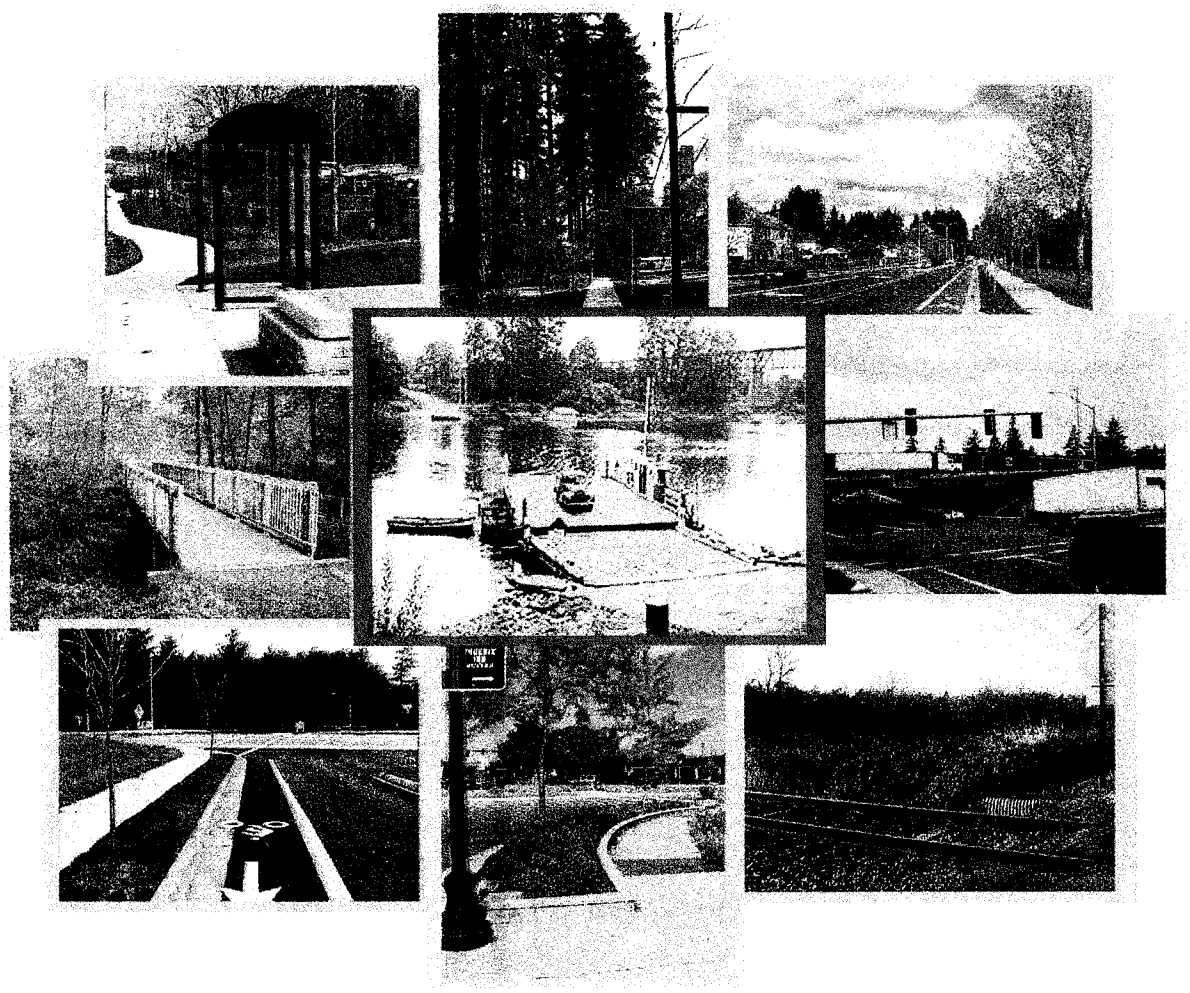
City of
WILSONVILLE
in OREGON

2003
TRANSPORTATION SYSTEMS PLAN



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ADOPTED
JUNE 2, 2003

2003 CITY OF WILSONVILLE
TRANSPORTATION SYSTEMS PLAN
June 2, 2003 Proof Draft

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CHAPTER 1
INTRODUCTION

1.1 BACKGROUND

The City of Wilsonville is a rapidly growing community with a thriving commercial and industrial base. Wilsonville is located in the Portland metropolitan area along Interstate 5, south of Interstate 205, 18 miles south of downtown Portland and 29 miles north of Salem (**Figure 1.1**). This document (the Transportation Systems Plan) is a complete update of the City's 1991 Transportation Master Plan and constitutes the transportation element of the City's Comprehensive Plan. Transportation needs, including goals and policies, were last addressed in the 1991 Plan. Since that time, Wilsonville has experienced significant growth that has placed heavy demands on the transportation system.

The purposes of this Transportation Systems Plan (TSP) are to:

- Comply with state mandates for transportation planning as specified by the statewide *Transportation Planning Rule (TPR). Per* OAR (Oregon Administrative Rules) 660-012-0015, the purpose of the TSP is to "establish a system of transportation facilities and services adequate to meet identified local transportation needs consistent with regional TSPs and adopted elements of the State TSP".
- Develop standards for the transportation system.
- Address current problem areas.
- Identify future roadway needs required to support predicted growth over the next 20 years.
- Provide guidelines for future transportation planning.

The TSP contains policies and implementation measures designed to fulfill the City's transportation needs through the year 2020. Many of these policies and implementation measures will become the City's standards for future transportation planning; however, several of these policies and measures seek to "encourage", "promote", or "support" particular actions in an effort to create a positive environment in Wilsonville. They represent an ideal or a suggestion and are not to be interpreted as a requirement of the TSP or any implementing document of the TSP on any individual, business, or organization. In time, these measures may be supported by incentives.

This TSP provides details to guide transportation investment for the future and to determine how land use and transportation needs can be balanced to bring the most benefit to the City. In addition to meeting state requirements, this TSP is in compliance with other jurisdictional plans including Metro's *Regional Transportation Plan (RTP)*, Washington County's *Transportation Plan*, Clackamas County's *Comprehensive Plan*, and Metro's *Urban Growth Management Functional Plan*.

1.2 THE PLANNING PROCESS

To develop this updated plan, the planning area boundaries were set as Clay Street and Day Road to the north, Miley Road to the south, Stafford and Wilsonville roads to the east, and Grahams Ferry Road to the west. This planning area is larger than the Urban Growth Boundary (UGB) and the city limits to ensure consistency between plans within the City and those plans outside of its urban growth area (see **Figure 1.2**).

Figure 1.3 illustrates the process followed to develop the TSP for the planning area. This process consisted of extensive engineering and planning analysis combined with input and review by the Adjunct Transportation Planning Committee (ATPC), the Planning Commission and the City Council. The ATPC consisted of citizens at large, business owners, and representatives from both the Planning Commission and City Council. The ATPC held its last meeting in April 2002. The ATPC's primary goal was to plan and provide for adequate public facilities and services, concurrent with the rate of development and population growth within the Wilsonville planning area. Public hearings were held on the TSP prior to its adoption by the City Council.

The planning process included:

- Review of public documents to assure compliance.
- Inventory and data collection of current transportation conditions and facilities.
- Definition of goals and policies.
- Determination of needs and desires for roadway network and non-motorized facilities (e.g., sidewalks, bicycle lanes).
- Development of alternatives with varying improvements and land uses to mitigate deficiencies.
- Evaluation of alternatives.
- Selection of two viable alternatives to carry forward.
- Analysis and establishment of appropriate level of service standards.
- Cost estimation of improvements necessary to satisfy City level of service standards.
- Determination of short-range and long-range plans.
- Development of TSP.

The transportation plan was developed around four basic modes (or mode groups):

- Motor Vehicles
- Pedestrians and Bicyclists
- Transit
- Other Modes (Including Rail, Air, and Water)

The objective of this TSP is to optimize each transportation mode within Wilsonville. The following chapters summarize the analysis performed for this plan. Each chapter addresses an essential piece of the TSP. These chapters are:

- Existing Conditions (Chapter 2)
- Traffic Model Development (Chapter 3)
- Motor Vehicle Facilities (Chapter 4)
- Pedestrian and Bicycle Facilities (Chapter 5)
- Transit System (Chapter 6)
- Other Modes and Multi-modal Coordination (Chapter 7)
- Transportation Demand Management (Chapter 8)
- Funding (Chapter 9)

1.3 HOW TO USE THIS PLAN

Goals are indicated for each chapter. After the *Goals*, information is provided to explain the issues raised and further explain what the community hopes to achieve. Then, specific *Policies* are listed indicating the official position of the Wilsonville City Council on these matters. Finally, *Implementation Measures* are listed so that the specific actions to be taken by the City can readily be seen.

The text is organized to enable the reader to focus on particular subjects of interest. Each chapter contains *Policies* and each *Policy* has one or more *Implementation Measures* that relate specifically to that *Policy*. For instance, someone with a particular interest in transit can look to Chapter 6. *Policy T-6.1* requires land use patterns and development standards that support transit. *Implementation Measures 6.1.a*, *6.1.b*, and *6.1.c* follow in the next section and list several actions that the City will take to help make sure that *Policy 6.1* is implemented.

Moving from *Goals* to *Policies* to *Implementation Measures*, the plan guides the reader from the general to the specific. As time goes on, readers of this document should be able to look at the specific *Implementation Measures* and determine whether, in fact, all of the steps outlined in the plan have been taken.

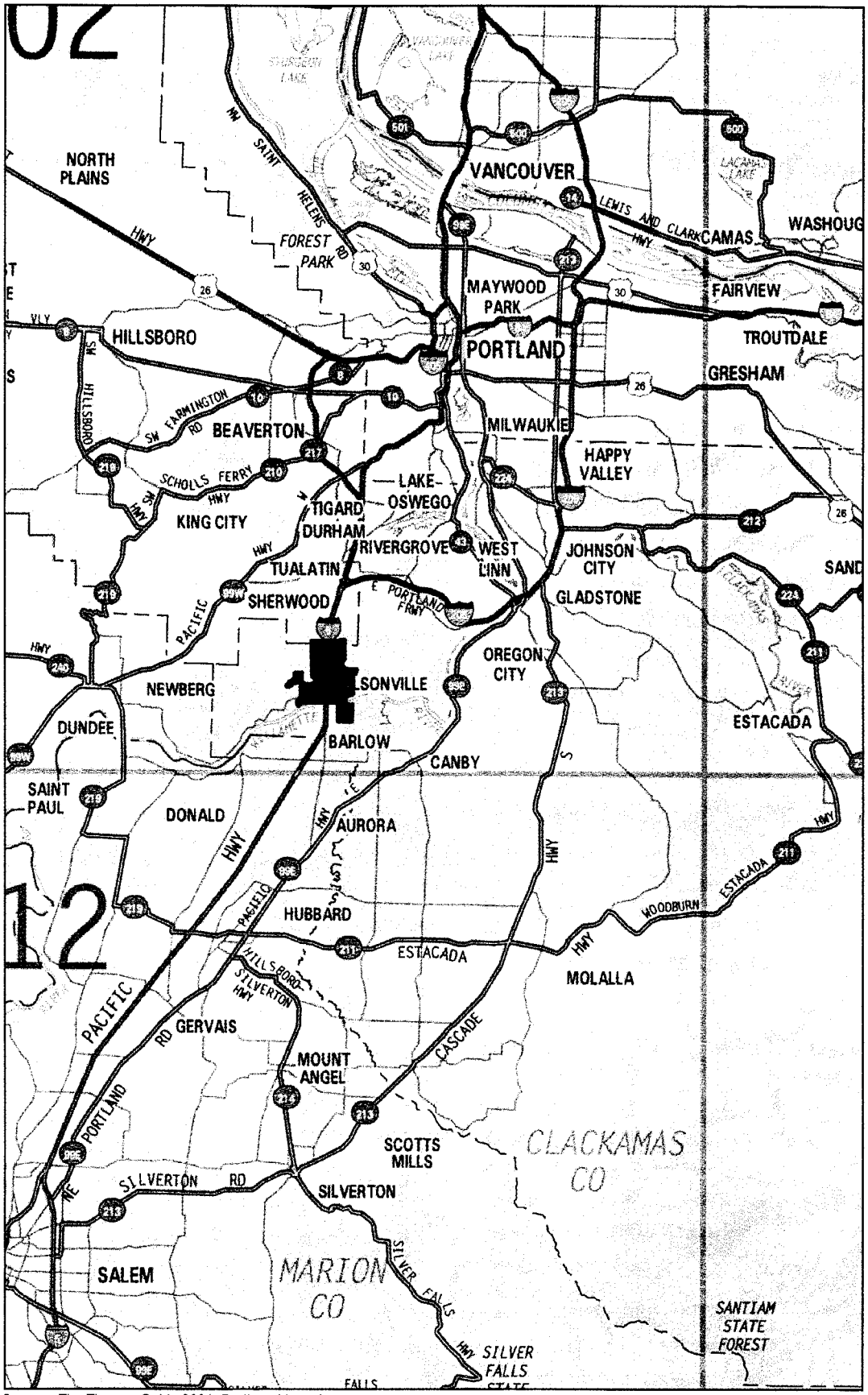
Over time it can be expected that portions of this plan will be amended to keep pace with changes in circumstances. By organizing the plan in this way, it should make it easier for those considering changes to this plan to know whether they need to change the *Goals*, the *Policies*, or just the *Implementation Measures*. At any point in the future, it should be possible for readers of this document to look at the Transportation Systems Plan and know whether the City has done the things that it has said that it would do to meet the community's transportation needs.

1.4 TSP ALTERNATIVES

In the course of preparing this TSP for the City of Wilsonville, numerous different alternative plans, as well as a substantial number of variations, were modeled and studied. After reviewing those alternative plans in some detail, the ATPC selected three alternatives for more refined study and final consideration. Based on new modeling, the Planning Commission further refined the three alternatives down to two alternatives: Alternative 1: the Modified No-Action and Alternative 2: the Recommended Alternative. To reduce confusion, these final two alternatives are listed numerically, and the names that were applied to them in previous draft documents were deleted. The alternatives are:

Alternative 1: Modified No-Action – This alternative looked at the community in the year 2020, with only minimal public investment in new transportation facilities during the interim. This alternative assumed that transportation projects that are planned and funded as of 2002 will be completed, and private investments will be made to improve the transportation system, but major public investment will not occur during the planning period. It also assumes that community growth and development are allowed to continue in spite of inadequacies to the transportation systems. This is essentially the "no-action" or "no-build" alternative as the term is used in the *National Environmental Policy Act*.

Alternative 2: Recommended Alternative – This alternative was based on all of the system improvements that would be needed by 2020 with an enhanced Wilsonville interchange as part of the transportation system. A Boeckman interchange, or other freeway access improvements that are not a part of proposed improvements to the Wilsonville Road interchange, are noted as being needed subsequent to the 20-year planning horizon of the TSP.

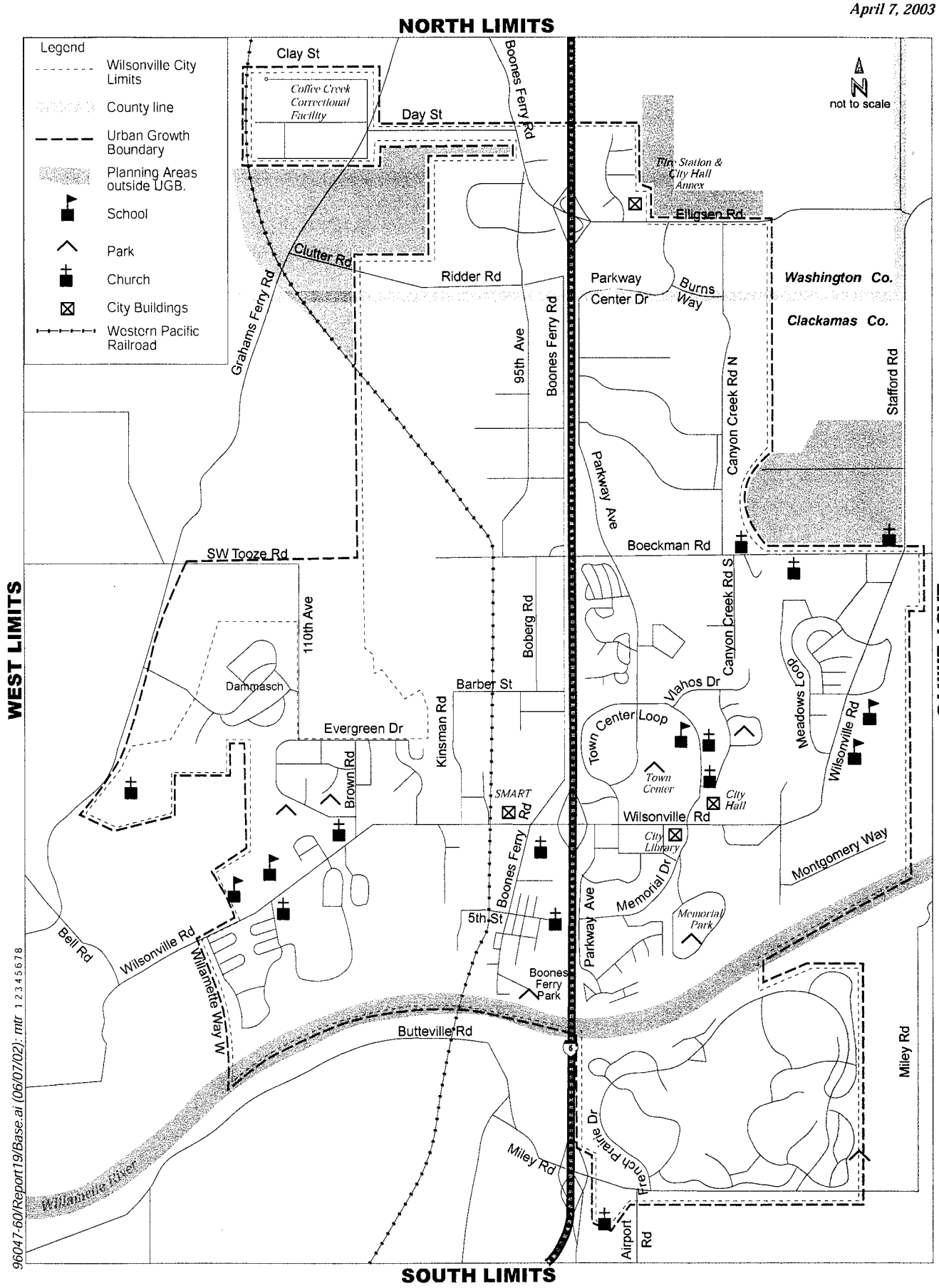


Source: The Thomas Guide 2001, Portland Metro Area

96047-60/Report19/Regional Location 01/04/02 cjs

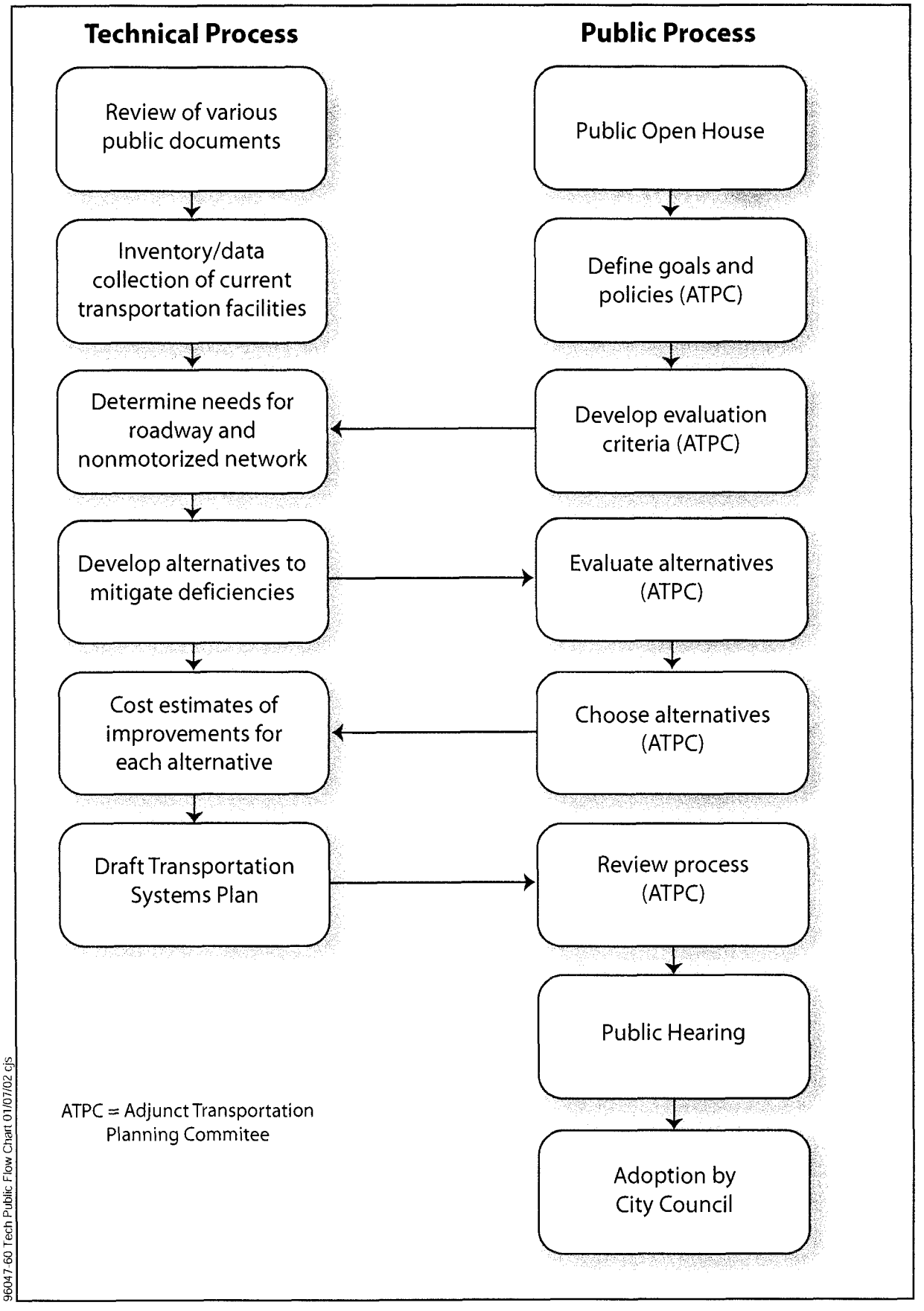
City of WILSONVILLE in OREGON
Transportation *Systems Plan*

Figure 1.1
Regional Location



City of WILSONVILLE in OREGON
Transportation *Systems Plan*

Figure 1.2
Transportation Systems Plan
Planning Area



City of WILSONVILLE in OREGON
Transportation *Systems Plan*

Figure 1.3
Transportation Systems Plan Process

CHAPTER 2
EXISTING CONDITIONS

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EXISTING CONDITIONS

2.1 INTRODUCTION

As a part of this Transportation Systems Plan (TSP) process, the City's existing transportation facilities were inventoried and their condition was assessed. The following sections describe the existing street network, circulation, pavement condition, traffic volume, traffic control, traffic levels of service, accidents, transit, bicycle and pedestrian facilities, and other transportation modes. Past transportation planning work in the City has been summarized, as well as regulations and other influencing documents from the State, region, and counties. In addition, results from the public involvement process are summarized herein.

2.2 PREVIOUS WORK

Plans and policy documents from the City of Wilsonville, Clackamas County, Washington County, Metro, and the State of Oregon were reviewed for information relevant to the Wilsonville planning area. State, regional, and other city documents also were reviewed for information pertinent to the planning process. This review highlights some of the major issues covered by these planning documents and compares the major transportation-related elements of existing plans, codes, and ordinances pertinent to the transportation planning efforts of the City of Wilsonville.

2.2.1 Review of Major Planning Documents

Most of the plans reviewed address the same major elements. These elements include motor vehicle traffic, bicycles and pedestrians, transit, transportation demand management (TDM), and road standards. For comparison purposes, **Tables 2.a** through **2.f** summarize the major planning documents and how they address each element.

The following provides a brief overview of major common elements and discrepancies identified during the plan review. These also are identified in **Tables 2.a** through **2.f**.

2.2.1.1 Overall Transportation Issues

Table 2.a summarizes the *transportation issues* addressed in each plan. Overall, these plans appear to be consistent when it comes to planning goals and level of service (LOS) standards. There is also some consistency with recommended regional roadway projects, although the plans are not in complete agreement (see **Table 2.b**).

Table 2.a
Comparison of the Five Major Plans on Overall Transportation Issues

Transportation Issue	RTP August 2000	WCTP October 1988	CCCP June 2002	WTMP July 1991	OHP 1999
Planning Goals	Encourage and facilitate economic growth of the Portland region through improved accessibility Ensure allocation of increasingly limited fiscal resources is driven by land use and transportation benefits. Place priority on protecting region's natural environment in transportation planning process.	Increase system capacity by improving and expanding roadway network. Make more efficient use of system: encouraging transit use and developing demand management programs, to encourage shared vehicle use and spread travel demand away from traditional peak travel hours.	Provide for safe, efficient, convenient and economical vehicle movement while minimizing degradation of environment and conserving energy; improve relationship between land use and transportation to decrease reliance on automobiles and encourage transit ridership by developing a convenient system.	Plan for and provide adequate public facilities and services closely tied to the rate of development.	To maintain and improve the safe and efficient movement of people and goods, and contribute to the health of Oregon's local, regional and statewide economies and livability of its communities.
Planning Horizon	2020 (base year 1994)	2005 (base year 1985)	2010 (base year 1987)	2010 (base year 1990)	2019
Population/ Employment Forecast	Population 2,348,943. Employment 1,106,364. 1,610,956. 796,279 new residents. 666,309 new jobs.	Population 411,000 Employment 145,000. 145,000 new residents 106,000 new jobs.	Population n/a Employment 134,600. 112,500 new people 48,100 new jobs[1]	Population 15,528 Employment 18,000. 8,220 new residents and 11,800 new jobs.	Not addressed.
LOS Standard - Multi-modal System	Wilsonville Town Center: F/E for 2-hour peak period. Other arterial routes: E/E.	LOS D with 20 minutes of E during peak hour for region (1986).	Not addressed.	LOS D is considered acceptable, but is approaching capacity.	0.99 v/c over the 2-hour peak period.

1. The new jobs are nonagricultural.

RTP=Regional Transportation Plan, WCTP=Washington County Transportation Plan, CCCP=Clackamas County Comprehensive Plan (Chapter 5), WTMP=1991 Wilsonville Transportation Master Plan, OHP=Oregon Highway Plan

n/a = Not Available

Table 2.b
Comparison of Projects Recommended in the Wilsonville Area by the Five Major Plans

Location	RTP	WCTP	CCCP	WTMP	WCP
I-5/Wilsonville I/C	Reconfigure	n/a	Improve	n/a	n/a
I-5/Charbonneau I/C	Improve	n/a	Improve	Improve	n/a
I-5/Elligsen Road I/C	n/a	Improve	n/a	n/a	Modify
I-5/Boeckman I/C	n/a	n/a	Study	n/a	n/a
Wilsonville Road	n/a	n/a	Upgrade	Widen	Widen

RTP = Regional Transportation Plan, WCTP = Washington County Transportation Plan, CCCP = Clackamas County Comprehensive Plan (Chapter 5), WTMP = 1991 Wilsonville Transportation Master Plan, WCP = Wilsonville Comprehensive Plan, I/C = interchange.

n/a = Not Addressed

2.2.1.1.1 Common Elements

- A common theme between plans is the need to address the correlation between land uses and transportation.
- LOS D is considered acceptable, but LOS E is becoming common as a standard.
- There is a need to improve the interchanges that provide access to Wilsonville (see **Table 2.b**). Note that both of the existing interchanges north of the Willamette River received substantial improvements in the late 1990s.

2.2.1.1.2 Discrepancies

- Roadway functional classifications differ between plans (see **Table 2.c**).
- Planning horizons differ between plans.
- Population and employment forecasts for the 1991 Wilsonville Transportation Master Plan (TMP) and the 1988 Comprehensive Plan appear to be based on very different assumptions.

It is also important to note that during the three years after the 1991 TMP was adopted, Wilsonville's population increased 33 percent (to 9,680). Employment increased an astonishing 125 percent (to approximately 14,000) between 1991 and 1996. As a result, Wilsonville attained 66 percent of its expected employment in only 25 percent of the time anticipated. City population reached 29 percent of its expected value in 20 percent of the time. This growth rate highlights the difficulty facing the City in achieving its goal of providing public services at a rate that is closely tied to development.

Table 2.c
Comparison of Functional Classifications in the Five Major Plans
Road Functional Classification

Road	RTP August 2000	WCTP October 1988	CCCP June 2002	WTMP July 1991	WCP November 1988	OHP 1999
I-5	principal arterial (freeway)	Regional arterial freeway	freeway	not classified	not classified	Interstate Highway
Boones Ferry Road	multi-modal minor arterial (rural road)	n/a	collector	major/ minor collector	arterial	District Highway
Elligsen Road	multi-modal minor arterial (urban road)	regional arterial principal route	n/a	major/ minor arterial	arterial	N/A
Wilsonville Road	multi-modal minor arterial (community street)	n/a	major arterial	major arterial	arterial	N/A
Ridder Road	minor arterial (n/a)	major collector	n/a	minor arterial	collector	N/A
Parkway Avenue	minor arterial (community street)	minor arterial	collector	minor arterial	collector	N/A
Boeckman Road	minor arterial (regional street)	n/a	collector	minor arterial	minor collector	N/A
Town Center Loop	minor arterial (community street)	n/a	collector	minor arterial	major arterial	N/A

RTP= Regional Transportation Plan, WCTP= Washington County Transportation Plan, CCCP= Clackamas County Comprehensive Plan (Chapter 5), WTMP= 1991 Wilsonville Transportation Master Plan, WCP= Wilsonville Comprehensive Plan.

n/a = Not Addressed because the plan does not list a functional classification for this road.

Note: Secondary listing under RTP in parentheses denotes road designation.

2.2.1.2 *Bicycle and Pedestrian Issues*

Table 2.d summarizes the bicycle and pedestrian issues addressed in each plan. Overall, it is clear that pedestrian and bicycle facilities are important elements within each plan. However, there are many differences when it comes to design standards.

2.2.1.2.1 *Common Elements*

The regional and county plans all recognize the importance of safe and convenient facilities.

2.2.1.2.2 *Discrepancies*

The pedestrian and bicycle facility standards are not clearly defined and there are some inconsistencies among the existing Wilsonville planning documents.

The Wilsonville Bicycle and Pedestrian and Parks and Recreation Master Plans address facility location and the other plans address design standards.

2.2.1.3 *Transit and Transportation Demand Management (TDM) Issues*

Table 2.e summarizes the transit and TDM issues addressed in each plan. Overall, it appears that these plans are consistent when it comes to the significance of transit and TDM measures to Wilsonville.

2.2.1.3.1 *Common Elements*

It is clear that transit is an important element to the regional and county plans. However, Wilsonville has not been previously identified for any regional transit routes; but a plan to extend commuter rail service to Wilsonville may require new transit service in the future.

Only recently have the Wilsonville Plans begun to emphasize transit as well as seek to implement TDM techniques. The City supports its own transit system.

2.2.1.4 *Road Standards*

Table 2.f summarizes the road standards contained in the 1987 Wilsonville Public Works Standards and the 1991 Wilsonville TMP. Many inconsistencies exist between those documents. The City has adopted a design life standard with the result that concrete construction is preferred for arterial streets when conditions allow the street to be closed for construction.

Table 2.d
Comparison of Bicycle and Pedestrian Issues in the Plans Reviewed

Plan	Planning Goal	Design Standards		Major Routes in Wilsonville for Proposed Bicycle and Pedestrian Facilities
		Sidewalk	Bicycle Facilities	
2000 Metro Regional Transportation Plan (RTP)	Safe and convenient routes for bicyclists and pedestrians region wide, and increase walking and biking mode shares.	None.	None.	Wilsonville Town Center is designated as a pedestrian district. Boones Ferry Road, Elligsen Road, Town Center Loop and Wilsonville Road are designated as transit/mixed use corridors and along with Canyon Creek Road North, 95th Avenue, Parkway Avenue and Boeckman Road, are designated as bikeways.
1988 Washington County Transportation Plan (WCTP)	Safe and efficient use of pedestrian and bicycle facilities as alternative to motorized travel and for recreational purposes.	None.	6-foot adjacent to curb within pavement area. One-way facilities, same direction as traffic.	Boones Ferry Road and near I-5 Willamette River crossing.
2002 Clackamas County Transportation Plan (CCCP, Chapter 5)	Safe, convenient movement of pedestrians and bicycles.	None.	None.	Wilsonville Road, Stafford Road, Advance Road, Mountain Road, and Butteville Road
1991 Wilsonville Transportation Master Plan (WTMP)	None.	5 to 8 feet in width for all road types	6-foot lane adjacent to curb within pavement area. One-way facilities, same direction as traffic.	Elligsen Road, Boeckman Road, Wilsonville Road, I-5, and Boones Ferry Road.

Class I paths are completely separated from vehicular traffic within an independent right-of-way (ROW) or the ROW of another facility. Bikeways separated from vehicles, but shared by both bicycles and pedestrians, are included in the classification.

Class II is part of the roadway or shoulder and delineated by pavement markings or barriers such as extruded curb or pavement bumper blocks. Vehicle parking, crossing, or turning movements may be permitted within the bikeway.

Class III shares its traffic ROW with motor vehicles and is designated by signing only.

n/a = Not Available.

(Continued on next page)

Table 2.d (continued)
Comparison of Bicycle and Pedestrian Issues in the Plans Reviewed

Plan	Planning Goal	Design Standards		Major Routes in Wilsonville for Proposed Bicycle and Pedestrian Facilities
		Sidewalk	Bicycle Facilities	
1994 Wilsonville Parks and Recreation Master Plan	Orderly and efficient development of park and recreation facilities.	None.	None.	Trails consistent with and connected to the Bicycle and Pedestrian Master Plan.
1993 Wilsonville Bicycle and Pedestrian Master Plan	Create an environment that promotes bicycling and walking and reduces dependence on automobiles.	In accordance with Public Works Standards.	5–6-foot shoulder striped and marked. Shoulder bikeway or shared roadway only if standard lane cannot be built.	Elligsen Road, Boeckman Road, Wilsonville Road, Miley Road, Boones Ferry Road, and Parkway Avenue.
2001 Wilsonville Comprehensive Plan (WCP)	Plan for and provide adequate public facilities and services closely tied to the rate of development.	Concrete sidewalks on both sides of all streets. In most cases, sidewalk on one side only with combination sidewalk/bicycle path on other side.	Class I primary bicycle path system unless physical barriers and interim phasing warrants Class II or III.	I-5, Elligsen Road, Boeckman Road, Wilsonville Road, Miley Road, Boones Ferry Road, and Parkway Avenue.
Public Works Standards	n/a	Per Engineering Department and sidewalk ordinance.	None.	None.
Wilsonville Development Code	n/a	Concrete sidewalks minimum 5-foot width except adjacent to commercial store fronts, then 8-foot minimum width.	Class I primary pathways unless topography, physical barriers, or adjacent development will not permit. 5-foot minimum from curb.	None.

Class I paths are completely separated from vehicular traffic within an independent right-of-way (ROW) or the ROW of another facility. Bikeways separated from vehicles, but shared by both bicycles and pedestrians, are included in the classification.

Class II is part of the roadway or shoulder and delineated by pavement markings or barriers such as extruded curb or pavement bumper blocks. Vehicle parking, crossing, or turning movements may be permitted within the bikeway.

Class III shares its traffic ROW with motor vehicles and is designated by signing only.

n/a = Not Available.

Table 2.e
Comparison of Transit and TDM Issues between Area Transportation Plans

Issue	RTP August 2000	WCTP October 1988	CCCP June 2002	WTMP July 1991
Primary Goals	Transit should be a viable alternative to SOV use by serving a variety of trip destinations, purposes, and times throughout the UGB.	Provide transportation system offering cost effective alternatives to cars and encourage land use pattern supporting transit.	Encourage transit use by developing a fast, comfortable, and low cost transit system and by developing land use patterns supporting it.	None given.
Transit LOS	Not addressed.	Not addressed.	Not addressed.	Not addressed.
Proposed Transit Network for Wilsonville area	Wilsonville designated as a Town Center (smaller than a regional center). No regionally significant routes identified for Wilsonville.	No new transit routes identified within Wilsonville.	Does not include Wilsonville.	Transit routes on arterial and collector streets (Tri-Met peak-hour service, SMART, and park-and-ride). Major routes: Elligsen Rd., Boeckman Rd., Wilsonville Rd., and I-5.
TDM Measures & Approach for Wilsonville area	Comprehensive regional approach, guidelines include TDM infrastructure/ support programs, CMS, and parking management.	Identifies TDM measures for county. Wilsonville not identified as Demand Management Area.	Not addressed.	Reduce or spread peak demand with TSM to provide efficient system versus widening or building new roads. Recommend carpooling, vanpooling, alternative work schedules, transit, bicycle/pedestrian facilities, and high-density employment areas.

RTP=Regional Transportation Plan, WCTP=Washington County Transportation Plan, CCCP=Clackamas County Comprehensive Plan (Chapter 5), WTMP=1991 Wilsonville Transportation Master Plan, UGB=urban growth boundary, TSM=transportation systems management, TDM=transportation demand management, SOV=single-occupant vehicle, CMS=Congestion Management System, SMART=South Metro Area Rapid Transit, LOS = Level of Service

Table 2.f
Comparison of Roadway Standards
From the City of Wilsonville Public Works Standards and 1991 Transportation Master Plan

	ROW (width in ft)		Paved Surface (width in ft)		Sidewalks (width in ft)		Bicycle Lanes (width in ft)	
Road Type	**WPWS**	**WTMP**	**WPWS**	**WTMP**	**WPWS**	**WTMP**	**WPWS**	**WTMP**
Local Access	42 to 50	46 to 50	28 to 36	32	5 to 6	5	6 (when provided)	n/a
Minor Collector	60	50	28 to 36	36	5 to 6	5	6 (when provided)	6
Major Collector	60 to 74	60 to 62	28 to 50	42 to 48	5 to 6	5 to 8	6 (when provided)	6
Major Collector w/o bicycle lanes	60 to 66	60 to 62	28 or 42	42 to 48	5 to 6	5 to 8	n/a	n/a
Major Collector with bicycle lanes	66 to 74	62 to 74	36 or 50	48 to 50	5 to 6	5 to 8	6	5 to 6
Commercial/industrial roadway w/o bicycle lanes	54 to 64	60 to 62	40 to 50	42 to 48	5 to 6	5 to 8	n/a	n/a
Commercial/industrial roadway with bicycle lanes	64	62 to 74	50	48 to 50	5 to 6	5 to 8	6	5 to 6
Major and Minor arterials[1]	90 to 114	64 to 90	42 to 90	50 to 66	5 to 6	5 to 8	6 (when provided)	6

[1]According to the City of Wilsonville 1991 TMP, the standards for the major arterial include a 98-foot right-of-way, 74-foot paved surface, 5- to 8-foot sidewalks, and 6-foot bicycle lanes.

WPWS = 1987 Wilsonville Public Works Standards, WTMP = 1991 Wilsonville Transportation Master Plan, ROW = Right-of-way, n/a = Not Applicable

2.2.2 Other Pertinent Documents Reviewed

A comprehensive review and analysis of all relevant state, regional and local planning documents pertinent to transportation planning for Wilsonville was conducted. The documents reviewed included state, regional, and city plans, ordinances, and reports. The major elements of the documents are discussed briefly below.

- Transportation Planning Rule (TPR)
- TPR Implementation Guidelines
- Oregon Highway Plan (OHP)
- Access Management Rule, OAR 734 Division 51
- Oregon Public Transportation Plan
- Oregon Bicycle and Pedestrian Plan
- Travel Demand Model Development and Application Guidelines
- APA Recommendations for Pedestrian, Bicycle, and Transit Friendly Development Ordinances
- Metro Regional Framework Plan
- Metro Urban Growth Management Functional Plan
- Metro 2000 Regional Transportation Plan
- Wilsonville Traffic Management Ordinance 431
- Wilsonville Ordinance 463
- Wilsonville Urban Renewal Plan (The Year 2000 Plan)
- Wilsonville Street Lighting Resolution No. 881
- Wilsonville West Side Master Plan
- Wilsonville Future Search
- Dammasch Area Transportation – Efficient Land Use Plan
- South Metro Area Rapid Transit (SMART) Transportation Plan

2.2.2.1 State of Oregon's Transportation Planning Rule (TPR) Reviewed

This summary describes the requirements of Oregon's Transportation Planning Rule (TPR), specifically Section 660-12-045—*Implementation of the Transportation System Plan* (TSP). It also describes the City of Wilsonville's existing policies, standards and plans that are designed to meet the TPR requirements, and it identifies policy inconsistencies or changes needed to address the TPR. The Wilsonville TSP has been structured to satisfy the TPR requirements for TSPs.

The purpose of the TPR is to set requirements for the preparation, adoption, refinement, implementation, and amendment of TSPs. The TPR contains measures designed to reduce reliance on the automobile and intends to ensure that the planned transportation system supports a pattern of travel and land use in urban areas that will avoid air pollution, traffic, and livability problems. Three requirements for municipalities in the TPR include no increase in automobile vehicle miles traveled (VMT) per capita within the first 10 years following the adoption of a transportation plan, followed by a 10 percent reduction in VMT per capita within 20 years, and finally a 20 percent reduction in VMT per capita within 30 years.

These requirements are to be achieved by increasing the share of non-automobile trips (pedestrian, bicycle, or transit), reducing the number of single occupant vehicle (SOV) trips, increasing average vehicle occupancy, or reducing the number of trips and/or length of trips required through more intensive land use and/or a better mix of land uses.

In general, the City of Wilsonville's *Comprehensive Plan*, *1991 TMP*, and *Development Code* are inconsistent with many TPR requirements. Stronger, clearer, and more objective standards are needed for pedestrian access, bicycle parking, and land use approvals for transportation projects. The Wilsonville Development Code does not include development standards for transit facilities, a parking plan, or a demand management program. **Table 2.g** cross-references TPR requirements and Wilsonville's Code provisions. Each section is described below.

2.2.2.1.1 Land Use Approvals for Transportation Projects

The TPR [660-12-045(1)] requires that local governments amend their land use regulations to be consistent with their adopted TSP and to clarify the land use approval process for transportation-related projects. Wilsonville does not specifically identify transportation projects as permitted or conditional uses in its zoning districts. The Development Code does have a provision that could be interpreted to satisfy this requirement. Section 4.005(.05) states that a development permit is not required for *"establishment, construction, or termination of an authorized public facility that serves development... including such facilities as a private or public street."* The definition of an authorized public facility in the Code should be expanded to include a transportation project listed in the adopted TSP.

Table 2.g
TPR Implementation Measures

Issue	TPR Citation	Wilsonville Development Code
Land Use Approvals for Transportation Projects	045 (1)	4.005(.05) could be interpreted to satisfy, but should be made clearer.
Access Control	045 (2) (a)	4.167(.01)
Protecting Future Operations	045 (2) (b)	4.116(.10)(A.)
Airports	045 (2) (c)	Not applicable
Coordinated Review	045 (2) (d)	See Implementation Measure 4.1.5.a
Conditions of Approval	045 (2) (e)	4.140(.09)(G.)(3.)
Notification	045 (2) (f)	4.016
Consistency with TSP	045 (2) (g)	4.197(.01)(B.)
Bicycle Parking	045 (3) (a)	4.154 (Completion currently postponed until completion of TSP)
Pedestrian and Bicycle Facilities	045 (3) (b)	4.421(.01)(C.)
Off-site Improvements	045 (3) (c)	See Transportation SDC ordinance
Internal Pedestrian Circulation	045 (3) (e)	4.421(.01)(C.)
Design Support for Transit Routes	045 (4) (a) and (5) (d)	See Chapter 6 for details on transit needs and proposals
Transit Access	045 (4) (b, e, and f)	See Appendix B, staff response to 045(4)(b, e, and f)
Pedestrian Districts	045 (4) (c)	The TSP does not propose any pedestrian districts. (See Implementation Measure 5.1.2.b.)
Preferential Carpool Parking	045 (4) (d)	See Implementation Measure 8.1.2.c
Transit Oriented Development	045 (4) (g) and (5) (a)	4.131(.03), 4.131(.05), 4.135
Demand Management Program	045 (5) (b)	See Chapter 8 and Implementation Measure 8.1.1.d.
Parking Plan	045 (5) (c)	Only general parking regulations given in 4.155
Pedestrian and Bicycle Plan for Developed Areas	045 (6)	Bicycle and Pedestrian Master Plan (1993)
Street Standards	045 (7)	Comprehensive Plan (Public Facilities and Services – Roads and Transportation Plan) and 2002 TSP (Subsection 4.4.1 Roadway Design Standards)

2.2.2.1.2 Protecting the Existing and Future Operation of Facilities

Access Control. The TPR [660-12-045(2)(a)] requires local governments to adopt access control measures such as driveway and public road spacing, median control, and signal spacing standards that are consistent with the functional classification of roads. The Development Code

includes the following *"Each access onto streets shall be at defined points as approved by the City and shall be consistent with the public's health, safety and general welfare. Such defined points of access shall be approved at the time of issuance of a building permit if not previously determined in the development permit."* This language should be strengthened to refer to the functional road classification. The site design standards require that *"special attention shall be to location and number of access points"* [4.421(.01)(C.)]. The 1991 TMP includes access management guidelines (TMP, page 57) for each functional street classification.

Protecting Future Operations. The TPR [660-12-045(2)(b)] requires local governments to adopt standards to protect future operation of roads, transit ways and major transit corridors. The Code includes the following language *"No structure shall be erected closer than the right-of-way line than existing or the officially planned right-of-way of any public, county, or state road."* [4.116(.10)(A)] This language should be strengthened by requiring new developments to reserve right-of-way (ROW) for projects shown in the adopted TSP, including ROW for transit and pedestrian uses.

Airports. The TPR [660-12-045(2)(c)] requires local governments to adopt measures to control land uses within airport noise corridors and imaginary surfaces. The Wilsonville Development Code does not include an airport overlay zone. This TPR requirement is not applicable because the Aurora State Airport is the closest airport facility, and it is approximately 2 miles south of Miley Road. The City will need to be cautious about maintaining the 35-foot height limitation for structures in the Charbonneau area, however, due to the flight path of the Aurora Airport.

2.2.2.1.3 Process for Coordinated Review of Land Use Decisions

Coordinated Review. The TPR [660-12-045(2)(d)] requires local governments to create a process for coordinated review of future land use decisions affecting transportation facilities, corridors, or sites. The City's Development Code does not adequately address this requirement. Language should be added to the land division and site design review sections that requires findings showing the potential impact of land use decisions on the transportation system.

Conditions of Approval. The TPR [660-12-045(2)(e)] requires local governments to adopt land use regulations that create a process for applying conditions to development proposals to minimize impacts and protect transportation facilities, corridors, or sites. As part of the planned development review process, the Development Review Board is empowered to adopt additional requirements or restrictions that may impact the location, width, and improvement of vehicular and pedestrian

access [4.140(.09)(G.)(2.)]. This language should be updated to include specific reference to transportation related conditions of approval and similar language should be added to the design review and land division sections of the Development Code.

Notification. The TPR [660-12-045(2)(f)] requires regulations calling for notification of the following applications to public agencies providing transportation facilities and services, Metropolitan Planning Organizations (MPOs), and the Oregon Department of Transportation (ODOT):

- Land use applications that require public hearings.
- Subdivision and partition applications.
- Other applications that affect private access to roads.
- Other applications within airport noise corridors and imaginary surfaces that affect airport operations.

The existing notification procedures are limited to placement of a newspaper ad and local postings. Effective implementation of the Wilsonville TSP requires coordination with and notice to affected transportation and facility providers for projects that could have a significant impact on the transportation system. These providers include Washington County, Clackamas County, Tri-Met, Metro, and ODOT.

Consistency with TSP. The TPR [660-12-045(2)(g)] requires regulations ensuring that amendments to land use designations, densities, and design standards are consistent with the functions, capacities, and levels of service of facilities identified in the TSP. The purpose of this requirement is to ensure that a Comprehensive Plan amendment, zoning ordinance amendment, or zone change considers the impact on traffic and is consistent with the TSP. Wilsonville's zone change or amendment decision-making criteria [4.197(.01)(B.)] includes substantial compliance with applicable statewide planning goals and rules; applicable state statutes; applicable Comprehensive Plan policies; and applicable provisions of the Development Code. Revised Code language adopting the TSP links the TSP with applicable state rules per TPR requirement.

Oregon Highway Plan (OHP) Action 1F.2 requires a 20-year planning horizon for local TSPs. Changes to the City's land use regulations and/or the TSP that may affect state facilities are typically the result of capacity analyses that consider the impacts to state facilities.

2.2.2.1.4 Safe and Convenient Pedestrian and Bicycle Circulation

Bicycle Parking. The TPR [660-12-045(3)(a)] requires bicycle parking facilities as part of multifamily residential units of four or more units; new retail, office, or institutional developments; and all transit transfer stations and park-and-ride lots. Bicycle parking standards have been included in

Section 4.155 of Wilsonville's Development Code. The standards may be refined, if necessary, when the 2002 TSP is completed.

Pedestrian and Bicycle Facilities. The TPR [660-12-045(3)(b)] requires on-site facilities that accommodate safe and convenient pedestrian and bicycle access from within new subdivisions, multifamily developments, planned developments, shopping centers, and commercial districts to adjacent residential areas and transit stops, and to neighborhood activity centers within a half mile of the development. The TPR also provides that single-family residential developments shall generally include streets and access ways; and that pedestrian circulation through parking lots should generally be provided in the form of access ways.

The TPR defines "safe and convenient" as bicycle and pedestrian routes, facilities, and improvements that have all the following characteristics:

- They are reasonably free from hazards, particularly types or levels of automobile traffic that would interfere with or discourage pedestrian or bicycle travel for short trips.
- They provide a reasonably direct route of travel between destinations, such as between a transit stop and a store.
- They meet the travel needs of bicyclists and pedestrians considering destination and length of trip; and considering that the optimum trip length of pedestrians is generally one-quarter to one-half mile. [660-12-045(3)(d)]

The Wilsonville Development Code generally addresses bicycle and pedestrian facilities as part of the site design standards that include the following:

> "Drives, Parking, and Circulation. With respect to vehicular and pedestrian circulation, including walkways, interior drives and parking, special attention shall be given to location and number of access points, general interior circulation, separation of pedestrian and vehicular traffic, and arrangement of parking areas that are safe and convenient and insofar as practicable, do not detract from the design of proposed buildings and structures and the neighboring properties. [4.421(.01)(C.)]"

This language should be strengthened or should reference standards within the adopted TSP.

All streets shall be developed with curbs and sidewalks on both sides [4.177(.01)(B.)] per the City's Development Code, although the City does have exemptions to this standard. Cul-de-sacs shall not exceed 200 feet in length [4.177(.01)(G.)]. Collectors and arterials in commercial areas are required to have 6-foot clear sidewalks (by adoption of the 2002 TSP, Chapter 4).

Wilsonville's Bicycle and Pedestrian Master Plan provides a plan to create a system of improved bicycle and pedestrian routes throughout the City that connect important destinations.

The Development Code does not include standards for orienting new commercial and civic buildings to the street or requiring buildings to have an entrance oriented toward the street, except in the Old Town overlay area. The standards could be made stronger by specifically requiring pedestrian and bicycle connections to adjacent residential areas, transit stops, and neighborhood activity centers (schools, parks, shopping, or employment centers) within one-half mile of the development. In addition, handicap ramps at intersections need to be provided to comply with the federal Americans with Disabilities Act (ADA).

Off-site Improvements. The TPR [660-12-045(3)(c)] requires off-site improvements that are required as a condition of approval to include pedestrian and bicycle improvements, including bicycle ways along arterials and major collectors. Developers are required to develop internal streets and typically provide half-street improvements on all abutting streets. Other off-site improvements typically are developed by the City and funded through the City's transportation system development charge ordinance. City-sponsored transportation improvements must conform to City standards. These City standards have been strengthened by the completion of this TSP.

Internal Pedestrian Circulation. The TPR [660-12-045(3)(e)] requires internal pedestrian circulation within new office parks and commercial developments to be provided by clustering buildings, constructing access ways and walkways, and similar techniques. The site design standards referenced above require the Development Review Board to consider general interior circulation, separation of pedestrian and vehicular traffic, and arrangement of parking areas that are safe and convenient [4.421(.01)(C.)].

2.2.2.1.5 Transit Access and Facilities

For urban areas where the area is already served by a public transit system, the TPR [660-12-045(4)] requires support of transit by requiring these land use regulations:

- Support transit routes and facilities through appropriate measures such as bus stops, pullouts, optimum road geometrics, or parking restrictions.
- Include transit routes and facilities and convenient pedestrian access to transit through walkways and connections in new retail, civic, office, and institutional developments.
- Designate pedestrian districts for an area planned for mixed uses likely to support a relatively high level of pedestrian activity.

- Allow existing developments to redevelop portions of parking areas for transit-oriented uses where appropriate.
- Ensure that new roads can be adequately served by transit.
- Designate transit supportive land uses along existing or planned transit routes.

As Wilsonville grows and its transit system becomes more extensive, access to transit will become an important part of the transportation system. The current Development Code does not address access to transit routes and facilities. The City should adopt new standards as part of the Design Review and Subdivision regulations to ensure transit access is incorporated into new developments. (See Chapter 6 Transit System, Implementation Measure 6.1.1.b.)

2.2.2.1.6 Other TPR Provisions

Preferential Carpool Parking. The TPR [660-12-045(4)(d)] requires that designated employee parking areas in new developments shall provide preferential parking for carpools and vanpools. The City does not have any requirements for preferential parking and should include them as part of an update of the parking standards to conform to Metro's Urban Growth Management Functional Plan. (See Chapter 8 Transportation Demand Management, Implementation Measure 8.1.2.c.)

Transit-Oriented Development. The TPR [660-12045(5)(a)] requires local governments to adopt land use and subdivision regulations that allow transit-oriented development on lands along transit routes. "Transit-oriented development" is defined as a mix of residential, retail, and office uses with a supporting network of roads and bicycle and pedestrian facilities focused on a major transit stop. A key component is high-density residential development close to a transit stop with supporting neighborhood commercial uses. Wilsonville's Planned Development Commercial and Planned Development Industrial zones allow residential mixed use provided the majority of the total area is the underlying use (commercial or industrial). The City should review the distribution of these planned development areas to ensure or encourage mixed-use development along transit routes. (See Chapter 6 Transit System, Implementation Measures.)

Demand Management Program. The TPR [660-12-045(5)(b)] requires local governments to implement a demand management program to meet the VMT reduction standards. Demand management programs are designed to change travel behavior to improve the performance of transportation facilities and reduce the need for additional road capacity. Possible actions include, but are not limited to, promoting the use of alternative modes, ride-sharing and vanpool programs, and trip-reduction

ordinances. The City of Wilsonville TDM program is outlined in Chapter 8 of this TSP.

Parking Plan. The TPR [660-12-045(5)(c)] requires local governments to implement a parking plan that does all of the following:

- Achieves a 10 percent reduction in the number of parking spaces per capita in the MPO area over the planning period. (Planning period is the twenty-year period beginning with the date of adoption of the TSP.)
- Aids in meeting the VMT reduction standards.
- Sets minimum and maximum parking requirements.

The reduction in parking spaces may be accomplished through a combination of restrictions on new developments and requirements to redevelop existing spaces into other uses. The City of Wilsonville has addressed these standards by incorporating Metro's parking standards from the Urban Growth Management Functional Plan.

Pedestrian and Bicycle Plan for Developed Areas. The TPR [660-045(6)] requires local governments to identify appropriate pedestrian and bicycle improvements in developed areas to provide for more direct, convenient, and safer travel within and between residential areas and neighborhood activity centers (schools, parks, and shopping areas). In 1993, the City prepared a Bicycle and Pedestrian Master Plan along with subsequent planning by the Parks and Recreation Board that has been integrated into this TSP.

Street Standards. The TPR [660-12-045(7)] requires local governments to establish street standards that minimize pavement width and total ROW, consistent with the operational needs of the facility. The intent of this standard is to encourage local government to consider and reduce excessive standards to lower construction costs, provide for more efficient use of urban land, provide emergency vehicle access while discouraging inappropriate traffic volumes and speeds, and accommodate convenient bicycle and pedestrian circulation. Street standards do not need to be adopted as land use regulations. Wilsonville's street standards are referenced in both the Comprehensive Plan and the 1991 TMP. Functional street classifications and the impacts of reducing local street standards are discussed in Section 4.4.1 "Roadway Design Standards.

2.2.2.1.7 TPR Implementation Guidelines

The objectives of the State's TPR Implementation Guidelines were to understand specific TPR requirements for new development by examining various case studies of different development types; to explore different approaches to meeting the TPR requirements for new development; and to distill the "lessons learned" from case studies and group discussions into guidelines that can be used by local jurisdictions to

write ordinances that meet TPR requirements. Based on this, the TPR requires local governments and/or developers to provide:

1. Bicycle parking in multifamily residential, commercial, industrial, institutional, and transit facility developments;
2. Safe and convenient pedestrian and bicycle access in all types of new development;
3. Internal pedestrian circulation in commercial developments;
4. Design and provision of transit facilities;
5. Preferential access to transit in commercial and institutional developments;
6. Preferential parking for carpools and vanpools in industrial and commercial developments;
7. Opportunities for redevelopment of surface parking for transit-oriented uses;
8. Road systems that facilitate pedestrian and transit access; and
9. Transit stops for major commercial, industrial, and institutional developments.

