use. In addition to bicycle lanes, bicycle parking, showers, and locker facilities can help to encourage bicycle commuting.

Pedestrian activity was relatively low (5.3 percent of trips to work) in 1990. Again, census data do not include trips to school or other non-work activities which, if included, would likely show an increased trend in walking trips.

SAFETY ANALYSIS

David Evans and Associates, Inc. reviewed accident data along the state highways within Arlington to identify high accident locations, potential accident patterns, and safety concerns at these locations. The two sources of accident data reviewed included:

- Accident summaries generated by ODOT's Transportation Development Branch for the three-year period from January 1, 1994 to December 31, 1996.
- Accident summaries generated from the ODOT Accident Summary Database for locations along the state highways in Gilliam County.

ODOT's Accident Summary Database calculates two useful factors for comparison with statewide statistics based on accident information over the three-year period studied. The first factor is a computed average three-year accident rate, which compares the number of accidents with the ADT volume and the length of the segment analyzed. The second factor is the Safety Priority Index System (SPIS) value. This factor evaluates accident frequency, severity, and traffic volumes to create an index for prioritizing state highway locations with safety concerns.

Additionally, ODOT collects detailed accident information on an annual basis along I-84 and OR 19 in Gilliam County. The accident information data shows overall accident rates for the routes and accident locations. The accident rate for a stretch of roadway is typically calculated as the number of accidents per million vehicle miles traveled along that segment of roadway.

Historic

Table 4-5 shows the accident rates for urban sections of I-84 and OR 19 in Arlington as well as the Oregon statewide average for urban freeway and urban non-freeway primary state highways from January 1, 1994 to December 31, 1996. Accidents rates for rural highway sections are summarized in the Gilliam County TSP.

The accident rates for the urban segments of I-84 within Arlington are slightly lower than the associated statewide averages for the years reported.

The only accident rate for OR 19 within Arlington was recorded in 1994 and was less than one-half the statewide average for all urban non-freeway primary highways for the year. Rural sections of OR 19 from 1994 to 1996 are well below the associated statewide average.

TABLE 4-5
HISTORIC ACCIDENT RATES ALONG OREGON STATE HIGHWAYS IN ARLINGTON
(Accidents per Million Vehicle Miles Traveled)

Highway	1996	1995	1994
Primary State Highways			
I-84 (Columbia River Highway)			
Urban: Arlington- West city limits to Oregon Hwy 19	na	na	na
Urban: Arlington- Oregon Hwy 19 to Oregon Hwy 19 connection	0.66	na	0.65
Urban: Arlington- Oregon Hwy 19 connection to east city limits	na	na	na
OR 19 (John Day Highway)			
Urban: I-84 to Arlington south city limits	na	na	1.63
Average for all **Urban** Freeway Primary State Highways	**0.99**	**0.58**	**0.93**
Average for all **Urban** Non-freeway Primary State Highways	**3.63**	**3.98**	**3.45**

Source: 1996 Oregon Department of Transportation Accident Rate Tables.

Table 4-6 contains detailed accident information on I-84 and OR 19 in Gilliam County from January 1, 1994 to December 31, 1996. It shows the number of fatalities and injuries, property damage only accidents, the total number of accidents, and the overall accident frequencies and rates for the segments of these roadways in Gilliam County.

TABLE 4-6
HIGHWAY ACCIDENT SUMMARIES
(January 1, 1994 to December 31, 1996)

Location	Fatalities	Injuries	PDO [1]	Total Accidents	Accident Frequency (acc/mi/yr)	Accident Rate (acc/mvm)
I-84 *(Columbia River Hwy)*						
Sherman Co. to Arlington (MP 114.95 - 137.56)	0	19	21	32	0.47	0.14
Arlington to Morrow Co. (MP 137.56 - 149.50)	2	38	21	35	0.98	0.31
OR 19 (*John Day Hwy*)						
Arlington to Condon (MP 0.00 - 37.50)	0	4	3	7	0.06	0.37
Condon to Wheeler Co. (MP 37.50 - 38.68)	0	1	0	1	0.28	na

Notes:
[1] PDO: Property Damage Only Accident
Source: Oregon Department of Transportation Accident Summary Database Investigative Report.

I-84 (Columbia River Highway)

Within Arlington during the three-year period analyzed, there were two ODOT-reported accidents, one of which was reported as property damage only. There were no fatalities and two injuries resulting from the accidents. One accident occurred during daylight hours under icy pavement conditions and the other occurred during darkness under wet pavement conditions. Both accidents involved drivers that hit a fixed object. Neither accident involved a truck.

The reported accidents occurred at different locations but within 1,000 feet of each other between milepost 137.92 and milepost 138.00. Neither of these locations has been identified by ODOT as high SPIS locations.

OR 19 (John Day Highway)

There were no ODOT-reported accidents along OR 19 within Arlington during the three-year period analyzed from 1994 to 1996.

CHAPTER 5: TRAVEL FORECASTS

The traffic volume forecasts for the City of Arlington are based on historic growth on the state highway system, historic population growth, and projected population growth. Forecasts were only prepared for the state highway system in the city, since the volumes on these roadways are much higher than on any of the city or county roads.

LAND USE

Land use and population growth play an important part in projecting future traffic volumes. Historic trends and their relationship to historic traffic growth on state highways are the basis of those projections. Population forecasts were developed to determine future transportation needs. The amount of growth, and where it occurs, will affect traffic and transportation facilities in the study area.

Population projections in Arlington are based on historic growth rates and forecasts by the State of Oregon Office of Economic Analysis (OEA). Factors that will affect the future population growth rate of Arlington include employment opportunities, available land area for development, and community efforts to manage growth.

A detailed description of existing and future land use projections, including the methodology and data sources used, is contained in the Population and Employment Analysis located in Appendix C. The analysis also includes population estimates for Gilliam County and Condon.

Historical data were compiled as reported by the Census Bureau and official population estimates as estimated by Portland State University's (PSU's) Center for Population Research and Census. Based on PSU's estimates through 1995 and a state econometric model, the State of Oregon OEA provided long-term (through year 2040) state population forecasts, disaggregated by county, for state planning purposes. These annual population estimates for cities and counties are used for the purpose of allocating certain state tax revenues to cities and counties.

Historic population estimates for Arlington are summarized in Table 5-1.

TABLE 5-1
ARLINGTON POPULATION TRENDS

Year	Population	Average Annual Growth Rate	Total Growth
1960	643	–	–
1970	375	-5.2%	-41.7%
1980	521	3.3%	38.9%
1990	425	-2.0%	-18.4%
1997	500	1.6%	17.6%

Source: US Census Bureau (1960, 1970, 1980, and 1990 censuses); and Portland State University Center for Population Research and Census (1997 estimates).

Historic Population Trends

Arlington's population has fluctuated over the past 37 years, with significant decreases between 1960 and 1970 and between 1980 and 1990 of nearly 42 percent and 20 percent, respectively. These population decreases were tempered by population gains from 1970 to 1980 and from 1990 to 1997 of nearly 39 and 19 percent, respectively. Overall, the city's population increased from 375 to 500 persons between 1970 and 1997 resulting in a total increase of 33.3 percent, or an annual increase of 1.07 percent per year. While Arlington was growing over the 27-year period, Gilliam County as a whole declined in population by 16.7 percent or 0.68 percent per year.

Projected Population Trends

Like Gilliam County, Arlington is expected to experience population gains for the next 20 years. The methodology used in forecasting the future population of Arlington employs historical census data, official annual estimates, and official long-range forecasts. For this method, David Evans and Associates, Inc. (DEA) used a methodology based on the state's OEA county-distribution methodology to develop population and employment forecasts for Arlington. DEA calculated a weighted average growth rate for Arlington (weighting recent growth more heavily than past growth) and combined this average growth rate with the projected county-wide growth rate. This methodology assumes convergence of growth rates because of the physical constraints of any area to sustain growth rates beyond the state or county average for long periods of time. These constraints include availability of land and housing, congestion, and other infrastructure limitations.

Projected population estimates for Arlington, using this methodology, are summarized in Table 5-2.

TABLE 5-2
ARLINGTON POPULATION PROJECTIONS

Year	Population	Average Annual Growth Rate	Total Growth
1997	500	–	–
2000	520	1.3%	4.0%
2005	550	1.1%	5.8%
2010	580	1.1%	5.5%
2015	600	0.68%	3.4%
2020	620	0.66%	3.3%
1997 to 2020	+120	0.94%	24.0%

Source: 1997 estimates developed by Portland State University Center for Population Research and Census; forecasts developed by State of Oregon Office of economic Analysis.

Using this methodology, Arlington is expected to experience a population gain of 120 people during the next 22 years. This represents an increase of nearly 24 percent from the 1997 estimate of 500 residents to an estimated 620 residents in year 2020. During the same period, Gilliam County is expected to gain a total of 211 new residents. Therefore, Arlington is forecast to receive nearly 57 percent of all new residents moving to the county through year 2020.

Potential Development Impact Analysis

To supplement the demographic analysis and to determine more specific potential growth areas in Arlington, DEA reviewed ODOT's Potential Development Impact Analysis (PDIA) for Arlington. The

PDIA provides estimates for a maximum development scenario in Arlington. Potential growth areas or "polygons" are identified around the county based on zoning. A detailed summary of the PDIA is contained in Appendix D.

The analysis is based on a number of assumptions, some of which are acknowledged to overstate potential development. Some of the key assumptions include the following:

- No adjustments were made for slopes, bodies of water, riparian areas, or other physical development constraints.
- Development estimates do not account for market factors.
- Where the zoning ordinance does not specify a parking requirement, no adjustment was made for parking.

Arlington has approximately 78 acres of land zoned for industrial use and approximately 56 acres zoned for commercial use. Because aerial photographs were not available for Gilliam County, the PDIA analysis could not be used to determine the portion of commercial and industrial acres that are vacant in Arlington. Therefore, no sense of potential development associated with commercial and industrial zoned land was established through the PDIA. These figures could only be generated for residential land use in Arlington as summarized in 5-3.

TABLE 5-3
POTENTIAL DEVELOPMENT IMPACT ANALYSIS SUMMARY

	Acreage		Residential Units		
Designated Use	**Net Area**	**Vacant**	**Existing**	**Potential**	**Maximum**
Residential	1,000	969	182	5,618	5,800
Commercial	56	na	na	na	na
Industrial	78	na	na	na	na

Source: *Potential Development Impact Analysis* (PDIA) report prepared for ODOT by Community Planning Workshop department of Planning, Public Policy, and Management, December 1995.

na - not available.

Approximately 1,000 acres of land is zoned for residential uses with 182 existing residential units. Of the residential land, approximately 969 acres are vacant representing development potential of 5,618 units. The analysis involved applying an average annual population growth rate of 0.9 percent per year determined over the 1970 to 1994 period in order to forecast population in 2012. This resulted in a forecast 2012 population of 536 residents. This forecast population was divided by the city's 1990 US Census *median persons per household* figure of 2.54 to estimate the number of residential households needed in 2012 at 211; 29 more households than exists today. The forecast population outlined in the PDIA is slightly lower than the more current estimate generated by PSU and summarized in Table 5-2. Assuming a 2012 population based on recent figures generated through PSU of 590 residents, Arlington's residential development needs in 2012 would be 233 units. With a maximum potential of 2,261 residential units, Arlington can adequately serve residential needs of this moderately growing community.

TRAFFIC VOLUMES

Historic

Before projecting future traffic growth, it is important to examine past growth trends on the roadway system in Arlington. Historic data are only available for OR 19 in Arlington; however, this roadway carries far more traffic than any other streets in the city. ODOT collects traffic count data on OR 19 in Arlington annually at the same locations. Historic growth trends along the rural sections of I-84 leading to and from Arlington are also reported. Although no traffic data has been recorded along I-84 within the Arlington city limits, the rural traffic count data provides an effective measure of traffic volumes through Arlington. No historic traffic volume data is available along county roads.

Historic growth trends on the state highways in Arlington were established using the average daily traffic (ADT) volume information presented in the ODOT *Traffic Volume Tables* for the years 1977 through 1997. The ADT volumes were obtained for each of these years at several locations along each highway. Using a linear regression trendline analysis of the average ADT volumes between 1977 and 1997, an average annual growth rate was determined. Table 5-4 summarizes the state highway historic average growth rates.

Over the past 20 years, traffic levels have grown relatively rapidly throughout Arlington. Growth along the rural sections of I-84 leading to and away from Arlington have ranged between 2.3 and 2.5 percent per year, respectively. Traffic volumes on OR 19, aggregated throughout Arlington's city limits, have been growing at 4.1 percent per year. Isolated locations along OR 19 have ranged in growth from 2.1 percent per year just south of Beech Street to 7.1 percent per year at the southeast city limits. The uncharacteristically large growth near the southeast city limits has primarily occurred since the waste management site located south of Arlington along Cedar Springs Road began operations in 1990.

Historic traffic volume growth on the state highways in and around Arlington has far exceeded the 20-year historic population growth for Arlington (1.07 percent per year) and for Gilliam County (0.44 percent per year). Although Arlington has experienced population gains during this decade (2.3 percent per year since 1990), during the 17-year period between 1980 and 1997, Arlington's population declined at about -0.2 percent per year. While population declined over this 17-year period, traffic volumes grew fairly rapidly on the order of three percent per year along I-84 and 3.2 percent per year along OR 19. This relationship reflects the modern trend toward increased per capita vehicle miles traveled and increases in commercial and tourist traffic.

TABLE 5-4
HISTORIC TRAFFIC GROWTH RATES ON STATE HIGHWAYS

Highway Section	Milepoint	AAGR[1] 1977-1997	Total Growth 1977-1997
I-84			
Rural- Gilliam/Sherman Co. line to Arlington	114.55 - 137.56	2.49%	63.5%
Rural- Arlington to Gilliam/Morrow Co. line	137.56 - 149.50	2.35%	59.0%
OR 19			
Urban Section- Arlington	0.33 - 1.07	4.10%	123.3%

Source: 1997 ODOT Traffic Volume Tables; information compiled by DEA, Inc.
[1]AAGR- Average Annual Compound Growth Rate.

Forecasting Methodology

The forecasting methodology was based on the available existing and historical traffic data and population growth trends. The traffic forecast for the state highway system in Arlington was performed using a Level 1–Trending Forecast[2] analysis. This type of forecast projects future traffic volumes based on one or more of the following growth rates: the historical growth on the state highway system, the historical population growth, and the projected population growth.

The forecasting methodology used in this forecast assumed that traffic demand on the state highways will grow over the 20-year planning period according to the greater of the linear 20-year historical traffic growth trendline rate or the forecast Arlington city population growth rate. To confirm that use of the historical traffic growth linear trendline in the Trending Forecast analysis was the best projection methodology for most rural highway locations, comparisons were made with the historical and projected population growth for the city.

Comparisons show that historical traffic growth trendline rates on all state highways in Arlington are higher than the 27-year (1970 to 1997) historical and 23-year (1997 to 2020) forecast population growth rates for Arlington which are 1.07 and 0.94 percent per year, respectively. The rural sections of I-84 leading to and from Arlington have grown historically at 2.3 and 2.5 percent per year, respectively. The aggregate historical growth rate throughout Arlington has averaged 4.1 percent per year. This aggregate growth rate was applied to all locations along OR 19 within the city limits.

Appropriately, forecast traffic growth along rural sections of I-84 and along the urban section of OR 19 are assumed to continue to grow according to their respective 20-year historical traffic growth trendlines.

It is important to note that using the historical growth trends assumes that future traffic patterns will remain consistent with historical patterns, without consideration of future planned developments.

Future Traffic Volumes

Using the same linear regression analysis used to calculate the historic growth rate of traffic, forecasts were generated for the years 1998 through 2018 for all highway sections in Arlington as shown in Figure 5-1. Traffic volumes are expected to grow 44 percent, from 10,171 vehicles per day (vpd) to 14,658 vpd, on I-84 within Arlington and nearly 51 percent, from 1,579 vpd to 2,377 vpd, on OR 19 within Arlington.

The forecast future traffic volumes and total growth from 1998 to 2018 are shown in Table 5-5.

[2] ODOT *Transportation System Planning Guidelines*, August 1995, p. 29.

TABLE 5-5
FORECAST FUTURE TRAFFIC GROWTH RATES ON STATE HIGHWAYS

Highway Location	Milepoint	1998 ADT (vehicles/day)	2018 ADT (vehicles/day)	Total Growth 1997-2018
I-84				
Rural- Gilliam/Sherman Co. line to Arlington	114.55 - 137.56	10,171	14,658	44.1%
Rural- Arlington to Gilliam/Morrow Co. line	137.56 - 149.50	10,171	14,658	44.1%
OR 19				
Urban Section- Arlington	0.33 - 1.07	1,579	2,377	50.5%

Source: 1977-1997 ODOT Traffic Volume Tables; growth rate information compiled by DEA, Inc.

HIGHWAY SYSTEM CAPACITY

Both existing year 1998 and future year 2018 level-of-service analyses were performed on the urban sections of state highways in Arlington. The future year volumes were generated in accordance with the forecasting procedures outlined previously and summarized in Table 5-5.

Within the city limits, traffic operations are primarily measured through analysis of unsignalized intersection operations. Additionally, freeway operations were analyzed sine I-84 does traverse the city limits. Analyses were conducted for the same rural highway locations and in the same manner as outlined in Chapter 4 (*Current Transportation Conditions*).

Operations at Intersections

Analysis of the street system capacity in Arlington is primarily focused on intersection operations along OR 19 through town where traffic volumes are the greatest. Currently, all intersections along the highway are unsignalized and STOP-controlled on the minor approaches, with continuous flow on the highway. The LOS was determined at the busiest intersection on the highway to determine the worst possible traffic operations.

The intersection of Main Street at OR 19 (S Locust Street) was determined to be the busiest intersection in the city. Future 2018 daily traffic volumes along OR 19 are expected to be the highest recorded ADT volumes along the highway within the city limits at 2,377 vpd. To determine the worst possible traffic operations at this intersection, the ADT was increased by 20 percent to reflect an ADT for the peak summer months. Traffic operations were then analyzed using a peak hour traffic volume of roughly 10 percent of the adjusted daily traffic, which is typical for most cities. Also, a 60/40 directional split was used to reflect the distribution of traffic on the highway during the peak hour. Traffic data on the Main Street approach was not available. Therefore, a conservative approach volume equal to one-half the highway volume was used (143 vehicles during the peak hour).

Under these assumptions, the OR 19/Main Street intersection is expected to operate at LOS A for all movements at the intersection under 1998 normal and summer operations and in 2018 under normal operations. The analysis indicates that the northbound approach on Main Street under 2018 summer operations would just cross the threshold to LOS B operations, although the overall intersection would operate at LOS A. This result stems from what DEA considers to be conservatively high volumes along Main Street. The analysis indicates that traffic operations in Arlington will continue to operate very well

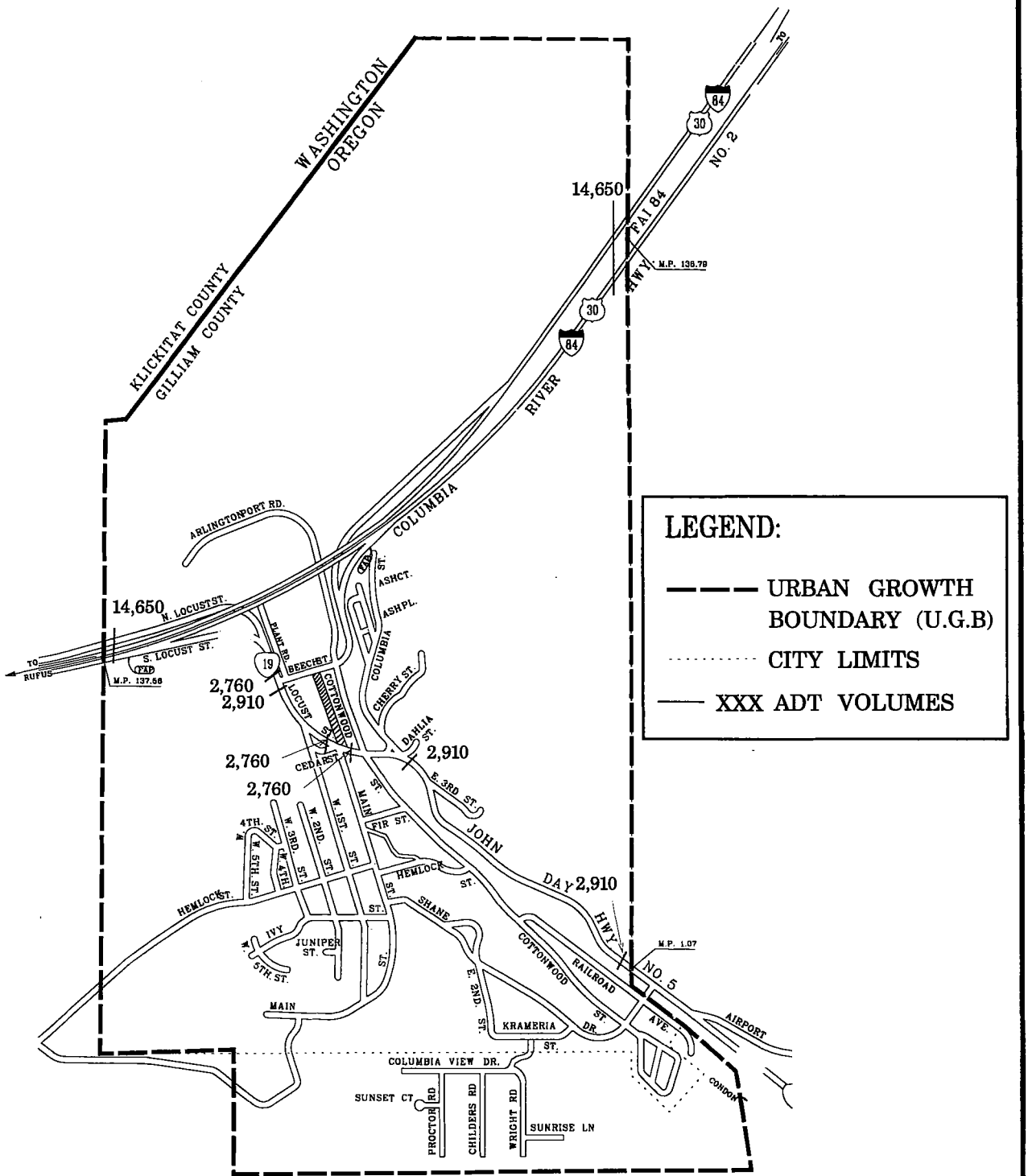

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FIGURE 5-1

2018 Average Daily Traffic Volumes on State Highways

City of Arlington TSP

ODOT0277/ARL15-1.DGN/JXD/11-20-98

through the 20-year planning period and that all other lower-volume roads or driveways accessing the highway within Arlington will operate at LOS A as well.

Freeway Operations

Analysis of freeway operations is based on traffic volumes and composition (i.e., percent trucks), lane widths, lateral clearance between the edge of the travel lane and the nearest roadside or median obstacle or object influencing traffic behavior, and driver population (i.e., regular and familiar users of the facility).

Freeway operations were analyzed along I-84 east of Arlington near ODOT's automatic traffic recorder at MP 146.16. This segment of the freeway was chosen to represent operations within Arlington's city limits due to the combination of high ADT volumes, and the high percentage of truck traffic which produce a worst-case freeway analysis. Future 2018 freeway operations were analyzed using 2018 ADT volumes representing average daily conditions, and using the same 2018 ADT volumes, increased by 36 percent to represent the same traffic level trend experienced during peak summer conditions in 1997. Peak hour traffic was assumed to represent ten percent of the 24-hour ADT volumes used and the directional split was assumed to be 60/40.

The resulting freeway LOS for average and peak summer traffic levels in the Arlington area under the assumptions outlined above was LOS A for 1998. Under average 2018 traffic levels the freeway would continue to operate at LOS A. However, the analysis using the higher summer peak traffic levels estimated in 2018 indicates LOS B operations in the heavier peak direction and continued LOS A operations in the lighter off-peak direction. Overall, future 2018 freeway operations are expected to continue to operate very well throughout Arlington.

Capacity Issues

With both unsignalized and freeway operations within Arlington expected to continue to operate at or near LOS A through year 2018, there are no identified capacity constraints or issues within Arlington.

CHAPTER 6: IMPROVEMENT OPTIONS ANALYSIS

Potential transportation improvements for the City of Arlington were developed and evaluated as part of the transportation system analysis. These potential improvements were developed with the help of the Transportation Advisory Committee (TAC), and attempt to address the concerns specified in the goals and objectives (Chapter 2). Based on an analysis of these projects, a list of improvements to be incorporated into the TSP is recommended.

Each of the transportation system improvement options was developed to address specific deficiencies and safety and access concerns. The following list includes all of the potential transportation system improvements considered. Improvement options 3 and 4 are illustrated in Figure 6-1.

1. Revise zoning code to allow and encourage mixed-use development and redevelopment.
2. Implement transportation demand management strategies.
3. Develop direct roadway connection from the Columbia View Estates development to Main Street.
4. Improve sidewalk connectivity.

Project implementation recommendations were based on the evaluation of each project using the criteria described below.

EVALUATION CRITERIA

Each improvement option was evaluated with regard to impacts to traffic, safety, environmental factors, such as air quality, noise, and water quality; and socioeconomic and land use impacts, such as right-of-way requirements and impacts on adjacent lands. A final factor in the evaluation of the potential transportation improvements was cost. Costs were estimated in 1998 dollars based on preliminary alignments for each potential transportation system improvement. Final review of each project resulted in a recommendation of whether the project should be implemented.

EVALUATION OF POTENTIAL TRANSPORTATION IMPROVEMENTS

Option 1. Revise Zoning and Development Codes

Overview: One of the goals of the Oregon Transportation Planning Rule (TPR) is to reduce reliance on the single-occupant automobile. One method of reducing reliance on automobiles is to amend zoning and development codes to allow mixed-use developments and increased density in certain areas. Specific amendments include allowing neighborhood commercial uses within residential zones and allowing residential uses within commercial zones. Such code amendments can result in shorter travel distances between land uses, thereby encouraging residents to use alternative modes of transportation, such as walking and cycling throughout the community.