Each requirement was addressed in the TPR Implementation Guidelines, with emphasis on providing guidelines regarding bicycle parking, connectivity, pedestrian and bicycle access, and building orientation.

2.2.2.2 *Other State Documents Reviewed*

Oregon Highway Plan (OHP) (1999, and Table 7 amended 2000). The OHP is a refinement of the goals and policies of the Oregon Transportation Plan. Local TSPs must be consistent with a set of policies enumerated in the OHP including, but not limited to: State Highway Classification, Highway Freight System and Transportation Demand Management and Investment Policies. The OHP sets highway mobility standards to be used in the development of transportation systems plans and criteria for access management policies. The guidelines, standards and policies were reviewed and incorporated, where applicable, in this TSP.

Travel Demand Model Development and Application Guidelines. The purpose of this report is to provide transportation planners with a blueprint for developing and applying appropriate travel demand forecasting techniques and procedures to transportation problems at the regional, corridor, and sub-area levels. These statewide guidelines detail the mathematics of model formulation, provide examples of fully developed model components, provide recommendations for market segmentation, and generally describe procedures for model validation application. These guidelines were followed to develop the model used to generate the volumes for analysis in this TSP.

2.2.2.3 Regional Documents Reviewed

2.2.2.3.1 APA Recommendations for Pedestrian, Bicycle, and Transit Friendly Development Ordinances

This document represents a compilation of ideas on how to meet the requirements of the TPR. It recommends ordinance standards that should be used as a starting point for local efforts to implement the TPR. The recommended ordinance standards should be evaluated, adapted, and refined to fit local circumstances.

2.2.2.3.2 Regional Framework Plan

The Metro Regional Framework Plan (RFP) "is intended to be the document that unites all of Metro's adopted land use planning policies and documents." The RFP was created from a requirement of the voter approved Metro Charter. The Charter also requires that Metro adopt a Future Vision, as embodied in the 2040 Growth Concept, which sets the direction of planning found in the RFP. The RFP is implemented through various functional plans, both regional and local. The Goals and Policies of the Wilsonville TSP are consistent with the Goals and Policies of the RFP.

The RFP includes goals and policies that are directly applicable to Metro's planning activities. The transportation related goals and policies are found in Chapter Two of the RFP and are implemented through the Metro functional plans, the Urban Growth Management Functional Plan and the Regional Transportation Plan (RTP).

The RFP is meant to "establish a new framework for planning in the region by linking land use and transportation plans." The policy highlights in Chapter Two of the RFP emphasize this new framework by:

- Ensuring efficient access to jobs, housing, cultural and recreational opportunities, shopping in and throughout the region, and providing transportation facilities that support a balance of jobs and housing.
- Reducing reliance on any single mode of travel and increasing the use of alternative modes, such as transit, bicycling, and walking.
- Integrating land use, automobile, bicycle, pedestrian, freight, and public transportation needs in regional and local street designs.
- Providing efficient transportation systems that accommodate motor vehicles, public transportation, pedestrian transportation, bicycle transportation, and freight movement.
- Reducing VMT per capita and related parking spaces.
- Providing TDM and TSM strategies.
- Minimizing impact of urban travel on rural land through use of green corridors.

- Protecting water and air quality and reducing energy consumption.

Though the implementation of the RFP is through the functional plans, the goals and policies of the Wilsonville TSP are generally consistent with goals and policies of Chapter Two of the RFP.

2.2.2.3.3 Urban Growth Management Functional Plan

The Urban Growth Management Functional Plan is one of the documents that implements regional goals and objectives as adopted by the Metro Council. The state legislation that created Metro authorizes Metro "to adopt Functional Plans that could contain specific recommendations and requirements for the cities and counties within Metro's boundaries to amend their Comprehensive Plans and implementing zoning ordinances." The Urban Growth Management Function Plan, in combination with the RTP are the two functional plans that have specific requirements for local governments.

The Urban Growth Management Functional Plan (Functional Plan) contains one Title that deals with regional transportation issues; *Title 2: Regional Parking Policy*. Before August of 2000, the Functional Plan also included a number of regional transportation policies in Title 6. Title 6 was superceded by the RTP.

2.2.2.3.4 Title 2: Regional Parking Policy

Title 2 of the Functional Plan is part of the regional implementing policy for the federally mandated air quality plan and state requirements found in the TPR.

Title 2 of the Functional Plan includes the following sections:

- Section 1: Intent

Section 1: The goal of Title 2 is to preserve the quality of life in the Metro Region. Metro furthers this goal by encouraging compact development. Title 2 attempts to enhance the quality of life by improving air quality. This occurs through the setting of minimum and maximum parking standards. Such standards encourage other modes of travel and reduce vehicle miles traveled (VMT).

- Section 2: Performance Standard

Section 2: Performance Standard sets minimum and maximum parking standards that shall be implemented by changes to a local jurisdiction's Comprehensive Plan and Development Code. Section 2 establishes a maximum on the minimum number of *required* parking spaces per use as well as a maximum *permitted* parking ratio. Section 2 also establishes a Zone A and a Zone B and different parking standards for each zone. Zone A is within one-quarter mile walking distance of 20-minute peak

hour transit service and therefore has more stringent parking standards than Zone B. Zone B is everything outside Zone A. The entire City of Wilsonville is within Zone B, as there is currently no 20-minute transit service within the City.

A variance may be granted from any maximum parking ratios and different use categories or measurement standards other than those in the Regional Parking Ratios Table if the results are substantially the same.

The City of Wilsonville Development Code specifies minimum and maximum off-street parking requirements, as required by Metro's Urban Growth Management Functional Plan (UGMFP).

Compliance with Title 2 must be verified on an annual basis through submittal by City staff of the following information to Metro:

- the number and location of newly developed parking spaces, and
- demonstration of compliance with the minimum and maximum parking standards.

2.2.2.3.5 2000 Regional Transportation Plan

The Metro Council adopted the 2000 RTP in August 2000. The RTP is the second functional plan that implements the Regional Framework Plan. As such, there are specific requirements that local jurisdictions will have to meet. The RTP replaces Title 6 of the UGMFP and complements the parking standards found in Title 2. According to the RTP "All local plans must demonstrate consistency with the RTP as part of their normal process of completing their plan or during the next periodic review." Wilsonville has demonstrated consistency with the RTP in the TSP.

The RTP includes a list of projects that compose the preferred network of roads for the next 20 years. To qualify for this list, jurisdictions must submit projects that meet all of the requirements in both the UGMFP and the RTP. The RTP identifies a process through which a local government can request an amendment to the RTP to reflect local planning decisions.

Each jurisdiction must comply with the sections of the RTP as described in the following summary. This summary also lists elements of the RTP that require consistency between the RTP and local plans.

Chapter 1 – Regional Transportation Policy

Chapter 1 includes a list of 34 policies and associated objectives; the TSP is consistent with all of these. The policies address a wide variety of topics, from public involvement to environmental issues to regional freight to funding. The policies can be divided into seven categories. A brief discussion of the categories and TSP consistency follows:

1. Public Process. Policies 1 and 2 concern the integration of the public and various levels of governmental agencies into the planning and land-use decision-making process. This TSP has been written and reviewed by The City of Wilsonville Adjunct Transportation Planning Committee (ATPC), composed of Wilsonville residents, business owners, and Planning Commission and City Council members. Several public Open Houses have been conducted. (See Section 2.15 Public Involvement.) Metro, ODOT and DLCD have provided comments during the review of the draft TSP, before their formal review.

2. Connecting Land Use. Policies 3 and 4 concern the consistency of transportation facilities with present day regional land use policies and patterns as well as future ones as expressed in the Metro *2040 Growth Concept*. As part of the transportation modeling process, Metro reviewed both present and future land use assumptions, housing numbers and employment figures that the model was based on. (See Chapter 3.)

3. Equal Access and Safety. Policies 5 through 6 inclusive address the need of the transportation system to provide for the mobility needs of the disadvantaged portions of the citizenry as well as for the safety of all transportation system users. The City of Wilsonville is fortunate to have a locally based transit system – South Metro Area Rapid Transit (SMART). This system provides for the need of the local citizenry to move about town and to connect to Tri-met for out of area transportation (See Chapter 6 for details.) The commitment to safety in this TSP lies not in Goals and Policies but in the practice of providing for roads, bicycle lanes and pedestrian walkways that promote the multi-modal approach to mobility. See Chapters 4 and 5 for roadway, bicycle and pedestrian standards.

4. Protecting the Environment. Policies 7 through 10 concern the protection of the natural environment, energy, clean air and water quality issues. During the discussion of possible road alignments, the ATPC was aware of possible environmental impacts. Decisions were made to impact the environment as little as possible. When road alignment studies and/or construction take place, all applicable environmental rules and regulations will be followed and enforced. Air quality and energy issues are addressed in Chapters 7 and 8 under multi-modal strategies and transportation demand management.

5. Designing the Transportation System. Policies 11 through 17 concern the planning and implementation of the area's transportation system. Transportation facilities and systems play a significant role in the character of the surrounding community and impact adjacent land uses. Throughout the TSP references are made to the applicability and viability of proposed routes, designs, standards, implementation

measures for cars, trucks, pedestrians, bicyclists and transit patrons. Design concepts contained in the Metro publication *Creating Livable Streets: Street Design for 2040* are referenced in Section 4.4.1 Roadway Design Standards.

6. Managing the Transportation System. Policies 18 and 19 concern better use of the existing transportation system. Concepts here include the strategies outlined in TSP Chapters 7 and 8 under alternative modalities and transportation demand management.
7. Implementing the transportation system. Policy 20 concerns funding. This is covered in Chapter 9 of the TSP.

Chapter 2 – Land Use, Growth and Travel Demand
Chapter 2 requires that local plans be consistent with the 2020 population and employment forecast created by Metro that is based on 1994 data. Based on direction from the committee and city staff, an alternative 2020 population and employment forecast was prepared. An alternative forecast is allowed under certain conditions described in Chapter 6 of the RTP.

Chapter 6 – Local Implementation of the RTP

Chapter 6 includes the majority of requirements that local jurisdictions must show compliance with through local plans. The subsections of Chapter 6 are described below.

6.4.2 – Local TSP Development. This section is similar in scope to the Transportation Planning Rule requirements discussed above. This section requires that local TSPs identify transportation needs for a 20-year planning period, that alternative modes and strategies are identified, and a recommended set of projects and actions are created. The TSP is a 20-year plan that is consistent with the requirements of Section 6.4.2.

6.4.3 – Process for Metro Review of Local Plan Amendments, Facility and Service Plans. This section details the Metro process for reviewing local plans for consistency, compliance, and notification requirements for local plan amendments.

6.4.4 – Transportation Systems Analysis Required for Local Plan Amendments. This section is similar to Subsection C of Title 6 in that it sets a process for adding SOV capacity to the regional motor vehicle system when the project is not listed in the 2000 RTP. The Wilsonville TSP recommends SOV capacity improvements for the regional system beyond the RTP, and will consider the following actions before the improvement is allowed:

- Transportation demand strategies
- System management strategies including Intelligent Transportation Systems (ITS)

- Local transit, bicycle, and pedestrian system improvements to improve mode split
- Improvements to parallel arterials
- Traffic calming techniques

If none of these actions adequately or cost-effectively address the problem, a significant capacity improvement may be included in the plan.

6.4.5 Design Standards for Street Connectivity. This section adds a requirement that cities and counties amend their development codes and comprehensive plans, if necessary, to improve local and collector street connectivity. The RTP requires the following:

- Cities and counties must identify all contiguous areas of vacant and re-developable parcels of five or more acres planned or zoned for residential or mixed-use development and prepare a conceptual new streets plan map.
- Cities and counties shall require new residential or mixed-use development that will require construction of new street(s) to provide a street map that:
    a. Responds to and expands on the conceptual street plan map as required above.
    b. Provides full street connections with spacing of no more than 530 feet between connections except where certain conditions exist.
    c. When full street connections are not possible, provides bicycle and pedestrian access ways on public easements or ROW in lieu of streets.
    d. Limits the use of cul-de-sac designs and other closed-end street systems to situations where barriers prevent full street extensions.
    e. Includes no closed-end street longer than 200 feet or with more than 25 dwelling units.
    f. Includes street cross-sections demonstrating dimensions of ROW improvements, with streets designed for posted or expected speed limits.

- In addition, the street design code should include consideration of narrow street alternatives (28-foot pavement width), local traffic calming options, and the provision of direct connections between neighborhoods and nearby services.

Most of the requirements listed above are addressed by the TSP; other portions are addressed by implementation measures.

6.4.6 Alternative Mode Analysis. This section establishes the requirement that local jurisdictions establish non-SOV modal targets for regional 2040 design types as established by the RTP. This section

mandates a non-SOV mode split for designated town centers of 45 to 55 percent and 40 to 45 percent for everywhere else for the year 2040. This is obviously unattainable in the near future, but is the goal for the year 2040 to meet the per capita travel reductions required by the TPR.

Chapter 8 identifies the actions that will increase non-SOV mode share. Local benchmarks for evaluating progress toward achieving modal targets may be based on future RTP updates and analysis.

6.4.7 Motor Vehicle Congestion Analysis. This section of the RTP is similar to Section 4 subsection B of the UGMFP. This section is a discussion of transportation congestion as measured by the standards set forth in the RTP. Policy 13 and Table 1.2 (**Table 2.h** below) of the RTP establish LOS standards for regional facilities that must be incorporated into local plans and implementing ordinances.

Table 2.h
2000 Regional Transportation Plan
LOS Standards

	Mid-Day One-Hour Peak			A.M./P.M. Two-Hour Peak					
				Preferred Operating Standard		Acceptable Operating Standard		Exceeds Deficiency Threshold	
Location	Preferred Operating Standard	Acceptable Operating Standard	Exceeds Deficiency Threshold	1st Hour	2nd Hour	1st Hour	2nd Hour	1st Hour	2nd Hour
Town Center	C	E	F	E	E	F	E	F	F
Industrial Areas	C	D	E	E	D	E	E	F	E
Employment Areas	C	D	E	E	D	E	E	F	E
Inner Neighborhoods	C	D	E	E	D	E	E	F	E
Outer Neighborhoods	C	D	E	E	D	E	E	F	E
I-5	C	D	E	E	D	E	E	F	E

Jurisdictions may adopt alternative standards that do not exceed the minimum LOS established in Table 2.h of this TSP. If more stringent standards (e.g., LOS D is more stringent than LOS E) are adopted by the local jurisdiction, those standards must not:

- Result in major motor vehicle capacity improvements that have the effect of shifting unacceptable levels of congestion into neighboring jurisdictions along shared regional facilities.
- Result in motor vehicle capacity improvements to the principal arterial system (as defined in figure 1.12 of the RTP) that are not recommended in, or are inconsistent with, the RTP.
- Increase single-occupancy-vehicle (SOV) travel to a measurable degree that affects local consistency with the modal targets contained in Table 1.3 of the RTP.

This section also establishes the process whereby a local jurisdiction can identify an unmet transportation need in the RTP and recommend a solution. This is accomplished by identifying the need(s) and proposing projects in the TSP. Upon review by Metro of the TSP for consistency, the projects are incorporated into the RTP at the next scheduled update.

6.4.8 Future RTP Refinements Identified through Local TSPs. This section gives local jurisdictions the opportunity to request updates to the RTP through their TSP process.

6.4.9 Local 2020 Forecast – Options for Refinements. This section describes the requirements that local jurisdictions must go through to use population and employment forecasts that are different than the Metro 2020 forecasts. Wilsonville coordinated its forecasting with Metro and ODOT as required by the RTP.

6.4.10 Transit Service Planning. This section requires local jurisdictions to include measures to improve transit access, passenger environments, and transit service speed and reliability for rail station areas and regional bus corridors. This section also requires local TSPs to include a transit system map that is consistent with Figure 1.16 of the RTP. This section also requires changes to development codes to require new retail, civic, office, and institutional buildings on sites adjacent to major transit stops to:

- Locate buildings within 20 feet of major transit stops or provide a pedestrian plaza at the major transit stops.
- Provide reasonably direct pedestrian connections between the transit stop and building entrances on the site.
- Provide a transit passenger-landing pad accessible to disabled persons (if not already existing to transit agency standards).
- Provide an easement or dedication for a passenger shelter and underground utility connection from the new development to the transit amenity if requested by the public transit provider.

- Provide lighting at a transit stop (if not already existing to transit agency standards).

Section 6.6.2. RTP Project Amendments. This section outlines the process by which the RTP can be updated based on findings from local TSPs, corridor plans, and area studies. These amendments may result from:

1. The findings of major studies through a quasi-judicial or legislative process at the Metro Council level.
2. The findings of local TSPs provided the identified projects demonstrate consistency with the RTP and the demonstrated need meets the performance criteria of the RTP and the local TSP.
3. Updates to the Regional Framework Plan or related functional plans.

Section 6.6.3. Congestion Management Requirements. This section applies to any amendments to the RTP to add significant single occupancy vehicle (SOV) capacity to multi-modal arterials and/or highways. This section requires the following to be considered prior to recommendations to add significant SOV capacity:

1. Regional transportation demand strategies
2. Regional transportation system management strategies
3. High occupancy vehicle (HOV) strategies
4. Regional transit, bicycle and pedestrian system improvements to improve mode split
5. Unintended land-use and transportation effects resulting from a proposed SOV project or projects
6. Effects of latent demand from other modes

Section 6.7.3. Project development requirements. This section in the RTP concerns project-level operational and design considerations. At the RTP and/or TSP level a project's need, mode, corridor and function have been identified. At the project-level, best management practices are employed to ensure that the required reports and analysis are performed. Metro's *Interim 1996 Congestion Management System (CMS)* requires a demonstration of compliance with congestion management practices and street design guidelines. When applicable, a transportation project will comply with the CMS provisions. At all times, transportation projects will comply with best management practices.

2.2.2.4 City of Wilsonville Documents Reviewed

2.2.2.4.1 Traffic Management Ordinance No. 431

This ordinance was appealed to the State Land Use Board of Appeals (LUBA). The LUBA overturned Ordinance 431 and therefore it is no longer active. After the City had to deny development in the vicinity of the Wilsonville Road interchange because development caused surrounding

intersections to fall below the LOS D standard, the City enacted this ordinance. This ordinance allocated excess traffic capacity in the vicinity of a said interchange (after improvements) over a five-year period to ensure that development could continue in the City. It was determined that, after improvements to the Interstate 5 (I-5)/Wilsonville Road Interchange and nearby intersections, there would be an estimated 1,656 unaccounted p.m. peak-hour trips, or excess capacity. Through this ordinance, only 20 percent per year, over a five-year period, of that excess capacity could be used by new development. Any portion of that 20 percent that was not used in one year could be carried forward to the following year. Any reserved capacity could be reclaimed by the City for reuse if a building permit or public works permit had not been issued within two years of approval or an extension had not been granted. No one developer could receive more than 30 percent of one-year's excess capacity.

In addition, the ordinance allowed for an additional 10 percent of the annual 20 percent of excess capacity to be granted to the development if the development met certain specific criteria. The ordinance was unique in that the bonus capacity award was given if certain aspects of the TPR, the Metropolitan Housing Rule (increasing housing density), or TDM measures were included in the design. Some of these aspects included prohibiting drive-up windows, providing 10 percent fewer parking spaces than required by the Code, building fronts along the street ROW, using an "urban village" (planned-unit development) approach, and providing on-site bicycle parking and pedestrian facilities.

2.2.2.4.2 Public Facilities Transportation Strategy Ordinance No.463

While Ordinance 431 was struck down by LUBA under existing state statutes as a *de facto* moratorium, the City sought a legislative solution. The City helped to get passed ORS 197.524 et seq., the Public Facilities Strategy law, which enabled the City to continue to do much of what it sought to do in Ordinance No. 431 in Ordinance No. 463.

Ordinance No. 463 limited development in the Wilsonville Road corridor to the same number of total trips of 1,656 with two exceptions; development involving essential government services, or causing three or fewer p.m. peak hour trips to the intersections on Wilsonville Road at Town Center Loop West or Boones Ferry Road. The reason for the ordinance was that the City was approving developments based on the excess capacity to be provided by the rebuilt interchange, and many or all of these trips were forecasted to be allocated (i.e., used up) before the interchange was completed. Ordinance No. 463 provided that when all of the 1,656 excess capacity trips at the Wilsonville Road interchange were allocated, development would cease. In any event, Ordinance No. 463 was scheduled to sunset six months after the new TSP is adopted and funded. However, the 2001 legislature amended the Public Facilities

Strategy law, limiting the total duration of a public facilities strategy ordinance to five years. On January 1, 2002, Ordinance No. 463 was sunsetted (allowed to lapse) by operation of the statutory amendment.

According to Ordinance 463, before the halt on development could occur, the City required the following:

1. All new developments were to file traffic management plans to reduce traffic as well as p.m. peak-hour trips.
2. All new commercial and industrial developments, and all residential developments of two acres or more were to be designed as planned-unit developments wherein mixed uses are encouraged to reduce traffic.
3. The City continued to stress reduction of p.m. peak-hour trips by: (a) providing transit; (b) working with major employers to encourage car and vanpooling, working at home, and use of transit; (c) implementing the City's pedestrian and bicycle plan; and (d) emphasizing personal responsibility to reduce p.m. peak-hour trips by modifying driving schedule, carpooling, and use of transit.
4. Initiating development of City's other streets to provide alternative routing.
5. Limiting development based on the LOS D capacity standard.
6. Requiring developments to analyze the intersection(s) through which the highest percentage of traffic from that development will travel.
7. Any traffic capacity approved by the City and allocated to a specific development was to remain with such, regardless of change in ownership.
8. In the event that the full capacity of the interchange is allocated prior to enactment of this ordinance, the halt in development as described earlier will begin.

During the period from six months after the interchange is complete to approval of the TSP and funding plan, the City will approve any project, if it is found that additional excess capacity at the interchange is available because actual capacity of the street system exceeded current projections. After adoption of the TSP, the City Council shall adopt findings that evaluate the level (amount) of development and/or the timing and/or location of the development to ensure concurrence between development and needed road improvements.

2.2.2.4.3 Urban Renewal Plan (The Year 2000 Plan)

The Year 2000 Plan's purpose is to address critical problems in the City. Among the Urban Renewal Plan recommendations are various transportation improvement projects intended to improve conditions of blight due to substandard conditions. Additional urban renewal districts are currently under consideration.

2.2.2.4.4 *Street Lighting Resolution No. 881*

This resolution identifies the specific style and regulations for streetlights within the different neighborhoods in the City.

2.2.2.4.5 *West Side Master Plan*

The West Side Master Plan addresses the growth and development of the west Wilsonville planning area. One of its primary goals is to improve access from one side of I-5 to the other and to deal with traffic problems in general. The plan lists a number of policies and implementation measures that emphasize a multi-modal approach to solving transportation problems. In addition, several street extensions have been included in this TSP. This Plan was not adopted, but provides guidance for planning decisions.

2.2.2.4.6 *Dammasch Area - Transportation-Efficient Land Use Plan*

The Dammasch Area is located on the western edge of the City of Wilsonville and comprises about 520 acres, encompassing the Dammasch Hospital site, the Living Enrichment Center, and several other private properties, most of which are used for agriculture. The land use plan for this area is conceptual and illustrates design principles for the planning area. The recommended land use for this area is a residential community with a Village Center component that includes mixed-use retail development. An amended version of this Plan is being proposed with construction intended to begin by mid-2003.

2.2.2.4.7 *SMART Transit Master Plan*

SMART will soon be preparing a Transit Master Plan to guide the day-to-day operations of the City's transit system. A review of this document will be done when it is available for distribution. The Transit Master Plan is not regarded as a sub-element of the Comprehensive Plan.

2.2.3 Accomplishments of the Wilsonville 1991 Transportation Master Plan

As shown in **Figure 2.1**, many projects have been completed since the Wilsonville 1991 TMP was implemented. The 1991 TMP was based on 1990 and projected 2010 traffic volumes. The plan was completed before the TPR was passed, so it does not specifically address TPR requirements. The 1991 TMP only had one goal - to plan for and provide adequate public facilities and services closely tied to the rate of development. This goal was supported by four objectives. When the 1991 TMP was prepared, the City faced existing street capacity deficiencies on Wilsonville Road between Kinsman and Town Center Loop West, and on Elligsen and Boones Ferry Roads near the Stafford/I-5 interchange. In addition, the TMP's forecast was based on an expected 2010 population of 15,500, and employment of 18,000.

The TMP's recommended alternative included approximately 37 street improvements by year 2010 to keep up with expected growth. **Table 2.i** lists these improvements and their current status as of November 2002.

The bicycle plan within the TMP lacked two primary elements that are required by the TPR: provision for bicycle parking and bicycle circulation in developments.

Pedestrian needs were met by requiring sidewalks along all streets according to the City's street standards. These standards are consistent with the TPR, except they do not address the need for pedestrian facilities on-site in new developments.

The 1991 TMP contains suggestions for TDM techniques. Implementation of TDM or TSM measures is a higher priority strategy in the TPR than adding capacity. This TSP addresses TDM strategies in Chapter 8.

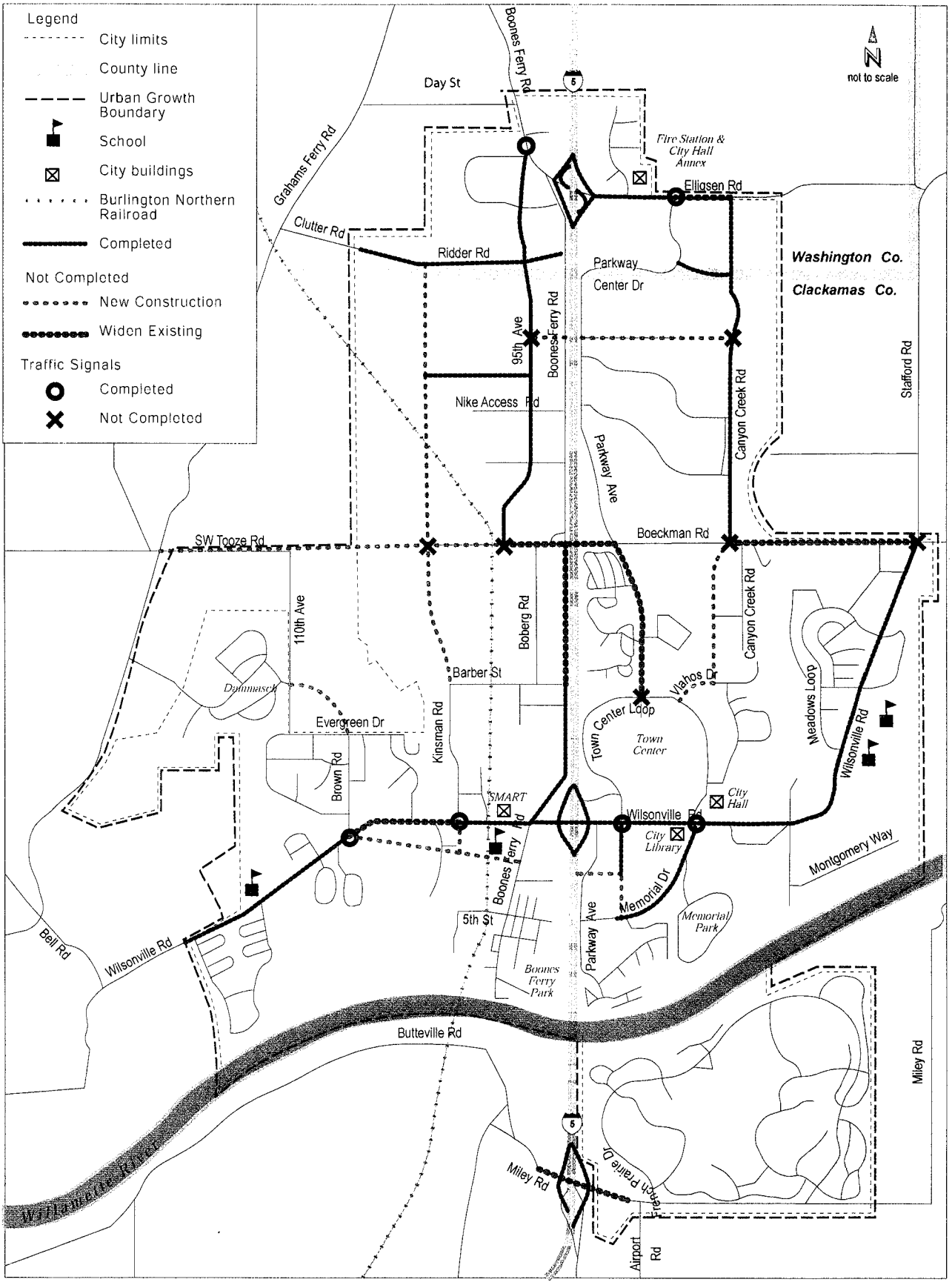

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Figure 2.1
1991 Adopted Transportation Master Plan

Table 2.i
1991 TMP Recommended Improvements and Status (As of November 2002)

No.	Project Description	TMP Priority	Status
1	Traffic signal at Brown Road and Wilsonville Road	Immediate	Done
2	Traffic signal at Town Center Loop West and Wilsonville Road	Immediate	Done
3	Traffic signal at Elligsen Road and Parkway Center Drive	Immediate	Done
4	Extend Town Center Loop West south from Wilsonville Road to Trask Road	Immediate	Removed from List
5	Construct I-5/Stafford Interchange	Prior to 1995	Done
6	Construct I-5/Wilsonville Road Interchange	Prior to 1995	Done
7	Widen Wilsonville Road from Brown Road to Town Center Loop East to 5 lanes	Prior to 1995	Partly Done
8	Extend 95th Avenue from Boeckman Road north to Boones Ferry Road	Prior to 1995	Done
9	Widen Boones Ferry Road from Boeckman Road to Wilsonville Road to 3 lanes	Prior to 1995	Partly Done
10	Widen Parkway Avenue from Parkway Center Dr. to Town Center Loop to 3 lanes	Prior to 1995	Done
11	Widen Elligsen Road from Canyon Creek Road to I-5 northbound ramps to 5 lanes	Prior to 1995	Partly Done
12	Widen Boeckman Road Overpass from Parkway Ave. to 95th Ave. to 3 lanes	Prior to 1995	Not Done
13	Construct Canyon Creek Road from Town Center Loop to Elligsen Road	1995 to 2000	Partly Done
14	Extend Kinsman Road from Wilsonville Road to Ridder Road	1995 to 2000	Not Done
15	Realign the Wilsonville/Stafford/Boeckman Road intersection	1995 to 2000	Done
16	Widen Wilsonville Rd. from Town Center Loop East to Boeckman Rd. to 3 lanes	1995 to 2000	Done
17	Construct Burns Drive from Parkway Center Drive to Canyon Creek Road	1995 to 2000	Done
18	Construct Wiedemann Rd. and overpass from Canyon Creek Road to 95th Ave.	1995 to 2000	Partly Done
19	Widen Boeckman Road from Canyon Creek Road to Wilsonville Road to 3 lanes	1995 to 2000	Partly Done
20	Widen Wilsonville Road from Brown Road west to City Limits	After 2000	Done
21	Extend Boeckman Road west to Grahams Ferry Road	After 2000	Not Done
22	Realign ninety degree turns on Brown Road north of Wilsonville Road	After 2000	Not Done
23	Improve I-5/Charbonneau Interchange	After 2000	Not Done
24	Ridder Road: Boones Ferry Road to Garden Acres Road	After 2000	Done
25	Construct new commercial industrial street from 95th Avenue to Kinsman Road	When Warranted	Not Done
26	Construct parallel collector streets south of Wilsonville Road from Boones Ferry to Kinsman Road	When Warranted	Not Done
27	Extend Town Center Loop East south and west to Parkway Avenue	When Warranted	Done
28	Realign intersection of Ridder Road, Clutter Road and Garden Acres Road	When Warranted	Done
29	Traffic signal at Kinsman Road and Wilsonville Road	When Warranted	Done
30	Traffic signal at Town Center Loop East and Wilsonville Road	When Warranted	Done
31	Traffic signal at Boeckman Road and Wilsonville Road	When Warranted	Not Done
32	Traffic signal at Boeckman Road and Canyon Creek Road	When Warranted	Not Done
33	Traffic signal at Boeckman Road and 95th Avenue	When Warranted	Not Done
34	Traffic signal at Boeckman Road and Kinsman Road	When Warranted	Not Done
35	Traffic signal at 95th Avenue and Wiedemann Road	When Warranted	Not Done
36	Traffic signal at Canyon Creek Road and Wiedemann Road	When Warranted	Not Done
37	Traffic signal at 95th Avenue and Boones Ferry Road	When Warranted	Done

2.3 FUNCTIONAL CLASSIFICATION

Roadways are designed to serve various functions. Some roadways are designed to provide direct, high speed, through travel, while others provide lower speed, local travel. Some roadways provide access to adjacent properties, while others have access restrictions. *A Policy on Geometric Design of Highways and Streets*, American Association of State Highway and Transportation Officials (AASHTO) Washington D.C. (1990) is a national publication that provides a general breakdown of roadway classifications, based on their intended function. In general, roadways are classified as major arterials, minor arterials, collectors, and local streets.

The roadway classifications of the RTP, Clackamas County, and Washington County are generally consistent with the City of Wilsonville classifications. However, some differences were noted in **Table 2.c**.

ODOT classifies roads that are considered to be of statewide or regional significance. These classifications are in accordance with Wilsonville's classifications. The ODOT classifications can be found in the *Roadway Functional Classification According to Jurisdiction* report and in the 1999 *Oregon Highway Plan* (OHP). The two state facilities in Wilsonville are identified as: I/5 - Interstate Highway and Boones Ferry Road (Hwy 141) - District Highway. **Figure 2.2** shows the current functional classification for existing roadways in Wilsonville based on the 1991 TMP. The City also has defined additional classifications for its road network including commercial industrial, which indicates routes primarily serving industrial areas.

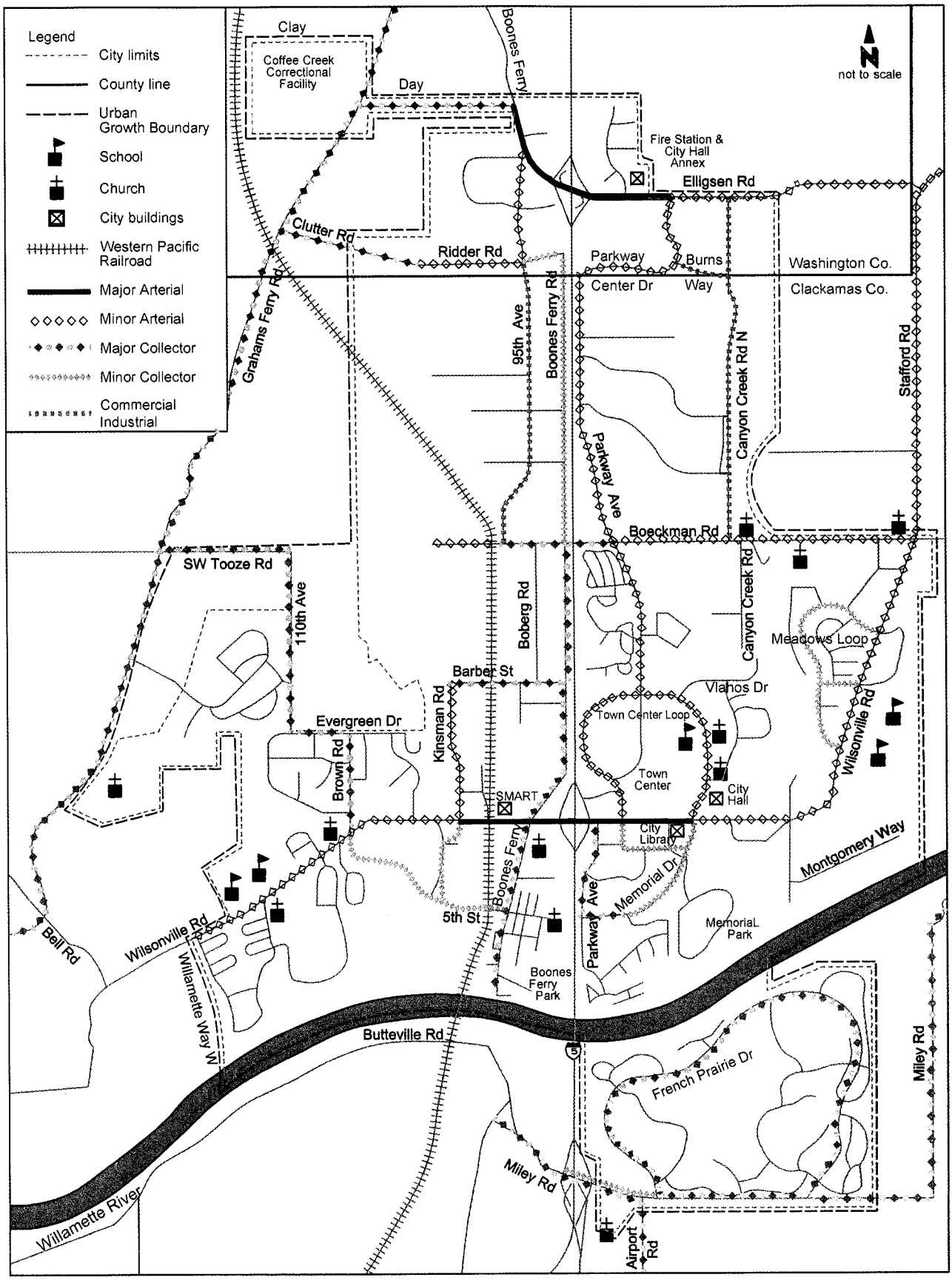

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Figure 2.2
Functional Classifications based on 1991 TMP

2.4 STREET NETWORK

The following section summarizes the characteristics of major thoroughfares in Wilsonville in terms of volumes, capacity, accidents, adjacent land use, and intersection LOS. The key routes include I-5, Wilsonville Road, Stafford Road, Elligsen Road, 95th Avenue, Ridder Road, Kinsman Road, Town Center Loop East, Town Center Loop West, Boeckman Road, Parkway Avenue, and Miley Road. **Figure 2.3** shows the existing roadway network and major activity centers.

2.4.1 Arterial Highways

Interstate 5 is classified by ODOT as an interstate highway and a state Freight Route. It serves vehicles traveling between Portland and Salem. Interstate 5 is a primary inter- and intrastate route for traffic heading north or south along the Northwest Pacific Coast. Interstate 5 also serves commuters heading to/from the Portland and Salem metropolitan areas. Finally, all travel between the center of Wilsonville and the neighborhood of Charbonneau must use I-5, because it has the only bridge over the Willamette River in the area.

2.4.2 District Highway

That section of Boones Ferry Road (Hwy 141) from the Elligsen Interchange north to Tualatin is classified as a district highway by ODOT. The RTP identifies that section of Boones Ferry Road as an urban road and a rural arterial. The TSP classifies that section of Boones Ferry Road within the City limits, from the Elligsen Interchange north to Day Road, as a major arterial. This route is a major connector between Tualatin and Wilsonville. The southern section of Boones Ferry Road from Ridder Road to the Willamette River is under City jurisdiction. It serves as a major north/south route between Wilsonville Road and Ridder Road. South of Boeckman Road it is classified as a Major Collector. North of Boeckman Road it is classified as a Minor Collector.

2.4.3 Arterial Streets

Wilsonville Road is classified as a major arterial between Kinsman Road and Town Center Loop East, and as a minor arterial between Bell Road and Kinsman Road and between Town Center Loop East and Boeckman Road. This route is one of the major east-west connections in Wilsonville and provides access to both residential and commercial developments, as well as access to I-5.

Stafford Road is classified as a major arterial by Clackamas County and Washington County. Stafford Road is a north-south extension of Wilsonville Road. This route provides access to both residential and commercial developments.

Grahams Ferry Road is currently classified as a major collector by Clackamas County, pending development. Since Grahams Ferry Road is an urban to urban rural arterial, between Tualatin and Wilsonville, it is classified as a minor arterial for this TSP. The same rationale is used by Clackamas County in classifying Stafford

Road as a major arterial, between Lake Oswego and Wilsonville. This major north-south route provides access for rural residences, commercial, industrial and inter-urban transportation.

Elligsen Road is classified as both a major and a minor arterial between 65th Avenue and Parkway Center Drive, and as a major arterial between Parkway Center Drive and Boones Ferry Road. It is a major east-west route providing local access to I-5. This route primarily provides access to commercial developments and has a high percentage of truck traffic.

95th Avenue is classified as a minor arterial between Ridder Road and Boones Ferry Road. This route provides north-south access to the commercial and industrial areas. It has high truck volumes.

Ridder Road is classified as a minor arterial between 95th Avenue and Clutter Road. This route provides access to commercial and industrial areas.

Kinsman Road is classified as a minor arterial between Barber Street and Wilsonville Road. Kinsman Road provides access to commercial and industrial areas.

Town Center Loop West is classified as a minor arterial between Wilsonville Road and Parkway Avenue. This route provides access to commercial development.

Town Center Loop East is classified as a minor arterial between Wilsonville Road and Parkway Avenue. This route provides access to commercial development.

Boeckman Road is classified as a minor arterial between Wilsonville Road and Parkway Avenue and from 95th Avenue to its westerly end. This road provides an east-west connection over I-5 between Parkway Avenue and 95th Avenue, which are both classified as minor arterials. This route provides access to commercial, industrial, and residential developments.

Parkway Avenue is classified as a minor arterial between Town Center Loop and Parkway Center Drive. This route provides a north-south local alternative to I-5. It serves commercial, industrial, and residential developments.

Miley Road is classified as a minor arterial by Clackamas County between the I-5 southbound ramps and Airport Road. This route provides the only direct access to the residential development of Charbonneau.

2.4.4 Pavement Condition

Figure 2.4 summarizes the pavement condition of major thoroughfares in Wilsonville. Most of the City's streets are asphalt, although the newer streets (95th Avenue, and portions of Parkway Avenue, Wilsonville Road, and Canyon Creek Road) are concrete. (Note: **Figure 2.4** only shows pavement condition of collector and arterial streets.) The City's planned maintenance budget is shown in **Table 2.j**. Road maintenance projects include residential streets along with collectors and arterials.

Table 2.j
Wilsonville Proposed Pavement Maintenance Expenditures

	Fiscal Year	
	1995-2000	**2001–2006**
Reconstruct	$ 653,233	$ 537,528
Overlays	$1,267,908	$1,085,683
Surface Treatment	$ 509,465	$1,058,991
5-year Program TOTAL	**$2,430,606**	**$2,682,202**

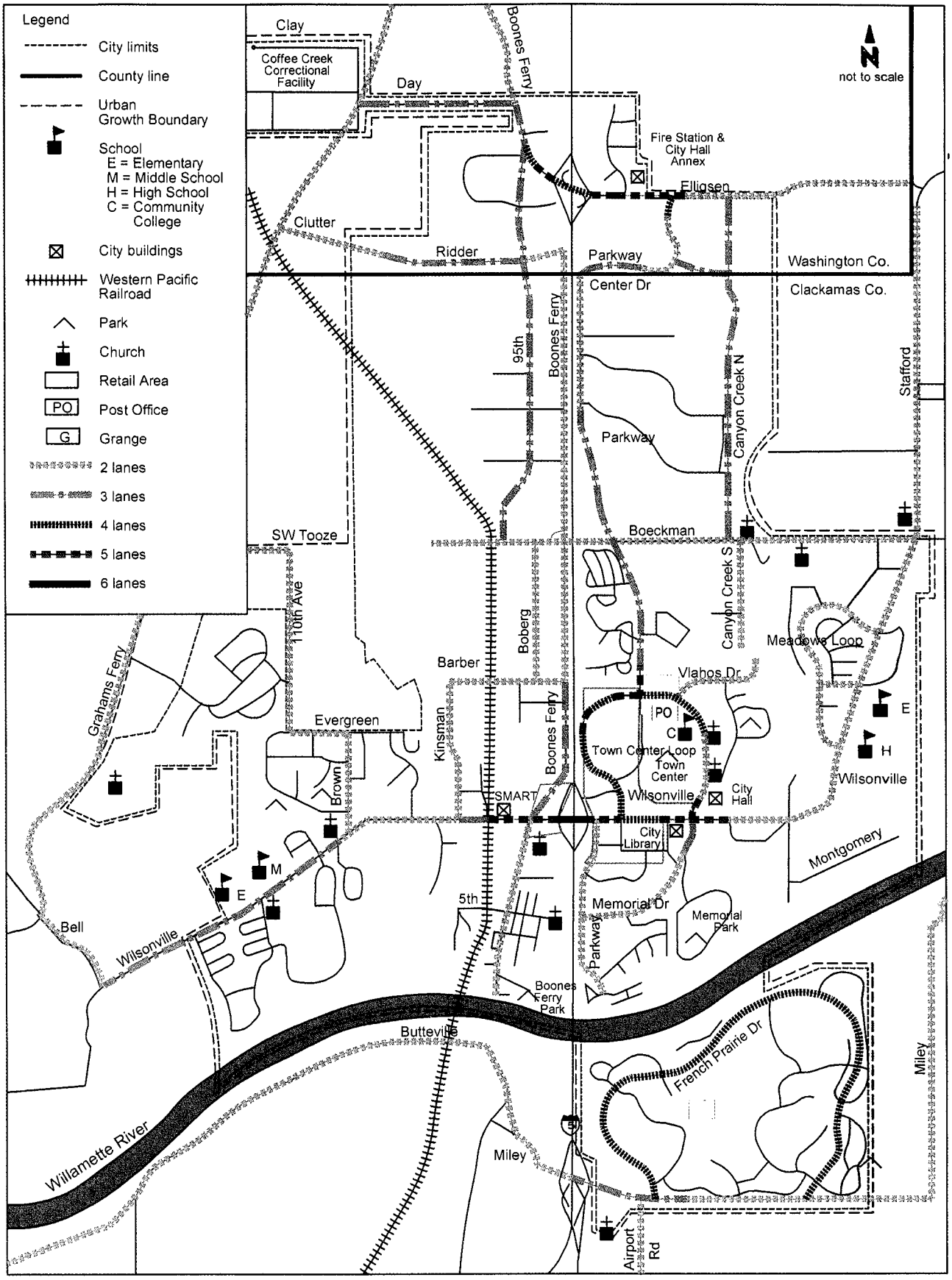

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Figure 2.3
2002 Roadway Network and Major Activity Centers

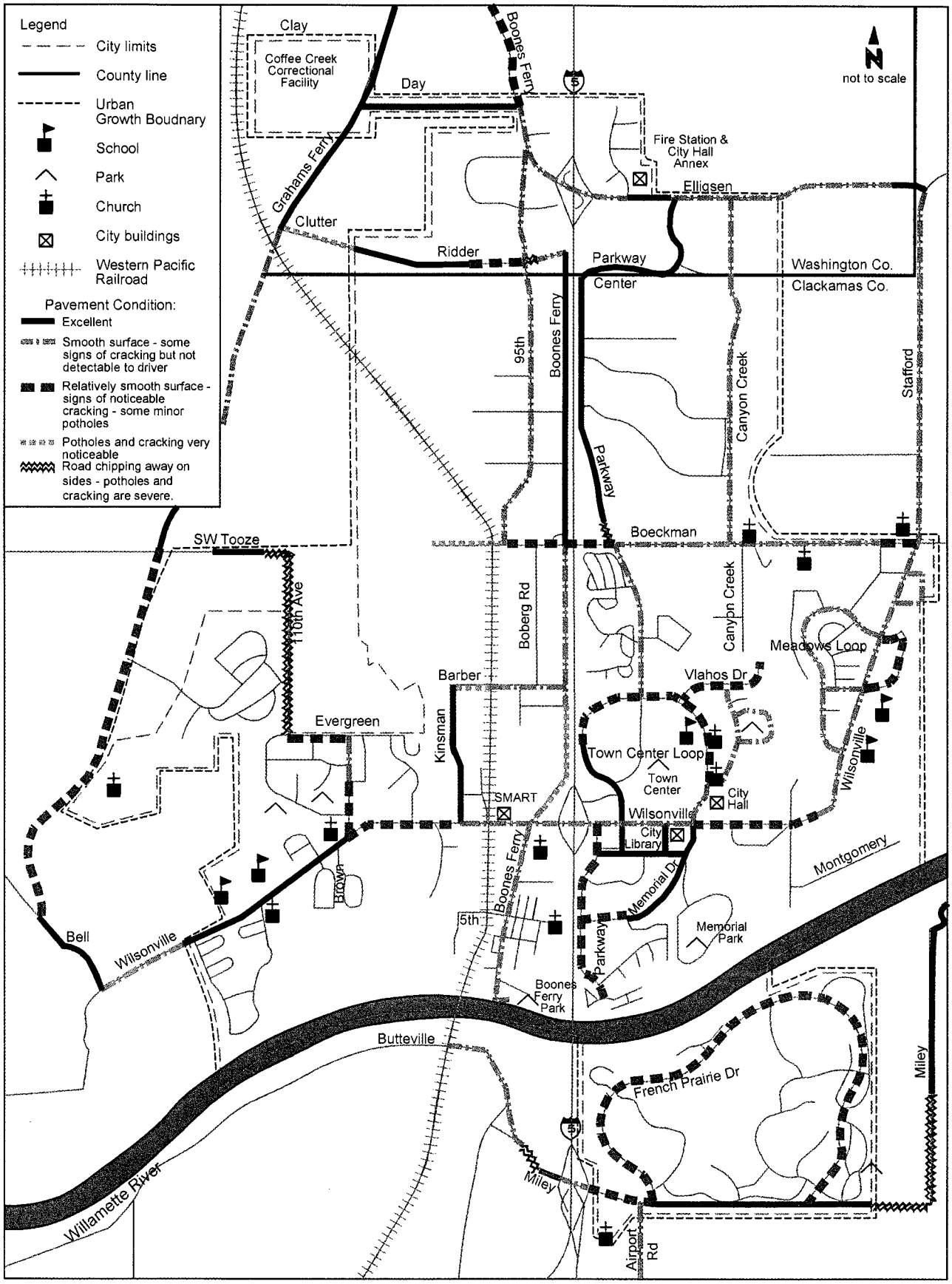

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Figure 2.4
2002 Pavement Conditions

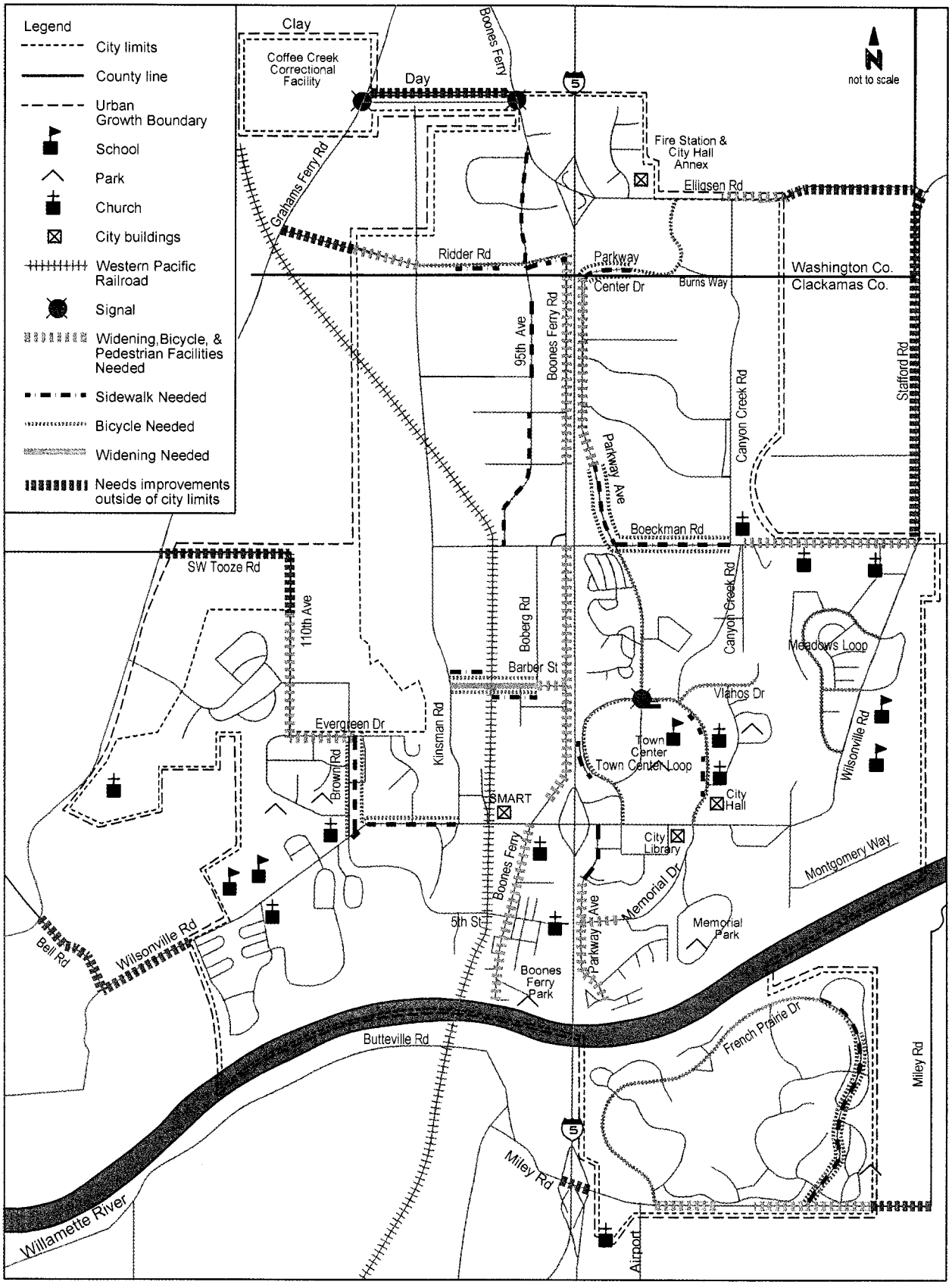
2.4.5 Design Standards Deficiencies

Based on the design standards of the 1991 TMP (see **Table 2.f**), some of the existing Wilsonville street network is deficient in terms of meeting the design standards requirements. **Figure 2.5** illustrates the streets or portions of streets that do not currently meet existing design standards, and for what reason.

2.5 TRAFFIC VOLUMES

Traffic volumes were measured as a part of the 1991 TMP. Traffic counts were conducted to provide the basis for analyzing existing congested areas, as well as establishing a base condition for future modeling. Turning movement counts were conducted at 30 intersections during the p.m. peak period to ascertain current operating conditions. Traffic counts were conducted from 1998 to 2000. Traffic volumes were the highest on I-5, Parkway Avenue, and the I-5 interchanges with Wilsonville Road and Elligsen Road.

Average daily traffic volumes were obtained in the year 2000 for select roadways within Wilsonville, and are shown on **Figure 2.6**. **Figure 2.7** shows the average traffic distribution over a 24-hour period at five locations within Wilsonville, including Wilsonville Road, Boeckman Road, Parkway Avenue and Elligsen Road. As is shown, definite peaks occur during the a.m. (7–9 a.m.) and p.m. (4–7 p.m.) periods in traffic throughout the City along these major roadways.



* Substandard streets based on 1991 classification standards.

** Only substandard arterials and collectors are shown.

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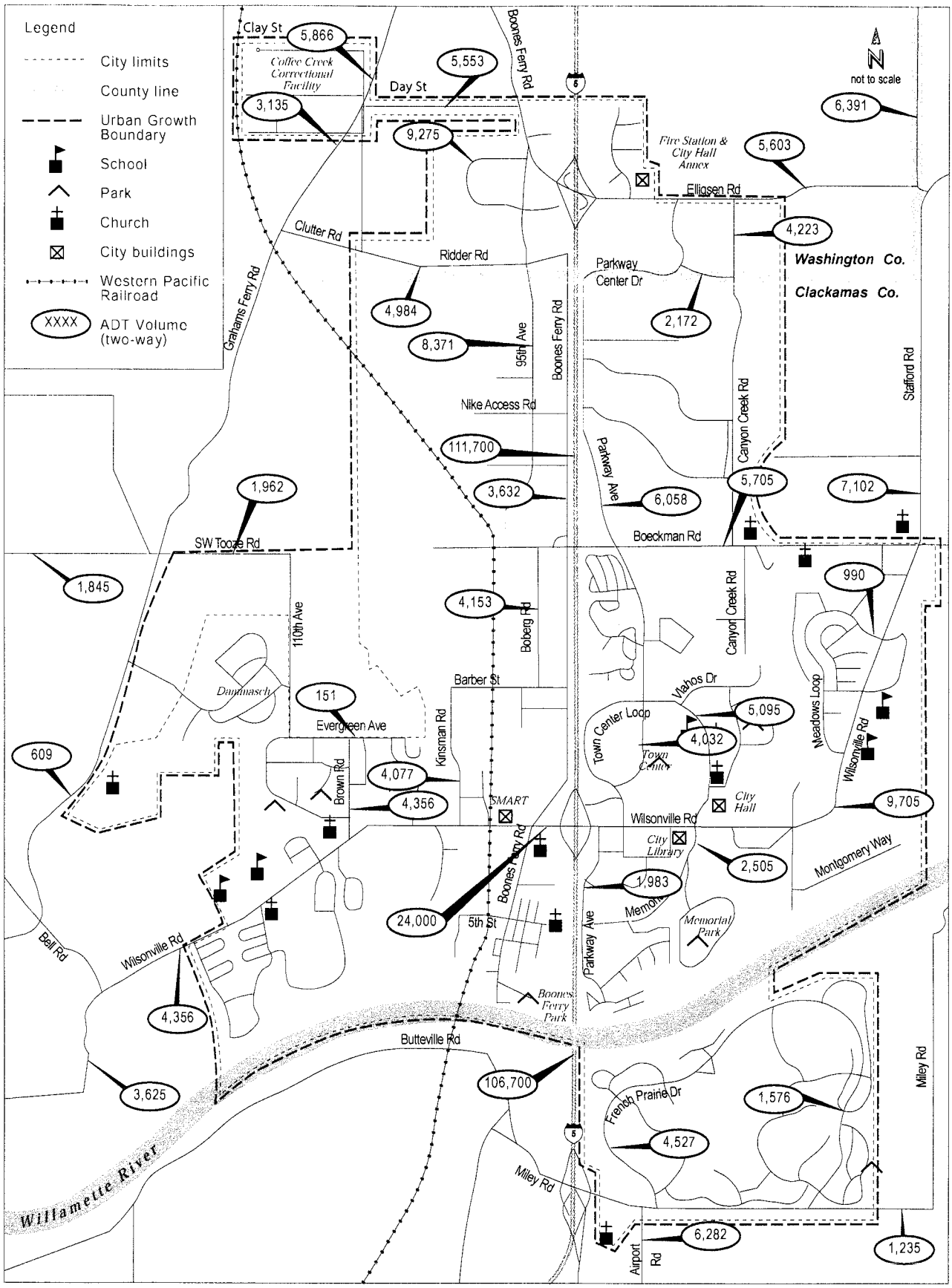
Figure 2.5
2002 Substandard Streets Based On 1991 TMP



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Source of I-5 AWDT: May 2000

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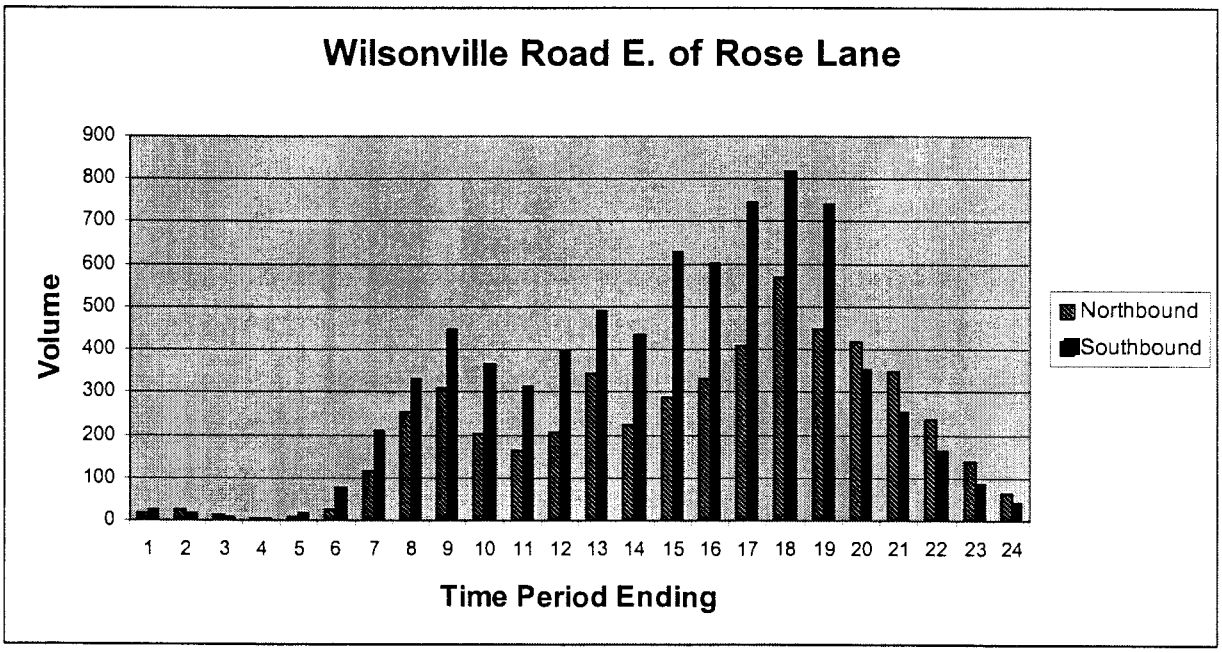
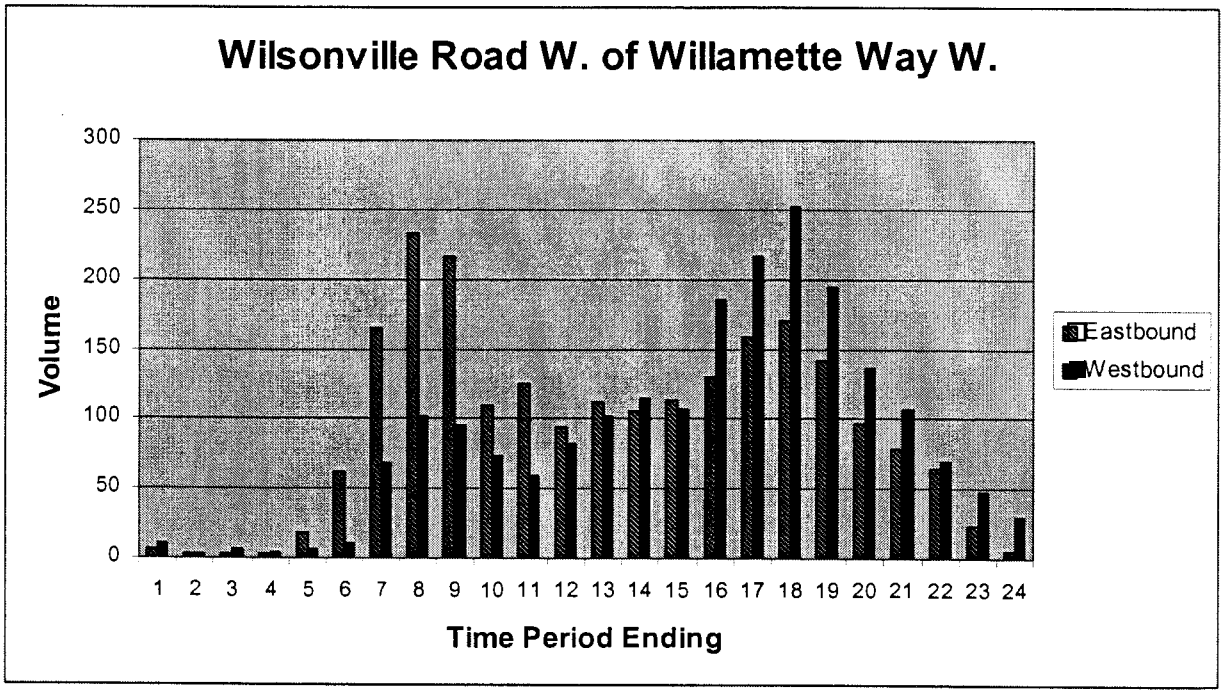
Figure 2.6
2001 Average Daily Traffic Volumes

Figure 2.7
Distribution of Traffic Over 24 Hours at Five Locations

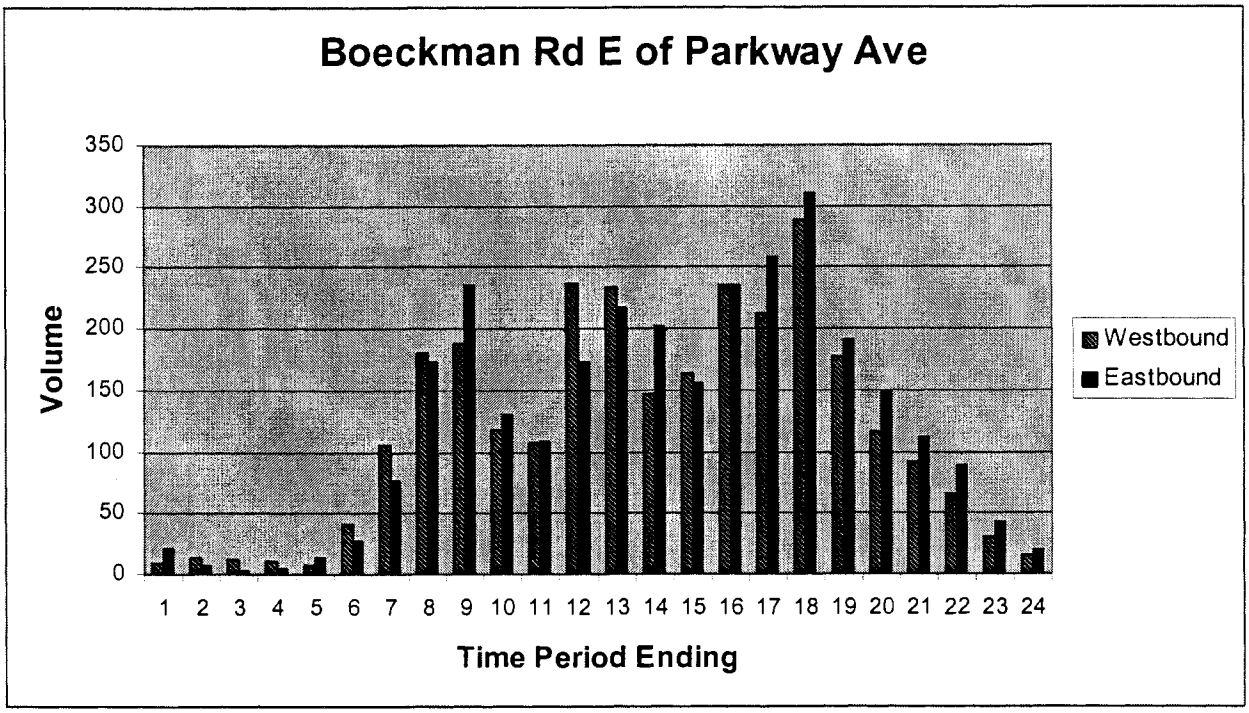


Based on data collected May 13 to May 20, 2000



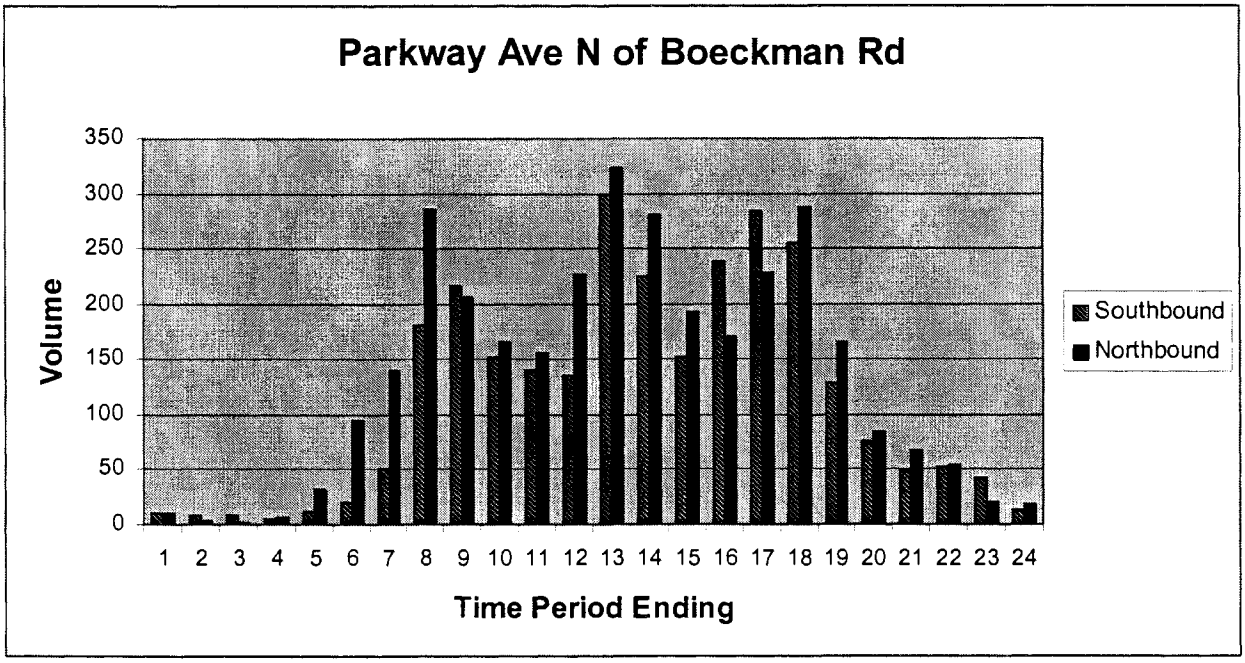
Based on data collected May 16 to May 18, 2000

Figure 2.7



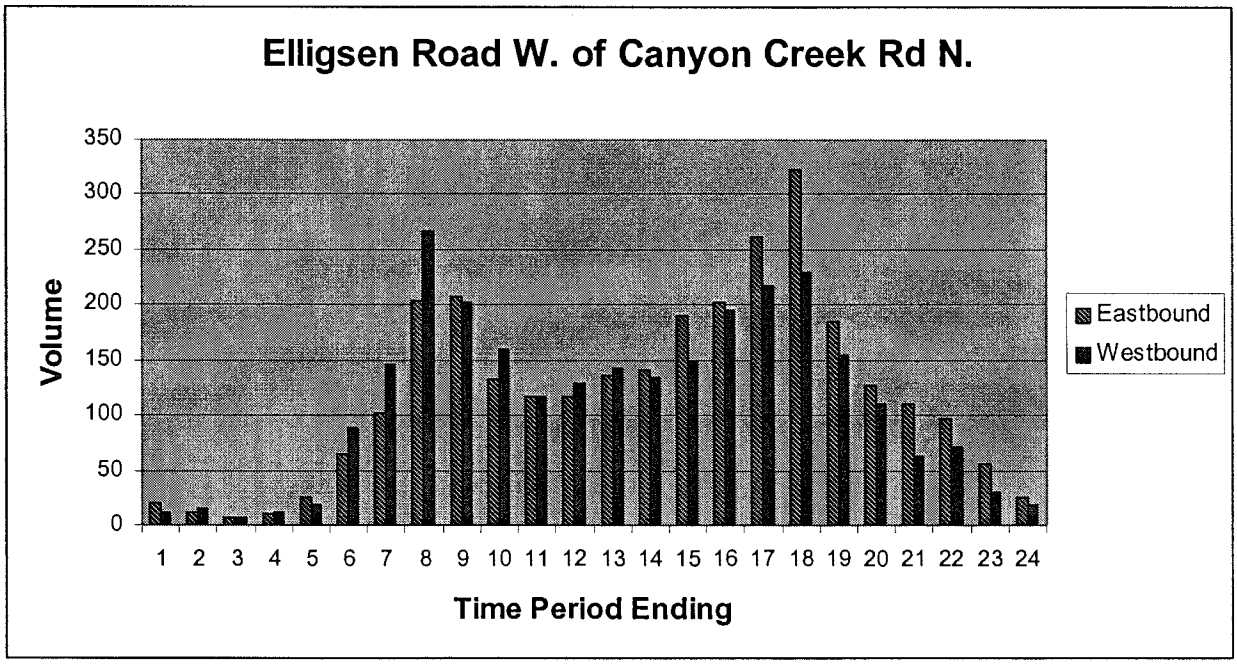
Distribution of Traffic Over 24 Hours at Five Locations (continued)

Based on data collected May 22 to May 24, 2000



Based on data collected May 22 to May 24, 2000

Figure 2.7
Distribution of Traffic Over 24 Hours at Five Locations (continued)



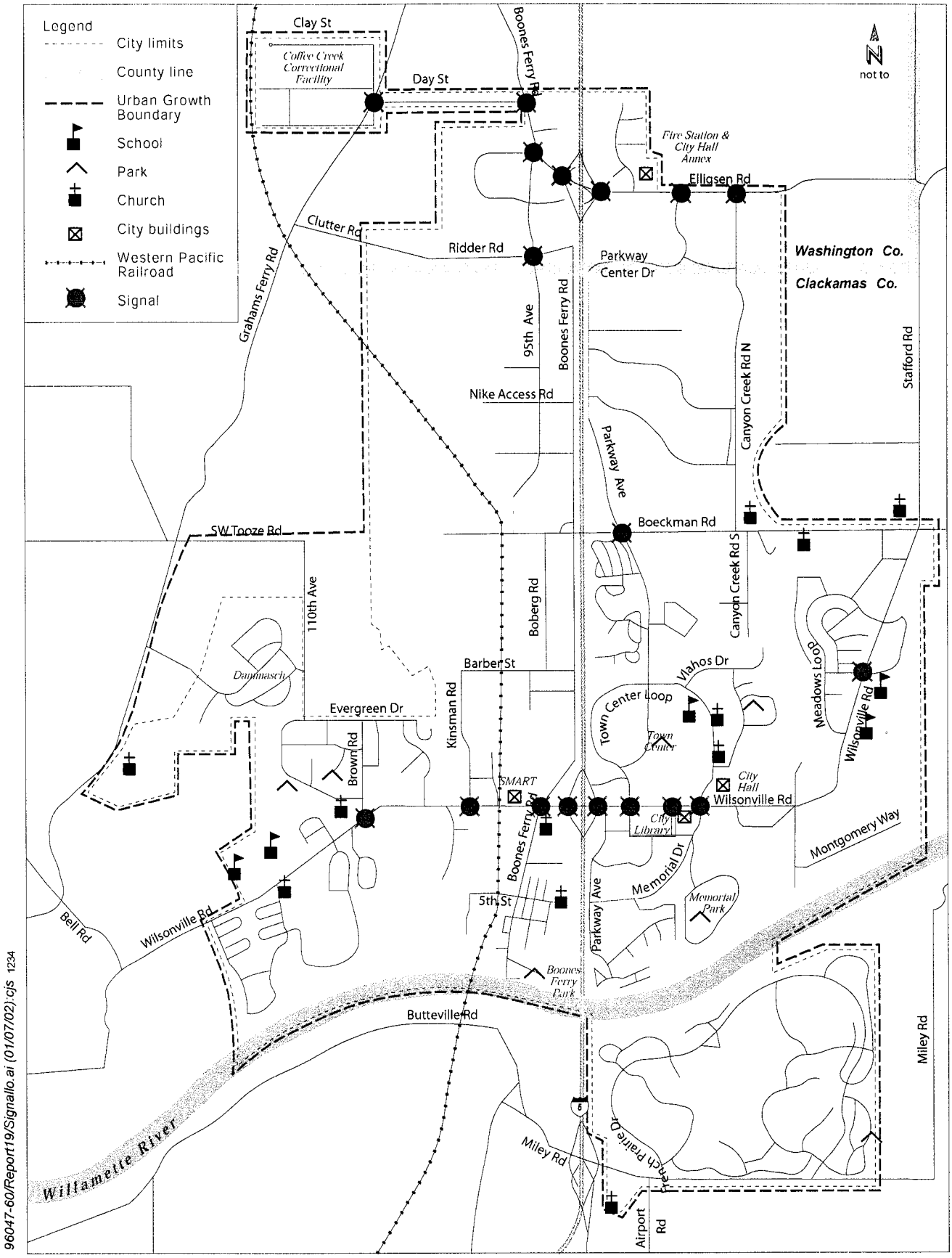
Based on data collected May 30 to June 1, 2000

2.6 TRAFFIC CONTROL

Intersections are the portion of the transportation network most often perceived as deficient. This is especially true of signalized intersections because they cause delay for through traffic and they are a point of conflict and interaction with other streams of traffic. Wilsonville has 16 signalized intersections with the majority on arterial streets. **Figure 2.8** illustrates the locations of current signals.

For the most part, however, traffic signals serve their purpose by creating gaps in traffic for all movements (e.g., left turns), making all vehicles share the burden of delay. In addition, they offer breaks in traffic for pedestrian movements, and provide for safe, orderly movement of traffic.

Some believe that traffic signals provide the solution to all traffic problems at intersections. However, traffic signal installations, even though warranted by traffic and roadway conditions, can be poorly designed, ineffectively placed, improperly operated, or poorly maintained. In these cases, excessive delay, increased accident occurrence, or non-compliance with traffic laws may result. The *Manual on Uniform Traffic Control Devices* (MUTCD) provides warrants (criteria) for traffic signal installation; however, engineering judgment is also used in the decision process. The MUTCD also provides warrants for stop sign-controlled intersections. Wilsonville adheres to the MUTCD standards and does not allow the emplacement of traffic control devices without warrants being met. ODOT, WASHINGTON County, Clackamas County, and Wilsonville have approved the MUTCD for use.



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City of WILSONVILLE in OREGON
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Figure 2.8
2002 Signal Locations

2.7 TRAFFIC LEVELS OF SERVICE

Level of Service (LOS) refers to the range of operating conditions that a transportation facility may experience. LOS is a ratio used to measure the performance of a transportation facility.

The RTP and OHP facility deficiency thresholds and operating standards are based on a link volume-to-capacity (v/c) ratio or a link demand-to-capacity (d/c) ratio. A link is defined as a segment of roadway. Volume refers to the number of vehicles using a segment of roadway, while demand is the number of vehicles that are projected to use a segment of roadway. Link LOS is a planning level measure of operation.

Another measure of how well a roadway operates is based on intersection operations, rather than mid-block or segment operations. This is because the corridor is constrained by its capacity at intersections located along the corridor, especially as intersection spacing decreases. Intersection LOS is an operational level of measure. The 1997 update to the *Highway Capacity Manual* (HCM), Transportation Research Board *Special Report 209,* Washington, D.C., provides procedures for measuring the quality of operations at signalized and unsignalized intersections, known as level of service (LOS).

Level of service refers to the degree of congestion on a roadway or intersection. It is a measure of vehicle operating speed, travel time, travel delays, freedom to maneuver, and driving comfort. A letter scale from A to F is generally used to describe LOS. For intersections, LOS A represents free-flow conditions—motorists experience little or no delay, and LOS F represents forced-flow conditions—motorists experience excessive delay. Control delay is measured in seconds per vehicle. At signalized intersections, the control delay value that determines LOS is the average of all the control delay experienced at all movements of a signalized intersection during one hour. At unsignalized intersections, the reported control delay is for only one movement, the movement experiencing the worst control delay (typically one of the stop-controlled side street approaches).

The LOS analysis for this TSP based on intersection operation was conducted using principles of the Transportation Research Board's 1997 HCM through two computer based software programs known as HCS (Highway Capacity Software) and Synchro. HCS is used to determine operations at unsignalized intersections and Synchro is used to determine operations at signalized intersections.

Table 2.k and **Table 2.l** list brief descriptions of each LOS as given in the 1997 update to the HCM, as well as threshold values for a detailed operational (control delay) LOS analysis.

Table 2.k
Level of Service Description and Threshold Values for Link Segments

LOS	Traffic Flow Characteristics	v/c ratio
A	Virtually free flow; completely unimpeded	< 0.60
B	Stable flow with slight delays, reasonably unimpeded	0.61 to 0.70
C	Stable flow with delays, less freedom to maneuver	0.71 to 0.80
D	High density, but stable flow	0.81 to 0.90
E	Operating conditions at or near capacity, unstable flow	0.91 to 1.00
F	Forced flow, breakdown conditions	1.01 to 1.10
>F	Demand exceeds roadway capacity	> 1.10

Source: 1997 update to the Highway Capacity Manual, Special Report 209, Transportation Research Board, 1994; and Interim Materials on Highway Capacity, Circular 212, Transportation Research Board, 1980.

Table 2.l
Level of Service Description and Threshold Values for Signalized Intersections

LOS	Description	Unsignalized Intersection Control Delay[3] (Sec/veh)	Signalized Intersection Control Delay[1] (sec/veh)
A	Progression is extremely favorable; most vehicles arrive during green phase and do not stop at all.	D ≤ 10	D ≤ 10
B	Good progression, short cycle lengths, or both; more vehicles stop than with LOS A.	10 < D ≤ 15	10 < D ≤ 20
C	Fair progression, longer cycle lengths, or both; some cycle failures witnessed; frequency of stopped vehicles is significant, though many still pass through without stopping.	15 < D ≤ 25	20 < D ≤ 35
D	Unfavorable progression, long cycle lengths, or high delay; many vehicles stop; individual cycle failures[2] are noticeable.	25 < D ≤ 35	35 < D ≤ 55
E	Poor progression, long cycle lengths, high delay; individual cycle failures are frequent occurrences.	35 < D ≤ 50	55 < D ≤ 80
F	Over-saturation: arrival flow rates exceed capacity; very high delay witnessed; many individual cycle failures.	D > 50	D > 80

[1]Detailed operational analysis
[2]Individual cycle failure means that a car waits through more than one red light.
[3]The LOS breakpoints for unsignalized intersections are different than those for signalized intersections due to driver expectations that signalized intersections are designed to carry higher traffic volumes than unsignalized intersections, therefore, a higher level of control delay is acceptable at a signalized intersection for the same level of service.

Source: 1997 update to the Highway Capacity Manual, Special Report 209, Transportation Research Board, 1994; and Interim Materials on Highway Capacity, Circular 212, Transportation Research Board, 1980.

Intersection turning movement counts were conducted at the study intersections during the p.m. peak hour, and were used to determine the existing LOS based on the 1997 HCM methodology for signalized and unsignalized intersections. Two signalized intersections were not analyzed because recent data were not available: Wilsonville Road/Meadows Parkway and Ridder Road/95th Avenue. **Table 2.m** summarizes the p.m. peak-hour LOS for signalized intersections and unsignalized intersections. The LOS results for both signalized and unsignalized intersections are illustrated in **Figure 2.9**.

All of the existing signalized and unsignalized intersections meet City standards (LOS D or better) except for the unsignalized intersection of SW 65th Avenue and Stafford Road.

Table 2.m
2000 Conditions
P.M. Peak-Hour Intersection Level of Service

Intersection of...	Intersection and...	Type[1]	LOS[2]	Delay[3] (sec/veh)
Wilsonville Road	Brown Road	Signal	D	46.0
Wilsonville Road	Kinsman Road	Signal	B	11.5
Wilsonville Road	Boones Ferry Road	Signal	C	29.7
Wilsonville Road	I-5 SB Ramp	Signal	C	32.3
Wilsonville Road	I-5 NB Ramp	Signal	C	21.3
Wilsonville Road	Town Center Loop W.	Signal	C	26.5
Wilsonville Road	Rebekah Street	Signal	C	23.4
Wilsonville Road	Town Center Loop E.	Signal	B	19.5
95th Avenue	Boones Ferry/Elligsen Rd	Signal	C	20.1
Elligsen Road	I-5 SB Ramp	Signal	A	9.1
Elligsen Road	I-5 NB Ramp	Signal	A	4.1
Elligsen Road	Parkway Center Drive	Signal	D	54.6
Elligsen Road	Canyon Creek Road	Signal	A	7.7
Boeckman Road	Parkway Avenue	Signal	B	19.3
Town Center Loop W.	Parkway Avenue	AWSC	B	11.5
Grahams Ferry Road	Day Road	TWSC	C	16.1
Wilsonville Road	Parkway Avenue	AWSC	C	16.0
Wilsonville Road	Meadows Loop N.	TWSC	A	8.1
Wilsonville Road	Boeckman Road	AWSC	C	15.6
Barber Street	Boones Ferry Road	TWSC	A	8.6
Boeckman Ramp	Boones Ferry Road	TWSC	B	10.4
Boeckman Road	95th Avenue	TWSC	C	18.2
Elligsen Road	SW 65th Avenue	TWSC	B	13.5
SW 65th Avenue	Stafford Road	TWSC	E	37.1
Boeckman Rd.	Canyon Creek Rd. N.	TWSC	C	19.1
Boeckman Rd. E,	Boones Ferry Ramp	TWSC	C	17.8
Town Center Loop E.	Vlahos Dr.	TWSC	B	11.5
Miley Road	French Prairie Drive W.	TWSC	B	10.3
Grahams Ferry Road	Tooze Road	TWSC	B	11.2
Airport Road	Miley Road	TWSC	B	11.5
Wilsonville Road	I-5 SB Ramp	Signal	E	72.0[5]
Wilsonville Road	I-5 NB Ramp	Signal	D	51.5[5]
Elligsen Road	I-5 SB Ramp	Signal	A	14.8[5]
Elligsen Road	I-5 NB Ramp	Signal	B	9.0[5]

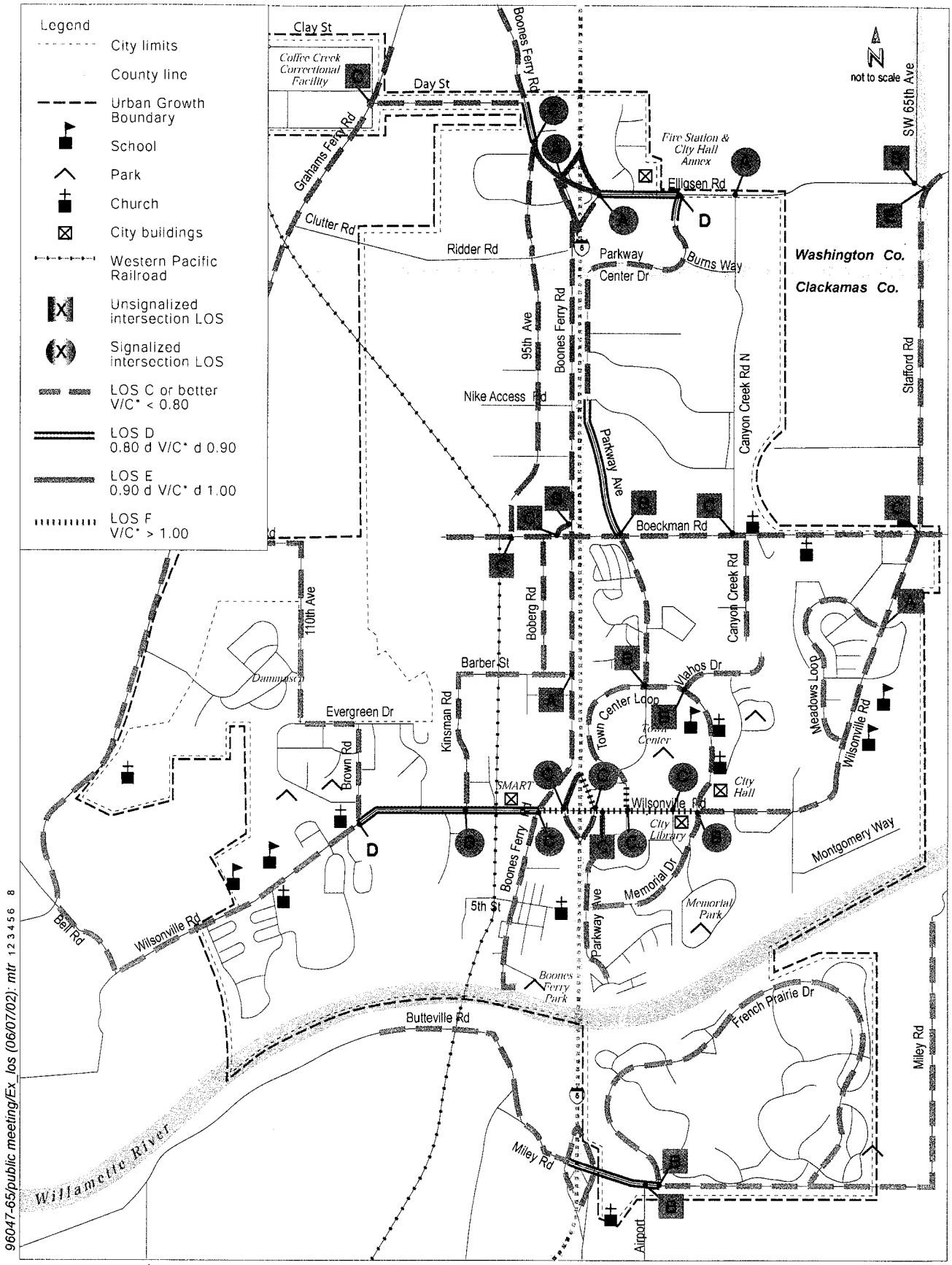
[1] AWSC = All way stop controlled intersection, TWSC = Two way stop controlled intersection, Signal = Signalized intersection

[2] Control delay, measured in seconds per vehicle, is a measure of all the delay contributable to traffic control measures, such as traffic signals or stop signs. At signalized intersections, the delay reported is the average of all the control delay experienced for all the movements. At unsignalized intersections, the reported delay is for only one movement, the movement experiencing the worst control delay, which is typically one of the stop-controlled side street approaches. The control delay reported at unsignalized intersections is not a valid indication of the operations at the entire intersection.

[3] LOS is the level of service; a concept based on the 1997 Highway Capacity Manual for unsignalized and signalized intersections.

[4] The LOS values presented above are based on actual counts. They do not include approved project improvements that are not yet built.

[5] Per ODOT's Volume to Capacity standards (from the Freeway Access study), see Table 2.k.



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*V/C = volume to capacity ratio. The V/C shown is for the segments between the intersections.

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Figure 2.9
2001 Intersection and Corridor Level of Service

2.8 ACCIDENTS

Accident data were obtained from the Clackamas County Sheriff's Department Crime Analysis Unit. Accidents were tabulated for three years between October 1997 to September 2000. Because the number of accidents occurring at an intersection is dependent on the traffic volume entering the intersection, accidents are usually reported as a rate. For this analysis, where traffic counts were available, intersection accidents were reported as accidents per million entering vehicles (apmev). Expressing accident occurrences as rates enables a relative comparison between intersections. For this reason, an intersection with the most accident occurrences does not necessarily have the highest accident rate. **Table 2.n** lists the accident frequency for the 27 analyzed intersections. Accident rates were calculated for 13 of the 27 intersections that had traffic count data available.

A total of 291 accidents were reported at 71 locations within the city limits over the three-year period. These accidents occurred at or near the intersection as shown in **Figure 2.10**. The intersections of Wilsonville Road/Town Center Loop and Town Center Loop/Parkway Avenue had accident rates greater than one apmev over the study period. Town Center Loop/Wilsonville Road had the highest accident rate at 1.67 apmev along with the highest accident frequency with 29 accidents over the three-year period. The location at Wilsonville Road and Boones Ferry Road had the second highest frequency with 24 accidents.

Twenty-seven different accident types were analyzed for each year from 1997 to 2000 and are listed in **Table 2.o**. Failure to yield and careless driving caused the highest number of accidents. The column "other" represents the accident types that were not consistent throughout the three-year period.

Overall, Wilsonville Road had the highest accident total with 100. Of these, following too close caused 19 accidents. The "other" locations reported a total of 75 accidents. Hitting a parked car was the most frequent cause at these locations. **Table 2.p** summarizes the accident types for the 27 analyzed intersections.

Table 2.n
Ranking by Accident Rate of Highest Accident Locations

Ranking[1]	Location[2]	Frequency (# of Accidents)	Rate[3] (apmev)
1	Wilsonville Rd/Town Center Loop	29	1.67
2	Town Center Loop E/Parkway Ave	12	1.10
3	Elligsen Rd/Canyon Creek Rd	7	0.91
4	Wilsonville Rd/Boones Ferry Rd	24	0.82
5	Wilsonville Rd/Meadows Loop	4	0.64
6	Wilsonville Rd/I-5	21	0.63
7	Boeckman Rd/Parkway Ave.	9	0.56
8	Miley Rd/French Prairie Rd.	4	0.40
9	Wilsonville Rd/Brown Rd	5	0.37
10	Boeckman Rd/Boones Ferry Rd	2	0.35
11	Grahams Ferry Rd/Tooze Rd	1	0.32
12	Wilsonville Rd/Kinsman Rd	3	0.17
13	Elligsen Rd/SW 65th Ave	1	0.06
N/A	Town Center Loop/Citizens Dr.	20	
N/A	Elligsen Rd/I-5	14	
N/A	Commerce Circle/Boones Ferry Rd	9	
N/A	Elligsen Rd/Parkway Ave	8	
N/A	Commerce Circle/95th Avenue	8	
N/A	Wilsonville Rd/Rebekah St	6	
N/A	Town Center Loop/Courtside Dr.	6	
N/A	Boones Ferry Rd/95th Ave	5	
N/A	Ridder Rd/95th Ave	4	
N/A	Miley Rd/I-5	4	
N/A	Wilsonville Rd/Willamette Way	3	
N/A	Wilsonville Rd/Montebello Dr.	3	
N/A	Wilsonville Rd/Meadows Parkway	2	
N/A	Boberg Rd./Barber St.	2	
N/A	Additional Locations	75	

Notes: apmev = accidents per million entering vehicles

[1]No traffic count data were provided for ranking locations listed as N/A.

[2]Accidents are at or near the location of each respective intersection.

[3]Rates are calculated by using the average weekday traffic volumes of the intersection calculated by a K-factor obtained from 1998–2000 counts and the May 2000 Average Traffic Volumes on the mainline.

Table 2.o
Number of Accidents by Cause Per Year

Cause	Year[1] 97–98	98–99	99–00	Total
Failure to Yield	14	14	14	42
Careless Driving	13	9	13	35
Following Too Close	11	8	11	30
Improper Turning	12	8	10	30
Unknown	8	11	8	27
Failure to Obey Traffic Control Devices	9	10	7	26
Hit Parked Car	7	9	9	25
Excessive Speed	8	5	6	19
NICR-Non-Injury Crash Report	5	5	1	11
Improper Lane Change		5	3	8
Other				
Avoiding Oncoming Vehicle	1	1	0	2
Bicyclist in Roadway	0	0	1	1
Brake Failure	0	0	1	1
Driver Fell Asleep	1	1	2	4
Driver had Seizure	0	0	2	2
Failure to Drive to the Right	0	1	2	3
Failure to Secure Vehicle	0	0	1	1
Foot Slipped off Brake	1	0	0	1
Icy Roadway	3	0	1	4
Improper Backing	6	1	0	7
Improper Passing	1	1	0	2
Improper U-Turn	0	1	0	1
Intentionally Rammed	1		0	1
Object in Roadway	0	1	1	2
Obstructed View	0	3	1	4
Reckless Driving	0	0	1	1
Tire Blow out	0	1	0	1
Total Other	14	11	13	38
TOTAL	**101**	**95**	**95**	**291**

[1] 97–98 is from October 1997 to September 1998, 98–99 is from October 1998 to September 1999, 99–00 is from October 1999 to September 2000

Table 2.p
Summary by Accident Type

LOCATION	Careless Driving	Excessive Speed	Failure to Obey Traffic Control Devices	Failure to Yield	Following Too Close	Hit Parked Car	Improper Lane Change	Improper Turning	Non-Injury Crash Report	Unknown	Other	Total
Wilsonville Rd/Willamette Way	3	0	0	0	0	0	0	0	0	0	0	**3**
Wilsonville Rd/Rebekah St	0	1	2	0	0	0	0	0	0	0	3	**6**
Wilsonville Rd/Montebello Dr.	0	0	0	1	0	0	0	1	0	0	1	**3**
Wilsonville Rd/Meadows Parkway	0	0	0	0	2	0	0	0	0	0	0	**2**
Wilsonville Rd/Brown Rd	0	1	0	1	1	1	0	0	0	0	1	**5**
Wilsonville Rd/Town Center Loop	3	1	4	1	4	3	1	5	3	2	2	**29**
Wilsonville Rd/Meadows Loop	0	2	0	0	1	0	0	0	0	1	0	**4**
Wilsonville Rd/Kinsman Rd	1	0	0	0	0	1	0	1	0	0	0	**3**
Wilsonville Rd/I-5	3	0	4	1	7	0	2	3	1	0	0	**21**
Wilsonville Rd/Boones Ferry Rd	3	0	0	5	4	1	1	4	1	3	2	**24**
Town Center Loop/Parkway Ave	1	0	2	1	0	3	0	1	1	1	2	**12**
Town Center Loop/Courtside Dr.	0	2	0	3	0	0	0	0	0	1	0	**6**
Town Center Loop/Citizens Dr.	2	3	1	10	0	0	0	1	0	0	3	**20**
Ridder Rd/95th Ave	0	0	1	2	1	0	0	0	0	0	0	**4**
Miley Rd/I-5	0	1	1	0	0	0	0	1	0	0	1	**4**
Miley Rd/French Prairie Rd.	1	1	0	2	0	0	0	0	0	0	0	**4**
Grahams Ferry Rd/Tooze Rd	0	0	0	0	0	0	0	1	0	0	0	**1**
Elligsen Rd/I-5	1	0	1	1	4	1	1	0	1	1	3	**14**
Elligsen Rd/SW 65th Ave	0	0	0	1	0	0	0	0	0	0	0	**1**
Elligsen Rd/Parkway Ave	1	0	1	1	1	0	0	0	0	2	2	**8**
Elligsen Rd/Canyon Creek Rd	0	1	1	1	0	0	0	3	0	0	1	**7**
Commerce Circle/Boones Ferry Rd	0	1	2	2	0	0	0	1	1	0	2	**9**
Commerce Circle/95th Avenue	2	0	1	1	1	1	0	1	0	1	0	**8**
Boones Ferry Rd/95th Ave	1	0	2	2	0	0	0	0	0	0	0	**5**
Boeckman Rd/Parkway Ave.	0	0	0	0	1	0	1	0	0	2	5	**9**
Boeckman Rd/Boones Ferry Rd	0	0	0	0	0	0	0	0	0	0	2	**2**
Boberg Rd/Barber St.	1	0	0	1	0	0	0	0	0	0	0	**2**
Other Locations	12	5	3	4	3	15	2	7	3	13	8	**75**
TOTAL	**35**	**19**	**26**	**41**	**30**	**26**	**8**	**30**	**11**	**27**	**38**	**291**

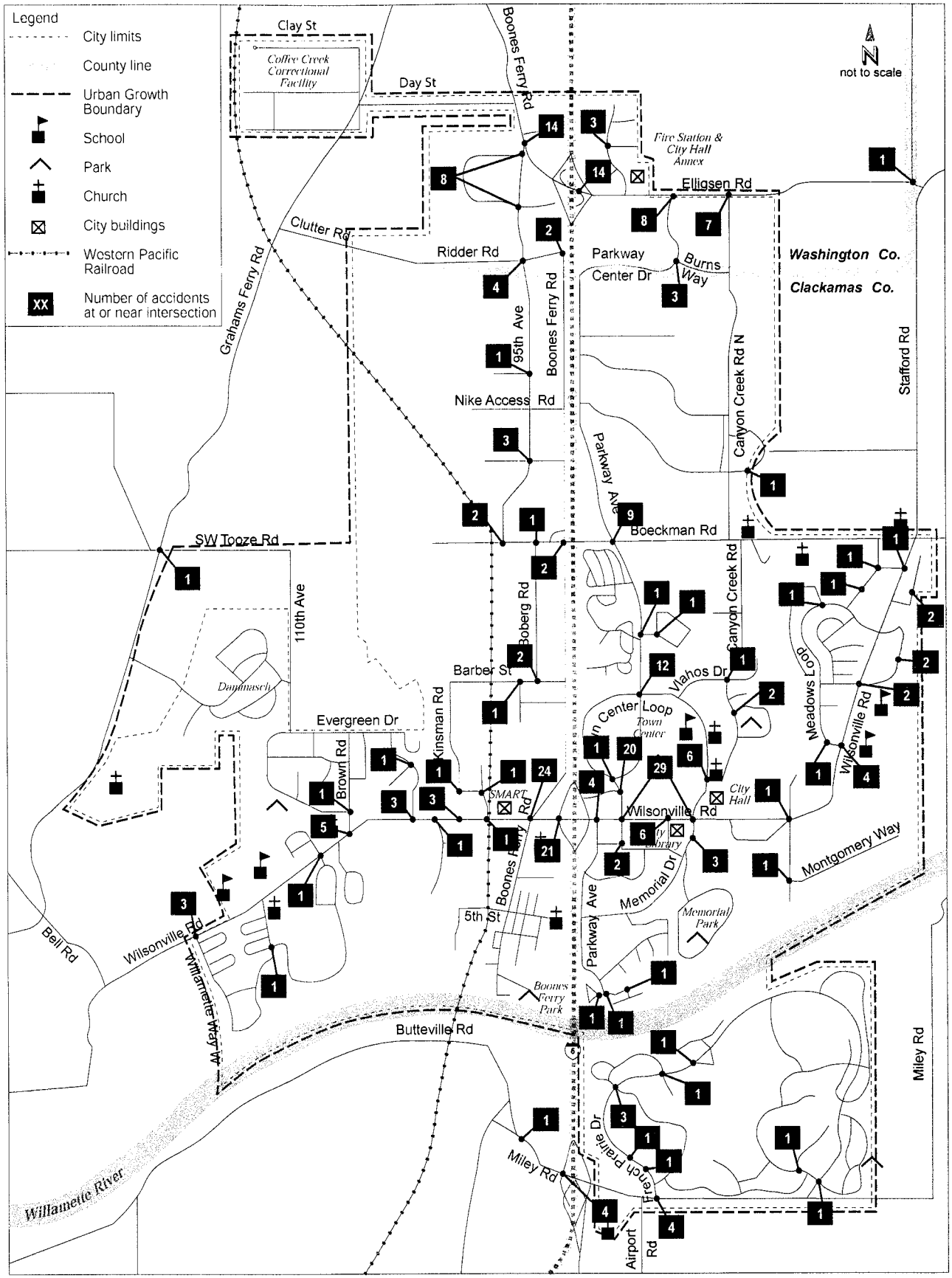

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Figure 2.10
Accidents During 1998 - 2000

2.9 TRANSIT

The City of Wilsonville operates South Metro Area Rapid Transit (SMART). SMART's service area is approximately 12 square miles, encompassing the entire City. SMART provides a range of services including five fixed routes and two demand response routes. The system is fareless and is funded primarily with a 0.03 percent employer payroll tax. Hours of operation are between 5:30 a.m. and 8:40 p.m. daily with only local fixed route service and reduced demand response service on Saturdays. SMART does not operate on Sundays or holidays. These routes are described below. **Figure 2.11** provides a map of existing SMART routes and facilities.

- The five fixed routes SMART offers provide local service as well as connections to other regional providers. Daily peak-hour connections with Cherriots at the Salem Transit Center and with Tri-Met at the Barber Transit Station are also provided.
- The two demand response routes provide local curb-to-curb service in the City. Local cab service is called to provide back-up ADA services to SMART.

SMART ridership increased 37 percent from 1996 passenger counts of 131,000 to 179,000 in 1999. Route 201, which connects Wilsonville with the Barber Transit Center, has the highest ridership while Route 1X to Salem has the highest productivity, meaning more boardings per service hour. SMART is at capacity on its Salem service due to high demand.

SMART route frequencies range from every 30 minutes to more than an hour. Commuter-oriented routes, such as Routes 201 Barber and 1X Salem, have reduced or no midday service. Only Route 204 Wilsonville Road maintains at least one-hour headways during the midday. **Table 2.q** summarizes SMART route frequencies.

Table 2.q
SMART Weekday Fixed-Route Frequencies

Route	A.M. Peak	Midday	P.M. Peak	Evening (after 6:00 p.m.)
201 Barber	30-60 min.	~60 min.	30-60 min.	90 min.
205 Canby	~90 min.	none	~75 min.	1 trip
203 North/South Loop	30-60 min.	none	~30 min.	none
204 Wilsonville Rd.	~60 min.	60 min.	60-75 min.	1 trip
1X Salem	2 trips	none	1 trip	1 trip

~ = approximately

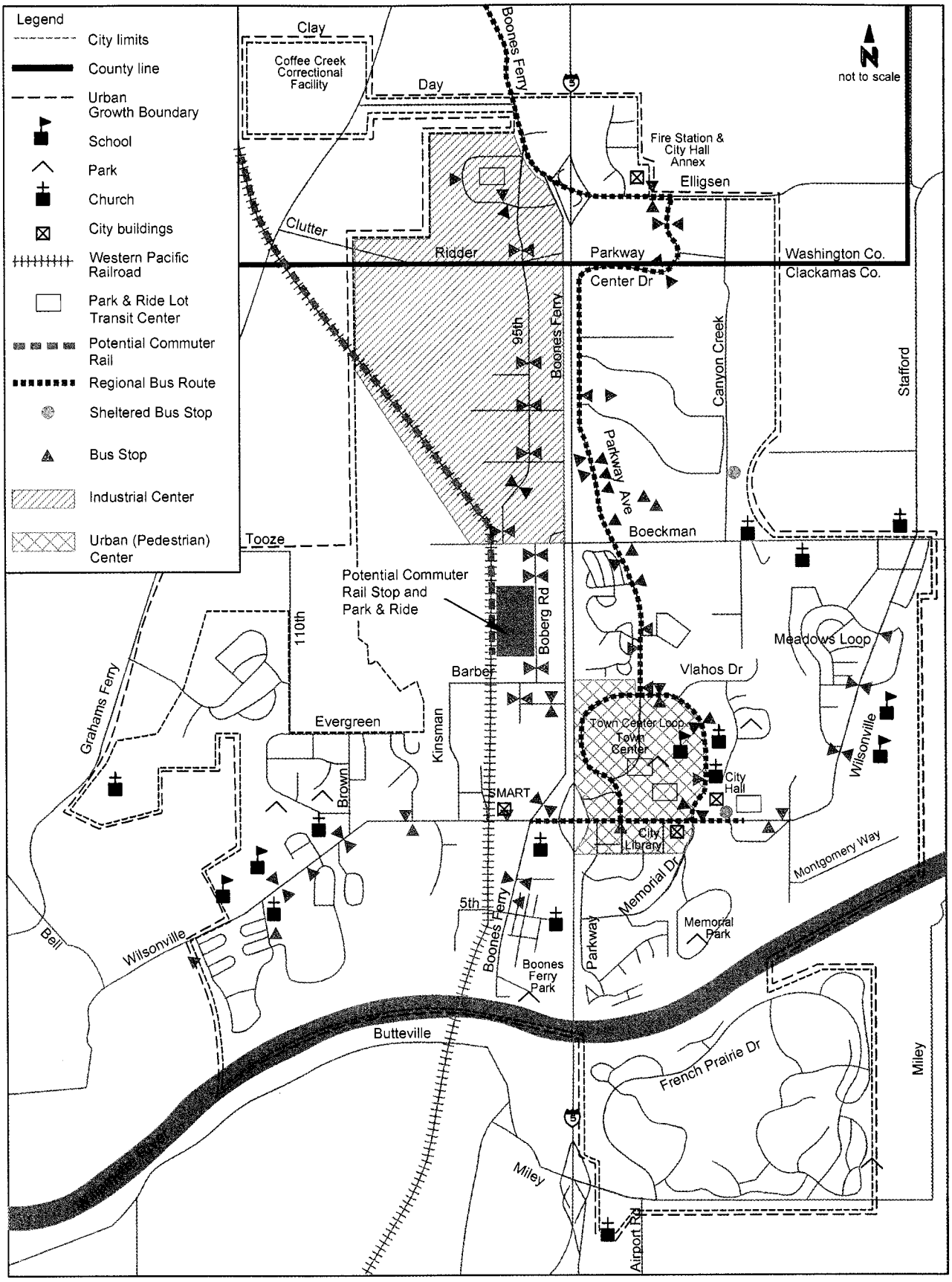

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Figure 2.11
2002 Transit Facilities

In addition to the SMART fixed-route service, Tri-Met runs Route 96 on weekdays connecting downtown Portland with the Commerce Circle area in northwestern Wilsonville. Route 96 provides peak-hour service. Headways range from 10 to 40 minutes during the a.m. peak and from 20 to 40 minutes during the p.m. peak. There is one evening trip and no midday service.

SMART has 110 bus stops and five shelters throughout the city. Of the 110 bus stops, approximately 20 percent are fully accessible. The remaining stops lack pedestrian amenities and require upgrading to ADA standards. The sheltered stops have benches and concrete pads. The City Hall shelter is equipped with a bicycle rack. Two additional shelters at Elligsen Road and Parkway Avenue have recently completed construction. SMART has a shared parking agreement with a local business for approximately 35 park-and-ride spaces in the Town Center area.

2.10 BICYCLE FACILITIES

Existing bicycle facilities, including designated lanes, and off-street bicycle paths, are shown in **Figure 2.12**. Wilsonville Road, Town Center Loop, Boones Ferry/Stafford Road, and Parkway Center Drive are identified in the RTP's Regional Bicycle System. Some shoulders greater than 6 feet may not be considered ideal bicycle facilities due to on-street parking.

There is limited connectivity of existing bicycle facilities. In particular, there are few direct east-west routes in the city, and no north-south route on the west side of I-5. Bicyclists wishing to travel east to west must share travel lane space with automobiles while crossing I-5 on Boeckman Road. Wilsonville Road and Stafford Road interchanges provide bicycle lanes. Neighborhood connectivity with existing activity centers is limited. Residents of Charbonneau, for example, cannot cross the Willamette River into Wilsonville without traveling on I-5. Bicyclists are generally permitted on all roadways in the City, with the exception of I-5.

As mentioned previously, the Urban Growth Management Functional Plan stipulates pedestrian and bicycle connections or access ways to major roadways at intervals of not more than 330 feet.

2.11 PEDESTRIAN FACILITIES

Figure 2.13 illustrates the existing and programmed pedestrian facilities in Wilsonville. The majority of arterials within the core of the City have some form of pedestrian facility, while most outlying arterials have no pedestrian facilities. Wilsonville Road, Town Center Loop, Boones Ferry/Stafford Road, and Parkway Center Drive are identified in the RTP's Regional Pedestrian System.

Overall, pedestrian connectivity to neighborhood activity centers is not adequate in the core area surrounding the Town Center. For example, the distance between the Les Schwab store and Town Center is not adequately supplied with a walkway. Furthermore, Charbonneau does not have direct pedestrian access to the Town Center area.