These code revisions are more effective in medium- to large-sized cities (with over 25,000 residents), than in cities such as Arlington, where they may not be as appropriate. Because of Arlington's relatively small size, the decision of what mode of transportation to use when making a trip inside the city is generally not influenced by distance. The longest distance between city limit boundaries in Arlington is less than two miles, a distance short enough to walk, ride a bike, or drive. Distances between different land uses,

such as residential and commercial, are even shorter. Approximately six percent of the population already walks to work, which is higher than the statewide average.

Increasing density may have some effect on development in Arlington. Projected population growth of 24 percent (120 additional residents) by year 2020 is anticipated to be accommodated by infill development inside the city limits and by development of vacant land within the UGB such as the Columbia View Estates. Therefore, as city limits are expected to expand to include portions of the UGB, the provision of commercial uses close to or within these areas could become more important in reducing the need for automobile trips.

Impacts: Although the primary goal of TDM strategies is to reduce the number of vehicle trips made within a jurisdiction, especially during peak periods, street capacity for automobiles and trucks is generally not an issue in Arlington. Nevertheless, altering land use codes to encourage some level of mixed uses, bringing compatible businesses and residents closer together, can be beneficial for both. Retailers may gain more exposure from people walking by, rather than driving by, their shops. For residents, more walking and biking can enhance the sense of community, local vitality, and security. With more emphasis on walking or biking in the city, conditions such as air quality and noise levels would be improved as well.

Cost Estimate: No direct costs are associated with making the zoning code amendments.

Recommendation: Because of the small size of the city, the relationship between land uses is already similar to the mixed use zoning patterns that are recommended in larger urban areas. It is desirable for this development pattern to continue as the city grows (the population is forecast to increase by 24 percent, or 120 additional residents by year 2020). Increasing density requirements would have a positive effect on the way land is developed in Arlington by preventing sprawl. Therefore, revisions to zoning and development codes to allow for increased density are recommended.

Option 2. Implement Transportation Demand Management (TDM) Strategies

Overview: The TPR also recommends that cities should evaluate TDM measures as part of their Transportation System Plans. These strategies are designed to change the demand on the transportation system by providing facilities for other modes of transportation, implementing carpooling programs, and applying other transportation measures within the community, such as staggering work schedules at local businesses. TDM strategies may be more effective in larger, more urban, cities but some strategies can still be useful in smaller cities such as Arlington. Provisions for alternative modes of transportation, such as sidewalks and bike lanes, and implementing a county-wide carpooling program can be beneficial for residents of some smaller cities. Other TDM measures such as staggering work shift schedules at local businesses may be less appropriate since many large-scale area businesses tend not to operate shifts.

One type of TDM measure appears best suited to the small community of Arlington: development of facilities for alternative modes of transportation. This would include paved shoulders and paths, sidewalks, and bike lanes which would handle pedestrians and bicyclists.

All future street improvement projects in the Arlington UGB, whether they involve new roadways or a retrofit of an existing roadway, should include the addition of a pedestrian facility such as sidewalks or a dedicated pedestrian path. Bike lanes should be considered for collectors and arterials, depending on traffic levels. This would allow pedestrians and bicyclists to travel separately from the traffic on the road.

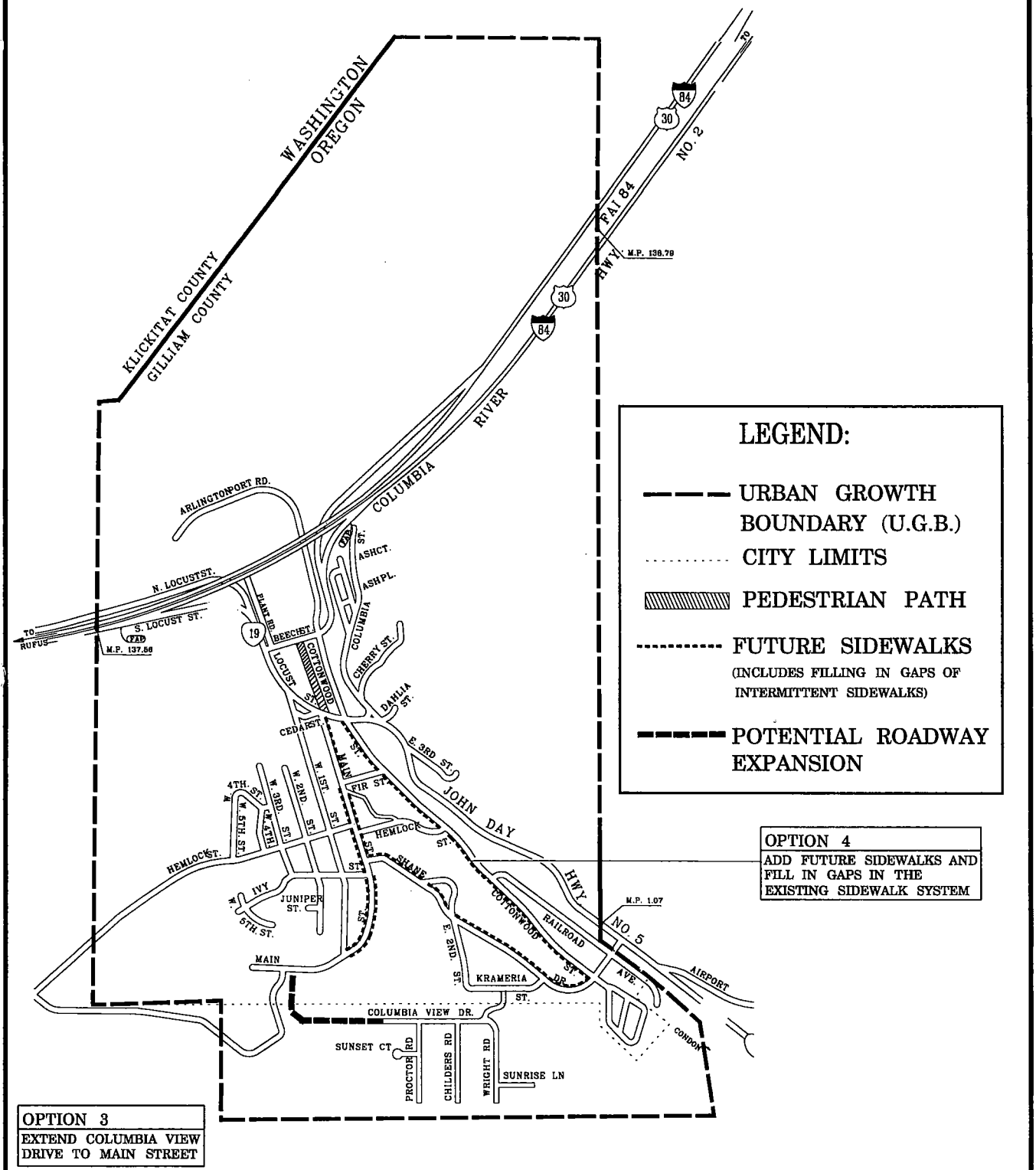

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FIGURE 6-1

Potential Improvement Options

City of Arlington TSP

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Impacts: Providing adequate facilities for pedestrians and bicyclists increases the livability of a city, and improves traffic and pedestrian safety. With more emphasis on walking or biking in the city, conditions such as air quality and noise levels would be improved as well. As street improvements are made to the existing street system, projects involving the construction of new sidewalks may require on-street parking to be implemented in place of parking on grass or gravel shoulders. In situations where the right-of-way is limited, adding sidewalks may prevent on-street parking as well.

Cost: The costs for several types of facilities which promote walking and biking in the county are summarized below.

- *Paved Shoulders* – Shoulders constructed along both sides of a road that are 4 feet in width would cost around $25 per linear foot of road. This would include 4 inches of asphalt and 9-inches of aggregate.
- *Multi-Use Paths* – A multi-use path 10 feet in width would cost around $16 per linear foot. This includes 2 inches of asphalt over 4 inches of aggregate.
- *Concrete Sidewalks* – The estimated cost to install new sidewalks on one side of an existing street is around $25 per linear foot. This includes a five foot wide walkway composed of 4 inches of concrete over 2 inches of aggregate. Installation of curbs would add an additional $5 per linear foot.
- *Bike Lanes* – The cost to install bike lanes on both sides of an existing road is around $45 per linear foot. This cost includes widening the roadway by 5 feet on both sides, installing curbs, using a fill composed of 4 inches of asphalt over 9 inches of aggregate, and placement of a 8 inch painted stripe.

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

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

Option 3. Develop Columbia View Drive Extension to Main Street

Overview: A relatively new 60 parcel housing development is being built in Gilliam county within Arlington's UGB but outside of the current city limits. The Columbia View Estates is located in the southern portion of Arlington's UGB and has access to the city of Arlington roadway network exclusively via Krameria Street. The development road network remains under the control of the developer, and the City of Arlington has no plans to annex the development until the site is more fully developed. This may be a number of years.

Under the current development roadway network, all roads feed to Columbia View Drive which connects to Krameria Street. The portion of Columbia View Drive from Krameria Street to Wright Road, which serves as the entrance road to the development, is one of the steepest roads in the UGB. The City of Arlington has identified that this road would likely be difficult to maintain during winter conditions and could limit mobility for residents within the development and limit emergency response access to the development. The city would like to see a second access road built to the development.

The Columbia View Drive extension would extend west from the current road end and connect to Main Street just east of the existing gravel road that runs north-south from Main Street. This alignment eliminates any encroachment on existing school property. The existing gravel road and land where the roadway extension would be built is owned by the Columbia View estates developer.

Columbia View Drive would function as a collector road and with its connection of residential and school land uses should be built with some type of facility to serve pedestrians such as paved roadway shoulders, a multi-use path, or sidewalks. Any of these treatments could potentially be built along just one side of the road initially (likely the north side) to reduce costs while still providing adequate service to pedestrians. Traffic volumes and speeds will likely be low enough that bicycles and cars could share the road without the need for bike lanes.

Impacts: A second access road to the Columbia View Estates development would improve roadway connectivity throughout the Arlington area. More importantly, it would provide a more viable access road during winter conditions when maintaining the existing steep access road is difficult, if possible. A new road with pedestrian use facilities would provide an alternate and safer facility for children within the development to access the city's school system.

Cost Estimate: This roadway would function as a collector. Since it is not part of the Arlington street network, it was assumed that the road would be built to a 28 foot paved rural collector street design standard consisting of two 10-foot travel lanes, and two four-foot paved shoulders to provide pedestrian and bicycle circulation. The unit cost to build this type of roadway is approximately $144 per linear foot including all construction and material costs and ROW costs. Based on a preliminary alignment submitted by Arlington, the roadway would be approximately 1,800 feet long resulting in an approximate project cost of $260,000.

Recommendation: The benefits of improved access between the Columbia View Estates development and the City of Arlington urban area, expansion of safe and efficient pedestrian circulation between the development and nearby schools, and an alternate access route during winter weather conditions make this a desirable project. Development of the project is recommended; however, because this project involves Gilliam County, Arlington, and multiple landowners, an agreement about funding of construction and maintenance of the new roadway must be reached before implementation. The county should take the lead in coordinating the development of this project.

Option 4. Improve Sidewalk Connectivity

Overview: The most basic transportation option is walking. However, it is not often considered as a means of travel. The presence of sidewalks is generally lacking in Arlington. Where sidewalks are present, they are generally fragmented and often not on both sides of a street. Sidewalks are primarily located in the vicinity of community resources that generate higher levels of pedestrian traffic such as along Beech Street which is near the pedestrian mall and boat basin and near Arlington's schools along Main Street. South Locust Street (OR 19) is bordered by sidewalks between Beech and Cottonwood Streets. Arlington has identified a need to develop sidewalks along Cottonwood Street, Main Street, and Shane Drive (see Figure 6-1).

On the low volume, primarily residential, local roadways, pedestrians and autos can both share the roadway without safety being a critical issue. On higher pedestrian use routes, sidewalks can help provide pedestrians with a stronger sense of safety since they are physically separated from the traveled roadway.

Shane Drive is bordered by moderately steep grades along most of the west side of the road between Main Street and Cottonwood Road. Addition of west-side sidewalks would likely involve some retaining wall construction. The city could be well served by sidewalks along only the east side of the road. Cost estimates along Shane Drive assume construction of east-side sidewalks only.

Main Street currently has a fragmented sidewalk system. As the primary collector level street in the city, and as one of the heavier pedestrian traveled roadways due to its proximity to schools, the sidewalk system along Main Street should be completed to consist of sidewalks on both sides of the street between W. 1st Street and OR 19. If and when Columbia View Drive is extended to Main Street, sidewalks should be extended along Main street to connect to the new roadway.

Cottonwood Street is abutted by a drainage canal along the east side of the roadway between OR 19 and Shane Drive. This limits sidewalk expansion to the west side of the road. Arlington could be well served by adding sidewalks to the west side of the roadway only.

Impacts: The addition of sidewalks along the streets identified would improve connectivity of residential, school, and commercial downtown land uses.

Cost Estimate: The estimated cost to install new concrete sidewalks on one side of an existing street is around $25 per linear foot. This includes a five foot wide walkway composed of 4 inches of concrete over 2 inches of aggregate. An additional $5 per linear foot needs to be added to the cost if curbs are also installed.

TABLE 6-1
SIDEWALK DEVELOPMENT COST ESTIMATE

Street	Sidewalk Location	Total Length (ft)	Unit Cost per Foot	Total Cost
Main Street (W. 1st St. to OR 19)	East side West side	2,500 2,500	$30	$150,000
Shane Drive (Main St. to Cottonwood St.)	East side	3,300	$30	$99,000
Cottonwood Street (Shane Drive to OR 19)	West side	4,800	$30	$144,000
Total		13,100		$393,000

Recommendation: Arlington residents would benefit from improved sidewalk connectivity. A connected sidewalk system supports and promotes pedestrian travel which may lead to slightly decreased auto use. Sidewalks also improve pedestrian safety, while maintaining vehicle mobility, by separating pedestrians from the traveled way. Sidewalk expansion in Arlington is recommended. Due to the higher level pedestrian use and service to schools, Arlington should focus on developing Main Street sidewalks before Shane Drive and Cottonwood Street.

Summary

Table 6-2 summarizes the recommendations of the street system modal plan based on the evaluation process described in this chapter. Chapter 7 discusses how these improvement options fit into the modal plans for the City of Arlington.

TABLE 6-2
TRANSPORTATION IMPROVEMENT OPTIONS - RECOMMENDATION SUMMARY

Option	Recommendation
1. Revise Zoning and Development Codes	• Implement
2. Implement TDM Strategies	• Implement
3. Develop Columbia View Drive Extension to Main Street	• Implement
4. Improve Sidewalk Connectivity	• Implement

CHAPTER 7: TRANSPORTATION SYSTEM PLAN

The purpose of this chapter is to provide detailed operational plans for each of the transportation systems within the Arlington community. The Arlington Transportation System Plan (TSP) covers all the transportation modes that exist and are interconnected throughout the urban area. Components of the street system plan include street classification standards, access management recommendations, transportation demand management measures, modal plans, and a system plan implementation program.

STREET DESIGN STANDARDS

Street design standards ensure that the design of a roadway supports its intended function. The function is determined by operational characteristics such as traffic volume, land use access, operating speed, safety, and capacity. Street standards institute design parameters necessary to provide a community with roadways which are relatively safe, aesthetic, and easy to administer when new roadways are planned or constructed. They are based on experience, and policies and publications of the profession.

The Oregon Transportation Planning Rule states that local governments shall establish standards for local streets that minimize pavement width and total right-of-way, consistent with the operational needs of the facility. The intent of this requirement is that local governments consider and reduce excessive standards for local streets to reduce construction costs, provide for more efficient land use, provide for emergency vehicle access, all while discouraging inappropriate through traffic volumes and speeds. Standards should also accommodate convenient pedestrian and bicycle use.

Recommended Street Standards

Development of the City of Arlington Transportation System Plan provides the city with an opportunity to review and revise street design standards to more closely fit with the functional street classification, and the goals and objectives of the Transportation System Plan. The recommended street standards are shown graphically in Figure 7-1 and Figure 7-2, summarized in Table 7-1, and described in detail on the following pages.

Since the City of Arlington Transportation System Plan includes land within the UGB, urban road standards should be applied in these outlying areas as well. Although portions of the city, especially outside the City Boundary, may presently have a rural appearance, these lands will ultimately be part of the urban area. Retrofitting rural streets to urban standards in the future would be expensive and perhaps controversial; it is recommended to initially build them to an acceptable urban standard.

TABLE 7-1
RECOMMENDED STREET DESIGN STANDARDS

Classification	Pavement Width	ROW Width	Travel Lanes No./lane width	Parking Lanes No./width	Bike lanes No./width	Planting, Utility, sidewalks (each side)
Arterial — Option 1	36 ft.	70 ft.	2/12 ft	none	2/6 ft	17 ft
Arterial — Option 2	52 ft.	80 ft.	2/12 ft	2/8 ft	2/6 ft	14 ft
Arterial — Option 3	48 ft.	70-80 ft.	3/12 ft[4]	none	2/6 ft	11-16 ft
Collector	36 ft.	60-70 ft.	2/10 ft	2/8 ft	none	12-17 ft
Minor— Option 1	24 ft.	50 ft.	2/12 ft	none	none	13 ft
Minor— Option 2	34 ft.	60 ft.	2/10 ft	2/7 ft	none	13 ft
Alley	20 ft.	20 ft.	2/10 ft	none	none	none

[1] Right-of-way
[2] May require on-street parking if parking cannot otherwise be accommodated.
[3] Includes 12-foot divider for left-turn refuge lane.
[4] Includes one 12-foot center two-way turn lane.

Minor Streets

The design of a minor street affects its traffic operation, safety, and livability. The residential street should be designed to enhance the livability of the neighborhood as well as to accommodate less than 1,200 vehicles per day. Design speeds should be 15 to 25 mph. When traffic volumes exceed approximately 1,000 to 1,200 vehicles per day, the residents on that street will perceive the traffic as a noise and safety problem.

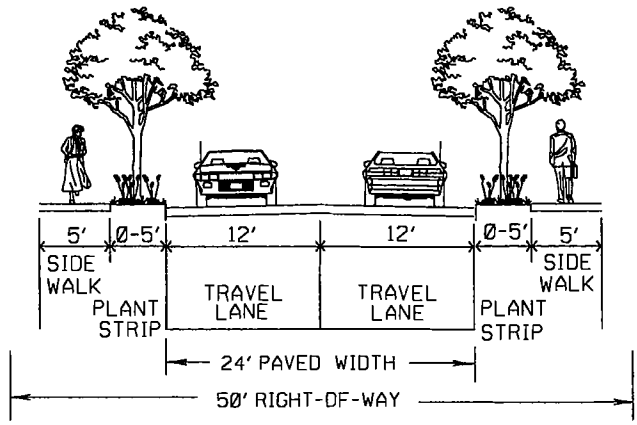
To maintain neighborhoods, residential streets should be designed to encourage low speed travel and to discourage through traffic. Narrower streets discourage speeding and through traffic as well as improve neighborhood aesthetics. They also reduce right-of-way needs, construction costs, storm water run-off, and the need to clear vegetation. Ten-foot travel lanes are desirable.

Two recommended street standards for minor streets are shown in Figure 7-1. As future street development or redevelopment occurs, the city may implement either street design standard to serve the desired function of the street. Where on-street parking is deemed necessary or desirable, Option 2 would be implemented.

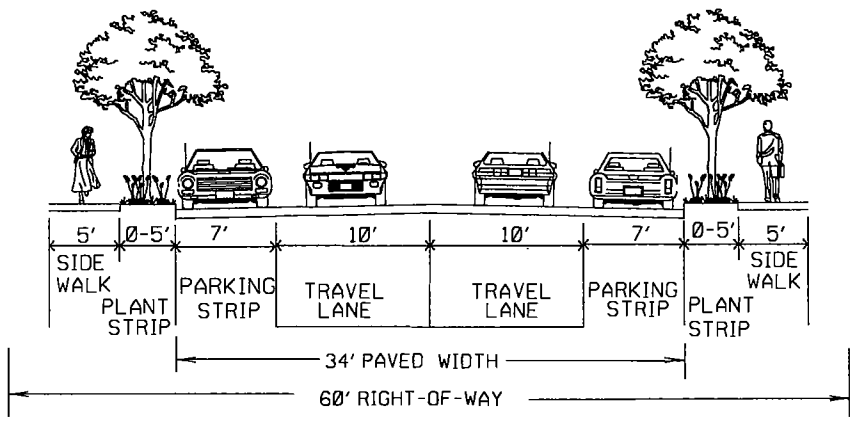
Option 1- This street standard provides for a 24-foot paved roadway surface within a 50-foot right-of-way. This standard accommodates passage of two lanes of moving traffic in each direction, with five-foot sidewalks on each side of the roadway. Optional planting strips have also been included. This wider street standard is in accordance with existing street standards in Arlington which specify 12-foot lane widths.

Option 2- This street standard provides for a 34-foot paved roadway surface within a 60-foot right-of-way. This standard accommodates passage of two lanes of moving traffic in each direction and directional on-street parking. It also includes five-foot sidewalks on each side of the roadway. Optional planting strips have also been included.

Oregon's Transportation Planning Rule (TPR) requires sidewalks along "most" minor streets but does not state that sidewalks be established on both sides of the roadway. The city of Arlington may wish to develop sidewalks on only one side of the street to help reduce development costs.

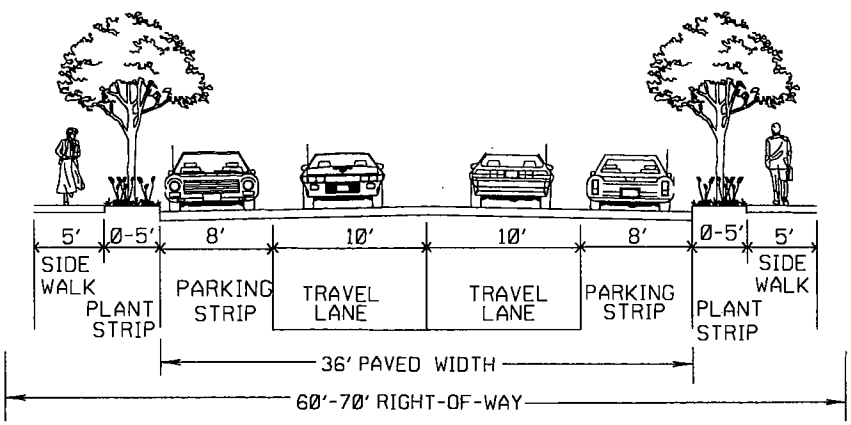


OPTION 1: TWO TRAVEL LANES WITH NO ON STREET PARKING



OPTION 2: TWO TRAVEL LANES WITH ON STREET PARKING

MINOR STREETS



COLLECTOR STREETS

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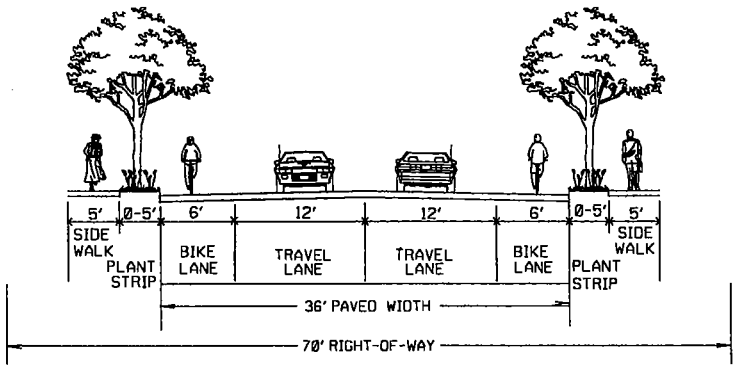
FIGURE 7-1

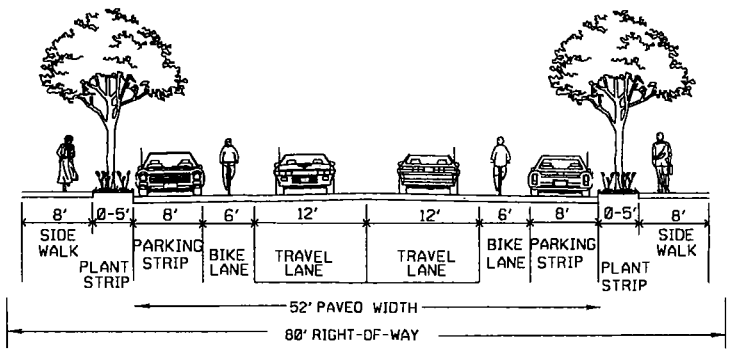
Recommended Street Standards Minor and Collector Streets

City of Arlington TSP



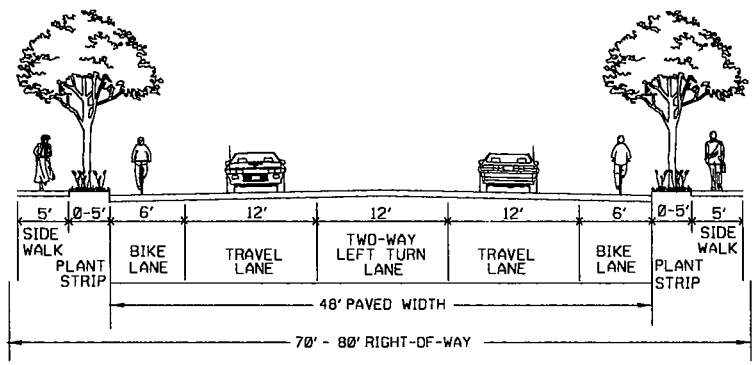
ARTERIAL STREETS

OPTION 1: TWO TRAVEL LANES WITH BIKE LANES



DOWNTOWN ARTERIAL STREET (BEECH STREET)

OPTION 2: TWO TRAVEL LANES WITH ON STREET PARKING AND BIKE LANES



ARTERIAL STREETS

OPTION 3: TWO TRAVEL LANES WITH CENTER LEFT-TURN LANE AND BIKE LANES

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FIGURE 7-2

Recommended Street Standards Arterial Streets

City of Arlington TSP

Alleys

Alleys can be a useful way to diminish street width by providing rear access and parking to residential, commercial, and industrial areas. Including alleys in a residential subdivision allows homes to be placed closer to the street and eliminates the need for garages to be the dominant architectural feature. This pattern, once common, has been recently revived as a way to build better neighborhoods. In addition, alleys can be useful in commercial and industrial areas, allowing access for delivery trucks that is off of the main streets. Alleys should be encouraged in the urban area of Arlington. Alleys should be 20 feet wide, with a 20-foot right-of-way.