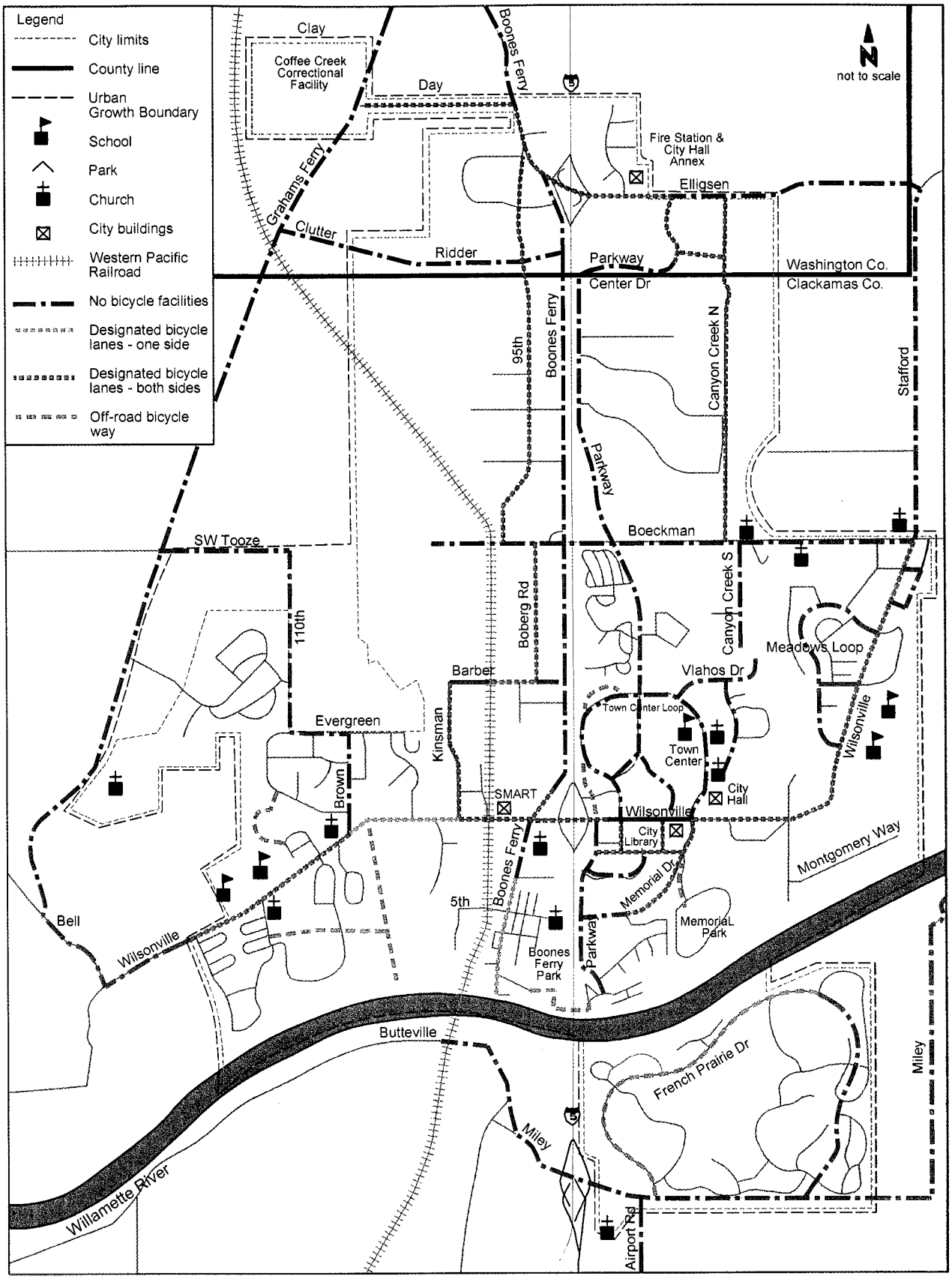

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Figure 2.12
2002 Bicycle Facilities

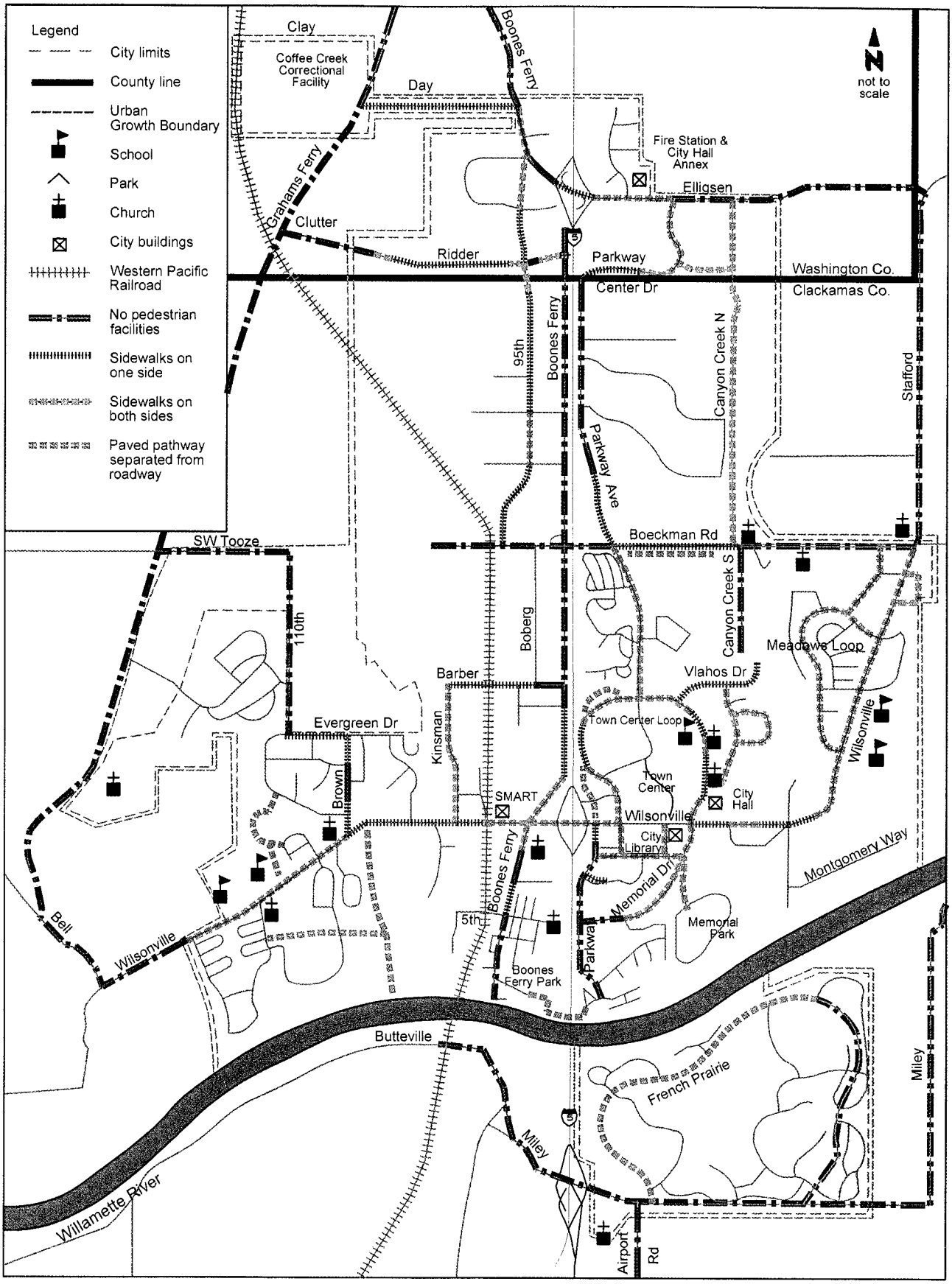

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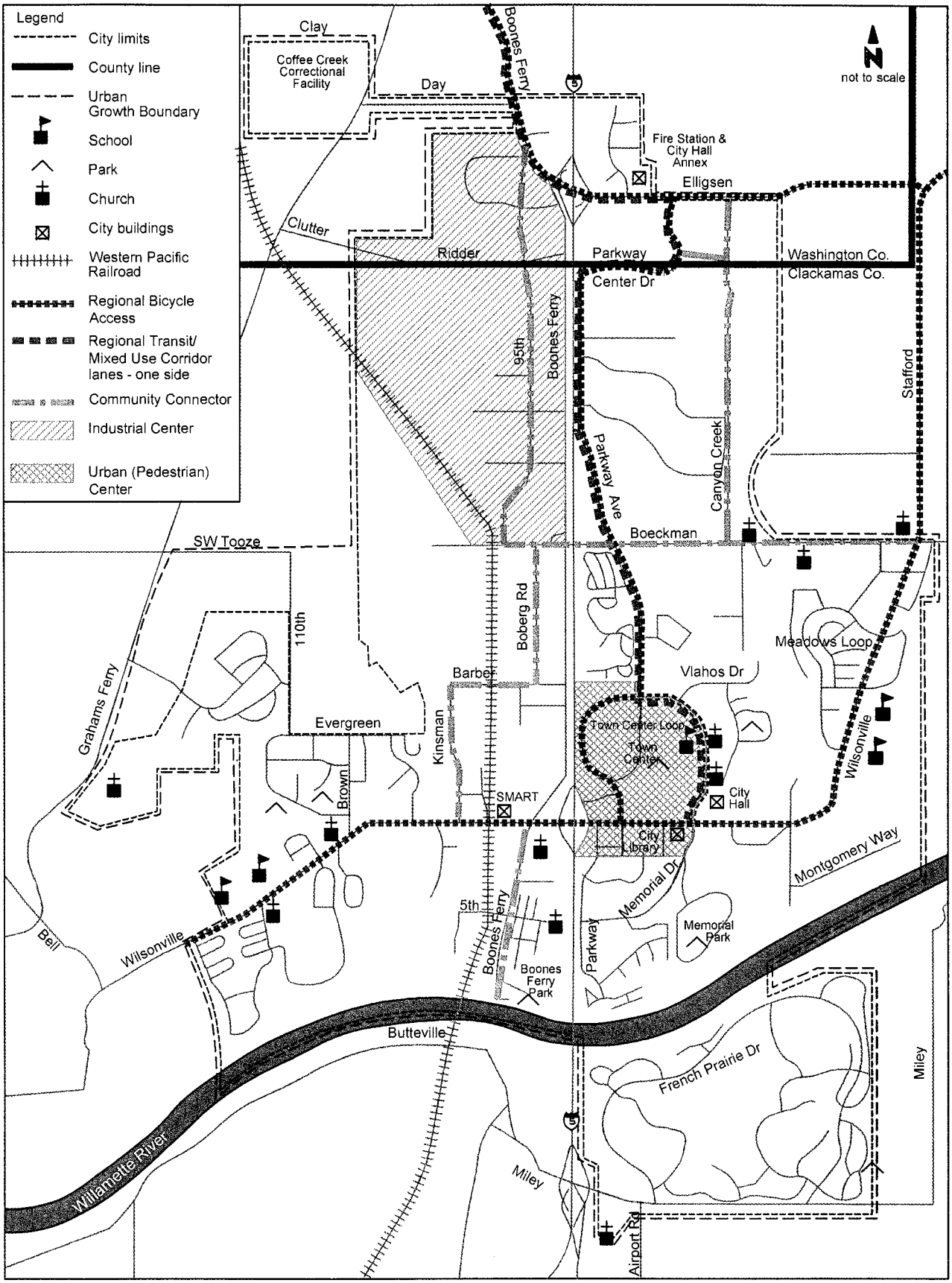
Figure 2.13
2002 Pedestrian Facilities



Note: Per 2000 Metro Regional Transportation Plan

2.12 COMMERCIAL VEHICLES (TRUCKS)

The City of Wilsonville has a large amount of truck traffic due to its proximity to I-5 and the large industrial and warehouse complexes located in northwest Wilsonville. Additionally, the shopping areas in the Town Center generate significant truck volumes. Virtually all truck traffic on Wilsonville city streets is heading to or from a business or service within Wilsonville. Residents also cite extensive truck traffic on Wilsonville Road coming from the west, even though trucks are not to use this road for through traffic according to County regulations. Currently, there are no designated truck routes through Wilsonville.

2.13 RAIL

A rail route (See **Figure 2.15)** owned by Western Pacific and operated by the Portland and Western Railroad passes through Wilsonville. This single-track rail line is a north-south route that carries between three and eight freight trains on a daily basis. Train volumes vary because they are dependent on shipper demand. Currently, there are no passenger trains running on this rail line. However, the line is currently being planned for future commuter rail use by a consortium of municipalities with funding from the state and federal governments

There are a total of five public railroad crossings in Wilsonville: four at-grade and one grade-separated. Three of the four at-grade crossings are equipped with automatic gates and flashing light signals. These are located on Wilsonville Road, Barber Street, and Boeckman Road. The at-grade crossing at Fifth Street does not have automatic gates. The grade-separated railroad crossing is at Grahams Ferry Road.

2.14 MARINE

The Willamette River is the only navigable body of water in the Wilsonville area. Currently, there is one ferry service operator in the vicinity of Wilsonville. A Clackamas County ferry (Canby Ferry) operates several miles from Wilsonville, but it is only open intermittently due to mechanical problems with the ferryboat and the ferry's inability to cope with seasonal high water levels in the river. The City is minimizing development along Boones Ferry Park to preserve areas along the riverfront for potential river-related uses, including boating. In addition, the West Side Planning Task Force has discussed the possibility of a pedestrian/bicycle shuttle between Charbonneau, Memorial Park, Boones Ferry, and perhaps up to Champoeg Park.

2.15 PUBLIC INVOLVEMENT

Transportation concerns of the public were identified by telephone interviews, and public open house and public meeting attendees and their options for solutions which have been summarized in Appendix A. These findings are qualitative in nature and do not represent a statistical sampling of Wilsonville residents.

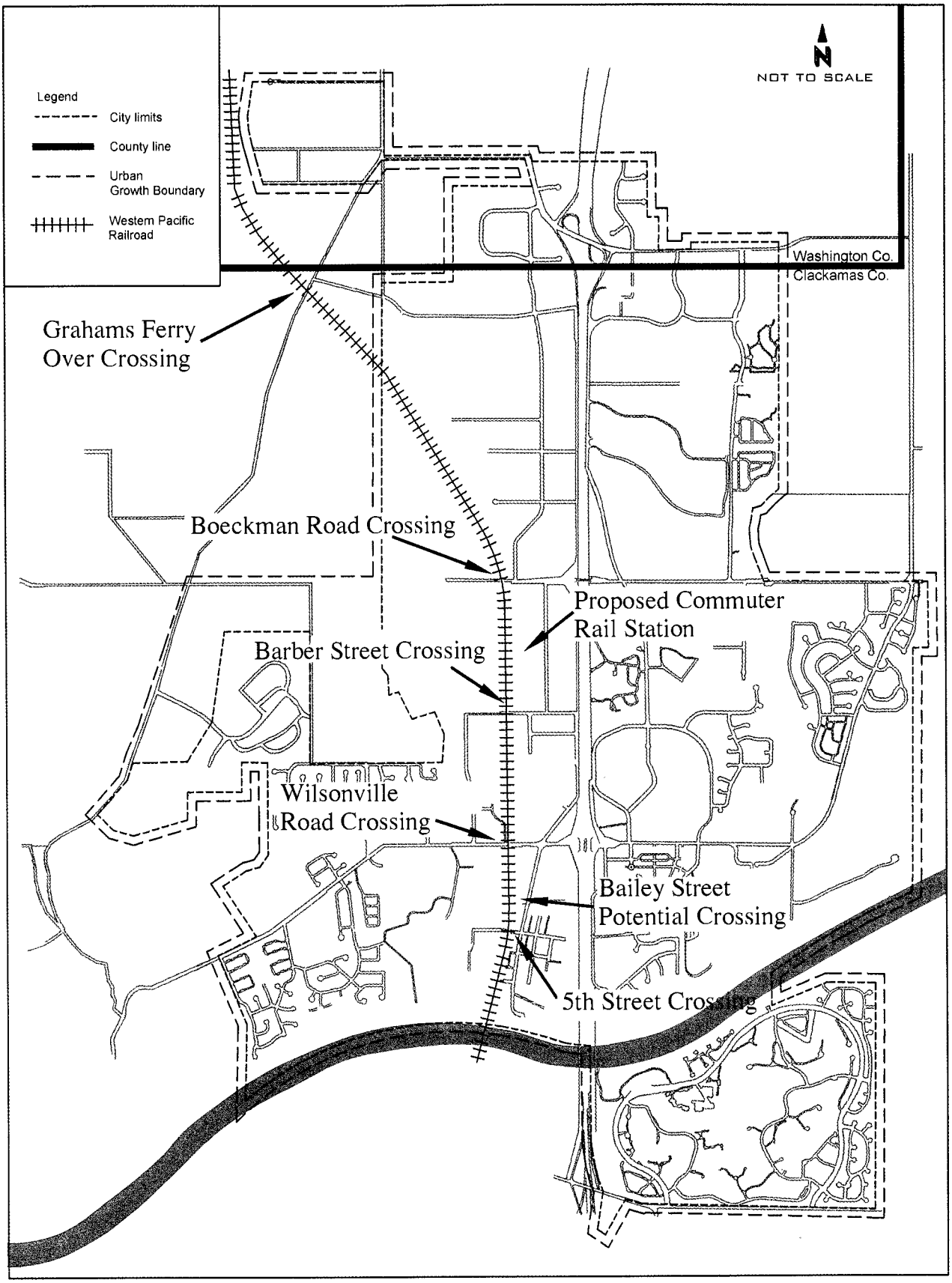


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Figure 2.15
2002 Public Railroad Crossings

CHAPTER 3
TRAFFIC MODEL DEVELOPMENT

CHAPTER 3
TRAFFIC MODEL DEVELOPMENT

3.1 LAND USE GOALS

Goal 3-1: To establish and maintain a multi-modal transportation system that supports the Wilsonville Comprehensive Plan.

3.2 INTRODUCTION

This chapter summarizes the development of the City's travel demand forecasting model and the land use assumptions the model is based on. Forecasts of travel demand are used to establish the loads on future or modified transportation system alternatives. Future land uses, road network, population, and employment are based on a 2020 horizon year.

3.2.1 History

The traffic engineering firm of Entranco, the planning firm of Pacific Rim (now known as Parametrix) and the traffic modeling firm of HTA Associates, along with City staff, developed the original traffic model that the June 2002 Public Draft Transportation Systems Plan (TSP) is based upon. This model was considered state-of-the-art at the time in 1998. After development, the model was used to examine a number of roadway and land use alternatives and multiple scenarios. The Adjunct Transportation Planning Committee (ATPC) reviewed the assumptions, results and scenarios before forming the basis of the Draft TSP.

In October of 2001, ODOT and the City of Wilsonville jointly hired the traffic-engineering firm of DKS Associates to address access issues to Interstate 5 (I-5) from Wilsonville. Specifically, DKS Associates were asked to determine what influence do regional growth patterns, such as the proposed Villebois development and commuter rail park and ride site, have on transportation patterns in the City. The Freeway Access Study (FAS) proposed to analyze two scenarios, one that included a new interchange at Boeckman Road and the other utilizing the existing interchanges at Elligsen and Wilsonville Road.

DKS was supplied with the transportation model developed for the TSP. Using a process called demand adjustment DKS refined the model output. The analysis preliminarily concluded that, based on suggested roadway network improvements outlined in the TSP and with additional DKS suggested modifications, the existing interchange at Wilsonville Road could be made to operate satisfactorily until 2020. This conclusion was contrary to the findings of the June 2002 Draft TSP that concluded that a Boeckman Road Interchange was necessary for satisfactory operation of the City's transportation system in the horizon year of 2020.

Due to conflicting results from ostensibly the same model, City staff requested the Oregon Modeling Steering Committee (OMSC) perform a peer review of the Wilsonville transportation model and subsequent work in model application. Upon

review of the model, the Committee concluded that since the structure of the model is an "aggregate quick response", that it is unable to provide accurate estimates of choice behavior due to changes in land use and transportation. The Committee noted that this method of modeling is no longer used and has been replaced with a destination choice structure. There were also issues with the DKS results. First, that they were based on an outmoded model structure. Second, that the demand adjustment refinement of the model performed by DKS was considered an extreme form of model refinement and is not recommended.

The peer review panel recommended that ODOT, Metro and the City produce a sub-area transportation model for the City of Wilsonville. The model development process consisted of superimposing the Wilsonville network and zone system on a sub-area of the metropolitan transportation model. The Metro-Wilsonville model would be able to use the same trip purposes, trip generation, distribution, mode choice and time of days of the metropolitan model, while retaining the socio-economic, demographic and land use information accumulated for the original TSP model. Based on the recommendation, the original TSP model data was added to the structure of the metropolitan model, correlated, run, checked and validated. The Freeway Access Study and the 2002 Wilsonville TSP both employed the updated traffic modeling.

3.2.2 Factors Influencing Travel Demand

Three factors influence the demand for urban travel: land use, socioeconomic characteristics and availability of transportation services.

- Land use characteristics are the primary determinant of travel demand. The amount of traffic generated by a parcel of land is dependent on what the land is used for. Different uses, such as shopping malls, apartments, single-family homes, office buildings, industrial sites, produce different traffic patterns.
- Socio-economic characteristics, such as life styles and values, influence transportation choices. For example, workers will generate more trips by automobile (SOV or single-occupant-vehicles) versus fixed income retirees dependent on public transportation.
- The availability of transportation services (supply) affects mode-choice. That is, whether to use an alternative means of transportation is affected by travel time, cost, convenience, comfort and safety.

The importance of these factors is reflected in the current generation of traffic modeling programs that emphasize a destination choice structure. A destination choice model addresses the critical importance in the roles of land use; travel choice and transportation supply data.

3.2.3 Travel Demand Forecasting Model

The City's original travel demand forecasting model was developed using a transportation modeling package known as EMME/2. Travel demand forecasting models attempt to represent the logical sequence of travel behavior. The original

model was coordinated with Metro's 1996 EMME/2 regional model to assure conformity in major entering route volumes and modeling assumptions.

The seven primary steps used to develop the original travel demand model were:

1. Small Traffic Analysis Zone (TAZ) Development
2. Roadway Network Development
3. Trip Generation
4. Trip Distribution
5. External Trip Table Development
6. P.M. Peak-Hour Trip Table Estimation
7. Roadway Network Validation

On a regular basis, the metropolitan model has been modified to incorporate new data and research findings. In 1998 Metro adopted new technical specifications per modeling guidelines established by OMSC. Over time, based on these guidelines, Metro integrated more explanatory capabilities into the model for trip distribution, pre-mode choice, mode choice and household structure.

The travel demand forecast approach followed by Metro in the current (2002) model uses a four-step sequence: trip generation, trip distribution, modal choice, and traffic assignment. Two additional steps augment this sequence: preliminary input data (prior to modeling) and network validation (post modeling).

The main difference between the original model and the current model lies in the addition of the mode choice step and the use of a destination choice matrix. An expanded list of steps in the development of the current travel demand model is:

1. Preliminary Input Data
    a. Traffic Analysis Zone (TAZ) Development
    b. Roadway Network Development
2. Trip Generation
3. Trip Distribution
4. Mode Choice
5. Traffic Assignment
    a. Internal/External Trip Table Development
    b. P.M. Peak Hour Trip Table Estimation
6. Network Validation

These steps are described in the following sections.

3.3 PRELIMINARY INPUT DATA

Prior to the task of developing the demand model, a variety of input data must be collected. Among these are socio-economic and land use data, access measurement data, special trip generators, and household/employment transit coverage. (For detailed information, see the Trip Generation section.) This information was initially collected and refined for the original model, then re-utilized in the new model. In order to place this information into a spatial context, the study area must be delineated into traffic zones. Similarly, within the traffic zones a roadway network must be developed upon which travel movements are analyzed.

3.3.1 Traffic Analysis Zone System

The strategy in developing traffic zones is to select areas that are reasonably homogenous with respect to land use. Mixing land uses such as manufacturing and residential will lead to uneven results. Another part of the strategy is to select traffic analysis zones bounded by principal transportation routes. By grouping similar land uses and transportation routes, production-attraction (p-a) trip tables are constructed. P-A trip tables consist of a matrix of trips from each zone (production) to another zone (attraction) depending on the land use. In the traffic assignment step each trip is assigned to the transportation network. Thus, a forecast of traffic volumes on each roadway link is produced.

Metro's (regional) Traffic Analysis Zones (TAZs) and its accompanying roadway networks are designed to model region wide traffic flows on freeways, state routes, and principal arterials. The TAZs are not specifically designed to provide traffic flow information and data at the minor arterial and local collector level. (See **Figure 3.1** for a map of the Metro TAZs in the Wilsonville area.) The regional model encompasses the greater Portland metropolitan area with extensions to outlying areas. A finer zone system is required to provide traffic flow information on minor arterials and local collectors. To develop a finer system for the Wilsonville model, the 14 Metro regional TAZs in the Wilsonville area were disaggregated into 90 small area TAZs. (See **Figure 3.2** for a map of the Wilsonville TAZs.) The Wilsonville model encompasses an area south to Miley Road and Butteville Road; east to Wilsonville Road and Stafford Road; north to Clay Street, Day Road, and SW Norwood Road; and west to Grahams Ferry Road.

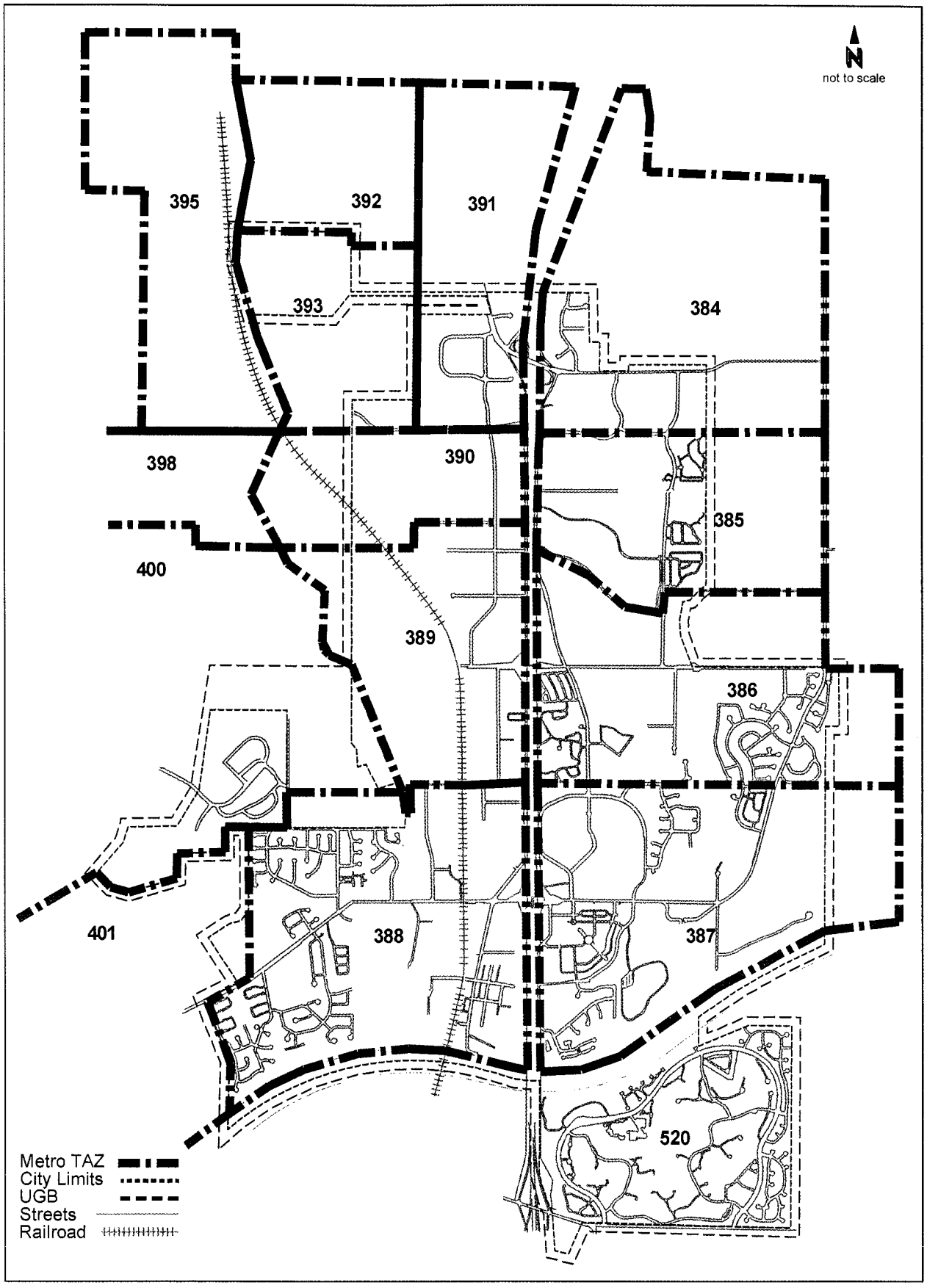

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Figure 3.1
City of Wilsonville Transportation Model
Metro Traffic Analysis Zone

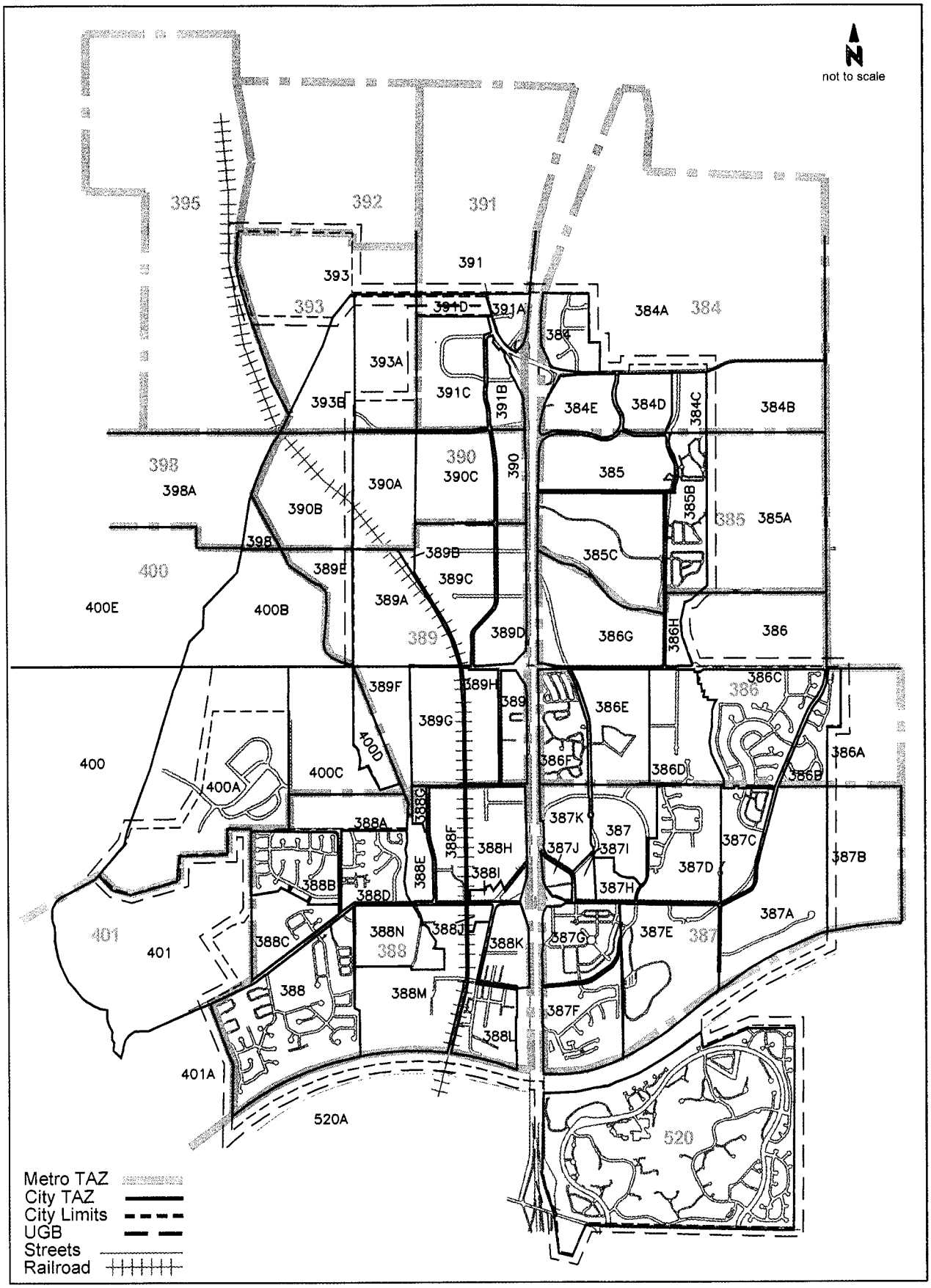

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Figure 3.2
City of Wilsonville Transportation Model
Metro and City Traffic Analysis Zones

3.3.2 Roadway Network Development

The representation of the transportation system is one of the most important aspects of the travel demand model. The roadway network serves several purposes. First, it is an inventory of the existing system (i.e. functional classification, number of lanes, traffic control devices) and a record of future proposed alignments. Second, the network is used in the demand analysis to estimate the level of traffic congestion between zones. This information is used in the trip distribution and mode choice steps. Finally, the network is used to simulate travel usage and to estimate associated impacts.

A computerized roadway network describing the characteristics of the existing roads in the traffic modeling software is constructed; much in the same way a map describes roads to a driver. For input into the EMME/2 computer-modeling package, a network is made up of links, centroids and nodes. A link is a portion of the street system that can be described by its capacity, number of lanes and speed. In the model, each TAZ has a centroid, representing an approximate center of activity and development. A centroid is the location within a zone where trips are considered to begin and end. Centroids are joined to the street system with special links known as centroid connectors. These are artificial links representing the combined capacities of driveways and local access streets by which drivers access the transportation system. A node is the end point of a link and represents an intersection or where a link changes direction, capacity, lanes or speed. The network is then coded to locate zone centroids, nodes and the street system.

Roadway links are classified as freeways, major arterials, minor arterials, and collectors by their characteristics, namely: speed, volume delay functions (vdf), length, number of lanes, hourly vehicle capacity per lane, and turn penalty or turn prohibition data (see **Table 3.a**). Wherever a street had an odd number of lanes, i.e., 3, 5, or 7 lanes indicating a center two-way left-turn lane, it was coded as a 2-, 4-, or 6-lane facility respectively. The additional capacity from the center left-turn lane was distributed equally per lane in each direction. All centroid connectors were coded with unlimited capacity and a speed of 15 mph to reflect the average speed of local access streets.

3.3.3 2000 Roadway Network

The regional roadway network coded in the EMME/2 model was based on Metro's 1996 highway network, representing all regional highways, and major and minor arterials, in the Wilsonville study area. (See **Figure 3.3**) (There was no change in the regional network between the original and current models.) Including additional major and minor arterials and local collectors enhanced the local roadway network within the City of Wilsonville. The local network was updated to Year 2000 conditions in both models. (See **Figure 3.4**) The number of lanes, free-flow speeds, and turn prohibitions were coded to reflect actual conditions in the City of Wilsonville. Hourly lane capacities, as shown in **Table 3.a**, were based on functional classifications and lane configurations.

The roadway network enhancements were based on field surveys of the Wilsonville study area. The field surveys confirmed the posted speeds, number of lanes, and lane capacities of the regional facilities, as well as the major, minor, and collector arterials.

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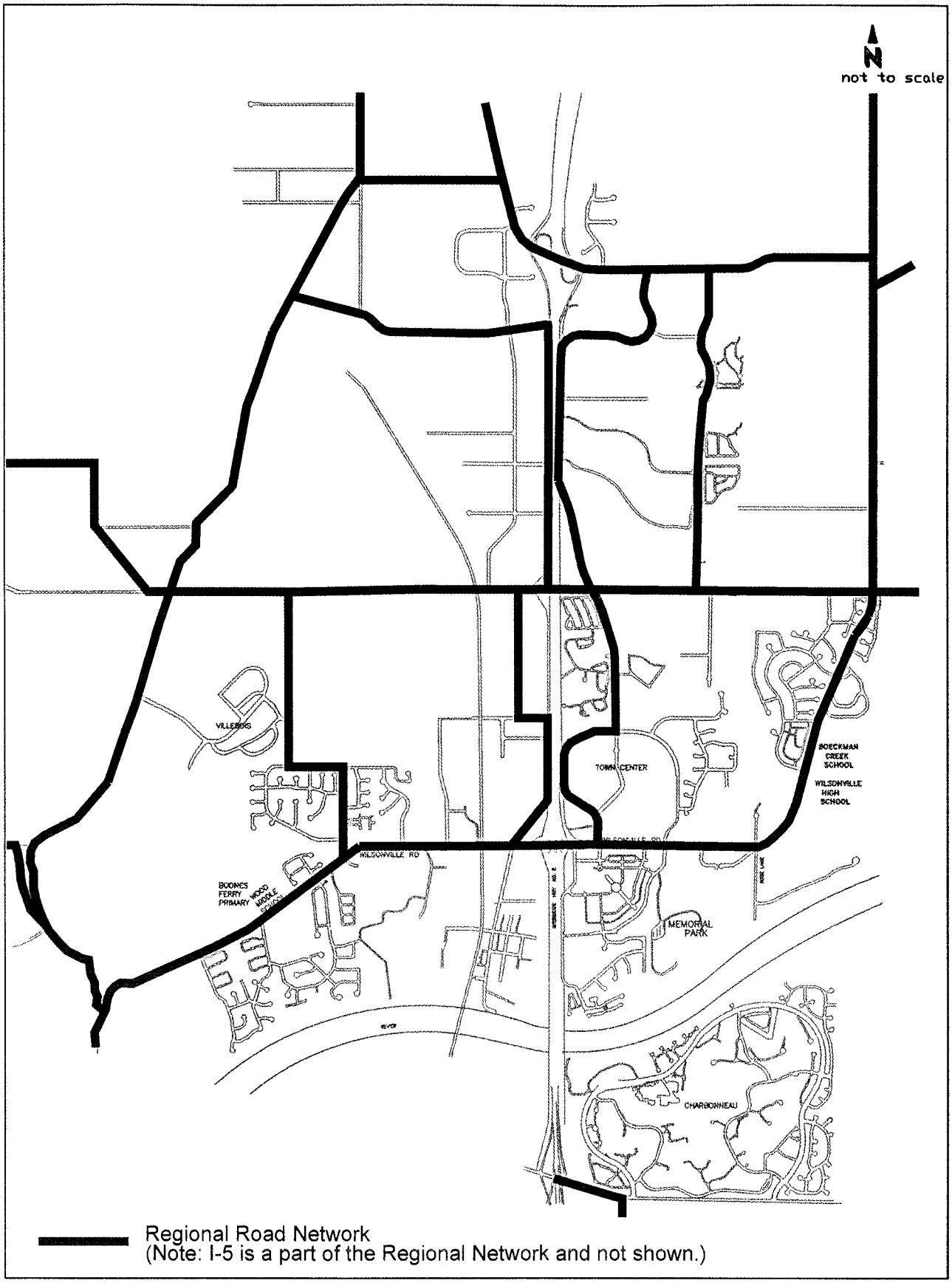

Figure 3.3
City of Wilsonville Transportation Model
Regional Base Road Network

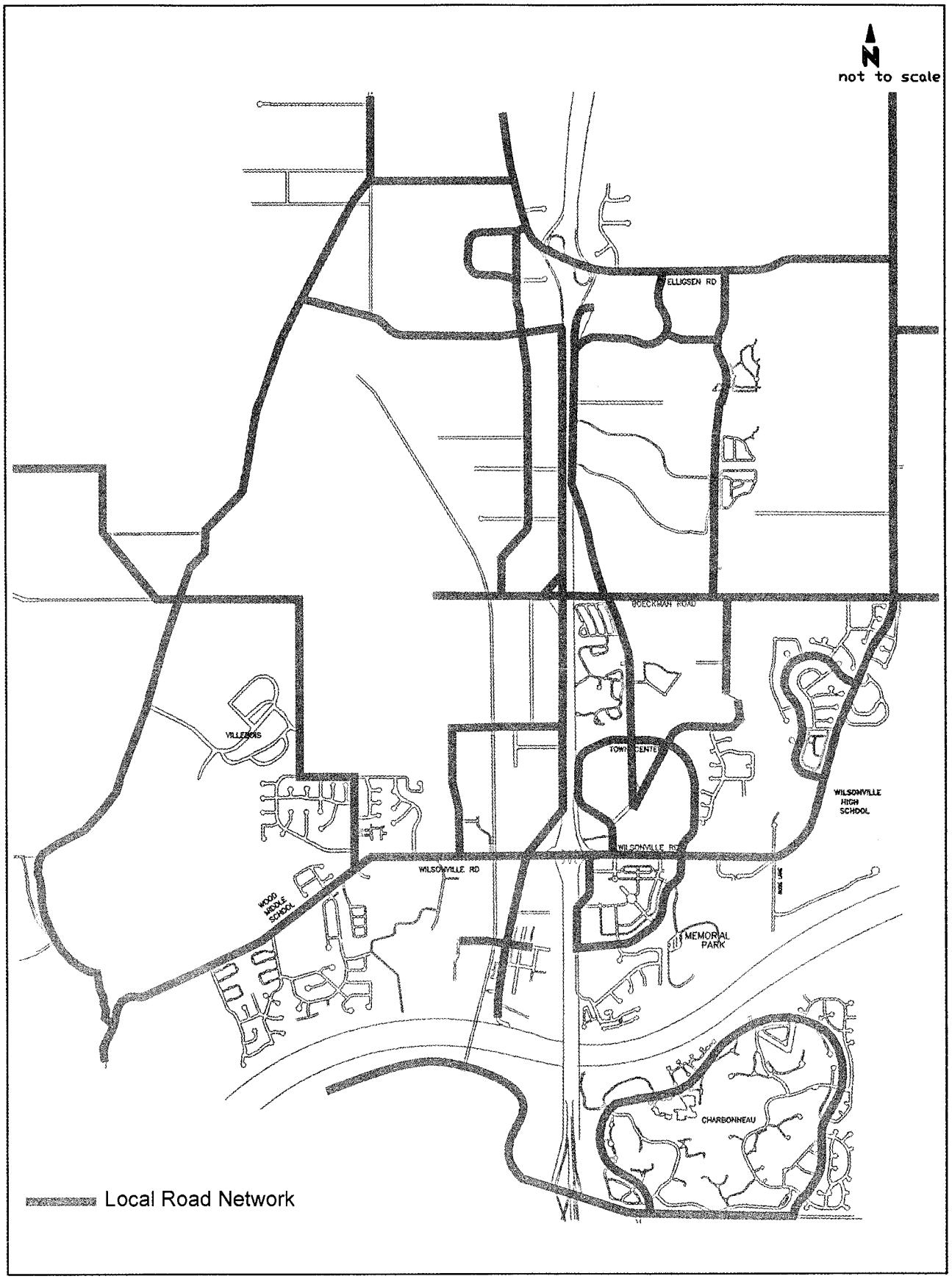

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Figure 3.4
City of Wilsonville Transportation Model
Local Base Road Network

Table 3.a
City of Wilsonville Roadway Network
Lane Capacities and Speeds

Functional Classification	Free Flow Speed (mph)	Per Lane Capacity (vph)
Freeways:		
1 lane	55 – 60	2,000
1 lane ramp	25 – 35	1,200
State Routes:		
1 lane	50 – 55	1,500
Major Arterials:		
1 lane (with twltl)	30 – 35	1,000
2+ lanes (with twltl)	30 – 35	900
1 lane (without twltl)	25 – 30	800 – 900
2+ lanes (without twltl)	25 – 30	800
Minor Arterials:		
1 lane	30 – 35	900
2 lanes	30 – 35	800
1 lane	25 – 30	800
2 lanes	25 – 30	700
Collectors :		
1 lane	20 – 25	600
Centroid Connectors[b]	15	9,999

[a]Twltl = two-way left-turn lane

[b]Artificial link representing total driveway/local access capacity in each TAZ.

3.4 TRIP GENERATION

Trip generation is the process of determining the number of trips that begin or end in each traffic zone within a study area. Each trip has two ends; a trip is either produced by a traffic zone or attracted to a traffic zone. Trip analysis has two functions: 1) to develop a relationship between trip end production/attraction and land use, and 2) to use that relationship to estimate the number of trips generated at some future date due to changes in land use patterns or growth.

3.4.1 Regional Model Application

The Wilsonville model is nested within an application sub-area of the regional model. Using the land use assumptions developed by the City for the Wilsonville area, the regional model was run to quantify the trip making in the metropolitan area. This step captured the trip interaction that occurs between the City and the rest of the region. Trip interactions can vary depending upon the degree of development in Wilsonville and accessibility to other regional locations.

The City of Wilsonville was responsible for defining the land use assumptions for the model. Household and employment control totals were derived from the City's business license records and the regional allocation prepared by the Metro Data Resource Center. Totals were prepared for a year 2000 base and 2020 horizon year forecast.

The 2000 and 2020 regional land use assumptions for the Wilsonville study area as used in the regional travel demand model are given in **Table 3.b** and **Table 3.c** respectively. These tables are summaries of City and Metro data for 2000 existing and 2020 projected land use model numbers. The table numbers were obtained from the original City of Wilsonville transportation model, by aggregating the numbers for the City TAZ system, and Metro Data Resource Department. The data is broken down by Metro TAZ, households and employment. A third column, *New Model*, represents the model numbers for the new transportation model.

The new model numbers are the result of a data analysis comparing existing information from the City's database of dwellings and businesses and analysis that generated the 2020 City projections, with Metro existing and projected numbers. Where a Metro TAZ exceeded City boundaries, the regional model used Metro numbers. Where a Metro TAZ was almost wholly within the bounds of the City, based on existing information and detailed land use projections, the original model numbers were used. Overall, with the exception of 2000 Existing Employment, the new regional model numbers meet or exceed regional totals. Once the regional model is run, the regional model numbers are disaggregated (i.e., broken down into smaller sub-components) into the City's sub-TAZs and apportioned to the discrete sets of household and employment categories.

Table 3.b
2000 Existing Regional Land Use Assumptions

Households				Employment			
Metro TAZ	City -00	Metro -02	New Model	Metro TAZ	City -00	Metro -02	New Model
384	0	43	43	**384**	1086	1360	1360
385	545	142	502	**385**	1952	1337	1952
386	1277	1398	1398	**386**	1586	3031	1586
387	1834	1449	1834	**387**	2122	3587	3322
388	1634	1581	1634	**388**	2398	3427	2398
389	63	17	63	**389**	1808	2408	1808
390	0	2	2	**390**	696	1260	1260
391	0	57	57	**391**	1459	2154	2154
393	0	47	47	**393**	34	371	371
398	0	379	379	**398**	0	118	118
400	34	213	213	**400**	46	58	58
401	0	26	26	**401**	0	119	119
520	1606	2009	2009	**520**	0	979	979
931	0	2	2	**931**	0	168	168
Total	6993	7365	**8209**	**Total**	13187	20377	**17653**

Table 3.c
2020 Projected Regional Land Use Assumptions

Households				Employment			
Metro TAZ	City -00	Metro -02	New Model	Metro TAZ	City -00	Metro -02	New Model
384	564	821	821	**384**	3046	1004	3046
385	594	467	594	**385**	3946	2275	3946
386	2806	1747	2806	**386**	4941	4284	4941
387	2084	1710	2084	**387**	4160	4926	5360
388	2258	2372	2258	**388**	4398	5009	4398
389	63	25	63	**389**	4210	3592	4210
390	0	7	7	**390**	2821	1677	2821
391	0	61	61	**391**	2161	2302	2161
393	0	2110	47	**393**	2057	1633	2057
398	0	550	550	**398**	0	151	151
400	2351	1421	2351	**400**	792	660	792
401	0	281	281	**401**	0	178	178
520	1676	1494	2009	**520**	57	951	951
931	0	877	877	**931**	0	131	131
Total	12396	13943	**14809**	**Total**	32589	28773	**35143**

3.4.2 Local Model Application

3.4.2.1 2000 Land Use

For the Wilsonville study area, 2000 land use data were developed by City staff (with assistance from Pacific Rim, now Parametrix) based on business licenses and other City records. This detailed land use information was organized into land use categories, based on the *ITE Trip Generation Manual* (1997). These land use categories are shown in **Table 3.d**.

Table 3.d
Trip Generation Categories and City of Wilsonville Land Use Categories

Trip Generation Land Use Categories	Measurement	City of Wilsonville ITE Categories
Single-family – SFDU	Dwelling Units	210
Multifamily - MFDU	Dwelling Units	221, 223, 230, 240, 253
Commercial - OTHER Government Office; Medical/Dental Office; Office Park; General Office Bldg.; Light/Heavy Industries; Warehousing; and Institutional	No. of Employees	750, 110
Commercial - RETAIL General Retail	No. of Employees	320, 493, 732, 810, 812, 814, 815, 816, 817, 820, 832, 834, 835, 844, 845, 847, 850, 851, 853, 912
School – ENROLL School Enrollment	No. of Students	520, 530
Special Generators – SG	Daily person trips	Town Center Parkway Center

Source: City of Wilsonville

The Town Center shopping mall and Parkway Center (the area southeast of the Stafford interchange) were treated as Special Generators in the trip generation model:

Town Center = General Retail land use + special generation

Parkway/Elligsen Center = General Retail land use + special generation

At these two locations, special trip generation consisting of daily productions and attractions were directly added to the general retail land use to represent expected higher than average trip generation.

The 2000 housing and employment data for the City of Wilsonville study area formed the trip generation basis in the travel model. Housing numbers were 3,430 single-family units and 3,486 multifamily units. Employment numbers were estimated as 2,032 for retail and 11,155 for non-retail. School enrollment for 2000 was estimated at 2,635.

3.4.2.2 2020 Land Use

The land use portion of the modeling process projects the future number of dwelling units and jobs within Wilsonville and is driven by the model's requirements. The model requires that both jobs and housing units be identified by traffic analysis zone (TAZ). In addition, the model generates different trip

generation numbers based on the job category and the type of dwelling unit. Therefore, retail jobs and non-retail jobs must be separated for analysis, as must single-family and multi-family housing. To arrive at the number of future dwelling units and jobs, the amount of vacant land needs to be calculated by TAZ and matched to the related land use.

The predicted number of dwelling units and jobs for the 2020 horizon year is based both on land use and on current conditions within Wilsonville, the current Comprehensive Plan and Development Code, current business license data and predicted employment. A number of assumptions go into any future calculation that may be changed for a number of reasons, including the number of housing units per acre and the potential employees per square foot of development. The analyses results are based on assumptions made in 2000 and are driven by the model's requirements and available information.

The base year (2000) assumptions and data sources included employment data and dwelling units/population. The data source, methodology, and assumptions are described briefly in the next section.

3.4.2.2.1 Employment

The City of Wilsonville's Business License Data supplied employment data. Data included Standard Industrial Classifications (SIC), TAZ, and number of employees. The following assumptions and methodology were applied:

- Allocate land use to Retail and Non-Retail Employment, using SIC.
- Retail SIC defined as Retail Trade (521–599) plus selected Services (701–729, 751–799).
- Some business licenses listed a site address outside of the City. These employees (676) were not included in the model land use.
- City employees were added to the land use data. Part-time positions (20 to 40 hours/week) were assigned a 0.75 full-time equivalent (FTE) factor. Half-time positions (less than 20 hours/week) were assigned a 0.50 FTE, while student and seasonal positions were assigned a 0.25 FTE.

3.4.2.2.2 Dwelling Units and Population

The City of Wilsonville supplied dwelling units and population data. The following assumptions and methodology were applied:

- Duplex, mobile home, and mobile home park units were counted as single-family. Condo and congregate units were counted as multiple-family.
- Conversion from dwelling units to population was based on 2.15 people per household (1990 Census data: 2.29 people per household, adjusted for a 7.2% vacancy rate).

3.4.2.2.3 Process for Estimating 2020 Dwelling Units and Employment

The process for estimating 2020 dwelling units and employment included a number of steps to arrive at a final number of dwelling units and employees per TAZ. Spreadsheets, provided by the City of Wilsonville, denoting parcels of vacant land by TAZ were matched to spreadsheets depicting land use and zoning by TAZ. After these spreadsheets were combined and sorted by TAZ, the new spreadsheet was compared to current zoning and Comprehensive Plan maps for obvious errors. Housing densities indicated on the Comprehensive Plan map were added to the spreadsheet. In addition, primary and secondary open spaces were identified for each parcel based on the Plan Map and an estimated constraint was placed on the parcel based on the amount of non-buildable or semi-buildable area. The 1996 West Side Master Plan was also consulted in determining possible future land uses.

Committed projects were identified by parcel and TAZ. Jobs and housing units were calculated for each and the committed acres were subtracted from the vacant acres. Subtracting committed parcels resulted in a total vacant land value by TAZ with the associated land use and zoning designation.

Dwelling units and employment were then calculated based on the current Comprehensive Plan designation and the current Development Code. To convert all acreage to buildable square feet for both dwelling units and employment centers, multifamily dwelling units were calculated separately from single-family dwellings, and retail jobs were calculated separately from non-retail jobs. The four categories were totaled by TAZ for entry into the model.

A number of assumptions were made to translate vacant acreage into estimated single-family and multifamily dwelling units and retail and non-retail employees.

For housing units, a median point was selected within the range of allowed densities. The median point allows for acreage that will be used for roads and other uses that prevent the entire acreage from being developed. The median units per density were converted to square feet per lot, and then divided into the total developable acres to arrive at the number of dwelling units (see **Table 3.e**). In cases where subdivisions were already platted, the number of vacant lots in the subdivision determined the number of dwelling units.

Calculating the number of employees, both retail and non-retail, required more assumptions than for the dwelling unit calculation. For each possible use within the Comprehensive Plan, assumptions were made regarding the likely building square footage for each acre of vacant land and the number of square feet required to support one employee per use.

Like the dwelling unit calculation, estimations were made to account for open space constraints.

Table 3.e
Conversion of Lot Size to Dwelling Units

Allowed density	Median units/acre	Lot Size in sq. ft./DU
0–1	1	43,560
1–3	2	21,780
3–5	4	10,890
5–7	6	7,260
7–12	10	4,356
12–20	17	2,562

City zoning allows for 20 percent of land zoned as industrial to be built into office space, with an even higher percentage allowed for high-tech office use. Because of the higher rents achieved through office space and current trends in Wilsonville, it was assumed that almost all industrial parcels would have 20 percent of floor space in office use. The percentage used to convert vacant land to building square footage includes parking and landscaping requirements as well as any other easements or limitations (besides environmental) on the property.

The conversion of acreage to building square footage was based on projects approved by the City as of May 2000 (**see Table 3.f**). The number of square feet required for each employee was based on research done by Metro (**see Table 3.g**). The Metro research included surveys of both urban and suburban use in the Portland metropolitan area as well as available national statistics.

Table 3.f
Building Size by Land Use

Land Use	Building Size as a Percentage of Developable Land (%)
Light Industrial with 20% Office	35
Office (with structured parking)	50
Warehouse distribution	40
General Retail	30
Retail with Office (mixed use)	50

Source: *City of Wilsonville Historical Development Patterns* 1997

Table 3.g
Building Square Footage per Employee by Land Use

Land Use	Square Footage for 1 Employee
Auto Dealer	650
Light Industrial (general)	700
Warehouse (storage)	20,000
Retail (general)	700
Office	350
Warehouse (distribution)	2,500
Education services	1,300
Auto Service	400

Source: *Metro* 1990

3.4.2.2.4 Other 2020 Assumptions

To properly account for civic infrastructure such as future parks, churches, and other forms of public ownership, final 2020 employment and dwelling unit numbers were reduced by ten percent. Land required for roads is included in the assumptions on building and lot size. However, other publicly owned land—such as future parks and open spaces that cannot be developed in more intensive ways—is not included in any assumption and is therefore taken out of the total. The ten percent reduction was based on existing parkland and open space in the City and input from City staff.

Former Metro Urban Reserve areas (which are now considered to be within Wilsonville's planning area) adjacent to Wilsonville were assumed to develop by 2020 and assumptions were made about the type of development based on the experience of City staff.

The ATPC also recommended some changes to future land use assumptions and those changes were incorporated into spreadsheets used in the transportation model.

3.4.3 Trip Generation

To determine trip generation, estimates are made of the trips produced (at the home end) and trips attracted (at the activity end), separately for each travel purpose and for all study area TAZs. The City of Wilsonville trip generation model links the land use database for the study area with trip generation equations. The trip generation model uses the basic land use information for each TAZ together with daily person

trip generation rates (*ITE Trip Generation Manual*) to calculate daily trips for these trip purposes:

- HBW – Home-Based Work
- HBO – Home-Based Other
- NHB – Non-Home Based Work
- Non-Home Based Non-Work
- School
- College

Daily trips for TAZs inside the study area were based on the 2000 household and employment data. Daily trips for the external TAZs were estimated from Metro's regional travel demand model. The trip generation equations were derived from Metro's regional trip generation model and ITE rates.

Table 3.h provides a summary of the 2000 daily trip generation for the City of Wilsonville study area. **Table 3.i** summarizes the forecast 2020 trip generation.

Table 3.h
2000 Daily Trip Generation Summary

	Home-Based Work		Home-Based Other		Home-Based School		Non-Home Based		Total Daily Trips	
Area	Prod.	Attr.	Prod.	Attr.	Prod.	Attr.	Prod.	Attr.	Prod.	Attr.
External	11,659	8,995	36,019	14,264	2,892	1,340	32,845	32,845	83,415	57,443
Internal	13,787	16,452	27,125	48,881	2,401	3,953	47,425	47,425	90,738	116,710
Total	25,447	25,447	63,144	63,144	5,293	5,293	80,269	80,269	174,153	174,153

Prod = Production
Attr = Attraction
Source: 2000 land use estimates and Wilsonville travel model trip generation rates.

Table 3.i
2020 Daily Trip Generation Summary for Alternative 1

	Home-Based Work		Home-Based Other		Home-Based School		Non-Home Based		Total Daily Trips	
Area	Prod.	Attr.	Prod.	Attr.	Prod.	Attr.	Prod.	Attr.	Prod.	Attr.
External	22,216	8,320	56,579	11,118	3,944	1,462	48,379	48,380	131,118	69,280
Internal	25,451	39,346	50,303	95,764	4,471	6,953	99,131	99,131	179,355	241,193
Total	25,447	25,447	63,144	63,144	5,293	5,293	80,269	80,269	310,473	310,473

Prod = Production
Attr = Attraction
Source: 2020 No-Action land use and Wilsonville travel model trip generation rates

3.5 TRIP DISTRIBUTION

The trip distribution step connects each trip production to a specific trip attraction located in the study area or at one of the external stations. Besides estimating the extent of activity in and between each traffic zone, the model accounts for the effects of congestion or accessibility on destination choice. This process is performed separately for daily trip productions and attractions by each trip purpose. The daily trips are then adjusted to the afternoon peak hour (4:30 p.m. to 5:30 p.m.) based on two factors: 1) the percentage of daily trips that occur in the p.m. peak hour, and 2) the proportion of p.m. peak-hour traffic traveling in the direction from production to attraction (P to A) versus attraction to production (A to P). In the Wilsonville model, for example, 10.8 percent of daily home-based work trips are estimated to occur in the p.m. peak hour and, of these, about 93 percent are expected to be traveling from the zone of attraction (usually the commercial or activity end) to the zone of production (usually the home).

The database (i.e. trip table) of Wilsonville trips was derived from the traversal assignment on the regional system. The traversal assignment was used to isolate the Wilsonville trip interactions (to, from and within) from those in the rest of the region. Fourteen regional zones encompass the Wilsonville study area. The trips from the fourteen regional zones were disaggregated to populate the more detailed ninety-zone system. The technique is best described through the use of an example.

Assume that regional zone "A" has 2,000 trips entering during the p.m. peak-hour period. The focus area zone system has four zones that nest within zone "A". The 2,000 trips need to be apportioned between the four zones. Estimated trip rates for entering flows are applied to the land use assumptions for each focus area zone. These values can be used to derive the proportion of trips that will enter into each zone. The proportionality for the first zone is applied to the regional zone trip total to determine the number of trips entering the detailed zone. This process is repeated for each focus area zone. A similar approach is used to apportion the trips leaving each detailed zone.

Once the apportionment from the regional to the local zone is completed, the local focused model is run. In this way, a local refined Wilsonville model is run. The local model contains the detailed road network, 90 traffic analysis zones, and specific land use designations and assumptions.

3.6 MODE CHOICE

Mode choice is that aspect of the demand analysis that determines the percentage or number of trips between zones that are made by automobile, walking, bicycle, and by transit. The selection of one mode over another is a complex process that depends on numerous factors. Mode choice models attempt to estimate the number of trips by each mode for each zonal pair and are an integral link in the travel demand analysis.

The Metro travel demand model is multi-modal. Trip makers are given the option of using seven different modes for their trips. They include walk, bicycle, drive alone, drive with passenger, passenger, transit, and park and ride. Key factors in the choice include the competitiveness of the modal times, the cost by mode, urban accessibility measures, and household socio-economic characteristics (e.g., the relationship between the number of household workers and autos in the household).

3.7 TRAFFIC ASSIGNMENT

The traffic assignment step is used to determine the expected traffic volumes. That is, the actual street and highway routes that will be used and the number of automobiles that can be expected on each road segment. The preceding steps have generated the number of trips by auto or transit that will be made between zones and the road network linking the zones. The trips are now assigned to the road network, via a trip table, and the results for each segment are summed up according to a decision criteria (algorithm) that determines which route a motorist or transit rider chooses.

Vehicle trip tables are representations of a fixed portion of the total daily demand. Applying time-of-day factors to the total daily demand produces multi-hour tables. Thus daily trips are converted to peak hour trips for each direction and trip purpose. The simulated peak hour trip tables produce the number of trips that desire to travel in the peak period. These trip demands are entered in to the EMME/2 computer modeling software.

The EMME/2 software is used to assign the peak hour trips to the auto simulation network. The auto assignment uses a capacity-restrained equilibrium-based path finding algorithm. The number of trips assigned to each link is compared with the capacity of the link to determine how much link travel times are reduced. Using the relationship between volume and travel time (or speed), new link travel times are recalculated. This iterative process continues until equilibrium is reached. In other words, as the desired route becomes congested, the travel time increases. At that point, other routes are sought as competitive alternatives. Ultimately, trips are distributed among multiple competing routes to reach a destination.

3.8 2000 ROADWAY NETWORK CALIBRATION

The primary measure of a model's accuracy is how closely model volumes match observed traffic counts. One of the simplest ways to portray this correspondence is to plot model volumes against counts in what is known as a scattergram. In a scattergram, counts are usually shown on the horizontal or "x" axis and model volumes on the vertical or "y" axis. Each point then represents the observed count and model volume of a particular street segment. In a well-calibrated model, the points in a scattergram should appear tightly clustered around a line running at a 45-degree angle from the origin. In statistical terms, how closely the points around the line fit is known as the coefficient of determination (R2), while the angle and position of the line may be described in terms of slope (rise over run) and intercept. A perfectly calibrated model would have an R2 of 1.0, but as a practical matter, a model may be considered well-calibrated if its R2 is 0.90 or better, with a slope close to 1 and intercept close to zero.

For the Wilsonville model, afternoon peak-hour counts were collected on 170 directional street segments in the spring of 2000, the model's calibration year. After a series of minor adjustments and refinements, the scattergram between counts and model volumes for these 170 segments showed an R2 of 0.97 with a slope of 1.02 and an intercept of 21. These results indicate that the model accounts for about 97 percent of the variation in observed counts with little bias.

3.9 POLICIES

The City of Wilsonville shall:

Policy 3.1 Consider revising the existing land use plan and implementing changes that respond to the capacity constraints of the future transportation system.

Policy 3.2 Design a transportation system that accounts for adjacent land uses, including accessibility and access management.

3.10 IMPLEMENTATION MEASURES

Implementation Measure 3.1.a Continue to review all land use/development proposals with regard to transportation impacts.

Implementation Measure 3.1.b Work toward a land use plan that balances the employment and housing markets in Wilsonville and addresses local needs for commercial goods and services.

Implementation Measure 3.2.a Require that a separate study of the LOS D intersectional analysis and queuing be undertaken after the adoption of the TSP.

CHAPTER 4
MOTOR VEHICLE FACILITIES

CHAPTER 4
MOTOR VEHICLE FACILITIES

4.1 GOALS

Goal 4.1: **To provide an interconnected motor vehicle system that will safely and efficiently provide for vehicle circulation and enhanced mobility.**

Goal 4.2: **To establish transportation system standards for each of the motor vehicle, transit, marine, rail, and non-motorized systems that reflect the proposed transportation network and adopted land uses, and emphasize the movement of people over vehicles.**

4.2 INTRODUCTION

4.2.1 Network Alternatives

This chapter summarizes the road improvements necessary to meet the City's level of service (LOS) standards and level of development projected for the next 20 years. Road improvements were determined based on capacity needs, neighborhood connections, and street standards. This chapter discusses two alternatives in detail. The alternatives are:

- Alternative 1 – the Modified No-Action Transportation System is consistent with the National Environmental Policy Act (NEPA) and the Transportation Planning Rule (TPR). This alternative assumes the developers will take some action, but no City funding will be used. See Section 4.3.1 for more detailed information.
- Alternative 2 – the Recommended Transportation System includes system wide and intersection improvements, Wilsonville Road interchange improvements, and identifies the Boeckman Road Interchange for continued, future consideration. See Section 4.3.3 for more detailed information.

It is important to note that the proposed improvements, along with all related maps, figures, and tables, are provided for conceptual purposes only. The improvement projects listed (e.g., S-1, C-6, W-3, etc.) are not necessarily the same in each alternative, but each one always refers to the same location. Specific design issues, including roadway alignment, and concerns regarding private property and the environment, will be addressed later during the design of each specific road improvement. At that point, project staff will hold public meetings with affected property owners and other interested parties to fully address such concerns.

The Modified No-Action and the Recommended Alternatives were analyzed with the 2002 model using a 2020 base network with additional and varying road improvements. The base model used for the 2020 base network is comprised of the current roadway network plus transportation improvements planned and funded to be completed by 2002. **Figure 4.6a** and **Figure 4.6b** illustrate the general proposed land use between 2000 and 2020 assumed for modeling the action alternative

scenarios. This figure represents the assumptions of how future land use is planned to occur based on current trends.

4.2.2 I-5/Wilsonville Freeway Access Study

The I-5/Wilsonville Freeway Access Study (FAS) was commissioned by the City of Wilsonville and the Oregon Department of Transportation, with Metro participating in the study process. The objective of the study was to develop basic freeway access scenarios and evaluate if acceptable transportation performance measures, level of service standards and safety concerns can be met within the 20-year planning horizon, given the future land uses envisioned by Metro and the City of Wilsonville for the Wilsonville planning area. The FAS is incorporated into the TSP by reference and is available from the City of Wilsonville Community Development Department.

The study concludes that there will be a future deficiency of freeway access capacity in Wilsonville based on year 2020 PM peak forecasts. Improvements were identified to address this deficiency. These include an improved local street system in Wilsonville, freeway access improvements and I-5 operational improvements. Improvements to the local roadway system alone are not adequate to mitigate the future 2020 interchange access needs without interchange improvements. However, local improvements are necessary with any interchange alternative.

The Freeway Access Study (Table 10, page 67) lists 7 critical system wide extension projects from highest priority to lowest priority based on potential benefits to the local street network. The Boeckman Road and Barber Street extensions along with the Wilsonville Road widening projects would significantly enhance local roadway circulation. The remaining roadway projects are necessary to meet future 2020 traffic demands. The necessary local improvement projects and their FAS cost estimates are:

1. Boeckman Road extension (west to Tooze Road) - $9,500,000
2. Barber Street extension (west to Grahams Ferry Road and connecting with Brown Road) - $6,400,000
3. Wilsonville Road widening (west to Brown Road) - $5,400,000
4. Canyon Creek Road North extension (south to Town Center Loop) - $5,700,000
5. Kinsman Road extension #1 (north to Boeckman Road) - $4,600,000
6. Kinsman Road extension #2 (south to Brown Road Extension) and #3 (north from Boeckman Road to Day Street) - $15,000,000
7. Brown Road extension (south to Boones Ferry Road) - $5,900,000

In evaluating two freeway access improvement alternatives (an enhanced Wilsonville Road diamond interchange and a new Boeckman Road interchange to I-5) it was found that improvements to the existing Wilsonville Road interchange would be necessary with either interchange alternative. The study finds that an enhanced Wilsonville Road diamond interchange meets future 2020 motor vehicle performance measures, given model projections. However, after 2020 the same model projects that the Boeckman

Road interchange, or other access improvements, along with I-5 mainline improvements, is necessary to meet motor vehicle performance measures and safety concerns. If traffic growth varies from the model projections before 2020, then this will trigger revisiting the construction of a Boeckman interchange prior to 2020.

The FAS analysis of future freeway access needs was conducted with a wide range of travel forecasts, assessing the sensitivity of the findings in the 2020 PM peak period with various travel demand assumptions. In each case, the findings noted above were found to be consistent in that of the required first step is Wilsonville Road interchange enhancements. It is clear that additional freeway access improvements (e.g., the Boeckman Interchange) will be required beyond 2020 and the scope of this TSP. For planning purposes, it is important to note that the Boeckman interchange or other freeway access alternative continue to be regarded as a required long-term improvement in future regional capacity studies, the RTP update, an I-5 South Corridor Study, a 99W/I-5 Connector Study and/or a Stafford/I-205 Study.

4.3 NETWORK ALTERNATIVES

4.3.1 2020 Alternative 1: Modified No-Action Transportation System

4.3.1.1 Alternative 1 Network Description

The traditional No-Build alternative is used to illustrate the impact of doing nothing beyond the current transportation system and any committed improvements. This is an alternative against which other alternatives are compared and is, itself, not necessarily a viable alternative. This TSP modifies the No-Build alternative by recognizing that a full build-out model representative of the City in 2020 per the Comprehensive Plan, Zoning Map and potential Urban Growth Boundary expansion areas cannot occur without a minimum of new roads, widening of existing roads, and spot mitigation of intersections.

By definition, then, the Modified No-Action alternative represents the current transportation system as augmented by developer needed, funded and/or exacted transportation projects. The Modified No-Action alternative assumes no City participation, beyond perhaps, System Development Charge (SDC) credits. Without specific proposals to examine, these possible credits cannot be quantified. Thus, solely for the purposes of the Modified No-Action alternative, all project costs are assumed to be borne by developers and only those projects or mitigations that can possibly be required or exacted are included in the alternative. Alternative 2 – the Recommended alternative assumes both City and developer participation.

If no new transportation projects are built, estimated growth in population and employment would adversely affect the existing transportation system. The Modified No-Action System shows where additional transportation needs are

created by that growth. For full build-out to occur, a certain number of access roads must be constructed.

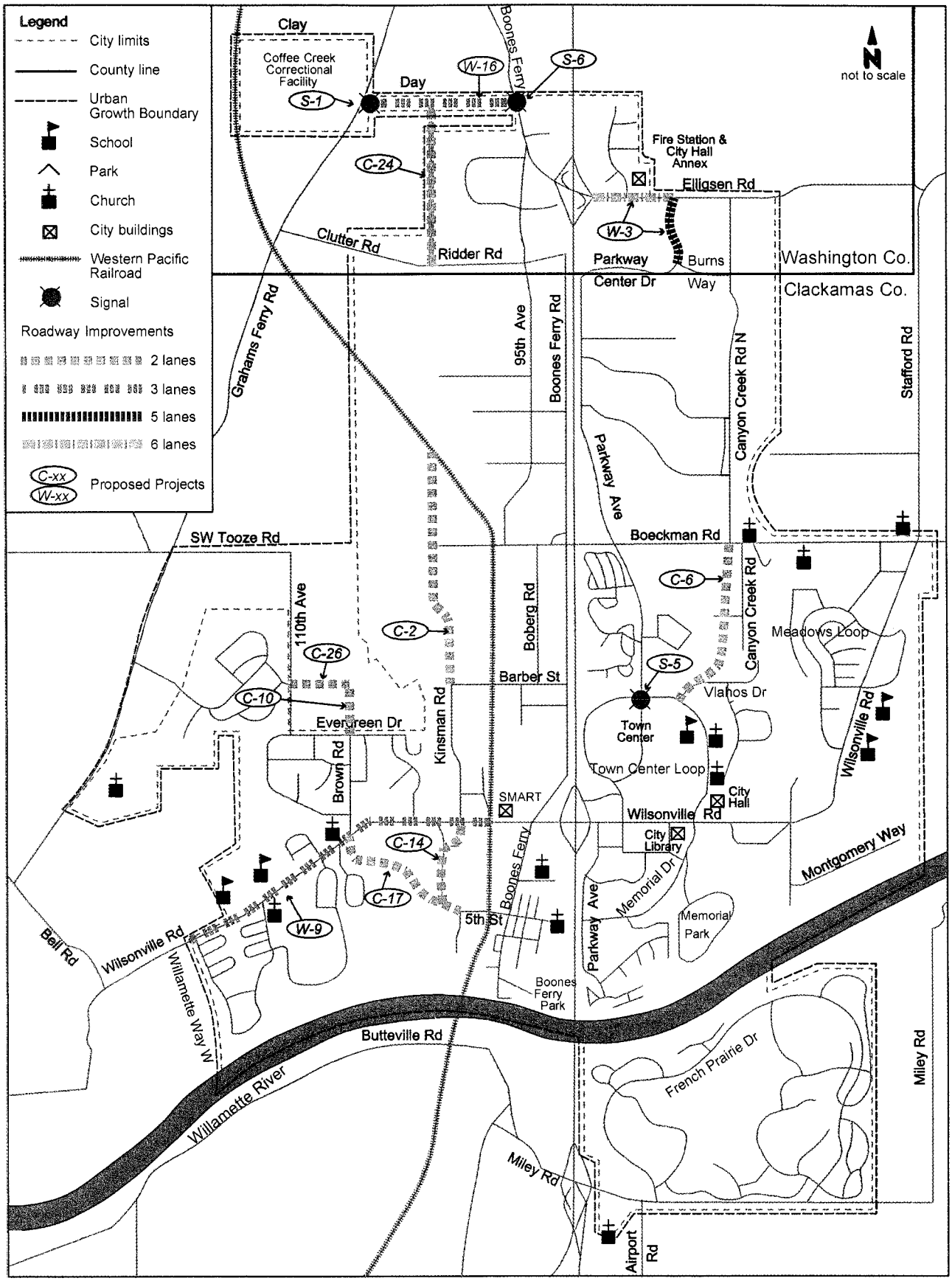
Future 2020 traffic was forecast using the transportation modeling process described in Chapter 3. The base model used for the 2020 base network is comprised of the current roadway network plus developer funded transportation improvements and intersection mitigations necessary for development access.

Table 4.a lists the necessary access improvements that were not yet constructed when this Transportation Systems Plan (TSP) was initiated. **Figure 4.1** illustrates these improvements. The arterial and collector classifications for this alternative, with the improvements listed in **Table 4.a**, are shown in **Figure 4.2**. (Functional classification definitions are found in **Table 4.I**.)

Table 4.a
2020 Alternative 1 List of Roadway Network Improvements and New Road Additions

Reference #	Improvement/New Road Addition Description
C-2	Construct two-lane extension of Kinsman Rd. from Barber St. to railroad tracks
C-6	Construct extension of Canyon Creek Rd. N from Boeckman Rd. to Vlahos Dr.
C-10	Construct two-lane extension of Brown Rd. north from Evergreen Dr. to the Barber St. alignment
C-14	Construct two-lane extension of Kinsman Rd. from Wilsonville Rd. to the south Brown Rd. extension
C-17	Construct two-lane extension of Brown Rd. south from Wilsonville Rd. to the future south Kinsman Rd. extension/5th St..
C-24	Construct two-lane extension of Kinsman Rd. north from Ridder Rd. to Day Rd.
C-26	Construct two-lane extension of Barber St. from 110th Ave. to the future north Brown Rd. extension
W-3	Widen Elligsen Rd. to six lanes from Parkway Avenue to Parkway Center Dr and widen Parkway Center Drive to five lanes from Elligsen Road to Burns Way.
W-9	Widen Wilsonville Rd. to three lanes from the railroad tracks to the west city limits
W-16	Widen Day Rd. to three lanes from Grahams Ferry Rd. to Boones Ferry Rd.

Note: For forecasting purposes, these are defined as developer funded projects, SDC credits may apply.

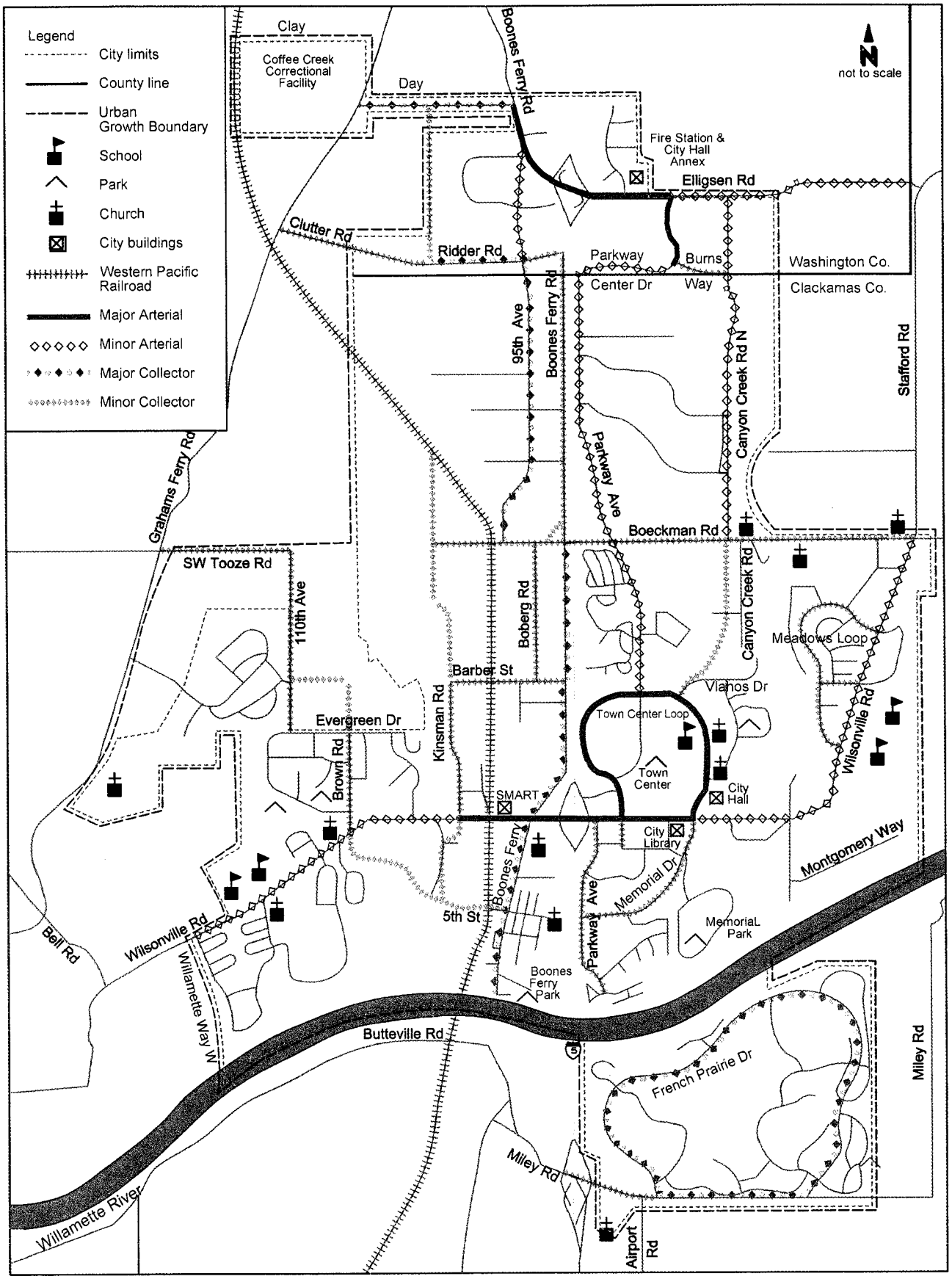


Notes:
1. All new 2-lane roads assumed to be 35 mph
2. The numbers shown on the map refer to the roadway improvement project reference number.
3. Projects S-1, S-6 and S-5 are Signal Improvement Projects.
4. Spot improvement projects are found on Figure 4.4 continued.

City of WILSONVILLE in OREGON

Transportation *Systems Plan*

Figure 4.1
2020 Alternative 1
Modified No-Action Roadway Network



City of WILSONVILLE In OREGON

Transportation *Systems Plan*

Figure 4.2
2020 Alternative 1
Arterial and Collector Classifications

4.3.1.2 *Alternative 1 Land Use Assumptions*

For Alternative 1, it was assumed that development of existing vacant parcels over the next 20 years would be based on the assumptions described in Chapter 3 in the Land Use Section 3.4.2, and **Figures 4.6a** and **b.** It should be noted that Alternative 1 includes:

- The prison at Day Road with high industrial development surrounding the prison area based on the *North Wilsonville Industrial Area Proposed Concept Plan* developed by City of Wilsonville staff and adopted for Urban Growth Boundary expansion by Metro.
- Full build-out of the urban village in the Dammasch area based on *Dammasch Area Transportation-Efficient Land Use Plan* prepared by David Evans and Associates in 1997.
- The Argyle Square proposal for the old Burns Brothers site located south of Elligsen Road and west of Parkway Avenue.
- The Frog Pond area adopted for Urban Growth Boundary expansion by Metro, north of Boeckman Road and west of Stafford Road.

4.3.1.3 *Traffic Volume Projections*

Traffic volumes for Alternative 1 are shown in **Figure 4.3**. They were based on the network shown in **Figure 4.1,** which includes additional development funded roads such as the Kinsman Road extension. **Figure 4.3** shows the 2020 p.m. peak-hour traffic volumes on various streets in Wilsonville. From 2000 to 2020, traffic is projected to increase on many streets, with the most significant increases occurring on Boones Ferry Road north of the Stafford interchange, Elligsen Road, Boeckman Road, and Wilsonville Road. In some cases, p.m. peak-hour traffic volumes more than double from 2000 to 2020.

4.3.1.4 *Spot Improvements*

The LOS standard for all intersections in the City is LOS D, with the exception of four signalized intersections on Wilsonville Road, which are allowed to operate at LOS E during the peak hours. These four Wilsonville Road intersections are at: Boones Ferry Road, I-5 southbound ramps, I-5 northbound ramps, and Town Center Loop West.

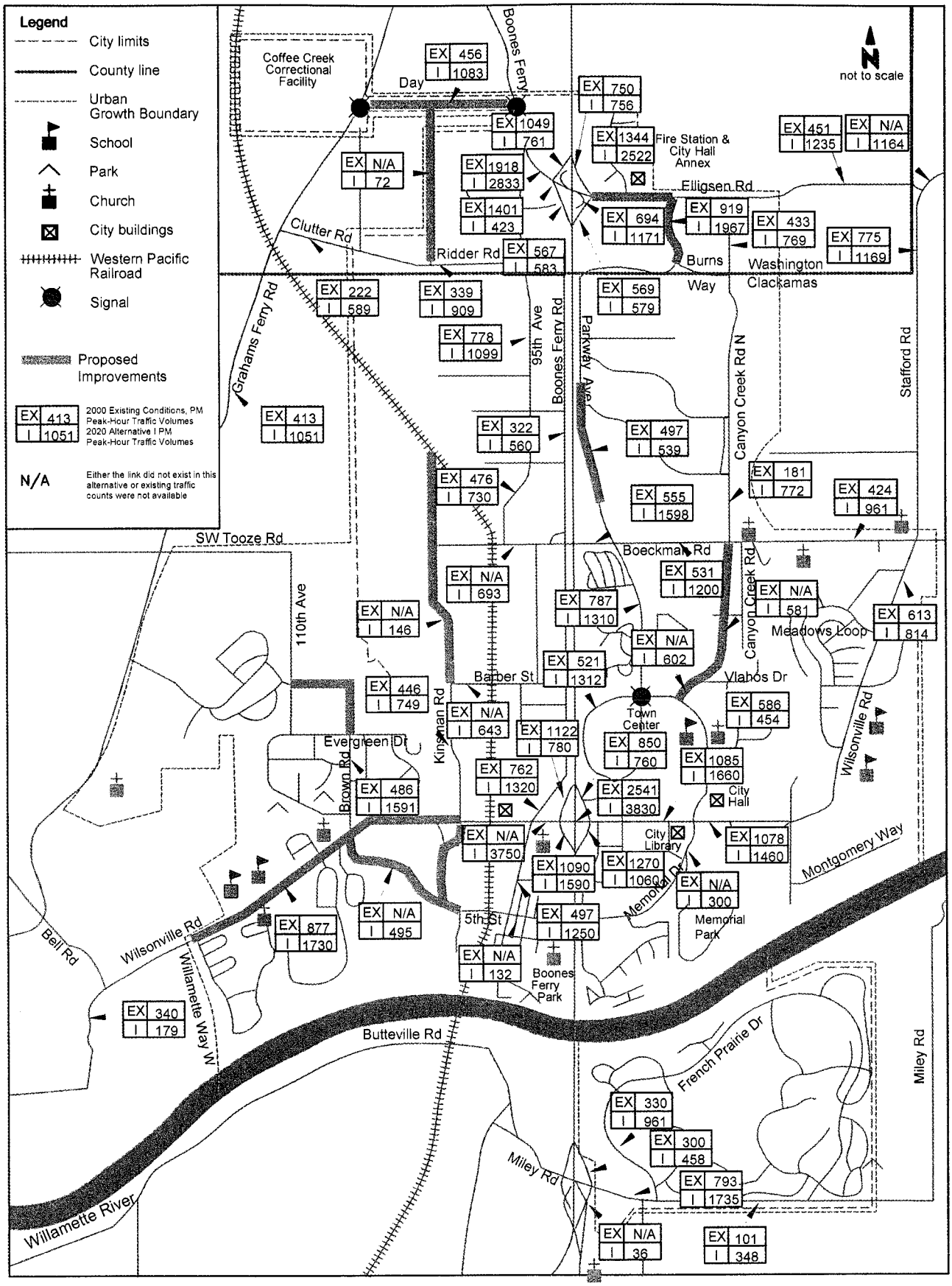
The intersections that do not meet the City's standards of LOS D can be improved by using several methods. Improvements can include land use changes, transportation demand management (TDM) techniques, increased transit service, and increased roadway capacity which could include re-channelization of existing intersections. Channelization refers to the number and type of lanes at each intersection. Channelization is most often shown as painted arrows on the pavement at an intersection.

Capacity improvements may involve building new streets or widening existing ones. Channelization improvements may involve the separation or regulation of

conflicting traffic movements into definite paths of travel by the use of traffic islands or pavement marking to facilitate the safe and orderly movements of both vehicles and pedestrians. One example of channelization is the addition of a left-turn storage lane where vehicles are able to wait without obstructing the through-lanes. As TDM, transit, and land use are incorporated into the transportation model and plan, fewer capacity improvements are required.

Each intersection was analyzed to determine what capacity improvements would be required to satisfy the City's standard. Closely spaced signalized intersections were analyzed as a network. **Table 4.b** describes the proposed capacity and spot improvements included in the 2020 Modified No-Action Alternative 1. It also lists the intersection improvements that will be included with the construction of a capacity and/or widening project. **Figure 4.4** illustrates both types of proposed intersection improvements.

Most of the spot improvements required to bring intersection operations up to City standard simply consisted of signalizing the intersection, or adding exclusive turn lanes. Some intersections, however, could *not* be improved to meet the City standard without major improvements. Specifically, the Wilsonville Road/I-5 interchange will operate at LOS F in 2020 unless major street widening, interchange improvements, or alternate routes are constructed (assuming capacity-only improvements). This is due to the major increase in traffic that is projected to occur at this location in the future and the geometric constraints present in this highly commercial area.



City of WILSONVILLE In OREGON

Transportation *Systems Plan*

Fig 4.3
P.M. Peak-Hour Traffic Volumes for 2020 Alternative 1 and 2000 Existing Conditions

Table 4.b
2020 Alternative 1 Intersection Spot Improvements

Reference Number	Intersection of...	Intersection and...	Intersection Type Before Improvement	Proposed Improvement
S-1[a]	Grahams Ferry Road	Day Road	Unsignalized	Install signal and add NB right-turn lane. Part of project W-16. (Completed)
S-2[b]	SW 65th Avenue	Stafford Road	Unsignalized	Install signal and add EB left-turn lane and SB right-turn lane.
S-4[a]	Town Center Loop E	Vlahos Drive	Unsignalized	Install signal. Part of project C-6.
S-5[b]	Parkway Avenue	Town Center Loop	Unsignalized	Install signal.
S-6[a]	Boones Ferry Road	Day Road	Unsignalized	Install signal and add NB through-pocket from 95th Ave. Part of project W-16. (Completed)
S-8[a]	Wilsonville Road	Brown Road	Signalized	Add SB left-turn lane, WB right-turn lane, and NB right-turn lane, and improve signal phasing. Part of project W-9.
S-9[b]	Grahams Ferry Road	SW Tooze Road	Unsignalized	Install signal and add SB left-turn lane.
S-10[b]	Elligsen Road	I-5 SB Ramp	Signalized	Convert SB left-through to a left-through-right.
S-11[b]	Elligsen Road/Boones Ferry Road	95th Avenue	Signalized	Add NB right-turn lane to create NB dual rights, add NB left-turn lane, add SB left-turn pocket, and add EB through pocket with receiving drop lane on WB leg. Improve signal phasing.
S-12[a]	110th Avenue	Barber Street Extension	Unsignalized	Install signal. Add SB right-turn lane, make SB right a Free Right. Part of project C-26.
S-13[a]	Boeckman Road	Canyon Creek Rd N	Unsignalized	Install signal. Part of project C-6.
S-15[a]	Barber Street	Kinsman Road Extension	Unsignalized	Install signal. Part of Project C-2.
S-16[a]	Kinsman Road	Wilsonville Road	Signalized	Add SB and NB exclusive right-turn lanes. Improve signal phasing. Part of capacity project C-14.
S-17[b]	Boeckman Road	95th Avenue	Unsignalized	Install signal.
S-18[a]	Kinsman Road Extension	Ridder Road	Unsignalized	Install signal at new intersection. Part of project C-24.
S-19[b]	Miley Road	I-5 SB Ramps	Unsignalized	Install signal.
S-20[b]	Miley Road	I-5 NB Ramp	Unsignalized	Install signal.

SB = Southbound; NB = northbound; WB = westbound; EB = eastbound

[a]This intersection improvement is a change that is part of the indicated widening or capacity project.

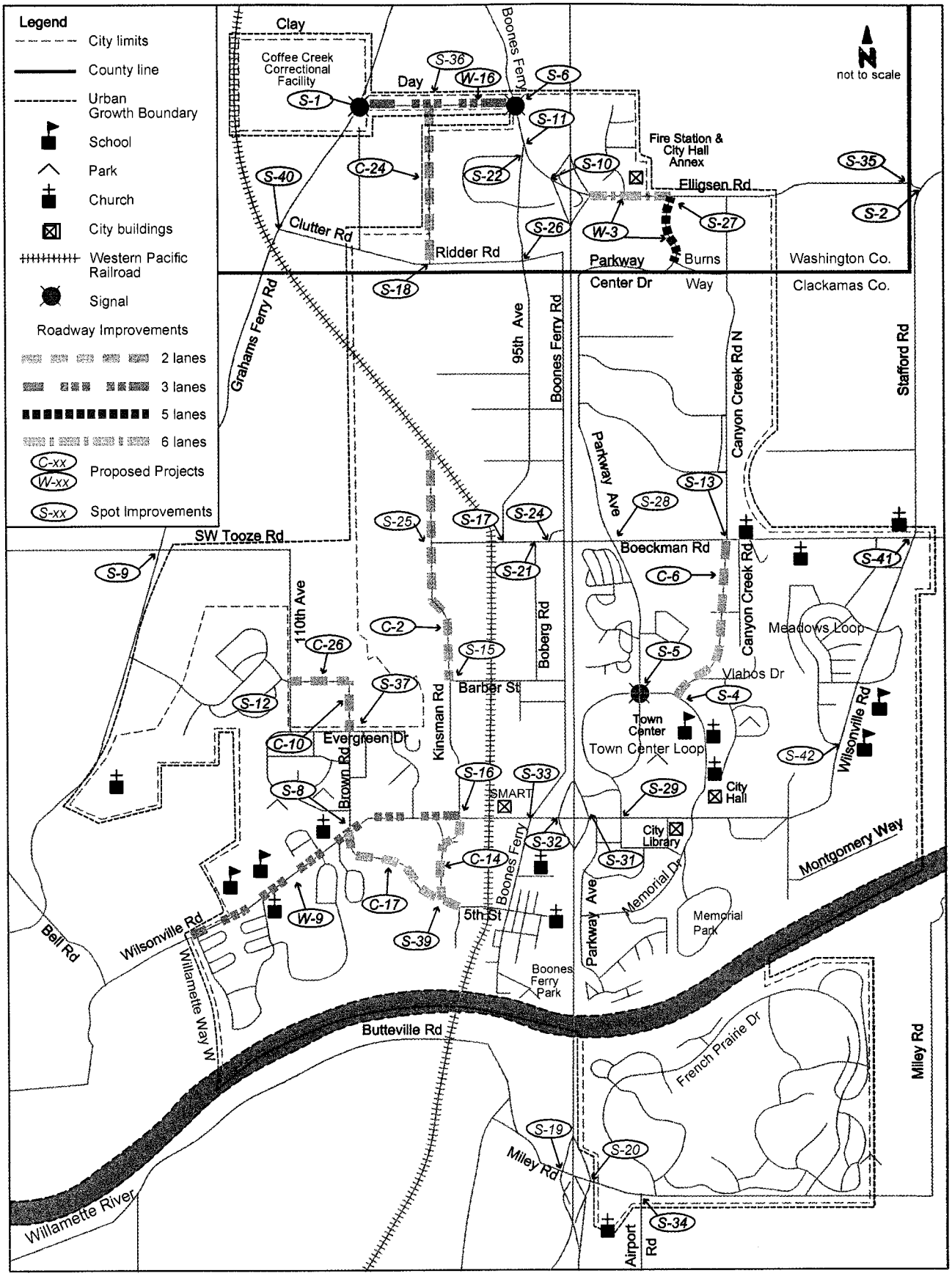
[b]This spot improvement is an additional change required at an intersection to meet the City's Level of Service standard.

Note: Projects above are given in Figure 4.4 and 4.4 continued, and described in Table 4.d and 4.p, 4.q or 4.r. They are included here for consistency.

Table 4.b (continued)
2020 Alternative 1 Intersection Spot Improvements

Reference Number	Intersection of...	Intersection and...	Intersection Type Before Improvement	Proposed Improvement
S-21 [b]	Boeckman Road	Boberg Avenue	Unsignalized	Install signal, add EB and NB right-turn pockets.
S-22 [b]	95th Avenue	Commerce Circle	Unsignalized	Install signal.
S-24 [b]	Boeckman Road	Boones Ferry Ramp	Unsignalized	Install signal.
S-25 [a]	Boeckman Road Extension	Kinsman Road Extension	Unsignalized	Add SB left-turn lane. Add WB left-turn lane. Part of Project C-2.
S-26 [b]	Ridder Road	95th Avenue	Signalized	Add SB right-turn lane.
S-27 [a]	Elligsen Road	Parkway Center Drive	Signalized	Add NB left-turn lane, EB through pocket, and receiving lane on east leg. Part of widening project W-3.
S-28 [b]	Parkway Avenue	Boeckman Road	Signalized	Add EB and SB right-turn lanes.
S-29 [b]	Wilsonville Road	Town Center Loop W	Signalized	Change left-through to left only.
S-31 [b]	Wilsonville Road	I-5 NB Ramps	Signalized	Add NB right-turn and left-turn lanes.
S-32 [b]	Wilsonville Road	I-5 SB Ramps	Signalized	Add WB left-turn lane, EB right-turn lane, and SB left-turn lane, and widen SB on-ramp to two lanes.
S-33 [b]	Wilsonville Road	Boones Ferry Road	Signalized	Add WB left-turn lane to create dual lefts with extra receiving lane on SB leg, and add NB right-turn lane. Improve signal phasing.
S-34 [b]	Airport Road	Miley Road	Unsignalized	Install signal and add EB right-turn lane.
S-35 [b]	SW 65th Avenue	Elligsen Road	Unsignalized	Install signal.
S-36	Kinsman Rd. ext.	Day Rd.	Unsignalized	Install signal.
S-37 [a]	Brown Road	Evergreen Drive	Unsignalized	Install signal and add NB left-turn pocket. Part of project C-10.
S-39 [a]	Brown Road Extension	Kinsman Road Extension/5th Street	Unsignalized	All-way-stop-control. Part of projects C-14 and C-17.
S-40 [b]	Grahams Ferry Road	Clutter Road	Unsignalized	Install signal.
S-41 [b]	Wilsonville Road	Boeckman Rd	Unsignalized	Install signal.
S-42	Wilsonville Road	Meadow Loop	Unsignalized	Install signal. Non-capacity improvement at High School, when warranted

SB = Southbound; NB = northbound; WB = westbound; EB = eastbound
[a] This intersection improvement is a change that is part of the indicated widening or capacity project.
[b] This spot improvement is an additional change required at an intersection to meet the City's Level of Service standard.
Note: Projects above are given in Figure 4.4 and 4.4 continued, and described in Table 4.d and 4.p, 4.q or 4.r. They are included here for consistency.



Note:
1. Spot improvement projects are given in Figure 4.4 continued, and described in Table 4.b, 4.d, and 4.p through 4.r.
2. All new 2-lane roads assumed to be 35 mph.
3. S-42 is a non-capacity spot improvement project, to be built when warranted.

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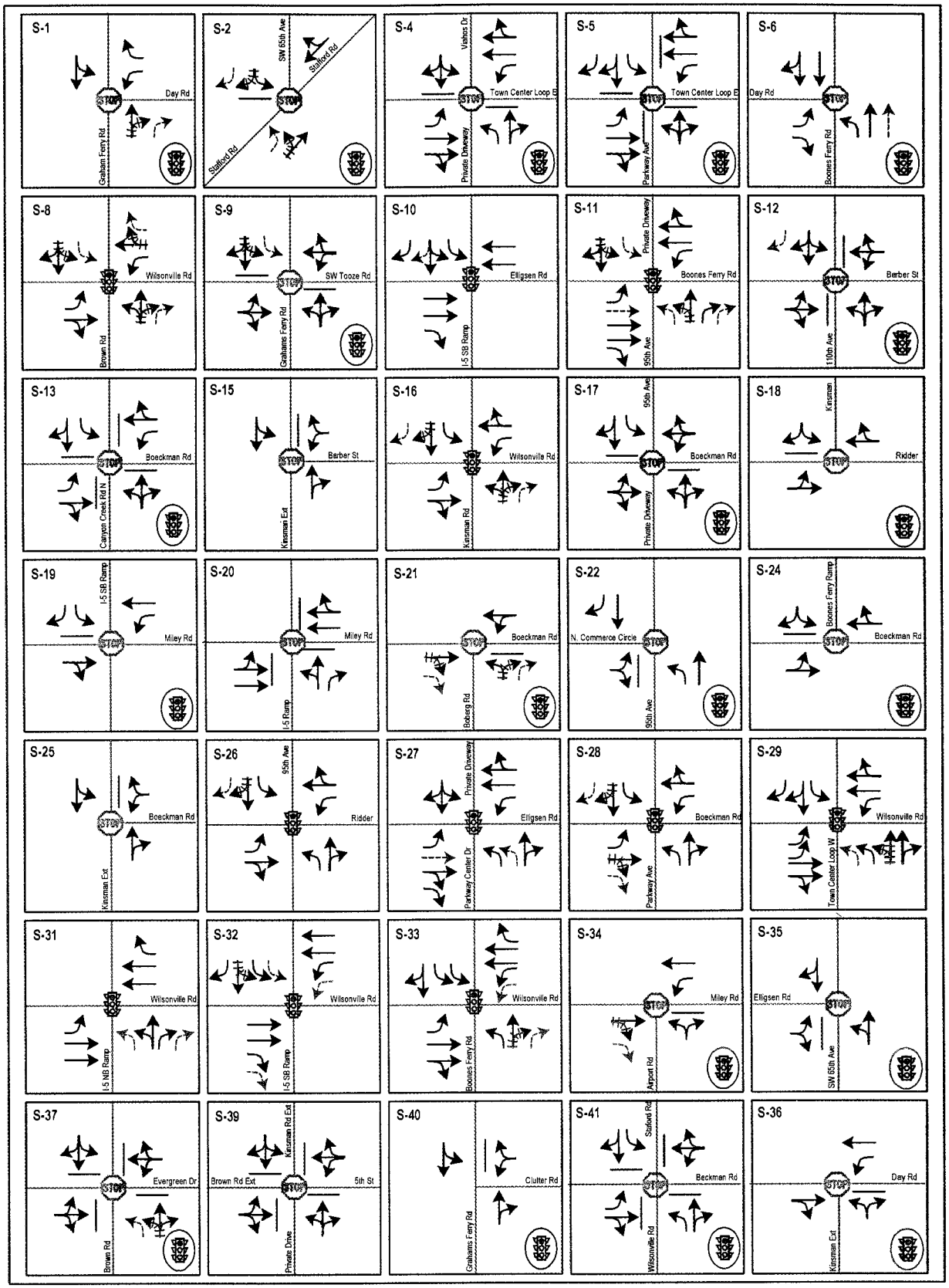
Figure 4.4
2020 Alternative 1
Modified No Action Roadway Network With Spot Improvements



Note:
1. Modeled spot mitigation given for S-22 is questionable due to proximity of signalized intersection S-11.
2. Spot Improvement 'S-42' is a non-capacity improvement and is not shown.
3. Red (dashed) arrows indicate new lane/movement. Crossed out arrows indicate deletion of exisitng movement. Black arrows indicate exisitng, or in case of new intersection, standard movement.

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Figure 4.4 (continued)
2020 Alternative 1
Modified No-Action Roadway Network With Spot Improvements

4.3.1.5 *Intersection Delay and Level of Service*

A LOS analysis was conducted to determine the future operations of the Alternative 1 network. The network includes the 2020 base network, committed street improvements, and development-funded access roads and intersection mitigations that are assumed to be in place by 2020. Steps were taken to ensure that each study intersection was given the proper traffic control treatment, i.e., whether or not it will be signalized in 2020. It was assumed that currently signalized intersections would remain signalized. Turning movement volumes at new intersections and currently unsignalized intersections were examined to determine whether signal warrants (criteria) will be met as outlined in the *Manual on Uniform Traffic Control Devices* (MUTCD). If volumes warrant a signal, it was assumed that the intersection would be signalized. Otherwise, it was assumed that the intersection would remain unsignalized.

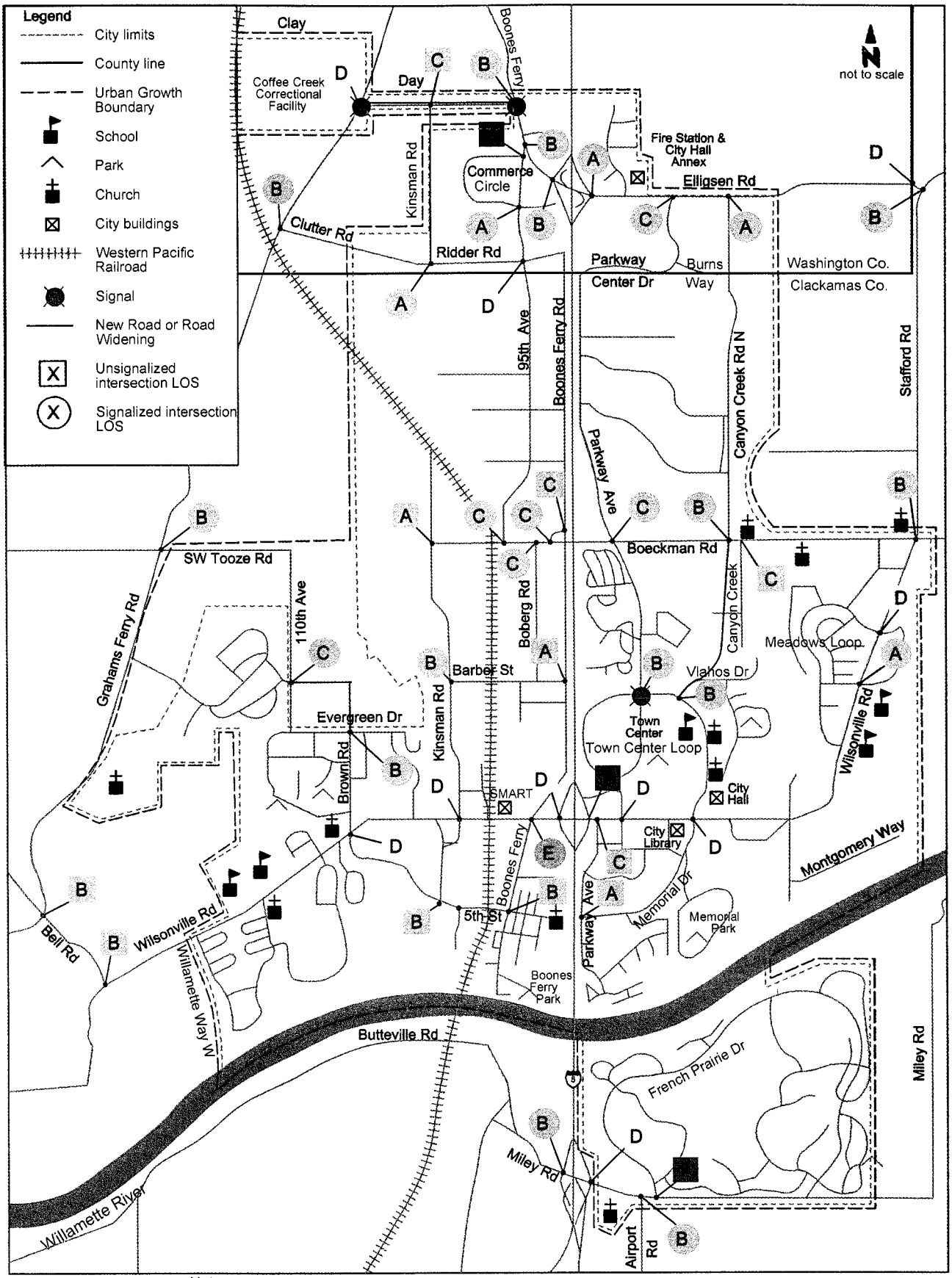
Table 4.c presents an overall summary of the LOS for the 52 intersections analyzed. Three of the 50 intersections analyzed are projected to still be below City standard with all the improvements in place. While the increase in the number of intersections approaching substandard conditions is significant, the increase in substandard intersections, as compared to existing conditions, has remained relatively small.

Table 4.c
2020 Modified No-Action Alternative 1
Number of Intersections at Each Level of Service

LOS	Network			
	2000 Existing Conditions		2020 Alternative 1 with Improvements	
	Signalized	Unsignalized	Signalized	Unsignalized
A	3	2	5	2
B	3	7	12	7
C	6	6	6	4
D	2	0	8	2
E	1	0	1[a]	0
F	0	0	2	1
Total	**15**	**15**	**34**	**16**
Below Standard	1	0	2	1

[a]This intersection is on Wilsonville Road within the area allowed to operate at LOS E and still meet the City LOS standard.

Figure 4.5 shows the LOS that Wilsonville drivers could experience in 2020 at select intersections based on the Alternative 1 network with improvements. **Table 4.d** provides a detailed summary of the LOS analysis by intersection for the 52 intersections analyzed in the 2020 Alternative 1. It also includes the 2000 existing conditions LOS for 30 of the study intersections.



Notes:
1. Includes developer constructed streets and spot improvements that are needed for 2020 operations.
2. The intersection of Commerce Circle North and 95th Avenue cannot be mitigated with a signal as shown in alternative 1. (Alternative 2 identifies the intersection, S-22, as an area of special concern.)

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Figure 4.5
2020 Alternative 1
Network Level of Service with Improvements

Table 4.d
2020 Alternative 1 P.M. Peak-Hour Intersection Level of Service Summary with Improvements

Intersection		Existing Conditions			2020 Alternative 1		
of...	and...	Type[1]	LOS[2]	Delay[3] (sec/veh)	Type[1]	LOS[2]	Delay[3] (sec/veh)
Barber Street Ext.	110th Avenue	n/a	n/a[4]	n/a	Signal	C	26.4
Barber Street	Kinsman Road Ext.	n/a	n/a	n/a	AWSC	B	14.6
Boeckman Road	Canyon Creek Road S	n/a	n/a	n/a	TWSC	C	18.2
Boeckman Road	Canyon Creek Road N	TWSC	C	19.1	Signal	B	13.8
Boeckman Road	Parkway Avenue	Signal	B	19.3	Signal	C	34.0
Boeckman Road	Boberg Road	n/a	n/a	n/a	Signal	C	25.1
Boeckman Road	95th Avenue	TWSC	C	18.2	Signal	C	26.8
Boeckman Road	Kinsman Road Ext.	n/a	n/a	n/a	TWSC	A	9.4
Boones Ferry Road	5th Street	n/a	n/a	n/a	TWSC	B	14.6
Boones Ferry Road	Barber Street	TWSC	A	8.6	TWSC	B	10.5
Brown Road	Evergreen Drive	n/a	n/a	n/a	AWSC	C	24.1
Brown Road Ext.	Kinsman Road Ext./5th St	n/a	n/a	n/a	TWSC	B	11.8
Day Road	Boones Ferry Road	n/a	n/a	n/a	Signal	B	14.8
Day Road	Kinsman Road Ext.	n/a	n/a	n/a	TWSC	C	22.4
Day Road	Grahams Ferry Road	TWSC	C	16.1	Signal	D	37.4
Elligsen Road	SW 65th Avenue	TWSC	B	13.5	Signal	D	44.5
Elligsen Road	Canyon Creek Road N	Signal	A	7.7	Signal	A	9.5
Elligsen Road	Parkway Center Drive	Signal	D	54.6	Signal	C	33.0
Elligsen Road	I-5 NB Ramp	Signal	A	4.1	Signal	A	9.2
Elligsen Road	I-5 SB Ramp	Signal	A	9.1	Signal	B	10.4
Elligsen Rd/Boones Ferry Rd	95th Avenue	Signal	C	20.1	Signal	B	19.8
Grahams Ferry Road	Clutter Road	n/a	n/a	n/a	TWSC	B	15.3
Grahams Ferry Road	SW Tooze Road	TWSC	B	11.2	Signal	B	19.8
Grahams Ferry Road	Bell Road	n/a	n/a	n/a	AWSC	B	11.0
Kinsman Road Ext.	Ridder Road	n/a	n/a	n/a	Signal	A	7.2

[1] AWSC = All-way stop controlled intersection, TWSC = Two-way stop controlled intersection, Signal = Signalized intersection

[2] LOS is level of service; a concept based on the 1997 Highway Capacity Manual for unsignalized and signalized intersections.

[3] Control delay, measured in seconds per vehicle, is a measure of all the delay contributable to traffic control measures, such as traffic signals or stop signs. At signalized intersections, the delay reported is the average of all the control delay experienced for all the movements. At unsignalized intersections, the reported delay is for only one movement, the movement experiencing the worst control delay, which is typically one of the stop-controlled side street approaches. The control delay reported at unsignalized intersections is not a valid indication of the operations at the entire intersection.

[4] n/a = not applicable. Existing volumes were not available. Future volumes were extrapolated based on available data.

[5] ECL = Exceeds Calculable Limits.

Table 4.d (continued)
2020 Alternative 1 P.M. Peak-Hour Intersection Level of Service Summary with Improvements

Intersection		Existing Conditions			2020 Alternative 1		
of...	and...	Type[1]	LOS[2]	Delay[3] (sec/veh)	Type[1]	LOS 2	Delay[3] (sec/veh)
Memorial Drive	Parkway Avenue	n/a	n/a	n/a	TWSC	A	8.9
Miley Road	I-5 SB Ramps	n/a	n/a	n/a	Signal	B	14.4
Miley Road	I-5 NB Ramps	n/a	n/a	n/a	TWSC	D	33.2
Miley Road	Airport Road	TWSC	B	11.5	Signal	B	15.9
Miley Road	French Prairie Drive W	TWSC	B	10.3	TWSC	F	126.2
Stafford Road	SW 65th Avenue	TWSC	E	37.1	Signal	B	18.8
Town Center Loop W	Parkway Avenue	AWSC	B	11.5	Signal	B	15.3
Town Center Loop E	Vlahos Drive	TWSC	B	11.5	Signal	B	12.7
Wilsonville Road	Bell Road	n/a	n/a	n/a	TWSC	B	14.8
Wilsonville Road	Brown Road	Signal	D	46.0	Signal	D	44.0
Wilsonville Road	Kinsman Road	Signal	B	11.5	Signal	D	47.6
Wilsonville Road	Boones Ferry Road	Signal	C	29.7	Signal	E	67.5
'ilsonville Road	I-5 SB Ramp	Signal	C	32.3	Signal	D	43.5
Wilsonville Road	I-5 NB Ramp	Signal	C	21.3	Signal	F	113.2
Wilsonville Road	Parkway Avenue	TWSC	C	16.0	TWSC	C	17.9
Wilsonville Road	Town Center Loop W	Signal	C	26.5	Signal	D	47.9
Wilsonville Road	Rebekah Street	Signal	C	23.4	Signal	C	34.5
Wilsonville Road	Town Center Loop E	Signal	B	19.5	Signal	B	35.5
Wilsonville Road	Meadows Parkway	n/a	n/a	n/a	Signal	A	9.4
Wilsonville Road	Meadows Loop N	TWSC	A	8.1	TWSC	D	31.5
Wilsonville Road	Boeckman Road	AWSC	C	15.6	Signal	B	18.0
95th Avenue	Ridder Road	n/a	n/a	n/a	Signal	D	36.6
95th Avenue	N Commerce Circle	n/a	n/a	n/a	Signal	F	ECL5
95th Avenue	S Commerce Circle	n/a	n/a	n/a	Signal	A	8.8

[1]AWSC = All-way stop controlled intersection, TWSC = Two-way stop controlled intersection, Signal = Signalized intersection
[2]LOS is level of service; a concept based on the 1997 Highway Capacity Manual for unsignalized and signalized intersections.
[3]Control delay, measured in seconds per vehicle, is a measure of all the delay contributable to traffic control measures, such as traffic signals or stop signs. At signalized intersections, the delay reported is the average of all the control delay experienced for all the movements. At unsignalized intersections, the reported delay is for only one movement, the movement experiencing the worst control delay, which is typically one of the stop-controlled side street approaches. The control delay reported at unsignalized intersections is not a valid indication of the operations at the entire intersection.
[4]n/a = not applicable. Existing volumes were not available. Future volumes were extrapolated based on available data.
[5]ECL = Exceeds Calculable Limits.

4.3.1.6 Estimated Cost for 2020 Alternative 1

Table 4.e provides planning-level cost estimates for these capacity related and spot improvements mentioned previously. The total planning-level cost for Alternative 1 is projected to be $41.9 million.

Table 4.e
2020 Alternative 1 Cost Estimates

Project No.	Description	Estimated Cost (in Millions)
C-2	Kinsman Road extension from Barber Street to railroad tracks	$6.8
C-6	Canyon Creek Road N extension from Boeckman Road to Vlahos Drive	$3.8
C-10	Brown Road extension to Barber Street extension	$1.1
C-14	Kinsman Road extension to 5th Street	$3.1
C-17	5th Street extension to Wilsonville Road	$4.5
C-24	Kinsman Road extension from Ridder Road to Day Road	$4.6
C-26	Barber Street extension to Brown Road extension	$1.4
S-1	Intersection of Grahams Ferry Road and Day Road	Part of W-16
S-2	Intersection of SW 65th Avenue and Stafford Road	$0.1
S-4	Intersection of Vlahos Drive and Town Center Loop E	Part of C-6
S-5	Intersection of Town Center Loop and Parkway Avenue	$0.3
S-6	Intersection of Boones Ferry Road and Day Road	Part of W-16
S-8	Intersection of Brown Road and Wilsonville Road	Part of W-9
S-9	Intersection of Grahams Ferry Road and SW Tooze Road	$0.4
S-10	Intersection of Elligsen Road and I-5 Southbound Ramp	$0.1
S-11	Intersection of 95th Avenue, Boones Ferry Road, and Elligsen Rd	$1.1
S-12	Intersection of 110th Avenue and Barber Street extension	Part of C-26
S-13	Intersection of Boeckman Road and Canyon Creek Road N	Part of C-6
S-15	Intersection of Kinsman Road and Barber Street	Part of C-2
S-16	Intersection of Kinsman Road and Wilsonville Road	Part of C-14
S-17	Intersection of 95th Avenue and Boeckman Road	$0.4
S-18	Intersection of Kinsman Road extension and Ridder Road	Part of C-24
S-19	Intersection of I-5 Southbound Ramp and Miley Road	$0.3

Note: For forecasting purposes, all these are defined as developer funded projects, SDC credits may apply.