Cul-de-Sac Streets

Cul-de-sac, or "dead-end" residential streets are intended to serve only the adjacent land in residential neighborhoods. These streets should be short (less than 400 feet long) and serve a maximum of 20 single-family houses.

Because cul-de-sac streets limit street and neighborhood connectivity, they should only be used where topographical or other environmental constraints prevent street connections. Where cul-de-sacs must be used, pedestrian and bicycle connections to adjacent cul-de-sacs or through streets should be included.

Collector Streets

Collectors are intended to carry between 1,200 and 10,000 vehicles per day (vpd), including limited through traffic, at a design speed of 25 to 35 mph. A collector can serve residential, commercial, industrial, or mixed land uses. Although only arterial streets in Arlington serve traffic volumes reaching 1,200 vpd, certain roadways in Arlington are primarily intended to serve local access needs of residential neighborhoods by connecting local streets to arterials. Despite carrying lower traffic volumes, these roadways function as collectors within the Arlington community. Bike lanes are typically not needed in smaller cities like Arlington due to slower traffic speeds and low traffic volumes.

The recommended street standard for collectors is shown in Figure 7-1. This street standard provides for a 36-foot paved roadway surface within a 60-foot to 70-foot right-of-way. Two 10-foot travel lanes accommodates passage of two lanes of moving traffic in each direction. This standard also includes two 8-foot parking lanes and five-foot sidewalks on each side of the roadway with an optional planting strip. Oregon's Transportation Planning Rule (TPR) requires sidewalks along all collector streets. In the event of limited funding, the city of Arlington may wish to develop sidewalks on only one side of all collectors initially with the intent to complete sidewalk development as funding becomes available.

This design standard can be striped to provide two travel lanes plus left-turn lanes at intersections or driveways by removing on-street parking for short distances.

Arterial Streets

Arterial streets form the primary roadway network within and through a region. They provide a continuous roadway system that distributes traffic between different neighborhoods and districts. Generally, arterial streets are high capacity roadways that carry high traffic volumes with minimal localized activity. Design speeds should be between 25 and 45 mph (See Figure 7-2). Three arterial street design standards were developed that closely conform to existing arterial standards outlined in Arlington's comprehensive plan.

Option 1

This option consists of a 70-foot right-of-way and a 36-foot paved width. This standard allows for two 12-foot travel lanes, two 6-foot bike lanes, and no curbside parking. Five-foot sidewalk should be provided on each side of the roadway and an optional planting strip up to five-feet may also be added. Bike lanes are not included in this option.

Option 2

This option consists of an 80-foot right-of-way and a 52-foot paved width. This standard allows for two 12-foot travel lanes, two 6-foot bike lanes, and two 8-foot curbside parking lanes. Sidewalks, at least five feet in width, should also be provided on each side of the roadway and an optional planting strip up to five-feet may also be added. This option supports access to curbside land uses such as retail and marina developments where sufficient off-street parking is not available along Beech Street.

Option 3

This option consists of a 70 to 80-foot right-of-way and a 48-foot paved width. This standard allows for two 12-foot travel lanes, one 12-foot center two-way left-turn lane, two 6-foot bike lanes, and no curbside parking. Sidewalks, at least five feet in width, should also be provided on each side of the roadway and an optional planting strip up to five-feet may also be added. This option supports the efficient flow of through traffic in areas where significant left-turn traffic would be expected to reduce capacity.

Bike Lanes

The Oregon Transportation Planning Rule directs that arterials shall include bikeways and sidewalks.

Sidewalks

A more complete pedestrian system should be implemented in the urban portion of Arlington. Every urban street should have sidewalks on both sides of the roadway as shown on the cross sections in Figure 7-2 through Figure 7-3. Due to funding availability, Arlington may need to phase construction of sidewalks and develop them on only one side of a street initially. Sidewalks on residential streets should be at least five feet wide. In addition, pedestrian and bicycle connections should be provided between any cul-de-sac or other dead-end streets.

Ideally, sidewalks should be buffered from the street by a planting strip to eliminate obstructions in the walkway, provide a more pleasing design, and a buffer from traffic. They also make the sidewalk more useable by disabled persons. When sidewalks are located directly adjacent to the curb, they can include such impediments as mailboxes, street light standards, and sign poles, which reduce the effective width of the walk. To maintain a safe and convenient walkway for at least two adults, a five-foot sidewalk should be used in residential areas.

Another essential component of the sidewalk system is street crossings. Intersections must be designed to provide safe and comfortable crossing opportunities. This includes crosswalks and other enhancements such as curb extensions which are used to decrease pedestrian crossing distance and as traffic calming measures.

Oregon's Transportation Planning Rule requires sidewalks along all collector and arterial streets and along "most" local streets.

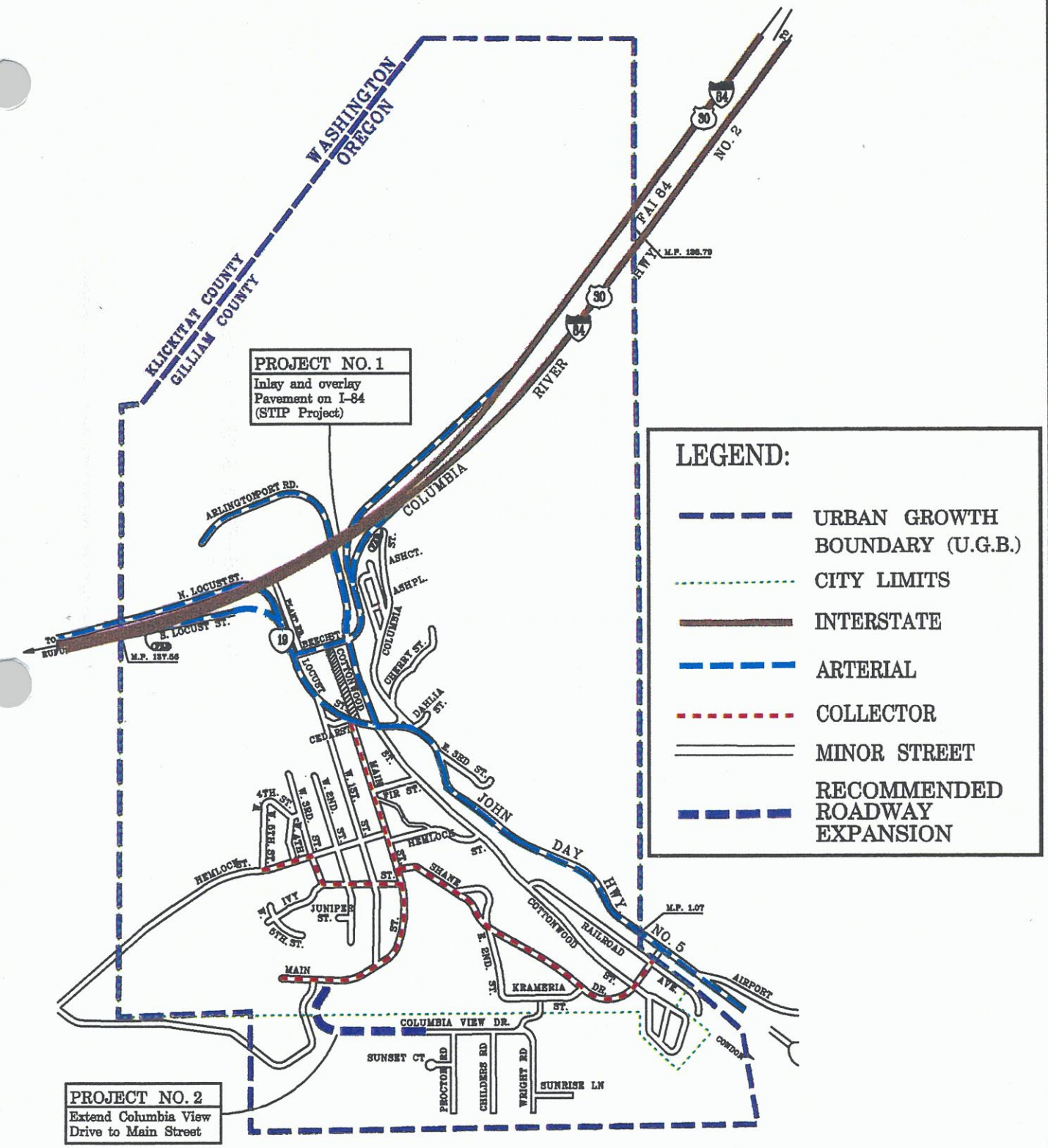

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FIGURE 7-3

Recommended Street System Plan

Crosswalks

The design of crosswalk markings is governed by the 1988 *Manual on Uniform Traffic Control Devices (MUTCD)* published by the US Department of Transportation (USDOT). Oregon follows the MUTCD standards but has developed some stricter design guidelines to enhance safety. Oregon's design standards, outlined in ODOT's *Traffic Line Manual*, satisfy all minimum requirements established under the MUTCD.

Crosswalks are designed to guide pedestrian travel at signalized and unsignalized intersections where traffic is required to stop as well as at non-intersection locations where a crosswalk is established. According to Section 3B-18 of the MUTCD, "at non-intersectional locations, these markings legally establish the crosswalk."

The following discussion of location and design standards is referenced from the MUTCD. Where Oregon has established a stricter design standard, only the Oregon standard is discussed since it also satisfys the MUTCD standards.

Location: "Crosswalks should be marked at all intersections where there is substantial conflict between vehicle and pedestrian movements. Marked crosswalks should also be provided at other appropriate points of pedestrian concentration, such as at loading islnads, midblock pedestrian crossing, or where pedestrians could not otherwise recognize the proper place to cross. Crosswalk markings should not be used indiscriminantly. An engineering study should be required before they are installed at locations away from traffic signals or STOP signs." (Section 3B-18, MUTCD)

Markings: Crosswalk lines shall be solid white lines marking both edges of the crosswalk and extending the full pavement width. At intersections in Oregon, the back edge line also serves as the vehicle stop line. ODOT standards specify crosswalk lines to be painted a minimum of 12-inches wide (up to a maximum of 24-inches, MUTCD) and spaced a minimum of 6-feet apart; 10-foot spacing is desirable in Oregon.

Signing: "Since non-intersectional pedestrian crossings are generally unexpected by the motorist, warning signs (see Section 2C-31 of the MUTCD) should be installed and adequate visibility provided by parking prohibitions." (Section 3B-18, MUTCD)

Appendix E presents excerpts from the MUTCD regarding crosswalk markings and signing. It also discusses ways of improving crosswalk visibility. The MUTCD is available through the Government Printing Office at a cost of $44. To order by phone, call (202) 512-1800.

Pavement Design

Unlike the sreet design standards presented in Figures 7-1 and 7-2 which illustrate the cross-sectional design of future streets, pavement design standards address types and depths of pavement layers. Pavement design is sensitive to key design parameters such as heavy truck volumes, environmental conditions, and soil conditions. Pavement designs may differ based on many variables including the types of materials used, the design truck volumes to be served, and the desired pavement design life. Because of greater traffic volumes, and specifically truck volumes, arterials would be expected to be thicker than minor streets.

As a planning document, the development of detailed pavement design standrards is outside the scope of this TSP. Development of such standards constitute a separate and detailed evaluation. However, experience in Arlington indicates that past pavement performance has been well served by designing

asphalt pavements with a minimum of 6-inches of base rock and 2.5-inches of asphalt. These minimum guidelines should be followed in future asphalt pavement design unless the results of a pavement design warrant changes. Detailed pavement designs may follow procedures outlined in the 1986 *AASHTO Guide for Design of Pavement Structures* published by the American Association of State Highway Transportaion Officials.

Curb Parking Restrictions

Curb parking should be prohibited at least 25 feet from the end of an intersection curb return to provide adequate sight distance at street crossings.

Street Connectivity

Street connectivity is important because a well-connected street system provides more capacity and better traffic circulation than a disconnected one. Developing a grid system of relatively short blocks can minimize excessive volumes of motor vehicles along roads by providing a series of equally attractive or restrictive travel options. Short block sizes also benefit pedestrians and bicyclists by shortening travel distances, making travel more convenient.

Arlington's existing development pattern is not an established grid. As much as the somewhat limiting topography allows, the city should plan future street development in a grid pattern. The city should consider block sizes with a perimeter distance of approximately 1,600 to 1,800 feet.

ACCESS MANAGEMENT

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 vehicles entering and exiting driveways, and through vehicles on the arterial streets. This not only leads to increased vehicle delay and deterioration in the level of service on the arterial, but also leads to a reduction in safety. Research has clearly 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 Transportation Planning Rule defines access management as measures regulating access to streets, roads and highways from public roads and private driveways and requires that new connections to arterials and state highways be consistent with designated access management categories. As areas of Arlington continue 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 City of Arlington TSP is to develop an access management policy that maintains and enhances the integrity (capacity, safety, and level-of-service) of the city street network. Too many access points along a street can contribute to a deterioration of its safety, and on some streets, can interfere with efficient traffic flow.

Access Management Techniques

The number of access points to an arterial can be regulated through a variety of techniques including, but not limited to:

- 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 roadways 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
- Recommended Access Management Standards

General Access Management Guidelines

Access management is hierarchical, ranging from complete access control on freeways to increasing use of roadways for access purposes, parking and loading at the local and minor collector level. Table 7-2 describes recommended general access management guidelines by roadway functional classification.

TABLE 7-2
ACCESS MANAGEMENT STANDARDS

			Intersection					
			Public Road		Private Drive[2]			
Functional Classification	Access Category	Urban/ Rural	Type[1]	Spacing	Type	Spacing	Signal Spacing	Median Control
Arterial								
I-84	1	U	Interchange	2-3 Mi.	None	NA	None	Full
OR 19	4							
Arlington: I-84 - Dahlia St.		U[3]	At grade	300 ft	Lt./Rt. Turns	150 ft	¼ Mi.	Partial/None
Other Urban areas		U	At grade	¼ Mi.	Lt./Rt. Turns	500 ft	½ Mi.	Partial/None
Other arterials in UGB	na	U	At grade	600 ft	Lt./Rt. Turns	300 ft	½ Mi.	na
Collector	na	U	At grade	300 ft	Lt./Rt. Turns	150 ft	na	na
Minor	na	U	At grade	300 ft	Lt./Rt. Turns	Each lot	na	na

1. Other intersection design treatments may be considered within categories 2-6.
2. Generally, no signals will be allowed at private access points on statewide and regional highways.
3 Intersection and driveway spacing based on existing "downtown" access patterns in the urban areas listed.
Source: Table 1 - Access Management Classification System, Appendix B, 1991 Oregon Highway Plan.

Application

The access management guidelines in Table 7-3 are generally not intended to eliminate existing intersections or driveways. Existing developments and legal accesses on the transportation network will not be affected by the recommended access management standards 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.

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.

State Highways

Access management is important to promoting safe and efficient travel for both local and long distance users along I-84 and OR 19 in Arlington. The 1991 Oregon Highway Plan (OHP) specifies an access management classification system for state facilities. The Draft 1998 Highway Plan (OHP) updates the access management standards and establishes guidelines and criteria to be applied when making access management assignments. Future developments on state highways (zone changes, comprehensive plan amendments, redevelopment, and/or new development) will be required to meet the 1991 OHP Level of Importance (LOI) and Access Management policies and standards until the 1998 Highway Plan is adopted. Arlington follows ODOT's designation of state highways as arterial roadways within the city, and should therefore follow the access management categories for these facilities as outlined in 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.

General

The OHP provides more than one appropriate access management classification for highways based upon their level of importance. Therefore, the Gilliam County TSP recommends which access management category is most appropriate for each highway based on the OHP guidelines and development levels. ODOT is ultimately responsible for determining the appropriate access management category for each highway.

I-84 through Arlington is a state highway of Interstate level of importance. Within the Arlington city limits, Oregon Highway Plan Category 1, "Full Control" applies. This classification requires interchange access with a minimum spacing of 3 miles in rural areas. No other access type is allowed.

OR 19 through Arlington (Locust Street) is a state highway of regional level of importance. Within the Arlington city limits, Oregon Highway Plan Category 4, "Partial Control" applies. Within urban areas, this classification permits at-grade intersections at a minimum spacing of one-quarter mile. Private driveways should have a minimum spacing of 500 feet from each other and from intersections. Traffic signals are allowed at one-half mile spacing.

Special Access Areas

Along OR 19 within the downtown urban core of Arlington, where the small scale "Mainstreet" character of development does not allow compliance with the standards outlined in Table 7-3 for urban areas, standards are recommended which support existing access development patterns. These development patterns support the pedestrian friendly downtown character that helps define livability within Arlington.

The increased development density and closer access spacing of streets and driveways in Arlington's "downtown" urban area along Locust Street (OR 19) precludes meeting the standard access management guidelines outlined in Table 7-3. Within the downtown area from I-84 to Dahlia Street, street spacing is approximately 300 feet. To preserve the downtown feel and pedestrian friendly nature of this section of the highway, reduced access management guidelines should be observed. Typically, minimum street spacing should be 300 feet and minimum driveway spacing should be 150 feet, allowing one driveway per block.

MODAL PLANS

The Arlington modal plans have been formulated using information collected and analyzed through a physical inventory, forecasts, goals and objectives, and input from area residents. The plans consider transportation system needs for Arlington during the next 20 years assuming the growth projections discussed in Chapter 5. All transportation system needs identified in this section have been assigned a project number in consecutive order, beginning with the projects identified in the street system plan. The timing for individual improvements are presented in the transportation system implementation program that follows. The timing of these projects are guided by the changes in land use patterns, growth of the population in future years, and available funds. Specific projects and improvement schedules may need to be adjusted depending on when and where growth occurs within Arlington.

Street System Plan

The City of Arlington roadway system plan encompasses all of the roadway projects identified to date by Arlington, Gilliam County and ODOT that are recommended for construction over the 20-year planning horizon. The plan is shown in Figure 7-3. It provides a consolidated list of projects that have been identified by various sources. These options have been discussed in Chapter 6 (Improvement Options Analysis). The two primary sources of identified roadway projects include:

- ODOT's final 1998-2001 Statewide Transportation Improvement Program (STIP), and
- Input from the Gilliam County TSP public involvement process

Projects listed represent capital improvements and not planned routine maintenance projects. The projects are listed as high priority (construction expected in the next 0 to 5 years), medium priority (construction expected in the next 5 to 10 years), and low priority (construction expected in the next 10 to 20 years). The Street System Plan also illustrates the recommended changes to Arlington's existing street functional classification system.

Street Functional Classification System

Development of the Arlington TSP provides the City with an opportunity to review and revise the currently adopted street functional classification system and the street cross-section design standards.

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

The current city street functional classification system designates streets within the City UGB as either freeway, arterial roadways or collector roadways (see Figure 3-1). All other roadways are considered minor roadways. Under the currently adopted street functional classification system, a greater number of the classified streets are designated as arterial roadways, with a much smaller proportion of the classified streets designated as collector streets.

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

The recommended street classification illustrated in Figure 7-3 designates I-84 as an Interstate route, four roadways as arterials, and three roadways as collectors within Arlington's city limits.

Arterials:

- Locust Street (OR 19) from I-84 to south city limits
- Beech Street from Locust Street to Birch Street (transition to I-84 on-ramp)
- Cottonwood Road from Locust Street to Arlingtonport Road
- Arlingtonport Road from Cottonwood Road to end of road

Collectors:

- Main Street from reservoir to Locust Street
- Shane Drive from Main Street to OR 19
- Hemlock Street from West 5th Street to West 3rd Street
- West 3rd Street from Hemlock Street to Ivy Street
- Ivy Street from West 3rd Street to Main Street
- Columbia View Drive (pending extension to Main Street)

Each of the designated arterials focuses on serving through traffic with access to development playing a secondary role. Locust Street (OR 19) serves through traffic from I-84 to other primary county destinations (i.e., Condon) and employment sites (e.g., Columbia Ridge Landfill). The Cottonwood Road and Arlingtonport Road link serves as a primary freight route for area farmers bringing crops to the port. Beech Street serves as the primary link for travelers leaving and entering I-84 as well as providing access to the main retail development mall in the city.

Each of the designated collector streets in Arlington strikes a balance between providing access to adjacent land uses and distributing primarily residential traffic to the city's arterial system. Their primary function is not just mobility, rather their function is equally divided between mobility for through traffic and access to the surrounding land. Under Arlington's existing comprehensive plan, Main Street is classified as an arterial roadway. Under the TSP, Main Street is reclassified as a collector street. Main Street primarily connects residential and school land uses with the city's arterial network. Through traffic comprises a small portion of traffic along the roadway. Hemlock Street links residential land uses with the arterial street system via Main Street. Shane Drive serves residential and commercial land uses and distributes traffic to the arterial street network along OR 19.

The remaining roadways previously designated as collector roadways in the City's currently adopted street functional classification plan are re-classified as local roadways. These streets include: Cherry Street, East 3rd Street, and Plant Road.

Statewide Transportation Improvement Program (STIP) Projects

The Oregon Department of Transportation has a comprehensive transportation improvement and maintenance program encompassing the entire state highway system. The Statewide Transportation Improvement Program (STIP) identifies all the highway improvement projects in Oregon. The STIP lists specific projects, the counties in which they are located, their construction year, and estimated cost.

The final 1998-2001 STIP, published in December 1997, identified one major highway improvement in Arlington as listed below.

Project No. S1

- I-84 Inlay/Overlay Phase I— The nearly 12-mile segment of I-84 between Arlington and Willow Creek (Milepost 138.00 to 149.65) is programmed to receive a pavement preservation inlay and overlay. Construction is scheduled to begin in federal fiscal year 1999 at an estimated cost of $7.87 million.

Other Roadway Projects

Only one additional roadway project was evaluated and recommended for implementation within Arlington. The western extension of Columbia View Drive to Main Street in Arlington is recommended as a medium-term project to be implemented in the next 5-10 years.

This project would provide a secondary access route to the relatively new 60 parcel housing development being built in Gilliam county within Arlington's UGB but outside of the current city limits. The Columbia View Estates development currently has access to the city of Arlington roadway network exclusively via Krameria Street. The existing development access road from Krameria Street is one of the steepest roads in the UGB. The City of Arlington has identified that this road would likely be difficult to maintain during winter conditions and could limit mobility for residents within the development and limit emergency response access to the development.

The Columbia View Drive extension would extend west from the current road end and connect to Main Street just east of an existing gravel road that runs north-south from Main Street. This alignment eliminates any encroachment on existing school property. The existing gravel road and the majority of the land where the roadway extension would be built is owned by the Columbia View estates developer. A second access road to the Columbia View Estates development would improve roadway connectivity throughout the Arlington area. More importantly, it would provide a more viable access road during winter conditions when maintaining the existing steep access road is difficult. A new road with pedestrian facilities would provide an alternate and safer facility for children within the development to access the city's school system.

Although development of the project is recommended, because this project involves Gilliam County, Arlington, and multiple landowners, an agreement about funding of construction and maintenance of the new roadway must be reached before implementation. Ultimately, it appears that Arlington would annex the Columbia View Estates development into the city. This is not expected to occur within the next five years, or until occupation of the development site is near completion. The county should take the lead in coordinating the development of this roadway project.

Pedestrian System Plan

A more interconnected pedestrian system should be implemented in the city when feasible. A sidewalk inventory revealed that sidewalks are present mainly in the downtown core of the city along OR 19 and Beech Street. Most of the remaining streets lack a pedestrian walkway. Every paved street should have sidewalks on both sides of the roadway, except in extenuating circumstances, meeting the requirements set forth in the recommended street standards.

Because of the small size of Arlington and the limited public resources available for transportation system improvements, sidewalk construction on a large scale is not feasible. Therefore, the city is focused on phasing construction to ensure that key streets have sidewalks on at least one side of the street. Figure 7-4 illustrates how the city's recommended sidewalk improvements improve pedestrian connectivity throughout the city.

Sidewalks on residential streets should be at least five feet wide. In addition, pedestrian and bicycle connections should be provided between any cul-de-sac or other dead-end streets. Pedestrian access on walkways should be provided continuously between businesses, parks, and adjacent neighborhoods. (Ordinances specifying these requirements are included in a separate document titled "Recommended Implementing Policies and Ordinances.") Since Arlington's downtown area is well served by sidewalks, the city has focused on sidewalk improvements that interconnect residential areas, schools, and downtown.

The primary goal of establishing a pedestrian system is to improve pedestrian safety; however, an effective sidewalk system has several qualitative benefits as well. Providing adequate pedestrian facilities increases the livability of a city. When pedestrians can walk on a sidewalk, separated from vehicular street traffic, it makes the walking experience more enjoyable and may encourage walking, rather than driving, for short trips. Sidewalks enliven a downtown and encourage leisurely strolling and window shopping in commercial areas. This "Main Street" effect improves business for downtown merchants and provides opportunities for friendly interaction among residents. It may also have an appeal to tourists as an inviting place to stop and walk around.

All new sidewalk construction in the city should include curb cuts for wheelchairs at every street corner to comply with the Americans with Disabilities Act (ADA). The addition of crosswalks should also be considered at all major intersections. As street improvements are made to the existing street system, projects involving the construction of new sidewalks may require on-street parking to be implemented in place of parking on grass or gravel shoulders.

In Chapter 6, a total of three options were recommended relating to pedestrian facility improvements. These options have been included in the pedestrian plan. Table 7-3 presents these projects along with their assigned prioritization and estimated cost. The recommended pedestrian system plan is shown in Figure 7-4.