Table 4.e (continued)
2020 Alternative 1 Cost Estimates

Project No.	Description	Estimated Cost (in Millions)
S-20	Intersection of I-5 Northbound Ramp and Miley Road	$0.3
S-21	Intersection of Boberg Avenue and Boeckman Road	$0.4
S-22	Intersection of 95th Avenue and Commerce Circle N	$0.3
S-24	Intersection of Boones Ferry Road Ramp and Boeckman Road	$0.3
S-25	Intersection of Kinsman Road extension and Boeckman Road	Part of C-2
S-26	Intersection of 95th Avenue and Ridder Road	$0.2
S-27	Intersection of Parkway Center Drive and Elligsen Road	Part of W-3
S-28	Intersection of Parkway Avenue and Boeckman Road	$1.3
S-29	Intersection of Town Center Loop W and Wilsonville Road	$0.8
S-31	Intersection of I-5 Northbound Ramp and Wilsonville Road	$0.4
S-32	Intersection of I-5 Southbound Ramp and Wilsonville Road	$0.9
S-33	Intersection of Boones Ferry Road and Wilsonville Road	$0.7
S-34	Intersection of Airport Road and Miley Road	$0.3
S-35	Intersection of SW 65th Avenue and Elligsen Road	$0.3
S-36	Intersection of Kinsman Road extension and Day Road	Part of C-24
S-37	Intersection of Brown Road and Evergreen Drive	Part of C-10
S-39	Intersection of Kinsman Road extension and Brown Road extension/5th Street	Part of C-17
S-40	Intersection of Grahams Ferry Road and Clutter Road	$0.3
S-41	Intersection of Wilsonville Road and Boeckman Road	$0.3
S-42	Intersection of Wilsonville Road and Meadow Loop (High School)	Tbd
W-3	Widen Elligsen Road from Parkway Ave. to Parkway Center Drive and widen Parkway Center Drive to five lanes from Elligsen Road to Burns Way.	$1.7
W-9	Widen Wilsonville Road from Kinsman Road to Oak Leaf Loop (Phase 3)	$5.4
W-16	Widen Day Road from Grahams Ferry Road to Boones Ferry Road	Complete
	TOTAL	**$41.9**

Tbd = to be determined

Note: For forecasting purposes, all these are defined as developer funded projects, SDC credits may apply.

4.3.2 Development of Action Alternatives

Alternative 1 has many deficiencies and does not address all of the issues concerning Wilsonville's traffic flow. Traffic volumes at the I-5 interchanges are predicted to be high, creating more delay and environmental impacts such as reduced air quality. Access to Dammasch would remain limited. Transit, bicycles, and pedestrians would all be affected by increased congestion and limited access opportunities. The LOS for all modes would decline. Safety would decrease due to greater congestion and longer trip lengths, which could lead to more accidents. Overall, Alternative 1 has the lowest capital facilities cost, but has a high social cost in terms of delay, safety, and aesthetics.

Alternative 1 fails to implement the 2000 Metro Regional Transportation Plan (RTP) as well as the planning efforts of Wilsonville and other surrounding cities and counties. Alternative 1 is incompatible with the 1991 TMP, the 1993 *Bicycle and Pedestrian Plan*, the 1994 *Parks and Recreation Plan* and the *Dammasch Area Transportation-Efficient Land Use Plan* (DATELUP) prepared by David Evans and Associates in 1997.

Additionally, many of the improvements for Alternative 1 summarized in **Tables 4.a and 4.b,** and shown in **Figure 4.4** may be avoided if other capacity improvements are considered that would actually shift traffic to less congested areas. As a general rule, spot improvements should be coordinated with regional or corridor-type improvements that can solve more problems than just the spot improvements alone. These capacity solutions include new roads, connecting existing streets, and constructing bypasses.

A number of alternatives were developed in the 2000 TSP transportation model (refer to Chapter 3 for a discussion of the 1998 and 2002 TSP transportation model scenarios) in an effort to provide remedies to Alternative 1's deficiencies and to incorporate additional capacity solutions. In addition to incorporating new capacity links and improvements, projected land uses at some locations were changed to test the effect of different land use designations on traffic patterns. Modifying land uses in the model did not result in any significant change in traffic patterns. **Table 4.f** provides a full description of the land use and road network assumed for each 2000 model action alternative. Action alternatives were developed in the 2002 model to test the validity of the 2000 model assumptions and alternatives. In general, the assumptions of and the alternatives generated in the 2000 model were validated. Thus, the 2002 model did not duplicate all of the scenarios contained in **Table 4.f**.

An assumption of the 2000 model was that the recently (1998) rebuilt Wilsonville Road interchange had all of the possible capacity improvements completed, short of razing the Town Center and west-side business district to accommodate a new interchange. A key finding of the FAS, utilizing the 2002 model, is that the existing Wilsonville road interchange can be further enhanced based on improved ramp and roadway designs which include wider ramps, more turn lanes and widening Wilsonville Road to eight lanes under the I-5 over crossing. The FAS concludes that:

- Though a Boeckman interchange can provide adequate additional freeway capacity, improvements must also be made to the Wilsonville Road interchange.
- The Dammasch area build-out can be accommodated in the TSP planning horizon with the Wilsonville Road interchange enhancements.
- A Boeckman interchange, or other access improvements, will be needed after 2020, or sooner if modeling projections prove unreliable.

Based on this new information, an alternative incorporating the FAS findings into the TSP was developed. This alternative includes system wide improvements and an enhanced Wilsonville Road interchange. The necessity for a future Boeckman Road interchange or other access improvement is acknowledged. This is the recommended transportation system.

Table 4.f
Land Use and Network Assumptions by Scenario

	Scenario Name	Land Use Description	Network Description
1	2000 Base Case with Existing Roadways	Existing conditions	Existing conditions
3[1]	2020 Modified No-Action (Alternative 1)	This land use assumption has been projected by the City to include the Prison at the Day Road Site. Full industrial development surrounding prison area. Build-out of Dammasch.	Existing conditions plus committed road improvements, widening Day Road, widening portions of Elligsen Road and Parkway Avenue. Additional 2-lane development-funded access roads will also be constructed, such as portions of Kinsman Road extension, Canyon Creek Road extension, Freeman Drive extension, Brown Road extension, and Barber Street extension.
3A	2008 Modified No-Action	Same as Scenario 3	Existing Conditions plus committed road improvements included in short-range plan and developer-funded access roads that will be constructed. This Scenario includes the Boeckman Road extension to 110th Avenue.
3B	2020 No-Action	Same as Scenario 3	Same as Scenario 3 including the full extension of Kinsman Road, Boeckman Road, and widening Wilsonville Road from the west city limits to the railroad tracks. A portion of the Barber Street extension will not be constructed in this Scenario.
4	2020 Low Land Use with Boeckman	Same as Scenario 3, except no industrial development surrounding prison area.	Same as Scenario 3 plus some additional roadway improvements, such as widening portions of Boeckman Road, Boones Ferry Road Ramp, Miley Road, 5th Street, and Brown Road, including the Barber Street extension, the Boeckman Road extension, and the Boeckman Road interchange.
4A	2020 with Boeckman Interchange	Same as Scenario 3, except with moderate (approximately half) industrial development surrounding prison area.	Same as Scenario 4
4B	2020 with Boeckman Interchange and No Barber Street Extension	Same as Scenario 4A	Same as Scenario 4 except no Barber Street extension.
4C	2020 with Boeckman Interchange and No Boeckman Road Extension	Same as Scenario 4A	Same as Scenario 4 except no Boeckman Road extension from Kinsman Road to 110th Avenue.
5	2020 with Boeckman and I-5 Improvements	Same as Scenario 3	Same as Scenario 4 plus I-5 widening north of the Willamette River.
6	2020 with Boeckman Interchange and New I-5 Crossings	Same as Scenario 3	Same as Scenario 4 plus an extension of Barber Street crossing I-5 and an extension of 5th Street crossing I-5.

[1]This is the alternative documented in this Transportation Systems Plan.

Table 4.f (continued)
Land Use and Network Assumptions by Scenario

	Scenario Name	Land Use Description	Network Description
6A	2020 with Boeckman Interchange and 5th Street Under-crossing	Same as Scenario 3	Same as Scenario 6 except Barber Street will not cross I-5
6B	2020 with Boeckman Interchange, No I-5 Crossings, and No Brown Road/5th Street Extension	Same as Scenario 3	Same as Scenario 6 except no roadway improvement on 5th Avenue and Brown Road, plus no Barber Street extension.
6C	2020 with Boeckman Interchange, and Brown Rd/5th St. Extension and crossing of I-5	Same as Scenario 3	Same as Scenario 6 plus Town Center Loop extension and Kinsman Road full extension. Also, Barber Street will not cross over I-5 and connect to Brown Road, and Boones Ferry Ramp Road will not be moved or widened.
7	2020 without Boeckman	Same as Scenario 3	Same as Scenario 4 without the Boeckman Road Interchange.
7A	2020 without Boeckman and No Barber Street Extension	Same as Scenario 3	Same as Scenario 7 without the Barber Street extension.
7B	2020 without Boeckman and No Boeckman Extension	Same as Scenario 3	Same as Scenario 7 except Boeckman Road will not be extended.
7C	2020 without Boeckman Interchange and No Dammasch build-out	Same as Scenario 3, with no Dammasch build-out; it is proposed to be farmland.	Same as Scenario 7 without the full extension of either Barber Street or Kinsman Road.
8	2020 without Boeckman and with New I-5 Crossings	Same as Scenario 3, except changing some commercial property on currently vacant land to residential property, especially south of Boeckman Road.	Same as Scenario 7 plus extending Barber Street to cross I-5 and extending 5th Street to cross I-5.
8A	2020 without Boeckman and with New 5th Street I-5 crossing	Same as Scenario 8	Same as Scenario 8 except Barber Street will not cross I-5.
8B	2020 without Boeckman, No New I-5 Crossings, and No Brown Street/5th Street Extension	Same as Scenario 8	Same as Scenario 8 except no roadway improvement on 5th Street and Brown Road will not extend south to 5th Street.

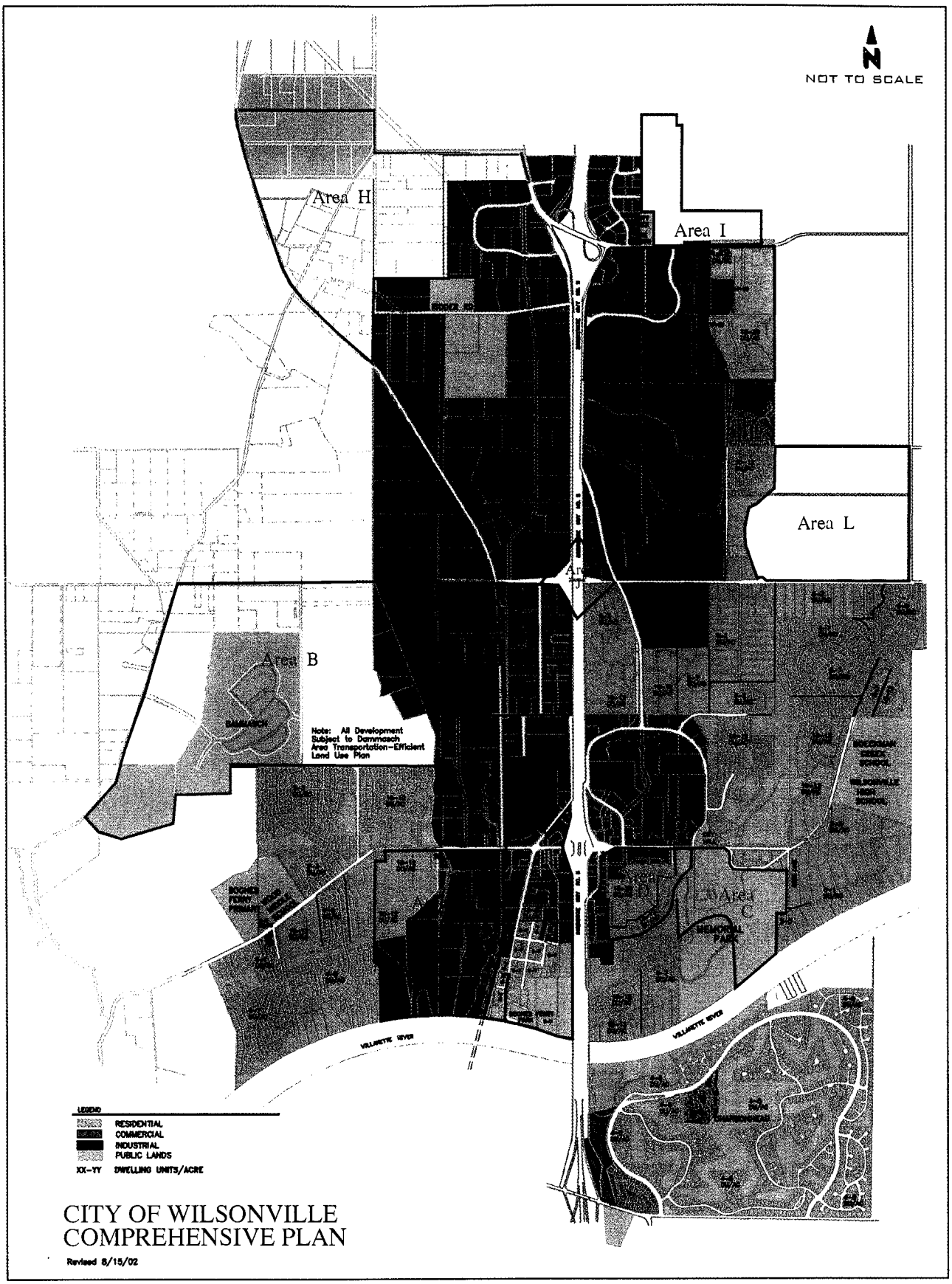

Figure 4.6a
City of Wilsonville Comprehensive Plan Map

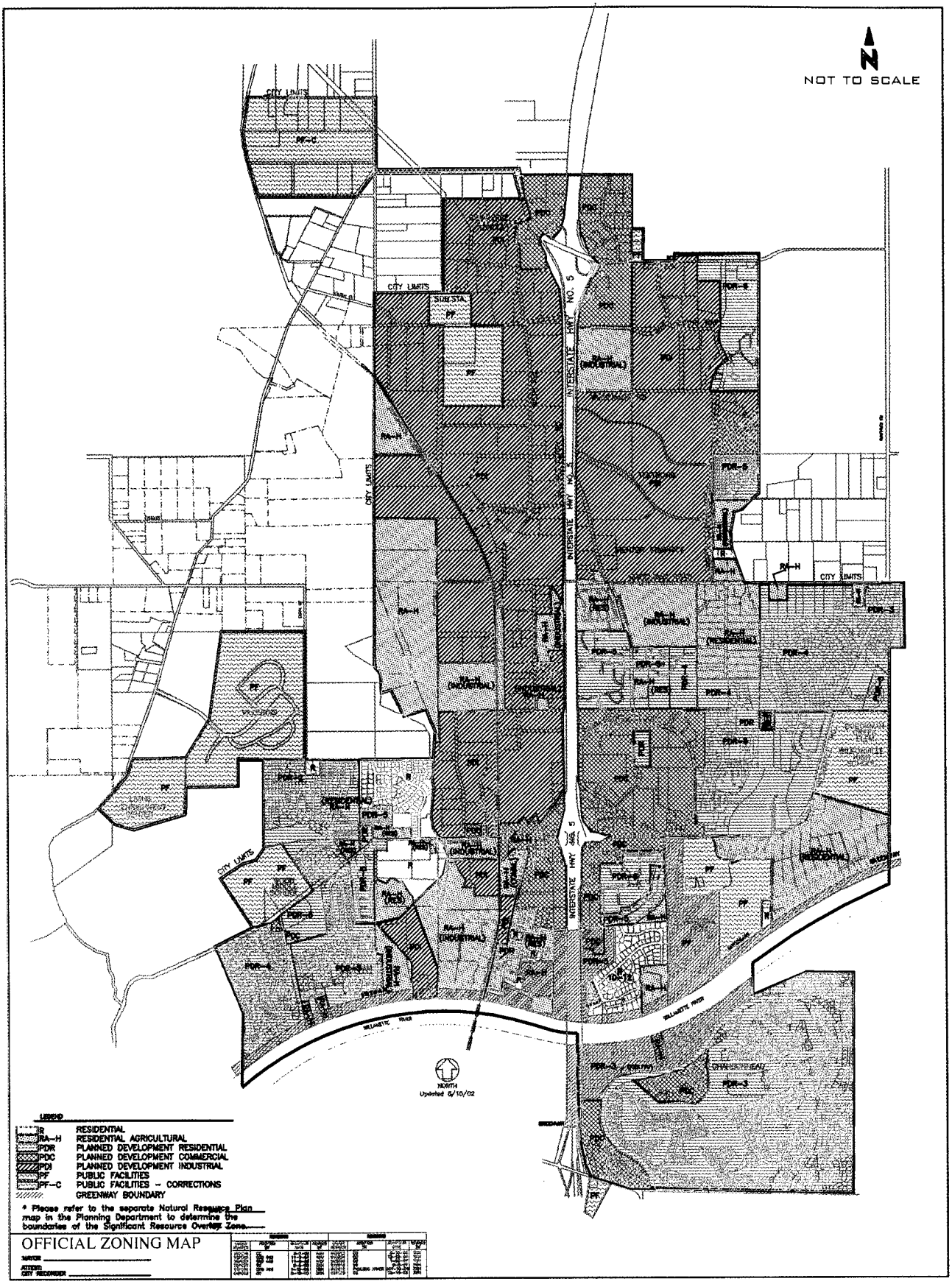

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Figure 4.6b
City of Wilsonville Zone Map

4.3.3 2020 Alternative 2: Recommended Transportation System

4.3.3.1 Alternative 2 Network Description

The 2020 Alternative 2: Recommended Transportation System was developed upon completion of the FAS and with the recognition that a Boeckman Road interchange may not be constructed within the next 20 years. The purpose of the Recommended System is to rectify the deficiencies of Alternative 1. To that end, the FAS's conclusions (for discussion of conclusions see Sections 4.2.2 and 4.3.2) were analyzed and incorporated into the work previously completed by the ATPC on the TSP. With the help and guidance of the City of Wilsonville Planning Commission, appropriate proposed transportation improvements to the existing road network were molded into a recommended transportation solution for the City of Wilsonville.

The recommended Transportation System starts with the same road network proposed in Alternative 1. With additional road widening, capacity projects, intersection improvements, and incorporating FAS proposals, such as enhancing the Wilsonville Road interchange, the deficiencies of Alternative 1 can be corrected within the TSP planning horizon. **Table 4.g** describes improvements made to the roadway network for Alternative 2 and **Figure 4.7** illustrates these improvements. **Figure 4.8** illustrates the arterial classifications for this alternative with the capacity improvements listed in **Table 4.g**

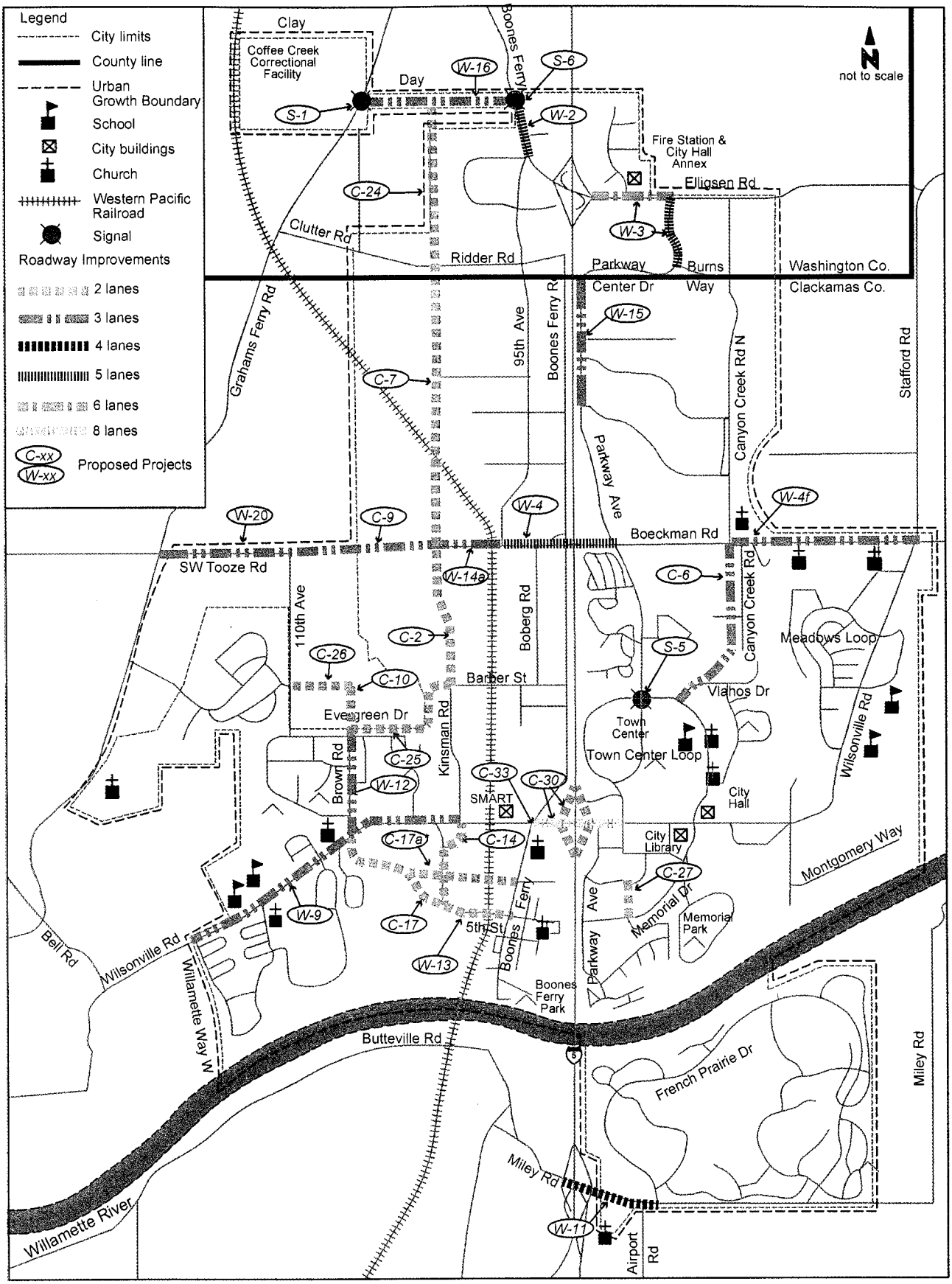
4.3.3.2 Alternative 2 Land Use Assumptions

The land use assumptions for this alternative are the same as Alternative 1. For Alternative 2, as it was for Alternative 1, it was assumed that development of existing vacant parcels over the next 20 years would be based on the assumptions described in Chapter 3 in the Land Use Section 3.4.2. It should be noted that Alternative 2 includes:

- The prison at Day Road and the associated high industrial development surrounding the prison area based on the North Wilsonville Industrial Area Proposed Concept Plan developed by City of Wilsonville staff and adopted for the 2002 Urban Growth Boundary expansion by Metro.
- Full build-out of the urban village in the Dammasch area based on *Dammasch Area Transportation-Efficient Land Use Plan* prepared by David Evans and Associates in 1997.
- The Argyle Square proposal for the old Burns Brothers site located south of Elligsen Road and west of Parkway Avenue.
- The Frog Pond area adopted for the 2002 Urban Growth Boundary expansion by Metro, north of Boeckman Road and west of Stafford Road.

Table 4.g
2020 Alternative 2 List of Roadway Network Improvements and New Road Additions

Reference Number	Improvement/New Road Addition Description
C-2	Construct two-lane extension of Kinsman Road from Barber Street to railroad tracks
C-6	Construct extension of Canyon Creek Road N from Boeckman Road to Vlahos Drive
C-7	Construct two-lane extension of Kinsman Road from railroad tracks to Ridder Road
C-9	Extension of Boeckman Road from the future Kinsman Road extension to 110th Avenue
C-10	Construct two-lane extension of Brown Road north from Evergreen Drive to the Barber Street alignment
C-14	Construct two-lane extension of Kinsman Road from Wilsonville Road to the south Brown Road extension
C-17	Construct two-lane extension of Brown Road south from Wilsonville Road to the future south Kinsman Road extension/5th Street
C-24	Construct two-lane extension of Kinsman Road north from Ridder Road to Day Road
C-25	Construct two-lane extension of Barber Street to north Brown Road
C-26	Construct two-lane extension of Barber Street from 110th Avenue to the future north Brown Road ext.
C-27	Construct two-lane extension of Rogue Lane from Memorial Drive to Holly Lane
C-30	Wilsonville Road Interchange Enhancements.
W-2	Widen Boones Ferry Road from 95th Avenue to Day Road to five lanes
W-3	Widen Elligsen Road to six lanes from Parkway Ave. to Parkway Center Drive and Parkway Center Drive to five lanes from Elligsen Road to Burns Way
W-4	Widen Boeckman Road (includes bridge rebuild) to five lanes from Parkway Avenue to 95th Avenue
W-4f	Widen Boeckman Road from Canyon Creek Road N to Wilsonville Road
W-9	Widen Wilsonville Road to three lanes from the railroad tracks to the west city limits
W-11	Widen Miley Road to four lanes from I-5 SB Ramps to French Prairie Drive W
W-12	Widen Brown Road to three lanes from Wilsonville Road to Evergreen Drive
W-13	Widen 5th Street from Brown Road extension to Nutting Road
W-14a	Boeckman Road extension from 95th Avenue to the future Kinsman Road extension
W-15	Widen Parkway Avenue from InFocus improvements to Parkway Center Drive
W-16	Widen Day Road to three lanes from Grahams Ferry Road to Boones Ferry Road
W-20	Widen Tooze Road from 110^{th} to Grahams Ferry Road



Notes:
1. Spot Improvements are detailed in Figure 4.4 (continued.) All improvements are described in Table 4.b, 4.d, and 4.p through 4.r. All new 2-lane roads assumed to be 35 mph.
2. C-17a* - Brown Road Extension to Bailey added as alternate rote.

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Figure 4.7
2020 Alternative 2
Recommended Roadway Network
(adopted by City Council June 2, 2003)

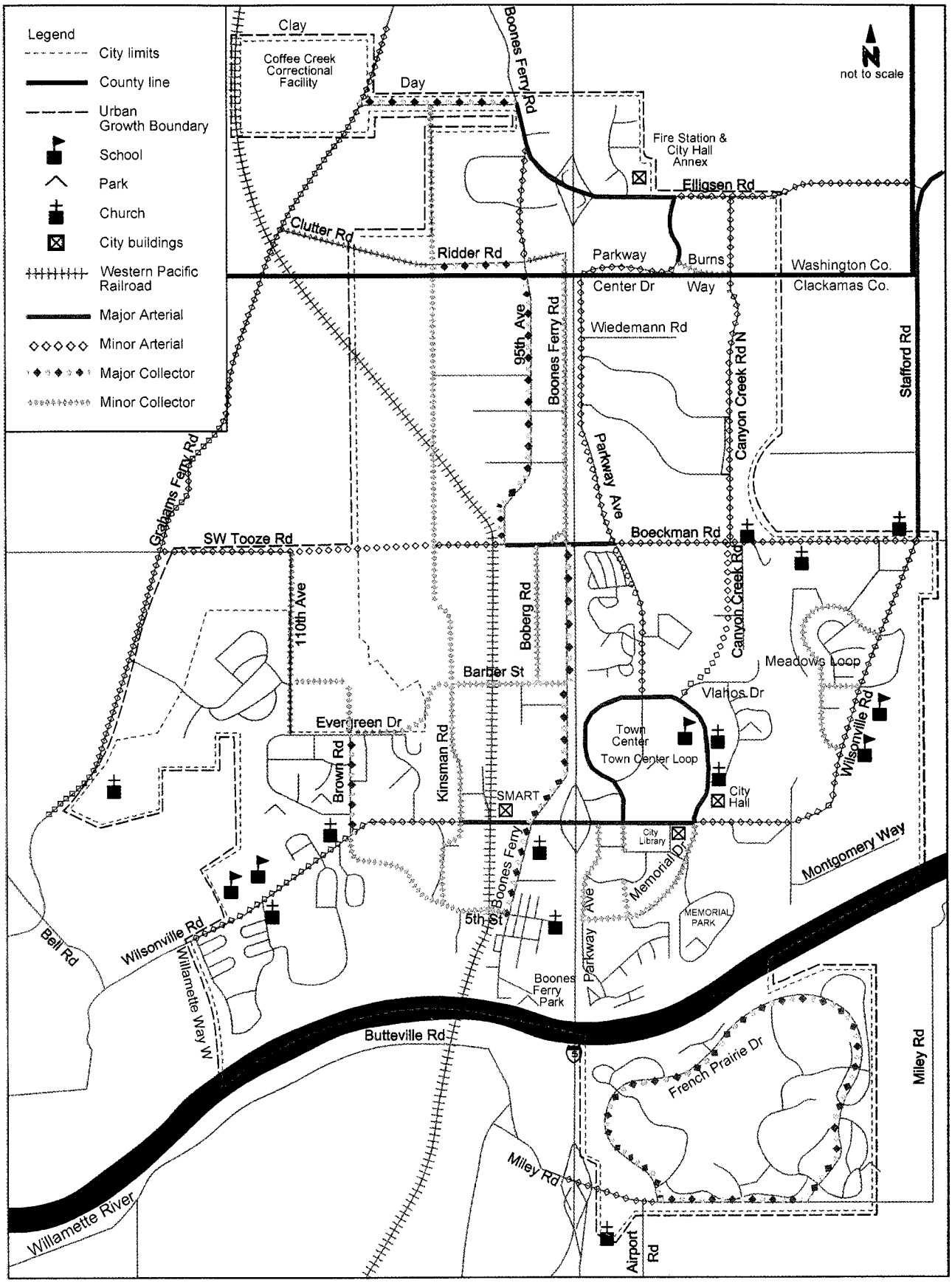

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Figure 4.8
2020 Alternative 2 Arterial and Collector Classifications
(adopted by City Council June 2, 2003)

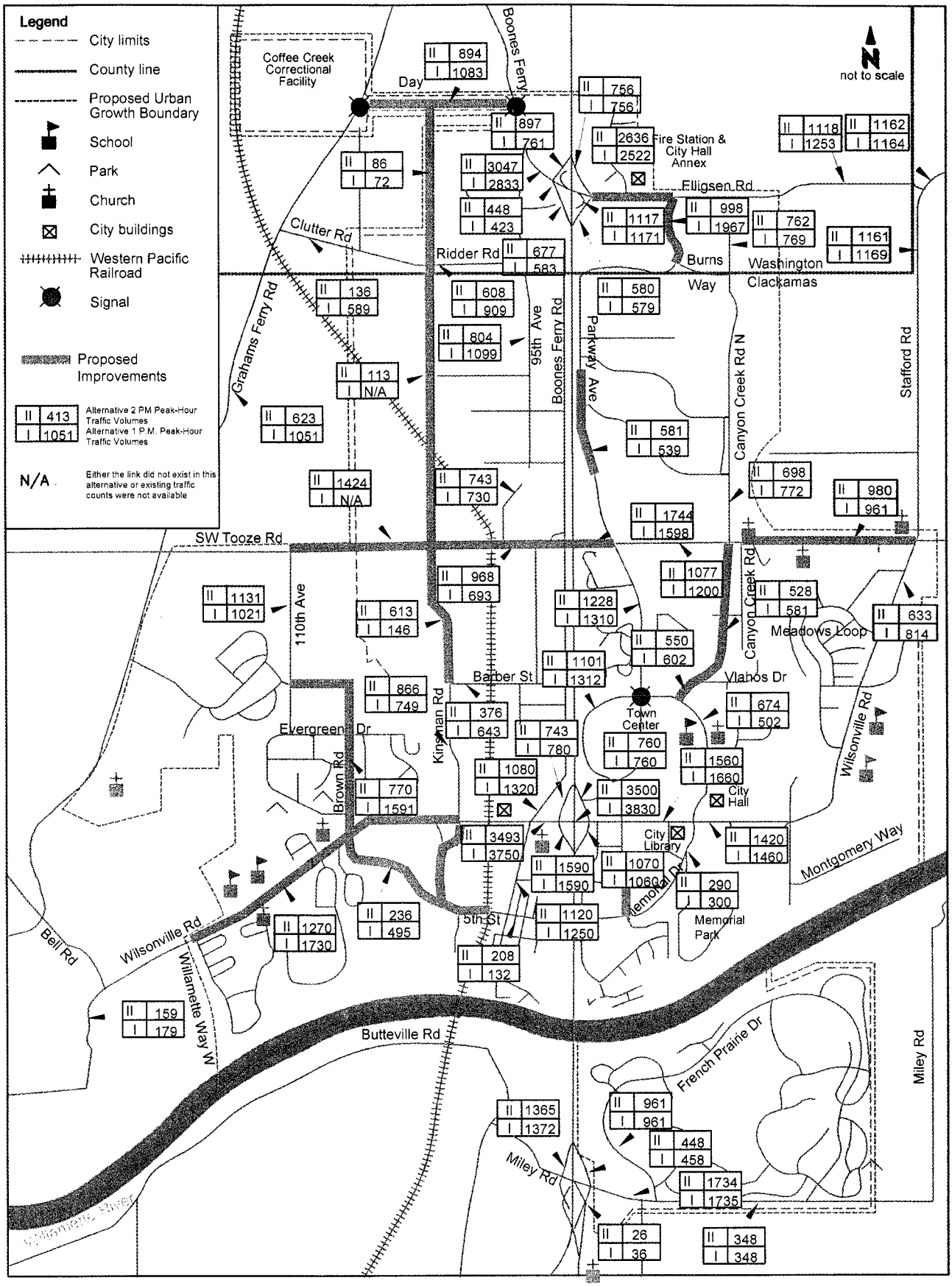

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Fig 4.9
2020 P.M. Peak-Hour Traffic Volumes For Both Alternatives

4.3.3.3 Traffic Volume Projections

Figure 4.9 shows the p.m. peak-hour traffic volumes on various streets in Wilsonville for the 2020 Alternatives 1 and 2. On most analyzed roadways, traffic volumes decreased when comparing the Recommended Alternative to the 2020 Alternative 1, although there were some roadways where volumes increased significantly (see Section 4.3.3.7). The most noticeable reductions in traffic volumes occurred along Wilsonville Road between Boones Ferry Road and Town Center Loop E, on Brown Road, and on Barber Street. The reduction of traffic on Wilsonville Road, Brown Road and Barber Street can be attributed to the enhanced Wilsonville Road interchange, Boeckman Road extension and the Barber Street extension.

4.3.3.4 Spot Improvements

Table 4.h describes the proposed spot improvements included in Alternative 2. Spot improvements (e.g., S-x projects) are improvements that need to be made in addition to the capacity and widening projects that were assumed for the base network to meet City standards for LOS. **Table 4.h** also lists the intersection improvements that will happen as a direct result of the construction of a capacity and/or widening project. **Figure 4.10** illustrates both types of these proposed intersection improvements.

Most of these improvements simply consist of signalizing the intersection or adding exclusive turn lanes. Some intersections, however, could *not* be improved to City standard or better without major improvements or because of limited right-of-way. Compared to Alternative 1, this alternative requires fewer spot improvements to achieve the required City LOS standard.

Table 4.h
2020 Alternative 2 Intersection Spot Improvements

Reference Number	Intersection of...	Intersection and...	Intersection Type Before Improvement	Proposed Improvement
S-1[a]	Grahams Ferry Road	Day Road	Unsignalized	Install signal. Part of project W-16.
S-2[b]	SW 65th Avenue	Stafford Road	Unsignalized	Install signal and add EB left- and SB right-turn lanes.
S-4[a]	Town Center Loop E	Vlahos Drive	Unsignalized	Install signal. Part of project C-6.
S-5[b]	Parkway Avenue	Town Center Loop	Unsignalized	Install signal and add NB left-turn lane.
S-6[a]	Boones Ferry Road	Day Road	Unsignalized	Install signal and add NB through lane. Part of project W-16.
S-7[a]	Boeckman Road	110th Avenue/SW Tooze Road	Unsignalized	Install signal and add EB and NB right-turn lanes. Part of project C-9.
S-8[a]	Wilsonville Road	Brown Road	Signalized	Part of project W-9.
S-9[b]	Grahams Ferry Rd	Tooze Rd	Unsignalized	Install signal.
S-10	Elligsen Road	I-5 SB Ramp	Signalized	Area of Special Concern
S-11[b]	Elligsen Road/Boones Ferry Road	95th Avenue	Signalized	Add NB right-turn lane to create NB dual rights. Add EB through pocket and SB left-turn lane. Improve signal phasing. Area of Special Concern.
S-12[a]	110th Avenue	Barber Street Extension	Unsignalized	Install signal and add EB left-turn lane and SB right-turn lane. Make SB right-turn a free right with channelized median. Part of project C-26.
S-13[a]	Boeckman Road	Canyon Creek Road N	Unsignalized	Install signal. Part of project C-6.
S-15[a]	Kinsman Road Ext.	Barber Street	Unsignalized	Add NB left-turn lane. Part of project C-2.
S-16[a]	Kinsman Road	Wilsonville Road	Signalized	Add WB right-turn lane. Part of projects W-9 and C-14.
S-17[a]	Boeckman Road	95th Avenue	Unsignalized	Install signal. Part of project W-14a.
S-18[a]	Kinsman Road Ext.	Ridder Road	Unsignalized	Install signal at new intersection. Part of project C-24.
S-19[a]	Miley Road	I-5 SB Ramps	Unsignalized	Install signal. Part of project W-11.
S-20[a]	Miley Road	I-5 NB Ramps	Unsignalized	Install signal. Part of project W-11.
S-21[a]	Boeckman Road	Boberg Avenue	Unsignalized	Install signal, add NB right-turn lane. Part of project W-4.
S-22	95th Avenue	Commerce Circle North	Unsignalized	Area of Special Concern.
S-24[a]	Boeckman Road	Boones Ferry Ramp	Unsignalized	Install signal. Part of project W-4.

SB = Southbound; NB = northbound; WB = westbound; EB = eastbound

[a]This intersection improvement is a change that is part of the indicated widening or capacity project.

[b]This spot improvement is an additional change required at an intersection to meet the City's Level of Service standard.

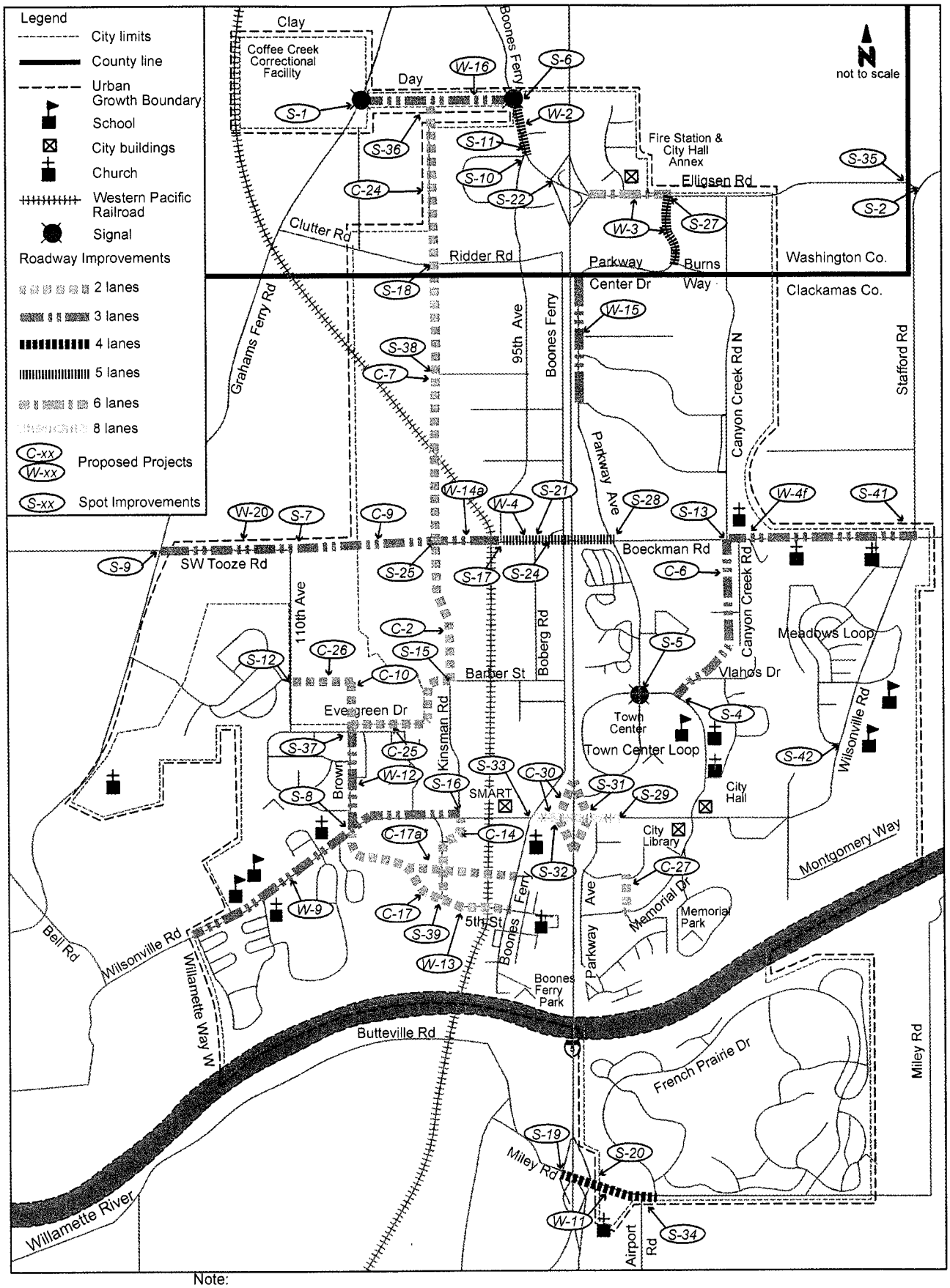
Table 4.h (continued)
2020 Alternative 2 Intersection Spot Improvements

Reference Number	Intersection of...	Intersection and...	Intersection Type Before Improvement	Proposed Improvement
S-25 [a]	Kinsman Road Ext.	Boeckman Road	Unsignalized	Install signal. Part of projects W-14a and C-9.
S-27 [a]	Elligsen Road	Parkway Center Drive	Signalized	Add NB left-turn lane, EB right-turn lane. Change EB through-right to through only. Improve signal phasing. Part of project W-3.
S-28 [a]	Parkway Avenue	Boeckman Road	Signalized	Separate EB and SB through-right lanes. Improve signal phasing. Part of project W-4.
S-29 [b]	Wilsonville Road	Town Center Loop West	Signalized	Change NB left-through to left only. Improve signal phasing.
S-31 [b]	Wilsonville Road	I-5 NB Ramps	Signalized	Add NB right-turn left-turn lanes. Add WB through lane. Part of Project C-30.
S-32 [b]	Wilsonville Road	I-5 SB Ramps	Signalized	Add EB right-turn lane. Add WB left-turn and EB through lane. Part of Project C-30.
S-33	Wilsonville Road	Boones Ferry Road	Signalized	Add WB left-turn lane to create dual lefts with extra receiving lane on SB leg. Add EB through lane. Improve signal phasing. Part of Project C-30.
S-34 [a]	Airport Road	Miley Road	Unsignalized	Install signal. Part of project W-11.
S-35 [b]	SW 65th Avenue	Elligsen Road	Unsignalized	Install signal.
S-36 [a]	Kinsman Road Ext.	Day Rd	Unsignalized	Install signal at new intersection. Part of project C-24.
S-37 [a]	Brown Road	Evergreen Drive	Unsignalized	Add SB left-turn lane. Part of project C-10.
S-38 [a]	Kinsman Road Ext.	Freeman Drive Ext.	Unsignalized	Part of project C-25.
S-39 [a]	Brown Road Ext.	5th Street	Unsignalized	Part of project C-17.
S-41 [a]	Boeckman Road	Wilsonville Road	Unsignalized	Install signal. Part of project W-4f.
S-42	Wilsonville Road	Meadow Loop	Unsignalized	Install signal. Non-capacity improvement at High School, when warranted

SB = Southbound; NB = northbound; WB = westbound; EB = eastbound

[a] This intersection improvement is a change that is part of the indicated widening or capacity project.

[b] This spot improvement is an additional change required at an intersection to meet the City's Level of Service standard.



Note:
1. Spot Improvements are detailed in Figure 4.4 (continued.) All improvements are described in Table 4.b. All new 2-lane roads assumed to be 35 mph 4.d, and 4.p through 4.r.
2. C-17a* - Brown Road Extension to Bailey added as alternate route.
3. S-42 is a non-capacity spot improvement project, to be built when warranted.

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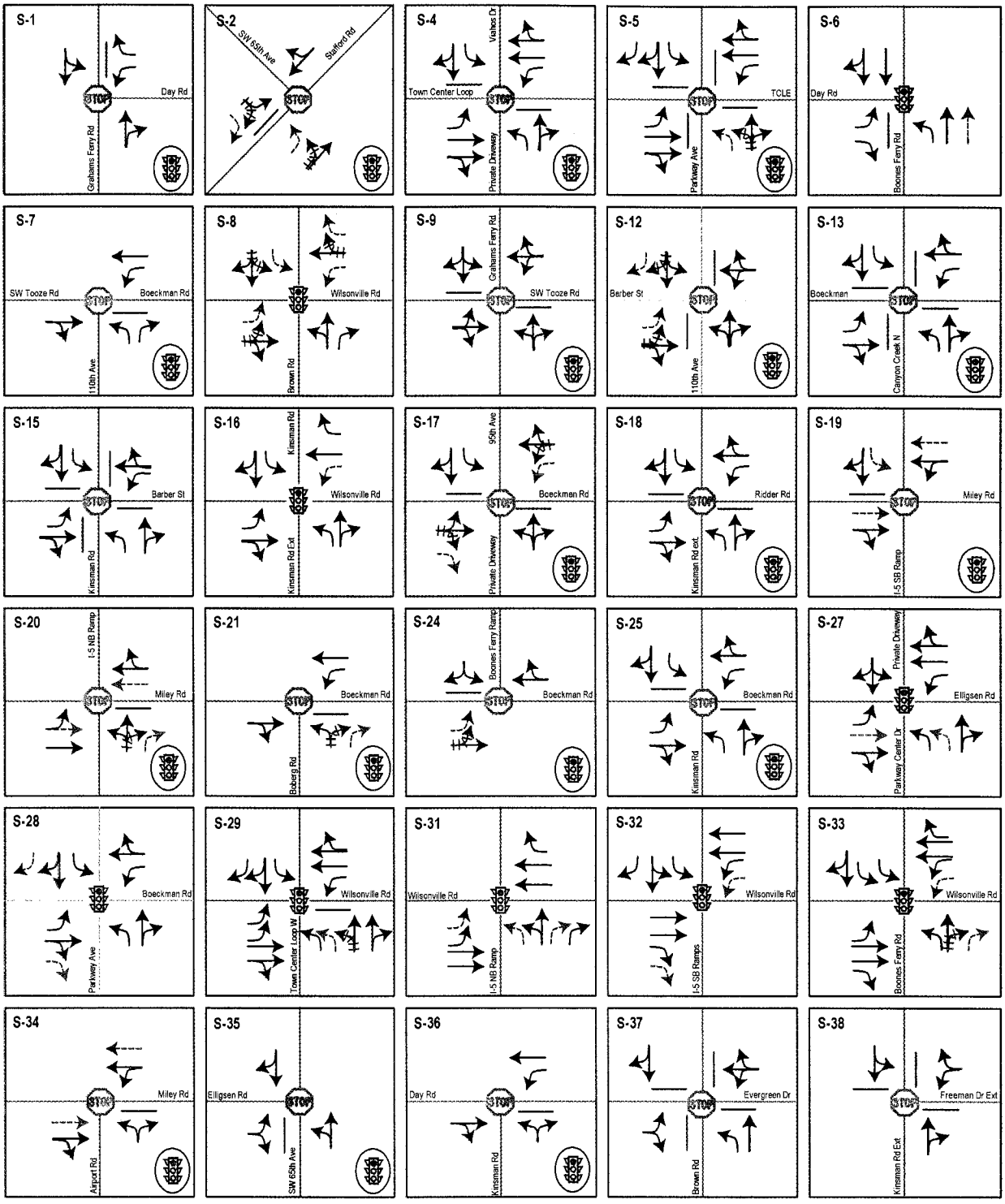
Figure 4.10
2020 Alternative 2
Recomended Roadway Network with Spot Improvements



Notes:

1. Projects "S-10, S-11 and S-22" are a part of an Area of Special Concern and are not represented here in detail pending further analysis.
2. Red (dashed) arrow indicates new lane/movement. Crossed-out arrow indicates deletion of exisitng lane/movement. Black arrows indicate exisitng, or in the case of a new intersection, lane/movement.
3. Spot Improvement 'S-42' is a non-capacity improvement and is not shown.
4. Red arrows indicate new lane/movement. Crossed out arrows indicate deletion of exisitng movement. Black arrows indicate exisitng, or in case of new intersection, standard movement.

Figure 4.10 (continued)
2020 Alternative 2
Roadway Network with Spot Improvements

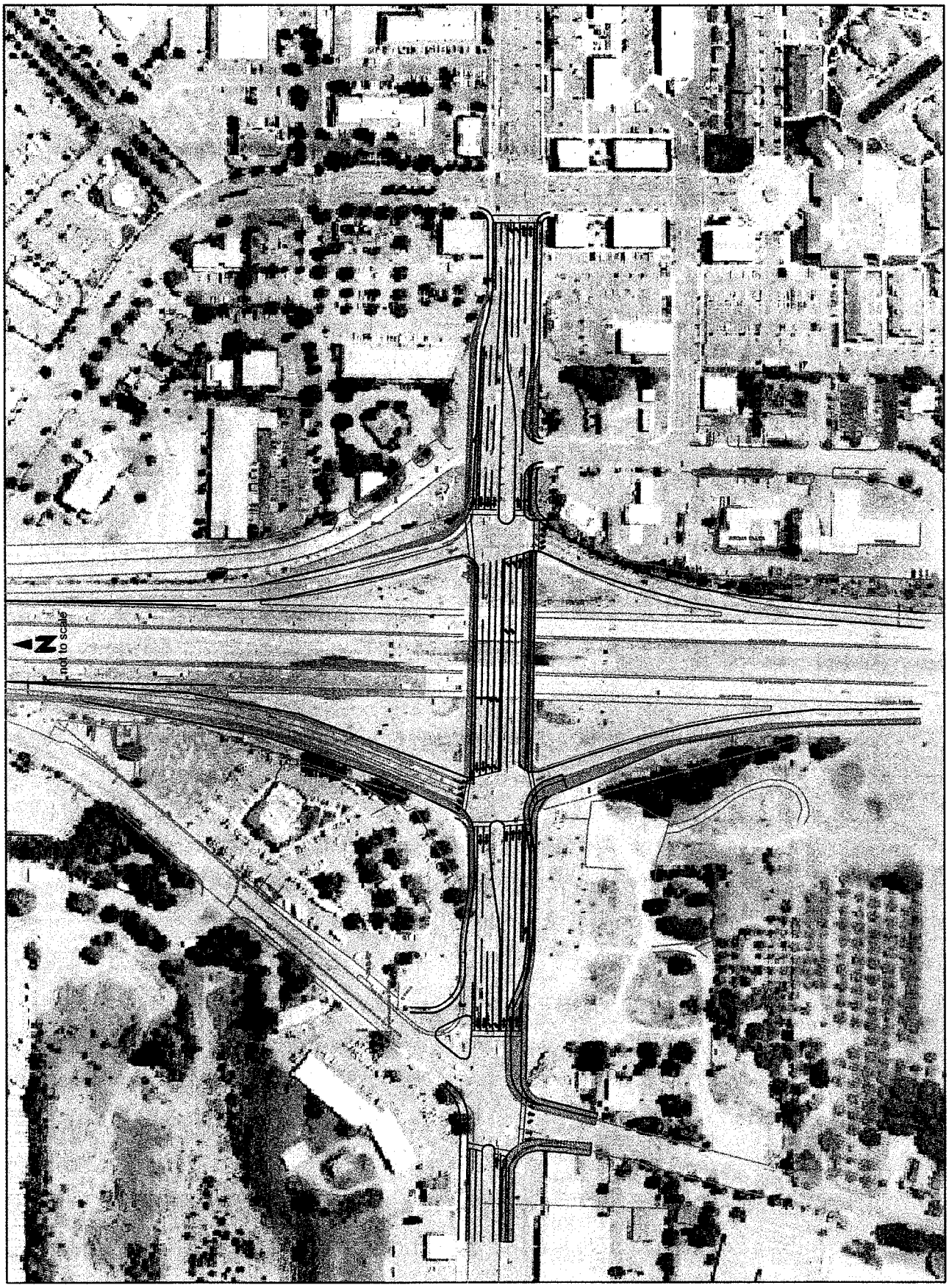


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Figure 4.10a
2020 Alternative 2
Recomended Enhanced Wilsonville Road Interchange

4.3.3.5 *Intersection Delay and Level of Service*

Table 4.i summarizes the number of changes in LOS over the 20-year planning period for each alternative. Of the 53 total intersections analyzed in Alternative 2, five intersections were below LOS E or F. Two of these intersections, I-5 southbound ramps/Wilsonville Road and Town Center Loop W/Wilsonville Road, are allowed to operate at LOS E and still meet City standard. The other three are below standard. These three failing intersections could not be improved for many reasons, including limited right-of-way and close proximity to other signalized intersections.

Figure 4.11 shows the LOS that Wilsonville drivers could experience in 2020 at select intersections based on the Alternative 2 network. **Table 4.j** provides a detailed summary of the LOS analysis by intersection for the 53 intersections analyzed in the 2020 Alternative 2. It also includes the 2000 existing conditions LOS for 30 of the study intersections.

Table 4.i
Level of Service Summary by Alternative with Improvements

LOS	Number of Intersections at each Level of Service (LOS)			
	2020 Alternative 1		2020 Alternative 2	
	Signalized	Unsignalized	Signalized	Unsignalized
A	5	2	5	1
B	13	7	16	6
C	6	4	6	4
D	8	2	9	2
E	1[a]	0	1[a]	0
F	1	1	0	2
Total	**34**	**16**	**37**	**15**
Below Standard	1	2	0	2

[a]The intersection of Boones Ferry Rd/Wilsonville Rd is allowed to operate at LOS E and still meet the City standard.

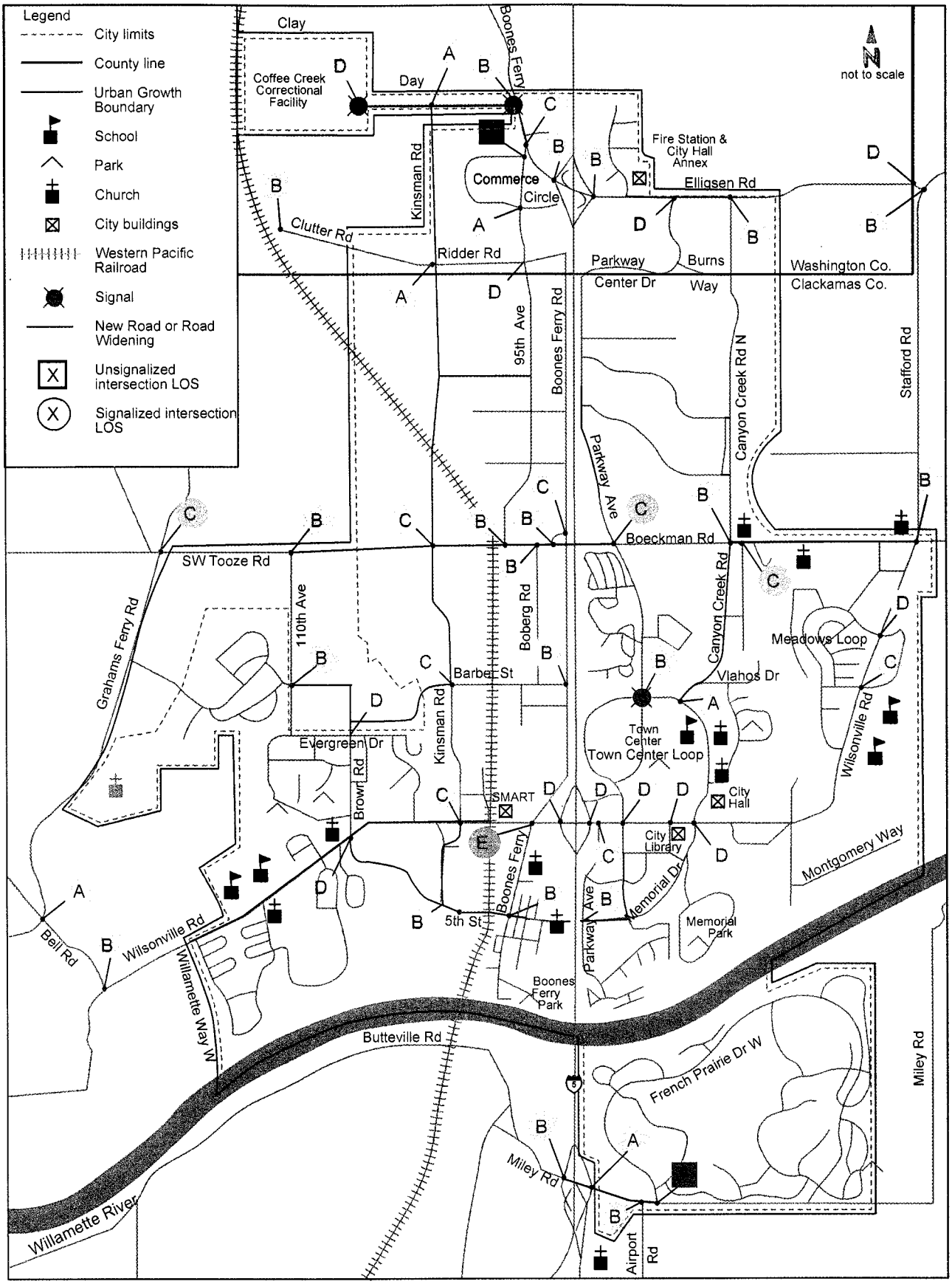

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Figure 4.11
2020 Alternative 2
Network Level of Service With Improvements

Table 4.j
2020 Alternative 2 P.M. Peak-Hour Intersection Level of Service with Improvements

Intersection		Existing Conditions			2020 Alternative 2		
of...	and...	Type[1]	LOS[2]	Delay[3] (sec/veh)	Type[1]	LOS[2]	Delay[3] (sec/veh)
Barber Street Ext.	110th Avenue	n/a	n/a[4]	n/a	Signal	B	15.2
Barber Street	Kinsman Road Ext.	n/a	n/a	n/a	AWSC	C	23.3
Boeckman Road	Canyon Creek Road S	n/a	n/a	n/a	TWSC	C	24.5
Boeckman Road	Canyon Creek Road N	TWSC	C	19.1	Signal	B	12.5
Boeckman Road	Parkway Avenue	Signal	B	19.3	Signal	C	30.0
Boeckman Road	Boones Ferry Ramp	TWSC	C	17.8	Signal	B	16.2
Boeckman Road	Boberg Road	n/a	n/a	n/a	Signal	B	14.6
Boeckman Road	95th Avenue	TWSC	C	18.2	Signal	B	17.6
Boeckman Road	Kinsman Road Ext.	n/a	n/a	n/a	Signal	C	21.0
Boeckman Road	110th Avenue/SW Tooze Rd	n/a	n/a	n/a	Signal	B	12.6
Boones Ferry Road	Boeckman Road Ramp	TWSC	B	10.4	Signal	C	23.0
Boones Ferry Road	5th Street	n/a	n/a	n/a	TWSC	B	14.6
Boones Ferry Road	Barber Street	TWSC	A	8.6	TWSC	B	10.3
Brown Road	Evergreen Drive	n/a	n/a	n/a	AWSC	D	34.3
Brown Road Ext.	Kinsman Road Ext. /5th St	n/a	n/a	n/a	TWSC	B	10.2
Day Road	Boones Ferry Road	n/a	n/a	n/a	Signal	B	15.2
Day Road	Kinsman Road Ext.	n/a	n/a	n/a	Signal	A	8.0
Day Road	Grahams Ferry Road	TWSC	C	16.1	Signal	D	35.2
Elligsen Road	SW 65th Avenue	TWSC	B	13.5	Signal	B	17.4
Elligsen Road	Canyon Creek Road N	Signal	A	7.7	Signal	B	12.0
Elligsen Road	Parkway Center Drive	Signal	D	54.6	Signal	D	40.1
Elligsen Road	I-5 NB Ramp	Signal	A	4.1	Signal	B	10.7
Elligsen Road	I-5 SB Ramp	Signal	A	9.1	Signal	B	14.8
Elligsen Road/Boones Ferry Rd	95th Avenue	Signal	C	20.1	Signal	C	32.9
Grahams Ferry Road	Clutter Road	n/a	n/a	n/a	TWSC	B	13.7
Grahams Ferry Road	SW Tooze Road	TWSC	B	11.2	TWSC	C	25.2
Grahams Ferry Road	Bell Road	n/a	n/a	n/a	AWSC	A	9.6

[1] AWSC = All-way stop controlled intersection, TWSC = Two-way stop controlled intersection, Signal = Signalized intersection
[2] LOS is the level of service; a concept based on the 1997 Highway Capacity Manual for unsignalized and signalized intersections.
[3] Control delay is a measure of all the delay contributable to traffic control measures, e.g. traffic signals or stop signs. At signalized intersections, the delay reported is the average of all the control delay experienced for all movements. At unsignalized intersections, the reported delay is only for the movement experiencing the worst control delay, typically a stop-controlled side street approach. The control delay reported at unsignalized intersections is not a valid indication of the operations at the entire intersection.
n/a = not applicable. Existing volumes were not available. Future volumes were extrapolated based on available data.
[5] ECL = Exceeds Calculable Limits.

Table 4.j (continued)
2020 Alternative 2 P.M. Peak-Hour Intersection Level of Service with Improvements

Intersection		Existing Conditions			2020 Alternative 2		
of...	and...	Type[1]	LOS[2]	Delay[3] (sec/veh)	Type[1]	LOS[2]	Delay[3] (sec/veh)
Kinsman Road Ext.	Ridder Road	n/a	n/a	n/a	Signal	A	8.4
Memorial Drive	Parkway Avenue	n/a	n/a	n/a	TWSC	B	10.2
Miley Road	I-5 SB Ramps	n/a	n/a	n/a	Signal	B	14.0
Miley Road	I-5 NB Ramps	n/a	n/a	n/a	Signal	A	5.2
Miley Road	Airport Road	TWSC	B	11.5	Signal	B	10.8
Miley Road	French Prairie Drive W	TWSC	B	10.3	TWSC	F	ECL[5]
Stafford Road	SW 65th Avenue	TWSC	E	37.1	Signal	B	17.4
Town Center Loop W	Parkway Avenue	AWSC	B	11.5	Signal	B	14.0
Town Center Loop E	Vlahos Drive	TWSC	B	11.5	Signal	A	9.8
Wilsonville Road	Bell Road	n/a	n/a	n/a	TWSC	B	12.5
Wilsonville Road	Brown Road	Signal	D	46.0	Signal	D	35.2
Wilsonville Road	Kinsman Road	Signal	B	11.5	Signal	C	25.2
Wilsonville Road	Boones Ferry Road	Signal	C	29.7	Signal	E	66.5
Wilsonville Road	I-5 SB Ramp	Signal	C	32.3	Signal	D	54.7
Wilsonville Road	I-5 NB Ramp	Signal	C	21.3	Signal	D	46.2
Wilsonville Road	Parkway Avenue	TWSC	C	16.0	TWSC	C	18.8
Wilsonville Road	Town Center Loop W	Signal	C	26.5	Signal	D	48.9
Wilsonville Road	Rebekah Street	Signal	C	23.4	Signal	D	36.7
Wilsonville Road	Town Center Loop E	Signal	B	19.5	Signal	D	45.1
Wilsonville Road	Meadows Parkway	n/a	n/a	n/a	Signal	C	20.1
Wilsonville Road	Meadows Loop N	TWSC	A	8.1	TWSC	D	34.2
Wilsonville Road	Boeckman Road	AWSC	C	15.6	Signal	B	18.1
95th Avenue	Ridder Road	n/a	n/a	n/a	Signal	D	39.4
95th Avenue	N Commerce Circle	n/a	n/a	n/a	TWSC	F	ECL[5]
95th Avenue	S Commerce Circle	n/a	n/a	n/a	Signal	A	9.7

[1] AWSC = All-way stop controlled intersection, TWSC = Two-way stop controlled intersection, Signal = Signalized intersection
[2] LOS is the level of service; a concept based on the 1997 Highway Capacity Manual for unsignalized and signalized intersections.
[3] Control delay is a measure of all the delay contributable to traffic control measures, e.g. traffic signals or stop signs. At signalized intersections, the delay reported is the average of all the control delay experienced for all movements. At unsignalized intersections, the reported delay is only for the movement experiencing the worst control delay, typically a stop-controlled side street approach. The control delay reported at unsignalized intersections is not a valid indication of the operations at the entire intersection.
[4] n/a = not applicable. Existing volumes were not available. Future volumes were extrapolated based on available data.
[5] ECL = Exceeds Calculable Limits.

4.3.3.6 *Estimated Cost for 2020 Alternative 2*

Table 4.k lists the corresponding project descriptions and the estimated planning-level construction costs for the improvements illustrated previously. The total estimated planning-level project cost for the 2020 Alternative 2 is $114.6 million. (Note: These costs do not include Cost Estimates for Existing Roadways to meet City Standards - **Table 4.m** nor Street Network Connectivity Projects- **Table 4.n.** See Section 4.5 - Project Prioritization for a full accounting of projects and estimated costs.)

Table 4.k
2020 Alternative 2 Cost Estimates

Project Number	Description	Estimated Cost (in Millions)
C-2	Kinsman Road extension from Barber Street to railroad tracks (2 phases)	$7.4
C-6	Canyon Creek N extension from Boeckman Road to Vlahos Drive	$4.5
C-7	Kinsman Road extension from Barber Street to Day Road	$3.8
C-9	Boeckman Road extension to 110th Avenue	$8.9
C-10	Brown Road extension to Barber Street extension	$1.3
C-14	Kinsman Road extension to 5th Street	$3.1
C-17	Brown Road extension from Wilsonville Road to 5th Street	$4.5
C-24	Kinsman Road extension from Ridder Road to Day Road	$4.6
C-25	Barber Street extension from Kinsman Road to future Brown Road extension	$4.4
C-26	Barber Street extension to Brown Road extension	$1.4
C-27	Rogue lane extension from Memorial Drive to Holly Lane	$0.7
C-30	Wilsonville Road interchange enhancements (3 phases)	$31.3
S-1	Intersection of Grahams Ferry Road and Day Road	Part of W-16
S-2	Intersection of SW 65th Avenue and Stafford Road	$0.4
S-4	Intersection of Vlahos Drive and Town Center Loop E	Part of C-6
S-5	Intersection of Parkway Avenue and Town Center Loop W	$0.3
S-6	Intersection of Boones Ferry Road and Day Road	Part of W-16
S-7	Intersection of Boeckman Road and 110th Avenue/SW Tooze Road	Part of C-9
S-8	Intersection of Wilsonville Road and Brown Road	Part of W-9
S-9	Intersection of Grahams Ferry Road and Tooze Road	Part of W-20
S-10	Intersection of Elligsen Road and I-5 SB ramp	ASC[2]
S-11	Intersection of 95th Avenue, Boones Ferry Road, and Elligsen Road	ASC[2]
S-12	Intersection of 110th Avenue and Barber Street alignment	Part of C-26
S-13	Intersection of Boeckman Road and Canyon Creek Road N	Part of C-6
S-15	Intersection of Kinsman Road extension and Barber Street	Part of C-2
S-16	Intersection of Kinsman Road and Wilsonville Road	Part of C-14
S-17	Intersection of Boeckman Road and 95th Avenue	Part of W-14a
S-18	Intersection of Kinsman Road extension and Ridder Road	Part of C-24

tbd = to be determined later
asc = area of special concern

Table 4.k (continued)
2020 Alternative 2 Cost Estimates

Project Number	Description	Estimated Cost (in Millions)
S-19	Intersection of I-5 Southbound Ramp and Miley Road	Part of W-11
S-20	Intersection of I-5 Northbound Ramp and Miley Road	Part of W-11
S-21	Intersection of Boberg Avenue and Boeckman Road	Part of W-4
S-22	Intersection of 95th Avenue and Commerce Circle North	ASC[2]
S-24	Intersection of Boones Ferry Road Ramp and Boeckman Road	Part of W-14a
S-25	Intersection of Kinsman Road extension and Boeckman Road	Part of C-9
S-27	Intersection of Parkway Center Drive and Elligsen Road	Part of W-3
S-28	Intersection of Parkway Avenue and Boeckman Road	Part of W-14
S-29	Intersection of Town Center Loop W and Wilsonville Road	$0.8
S-31	Intersection of I-5 Northbound Ramp and Wilsonville Road	Part of C-30
S-32	Intersection of I-5 Southbound Ramp and Wilsonville Road	Part of C-30
S-33	Intersection of Wilsonville Road and Boones Ferry Road	Part of C-30
S-34	Intersection of Airport Road and Miley Road	Part of W-11
S-35	Intersection of SW 65th Avenue and Elligsen Road	$0.3
S-36	Intersection of Kinsman Road extension and Day Road	Part of C-24
S-37	Intersection of Brown Road and Evergreen Drive	Part of C-10
S-38	Intersection of Kinsman Road extension and Freeman Drive extension	Complete
S-39	Intersection of Brown Road extension and 5th Street	Part of C-17
S-41	Intersection of Boeckman Road/Wilsonville Road	Part of W-4f
S-42	Intersection of Wilsonville Road and Meadow Loop (High School)	tbd
W-2	Widen Boones Ferry Road to 5 lanes from 95th Avenue to Day Road	Complete
W-3	Widen Elligsen Road from Parkway Ave. to Parkway Center Drive and Parkway Center Drive from Elligsen Road to Burns Way	$1.7
W-4	Widen Boeckman Road from Parkway Ave. to 95th Ave. (includes bridge replacement)	$9.6
W-4f	Widen Boeckman Road to 3 lanes from Canyon Creek North to Wilsonville Road	$4.3
W-9	Widen Wilsonville Road to 3 lanes from Willamette Way west to railroad tracks	$5.4
W-11	Widen Miley Road to 4 lanes from French Prairie to West of I-5	$2.2
W-12	Widen Brown Road to 3 lanes from Evergreen Avenue to Wilsonville Road	$1.7
W-13	Widen 5th Street from Brown Road extension to Boones Ferry Road	$1.7
W-14a	Boeckman Road extension from 95th Avenue to Kinsman Road extension	$4.3
W-15	Widen Parkway Avenue from Infocus improvements to Parkway Center Drive	$3.5
W-16	Widen Day Road from Grahams Ferry Road to Boones Ferry Road	Complete
W-20	Widen Tooze road from 110th to Grahams Ferry Road	$2.5

tbd = to be determined later
asc = area of special concern

4.3.3.7 Analysis Conclusions

Traffic volumes are slightly lower for Alternative 1 than Alternative 2. Volumes for the Stafford Road and Wilsonville Road interchanges, in particular, are higher for Alternative 2 (see **Figure 4.9**). The main reason for this is that as accessibility increases, so does use. However, increased accessibility and roadway capacity does mean that roadway congestion throughout the City increases.

Alternative 2 includes improvements for all modes similar to Alternative 1. Alternative 2 is compatible with ODOT plans, the 1991 Transportation Master Plan, the 1993 Parks and Recreation Plan, DATELUP and other recently completed local, regional and state planning studies. The proposed Dammasch area redevelopment is a prime example of the compact, urban form the Metro 2040 Plan encourages. Further, the Dammasch project is seen as a way as a way for the City to fulfill its regional housing allocation targets. However, achievement of the Dammasch redevelopment is interlinked with other land use-transportation issues. In order for Dammasch to proceed, adequate transportation access is necessary. Alternative 2 describes a transportation solution that allows development of the Dammasch area to proceed, as long as concurrency requirements are met.

The 2020 Alternative 2 addresses Wilsonville's most pressing transportation issues and provides the best overall traffic operations. Alternative 2 addresses north-south circulation by extending Kinsman Road and Brown Road to the north and south, and by extending Canyon Creek Road N to the south. Adding a Boeckman extension, a Barber extension and a five-lane Boeckman crossing of I-5 enhances east-west connectivity. Improved connectivity will allow more separation of cars and other modes, as well as reduce trip lengths and provide enhanced truck circulation.

Improvements to the local roadway system are necessary to meet the transportation needs of the City in the coming years. The Freeway Access Study, in Table 10 page 67, lists 7 critical system wide extension projects from highest priority to lowest priority based on potential benefits to the local street network. (These projects are listed in the short and mid range project prioritization lists based on discussion with DKS Traffic Engineers, the author of the FAS.). The necessary local improvement projects and their FAS cost estimates are:

1. Boeckman Road extension (west to Tooze Road) - $9,500,000
2. Barber Street extension (west to Grahams Ferry Road and connecting with Brown Road) - $6,400,000
3. Wilsonville Road widening: (west to Brown Road) - $5,400,000
4. Canyon Creek Road North extension (south to Town Center Loop) - $5,700,000

5. Kinsman Road extension #1 (north to Boeckman Road) - $4,600,000
6. Kinsman Road extension (#2-south to Brown Road Extension and #3-north from Boeckman Road to Day Street) - $15,000,000
7. Brown Road extension (south to Boones Ferry Road) - $5,900,000

Improvements to the local roadway system are not adequate by themselves to mitigate the future 2020 interchange access needs without interchange improvements. Consistent with the Freeway Access Study conclusions, Alternative 2 contains projects that serve to enhance the existing Wilsonville Road interchange. These enhancements are phased so as to allow for incremental financing and for the City to react to actual traffic growth trends rather than on static model projections. The enhancements include:

Project C-30 Wilsonville Road Interchange Improvements	
Phase I: On-off Ramp Improvements	$10.5 million
Phase II: Set back Abutment Walls and Widen Wilsonville Road	$ 9.8 million
Phase III: Add Auxiliary Lanes to I-5	$11.0 million
Total:	$31.3 million

Alternative 2 includes improvements for all modes of travel. Intersection delay is minimized, improving transit service. Transit service will also be improved with new neighborhood connector links. Other transportation modes will be improved with the implementation of the bicycle and pedestrian enhancements. Environmental impacts will occur but will be minimized with planning, preliminary engineering studies and inspection during construction.

This alternative's compatibility with Federal Highway Agency's (FHWA) and ODOT's plans for I-5 is discussed in the FAS as a long term viable solution to some of the future traffic congestion problems at the other interchanges in the City. Metro's RTP does not contain Wilsonville Road Interchange enhancements, the Boeckman Interchange, or another freeway access improvement alternative, within its 20-year list of projects. However, Metro will seek to include Alternative 2, the Boeckman Interchange, or another freeway access improvement alternative in the scheduled 2005 RTP update.

4.4 OTHER 2020 ROADWAY NETWORK IMPROVEMENTS

4.4.1 Roadway Design Standards

The City of Wilsonville has design standards that apply to every roadway. These standards provide functional classification and assist in future planning for the City's roadway network. The design standards are based on The *Policy on Geometric Design of Highways and Streets, American Association of State Highway and Transportation Officials* (AASHTO) Washington D.C. (2000). This is a national publication that provides a general breakdown of roadway classifications and street design guidelines, based on their intended function.

Other guidelines followed by the TSP are those provided by Metro's Regional Transportation Plan (RTP) for regionally significant roadways. The RTP regional street design policies address federal, state, and regional transportation mandates with street design concepts intended to support local implementation of the 2040 Growth Concept. The RTP recognizes as regionally significant the following Wilsonville roads: Elligsen Road, Boones Ferry Road (north of Elligsen Road), Parkway Avenue (north of Town Center Loop to Elligsen Road), Boeckman Road, Town Center Loop, and Wilsonville Road. Regional street design classifications are given in Figure 1.4, page 1-19 of the RTP. Elligsen Road is defined as an Urban Road. Town Center Loop and that portion of Wilsonville Road in the Town Center are defined as a Community Boulevard. All of the rest of the regionally significant roadways are defined as Community Streets. The TSP complies with AASHTO and RTP design concepts, purpose, and design emphasis. RTP regional street design concepts also apply to local streets. A discussion of local implementation of 'Green Streets' and 'Livable Streets' design concepts is found later in this section.

The functional classification of the regionally significant Wilsonville roads, per Figure 1.12 'Regional Motor Vehicle System' on page 1-29 of the RTP, is minor arterial. Minor Arterials, for the RTP, are primarily orientated toward motor vehicle travel at the community level. The TSP is in general conformance with the RTP functional classification, except where the City has designated portions of the City roadway system as major arterials. This discrepancy will be rectified when the RTP is next updated.

Figures 4.12 through **4.22** show the City's selected design standards by functional classifications for this TSP. In general, roadways are classified as major and minor arterials, major and minor collectors, residential streets, and rural roads. **Table 4.I** provides definitions and capacities in vehicles-per-day (Average-Daily Traffic or ADT) for most of the classifications as described by AASHTO. These standards include required right-of-way unless additional slope or utility needs exist. The width of the bicycle lanes shown and the movement of the sidewalks to the outside of the landscaped strip instead of by the curb results in an overall width increase. This is due to the need for additional width adjacent to the sidewalks to allow for repair and maintenance. These two changes resulted in a net increase in required right-of-way of six feet for most street classifications as compared to the 1991 TMP. For details on lighting, trees, and setbacks refer to the following City of Wilsonville documents: the Tualatin Valley Fire and Rescue Fire Code, Public Work Standards, Development Code, and Comprehensive Plan.

"Green Street," "Livable Street," "Skinny Street" or similar concepts are viable alternatives to the roadway standards that follow. Green streets specifically address storm water runoff issues. Though narrow in scope, the concept has an overall effect on transportation planning and road design by focusing attention on the protection, enhancement, and restoration of the environment. Livable streets are those that promote community livability by considering all modes of transportation, the surrounding land uses, and economic growth when designing transportation facilities. Skinny streets are those that seek to reduce the overall width of the street section in order to decrease the amount of impervious surface and enhance the

livability of the urban environment. Further information is available from Metro Regional Service publications entitled "Green Streets," June 2002, and "Creating Livable Streets," June 2002.

The City has adopted a Fire Prevention Code that, among other things, provides specifications and standards for roads and streets. The Regional Transportation Plan requires that the City provide guidelines that allow for consideration of narrow street design alternatives that may conflict with the adopted Fire Code. In turn, State law provides that the City may adopt additional specifications and standards for roads and streets that supersede code provisions. While this plan provides for the consideration of standards that may conflict with the adopted Fire Code, it is understood that these standards will be applied on a case-by-case basis, with due regard to the Code.

Any alternative to existing design standards must be approved by the Development Review Board and by the City Engineer. This is not to say that the City discourages alternative designs. Indeed, the City's Planning and Development Code does provide for the development of planned unit developments in which "skinny" streets could be employed. The planned development process is a conditional use process that allows for waivers of typical standards if it results in a better-designed, functional development. For example, skinny streets designed with parking pullouts serve residential guests in the Charbonneau Planned Development. Skinny streets were also designed in conjunction with private alleyways that serve garages in the Canyon Creek Estates Planned Development. Sprinkling of residences may also be a reasonable condition under some circumstances to ensure fire, life, and safety concerns are met where skinny street design has increased the probability of delay in fire apparatus access. The Plan Development process encourages collaborative review by the applicant, the City and other regulatory agencies on a case-by-case basis.

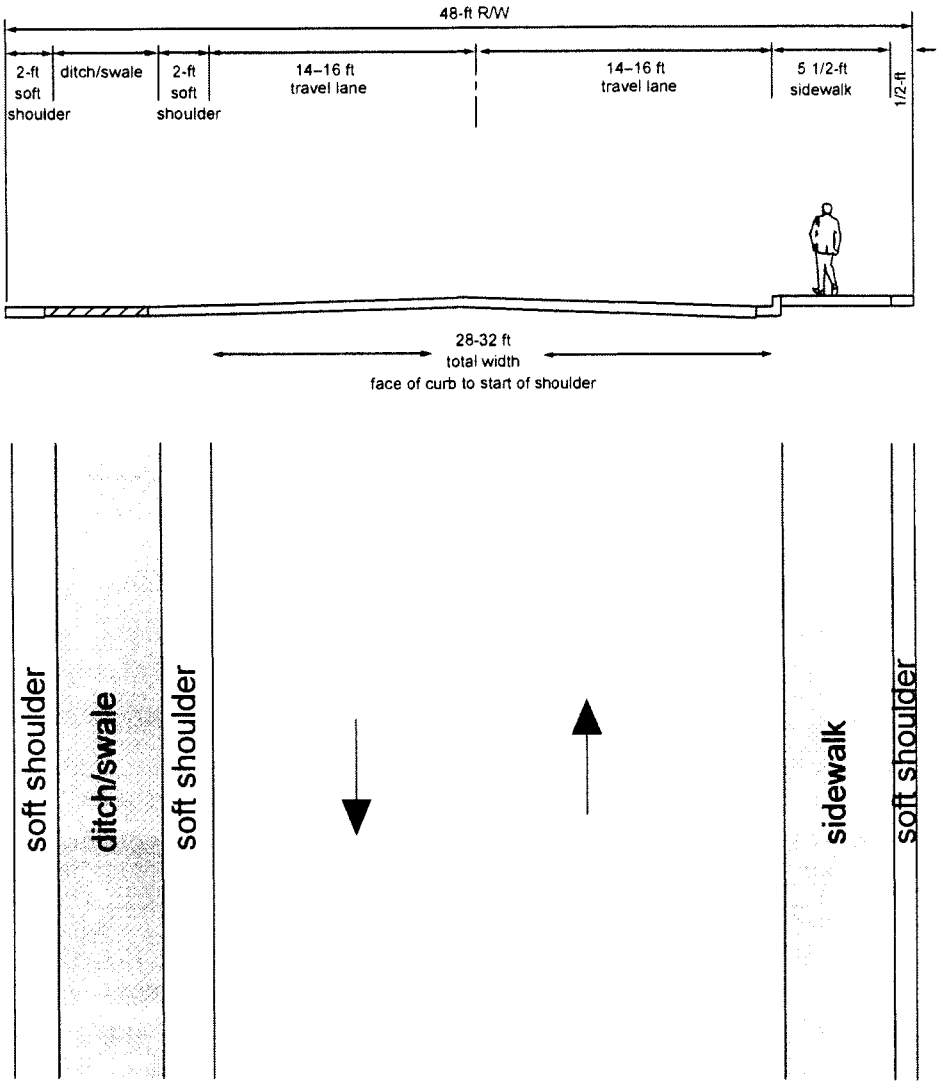
Table 4.I
Functional Classification

Functional Classification	Description	Design Capacity[1] Vehicles per Day	Number of Lanes[2]
Major Arterial	Serves major centers of activity; has highest traffic volume corridors; serves most trips entering and leaving urban areas, and through trips; serves intra-urban travel between major suburban or business districts; has fully or partially controlled access. Carries higher volumes than the minor arterial. Can include dual left turns at the intersections.	32,000	5
Minor Arterial	Interconnects and augments major arterials; serves trips of shorter distance and lower level of mobility than major arterials; places more emphasis on land access; does not usually penetrate identifiable neighborhoods. No parallel parking is included on this roadway.	10,000 – 32,000	3 – 5
Major Collector	Provides land access and traffic circulation within residential, commercial, and industrial areas; distributes trips from arterial system to ultimate destination and vice versa. This roadway type can also include on-street parking.	1,500 – 10,000	3
Minor Collector	Provides land access and traffic circulation within residential and commercial areas; provides connection from arterial system to residential and rural roadways and vice versa. This roadway type can occur with or without on-street parking.	1,200 – 3,000	2
Residential Street	Comprises all facilities not classified as a higher class; permits direct access to abutting land uses; connects to higher class systems; low level of mobility; discourages through traffic movement. Includes landscape strip and sidewalk. This classification includes residential cul-de-sacs or residential collectors with adjacent parking.	1,200	2
Rural Road	Consists of a facility outside of the urban growth area; primarily provides access to land adjacent to the collector network and serves travel over relatively short distances.	1,200	2

[1]Planning-level capacity is not based on functional classification, but primarily on the number of lanes.
[2]Number of Lanes taken from 2001 City of Wilsonville Street Standards.

Notes: *Design capacity based on Level of Service "D", 5 percent commercial vehicles, 10 percent right turns, 10 percent left turns, peak hour factor 95-90 percent, peak hour directional distribution 55 to 60 percent, peak hour 9 to 12 percent of daily volume and average signal timing for collector and arterial streets.

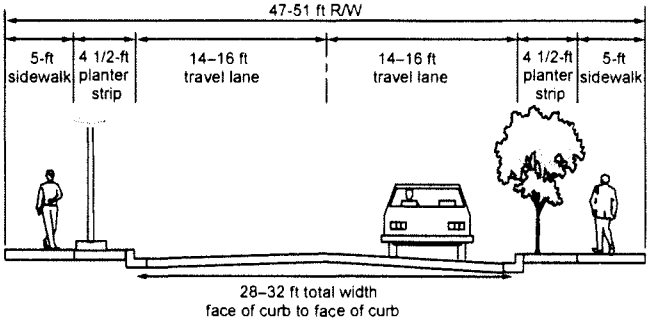
*Functional classification is a general guide that covers planning level capacity, number of lanes, and description. These are not the only factors that go into the classification of a road. Other issues are: access, interconnection with other roads, safety, surrounding land use designations, kind of traffic usage and purpose, and intersection configuration.

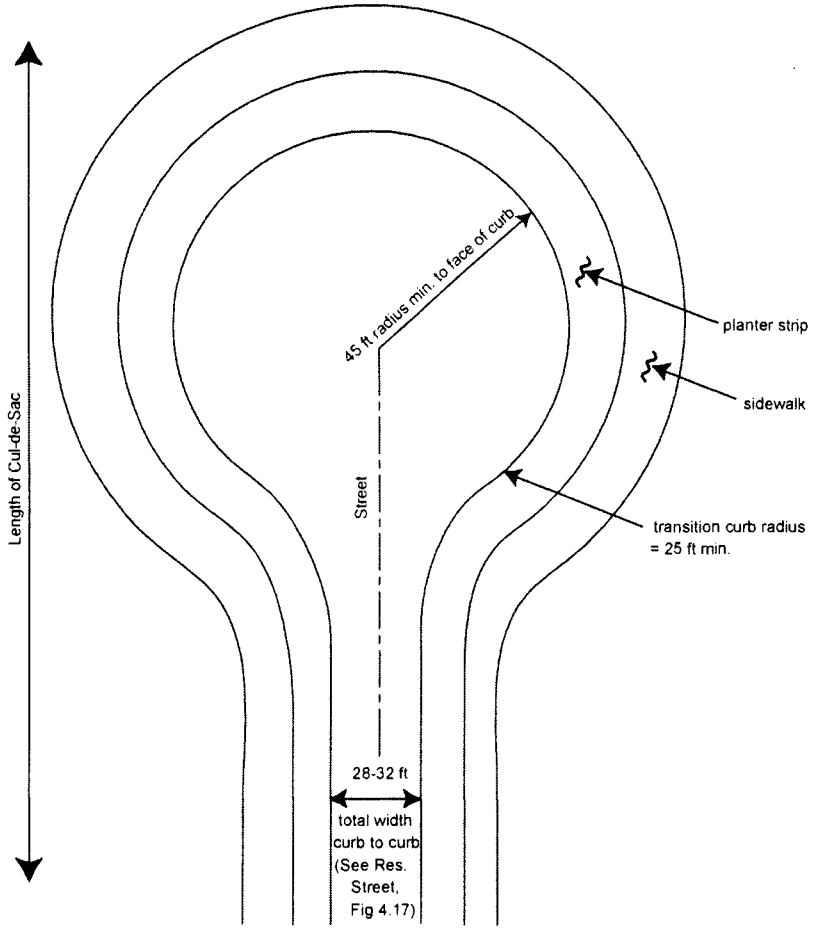


Notes:

1. Curb width (1/2') is included in sidewalk/planter strip width.
2. 2' soft shoulder is provided from edge of concrete surface for maintenance and survey monument protection.
3. No striping on street. Signage as required.
4. On-street parking on sidewalk side is optional consistent with emergency requirements.
5. The rural road cross-section is a special application only. It may only be used with prior approval from City Planning Department and City Engineer.

Figure 4.12
Rural Road Street Standards

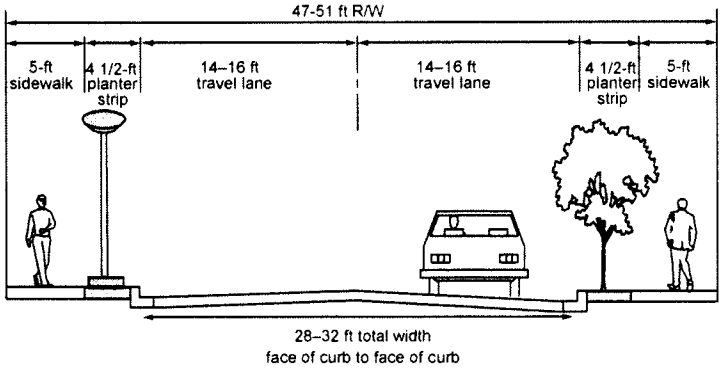


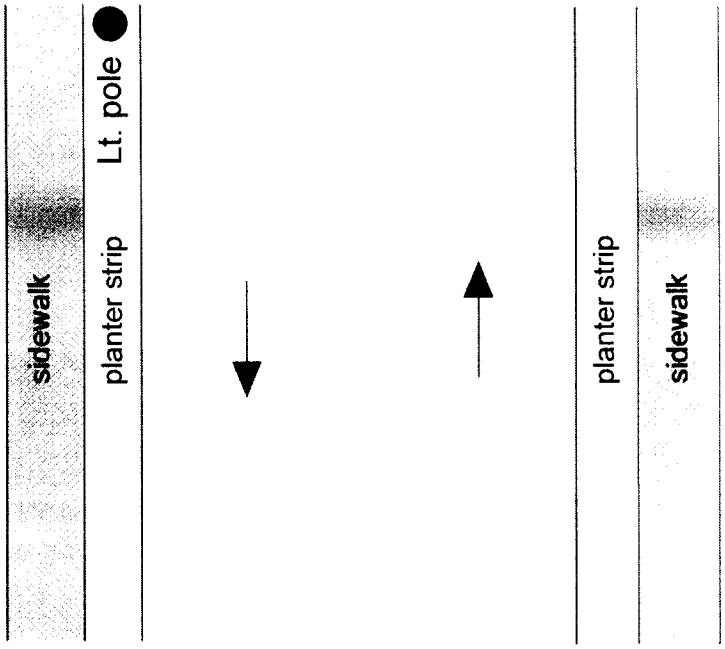


Notes:

1. A 4 ½' planter strip is required on all cul-de-sacs.
2. Curb width (1/2-foot) is included in planter strip width.
3. Street lights and street trees shall be located within planter strip as required.
4. No striping on street. Signage as required.
5. On-street parking is optional consistent with emergency requirements: Parking on one side only with 28' width. Parking on both sides with 32' width.
6. The length of the cul-de-sac shall be no longer than 200' from outside right-of way of bulb to near side right-of-way of intersecting street.
7. Dead end access roads in excess of 150-feet in length shall be provided with an approved turnaround.
8. Minimum 25' inner and 45' outer turning radii required.

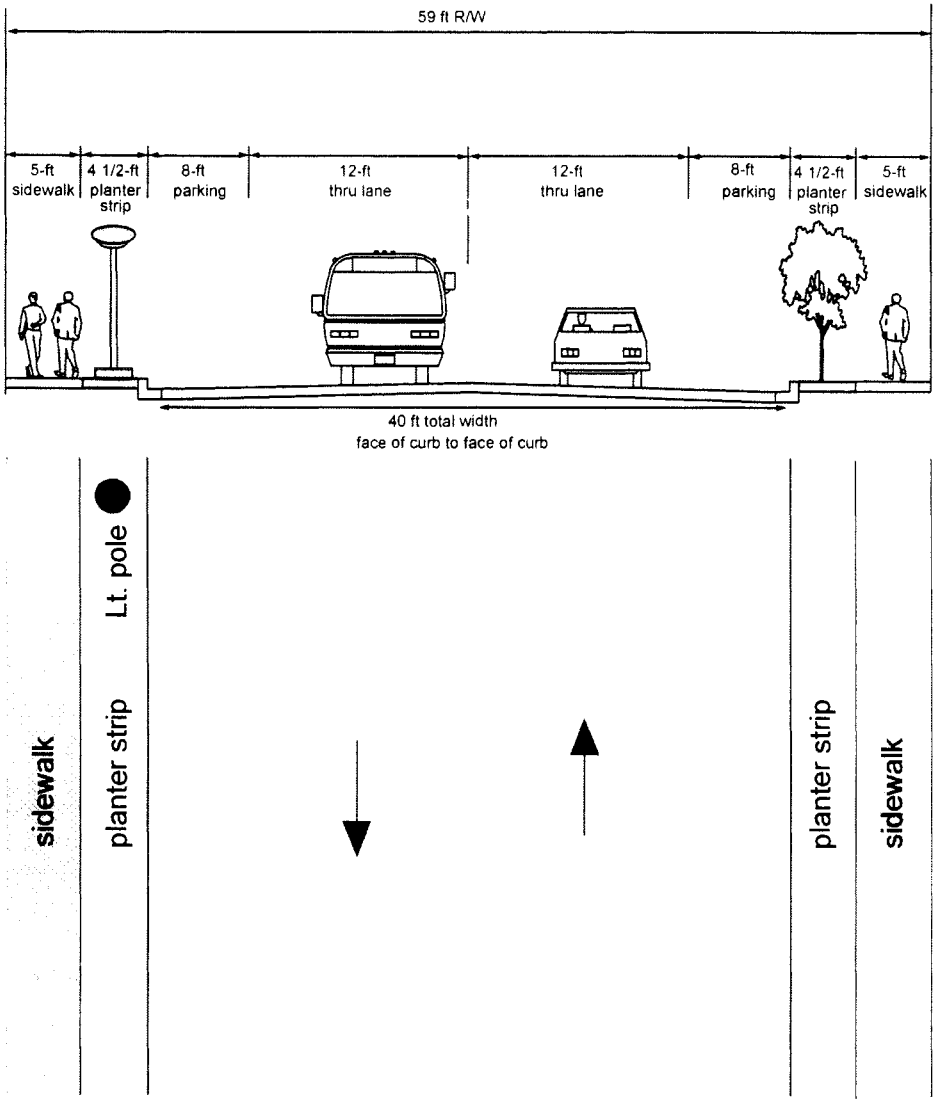
Figure 4.13
Residential Street Cul-de-sac Standards





Notes:
1. A 4 ½' planter strip is required on all residential streets.
2. Curb width (½') is included in planter strip width.
3. Street lights and street trees shall be located within planter strip as required.
4. No striping on street. Signage as required.
5. On-street parking is optional consistent with emergency requirements: Parking on one side only with 28' width.

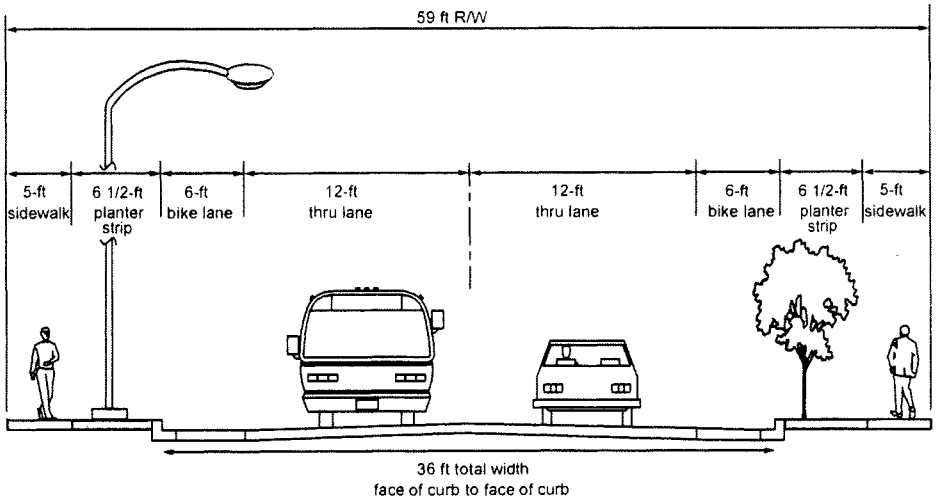
Figure 4.14
Residential Street Standards

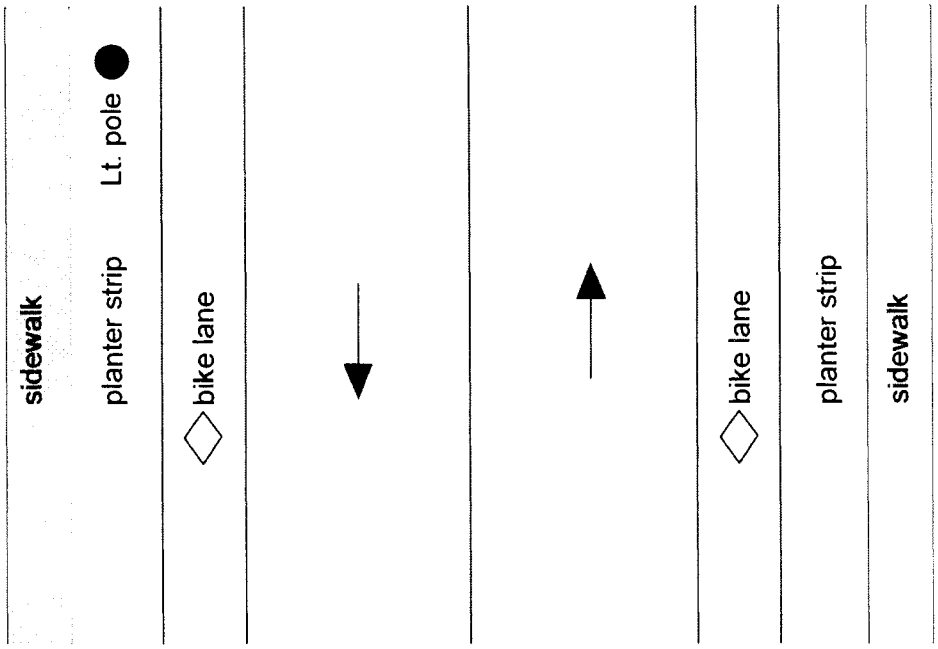


Notes:

1. A 4 ½' planter strip is required on all residential collector streets.
2. Curb width (1/2 foot) is included in sidewalk or planter strip width.
3. Street lights and street trees shall be located within planter strip as required.
4. No striping on street. Signage as required. Parking areas to be designated.
5. On-street parking on both sides is allowed consistent with emergency requirements.
6. Transit stop locations to be determined by Transit Director and located within parking area.
7. Residential (Transit) Street Standard is a special case by case application and may only be used with prior approval from the Development Review Board, the Transit Director and the City Engineer.

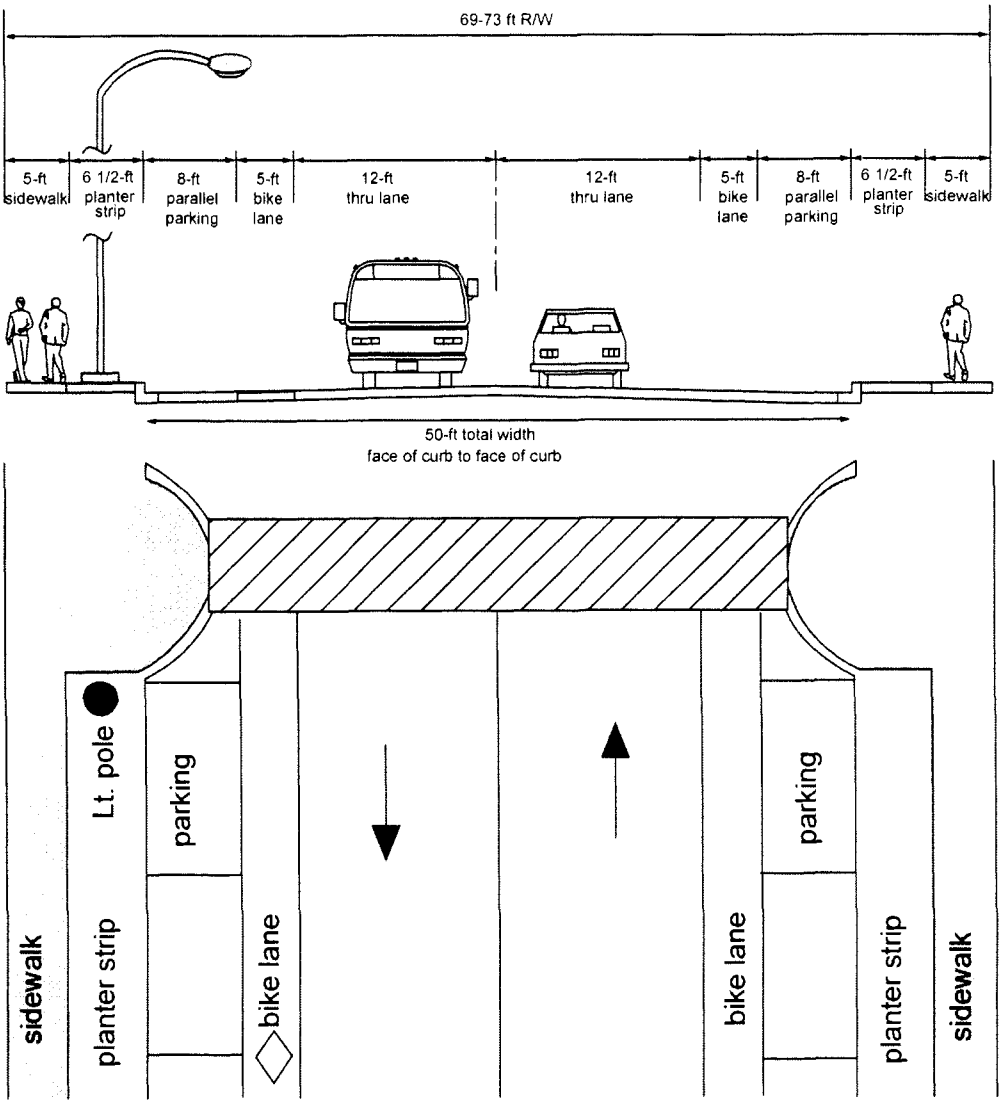
Figure 4.15
Residential (Transit) Street Standards





Notes:
1. A 6 ½' planter strip is required on all minor collector streets.
2. Curb width (½') is included in sidewalk or planter strip width.
3. Street lights and street trees shall be located within planter strip as required.
4. Striping and signage as required.
5. No on-street parking is allowed. Transit stop locations to be determined by Transit Director.

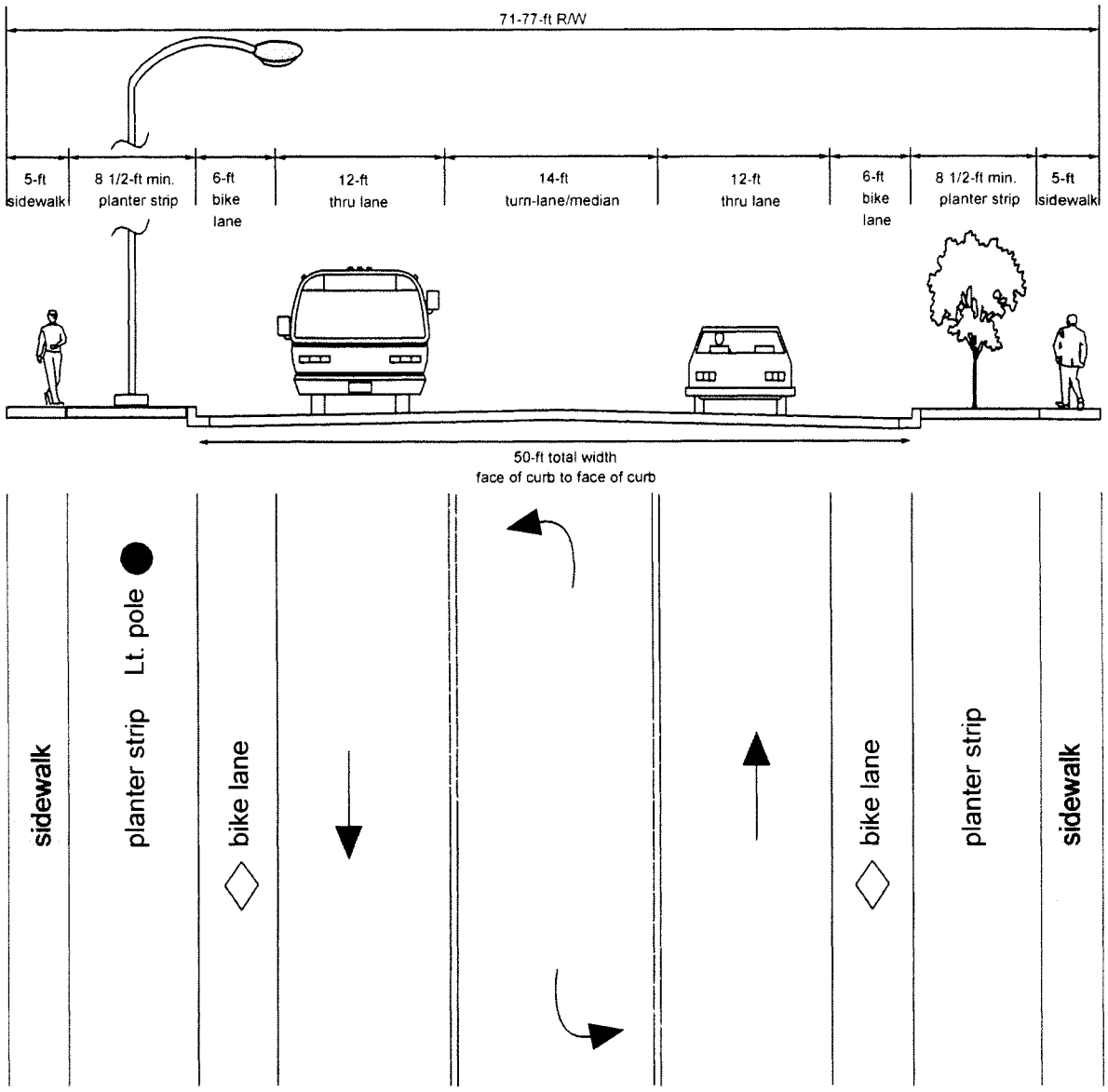
Figure 4.16
Minor Collector Street Standards
(Not to be used in residential areas)



Notes:

1. A 6 ½' planter strip is required on all minor collector with on-street parking streets in all non-commercial/retail areas. Width of sidewalk and planting strip may be combined in commercial/retail areas for a total width of 9 ½': street trees shall be in 4' tree wells only and adjacent to curb, sidewalk shall be 9 ½' wide and adjacent to curb, leaving a minimum of 5' clear sidewalk.
2. Curb width (½') is included in sidewalk or planter strip width.
3. Street lights shall be located within planter strip or, if commercial/retail area, sidewalk as required.
4. Striping and signage as required. Bicycle lanes shall not be striped until volume reaches 1,500 vehicles/day or as determined by the City Engineer.
5. On-street parking on both sides is allowed. Transit stop locations to be determined by Transit Director and located within parking or at bulb-out area.
6. The Minor Collector with On-Street Parking Street Standard is a special case by case application and may only be used with prior approval from the Development Review Board and the City Engineer.
7. If on-street parking is proposed, then additional modeling wil be required to confirm level-of-service standards.

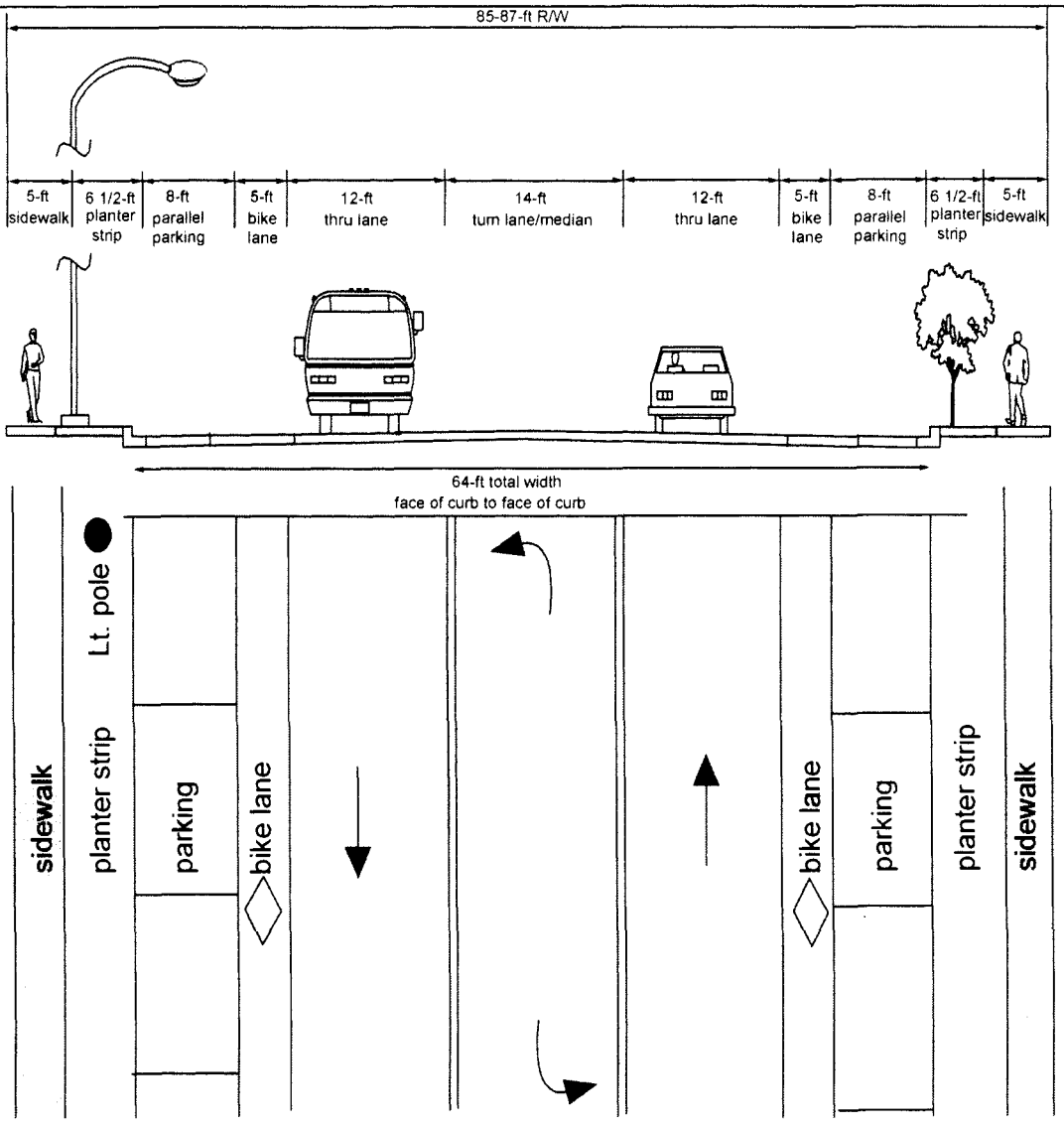
Figure 4.17
Minor Collector with On-street Parking Standards



Notes:

1. An 8 ½' planter strip is required on all major collector streets in all non- commercial/retail areas. Width of sidewalk and planting strip may be combined in commercial/retail areas for a total width of 10 ½': street trees shall be in 4' tree wells only and adjacent to curb, sidewalk shall be 10 ½' wide and adjacent to curb, leaving a minimum of 6' clear sidewalk.
2. Curb width (½') is included in sidewalk or planter strip width.
3. Street lights shall be located within planter strip or, if commercial/retail area, sidewalk as required.
4. Striping and signage as required.
5. On-street parking is not allowed. Transit stop locations to be determined by Transit Director.
6. Median shall be landscaped when not needed as a left-turn lane.