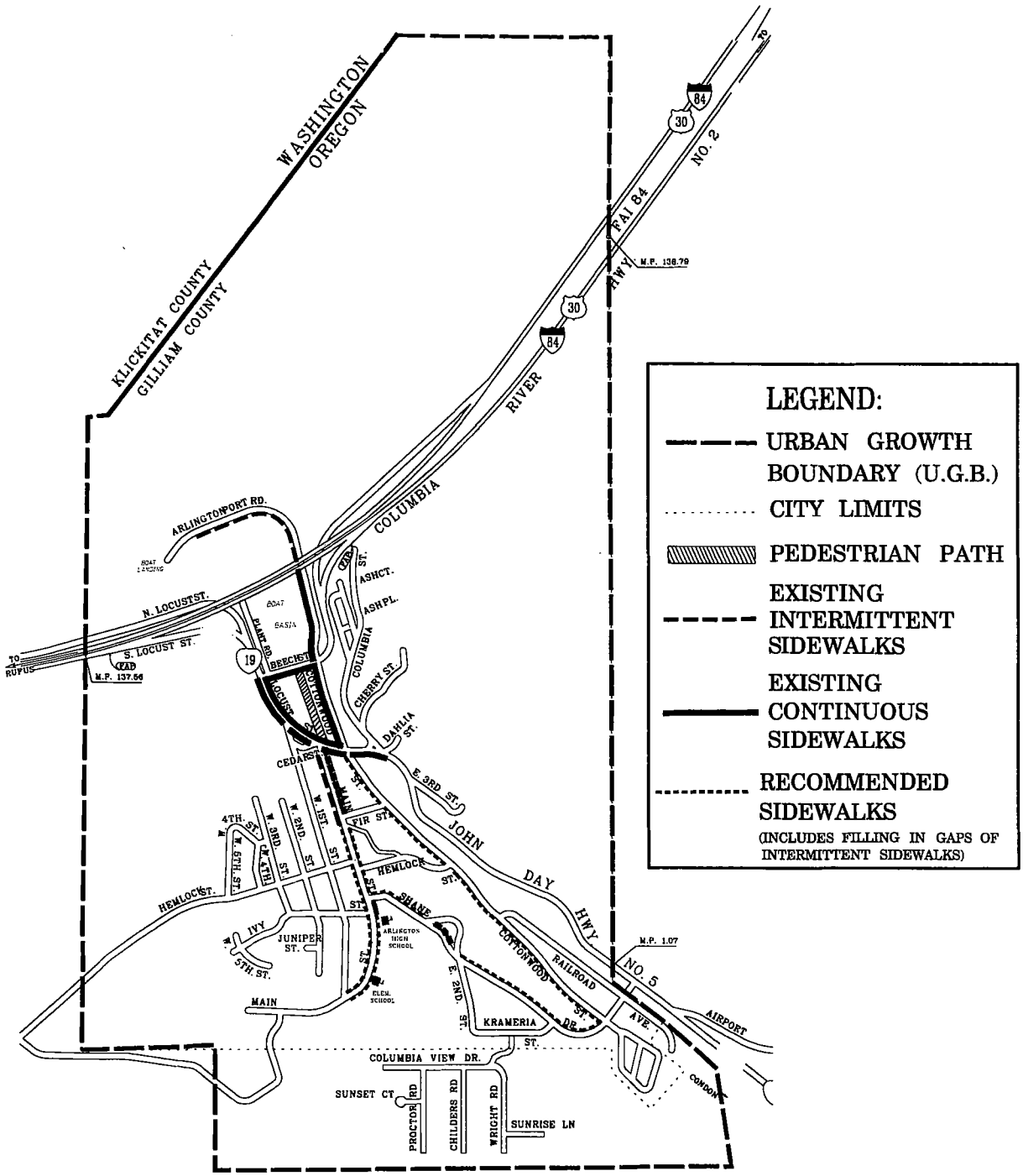

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FIGURE 7-4

Recommended Pedestrian System Plan

City of Arlington TSP

ODOT0277/ARL17-4.DGN/JXD/11-20-98

TABLE 7-3
RECOMMENDED PEDESTRIAN SYSTEM PROJECTS

Location/Description	Priority	Cost
Construct sidewalks on both sides of Main Street between West 1st Street and OR 19	High	$150,000
Construct sidewalks on east side of Shane Drive between Main Street and Cottonwood St.	Medium	$99,000
Construct sidewalks on west side of Cottonwood Street between Shane Drive OR 19	Low	$144,000
Subtotal High Priority Projects		**$150,000**
Subtotal Medium Priority Projects		**$99,000**
Subtotal Low Priority Projects		**$144,000**
Total		**$393,000**

Bicycle System Plan

The 1991 Oregon Bicycle and Pedestrian Plan describes the applicability of shared roadway bikeway facilities along roadways with low speeds (≤25 mph) and low daily traffic volumes (≤ 3,000 vpd). These low volume, low speed, roadways typically accommodate the safe and efficient shared mobility of motorists and bicyclists. Average daily traffic volumes are not forecast to reach 3,000 vpd in Arlington over the 20-year planning horizon. Beyond the 20-year planning horizon, Arlington would need to consider the development of bike lanes on some roadways.

OR 19 from Dahlia Street to the UGB line does have at least six-foot wide directional paved shoulders, supporting use of the highway as a shoulder bikeway facility. There are no specific bicycle development projects identified as part of Arlington's TSP.

Bicycle parking is lacking in Arlington. Bike racks should be installed in front of downtown businesses and all public facilities (schools, post office, library, city hall, and parks). Typical rack designs cost about $50 per bike plus installation. An annual budget of approximately $1,500 to $2,000 should be established so that Arlington can begin to place racks where needs are identified and to respond to requests for racks at specific locations.

Transportation Demand Management Plan

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

In Arlington, because traffic volumes are low, capacity of the local street system is not an issue and is not expected to become an issue during the 20-year planning horizon. Therefore, implementing TDM strategies may not practical in most cases. However, the sidewalk improvements recommended earlier in this chapter are also considered TDM strategies. By providing these facilities, the City of Arlington is encouraging people to travel by modes other than the automobile.

Because intercity commuting is a factor in Gilliam County, residents who live in Arlington and work in other cities should be encouraged to carpool with a fellow coworker or someone who works in the same area. Implementing a local carpool program in Arlington alone is not practical because of the city's small

size; however, a county-wide carpool program may be possible. The City of Arlington should support state and county carpooling and vanpooling programs which could further boost carpooling ridership.

No costs have been estimated for the TDM plan. Grants may be available to set up programs; other aspects of transportation demand management can be encouraged through ordinance and policy.

Public Transportation Plan

As described in Chapter 3, there is no established fixed-route public transportation system anywhere in Arlington or Gilliam County. The Mid-Columbia Bus Company operates home-to-school bus service for Arlington's school district. Mid-Columbia maintains an office and storage facility for its five buses located in Arlington. Since the state requires school bus coverage for elementary students that live more than three-quarters of a mile from school and for high school students that live more than one-mile from school, Mid-Columbia's bus coverage is widespread.

Mid-Columbia also operates charter bus service within the county and much of Oregon to various destinations including Seattle, Washington. Mid-Columbia operates 10 charter buses out of Condon with stops in Arlington. This service is targeted to adult passengers and serves only Arlington and Condon within the County.

Demand responsive, otherwise referred to as "dial-a-ride," transit is available in Arlington. Arlington operates one handicapped-access van and a 12-passenger van. This volunteer program is provided as a special transportation service primarily for seniors. Arlington has a transit coordinator that works in cooperation with Gilliam County and the Mid-Columbia Council of Governments who manage the provision of the service.

Arlington is scheduled to receive one new minivan by year 2001. The van will be purchased with funds allocated within ODOT's final 1998-2001 STIP for the *elderly and persons with disabilities program.*

Rail Service Plan

The Union Pacific Railroad maintains a rail line along the I-84 corridor throughout Arlington with a spur that runs through Arlington approximately 11 miles south along OR 19 to the Columbia Ridge Landfill facility located on Cedar Springs Road. The Waste Management facility generates one outgoing 60 to 90 car freight train daily during the week with occasional service on Saturday. The daily roundtrip train service brings a loaded train into the landfill site in the morning from Seattle, WA which upon off-load, returns empty at night. This freight operation represents the extent of rail service in Arlington and Gilliam County.

Approximately five years ago, Union Pacific Railroad ceased rail operations between Arlington and Condon and along the OR 74 corridor. Both rail lines have been physically removed. Freight operations between Arlington and Condon are now primarily accommodated via truck.

There are no plans to expand rail service within Arlington or Gilliam County at this time.

Air Service Plan

The City of Arlington is served by the Arlington Municipal Airport which is owned by the city and operates for private and agriculture use only. The airport is not staffed and consists of a turf and loose gravel runway measuring 3,000 feet by 50 feet. Arlington's airport is not lit, precluding nighttime operations. If needed, the airport property could support development of additional land-slide facilities and could support

extension of the runway to 5,000 feet in length. However, the city has no plans to further develop the airport at this time.

A Master Plan has not been developed for the airport. However, Gilliam County recognizes the importance, existing and future, of maintaining these two airport facilities. According to *Gilliam County's Comprehensive Plan*, the county will follow policies to "...protect these airports from hazards to navigation and to otherwise encourage the development of adjacent lands and facilities in a manner conducive to increased utilization."

The nearest passenger-use airport is located in Pendleton. Eastern Oregon Regional Airport in Pendleton is a tower controlled airport with 40,600 annual operations. Passenger service includes 16 scheduled flights per day by Horizon Airlines, with flights to Portland and Seattle. The Portland International Airport is located about 140 miles to the west of Arlington. Most people probably use this airport for air travel.

There are no plans to expand airport capacity or service within Arlington at this time. Arlington is developing a funding plan to make improvements to the airport that primarily consists of paving the runway. Although a specific construction timeline has not been determined, a tentative goal of year 2002 has been suggested to complete the estimated $150,000 project.

Pipeline Service

There are no pipeline facilities located within Arlington. However, two natural gas pipelines maintained by Pacific Gas Transmission traverse the central portion of Gilliam County. Although the County is not currently served by the pipelines, future natural gas service within the county has been discussed. Although a substation location has not been addressed, large commercial operations and Port operations within the Arlington area support future development in the Arlington area.

Water Transportation

Water transportation in Arlington consists of river cargo operations and marina operations which are both managed through the Port of Arlington. The two primary sources of information used by DEA to research water transportation include review of the *Port of Arlington Expansion Study*, March 1998 and a personal interview with representatives of Cargill Enterprises, the Port of Arlington's single tenant and operator of the Port's grain elevator.

Cargo Operations

The Port of Arlington is presently engaged in grain export only, and Port facilities consist of a single 703,000 bushel capacity grain elevator with one leg (or loading conveyor). The Port also maintains an 80-foot slip on the river to moor barges awaiting loading. There is currently only one marine cargo operator in the Port District— Cargill Enterprises, Inc. Cargill has been a long term tenant with the Port and leases use of the grain elevator.

The export of grain is critical to Gilliam County's largely agriculture-based economy and the County is a leading grain producer in the state. The only cargo, historically and currently, exported from Arlington is grain. Exported grain travels from Arlington via barge to Portland for export internationally. Historically, no cargo has been imported to Arlington by water.

Demand on the Port facility varies throughout the year. Farmers harvest their grain in the summer months, transporting a portion for immediate sale and export through the Port and storing some for sale later. The three peak periods of export volume through the Port are from late June to late September

following harvest, November and December as farmers sell some of the grain they've been storing for money to get through the winter, and from February to March as farmers empty their storage bins in preparation for the next harvest and earn money to pay taxes. During these peak periods, which cover nearly seven months of the year, truck traffic through the Port averages approximately 100 trucks per day. Cargill representatives have indicated that at times, the Port exceeds the storage capacity of its existing bins and the capacity of its single loading conveyor.

Although results of the *Port of Arlington Expansion Study* concluded that, "there is inadequate grain production in Arlington's service area to justify establishment of a second grain terminal" Cargill has indicated a potential future need to have the Port build additional bins and install an additional loading conveyor to keep up with demand.

Truck circulation through the Port facility has not been a problem in the past. Trucks enter the Port district on Arlingtonport Road and proceed to the west end of the Port where they drive eastbound through the truck scale and off-load site. Upon being off-loaded, trucks proceed eastbound out of the Port district. While trucks circulate along Arlingtonport Road, they share the roadway with motorists accessing the marina and recreational boat launch facilities and those parking near the east tip of the Port site to access the Columbia River to windsurf or engage in other recreational activities. Cargill representatives at the Port perceive recent increases in recreational traffic and have indicated a concern that continued increases in traffic could hinder continued safe traffic circulation through the facility. The Port should monitor traffic circulation within the Port facility.

Expansion of cargo operations within the Port facility other than grain transport appears limited. According to the *Port of Arlington Expansion Study*, the very limited developable area available to support cargo operations (about 2 acres adjacent to the grain elevator) is inadequate to support either rock or container activities which are the only two identified potential cargoes for movement through the Port. Although the report indicates that future throughput of cargo to the landfill is a potential business opportunity, the report also indicates that Waste Management is not pursuing this option.

Marina Operations

The Port of Arlington owns and operates a marina which is part of the riverfront complex. According to the *Port of Arlington Expansion Study*, the Port has excess moorage capacity and has not historically had, and does not currently have, a waiting list. Based largely on these facts, the study concludes that marina expansion is not warranted.

Expanded Barge Dock Operations

Under the *Port of Arlington Expansion Study*, three alternatives were analyzed regarding the expansion of barge dock operations within the existing port facility in Arlington. Much of the discussion in this section is based on results from that report.

In concept, based on expanded barge dock operations, inbound containerized solid wastes, destined for the Waste Management facility, would off load at the port. Barges would then leave Arlington with cargo ranging from bulk aggregate material to containerized value-added products from the Waste Management to products (containerized or breakbulk) produced at the North Gilliam County Industrial Park. The optimum dock configuration would support handling the various types of cargo described previously.

The optimal facility design, as described in the expansion study, would consist of a 300-foot by 50-foot slip surrounded by an expanded gravel pad. The pad would be constructed in the shallow bay east of the

existing grain elevator and causeway. A track mounted gantry would be installed to access the slip. The approximate cost for this design, as outlined in the expansion study, is $10.4 million.

A second, scaled down, design would be constructed on the existing two-acre port site just west of the grain elevator. This design would involve a rail mounted overhead crane and new barge dock. A small access dock would also be constructed. The approximate cost for this design, as outlined in the expansion study, is $2.3 million.

A third design is different from option 2 in that it is assumed that a private entity would provide the overhead crane as part of a long-term contract with the port. The approximate cost for this design, as outlined in the expansion study, is $1.6 million.

Previous analysis conducted under the *Port of Arlington Expansion Study* indicated that existing demand on the port facility does not warrant facility expansion. Future expansion of barge dock operations within the Port of Arlington will likely be tied to some commitment by one or more major users, which would support the economic viability of such an expansion. At that point, further analysis of which design concept to implement would be needed.

TRANSPORTATION SYSTEM PLAN IMPLEMENTATION PROGRAM

Implementation of the Arlington TSP will require both changes to the city comprehensive plan and zoning code and preparation of a 20-year transportation project list. These actions will enable Arlington to address both existing and emerging transportation issues throughout the urban area in a timely and cost effective manner.

One part of the implementation program is the formulation of a 20-year transportation project list. The purpose of the list is to detail what transportation system improvements will be needed as Arlington grows and provide a process to fund and schedule the identified transportation system improvements. It is expected that the Transportation System Plan project list can be integrated into the existing city and county CIP and the ODOT STIP. This integration is important since the TSP proposes that city, county, and state governmental agencies fund all or some of the transportation improvement projects.

Model policy and ordinance language that conforms with the requirements of the Transportation Planning Rule is included in a separate document titled "Recommended Implementing Policies and Ordinances." The proposed ordinance amendments will require approval by the City Council and those that affect the unincorporated urban area will also require approval by the Board of County Commissioners.

20-Year Transportation Project List

Timing for the 20-year transportation project list is organized into three time periods:

- 1999-2003 (less than 5 years)
- 2004-2008 (5 to 10 years)
- 2009-2018 (10 to 20 years)

These time periods are based on current need, the relationship between transportation service needs, and the expected growth of the city. Table 7-5 summarizes the 20-year transportation project list. It lists the projects by priority and provides cost information. The cost estimates for all the projects listed on the project list were prepared on the basis of 1998 dollars. These costs include design, construction, and some

contingency costs. They are preliminary estimates and generally do not include right-of-way acquisition, water or sewer facilities, or adding or relocating public utilities. The following schedule may be modified to reflect changes in priority or the availability of finances or the actual growth in population and employment.

A total of five projects are included in Arlington's 20-year transportation project list with a cost of over $8.5 million. Two projects have been identified for construction within the next five years at a total cost of $8 million, two projects within the next five to 10 years at a total cost of $359,000, and one project within the next 10 to 20 years at a total cost of $144,000.

Table 7-4 indicates that the City of Arlington has total funding responsibility for sidewalk improvement projects. Funding responsibility does not necessarily mean that the City must fund the entire cost. It should be noted that alternative funding sources are available to the city, as discussed in Chapter 8 *Funding Options and Financial Plan.* However, the city has the responsibility of competing for these funds and coordinating funding sources. It is quite possible that the City of Arlington will be able to fund significant portions of their sidewalk development projects through state and federal funds.

TABLE 7-4
ARLINGTON 20-YEAR TRANSPORTATION PROJECT LIST

		Costs ($ x 1,000)				
Timing	**Location/Description**	**City**	**County**	**State**	**Federal**	**Total**
1999-2003						
High Priority	Pavement preservation along I-84 between Arlington and Willow Creek	$0	$0	$1,347	$6,523	$7,870[1]
	Construct sidewalks on both sides of Main Street between West 1st Street and OR 19	$150	$0	$0	$0	$150[2]
2004-2008						
Medium Priority	Construct sidewalks on east side of Shane Drive between Main Street and Cottonwood Street	$99	$0	$0	$0	$99[2]
	Extend Columbia View Drive to Main Street	$86.6	$86.6	$0	$0	$260[3]
2009-2018						
Low Priority	Construct sidewalks on west side of Cottonwood Street between Shane Drive and OR 19	$144	$0	$0	$0	$144[2]
Total High Priority		$150		$1,347	$6,523	$8,020
Total Medium Priority		$185.6	$86.6			$359[3]
Total Low Priority		$144				$144
Total		**$479.6**	**$86.6**	**$1,347**	**$6,523**	**$8,523[3]**

[1.] 1998-2001 STIP project.
[2.] Arlington may qualify for state and federal grant money to complete sidewalk development projects.
[3.] A funding agreement between Arlington, Gilliam County, and the private landowners involved must be determined. For planning purposes, the private landowner is assumed to pay for one-third of the project cost.
TBD- To Be Determined

CHAPTER 8: FUNDING OPTIONS AND FINANCIAL PLAN

The Transportation Planning Rule requires Transportation System Plans to include an evaluation of the funding environment for recommended improvements. This evaluation must include a listing of all recommended transportation improvement projects, estimated costs to implement those improvements, and a review of potential funding mechanisms. Arlington's TSP identifies five specific capital improvement projects over the next 20 years. This section of this TSP provides an overview of some funding and financing options that may be available to the City of Arlington and Gilliam County to fund these improvements.

Pressures from increasing growth throughout much of Oregon have created an environment of planned improvements that remain unfunded. Arlington will need to work with Gilliam County and ODOT to finance the proposed new transportation projects over the 20-year planning horizon. The actual timing of these projects will be determined by the rate of population and employment growth actually experienced by the community. This TSP assumes Arlington will grow at an average annual rate of 0.94 percent over the next 20 years. If population growth exceeds this rate, the improvements may need to be accelerated. Slower than expected growth will relax the improvement schedule.

HISTORICAL STREET IMPROVEMENT FUNDING SOURCES

In Oregon, state, county, and city jurisdictions work together to coordinate transportation improvements. Table 8-1 shows the distribution of road revenues for the different levels of government within the state by jurisdiction level. Although these numbers were collected and tallied in 1991, ODOT estimates that these figures accurately represent the current revenue structure for transportation-related needs.

TABLE 8-1
SOURCES OF ROAD REVENUES BY JURISDICTION

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

Source: ODOT 1993 Oregon Road Finance Study.

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

As a state, Oregon generates 94 percent of its highway revenues from user fees, compared to an average of 78 percent among all states. This fee system, including fuel taxes, weight distance charges, and registration fees, is regarded as equitable because it places the greatest financial burden upon those who create the greatest need for road maintenance and improvements. Unlike many states that have indexed user fees to inflation, Oregon has static road-revenue sources. For example, rather than assessing fuel taxes as a percentage of price per gallon, Oregon's fuel tax is a fixed amount (currently 24 cents) per gallon.

Transportation Funding in Gilliam County

Historically, sources of road revenues for Gilliam County have included federal forest fees, state highway fund revenues, federal grants, earnings from the investment of the working fund balance, and other sources. Transportation revenues and expenditures for Gilliam County are shown in Table 8-2 and Table 8-3.

TABLE 8-2
GILLIAM COUNTY TRANSPORTATION-RELATED REVENUES

	1995-1996 Actual	1996-1997 Actual	1997-1998 Budget	1998-1999 Budget
Beginning Fund Balance	$406,296	$368,957	$330,000	$310,789
Resources				
Taxes	$294,615	$300,158	$298,640	$313,642
Investment Earnings	$6,463	$9,402	$6,000	$6,000
Charges/Fees/Services	$80,649	$239,774	$5,000	$255,000
Sale of Assets	$24,279		$100	$46,000
Misc. Other Revenue	$86,214	$92,126	$15,100	$10,100
State Motor Vehicle Fund	$135,773	$138,990	$140,000	$140,000
County Allotment	$54,712	$255,240	$20,000	$20,000
Sale of Public Land	$1,592	$5,221	$1,000	$25,000
Federal Disbursements	$2,161	$1,310	$1,200	$1,250
Interfund Transfers	$345,281	$122,803	$205,500	$112,395
	$1,031,738	$1,165,025	$692,540	$929,387

Source: Gilliam County.

As shown in Table 8-2, revenues have declined somewhat, from a high of nearly $1.2 million in 1996-1997 to an estimated $700,000 in 1997-1998. Nearly $140,000 of the annual revenue comes from the State Highway Fund. In recent years, Gilliam County has also benefited from resources from the County Allotment Fund, which distributes monies to counties with the lowest resource-per-equivalent road-mile ratios. The County Allotment Program distributes funds to counties on an annual basis; the funds distributed in this program are in addition to the re4gular disbursement of State Highway Fund resources. The program determines the amount of total revenue available for roads in each county and the number of road miles (but not lane miles) of collectors and arterials under each county's jurisdiction. Using these two benchmarks, a "resource-per-equivalent" ratio is calculated for each county. Resources from the $750,000 program are provided to the county with the lowest resource-per-equivalent road-mile ratio until they are funded to the level of the next-lowest county. The next-lowest county is then provided resources until they are funded to the level of the third-lowest county, and so on, until the fund is exhausted.

TABLE 8-3
GILLIAM COUNTY TRANSPORTATION-RELATED EXPENDITURES

	1995-1996 Actual	1996-1997 Actual	1997-1998 Budget	1998-1999 Budget
Personal Services	$363,895	$340,046	$327,757	$358,717
Materials and Services	$285,024	$181,511	$218,050	$285,050
Capital Outlay	$43,794	$6,311	$13,550	$11,100
Other Requirements	$2,288	$12,283	$60,410	$95,307
Transfers	$293,668	$290,000	$226,795	$263,500
	$988,669	$830,151	$846,562	$1,013,673

Source: Gilliam County.

As shown in Table 8-3, Gilliam County has spent between $6,000 and $44,000 annually in capital improvements. The bulk of expenditures in the road fund are for personal services and materials and services relating to maintenance.

The County also accounts for funds intended for the purchase of road improvement equipment in a Road Equipment Replacement Fund. Its revenues and expenditures are shown in Table8-4. Its revenues are typically transfers from the general road fund.

TABLE 8-4
GILLIAM COUNTY ROAD EQUIPMENT REPLACEMENT FUND

	1995-1996 Actual	1996-1997 Actual	1997-1998 Budget	1998-1999 Budget
Beginning Fund Balance	$183,727	$100,754	$76,100	$120,000
Resources				
Investment Earnings	$2,989	$1,863	$2,000	$2,000
Transfers	$100,000	$120,000	$120,000	$100,000
	$102,989	$121,863	$122,000	$222,000
Expenditures				
Road Equipment Purchase	$136,514	$97,399	$149,100	$173,000
Road Equipment Leases	$49,449	$46,918	$49,000	$49,000
	185,963	$144,317	$198,100	$222,000

Source: Gilliam County.

Transportation Revenue Outlook in the City of Arlington and Gilliam County

ODOT's policy section recommends certain assumptions in the preparation of transportation plans. In its Financial Assumptions document prepared in May 1998, ODOT projected the revenue of the State Highway Fund through year 2020. The estimates are based on not only the political climate, but also the economic structure and conditions, population and demographics, and patterns of land use. The latter is particularly important for state-imposed fees because of the goals in place under Oregon's TPR requiring a ten-percent reduction in per-capita vehicle miles of travel (VMT) in MPO planning areas by year 2015, and a 20-percent reduction by year 2025. This requirement will affect the 20-year revenue forecast from the fuel tax. ODOT recommends the following assumptions:

- Fuel tax will increase 1 cent per gallon per year (beginning in year 2002), with an additional 1 cent per gallon every fourth year;
- Vehicle registration fees would be increased by $10 per year in 2002, and by $15 per year in year 2012;
- Revenues will fall halfway between the revenue-level generated without TPR and the revenue level if TPR goals were fully met; and
- The revenues will be shared among the state, counties, and cities on a "50-30-20 percent" basis rather than the previous "60.05-24.38-15.17 percent" basis;
- Inflation occurs at an average annual rate of 3.6 percent

Figure 8-1 shows the forecast in both current-dollar and inflation-deflated constant (1998) dollars. As highlighted by the constant-dollar data, the highway fund is expected to more slowly than inflation early in the planning horizon until fuel-tax and vehicle-registration fee increases occur in year 2002, then increase somewhat faster than inflation through year 2015, then (again) more slowly than inflation.

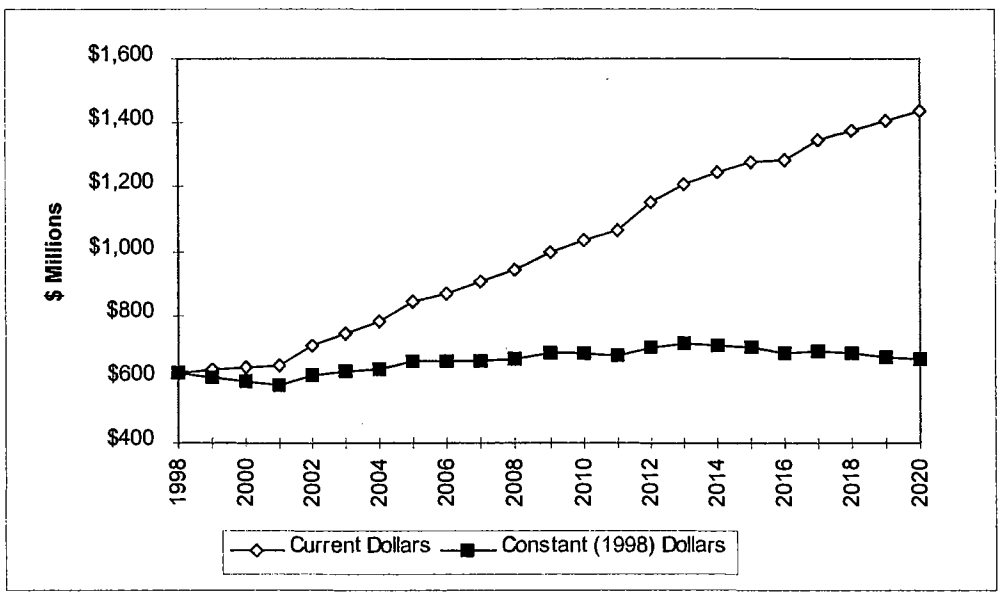

Figure 8-1 State Highway Fund (in Millions of Dollars
Source: ODOT Financial Assumptions.

As the State Highway Fund is expected to remain a significant source of funding for Arlington, the City is highly susceptible to changes in the State Highway Fund. The amount actually received from the State Highway Fund will depend on a number of factors, including the actual revenue generated by state gasoline taxes, vehicle registration fees, and other sources. It will also depend on the population growth in Arlington because the distribution of state highway funds is based on an allocation formula which includes population.

REVENUE SOURCES

In order to finance the recommended transportation system improvements requiring expenditure of capital resources, it may be necessary to consider a range of funding sources. Although the property tax has traditionally served as the primary revenue source for local governments, property tax revenue goes into general fund operations, and is typically not available for street improvements or maintenance. Despite this limitation, the use of alternative revenue funding has been a trend throughout Oregon as the full implementation of Measures 5 and 47. The alternative revenue sources described in this section may not all be appropriate in Arlington. However, this overview is provided to illustrate the range of options currently available to finance transportation improvements during the next 20 years.

Property Taxes

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

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

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

Measure 47, an initiative petition, was passed by Oregon voters in November 1996. It is a constitutional amendment that reduces and limits property taxes and limits local revenues and replacement fees. The measure limits 1997-98 property taxes to the lesser of the 1995-96 tax minus 10 percent, or the 1994-95 tax. It limits future annual property tax increases to three percent, with exceptions. Local governments' lost revenue may be replaced only with state income tax, unless voters approve replacement fees or charges. Tax levy approvals in certain elections require 50 percent voter participation.

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

The League of Oregon Cities (LOC) estimated that direct revenue losses to local governments, including school districts, will total $467 million in fiscal year 1998, $553 million in 1999, and increase thereafter. The actual revenue losses to local governments will depend on actions of the Oregon Legislature. LOC also estimates that the state will have revenue gains of $23 million in 1998, $27 million in 1999, and

increase thereafter because of increased personal and corporate tax receipts due to lower property tax deduction.

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

System Development Charges

System Development Charges (SDCs) are becoming increasingly popular for funding public works infrastructure needed for new local development. Generally, the purpose of a systems development charge is to allocate portions of the costs associated with capital improvements on the developments which increase demands on transportation, sewer or other infrastructure systems.

Local governments have the legal authority to charge property owners and/or developers fees for improving local public works infrastructure to meet the projected demand resulting from their developments. Charges are most often targeted toward improving community water, sewer, or transportation systems. In order to collect SDCs, cities and counties must have specific infrastructure plans in place that comply with state guidelines.

Typically, an SDC is collected when new building permits are issued. Transportation SDCs are based on trip generation of the proposed development. Residential calculations would be based on the assumption that a typical household will generate a given number of vehicle trips per day. Nonresidential use calculations are based on employee ratios for the type of business or industrial uses. SDC revenues would help fund the construction of transportation facilities necessitated by new development.

A key legislative requirement for charging SDCs is the link between the need for the improvements and the developments being charged. As the need for the recommended capital improvements in Arlington does not result from new development or capacity constraints, SDCs could not be used to fund them.

State Highway Fund

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

Local Gas Taxes

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

less expensive fuel elsewhere. Any action will need to be supported by careful analysis to minimize the unintended consequences of such an action.

Vehicle Registration Fees

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

Local Improvement Districts

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

Grants and Loans

There are a variety of grant and loan programs available, most with specific requirements related to economic development or specific transportation issues, rather than for the general construction of new streets. Many programs require a match from the local jurisdiction as a condition of approval. Because grant and loan programs are subject to change as well as statewide competition, they should not be considered a secure long-term funding source for Arlington. Most of the programs available for transportation projects are funded and administered through ODOT and/or the Oregon Economic Development Department (OEDD). Some programs which may be appropriate for the Arlington are described below. Appendix F provides a list of current 1998 program representatives for each of the grant and loan programs along with their phone numbers.

Bike-Pedestrian Grants

By law (ORS 366.514), all road, street or highway construction or reconstruction projects must include facilities for pedestrians and bicyclists, with some exceptions. ODOT's Bike and Pedestrian Program administers two programs to assist in the development of walking and bicycling improvements: local grants, and Small-Scale Urban Projects. Cities and counties with projects on local streets are eligible for local grant funds. An 80 percent state/20 percent local match ratio is required. Eligible projects include curb extensions, pedestrian crossings and intersection improvements, widening shoulders and restriping existing roads for bike lanes. Projects on urban state highways with little or no right-of-way taking and few environmental impacts are eligible for Small-Scale Urban Project Funds. Both programs are limited

to projects costing up to $100,000. Projects which cost more than $100,000, require ROW acquisition, or generate environmental impacts should be submitted to ODOT for inclusion in the STIP.

Enhancement Program

This federally-funded program earmarks $8 million annually for projects in Oregon. Projects must demonstrate a link to the intermodal transportation system, compatibility with approved plans, and local financial support. A 10.27 percent local match is required for eligibility. Each proposed project is evaluated against all other proposed projects in its region. Within the five Oregon regions, the funds are distributed on a formula based on population, vehicle miles traveled, number of vehicles registered and other transportation-related criteria. The solicitation for applications was mailed to cities and counties the last week of October, 1998. Local jurisdictions have until January, 1999 to complete and file their applications for funding available during the 2000-2003 fiscal years which begin October, 1999.

Highway Bridge Rehabilitation or Replacement Program

The Highway Bridge Rehabilitation or Replacement Program (HBRR) provides federal funding for the replacement and rehabilitation of bridges of all functional classifications. A portion of the HBRR funding is allocated for the improvement of bridges under local jurisdiction. A quantitative ranking system is applied to the proposed projects based on their sufficiency rating, cost factor, and load capacity. They are ranked against other projects statewide, and require state and local matches of 10 percent each. The HBRR includes the Local Bridge Inspection Program and the Bridge Load Rating Program.

Transportation Safety Grant Program

Managed by ODOT's Transportation Safety Section (TSS), this program's objective is to reduce the number of transportation-related accidents and fatalities by coordinating a number of statewide programs. These funds are intended to be used as seed money, funding a program for three years. Eligible programs include those relating to impaired driving, occupant protection, youth, pedestrians, speed, enforcement, and bicycle and motorcycle safety. Every year, TSS produces a Highway Safety Plan that identifies the major safety programs, suggests countermeasures, and lists successful projects selected for funding, rather than granting funds through an application process.

Special Transportation Fund

The Special Transportation Fund (STF) awards funds to maintain, develop, and improve transportation services for people with disabilities and people over 60 years of age. Financed by a two-cent tax on each pack of cigarettes sold in the state, the annual distribution of funds is approximately $5 million. Three-quarters of these funds are distributed to mass transit districts, transportation districts, and, where no such districts exist, to counties, on a per-capita formula. The remaining funds are distributed on a discretionary basis.

Special Small City Allotment Program

The Special Small City Allotment Program (SCA) is restricted to cities with populations under 5,000 residents. Unlike some other grant programs, no locally funded match is required for participation. Grant amounts are limited to $25,000 and must be earmarked for surface projects (drainage, curbs, sidewalks, etc.). However, the program does allow jurisdictions to use the grants to leverage local funds on non-surface projects if the grant is used specifically to repair the affected area. Criteria for the $1 million in total annual grant funds include traffic volume, the five-year rate of population growth, surface wear of the road, and the time passed since the last SCA grant allocation to a particular jurisdiction.

Immediate Opportunity Grant Program

The Oregon Economic Development Department (OEDD) and ODOT collaborate to administer a grant program designed to assist local and regional economic development efforts. The program is funded to a level of approximately $7 million per year through state gas tax revenues. The following are primary factors in determining eligible projects:

- Improvement of public roads;
- Inclusion of an economic development-related project of regional significance;
- Creation or retention of primary employment; and
- Ability to provide local funds (50/50) to match grant.

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

Oregon Special Public Works Fund

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

While SPWF program assistance is provided in the form of both loans and grants, the program emphasizes loans in order to assure that funds will return to the State over time for reinvestment in local economic development infrastructure projects. Jurisdictions that have received SPWF funding for projects that include some type of transportation-related improvement include the Cities of Baker City, Bend, Cornelius, Forest Grove, Madras, Portland, Redmond, Reedsport, Toledo, Wilsonville, Woodburn, and Douglas County.

Oregon Transportation Infrastructure Bank

The Oregon Transportation Infrastructure Bank (OTIB) program is a revolving loan fund administered by ODOT to provide loans to local jurisdictions, including cities, counties, special districts, transit districts, tribal governments, ports, and state agencies. Eligible projects include construction of federal-aid highways, bridges, roads, streets, bikeways, pedestrian accesses, and right-of-way costs. Capital outlays such as buses, light-rail cars and lines, maintenance yards, and passenger facilities are also eligible.

ODOT Funding Options

The State of Oregon provides funding for all highway related transportation projects through the Statewide Transportation Improvement Program (STIP) administered by the Oregon Department of Transportation. The STIP outlines the schedule for ODOT projects throughout the state. The STIP, which identifies projects for a three-year funding cycle, is updated on an annual basis. In developing this funding program, ODOT must verify that the identified projects comply with the Oregon Transportation Plan (OTP), ODOT Modal Plans, Corridor Plans, local comprehensive plans, and TEA-

1. *"Demonstrated need to accommodate long-range urban population growth requirements consistent with the LCDC goals.'*

   Findings: In order to meet the city's projected 20 year growth, the City would need an additional 372 dwelling units (based on current trends). A recent survey by City officials indicates only 80 buildable lots within existing city limits. There is undeveloped land which are above the capabilities of the city's water system and other infrastructure needs. The City intends to designate approximately 100 acres of the 150 acres in the UGB as

   R-1 Residential. Approximately 20 acres will be designated Open Space and approx. 32 acres (next to the railroad tracks) will be designated as industrial.

2. *"Need for housing, employment opportunities, and livability."*

   Findings: The 150 acres of the Urban Growth Boundary will be designate as Residential, Open Space, and light industrial. There will be a need for this to match the predicted population growth. This will also fill requests for industrial sittings. This will be of benefit to the economic growth of the city.

3. *"Orderly and economic provision of public facilities and services."*

   Findings: The most orderly and economic provision of facilities is to the south to the proposed Urban Growth Boundary area.

4. *"Maximum deficiency of land uses within and on the fringe of the existing urban area."*

   Findings: The proposed 150 acres of the Urban Growth Boundary is immediately adjacent to the existing facilities and urban development.

5. *"Environmental, energy, economic, and social consequences."*

   Findings: The land can readily be served by existing infrastructure, extension of existing streets will provide and energy savings over extending up the hill, the industrial lands will benefit the economy, and the social structure will not be impacted.

6. *"Retention of agricultural land is defined with Class 1 being the highest priority for retention and Class IV being the lowest priority."*

   Findings: The 150 acres within the proposed UGB is Class IV, and has not been farmed and has been pasture land over time.

7. *"Compatibility of the proposed urban uses with nearby agricultural activity."*

   Findings: There is little farming activity in this portion of the China Creek Valley. Lands to the north are urbanized.

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Goal 2 Exception To Agricultural Goal

There are 4 findings:

(1) *"Reasons justify why the State Policy embodied in the applicable goals should not apply."*

Findings: The area the west is impractical for development, and the existing infrastructure, water, sewer, and streets can simply be extended to the south without major effort. The land to the south, historically has not been used for agriculture other than range or pasture land.

(2) *"Areas which do not require a new Exception cannot reasonably accommodate the use."*

Findings: The only area in the City that can move toward is the land to the south.

(3) *"The long-term environmental, economic, social, and energy consequences resulting form the use at the proposed site. The measures designed to reduce adverse impacts were not significantly more adverse than would typically result from the same proposal being located on areas requiring a Goal Exception other than the proposed site."*

Findings: The long-term environmental, economic, social, and energy consequences of developing the land to the south would be considerably less than to the east or west.

(4) *"The proposed uses are compatible with other adjacent uses or will be so rendered through measures designed to reduce adverse impact."*

Findings: The expansion to the south is a continuation of the existing land use to the north, therefore is compatible.

Conclusion:

The deletion of the "Area of Mutual Concern" and establishment of the Urban Growth Boundary meets state and local criteria.

Decisions And Recommendations

The City of Arlington Planning Commission and the Gilliam County Planning Commission recommend the approval of the proposed Comprehensive Plan Amendments to the Arlington City Council and the Gilliam Court, respectively.

APPENDIX B

MAJOR STREET INVENTORY

APPENDIX B
1998 Major Streets Inventory
Arlington Transportation System Plan

Street	Jurisdiction	Classification[4]	Speed Limit (mph)	ROW Width (feet)	Street Width (feet)	No. of Travel Lanes	Direction of Travel	On-Street Parking	Shoulders Width (feet)	Shoulders Side	Shoulders Paving	Bikeway[1]	Bike Lanes	Truck Route	1998 Pavement Condition[3]	sidewalks	Curbs	Curb cuts at intersections	Comments
Arlingtonport Rd.																			
Boat landing to railroad crossing	Port of Arl.	Arterial	20	NA	24	2	Two-way	No	No	NA	NA	No	No	No	Good	No	Partial, South Side	No	
Ash Ct.																			
East 2nd St. to Birch Pl.	City	Not classified	25	45	14	2	Two-way	No	No	NA	NA	No	No	No	Good	No	No	NA	
Ash Pl.																			
East of East 2nd St.	City	Not classified	25	45	20	2	Two-way	No	No	NA	NA	No	No	No	Gravel	No	No	NA	
Beech St.																			
Locust St. to Plant Rd.	City	Arterial	25	45	40	2	Two-way	No	No	NA	NA	No	No	No	Fair to Good	Both Sides	Both Sides	Partial	
Plant Rd. to Cottonwood St.	City	Arterial	25	45	40	2	Two-way	No	No	NA	NA	No	No	No	Fair to Good	Both Sides	Both Sides	Partial	
Cottonwood St. to I-84 eastbound on-ramp	City	Arterial	25	45	40	2	Two-way	No	No	NA	NA	No	No	No	Fair to Good	Both Sides	Both Sides	Partial	
I-84 eastbound on-ramp to I-84 westbound off-ramp	City	Arterial	25	45	40	2	Two-way	No	No	NA	NA	No	No	No	Fair to Good	Both Sides	Both Sides	Partial	
Cedar St.																			
West 1st St. to Main St.	City	Not classified	25	45	20	2	Two-way	No	No	NA	NA	No	No	No	Very Good	No	No	NA	Width varies through parking lot
Cherry St.																			
Columbia St. to road end	Private	Not classified	25	NA	19	2	Two-way	No	No	NA	NA	No	No	No	Good	No	No	NA	Steep uprade (8-10%)
Dahlia St.																			
Columbia St. to road end	City	Not classified	25	50	19	2	Two-way	No	3	North	Gravel	No	No	No	Good	No	No	NA	Guard rail south side, steep upgrade
Fir St.																			
Main St. to 100' east of Main St.	City	Not classified	25	60	16	2	Two-way	No	No	NA	NA	No	No	No	Good	No	No	NA	Steep downgrade
100' east of Main St. to Cottonwood Rd.	City	Not classified	25	60	10	2	Two-way	No	No	NA	NA	No	No	No	Gravel	No	No	NA	Steep downgrade
Hemlock St.																			
West city limits to W. 5th St.	City	Not classified	25	60	10	2	Two-way	No	No	NA	NA	No	No	No	Gravel	No	Partial, Both Sides	NA	Private access west of 5th St.
W. 5th St. to W. 4th St.	City	Collector	25	60	33	2	Two-way	No	No	NA	NA	No	No	No	Very Good	No	Both Sides	NA	
W. 4th St. to W. 3rd St.	City	Collector	25	60	33	2	Two-way	No	No	NA	NA	No	No	No	Very Good	No	Both Sides	NA	
W. 3rd St. to W. 2nd St.	City	Not classified	25	60	33	2	Two-way	No	No	NA	NA	No	No	No	Very Good	No	Both Sides	NA	
W. 2nd St. to W. 1st St.	City	Not classified	25	60	33	2	Two-way	No	No	NA	NA	No	No	No	Very Good	No	No	NA	
W. 1st St. to Main St.	City	Not classified	25	60	28	2	Two-way	No	No	NA	NA	No	No	No	Very Good	No	No	NA	Steep downgrade
Main St. to Cottonwood Rd.	City	Not classified	25	50-30	21	2	Two-way	No	No	NA	NA	No	No	No	Very Good	No	No	NA	
Ivy St.																			
W. 5th St. to W. 3rd St.	City	Not classified	25	60	28	2	Two-way	No	No	NA	NA	No	No	No	Fair to Good	No	No	NA	
W. 3rd St. to W. 2nd St.	City	Collector	25	60	32	2	Two-way	No	No	NA	NA	No	No	No	Good	No	Both Sides	NA	
W. 2nd St. to W. 1st St.	City	Collector	25	60	32	2	Two-way	No	No	NA	NA	No	No	No	Good	No	No	NA	
W. 1st St. to Main St.	City	Collector	25	60	32	2	Two-way	No	No	NA	NA	No	No	No	Good	No	No	NA	
Shane Dr.																			
Main St. to E. 2nd St.	City	Collector	25	60	32	2	Two-way	No	No	NA	NA	No	No	No	Good	No	Partial, Both Sides	NA	
E. 2nd St. to Krameria St.	City	Collector	25	60	32	2	Two-way	No	No	NA	NA	No	No	No	Good	No	Both Sides	NA	
Krameria St. to Cottonwood St.	City	Collector	25	60	32	2	Two-way	No	No	NA	NA	No	No	No	Good	No	Both Sides	NA	
Cottonwood St. to Railroad Ave.	City	Collector	25	60	26	2	Two-way	No	No	NA	NA	No	No	No	Good	No	No	NA	
Railroad Ave. to John Day Hwy	City	Collector	25	60	26	2	Two-way	No	No	NA	NA	No	No	No	Good	No	No	NA	Intersection designed for trucks
Krameria St.																			
E. 2nd St. to Shane Dr.	City	Not classified	25	50	21	2	Two-way	No	No	NA	NA	No	No	No	Good	No	No	NA	
Unnamed Rd. (south of UGB)																			
Hemlock St. to Main St.	City/County	Not classified	25	40	10	2	Two-way	No	No	NA	NA	No	No	No	Gravel	No	No	NA	Private access west of 5th St.
West 5th St.																			
W. 4th St. to Hemlock St.	City	Not classified	25	60	31	2	Two-way	No	No	NA	NA	No	No	No	Good	No	No	NA	
W. 5th St. Spur (north of Ivy St.)	City	Not classified	25	60	28	2	Two-way	No	No	NA	NA	No	No	No	Good	No	No	NA	
W. 5th St. Spur (south of Ivy St.)	City	Not classified	25	60	26	2	Two-way	No	No	NA	NA	No	No	No	Good	No	Both Sides	NA	

APPENDIX B

1998 Major Streets Inventory

Arlington Transportation System Plan

Street	Jurisdiction	Classification[4]	Speed Limit (mph)	ROW Width (feet)	Street Width (feet)	No. of Travel Lanes	Direction of Travel	Shoulders: On-Street Parking	Shoulders: Width (feet)	Shoulders: Side	Shoulders: Paving	Bikeway[1]	Bike Lanes	Truck Route	1998 Pavement Condition[3]	sidewalks	Curbs	Curb cuts at intersections	Comments
West 4th St.																			
Hemlock St. to W. 4th St.	City	Not classified	25	60	33	2	Two-way	No	No	NA	NA	No	No	No	Very Good	No	Both Sides	NA	
W. 3rd St. to W. 4th St.	City	Not classified	25	60	34	2	Two-way	No	No	NA	NA	No	No	No	Very Good	No	Both Sides	NA	
W. 4th St. to W. 5th St.	City	Not classified	25	60	34	2	Two-way	No	No	NA	NA	No	No	No	Very Good	No	Both Sides	NA	
West 3rd St.																			
Road end to W. 4th St.	City	Not classified	25	60	32	2	Two-way	No	No	NA	NA	No	No	No	Very Good	No	Both Sides	NA	
W. 4th St. to Hemlock St.	City	Not classified	25	60	32	2	Two-way	No	No	NA	NA	No	No	No	Very Good	No	Both Sides	NA	
Hemlock St. to Ivy St.	City	Collector	25	60	32	2	Two-way	No	No	NA	NA	No	No	No	Very Good	No	Both Sides	NA	
West 2nd St.																			
Road end to Hemlock St.	City	Not classified	25	60	32	2	Two-way	No	No	NA	NA	No	No	No	Very Good	No	No	NA	
Hemlock St. to Ivy St.	City	Not classified	25	60	32	2	Two-way	No	No	NA	NA	No	No	No	Very Good	No	No	NA	
Ivy St. to Juniper St.	City	Not classified	25	60	32	2	Two-way	No	No	NA	NA	No	No	No	Very Good	No	No	NA	
Juniper St. to road end	City	Not classified	25	60	33	2	Two-way	No	No	NA	NA	No	No	No	Very Good	No	East Side	NA	
Juniper St.																			
Road end to W. 2nd St.	City	Not classified	25	50	28	2	Two-way	No	No	NA	NA	No	No	No	Very Good	No	No	NA	Cul-de-sac
Plant Rd.																			
I-84 to Beech St.	City	Not classified	25	16	21	2	Two-way	No	No	NA	NA	No	No	No	Fair	No	Partial, East Side	NA	
S. Locust St. (John Day Highway)																			
I-84 eastbound off-ramp (MP 0.00) to Beech St.	State	Arterial	25	50	26	1	One-way	No	6, 4	North, South	Paved	Shared Roadway	No	No	Good	No	East Side	NA	
Beech St. to W. 1st St.	State	Arterial	25	60	46	2	Two-way	No	No	NA	NA	Shared Roadway	No	No	Good	Both sides	Both Sides	Yes	
W. 1st St. to Main St.	State	Arterial	25	60	46	2	Two-way	No	No	NA	NA	Shared Roadway	No	No	Good	Both sides	Both Sides	Yes	
Main St. to Cottonwood St.	State	Arterial	25	60	46	2	Two-way	No	No	NA	NA	Shared Roadway	No	No	Good	Both sides	Both Sides	Yes	
Cottonwood St. to Dahlia St.	State	Arterial	25	60	46	2	Two-way	No	No	NA	NA	Shared Roadway	No	No	Good	South side	South Side	Yes	
Dahlia St. to E. 3rd St.	State	Arterial	35	60	24	2	Two-way	No	6	Both Sides	Paved	Shoulder Bikeway	No	No	Good	No	Partial, Both Sides	NA	
E. 3rd St. to 500' south of E. 3rd St.	State	Arterial	35	80-100	24	2	Two-way	No	6	Both Sides	Paved	Shoulder Bikeway	No	No	Very Good	No	No	NA	
500' south of E. 3rd St. to Hwy MP 1.0	State	Arterial	45	90-50	24	2	Two-way	No	6	Both Sides	Paved	Shoulder Bikeway	No	No	Very Good	No	No	NA	
Hwy MP 1.0 to Shane Dr.	State	Arterial	55	50	24	2	Two-way	No	6	Both Sides	Paved	Shoulder Bikeway	No	No	Very Good	No	No	NA	
Shane Dr. to Airport Rd. (MP 1.64)	State	Arterial	55	60	24	2	Two-way	No	6	Both Sides	Paved	Shoulder Bikeway	No	No	Very Good	No	No	NA	
N. Locust St.																			
S. Locust St. to I-84 westbound on-ramp	City	Arterial	25	16	12	1	One-way	No	2	Both Sides	Paved	No	No	No	Good	No			
West 1st St.																			
S. Locust St. to Cedar St.	City	Not classified	25	60	25	2	Two-way	No	No	NA	NA	No	No	No	Very Good	No	Both Sides	NA	
Cedar St. to Hemlock St.	City	Not classified	25	50-60	25	2	Two-way	Shoulder	Varying	Both Sides	Gravel/Paved	No	No	No	Very Good	No	No	NA	
Hemlock St. to Ivy St.	City	Not classified	25	60	21-25	2	Two-way	Shoulder	Varying	Both Sides	Gravel/Paved	No	No	No	Very Good	No	No	NA	
Ivy St. to Main St.	City	Not classified	25	60	24	2	Two-way	Shoulder	Varying	Both Sides	Gravel/Paved	No	No	No	Good	No	No	NA	
Main St.																			
S. Locust St. to Fir St.	City	Collector	25	50-85	21	2	Two-way	No	No	NA	NA	No	No	No	Good	Partial, West Side	Partial, Both Sides	NA	
Fir St. to Hemlock St.	City	Collector	25	85	24	2	Two-way	No	No	NA	NA	No	No	No	Good	No	No	NA	
Hemlock St. to Shane Dr.	City	Collector	25	80	24	2	Two-way	No	2-6	Both Sides	Partial gravel	No	No	No	Good	No	No	NA	
Shane Dr. to Ivy St.	City	Collector	25	60	22-42	2	Two-way	No	No	NA	NA	No	No	No	Good	Partial, East Side	Partial, East Side	Yes	
Ivy St. to W. 1st St.	City	Collector	25	60	22	2	Two-way	No	No	NA	NA	No	No	No	Good	No	No	NA	
W. 1st St. to unnamed Rd.	City	Collector	25	60	22	2	Two-way	No	No	NA	NA	No	No	No	Good	No	No	NA	
Unnamed Rd. to road end	City	Collector	25	60	22	2	Two-way	No	No	NA	NA	No	No	No	Good	No	No	NA	
Cottonwood St.																			
Arlingtonport Rd. to Beech St.	City	Arterial	25	52	24	2	Two-way	No	No	NA	NA	No	No	No	Good	East Side	East Side	NA	
Beech St. to S. Locust St.	City	Arterial	25	52	44	2	Two-way	No	No	NA	NA	No	No	No	Very Good	West side	West side	NA	
S. Locust St. to unnamed Rd.	City	Not classified	25	varies	32	2	Two-way	No	No	NA	NA	No	No	No	Good	No	Both Sides	NA	
Unnamed Rd. to Hemlock St.	City	Not classified	25	varies	32	2	Two-way	No	No	NA	NA	No	No	No	Good	No	Both Sides	NA	
Hemlock St. to Railroad Ave.	City	Not classified	25	60	32	2	Two-way	No	No	NA	NA	No	No	No	Very Good	No	Both Sides	NA	
Railroad Ave. to Shane Dr.	City	Not classified	25	60	32	2	Two-way	No	No	NA	NA	No	No	No	Very Good	No	Both Sides	NA	
Shane Dr. to Mobile Home Park	City	Not classified	25	60	32	2	Two-way	No	No	NA	NA	No	No	No	Very Good	No	Both Sides	NA	

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1998 Major Streets Inventory
Arlington Transportation System Plan

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Railroad Ave.																			
Cottonwood St. to Shane Dr.	City	Not classified	25	40	24	2	Two-way	No	2-3	Both Sides	Gravel	No	No	No	Very Good	No	No	NA	
Shane Dr. to road end	City	Not classified	25	40	20	2	Two-way	No	2-3	Both Sides	Gravel	No	No	No	Gravel	No	No	NA	
East 2nd Street																			
Columbia St. to North	City	Not classified	25	50	16	2	Two-way	Both Sides	2-4	Both sides	Gravel	No	No	No	Good	No	No	NA	
Shane Dr. to Krameria St.	City	Not classified	25	50	21	2	Two-way	No	No	NA	NA	No	No	No	Good	No	No	NA	
Birch Place																			
Columbia St. to North	City	Not classified	25	10	10	2	Two-way	Both Sides	No	NA	NA	No	No	No	Good	No	No	NA	
Columbia Street																			
Road end to 150' south	City	Not classified	25	60	16-18	2	Two-way	No	No	NA	NA	No	No	No	Fair to Poor	No	Both Sides	NA	
150' south to Birch Pl.	City	Not classified	25	60	21	2	Two-way	No	No	NA	NA	No	No	No	Good	No	Both Sides	NA	
Birch Pl. to E. 2nd St.	City	Not classified	25	60	21	2	Two-way	No	No	NA	NA	No	No	No	Good	No	Both Sides	NA	
E. 2nd St. to Cherry St.	City	Not classified	25	60	21	2	Two-way	No	No	NA	NA	No	No	No	Good	No	Both Sides	NA	
Cherry St. to Dahlia St.	City	Not classified	25	60	30	2	Two-way	No	No	NA	NA	No	No	No	Good	No	Both Sides	NA	
East 3rd Street																			
Columbia St. to road end	City	Not classified	25	60	23	2	Two-way	No	1-2	Both Sides	Gravel	No	No	No	Good	No	No	NA	
Columbia View Estates Roadways																			
Sunrise Lane	Private	Not classified	25	60	17	2	Two-way	No	No	NA	NA	No	No	No	Very Good	No	No	NA	
Wright Road	Private	Not classified	25	60	21	2	Two-way	No	No	NA	NA	No	No	No	Very Good	No	No	NA	
Childers Road	Private	Not classified	25	60	21	2	Two-way	No	No	NA	NA	No	No	No	Very Good	No	No	NA	
Proctor Road	Private	Not classified	25	60	21	2	Two-way	No	No	NA	NA	No	No	No	Very Good	No	No	NA	
Sunset Court	Private	Not classified	25	60	20	2	Two-way	No	No	NA	NA	No	No	No	Very Good	No	No	NA	
Columbia View Dr.- Wright Rd. to east	Private	Not classified	25	60	21	2	Two-way	No	No	NA	NA	No	No	No	Very Good	No	No	NA	
Columbia View Dr.- Krameria St. to Wright Rd.	Private	Not classified	25	60	26	2	Two-way	No	No	NA	NA	No	No	No	Very Good	No	No	NA	
Airport Road																			
Columbia St. to ODOT Maint. Sta.	County	Not classified	25	60	26	2	Two-way	No	1-2	Both Sides	Paved	No	No	No	Good	No	No	NA	
LEGEND/NOTES																			
Note 1: The three bikeway design treatments for bicycle facilities on roadways outlined in the 1995 Oregon Bicycle and Pedestrian Plan are: (1) shared roadway, (2) shoulder bikeway, and (3) bike lanes.																			
Note 2: Pavement condition information for arterials is from the 1997 ODOT Pavement Condition Report. Condition information for collectors is based on field survey conducted by DEA in June 1998.																			
Note 3: Based on ODOT Street Classifcation.																			
Note 4: Based on recommended street system plan (see Chapter 7).																			

APPENDIX C

TECHNICAL MEMORANDUM #2

POPULATION AND EMPLOYMENT FORECASTS FOR GILLIAM COUNTY AND ARLINGTON

The purpose of this memorandum is to present population and employment forecasts for Gilliam County and the incorporated cities of Arlington, Condon, and Lonerock. This memorandum briefly discusses historical population growth trends, the methodology used to develop the future forecasts, and the future population and employment trends estimated through the year 2020.

Methodology and Data Sources

Population estimates and projections were developed from historical data as reported by the Census Bureau. Portland State University's Center for Population Research and Census (PSU CPRC) develops annual population estimates for cities and counties for the purpose of allocating certain state tax revenues to cities and counties. In January of 1997, the State of Oregon Office of Economic Analysis (OEA) developed long-term (through year 2040) state population forecasts, disaggregated by county, for state planning purposes. OEA also developed county-level employment forecasts based on covered employment payrolls as reported by the Oregon Employment Department.

The Office of Economic Analysis used business-cycle trends (as reflected by the Employment Department's employment forecasts) as the primary driver of population and employment for the short term. For the long term, the forecasts shift to a population-driven model, which emphasizes demographics of the resident population, including age and gender of the population, with assumptions regarding life expectancy, fertility rate, and immigration.

David Evans and Associates, Inc. (DEA) used a methodology based on OEA's county-distribution methodology in developing population and employment forecasts for each of the cities in Gilliam County. DEA calculated a weighted average growth rate for each jurisdiction (weighting recent growth more heavily than past growth) and combined this average growth rate with the projected county-wide growth rate. This methodology assumes convergence of growth rates because of the physical constraints of any area to sustain growth rates beyond the state or county average for long periods of time. These constraints include availability of land and housing, congestion, and other infrastructure limitations. The forecasts were then modified to reflect more recent official estimates and local knowledge.

These population and employment forecasts were developed to determine future transportation needs. The amount of growth, and where it occurs, will affect traffic and transportation facilities in the study area. This report is not intended to provide a complete economic forecast or housing analysis, and it should not be used for any purpose other than that for which it is designed.

Historical Growth

Interestingly, population levels in most of Eastern Oregon are close to, or actually lower than, those experienced earlier in the century. Counties included in this phenomenon include Baker, Harney, Union,

Wallowa, Grant and Gilliam counties. The population of Gilliam County actually declined during the 1960s, 1970s and 1980s, reflecting the general slowdown in the state's economy during the 1960s and 1980s. Estimated at 1,950 in 1997, the population of Gilliam County has grown an average of nearly 2 percent annually since 1990, recovering from the declining trend of earlier decades. Table 1 shows historical and current estimated population levels for Gilliam County, Arlington, Condon, and Lonerock, as well as the State of Oregon.

Table 1
Population Growth, 1960 to 1997

						1970 to 1997 Change	
	1960	1970	1980	1990	1997	Number	Annual Average*
Gilliam County	3,069	2,342	2,057	1,717	1,950	(392)	-0.68%
Arlington	643	375	521	425	500	125	1.07%
Condon	1,149	973	783	635	800	(173)	-0.72%
Lonerock	31	12	26	11	25	13	2.76%
State of Oregon	1,768,687	2,091,533	2,633,156	2,842,321	3,217,000	1,125,467	1.61%

** Compound Average Annual Rate of Growth*
Source: Portland State University Center for Population Research and Census.

Like the county, the incorporated cities of Arlington, Condon and Lonerock have all grown in population, according to the most recent official estimates. This recent growth has helped these communities recover some of the net population loss they experienced between 1960 and 1990.

Population and Employment Forecasts

Gilliam County is expected to experience small population gains for the next 20 years. Like much of Eastern Oregon, the economy of Gilliam County remains largely seasonal, with over one-third of all employment agriculture-based. Therefore, the population increases are difficult to predict, and are not likely to be as stable as the forecasts appear to imply. Population and employment as forecast by the State of Oregon Office of Economic Analysis are shown in Table 2.

Table 2
Population and Employment Forecast, 1997 to Year 2020
Gilliam County and State of Oregon

							1997 to 2020 Change	
	1997	2000	2005	2010	2015	2020	Number	Annual Average
Gilliam County								
Population	1,950	1,992	2,032	2,071	2,116	2,161	211	0.45%
Non-Agr. Empl.	760	852	881	899	905	910	150	0.79%
State of Oregon								
Population	3,217,000	3,406,000	3,631,000	3,857,000	4,091,000	4,326,000	1,109,000	1.30%
Non-Agr. Empl.	1,524,900	1,601,718	1,718,659	1,814,276	1,882,653	1,947,702	422,802	1.07%

Source: Portland State University Center for Population Research and Census (1997 population estimates); State of Oregon Employment Department (1997 employment estimates); and State Of Oregon Office of Economic Analysis (forecasts).

As shown in Table 2, the State Office of Economic Analysis expects the population and employment in Gilliam County to grow, with population growing at the average rate of 0.45 percent over the 20-year planning horizon and non-agriculture based employment growing at an average rate of 0.79 percent. Based on the OEA projections, population forecasts for the jurisdictions of Arlington, Condon, and Lonerock are shown in five-year increments in Table 3.

Table 3
Population Forecast, 1997 to Year 2020
Gilliam County and Cities of Arlington, Condon, and Lonerock

							1997 to 2020 Change	
	1997	2000	2005	2010	2015	2020	Number	Annual Average
Gilliam County	1,950	1,989	2,029	2,069	2,112	2,158	208	0.44%
Arlington	500	520	550	580	600	620	120	0.94%
Condon	800	820	830	840	850	860	60	0.31%
Lonerock	25	30	30	30	30	30	5	0.80%

Source: Portland State University Center for Population Research and Census (1997 population estimates); and State Of Oregon Office of Economic Analysis (county forecasts); and David Evans and Associates, Inc. (disaggregation of county forecast to cities).

Based on this analysis, Arlington is expected to continue growing faster than the county overall, reaching a population of approximately 620 by year 2020. This growth represents a net increase of nearly one-quarter over the 1997 population level. The populations of Condon and Lonerock are also expected to grow over the 20-year planning horizon.

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APPENDIX D

POTENTIAL DEVELOPMENT IMPACT ANALYSIS

POTENTIAL DEVELOPMENT IMPACT ANALYSIS

Draft Report

CITY OF ARLINGTON
in
GILLIAM COUNTY

December, 1995

Prepared for:

Oregon Department of Transportation
Systems Planning Division
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Prepared by:

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TABLE OF CONTENTS

1.1 INTRODUCTION

This Potential Development Impact Analysis (PDIA) report provides development estimates for a maximum development scenario in the city of Arlington in Gilliam County. All land inside the urban growth boundary zoned for residential, commercial, and industrial uses was analyzed. The analysis was designed to assist ODOT in answering the question, "How many vehicle trips would be produced if every vacant parcel of residential, commercial, and industrial property in the city was developed at maximum density?" The following development figures were estimated in the analysis:

- The total number of acres zoned for residential, commercial and industrial uses;
- The portion of residential acres that are vacant (buildable);
- The number of existing residential units; and
- The number of buildable residential units.

Because aerial photographs were not available for Arlington we were not able to determine the following figures:

- The portion of commercial and industrial acres that are vacant; and
- The amount of leasable commercial square footage.

Analysis Limitations are outlined in Section 1.2, and Findings are presented in Section 1.3. Appendix A contains a Methodology summary, as well as the Development Standards used in the analysis. Appendix B is comprised of three Spreadsheet Tables which contain the analysis data figures.

1.2 ANALYSIS LIMITATIONS

This analysis was intended to provide a maximum development scenario for residential, commercial, and industrial land in the city. Because low density development is common, the development estimates provided in this report likely overestimate the actual development that will occur.

The development estimates presented in this report were calculated based on a number of assumptions and limitations which are summarized below:

1.2.1 Residential Development Estimate Limitations

- In order to estimate the existing number of units in residential zones, we summed the number of units for each census block that contains residential zones. The assumption is that most of the units that the Census tallies for a block containing residential zoning actually occur within the residential zone, rather than within non-residential zones.

- We made allowances for parking requirements and design standards, but because aerial photographs were not available, we did not make allowances for extreme slopes, bodies of water, riparian areas, and other features which constrain development. Therefore, the vacant residential acres figure may overstate the amount of buildable residential acreage, and the potential buildable units figure may overstate the number of residential units that are buildable.

- Residential units that occur in a census block that does not contain residential zoning were not added into the existing residential units figure.

- The development estimates do not account for market factors, such as the supply of available housing and demand for that housing, that affect residential development. Market demand for housing is related to a number of factors, including employment and income trends, that are not considered in this analysis.

- The development estimates do not account for possible land use actions, particularly annexations, that increase the amount of acreage within the urban area and the urban population.

1.2.2 Commercial Development Estimate Limitations

- We were unable to determine vacant commercial acres and maximum leasable square footage because no aerial photographs were available for Arlington.

- In cases where the zoning ordinance does not specify parking requirements for a commercial zoning designation, a parking requirement allowance cannot be calculated.

- Because we could not accurately determine the height of existing buildings or predict future building heights, we assumed that all existing and future commercial development is and will be one-story high.

1.2.3 Industrial Development Estimate Limitations

The industrial development estimates are expressed as total industrial acreage. We were unable to determine vacant industrial acres no aerial photographs were available for City of Arlington.

1.3 FINDINGS

This section summarizes the development estimates presented in Appendix B, Spreadsheet Tables.

1.3.1 Residential Development Estimates

Approximately 1,000 acres of land is zoned residential with 182 existing residential units. Of this residential acreage, approximately 969 acres are vacant with a potential buildout of 5,618 units. Maximum development (existing plus potential) is estimated at 5,800 units.

1.3.2 Commercial Development Estimates

The City of Arlington has approximately 56 acres zoned commercial. We were unable to determine the amount of vacant commercial land because no aerial photographs were available.

1.3.3 Industrial Development Estimates

Approximately 78 acres of land is zoned industrial. We were unable to determine the amount of vacant industrial land because no aerial photographs were available.

1.4 POPULATION FORECAST

The population forecast figures presented in this section were calculated in order to provide an alternative method of predicting future residential development needs.

1.4.1 Methodology

The average annual growth rate (AAGR) was determined by calculating the rate of population change between the years 1970 and 1994. The AAGR was applied to the 1994 base population figure and compounded for 18 years to estimate the population in 2012. The 2012 projected population figure was divided by the city's 1990 Census *median persons per household* figure to estimate how many residential units would be needed in 2012.

1.4.2 Findings

Based on the AAGR of 0.9 percent, we projected that between the years 1994 and 2012, the city's population would increase by 76 persons to a total of 536. Based on the 1990 Census *median persons per household* figure of 2.54 and the projected population for the year 2012, the city will need a total of 211 housing units in 2012. The Potential Development Impact Analysis predicted that the city could have a maximum of 5,800 units on land that is currently zoned residential.

APPENDIX A

METHODOLOGY AND DEVELOPMENT STANDARDS

Appendix A contains a description of the project methodology, as well as a detailed description of the Development Standards.

A-1 METHODOLOGY

We established the following five chronological phases for the city analysis:

Phase I:	Data Gathering and Development Standards
Phase II:	Initial Map Analysis
Phase III:	Aerial Analysis
Phase IV	Data Entry
Phase V:	Final Report

In Phase I, we compiled the materials necessary to begin the analysis. This process included reading the city zoning ordinance to determine which zones needed to be analyzed, and interpreting zone descriptions in order to write the Development Standards that are presented in Section A-2.

In Phase II, we studied the zoning map to identify all land within the urban growth boundary zoned for residential, commercial, and industrial use. We compared the zoning map to a U.S. Census map to identify all the census blocks within the residential, commercial, and industrial zones. We identified the census block acreage and the number of residential units within each census block using 1990 U.S. Census Data. For multi-zone blocks, we calculated the amount of acreage within each zone using a grid transparency. All this data was recorded on data sheets in four categories: blocks entirely within the city limits, blocks entirely within the UGB, blocks bisected by the city limits, and blocks bisected by the urban growth boundary.

Phase III, an aerial analysis of residential, commercial, and industrial land was not completed due to a lack of aerial photographs.

In Phase IV, we entered the data sheet entries into the Residential Spreadsheet (Table 1) and the Commercial/Industrial Spreadsheet (Table 2). The third Spreadsheet Table summarizes Tables 1 and 2. The following Residential Spreadsheet columns contain input data: Census Tract, Census Block, Census Block Acres, Census Block Residential Units (Existing), Zoning Type, Allowed Density, and Percent of Block by Zone. See Section A-2, Development Standards, for an explanation of the Allowed Density calculation.

Explanations of the Residential Spreadsheet columns that are calculated follow:

- Residential Acres by Zone is calculated by multiplying the Percent of Block by Zone by the Census Block Acreage.
- Vacant Residential Acres is calculated by multiplying the Percent Vacant by the Residential Acres by Zone.
- Potential Buildable Units is calculated by multiplying the Allowed Density by the Vacant Residential Acres.
- Maximum Allowed Units is a sum of the Potential Buildable Units and the Census Block Residential Units (Existing).

The following Commercial/Industrial Spreadsheet columns contain input data: Census Tract, Census Block, Census Block Acres, Zoning Type, Percent of Block by Zone, and Percent Vacant by Zone.

Explanations of the Commercial/Industrial Spreadsheet columns that are calculated follow:

- Total Commercial Acres is calculated by multiplying Census Block Acres and Percent of Block by Zone.
- Total Industrial Acres is calculated by multiplying Census Block Acres and Percent of Block by Zone.

A-2 DEVELOPMENT STANDARDS

In accordance with the city zoning ordinance, this section provides *maximum allowable density per net acre factors* for residential zones and *maximum leasable square feet per net acre factors* for commercial zones. These factors are used in the Spreadsheet Tables to calculate the development estimates.

A-2.1 Residential Zoning Designations

Two residential zoning designations were identified in the city zoning ordinance. For each designation, we provide the *maximum allowable residential density* (expressed in units per acre). This density indicates the number of units that could be built on a *net acre* (34,848 square feet). A net acre is calculated by subtracting 20 percent from a gross acre (43,560 square feet) to account for streets and right-of-ways.[1]

A summary of residential zones and their maximum allowable densities is presented in Table A-2-1. Following the table is a description of the zone density calculation.

---

[1] Derived from Land Use in 33 Oregon Cities, Bureau of Municipal Research and Service, University of Oregon, 1961.

Table A-2-1
Residential Zoning Designations

Residential Zoning Designation	Abbreviation	Maximum Allowable Residential Density (Units Per Acre)
Residential One	R-1	5.8
Residential Two	R-2	5.8

The minimum lot size for these residential zoning designations is 6,000 square feet. To calculate the maximum allowable residential density per acre, we divided 34,848 square feet (a net acre) by the 6,000 square foot minimum lot size. The resulting density is 5.8 units per acre.

A-2.2 Commercial Zoning Designations

One commercial zoning designation was identified in the city zoning ordinance. We calculated the *maximum leasable commercial area* (expressed in square feet per *net* acre) for this designation. A summary of findings is presented in Table A-2-2, followed by an explanation of the maximum leasable area calculation.

Table A-2-2
Commercial Zoning Designations

Commercial Zoning Designation	Abbreviation	Maximum Leasable Commercial Area (Square Feet Per Acre)
General Commercial	C-1	20,028

The zoning ordinance provides unique criteria for each commercial zoning designation. Therefore, the methodology for determining the maximum leasable commercial area per acre for each zoning designation differs. For all commercial zones within cities, the net usable area figure we base calculations on is a net acre (34,848 square feet). From this figure, allowances for setbacks, yards, and parking are subtracted to obtain the maximum leasable commercial area. If setbacks and yards are not required, a parking requirement allowance is generally the only figure subtracted from the net usable area figure. In cases where the zoning ordinance does not specify parking requirements, a parking requirement allowance cannot be calculated and the maximum leasable commercial area may be overstated.

If setbacks and yards are required, minimum lot dimensions must be determined in order to calculate how much area will be subtracted from the net usable area figure. If a minimum lot size is not specified in the zoning ordinance, the default minimum lot size that calculations are based on is a net acre. If minimum lot dimensions are not provided in the zoning ordinance, the lot is assumed to be square and the lot dimensions are derived by taking the square root of the minimum lot size. Front and rear setbacks are subtracted from the minimum lot depth measurement to obtain the buildable lot depth. Side setbacks are subtracted from the minimum lot width measurement to

obtain the buildable lot width. After subtracting setbacks, lot width is multiplied by lot depth to obtain the buildable (usable) area per lot. This figure multiplied by the number of lots per acre provides the net usable area per acre.

The parking requirement allowance is determined by averaging the parking requirements for permitted uses, as specified in the zoning ordinance. These are provided in terms of one space per "X" square feet of gross floor area (gfa). In calculating parking allowances, we use a standard allowance of parking lot space (parking, turning space, ingress, and egress) of 325 square feet per space.[2] The parking requirement average is divided into the standard allowance of parking lot space, which provides the parking ratio. The parking ratio plus one (1) is divided into the net usable area figure, providing leasable square feet per acre.

If the zoning ordinance provides a maximum lot coverage percent figure, the calculated leasable square feet figure (net usable area minus setbacks and parking allowance) must be less than or equal to the provided percentage.

Table A-2-3 displays the data used to determine the maximum leasable commercial area per acre for the commercial zoning designation.

Table A-2-3
General Commercial (C-1)

Criteria	Formula	Result
mum Lot Size (sq. ft.)	Not specified (default = 34,848 sq. ft., a net acre)	n/a
Maximum Lots Per Acre	34,848 *(net acre)* ÷ 34,848 *(min. lot size)*	1 lot per acre
Setbacks & Yards (Linear Feet)	None specified	n/a
Maximum Lot Coverage	70% (70% of 34,848 *(min. lot size)* = 24,394)	n/a
Minimum Lot Dimensions (Linear Feet)	None specified (default width & depth = square root of minimum lot size)	n/a
Parking Requirement Average	[Retail (600) + Service/Repair (600) + Bulk Retail (600) + Office (600) + Medical/Dental (600) + Eating/Drinking Establishment (250)] ÷ 6	442 sq. ft. gfa
Parking Ratio	325 *(one space fixed)* + 442 *(parking requirement)*	0.74
Net Usable Area Per Acre	34,848 *(min. lot size)* - 0 *(setbacks)* = 34,848 sq. ft. *(buildable area per lot)* 34,848 ÷ 1 *(lots per acre)*	34,848 sq. ft.
Leasable Sq. Ft. Per Acre	34,848 *(net usable area)* ÷ 1.74 *(parking ratio + 1)*	20,028 sq. ft.

[2] Derived from Site Planning, Kevin Lynch and Gary Hack, 1985, page 461. This book suggests a range of 250-400 square feet per car be used. We selected the midpoint in this range.

A-2.3 Industrial Zoning Designations

Industrial zoning designations are referred to as "I" in the Spreadsheet Tables. Table A-2-4 shows the industrial zoning designation used in this analysis.

Table A-2-4
Industrial Zoning Designations

Industrial Zoning Designation	Abbreviation
Industrial	M-1

APPENDIX B
SPREADSHEET TABLES

We present the data from the city analysis in three Spreadsheet Tables. Tables 1 and 2 are organized by census tract and block in ascending order.

- **Table 1** provides residential development estimates in the city limits
- **Table 2** provides commercial and industrial development estimates in the city limits.
- **Table 3** provides summary data totals for Tables 1 and 2.

Zoning Classifications

The following zoning designations are found in the Spreadsheet Tables:

R	Residential 1, Residential 2
C	General Commercial
I	Industrial

TABLE 1: RESIDENTIAL LAND INSIDE THE CITY LIMITS

Location: City of Arlington

Census Tract	Census Block	Census Block Acres	Census Block Res. Units (Existing)	Zoning Type	Allowed Density (units/acre)	Percent of Block by Zone	Res. Acres by Zone	Percent Vacant by Zone	Vacant Residential Acres	Potential Buildable Units	Maximum Allowed Units
Blocks Entirely Within the City Limits											
9601	105A	681.5	31	R	5.8	99%	672.0	N/A	666.6	3,866	3,897
9601	108	1.0	0	R	5.8	100%	1.0	N/A	1.0	6	6
9601	112A	14.1	0	R	5.8	100%	14.1	N/A	14.1	82	82
9601	113A	253.5	75	R	5.8	92%	232.5	N/A	219.5	1,273	1,348
9601	120	8.4	7	R	5.8	72%	6.0	N/A	4.8	28	35
9601	121	1.2	1	R	5.8	100%	1.2	N/A	1.0	6	7
9601	122	1.2	2	R	5.8	100%	1.2	N/A	0.9	5	7
9601	123	3.2	2	R	5.8	100%	3.2	N/A	2.9	17	19
9601	124	2.0	3	R	5.8	100%	2.0	N/A	1.5	9	12
9601	125	3.5	5	R	5.8	100%	3.5	N/A	2.6	15	20
9601	126	4.2	9	R	5.8	100%	4.2	N/A	2.6	15	24
9601	127	2.5	4	R	5.8	100%	2.5	N/A	1.8	11	15
9601	128	2.0	2	R	5.8	100%	2.0	N/A	1.7	10	12
9601	129	1.5	6	R	5.8	100%	1.5	N/A	0.5	3	9
9601	130	4.2	6	R	5.8	100%	4.2	N/A	3.2	18	24
9601	131	27.7	12	R	5.8	100%	27.7	N/A	25.6	149	161
9601	133	9.1	17	R	5.8	100%	9.1	N/A	6.2	36	53
9601	134A	19.0	0	R	5.8	64%	12.1	N/A	12.1	70	70
Subtotal	**N/A**	**N/A**	**182**	**N/A**	**N/A**	**N/A**	**1,000**	**N/A**	**969**	**5,618**	**5,800**
TOTAL	**N/A**	**N/A**	**182**	**N/A**	**N/A**	**N/A**	**1,000**	**N/A**	**969**	**5,618**	**5,800**

APPENDIX E

CROSSWALK DESIGN STANDARDS

3B-18 Crosswalks and Crosswalk Lines

III-9(c) Rev. 4

Crosswalk markings at signalized intersections and across intersectional approaches on which traffic stops, serve primarily to guide pedestrians in the proper paths. Crosswalk markings across roadways on which traffic is not controlled by traffic signals or STOP signs, must also serve to warn the motorist of a pedestrian crossing point. At non-intersectional locations, these markings legally establish the crosswalk.

Crosswalk lines shall be solid white lines, marking both edges of the crosswalk. They shall be not less than 6 inches in width and should not be spaced less than 6 feet apart. Under special circumstances where a stop line is not provided or where vehicular speeds exceed 35 MPH or where crosswalks are unexpected, it may be desirable to increase the width of the crosswalk line up to 24″ in width. Crosswalk lines on both sides of the crosswalk should extend across the full width of pavement to discourage diagonal walking between crosswalks (fig. 3-14a).

Crosswalks should be marked at all intersections where there is substantial conflict between vehicle and pedestrian movements. Marked crosswalks should also be provided at other appropriate points of pedestrian concentration, such as at loading islands, midblock pedestrian crossing, or where pedestrians could not otherwise recognize the proper place to cross.

Crosswalk markings should not be used indiscriminately. An engineering study should be required before they are installed at locations away from traffic signals or STOP signs.

Since non-intersectional pedestrian crossings are generally unexpected by the motorist, warning signs (sec. 2C-31) should be installed and adequate visibility provided by parking prohibitions.

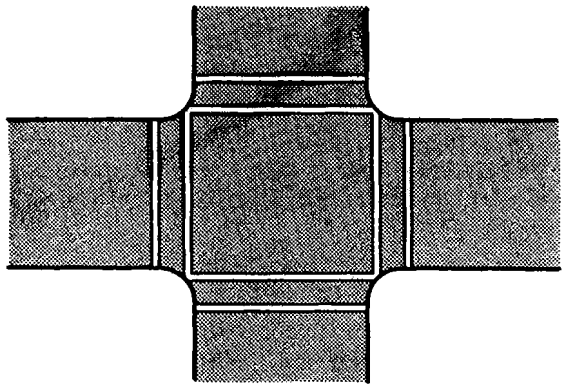
For added visibility, the area of the crosswalk may be marked with white diagonal lines at a 45° angle or with white longitudinal lines at a 90° angle to the line of the crosswalk (figs. 3-14b, 14c). These lines should be approximately 12″ to 24″ wide and spaced 12″ to 24″ apart. When diagonal or longitudinal lines are used to mark a crosswalk, the transverse crosswalk lines may be omitted. This type of marking is intended for use at locations where substantial numbers of pedestrians cross without any other traffic control device, at locations where physical conditions are such that added visibility of the crosswalk is desired or at places where a pedestrian crosswalk might not be expected. Care should be taken to insure that crosswalks with diagonal or longitudinal lines used at some locations do not weaken or detract from other crosswalks (where special emphasis markings are not used) (fig. 3-14a). When an exclusive pedestrian phase signal, which permits diagonal crossing, is installed at an intersection, a unique marking may be used for the crosswalk (fig. 3-15).

III-9(c) Rev. 4

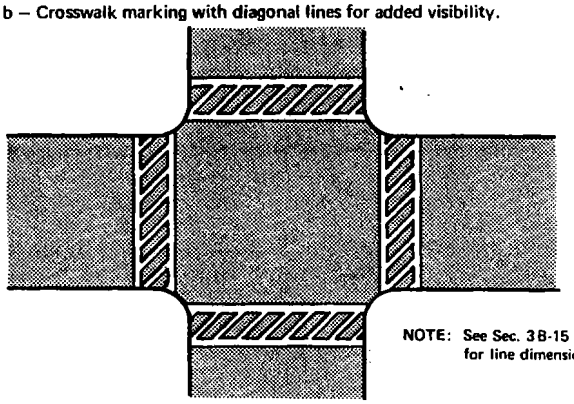
3B-19 Parking Space Markings

Parking space markings shall be white.

a – Standard crosswalk marking.



b – Crosswalk marking with diagonal lines for added visibility.



NOTE: See Sec. 3B-15 for line dimensions

c – Crosswalk marking with longitudinal lines for added visibility.

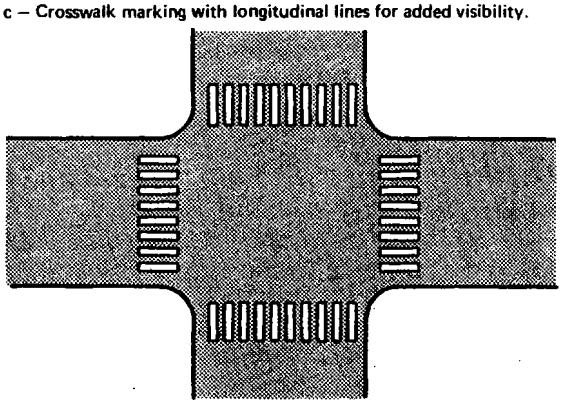
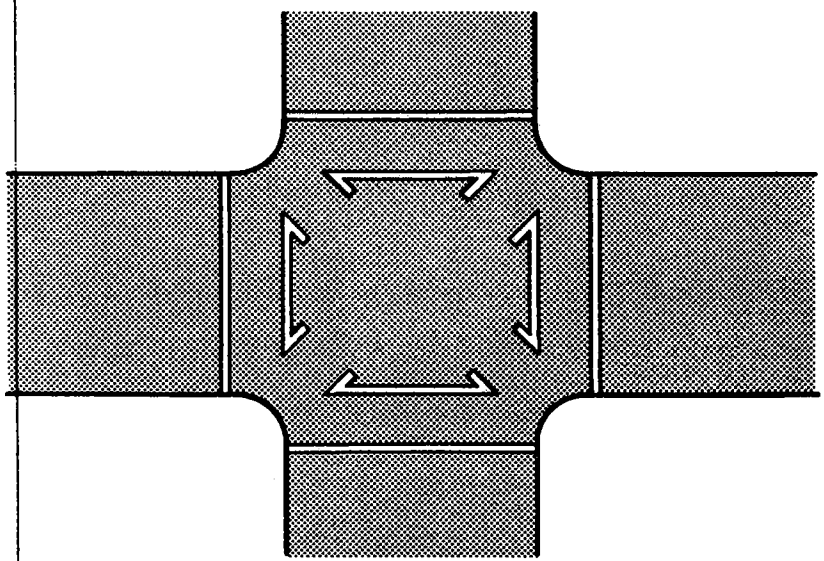


Figure 3-14. Typical crosswalk markings.

a — Crosswalk marking that outlines pedestrian travel paths.



b — Crosswalk marking that outlines the edge of pedestrian travel area.

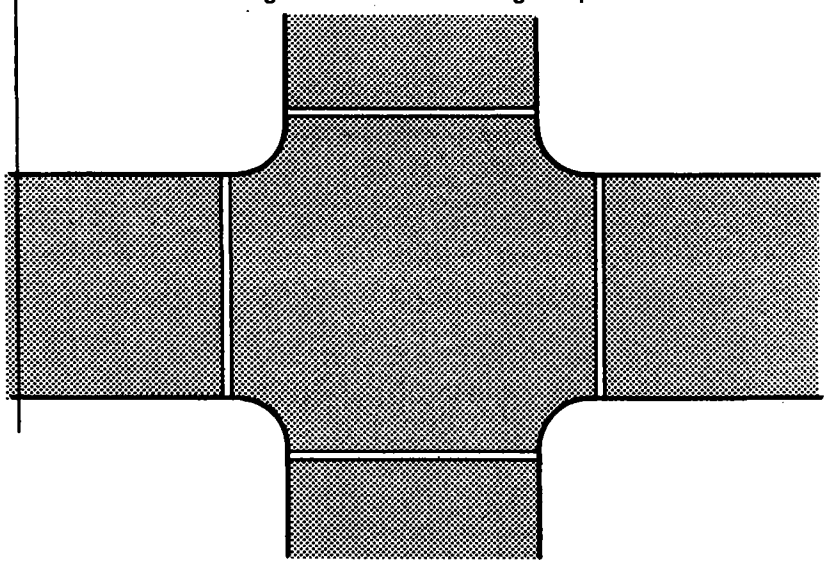


Figure 3-15. Typical crosswalk marking for exclusive pedestrian phase.

2C-29 Soft Shoulder Sign (W8-4)

The SOFT SHOULDER sign is intended for use to warn of a shoulder condition that presents a hazard to vehicles that may get off the pavement.

One sign shall be placed near the beginning of the soft-shoulder condition, and other signs shall be placed at intervals throughout the length of the road where the condition exists.

W8–4
30" x 30"

W8–5
30" x 30"

2C-30 Slippery When Wet Sign (W8-5)

The Slippery When Wet sign is intended for use to warn of a condition where the highway surface is extraordinarily slippery when wet.

It should be located in advance of the beginning of the slippery section and at appropriate intervals on long sections of such pavement.

2C-31 Advance Crossing Signs (W11 Series)

Advance Crossing signs should be used to alert vehicle operators to unexpected entries into the roadway by pedestrians, trucks, bicyclists, animals, and other potential conflicts. These crossings may be relatively confined, or may occur randomly over a substantial distance of roadway.

Where such crossings are confined to a single location, the Advance Crossing sign may be supplemented with an auxiliary distance sign specifying the distance to the crossing, or the crossing point may be identified by a Crossing sign (sec. 2C-32). Where such crossings occur randomly, an auxiliary distance sign specifying the length of highway section upon which the potential hazard exists may be used. If the section of roadway where the potential hazard exists is quite long, additional signs may be located at intervals, with appropriate adjustments in such legends.

If an unexpected hazard is seasonal or temporary, Advance Crossing signs shall be removed or covered when the hazardous condition terminates.

W11–1
30" x 30"

W11A–2
30" × 30"

W11–3
30" x 30"

W11–4
30" x 30"

W11–5
30" x 30"

2C–32 Crossing Signs (W11A Series)

Crossing signs may be used to supplement Advance Crossing signs as a means of assisting the vehicle operator in defining the specific point of crossing. Such signs should be used only at locations that are unusually hazardous or at locations not readily apparent. When used, the Crossing sign should be located immediately adjacent to the crossing location. Crossing signs are normally limited to nonmotorized crossings, such as pedestrians, bicyclists, and cattle. These signs are distinguished from Advance Crossing signs (W11 Series) by the addition of crossing lines on the symbol plate.

If an unexpected hazard is seasonal or temporary, Crossing signs shall be removed or covered when the hazardous condition terminates.

In many instances it may be desirable to define the crossing by pavement markings (sec. 3B–15).

2C–33 Double Arrow Sign (W12–1)

The Double Arrow sign showing two arrows pointing downward to right and left is intended for use at loading and refuge islands, traffic islands with curbs, and other obstructions in the roadway, where traffic is permitted to pass on either side of the island or obstruction. Traffic separated by this sign may either rejoin the through roadway or change

APPENDIX F
GRANT AND LOAN CONTACTS-1998

Program	Agency	Contact Person	Phone Number
Bike-Pedestrian Grants	ODOT	Michael Ronkin	(503) 986-3555
TEA-21 Enhancement program	ODOT	Pat Rogers	(503) 986-3528
Highway Bridge Rehabilitation or Replacement Program (HBRR)	ODOT	Mark Hirotia	(503) 986-3344
Transportation Safety Grant Program	ODOT	Troy Costales	(503) 986-4192
Special Transportation Fund	ODOT	Gary Whitney	(503) 986-3885
Special Small city Allottment Program	ODOT	Michael Augden	(503) 986-3893
Immediate Opportunity Grant Program	ODOT	Mark Ford	(503) 986-3463
Oregon Special Public Works Fund	ODOT	Betty Pongracz	(503) 986-0136
Oregon Transportation Infrastructure Bank	ODOT	John Fink	(503) 986-3922

City of Arlington
Transportation System Plan:
Recommended Implementing Policies and Ordinances

Adopted August 1999

Prepared for

Gilliam County, Oregon and Oregon Department of Transportation

Prepared by

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Portland, Oregon 97201

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IMPLEMENTING POLICIES AND ORDINANCES

The Oregon Transportation Planning Rule requires that Transportation System Plans (TSPs) include policies and ordinances to implement the TSP. The City of Arlington's *Comprehensive Plan* was initially adopted in 1978 and amended in 1994. The *City Code of Arlington*, which includes Title 9, *Zoning Regulations* and Title 10, *Subdivision Regulations*, was most recently published in 1995. The *Comprehensive Plan* and the *City Code* will need to be updated in order to meet the requirements of the Transportation Planning Rule and implement the policies and standards of the City of Arlington's TSP. Both documents were reviewed to determine where the language or standards should be amended. The recommended changes to each document are outlined below in italicized text and preceded by a brief paragraph discussing the intent of the language. Information in square brackets indicates existing section titles or headings where the recommended language should be inserted or amended.

ELEMENTS REQUIRED BY THE TRANSPORTATION PLANNING RULE

The applicable portion of the Transportation Planning Rule is found in Section 660-12-045, *Implementation of the Transportation System Plan*. The Transportation Planning Rule requires that local governments revise their land use regulations to implement the TSP in the following manner:

- Amend land use regulations to reflect and implement the Transportation System Plan.
- Clearly identify which transportation facilities, services, and improvements are allowed outright and which will be conditionally permitted or permitted through other procedures.
- Adopt land use or subdivision ordinance measures, consistent with applicable federal and state requirements, to protect transportation facilities, corridors and sites for their identified functions, to include the following topics:
  - access management and control;
  - protection of public use airports;
  - coordinated review of land use decisions potentially affecting transportation facilities;
  - conditions to minimize development impacts to transportation facilities;
  - regulations to provide notice to public agencies providing transportation facilities and services of land use applications that potentially affect transportation facilities;
  - regulations assuring that amendments to land use applications, densities, and design standards are consistent with the Transportation System Plan.
- Adopt land use or subdivision regulations for urban areas and rural communities to provide safe and convenient pedestrian and bicycle circulation, and to ensure that new development provides on-site roads and accessways that provide reasonably direct routes for pedestrian and bicycle travel.
- Establish road standards that minimize pavement width and total right-of-way.

In addition, state regulations in ORS 836.600 to 836.630 and OAR 660-13 encourage and support the continued operation of Oregon's airports by mandating planning for and recognition of airports consistent with their function in the state airport system. The regulations require local governments with jurisdiction over airports to amend their comprehensive plans and zoning regulations to:

- Create an Aviation System Plan (not included in this document);
- Identify and classify airports in their jurisdictions;

- Acknowledge permitted uses on public use airports; and,
- Implement land use compatibility and safety requirements.

These elements are discussed in the following sections, where they are grouped according to topic as well as appropriate policy or ordinance for insertion.

APPROVAL PROCESSES FOR TRANSPORTATION FACILITIES

Section 660-12-045(1) of the Transportation Planning Rule describes how cities and counties should amend their land use regulations to clarify the approval process for transportation-related projects.

Recommended Policies for Approval Process

Part Three, Transportation Policies, of the City of Arlington's Comprehensive Plan contains three sections: Streets, Rail Transportation, and Air Transportation. The Streets section provides street classifications and standards that would be more appropriately located in the City's Zoning Regulations (Title 9). Since new functional street classifications will become part of the City's Comprehensive Plan when the TSP is adopted, it is recommended that the City of Arlington move the current Streets section from the Comprehensive Plan to a new section in the Zoning Regulations, amending them to be consistent with new standards in Chapter 7 of the Transportation System Plan.

It is recommended that the City of Arlington create a new first section of Part Three (Transportation Policies) of the *Comprehensive Plan* titled, "Transportation Planning," with three subsections: "The Transportation System Plan and Land Use Review," "Local-State Coordination," and "Protection of Transportation Facilities." The first subsection should include the following language.

Transportation Planning

Policies

The Transportation System Plan and Land Use Review

1. *The Transportation System Plan is an element of the City of Arlington Comprehensive Plan. It identifies the general location of transportation improvements. Changes in the specific alignment of proposed public road and highway projects shall be permitted without plan amendment if the new alignment falls within a transportation corridor identified in the Transportation System Plan.*
2. *All development proposals, plan amendments, or zone changes shall conform with the adopted Transportation System Plan.*
3. *Operation, maintenance, repair, and preservation of existing transportation facilities shall be allowed without land use review, except where specifically regulated.*
4. *Dedication of right-of-way, authorization of construction and the construction of facilities and improvements, for improvements designated in the Transportation System Plan, the classification of the roadway, and approved road standards shall be allowed without land use review.*
5. *For State projects that require an Environmental Impact Study (EIS) or Environmental Assessment (EA), the draft EIS or EA shall serve as the documentation for local land use review, if local review is required.*

Recommended Ordinances for Approval Process

Projects specifically identified in the Transportation System Plan and for which the City of Arlington has made all the required land use and goal compliance findings should be permitted outright, subject only to the standards establisl

by the TSP. For improvements which are included in the TSP but for which no site-specific decisions have been made, it is recommended that The City of Arlington review these projects as regulated land use actions, using a conditional use process.

The following provisions should be adopted as part of the City of Arlington's *Zoning Regulations* (Title 9). The language below should be added to the list of "Uses Permitted Outright" for each base zone, which corresponds to Sections 9-3A-2, 9-3B-2, 9-3C-2, and 9-3D-2. (The code also includes several overlay, or "combining" zones. No additional language is needed for the Geologic Hazard Combining (GH) Zone, because it allows uses permitted either outright or conditionally by the base zone to be processed as conditional uses. Transportation projects in the GH zone would thus be subject to the specified conditional use process, and would also be subject to the provisions of Section 9-3E-8, "Standards for an Access Route in (GH) Zone." No special provisions for transportation projects are needed for the Historic Resource (HR) Combining Zone, as it addresses only the alteration or removal of historic structures. In the Airport Approach Safety Zone, no special provisions are needed because roadways are a permitted use as long as they are located so that vehicle lights do not impair visibility for landing (Section 9-3G-4, C)).

[9-3A-2, 9-3B-2, 9-3C-2, and 9-3D-2] USES PERMITTED OUTRIGHT

Transportation Improvements

A. *Normal operation, maintenance, repair, and preservation activities of existing transportation facilities.*

B. *Installation of culverts, pathways, medians, fencing, guardrails, lighting, and similar types of improvements within the existing right-of-way.*

C. *Projects specifically identified in the Transportation System Plan as not requiring further land use regulation.*

D. *Landscaping as part of a transportation facility.*

E. *Emergency measures necessary for the safety and protection of property*

F. *Acquisition of right-of-way for public roads, highways, and other transportation improvements designated in the Transportation System Plan except for those that are located in exclusive farm use or forest zones.*

G. *Construction of a street or road as part of an approved subdivision or land partition approved consistent with the applicable land division ordinance.*

The following language should be added to the list of "Conditional Uses Permitted" for each base zone in the City of Arlington, which corresponds to Sections 9-3A-3, 9-3B-3, 9-3C-3 and 9-3D-3 of the City Code.

[9-3A-3, 9-3B-3, 9-3C-3, and 9-3D-3] CONDITIONAL USES PERMITTED

Transportation Improvements

A. *Construction, reconstruction, or widening of highways, roads, bridges or other transportation projects that are: (1) not improvements designated in the Transportation System Plan; or (2) not designed and constructed as part of a subdivision or planned development subject to site plan and/or conditional use review. Transportation projects shall comply with the Transportation System Plan and applicable standards, and shall address the following criteria. For State projects that require an Environmental Impact Statement (EIS) or Environmental Assessment (EA), the draft EIS or EA shall be reviewed and used as the basis for findings to comply with the following criteria:*

   1. *The project is designed to be compatible with existing land use and social patterns, including noise generation, safety, and zoning.*

   2. *The project is designed to minimize avoidable environmental impacts to identified wetlands, wildlife habitat, air and water quality, cultural resources, and scenic qualities.*

3. *The project preserves or improves the safety and function of the facility through access management, traffic calming, or other design features.*

4. *The project includes provision for bicycle and pedestrian circulation as consistent with the comprehensive plan and other requirements of this ordinance.*

B. *Construction of rest areas, weigh stations, temporary storage, and processing sites.*

C. *If review under this Section indicates that the use or activity is inconsistent with the Transportation System Plan, the procedure for a plan amendment shall be undertaken prior to or in conjunction with the conditional permit review.*

D. *Authorization of a conditional use shall be void after a period specified by the applicant as reasonable and necessary based on season, right-of-way acquisition, and other pertinent factors. This period shall not exceed three years.*

Recommended Process for Applying Conditions to Development Proposals

Section 660-12-045(2)(e) of the Transportation Planning Rule requires that jurisdictions develop a process that allows them to apply conditions to development proposals in order to minimize impacts on transportation facilities.

The Site Plan review process is a useful tool for a small jurisdiction. Section 9-11-2 of the Arlington Code specifies submission requirements for land use applications. The City of Arlington may wish to amend its site plan review process to include a requirement to provide data on the potential traffic impacts of a project through a traffic impact study or, at the minimum, an estimation of the number of trips expected to be generated. Recommended language to be included under Site Plan Criteria is as follows:

- *The proposed use shall not impose an undue burden on the public transportation system. For developments that are likely generate more than 400 average daily motor vehicle trips (ADTs), the applicant shall provide adequate information, such as a traffic impact study or traffic counts, to demonstrate the level of impact to the surrounding road system. The developer shall be required to mitigate impacts attributable to the project.*
- *The determination of impact or effect and the scope of the impact study should be coordinated with the provider of the affected transportation facility.*

If the City of Arlington decides to amend their site plan review process, conditions such as the following may be included in the ordinance, to be applied in the event that a proposed project is demonstrated to potentially have an adverse affect on the transportation system.

- *Dedication of land for roads, transit facilities, sidewalks, bikeways, paths, or accessways shall be required where the existing transportation system will be impacted by or is inadequate to handle the additional burden caused by the proposed use.*
- *Improvements such as paving, curbing, installation or contribution to traffic signals, construction of sidewalks, bikeways, accessways, paths, or roads that serve the proposed use where the existing transportation system may be burdened by the proposed use.*

Recommended Regulations to Assure that Amendments are Consistent with the Transportation System Plan

Section 660-12-045(2)(g) of the Transportation Planning Rule requires that jurisdictions develop regulations to assure that all plan amendments and zone changes conform with the TSP. The following language should be added to Chapter 10, Amendments, of the City of Arlington Zoning Regulations. It should be included as a new secti

titled "Approval Criteria for Amendments" or "Conformance With Transportation System Plan," and inserted before the existing 9-10-3, which would be renumbered accordingly:

9-10-3 APPROVAL CRITERIA FOR AMENDMENTS

A. The applicant must show that the proposed change conforms with the Comprehensive Plan.

B. A plan or land use regulation amendment significantly affects a transportation facility if it:

1. Changes the functional classification of an existing or planned transportation facility;

2. Changes standards implementing a functional classification system;

3. Allows types or levels of land use that would result in levels of travel or access what are inconsistent with the functional classification of a transportation facility; or

4. Would reduce the level of service of the facility below the minimum acceptable level identified in the Transportation System Plan.

C. Amendments to the comprehensive plan and land use regulations which significantly affect a transportation facility shall assure that allowed land 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:

1. Limiting allowed land uses to be consistent with the planned function of the transportation facility;

2. 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,

3. Altering land use designations, densities, or design requirements to reduce demand for automobile travel and meet travel needs through other modes.

PROCESS FOR COORDINATED REVIEW OF LAND USE DECISIONS

A lack of coordination between state and local decision processes can result in costly delays and changes in public road and highway projects, as well as some maintenance and operation activities. Section 660-12-045(2)(d) of the Transportation Planning Rule requires that jurisdictions develop a process for the coordinated review of land use decisions affecting transportation facilities. The following recommended language should be added to the City of Arlington Comprehensive Plan as part of a new "Transportation Planning" section within Part 3, Transportation Policies:

Local-State Coordination

1. *The City of Arlington shall coordinate with the Oregon Department of Transportation to implement the highway improvements listed in the Statewide Transportation Improvement Program (STIP) that are consistent with the Transportation System Plan and The City of Arlington Comprehensive Plan.*
2. *The City of Arlington shall provide notice to ODOT of land use applications and development permits for properties that have direct frontage or access onto a state highway. Information that should be conveyed to reviewers includes: project location, proposed land use action, and location of project access points.*
3. *The City of Arlington shall consider the findings of ODOT's draft Environmental Impact Statements and Environmental Assessments as integral parts of the land use decision-making procedures. Other actions required, such as a goal exception or plan amendment, will be combined with review of the draft EA or EIS and land use approval process.*

PROTECTING EXISTING AND FUTURE OPERATION OF FACILITIES

Section 60-12-045(2) of the Transportation Planning Rule requires that local governments adopt land use regulations to protect future operation of transportation corridors. Such regulations shall include access control measures as well as standards to protect the future operation of roads, transitways, major transit corridors, and public use airports. For example, the proposed function of a future roadway must be protected from incompatible land uses.

The City of Arlington's *Comprehensive Plan* and *Zoning Regulations* include provisions to protect the municipal airport. The policy objective relating to air transportation in the *Comprehensive Plan* is to "assure that the Arlington Municipal Airport can develop to its full potential and that this development will not conflict with other opportunities for community improvement." Specific policies include keeping approach zones to the airport free of obstructions to safe flight and navigation.

Additional protection of existing and planned transportation systems can be provided by ongoing coordination with other relevant agencies, adhering to road standards, and to the access management policies and ordinances suggested below.

Recommended Policies for Protection of Transportation Facilities

The following policies are recommended to be adopted in Part 3, Transportation Policies, of the City of Arlington's Comprehensive Plan in a new section titled "Transportation Planning" and subtitled, "Protection of Transportation Facilities":

Protection of Transportation Facilities

1. *The City of Arlington shall protect the function of existing and planned roadways as identified in the Transportation System Plan.*
2. *The City of Arlington shall include a consideration of a proposal's impact on existing or planned transportation facilities in all land use decisions.*
3. *The City of Arlington shall protect the function of existing or planned roadways or roadway corridors through the application of appropriate land use regulations.*
4. *The City of Arlington shall consider the potential to establish or maintain accessways, paths, or trails prior to the vacation of any public easement or right-of-way.*
5. *The City of Arlington shall preserve right-of-way for planned transportation facilities through exactions, voluntary dedication, or setbacks.*
6. *The function of airports shall be protected through the application of appropriate land use designations to assure future land uses are compatible with continued operation of the airport.*

Recommended Ordinances for Establishing Street Standards Consistent with the Transportation System Plan

As discussed above, it is recommended that the City of Arlington move street standards from the *Comprehensive Plan* to the *Zoning Regulations* and amend them to be consistent with the street standards recommended in Chapter 7 of the Transportation System Plan. In addition to the street widths currently listed in the Streets section of th Comprehensive Plan, there are street standards included in Chapter 2, Design and Development, of the *Subdivisi*

Regulations. It is recommended that all street standards be moved to the *Zoning Regulations* and then be referenced in the *Subdivision Regulations.* This will ensure that any land use actions which might involve street construction but not land division will be subject to the street standards. We recommend that the City create a new chapter of the Zoning Regulations which can include these street standards as well as the access management standards and standards for bicycle and pedestrian facilities. If the City chooses to retain the street standards within the Subdivision Regulations, then Section 10-2-6, Street Widths, should be updated to reflect the standards recommended in Chapter 7 of the Transportation System Plan.

Recommended Access Control Ordinances

The following definitions related to access management should be added to Section 9-1-3, Definitions, of the Zoning Regulations:

Access. A way or means of approach to provide pedestrian, bicycle, or motor vehicular entrance or exit to a property.

Access Classification. A ranking system for roadways used to determine the appropriate degree of access management. Factors considered include functional classification, the appropriate local government's adopted plan for the roadway, subdivision of abutting properties, and existing level of access control.

Access Connection. Any driveway, street, turnout or other means of providing for the movement of vehicles to or from the public roadway system.

Access Management. The process of providing and managing access to land development while preserving the regional flow of traffic in terms of safety, capacity, and speed.

Corner clearance. The distance from a public or private road intersection to the nearest access connection, measured from the closest edge of the pavement of the intersecting road to the closest edge of the pavement of the connection along the traveled way.

Cross Access. A service drive providing vehicular access between two or more contiguous sites so the driver need not enter the public street system.

Easement. A grant of one or more property rights by a property owner to or for use by the public, or another person or entity.

Frontage Road. A public or private drive which generally parallels a public street between the right-of-wayand the front building setback line. The frontage road provides access to private properties while separating them from the arterial street.

Functional Area (Intersection). That area beyond the physical intersection of two roads that comprises decision and maneuver distance, plus any required vehicle storage length.

Functional Classification. A system used to group public roadways into classes according to their purpose in moving vehicles and providing access.

Joint Access (or Shared Access). A driveway connecting two or more contiguous sites to the public street system.

Lot. A parcel, tract, or area of land whose boundaries have been established by some, legal instrument, which is recognized as a separate legal entity for purposes of transfer of title, has frontage upon a public or private street, and complies with the dimensional requirements of this code.

Lot, Corner. Any lot having at least two (2) contiguous sides abutting upon one or more streets, provided that the interior angle at the intersection of such two sides is less than one hundred thirty-five (135) degrees.

Lot Depth. The average distance measured from the front lot line to the rear lot line.

Lot, Flag. A lot not meeting minimum frontage requirements and where access to the public road is by a narrow, private right-of-way line.

Lot, Through. (or Double Frontage Lot). A lot that fronts upon two parallel streets or that fronts upon two streets that do not intersect at the boundaries of the lots.

Lot Frontage. That portion of a lot extending along a street right-of-way.

Nonconforming Access Features. Features of the property access that existed prior to the date of ordinance adoption and do not conform with the requirements of this ordinance.

Parcel. A division of land comprised of one or more lots in contiguous ownership.

Plat. An exact and detailed map of the subdivision of land.

Private Road. A road under the jurisdiction of a public body that provides the principal means of access to an abutting property.

Public Road. *A road under the jurisdiction of a public body that provides the principal means of access to an abutting property*

Reasonable Access. *The minimum number of access connections, direct or indirect, necessary to provide safe access to and fr the roadway, as consistent with the purpose and intent of this ordinance and any applicable plans and policies of the City of Gold Beach.*

Right-of-Way. *Land reserved, used, or to be used for a highway, street, alley, walkway, drainage facility or other public purpose.*

Significant Change in Trip Generation. *A change in the use of the property, including land, structures or facilities, or an expansion of the size of the structures or facilities causing an increase in the trip generation of the property exceeding: (1) local 10 percent more trip generation (either peak or daily) and 100 vehicles per day more than the existing use for all roads under local jurisdiction; or (2) State exceeding 25 percent more trip generation (either peak or daily) and 100 vehicles per day more than the existing use for all roads under state jurisdiction.*

Stub-out (Stub-street). *A portion of a street or cross access drive used as an extension to an abutting property that may be developed in the future.*

Substantial Enlargements or Improvements. *An increase in existing square footage or increase in assessed valuation of the structure as described in Section___ of this ordinance.*

The following access management standards should be added to the City of Arlington's *Zoning Regulations* (Title 9). It is recommended that these standards be adopted as part of a new chapter in the *Zoning Regulations* and then referenced in the *Subdivision Regulations* with a statement that all land divisions must comply with them. This new chapter could be inserted in the *Zoning Regulations* as Chapter 5 and could incorporate the parking standards currently in Chapter 5, to avoid re-numbering later chapters. (If the City instead chooses to retain the street standards within the Subdivision Regulations, then the following provisions would be added to Title 10, Chapter 2, Design and Development.)

CHAPTER 5

SUPPLEMENTARY PROVISIONS RELATED TO TRANSPORTATION

9-5-1 Street Standards
9-5-2 Access Management
9-5-3 Off-Street Parking and Loading

9-5-2 ACCESS MANAGMENT

A. General

The intent of this section is to manage access to land development to preserve the transportation system in terms of safety, capacity, and function. This ordinance shall apply to all arterials and collectors within the City of Arlington and to all properties that abut these roadways. This ordinance is adopted to implement the access management policies of the City of Arlington as set forth in the Transportation System Plan.

B. Corner Clearance

1. Corner clearance for connections shall meet or exceed the minimum intersection spacing requirements for the roadway, according to the classification of the roadway in the Transportation System Plan, and specified in the table below.

Functional Classification	Public Road Spacing	Private Drive Spacing
Arterial		
I-84	2-3 Mi.	NA
OR 19		
Arlington: I-84 - Dahlia St.	300 ft	150 ft
Other Urban areas	¼ Mi.	500 ft
Other arterials in UGB	600 ft	300 ft
Collector	300 ft	150 ft
Minor Street	300 ft	Each lot

2. *New connections shall not be permitted within the functional area of an intersection or interchange as defined by the connection spacing standards of this ordinance, unless no other reasonable access to the property is available.*
3. *Where no other alternatives exist, the City may allow construction of an access connection along the property line farthest from the intersection. In such cases, directional connections (i.e. right in/out, right in only, or right out only) may be required.*

C. *Joint and Cross Access*

1. *Adjacent commercial or office properties classified as major traffic generators (i.e. shopping plazas, office parks), shall provide a cross access drive and pedestrian access to allow circulation between sites.*
2. *A system of joint use driveways and cross access easements shall be established wherever feasible and shall incorporate the following:*
   a. *A continuous service drive or cross access corridor extending the entire length of each block served to provide for driveway separation consistent with the access management classification system and standards.*
   b. *A design speed of 10 mph and a maximum width of 20 feet to accommodate two-way travel aisles designated to accommodate automobiles, service vehicles, and loading vehicles;*
   c. *Stub-outs and other design features to make it visually obvious that the abutting properties may be tied in to provide cross-access via a service drive;*
   d. *A unified access and circulation system plan for coordinated or shared parking areas is encouraged.*
3. *Shared parking areas shall be permitted a reduction in required parking spaces if peak demands do not occur at the same time periods.*
4. *Pursuant to this section, property owners shall:*
   a. *Record an easement with the deed allowing cross access to and from other properties served by the joint use driveways and cross access or service drive;*
   b. *Record an agreement with the deed that remaining access rights along the roadway will be dedicated to the City and pre-existing driveways will be closed and eliminated after construction of the joint-use driveway;*
   c. *Record a joint maintenance agreement with the deed defining maintenance responsibilities of property owners.*
5. *The City may reduce required separation distance of access points where they prove impractical, provided all of the following requirements are met:*
   a. *Joint access driveways and cross access easements are provided in accordance with this section.*
   b. *The site plan incorporates a unified access and circulation system in accordance with this section.*
   c. *The property owner enters into a written agreement with the City, recorded with the deed, that pre-existing connections on the site will be closed and eliminated after construction of each side of the joint use driveway.*

6. *The City may modify or waive the requirements of this section where the characteristics or layout of abutting properties would make a development of a unified or shared access and circulation system impractical.*

D. *Access Connection and Driveway Design*

1. *Driveways shall meet the following standards:*
   a. *If the driveway is a one way in or one way out drive, then the driveway shall be a minimum width of 10 feet and a maximum width of 12 feet and shall have appropriate signage designating the driveway as a one way connection.*
   b. *For two-way access, each lane shall have a minimum width of 10 feet and a maximum width of 12 feet.*

2. *Driveway approaches must be designed and located to provide an exiting vehicle with an unobstructed view. Construction of driveways along acceleration or deceleration lanes and tapers shall be avoided due to the potential for vehicular weaving conflicts.*

3. *The length of driveways shall be designed in accordance with the anticipated storage length for entering and exiting vehicles to prevent vehicles from backing into the flow of traffic on the public road or causing unsafe conflicts with on-site circulation.*

E. *Requirements for Phased Development Plans*

1. *In the interest of promoting unified access and circulation systems, development sites under the same ownership or consolidated for the purposes of development and comprised of more than one building site shall be reviewed as single properties in relation to the access standards of this ordinance. The number of access points permitted shall be the minimum number necessary to provide reasonable access to these properties, not the maximum available for that frontage. All necessary easements, agreements, and stipulations shall be met. This shall also apply to phased development plans. The owner and all lessees within the affected area are responsible for compliance with the requirements of this ordinance and both shall be cited for any violation.*

2. *All access must be internalized using the shared circulation system of the principal development or retail center. Driveways shall be designed to avoid queuing across surrounding parking and driving aisles.*

F. *Reverse Frontage*

1. *Lots that front on more than one road shall be required to locate motor vehicle accesses on the road with the lower functional classification.*

2. *When a residential subdivision is proposed that would abut an arterial, it shall be designed to provide through lots along the arterial with access from a frontage road or interior local road. Access rights of these lots to the arterial shall be dedicated to the City of Arlington and recorded with the deed. A berm or buffer yard may be required at the rear of through lots to buffer residences from traffic on the arterial. The berm or buffer yard shall not be located with the public right-of-way*

G. *Shared Access*

1. *Subdivisions with frontage on the state highway system shall be designed into shared access points to and from the highway. Normally a maximum of two accesses shall be allowed regardless of the number of lots or businesses served. If access off of a secondary road is possible, then access should not be allowed onto the state highway. If access off of a secondary road becomes available, then conversion to that access is encouraged, along with closing the state highway access.*

H. *Lot Width-to-Depth Ratios*

1. *To provide for proper site design and prevent the creation of irregularly shaped parcels, the depth of any lot or parcel shall not exceed 3 times its width (or 4 times its width in rural areas) unless there is a topographical or environmental constraint or an existing man-made feature.*

I. Connectivity

1. *The road system of proposed subdivisions shall be designed to connect with existing, proposed, and planned roads outside of the subdivision as provided in this section.*

2. *Wherever a proposed development abuts unplatted land or a future development phase of the same development, road stubs shall be provided to provide access to abutting properties or to logically extend the road system into the surrounding area. All road stubs shall be provided with a temporary turn-around unless specifically exempted by the Public Works Director, and the restoration and extension of the road shall be the responsibility of any future developer of the abutting land.*

3. *Minor collector and local residential access roads shall connect with surrounding roads to permit the convenient movement of traffic between residential neighborhoods or facilitate emergency access and evacuation. Connections shall be designed to avoid or minimize through traffic on local roads. Appropriate design and traffic control such as four-way stops and traffic-calming measures are the preferred means of discouraging through traffic.*

4. *Cul-de-sacs or permanent dead-end roads may be used as part of a development plan. However, through roads are encouraged except where topographical, environmental, or existing adjacent land use constraints make connecting roads infeasible. Where cul-de-sacs are planned, accessways shall be provided connecting the ends of cul-de-sacs to each other, to other roads, or to neighborhood activity centers, as provided in Section 9-5-3C.*

J. Variances to Access Management Standards

1. *The granting of the variance shall meet the purpose and intent of these regulations and shall not be considered until every feasible option for meeting access standards is explored.*

2. *Applicants for a variance from these standards must provide proof of unique or special conditions that make strict application of the provisions impractical. Applicants shall include proof that:*

   a. *Indirect or restricted access cannot be obtained;*

   b. *No engineering or construction solutions can be applied to mitigate the condition; and*

   c. *No alternative access is available from a road with a lower functional classification than the primary roadway.*

3. *No variance shall be granted where such hardship is self-created.*

K. Nonconforming Access Features

1. *Legal access connections in place as of (date of adoption) that do not conform with the standards herein are considered nonconforming features and shall be brought into compliance with applicable standards under the following conditions:*

   a. *When new access connection permits are requested;*

   b. *Change in use or enlargements or improvements that will increase trip generation.*

Recommended Ordinances to Protect Public Use Airports

The Oregon Airport Land Use Compatibility Guidelines (November 1994), which have been distributed to all County and City planning departments, provide examples for ordinance development, including an example Airport Overlay Zone appropriate to protect many smaller airports.

Chapter 3, Article G of the City of Arlington Zoning Regulations (Title 9) establishes the Airport Overlay Zone (A-0) and provides standards for development within this zone. The standards of Article G are largely consistent with

the Oregon Airport Land Use Compatibility Guidelines. However, minor additions and changes are recommended to update this section, as described below.

9-3G-3. Special Definitions

[Replace the definition of "Clear Zone," with the following:]

> ***Runway Protection Zone (RPZ).*** *An area off the runway end (formerly the clear zone) used to enhance the protection of people and property on the ground. The RPZ is trapezoidal in shape and centered about the extended runway centerline. It begins at the end of the turf and/or loose gravel runway. The RPZ dimensions are functions of the type of aircraft and operations to be conducted on the runway.*

[Replace the definition of Noise Impact, with the following:]

> ***Noise Sensitive Area.*** *Within 1,500 feet of an airport or within established noise contour boundaries exceeding 55 Ldn.*

[Add the following definitions to Section 9-3G-3:]
The following two paragraphs should be amended to include only the regulations that pertain to the type of runway and characteristics that the Arlington airport has. For example, the approach surface should be defined as having a width of 1,250 feet for a utility runway having only visual approaches, and the other descriptions deleted, if the Arlington airport is a utility, visual approach airport.

> ***Approach Surface.*** *A surface longitudinally centered on the extended runway centerline and extending outward and upward from each end of the Primary Surface. The inner edge of the approach surface is the same width as the Primary Surface and extends to a width of: 1,250 feet for utility runway having only visual approaches; 1,500 feet for a runway other than a utility runway having only visual approaches; 2,000 feet for a utility runway having a nonprecision instrument approach; 3,500 feet for a nonprecision instrument runway other than utility, having visibility minimums greater than three-fourths of a statute mile; 4,000 feet for a nonprecision instrument runway having visibility minimums as low as three-fourths statute mile; and 16,000 feet for precision instrument runways. The Approach Surface extends for a horizontal distance of 5,000 feet at a slope of 20 feet outward to each foot upward (20:1) for all utility and visual runways; 10,000 feet at a slope of 34 feet outward for each foot upward (34:1 for all nonprecision instrument runways other than utility; and for all precision instrument runways extends for a horizontal distance of 10,000 feet at a slope of 50 feet outward for each foot upward (50:1); thence slopes upward 40 feet outward for each foot upward (40:1) an additional distance of 40,000 feet.*
>
> ***Primary Surface.*** *A surface longitudinally centered on a runway. When the runway has a specially prepared hard surface, the Primary Surface extends 200 feet beyond each end of that runway. When the runway has no specially prepared hard surface, or planned hard surface, the Primary Surface ends at each end of that runway. The width of the primary Surface is 250 feet for utility runways having only visual approaches, 500 feet for utility runways having nonprecision instrument approaches, 500 feet for other than utility runways having only visual approaches or nonprecision instrument approaches with visibility minimums greater than three-fourths of a mile and 1,000 feet for nonprecision instrument runways with visibility minimums of three-fourths of a mile or less and for precision instrument runways.*
>
> ***Utility Runway.*** *A runway that is constructed for and intended to be used by propeller driven aircraft of 12,500 pounds maximum gross weight or less.*
>
> ***Visual Runway.*** *A runway that is intended solely for the operation of aircraft using visual approach procedures with no instrument approach procedures has been approved, or planned, or indicated on an FAA or state planning document or military service airport planning document.*

The code defines permitted and conditional uses, procedures, and limitations for the Airport Approach Safety Zone but not for the Runway Protection, or "Clear" zone. The following section should be added to Section 4.100, insert

before the section, "Permitted uses within the Airport Approach Safety Zone" and the rest of the section re-numbered accordingly:

9-3G-4 Permitted uses within the Runway Approach Zone (RPZ).
While it is desirable to clear all objects from the RPZ, some uses are permitted, provided they do not attract wildlife, are below the approach surface and do not interfere with navigational aids.

A. Agricultural operations (other than forestry or livestock farms).

B. Golf courses (but not clubhouses).

C. Automobile parking facilities.

The following additions should be made to the section, "Permitted uses within the Airport Approach Safety Zone":

F. In noise sensitive areas (within 1,500 feet of an airport or within established noise contour boundaries of 55 Ldn and above for identified airports) where noise levels are a concern, a declaration of anticipated noise levels shall be attached to any building permit, land division appeal, deed, and mortgage records. In areas where the noise level is anticipated to be 55 Ldn and above, prior to issuance of a building permit for construction of noise sensitive land use (real property normally used for sleeping or normally used as schools, churches, hospitals, or public libraries) the permit applicant shall be required to demonstrate that a noise abatement strategy will be incorporated into the building design which will achieve an indoor noise level equal to or less than 55 Ldn. The planning and building department will review building permits or noise sensitive developments.

G. No development that attracts or sustains hazardous bird movements from feeding, watering, or roosting across the runways and/or approach and departure patterns of aircraft. Planning authority shall notify Oregon Aeronautics of such development (e.g., waste disposal sites and wetland enhancements) within the airport overlay zone so as to provide Oregon Aeronautics Section an opportunity to review and comment on the site in accordance with FAA AC 150/5200-33.

H. No development that attracts or sustains hazardous bird movements from feeding, watering, or roosting across the runways and/or approach and departure patterns of aircraft. Planning authority shall notify Oregon Aeronautics of such development (e.g., waste disposal sites, open water impoundments, and wetland enhancements) within the airport overlay zone so as to provide Oregon Aeronautics Section an opportunity to review and comment on the site in accordance with FAA AC 150/5200-33.

I. Siting of new industrial uses and the expansion of existing industrial uses is prohibited where either, as part of regular operations, would cause emissions of smoke, dust or steam that would obscure visibility within airport approach corridors.

J. Outdoor lighting for new industrial, commercial or recreational uses or the expansion of such uses is limited to prevent light from projecting directly onto an existing runway or taxiway or into existing airport approach corridors except where necessary for safe and convenient air travel.

K. The establishment of new water impoundments larger than one-quarter acre in size within the airport boundary and RPZ is prohibited. Wetland mitigation required for projects located within the airport boundary or RPZ may be authorized within the airport boundary where it is impractical to provide mitigation off-site. Seaplane landing areas are exempt from this prohibition

L. The establishment of new landfills near airports, consistent with Department of Environmental Quality (DEQ) rules is prohibited.

9-3G-9: REQUIREMENT FOR MITIGATION. Land use regulations and standards for land use decisions regarding land use compatibility and other requirements of this code shall consider the effects of mitigation measures or conditions which could reduce the potential for safety risk or incompatibility.

[In accordance with ORS 836.616, amend the zoning regulations that pertain to the underlying zone of the Arlington airport to integrate the following purpose and uses:]

Permitted Commercial and Recreational Airport Uses at Non-Towered Airports

Within airport boundaries established pursuant to Land Conservation and Development Commission rules, Arlington's land use regulations must authorize the following uses and activities:

a) Customary and usual aviation-related activities including but not limited to takeoffs, landings, aircraft hangars, tie-downs, construction and maintenance of airport facilities, fixed-base operator facilities and other activities incidental to the normal operation of an airport;
b) Emergency medical flight services;
c) Law enforcement and firefighting activities;
d) Flight instruction;
e) Aircraft service, maintenance and training;
f) Crop dusting and other agricultural activities;
g) Air passenger and air freight services at levels consistent with the classification and needs identified in the State Aviation System Plan;
h) Aircraft rental;
i) Aircraft sales and sale of aeronautic equipment and supplies; and
j) Aeronautic recreational and sporting activities.

SAFE AND CONVENIENT PEDESTRIAN AND BICYCLE CIRCULATION

Bicycling and walking are often the most appropriate transportation mode for short trips. In small cities where the downtown area is compact, walking and bicycling can replace short auto trips, reducing the need for construction and maintenance of new roads. However, in order for walking and bicycling to be viable forms of transportation, safe and convenient bikeways and walkways must be provided; a lack of such facilities strongly discourages these mode choices. In addition, certain development design patterns, such as orienting commercial uses to the road and placing parking behind buildings, make a commercial district more accessible to non-motorized transportation and to existing or future transit service. The Transportation Planning Rule requires that urban areas and rural communities plan for bicycling and walking as part of the overall transportation system (660-12-045(3)).

Sections 660-12-045(3)(b), (c), and (d) of the Transportation Planning Rule address facilities for safe and convenient pedestrian and bicycle circulation and access within new residential and commercial development and on public roads. The Transportation Planning Rule specifies that, at a minimum, sidewalks and bikeways be provided along arterials and collectors in urban areas. Separate bicycle and pedestrian facilities should be provided where these would safely minimize trips distances by providing a "short cut."

The following special definitions related to bicycle and pedestrian travel should be added to Section 9-1-3, Definitions of the *Zoning Regulations*.

Accessway. A walkway that provides pedestrian and bicycle passage either between roads or from a road to a building or other destination such as a school, park, or transit stop. Accessways generally include a walkway and additional land on either side of the walkway, often in the form of an easement or right-of-way, to provide clearance and separation between the walkway and adjacent uses.

It is recommended that the City of Arlington adopt the following standards, which would make up one section of a new Chapter 5 of the *Zoning Regulations*.

9-5-4 PEDESTRIAN AND BICYCLE ACCESS AND FACILITIES

A. General

The purpose of this section is to provide for safe and convenient pedestrian, bicycle and vehicular circulation consistent with access management standards and the function of affected streets.

B. On-site facilities should be provided, where appropriate, to accommodate safe and convenient pedestrian and bicycle access.

1. Pedestrian Access and Circulation

a. Single family residential developments should include streets and accessways.

b. Sidewalks shall be required along arterials, collectors, and most local streets.

c. Pedestrian circulation should be provided in new commercial, office, and multi-family residential developments.

2. Bicycle Parking

a. New development should consider providing bicycle parking facilities as appropriate.

3. Commercial Development Standards

a. New commercial buildings, particularly retail shopping and offices, should be oriented to the road where possible.

b. Off-road motor vehicle parking for new commercial developments should, where possible, be located at the side or behind the building(s).

c. Site plans for industrial and commercial developments should show pedestrian and bicycle facilities.

C. Cul-de-sacs should provide through connections where possible.

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