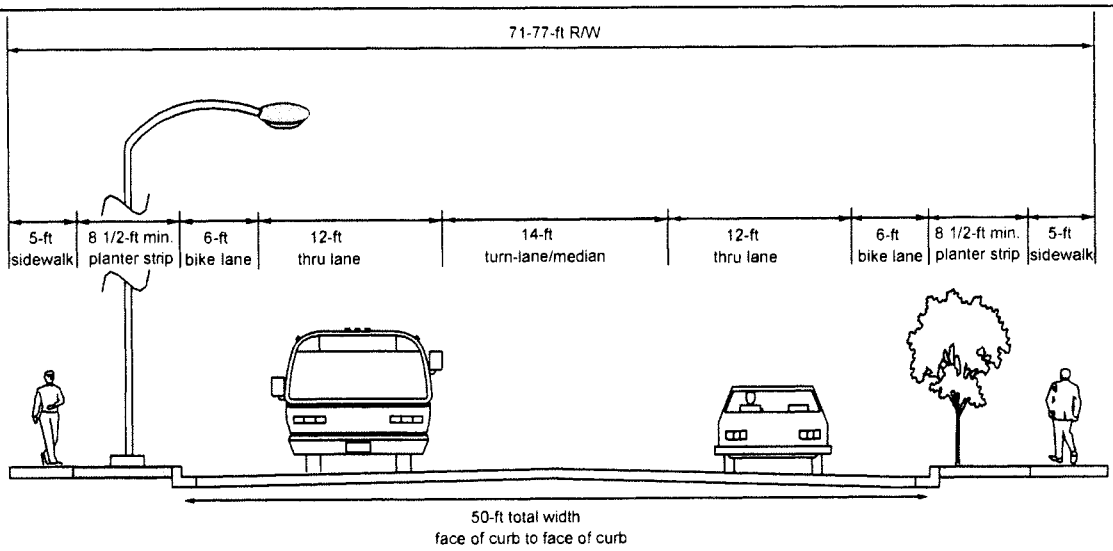
Figure 4.18
Major Collector Street Standards

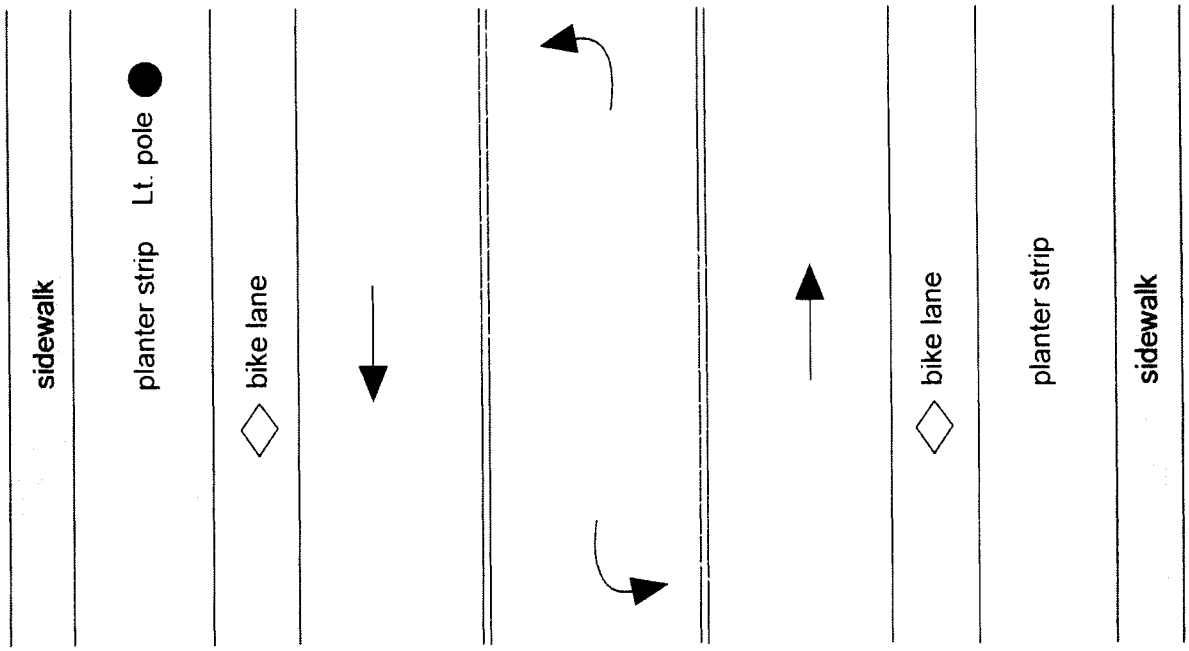


Notes:

1. A 6 ½' planter strip is required on all major collector with on-street parking streets in all non-commercial/retail areas. Width of sidewalk and planting strip may be combined in commercial/retail areas for a total width of 10 ½': street trees shall be in 4' tree wells only and adjacent to curb, sidewalk shall be 10 ½' wide and adjacent to curb, leaving a minimum of 6' clear sidewalk.
2. Curb width (1/2 foot) is included in sidewalk or planter strip width.
3. Street lights shall be located in planter strip, or if commercial/retail, sidewalk as required.
4. Striping and signage as required. Bicycle lanes shall not be striped until 1,500 vehicles/day or as determined by the City Engineer.
5. On-street parking on both sides is allowed. Transit stop locations to be determined by Transit Director and located within parking or at bulb-out.
6. Median shall be landscaped when not needed as a left-turn lane.
7. See minor collector with on-street parking for crosswalk with bulb outs.
8. The Major Collector with On-Street Parking Street Standard is a special case by case application and may only be used with prior approval from the Development Review Board and the City Engineer.
9. If on-street parking is proposed, then additional modeling wil be required to confirm level-of-service standards.

Figure 4.19
Major Collector with On-Street Parking Standards

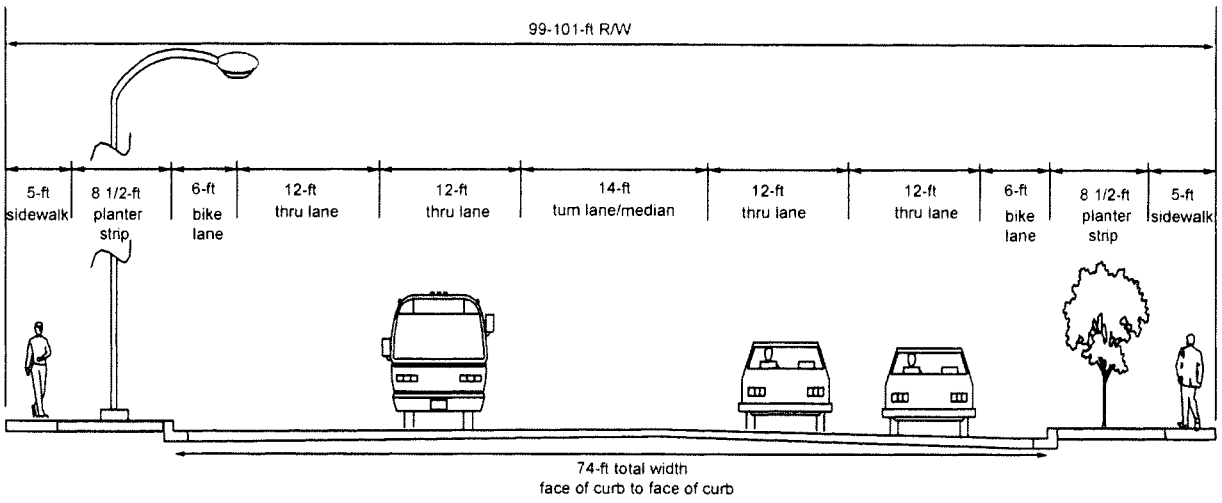


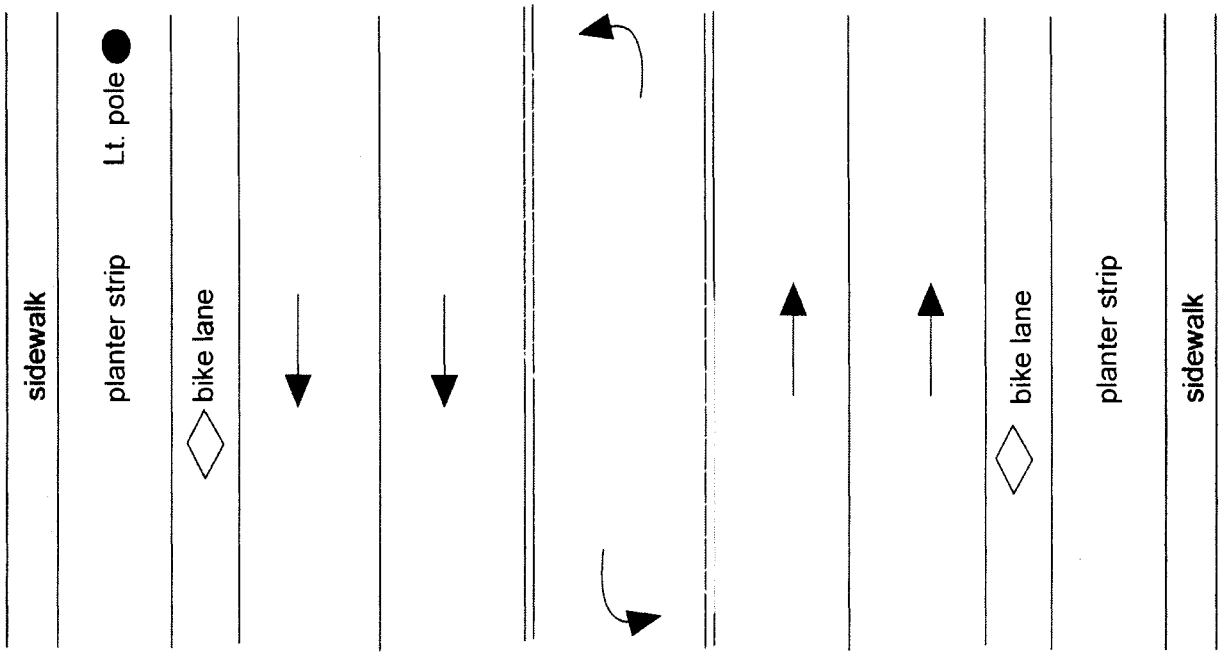


Notes:

1. An 8 ½' planter strip is required on all minor arterial streets in all non- commercial/retail areas. Width of sidewalk and planting strip may be combined in commercial/retail areas for a total width of 10 ½': street trees shall be in 4' tree wells only and adjacent to curb, sidewalk shall be 10 ½' wide and adjacent to curb, leaving a minimum of 6' clear sidewalk.
2. Curb width (½') is included in sidewalk or planter strip width.
3. Street lights shall be located within planter strip or, if commercial/retail area, sidewalk as required.
4. Striping and signage as required.
5. On-street parking is not allowed. Transit stop locations to be determined by Transit Director.
6. Median shall be landscaped when not needed as a left-turn lane.
7. See special setback requirements for minor arterial street sections.

Figure 4.20
Minor Arterial Street Standards

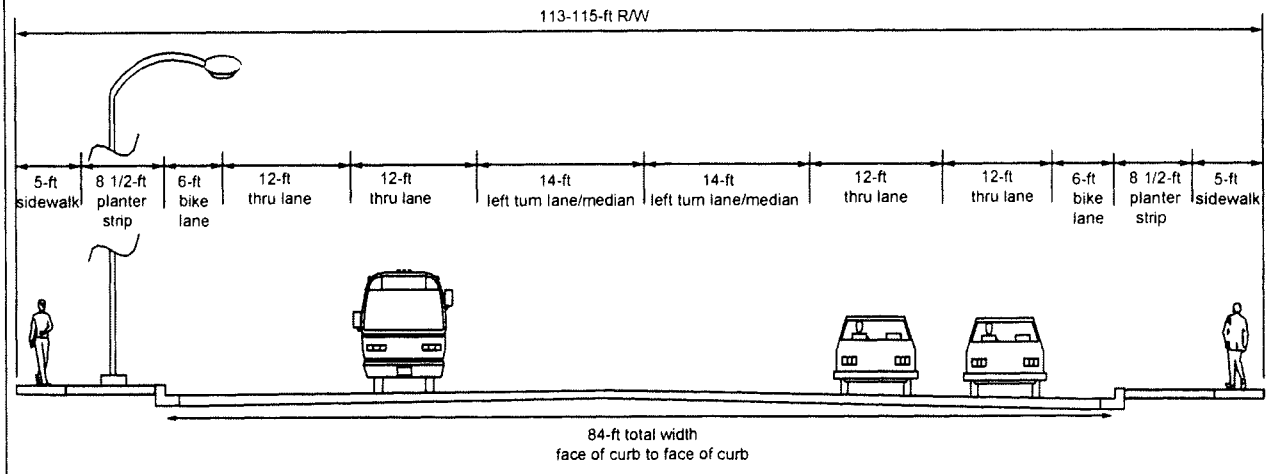


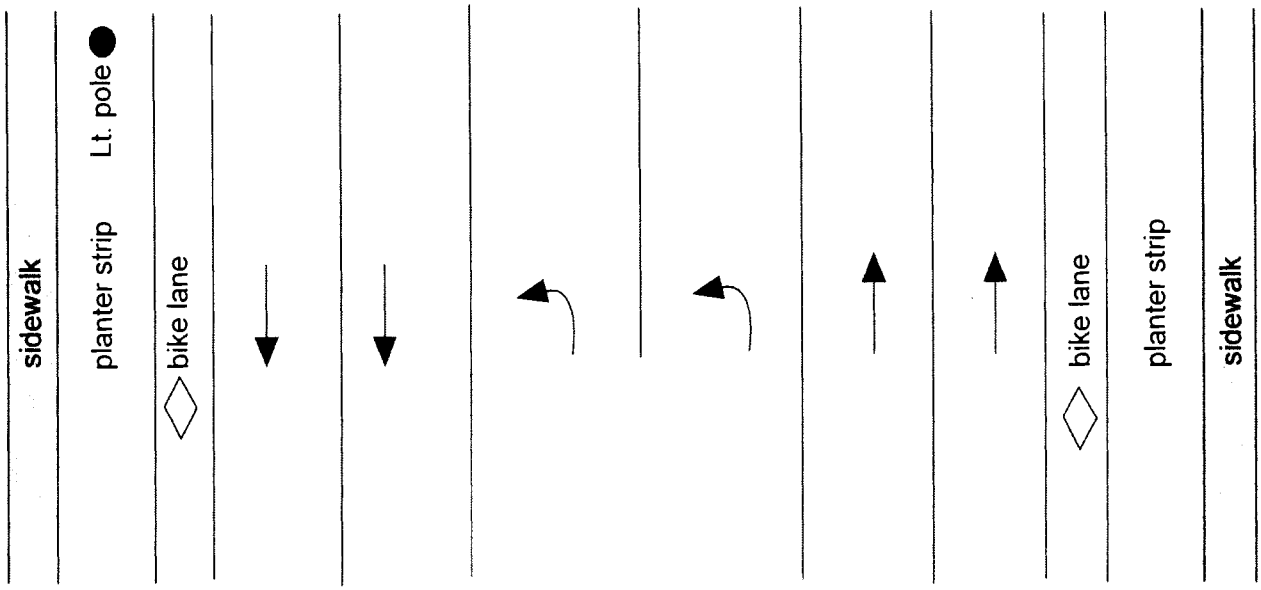


Notes:

1. An 8 ½' planter strip is required on all major arterial streets in all non- commercial/retail areas. Width of sidewalk and planting strip may be combined in commercial/retail areas for a total width of 12 ½': street trees shall be in 4' tree wells only and adjacent to curb, sidewalk shall be 12 ½' wide and adjacent to curb, leaving a minimum of 8' clear sidewalk.
2. Curb width (½') is included in sidewalk or planter strip width.
3. Street lights shall be located within planter strip or, if commercial/retail area, sidewalk as required.
4. Striping and signage as required.
5. On-street parking is not allowed. Transit stop locations to be determined by Transit Director.
6. Median shall be landscaped when not needed as a left-turn lane.

Figure 4.21
Major Arterial Street Standards





Notes:

1. An 8 ½' planter strip is required on all major arterial with dual left-turn streets in all non-commercial/retail areas. Width of sidewalk and planting strip may be combined in commercial/retail areas for a total width of 12 ½': street trees shall be in 4' tree wells only and adjacent to curb, sidewalk shall be 12 ½' wide and adjacent to curb, leaving a minimum of 8' clear sidewalk.
2. Curb width (½') is included in sidewalk or planter strip width.
3. Street lights shall be located within planter strip or, if commercial/retail area, sidewalk as required.
4. Striping and signage as required.
5. On-street parking is not allowed. Transit stop locations to be determined by Transit Director.
6. Median shall be landscaped when not needed as a left-turn lane.
7. See special setback requirements for major arterial.

Figure 4.22
Major Arterial with Dual Left-turns Street Standards

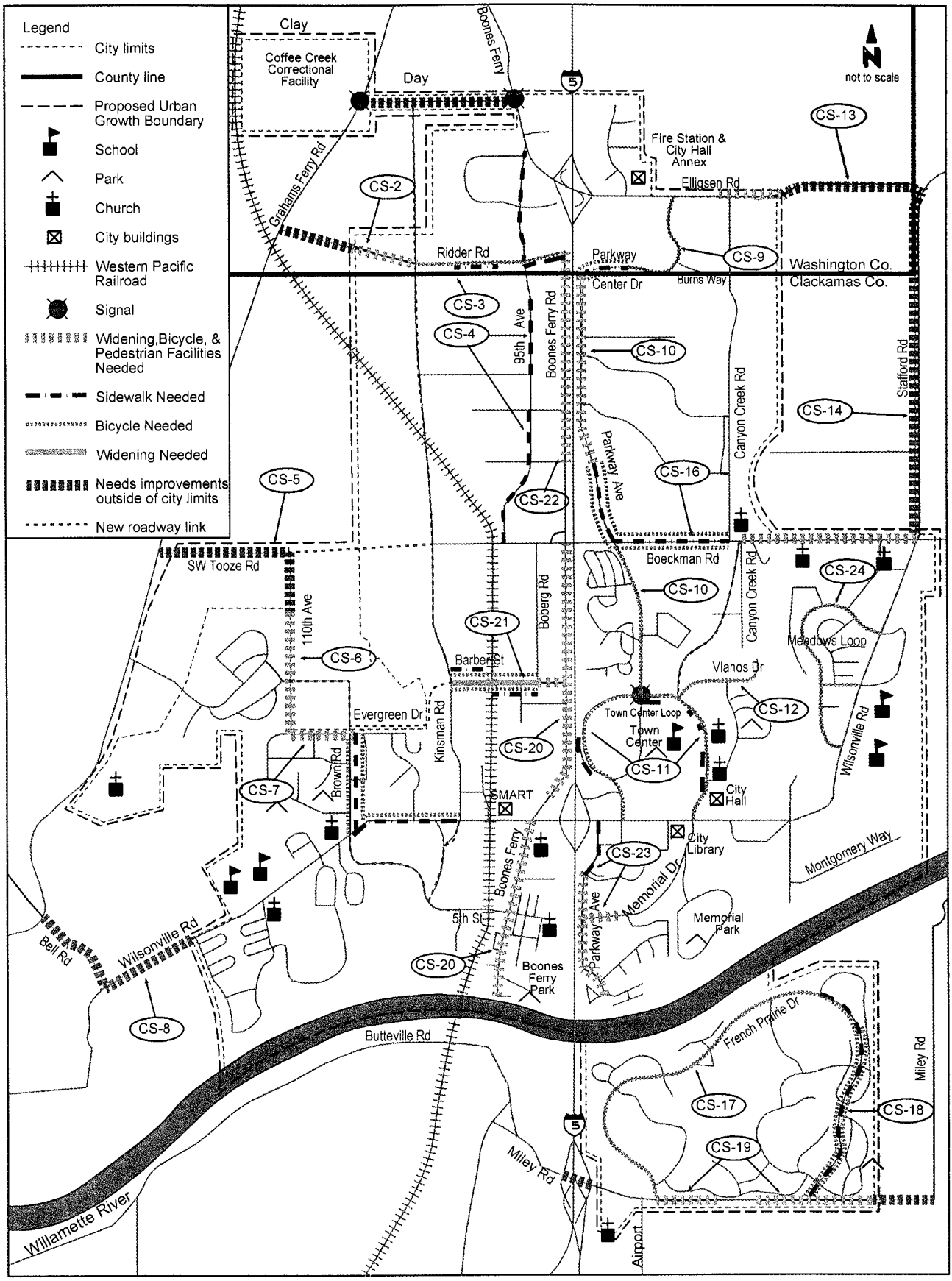
4.4.2 Improvements to Substandard Streets

Based on the design standards presented in the previous section, some of the existing Wilsonville street network does not meet these new design standard requirements. **Figure 4.23** illustrates the streets or portions of roads that do not meet design standards and the actions that will improve the roadway to satisfy design standards. The indicated road improvements in **Figure 4.23** do not include capacity or widening projects. These substandard roads need to be improved in addition to the other projects that are already included in the TSP. Improvements may include street widening and the addition or upgrade of bike and pedestrian facilities. **Table 4.m** provides the planning-level cost estimates for improving substandard roadways to meet City standards. The total cost to improve substandard streets is estimated to be $26.2 million.

4.4.3 Street Connectivity Improvements

The 1996 *Wilsonville Land Plan, A Tool for Becoming a Garden City of Neighborhoods*, a study produced by Lennertz and Coyle, set out to provide the essential elements of a zoning code and the related comprehensive plan and transportation components necessary to achieve the vision of a city made of neighborhoods, districts, and corridors. This report was used as a tool for discussion and for conceptual purposes only to begin the development of several of the essential elements mentioned above. This report indicated that Wilsonville does not have enough streets and alternative routes to disperse traffic successfully. Besides providing additional streets for capacity, some streets need to be extended or added to provide connectivity between activity centers, neighborhoods, or other existing streets.

Connector streets are not constructed with the intent of providing substantial capacity, and usually have only two vehicle lanes with bicycle lanes. Connector streets should not overload residential areas with unwanted traffic. Instead, they provide an alternate route for short trips, so that the capacity of major and minor arterial streets may be preserved for longer through trips. Connector streets are intended to reduce out-of-direction travel and vehicle miles traveled. They also provide excellent pedestrian and bicycle routes by substantially shortening walking distances and riding distances, which encourages the use of alternative modes. Distances to transit stops are also reduced, which decreases total travel time.



Note:
1. New roads are assumed to be built to 2002 standards.
2. Residential streets are not adressed in this figure.

City of WILSONVILLE in OREGON

Transportation
Systems Plan

Figure 4.23
Streets Not Meeting 2002 Standards

Table 4.m
Cost Estimates for 2002 Roadways to Meet City Standards

Project No.	Description	Estimated Cost[1] (in Millions)
CS-2	SW Clutter Road, bicycle lane and sidewalk	$1.2
CS-3	Ridder Road, bicycle lane and sidewalk	$0.7
CS-4	95th Avenue, Ridder to Boeckman, sidewalk only in center areas	$0.5
CS-5	Tooze Road, 110th to Grahams Ferry Road, widen for bicycles and sidewalk	W-20
CS-6	110th Avenue, 18-foot roadway widening, bicycle lane, and sidewalk	$1.8
CS-7	Evergreen Drive, 10-foot roadway widening, bicycle lane, and sidewalk	$0.6
CS-8	Wilsonville Road, 19-foot roadway widening, bicycle lane, and sidewalk	$1.2
CS-9	Parkway Center Drive, bicycle lane and sidewalk	W-3
CS-10	Parkway Avenue, 14-foot roadway widening, bicycle lane, and sidewalk	$2.4
CS-11	Town Center Loop, bicycle lane and sidewalk only	$2.1
CS-12	Vlahos Drive, bicycle lane only	$0.5
CS-13	Elligsen Road, 19-foot roadway widening, bicycle lane, and sidewalk	Complete
CS-14	Stafford Road, 16-foot roadway widening, bicycle lane, and sidewalk	$3.2
CS-16	Boeckman Road, bicycle lane and sidewalk	B-6
CS-17	French Prairie Dr. W, bicycle lane only	$2.7
CS-18	French Prairie Dr. E, bicycle lane and sidewalk	$3.4
CS-19	Miley Road, 8-foot roadway widening, bicycle lane, and sidewalk	$1.5
CS-20	Boones Ferry Road, 4 to 12-foot roadway widening, bicycle lane, and sidewalk	tbd[2]
CS-21	Barber Street, 13-foot roadway widening, bicycle lane, and sidewalk	$1.3
CS-22	Boones Ferry Road, 3-foot roadway widening, bicycle lane, and sidewalk	$1.7
CS-23	Parkway Avenue, varied roadway widening, bicycle lane, and sidewalk	$1.4
CS-24	Meadows Loop and Meadows Parkway, bicycle lanes only	tbd[2]
	TOTAL	**$26.2**

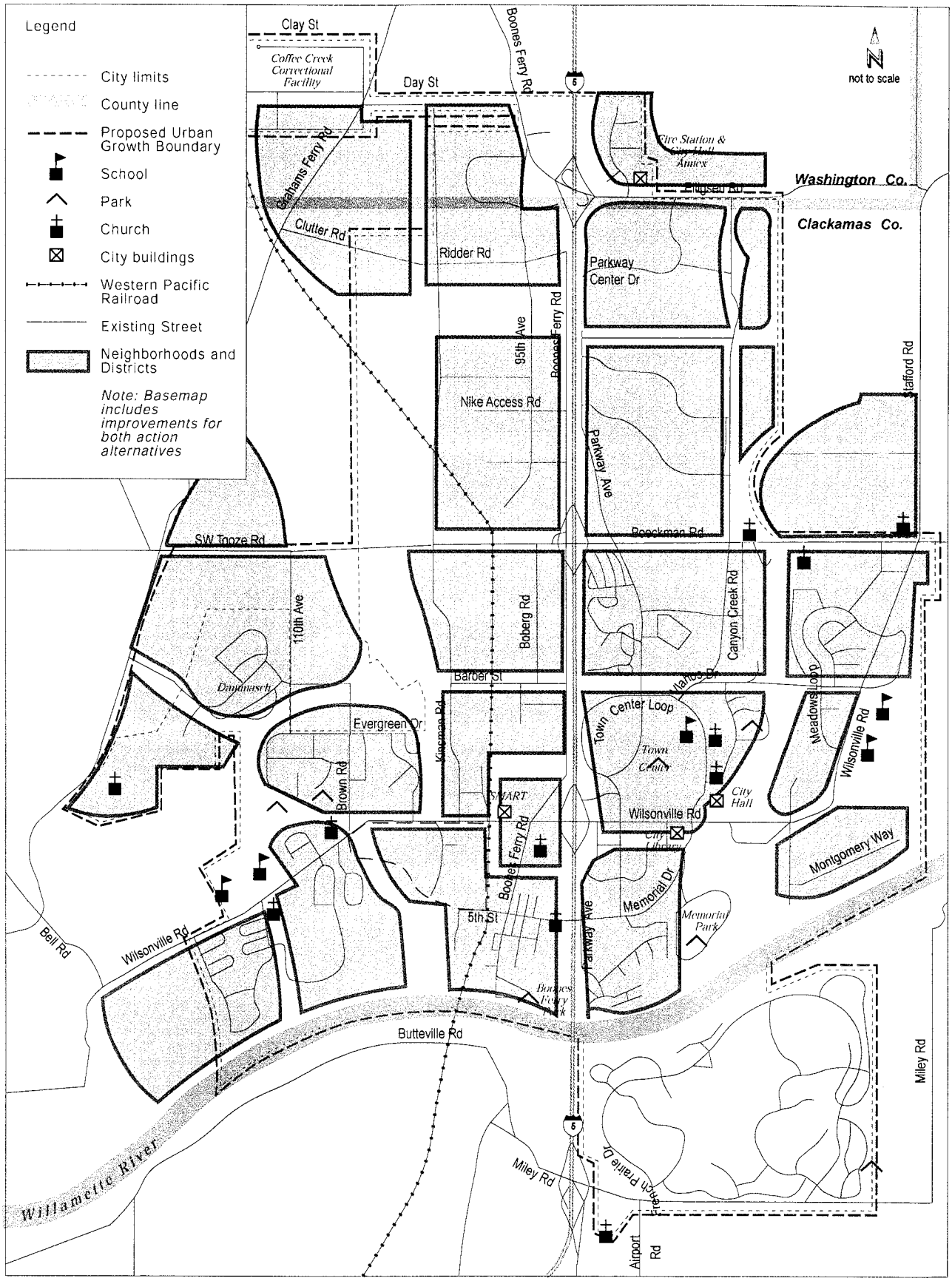
[1]To be conservative, these costs include purchasing right-of-way for the project.
[2]tbd – cost to be determined later

Historically, in a typical subdivision, residential collectors, residential streets, and cul-de-sacs branch off a major collector/arterial network with few, if any, linkages in between. Accordingly, few routes are open to bicyclists and pedestrians to reach a destination other than the arterial network. In contrast, an interconnected street system provides linkages to local shopping, school, and recreation destinations, as well as between developments. Key components of an interconnected system are bicycle and pedestrian linkages into and out of cul-de-sacs, and between neighborhoods. The City shall require bicycle and pedestrian linkages for all cul-de-sacs and encourage similar linkages between neighborhoods that would otherwise be separated. The City shall also require that new developments employ the interconnected street schema as the desired outcome in their designs.

The Lennertz and Coyle study proposed a layout of neighborhoods, districts, and corridors within Wilsonville **(Figure 4.24)** and recommended additional connector streets within activity centers. The purpose of the proposed layout was to assist in adding connectivity between neighborhoods and districts, and to mitigate capacity deficiencies by better dispersing traffic. The Lennertz and Coyle study was presented at a public meeting and comments regarding the proposed connector network were gathered. The proposed connector network was modified according to the comments received. **Figure 4.25** illustrates the location of each proposed connector street, and **Table 4.n** lists the proposed connector streets and the estimated cost for each one. The total cost to build all proposed neighborhood connectors that are not already included in a capacity project is estimated to be $14.1 million.

Both the Lennertz and Coyle study and the general public proposed two distinctly different kinds of connectors. The first type of connectors increases system capacity as well as improves local mobility and connectivity. These connectors were incorporated into the capacity improvement program outlined in the 2020 Alternative 2.

The second type of proposed connector links improved neighborhood connectivity with existing and proposed activity centers, and improved connections between areas with industrial and commercial land uses. Connections providing neighborhood connectivity include NC-20 between 5th Street and Memorial Drive, NC-12 between Parkway Avenue and Canyon Creek Road, NC-8 between Frog Pond Lane and Boeckman Road, and NC-18 between 5th Street and Wilsonville Road. The majority of the other connectors are in industrial or commercial areas.

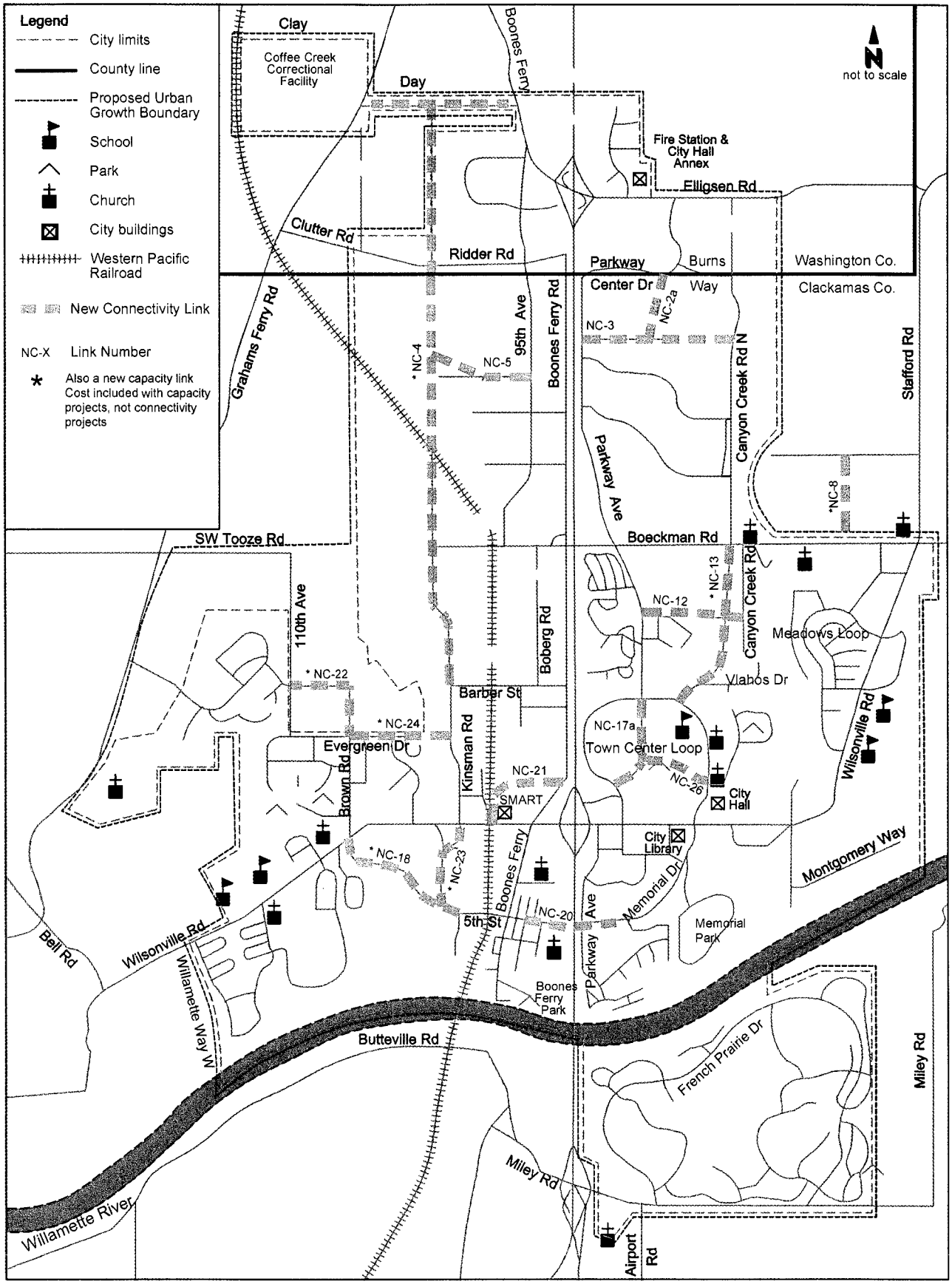


96047-65/final_figs/neighbor.ai (06/07/02): CJS 12345

From "A Tool for Becoming a Garden City of Neighborhods," Lennertz Coyle & Associates, 18 December, 1996.

City of WILSONVILLE in OREGON
Transportation Systems

Figure 4.24
Proposed Neighborhoods, Districts, and Corridors



City of WILSONVILLE in OREGON

Transportation
Systems Plan

Figure 4.25
Network Connections

Table 4.n
Street Network Connectivity Projects
Description and Cost Estimates

Project Number	No. of Lanes	From	To	Related Capacity Project[a]	Estimated Cost (in Millions)
NC-2a	2	Parkway Center Dr.	Wiedemann Road	N/A[b]	$2.0
NC-3	2	Parkway Avenue	Canyon Creek Road N	N/A	$4.3
*NC-4	3	Ridder Road	Tooze Road	C-24, C-7, & C-2	(1)
*NC-5	2	Kinsman Road Extension	95th Avenue	Complete	Complete
NC-8	2	Frog Pond Lane	Boeckman Road	N/A	$1.9
*NC-9	3	Tooze Road	Boeckman Road	C-9	(1)
NC-12	2	Parkway Avenue	Canyon Creek Road	N/A	$1.4
*NC-13	3	Boeckman Road	Vlahos Drive	C-6	(1)
NC-17a	2	Town Center Loop E	Town Center Loop W	N/A	$0.5
*NC-18	3	Wilsonville Road	5th Street	C-17	(1)
NC-20	2	5th Street	Memorial Drive	N/A	N/A
NC-21	2	Boones Ferry Road	Wilsonville Road	N/A	$2.5
*NC-22	2	110th Avenue	Brown Road	C-26	(1)
*NC-23	2	Wilsonville Road	5th Street	C-14	(1)
*NC-24	2	Barber Street	Evergreen Drive	C-10	(1)
NC-25	2	Brown Road	Kinsman Road	C-25	(1)
NC-26	2	Park Place	Town Center Loop E	N/A	$1.5
				TOTAL	**$14.1**

[a]The NC project shown is included with the Capacity Project (C- project) shown in this column.
[b]N/A = not applicable.
*Also provides required street network vehicular capacity.
(1) Cost is included with required capacity projects.

4.4.4 Commercial Vehicle Routes

The City of Wilsonville has a large amount of truck traffic due to its proximity to I-5 and industrial/warehouse development in west Wilsonville. Additionally, the shopping areas in the Town Center generate significant truck volumes. Virtually all truck traffic on Wilsonville streets is heading to or from a business or service within Wilsonville. There is very little through truck traffic on City streets. Currently, there are no designated truck routes through Wilsonville.

The City of Wilsonville should begin the process of designating truck routes. One goal of signing truck routes is to decrease truck impacts, especially in residential areas. Another goal is to keep the levels of through truck traffic on City streets to a minimal level, as it is today.

The process of creating truck routes should begin by examining where current truck movements are heavy, and then assume that truck traffic will remain constant or increase along these routes in the future. Thus, future truck impacts would be limited to areas currently affected by heavy truck traffic. According to traffic counts conducted in 2000, the following streets exhibited truck volumes in excess of 5 percent on one or more of the movements. Intersections with high truck volume percentages but low overall volumes are not included in this list:

- Boones Ferry Road at Day Road
- 95th Avenue between Boones Ferry Road and Ridder Road
- Grahams Ferry Road and Day Road
- I-5 ramps at Elligsen Road
- Parkway Avenue and Elligsen Road
- Boeckman Road and Boones Ferry Ramp
- 95th Avenue and Boeckman Road

The street network connecting these intersections should be considered as the base truck network. The proposed truck network includes Elligsen Road, Boones Ferry Road, 95th Avenue, Boeckman Road, Kinsman Road, Barber Street, and Wilsonville Road east of Industrial Way, Town Center Loop, and Parkway Avenue north of Wilsonville Road.

Most of these streets are already designed for heavy traffic. Portions of Wilsonville Road, Elligsen Road, Parkway Avenue, and Boeckman Road as well as all of 95th Avenue have a concrete surface, ideal for heavy vehicle loads. The pavement surface of Boones Ferry Road, however, must be upgraded, particularly north of Wilsonville Road, to be able to withstand the continual weight of regular truck traffic.

The proposed truck network avoids most neighborhood areas. The only truck routes that would go through a residential area would be on Wilsonville Road through the Meadows Loop neighborhood and the residential area near the intersection of Boeckman Road and Parkway Avenue.

Finally, once truck routes are established, the City of Wilsonville should ensure that proper enforcement minimizes the number of trucks traveling on roads not signed as truck routes. Also, any future zoning changes must be consistent with the existing or proposed truck routes.

4.4.5 Drop Lanes

A "drop lane" reduces the width of a section of roadway by one lane. Drop lanes are used for a variety of reasons including: transition from a wider section to a more narrow section due to a reduction in traffic demand or a change in roadway classification, the building of projects in stages, and/or enabling transit for "queue jumping". There are two main types of drop lanes, those that drop at an intersection as a left-turn or right-turn lane and those that merge in/drop after an intersection.

The length of the drop lane is based on parameters and queue lengths determined as a result of a traffic study.

A transit "queue jumping" lane is one example of a drop lane that tapers back in after the intersection. This lane is a short stretch of bus lane combined with traffic signal priority. The idea is to enable buses to bypass waiting queues of traffic and to cut in front by getting an early green signal. A special bus-only signal may be required. The queue jump lane can be a right-turn only lane, permitting straight-through movements for buses only. A queue jump lane can also be installed between right-turn and straight-through lanes. This type of arrangement can also be used to permit a bus to cross traffic lanes to make a left turn immediately after serving a curbside stop.

4.4.6 Access Management

As congestion becomes more of an issue on Wilsonville arterials and collectors, the issue of controlling access to these streets takes on greater importance. Proper access management can lead to smoother traffic flow, increased safety in the corridor, and financial savings. Lack of access management leads to an increased number of potential conflicts between vehicles entering and exiting driveways with through vehicles on the arterial. Such conflicts lead to an increase in accidents. Thus, streets that are designed for longer trips, such as arterials and collectors, should be access controlled to minimize conflicts and maximize moving traffic volumes. A discussion of driveway accesses follows.

Access management is hierarchical, ranging from complete access control on freeways and highways, as administered by ODOT (see the *1999 Oregon Highway Plan*, an element of the Oregon Transportation Plan, Appendix C: Access Management Standards), to increasing use of streets for access purposes, and parking and loading at the local and minor collector levels. See **Table 4.o** for access management guidelines by roadway functional classification and appropriate land use type for the City of Wilsonville.

As a whole, driveway approaches must not cause hazards or undue interference to the free movement of traffic, or infringe on the frontage of adjacent properties. No driveway should be located so as to create a hazard to pedestrians, bicyclists, or motorists, or to invite or compel illegal or unsafe traffic movements.

The following are access management techniques/policies that the City will apply to restrict access points near freeways:

- Access management spacing standards for interchanges as found in the Oregon Highway Plan (1999).
- Review Oregon Highway Plan access standards when property development, redevelopment or safety concerns occur.
- Examine the feasibility of realigning existing cross-streets or approaches that do not meet the spacing standards when roadway improvements are planned.

The following are several access management techniques/policies that the City will apply to restrict access points on an arterial:

- Restrict the spacing between access points based on the type of development and the speed of the abutting arterial.
- Keep the number of road approaches to a minimum to reduce conflict points with the through movement.
- Locate driveways on the minor street for properties with frontage on an arterial or collector and a minor street, whenever possible, and locate the driveways as close as possible to the property line most distant from the intersection.
- Maintain a minimum spacing of 500 feet between signal-controlled intersections, where possible. A spacing of 800 to 1,000 feet is the desirable spacing between signal-controlled intersections. Signals at private developments should be avoided, if possible.
- Construct frontage roads to separate local traffic from through traffic
- Limit properties without established driveways to one driveway where the frontage is less than 350 feet, or two driveways where the frontage is 350 feet or wider, if the driveways meet the other requirements.
- Prohibit new single-family home access points to reduce the number of small access points onto arterials and collectors. Access to new single-family homes should instead be provided by neighborhood street access.
- Maintain sight distance on all road approaches and driveways. If practicable, approaches should be relocated or closed in cases where sight limitations create undue hazards.

Other facility improvements that can be used for access management are as follows:

- Service driveways should be provided to prevent spillover onto adjoining roadways.
- Existing access points within 750 feet of freeway interchanges may be closed and/or consolidated. Existing access points between 750 feet and 1320 feet of freeway interchanges may be changed to right in/out access only and/or consolidated. This can improve traffic flow through the interchange and reduce accidents.
- Where possible, access points for developments should be consolidated.
- Median barriers should be installed to control left-turn conflicts.

Access management has many uses from controlling freeway access to increasing the use of minor streets for access purposes. Access management strategies combine access-reducing principles/policies established by the City with facility improvements. These two things together provide for better overall traffic flow, improved level of service, and increased safety for drivers and pedestrians.

Table 4.o
Access Management Guidelines

Access Standards				General Characteristics
Functional Classification	**Posted Speed**	**Minimum Access Spacing**	**Spacing[1]**	**Appropriate Adjacent Land Uses**
Major Arterial	35-50	1000 ft.	1-2 miles	• Community/neighborhood commercial near major intersections. • Industrial/offices/low volume retail and buffered medium or higher density residential between intersections.
Minor Arterial	35-50	600 ft.	1 mile	• Light industry/offices and buffered medium or low density residential. • Neighborhood commercial near some major intersections
Major Collector	25-40	100 ft.	½ mile	• Buffered low or medium density residential. • Compatible neighborhood commercial at some intersections.
Minor Collector	25-35	50 ft.	¼ mile	• Primarily lower density residential
Local Street	25	Access to each lot permitted	300-500 ft.	• Primarily low density residential.

[1]Desirable design spacing (existing spacing will vary).

Note: See the City of Wilsonville Planning and Land Use Ordinance, Section 4.177 *Street Improvement Standards*, for additional specific street standards.

4.4.7 Transportation Areas Of Special Concern

In the Transportation Systems Plan, several areas of special concern are identified. The general language and /or suggested mitigations in the text do not adequately address the concerns in these areas. For further information on these or other areas, see the Wilsonville Comprehensive Plan section entitled Areas of Special Concern.

Area A

Area of special transportation concern A is comprised of the Elligsen Road/Boones Ferry Road /95th Avenue intersection. It is the land in the southwest quadrant of the I-5/Stafford (Exit 286) interchange and adjacent to Area A in the Wilsonville Comprehensive Plan section entitled Areas of Special Concern. Conflict occurs between the southbound off-ramp of I-5 and access to 95th Avenue. The resultant congestion causes traffic to back up onto the freeway, approaches to the on and off ramps, and to northbound traffic from 95th Avenue. Since ODOT owns the right-of-

way in this area, any feasible mitigation of the traffic concerns must meet with their approval and cooperation. The City is engaged in ongoing talks with ODOT on correcting this intersection.

Area B

Area of special transportation concern B consists of the 520 acres in the Dammasch planning area. The Dammasch planning area has previously been analyzed in the *Dammasch Area Transportation-Efficient Land Use Plan* (DATELUP.) A Master Plan for the area that conforms to DATELUP is under development. The 2002 TSP has generally modeled the area and proposed several road alignments. Conflict may occur between the planning and development efforts under an adopted Master Plan and the 2002 TSP. To remedy any conflict, amendments may be made to the TSP during a regularly scheduled TSP update or under a special hearing process.

4.5 PROJECT PRIORITIZATION

Projects were prioritized using criteria developed by City staff, a consultant, the ATPC and subsequently with additional information from the Wilsonville Freeway Access study. These criteria are:

1. Limit congestion and maintain LOS
2. Maintain a citywide connectivity pattern
3. Connect adjacent neighborhoods
4. Provide access to new development areas
5. Maintain minimum street standards
6. Other factors, i.e., safety of pedestrians, source of funds, and cost effectiveness

Projects that were listed separately under the individual alternatives previously discussed in this chapter were grouped together for prioritization with projects that would be completed concurrently. These further include projects to improve substandard streets and street connectivity improvements. The short-, mid-, and long-range prioritization for each alternative is discussed below along with the estimated cost based on 2002 dollars.

4.5.1 Short-Range (0 – 5 Years)

Short-range planning was discussed with the ATPC during meetings from July 2000 to July 2001. Short-range projects are planned for 0 to 5 years. Based on these meetings, the short-range project list was created. Subsequent to the development of the ATPC list the Freeway Access Study (FAS) was finished and presented more information on project priority listings. The project lists presented here are comprised of the ATPC and FAS priorities and has been reviewed by the Planning Commission.

Table 4.p shows the short-range plan projects along with their projected project cost. The projects are not presented in order of priority, but in order of capacity, widening,

spot or sub-standard upgrade projects and by numerical order within these project types. Alternative 1 has the lowest projected short-range project cost with an estimated cost of $26.9 million. The estimated short-range plan cost for Alternative 2 is $80.6 million.

Table 4.p
Short Range Plan Projects and Estimated Costs

Proj	Sub-Proj	Project Description	Alternative 1 Estimated Cost ($M)	Alternative 2 Estimated Cost ($M)
C-2		Kinsman Rd extension from Barber St north to railroad tracks north of Boeckman Road	$6.8	
	Phase 1	from Barber Street to Boeckman Rd extension		$4.7
	S-25	Intersection of Kinsman Road extension and Boeckman Road		
	S-15	Intersection of Kinsman Road extension and Barber St		
	Phase 2	Kinsman Rd. extension from Boeckman Rd extension to railroad tracks		$2.7
C-6		Canyon Creek Rd N ext from Boeckman to Vlahos Dr to Town Center Loop E	$3.8	$4.5
	S-13	Intersection of Boeckman Road and Canyon Creek Road North		
		Intersection of Canyon Creek Road North ext. and Vlahos		
	S-4	Intersection of Vlahos Drive and Town Center Loop East		
	B-10	Ped and Bicycle facilities on Canyon Creek Rd extension from Boeckman Rd to Vlahos		
C-7		Kinsman Rd extension from railroad tracks to Ridder Rd	n/a	$3.8
		Railroad tracks north of Boeckman		
	S-38	Intersection of Kinsman Road ext and Freeman		
	S-18	Intersection of Kinsman Rd extension and Ridder Rd		
C-9		Boeckman Road extension from Kinsman Road ext. to 110th Avenue	n/a	$8.9
	S-25	Intersection of Kinsman Road extension and Boeckman Road		
	S-7	Intersection of 110th Avenue, Tooze Road, and Boeckman Road		
C-17		Brown Rd ext from Wilsonville Rd to 5th St	$4.5	$4.5
	S-39	Intersection of Kinsman Road ext and Brown Rd (5th St) ext		
C-24		Kinsman Road extension from Ridder Rd to Day Rd	$4.6	$4.6
	S-36	Intersection of Kinsman Road extension and Day Road		
	S-18	Intersection of Kinsman Rd extension and Ridder Rd		

n/a – not applicable
tbd – to be determined
asc – area of special concern

Note: Total cost figure does not include the cost for all projects listed since cost estimates for several projects (labeled tbd) were beyond the scope of study and have yet to be determined.

Table 4.p (continued)
Short Range Plan Projects and Estimated Costs

Proj	Sub-Proj	Project Description	Alternative 1 Estimated Cost ($M)	Alternative 2 Estimated Cost ($M)
C-25		Barber St ext from Brown Rd to Kinsman Rd	n/a	$4.4
	B-23	Ped and Bicycle facilities along Barber Street north extension		
C-30		Wilsonville Rd Interchange Enhancements	n/a	
	Phase 1	On and Off ramp Improvements		$10.5
	Phase 2	Setback abutment Walls and Widen Wilsonville Rd		$9.8
	S-31	Intersection of I-5 Northbound Ramp and Wilsonville Road		
	S-32	Intersection of I-5 Southbound Ramp and Wilsonville Road		
	S-33	Intersection of Wilsonville Road and Boones Ferry Road		
W-2		Widen Boones Ferry Road, from 95th Avenue to Day Road	n/a	complete
W-4f		Widen Boeckman Rd from Canyon Creek North to Wilsonville Rd	n/a	$4.3
	S-13	Intersection of Canyon Creek Rd N and Boeckman Rd		
	S-41	Intersection of Wilsonville Rd and Boeckman Rd		
	B-11	Boeckman Rd Ped and Bicycle facilities improvements from Wilsonville Rd to Parkway Ave		
W-9		Widen Wilsonville Rd from railroad tracks to Willamette Way W		
	Phase 2a	Railroad tracks to Kinsman Road, north side only	complete	complete
	Phase 3	Kinsman Road to Oak Leaf Loop	$5.4	$5.4
	S-8	Intersection of Wilsonville Road and Brown Road		
	Phase 4	Oak Leaf Loop to Willamette Way West	complete	complete
	B-1A	Continuous Ped and Bicycle facilities along Wilsonville Road from Boeckman to Willamette Way West		
W-11		Widen Miley Rd, from French Prairie to West of I-5, 4 lanes	n/a	$2.2
	S-19	Intersection of I-5 Southbound Ramp and Miley Road		
	S-20	Intersection of I-5 Northbound Ramp and Miley Road		
	S-34	Intersection of Airport Road and Miley Road		
	B-24	Miley Road Ped and Bicycle facilities improvements from French Prairie (east) to west of I-5		

n/a – not applicable
tbd – to be determined
asc – area of special concern

Note: Total cost figure does not include the cost for all projects listed since cost estimates for several projects (labeled tbd) were beyond the scope of study and have yet to be determined.

Table 4.p (continued)
Short Range Plan Projects and Estimated Costs

Proj	Sub-Proj	Project Description	Alternative 1 Estimated Cost ($M)	Alternative 2 Estimated Cost ($M)
W-13		Widen 5th St from Brown Rd extension to Boones Ferry Rd	n/a	$1.7
		Intersection of 5th St and Boones Ferry Rd		
W-14a		Widen Boeckman Rd from 95th Ave to Kinsman Rd Ext (3 lanes)	n/a	$4.3
	S-17	Intersection of 95th Avenue and Boeckman Road		
	S-25	Intersection of Kinsman Road extension and Boeckman Road		
W-16		Widen Day Rd from Grahams Ferry Rd to Boones Ferry Rd	complete	complete
	S-1	Intersection of Grahams Ferry Road and Day Road		
	S-6	Intersection of Boones Ferry Road and Day Road		
W-20		Widen Tooze Rd from Boeckman ext/110th to Grahams Ferry Rd	n/a	$2.5
	S-9	Intersection of Tooze Rd and Grahams Ferry Rd		
	CS-5	Tooze Road widening for bike lanes and sidewalks		
CS-21		Barber St. widening for bike lanes and sidewalk on the north side	$1.3	$1.3
	B-2	Continuous N-S Ped and Bicycle facilities route along Kinsman Rd, Barber St, Boeckman Rd, 95th Ave to Boones Ferry Rd		
B-6		Boeckman Rd/I-5 overpass Ped and Bicycle facilities	$0.2	$0.2
	CS-16	Boeckman Road improvements		
S-5		Intersection of Parkway Ave and Town Center Loop	$0.3	$0.3
S-42		Intersection of Wilsonville Road and Meadow Loop (High School)	tbd	tbd
		Short-Range Plan Total Project Cost	**$26.9**	**$80.6**

n/a – not applicable
tbd – to be determined
asc – area of special concern
Note: Total cost figure does not include the cost for all projects listed since cost estimates for several projects (labeled tbd) were beyond the scope of study and have yet to be determined.

4.5.2 Mid-Range (6 – 10 Years)

The mid-range plan projects (planned for 6 to 10 years) were chosen based on the same criteria mentioned previously. These projects are ones that are ideally completed within 6 to 10 years of adopting this plan. **Table 4.q** shows the mid-range projects chosen by the ATPC and reviewed by the Planning Commission. The projects are not presented in order of priority, but in order of capacity, widening, spot or sub-standard upgrade projects and by numerical order within the project types. Alternative 1 has the lowest estimated cost for mid-range projects with an estimated cost of $7.2 million. Alternative 2 has an estimated mid-range cost of $8.9 million.

Table 4.q
Mid-Range Plan Projects and Estimated Costs

Proj	Sub-Proj	Project Description	Alternative 1 Estimated Cost ($M)	Alternative 2 Estimated Cost ($M)
C-14		Kinsman Rd ext from Wilsonville Rd to Brown Rd (5th St) ext	$3.1	$3.1
	S-16	Intersection of Kinsman Road and Wilsonville Rd		
	S-39	Intersection of Kinsman Rd ext and Brown Rd (5th St) ext		
W-3		Widen Elligsen Rd from Parkway Ave to Parkway Center Dr and Parkway Center Dr from Elligsen Rd to Parkway Ave	$1.7	$1.7
	CS-09	Parkway Center Drive improvements	n/a	tbd
	B-8	Parkway Center Drive restriping for bicycle lanes		
	S-27	Intersection of Parkway Center Drive and Elligsen Road		
W-12		Widen Brown Rd from Wilsonville Rd to Evergreen Ave	n/a	$1.7
	B-1	Brown Rd Ped and Bicycle facilities improvements from Evergreen Ave to Wilsonville Rd		
CS-10		Parkway Avenue Improvements	$2.4	$2.4
	B-7	Parkway Avenue Ped and Bicycle facilities improvements from Town Center Loop to Boeckman Rd		
CS-13		Elligsen Road Improvements	complete	complete
		Mid-Range Plan Total Project Cost	**$7.2**	**$8.9**

n/a – not applicable
tbd – to be determined
asc – area of special concern
Note: Total cost figure does not include the cost for all projects listed since cost estimates for several projects (labeled tbd) were beyond the scope of study and have yet to be determined.

4.5.3 Long-Range (11 – 20 Years)

The long-range plan projects, or low priority projects planned for 11 to 20 years, were chosen based on the same criteria mentioned before. These projects are ones that are ideally completed within 11 to 20 years of adopting this plan. **Table 4.r** shows the long-range projects chosen by the ATPC and reviewed by the Planning Commission. The projects are not presented in order of priority, but in order of capacity, widening, spot or sub-standard upgrade projects and by numerical order within the project types. Alternative 1 had the lowest estimated long-range plan costs with an estimated cost of $34.2 million. Alternative 2 had an estimated long-range cost of $65.6 million.

Table 4.r
Long Range Plan Projects and Estimated Costs

Proj	Sub-Proj	Project Description	Alternative 1 Estimated Cost ($M)	Alternative 2 Estimated Cost ($M)
C-10		Brown Road ext from Evergreen to Barber Street ext	$1.1	$1.3
	S-37	Intersection of Brown Rd and Evergreen Rd		
		Intersection of Brown Rd ext and Barber St ext		
C-26		Barber Street extension from Brown Rd ext to 110th	$1.4	$1.4
	S-12	Intersection of 110th Avenue and Barber Street extension		
		Intersection of Brown Rd ext and Barber St ext		
C-27		Rogue Lane extension from Memorial Dr to Holly Lane	n/a	$0.7
		Intersection of Memorial Dr and Rogue Lane		
		Intersection of Rogue Lane ext and Holly Lane		
C-30		Wilsonville Rd Interchange Enhancements	n/a	
	Phase 3	Auxiliary Lanes		$11.0
W-4		Widen Boeckman Rd from Parkway Ave to 95th (5 Lanes)	n/a	$9.6
		Bridge Replacement		
	S-17	Intersection of 95th Avenue and Boeckman Road		
	S-21	Intersection of Boberg Avenue and Boeckman Road		
	S-24	Intersection of Boeckman Rd and Boones Ferry Rd Ramp		
	S-28	Intersection of Parkway Avenue and Boeckman Road		

n/a – not applicable
tbd – to be determined
asc – area of special concern

Note: Total cost figure does not include the cost for all projects listed since cost estimates for several projects (labeled tbd) were beyond the scope of study and have yet to be determined.

Table 4.r (continued)
Long Range Plan Projects and Estimated Costs

Proj	Sub-Proj	Project Description	Alternative 1 Estimated Cost ($M)	Alternative 2 Estimated Cost ($M)
W-15		Widen Parkway Ave from InFocus Improvements to the Parkway Center Drive	n/a	$3.5
	B-13	Parkway Avenue Ped and Bicycle facilities improvements from Boeckman Rd to Parkway Center Drive		
S-2		Intersection of Stafford Rd and 65th	$0.1	$0.4
S-9		Intersection of Grahams Ferry Rd and Boeckman Rd	$0.4	W-20
S-10		Intersection of Elligsen Rd and I-5 Southbound ramp	$0.1	ASC
S-11		Intersection of 95th Ave., Elligsen Rd & Boones Ferry Rd.	1.1	ASC
S-17		Intersection of 95th Avenue and Boeckman Road	$0.4	W-14a
S-19		Intersection of I-5 Southbound Ramp and Miley Road	$0.3	W-11
S-20		Intersection of I-5 Northbound Ramp and Miley Road	$0.3	W-11
S-21		Intersection of Boberg Avenue and Boeckman Road	$0.4	W-4
S-22		Intersection of 95th and Commerce Circle North	$0.3	ASC
S-24		Intersection of Boeckman Rd and Boones Ferry Rd Ramp	$0.3	W-4
S-26		Intersection of 95th and Ridder Rd	$0.2	n/a
S-28		Intersection of Parkway Avenue and Boeckman Road	$1.3	W-4
S-29		Intersection of Wilsonville Rd and Town Center Loop W	$0.8	$0.8
S-31		Intersection of Wilsonville Rd and I-5 Northbound Ramp	$0.4	C-30
S-32		Intersection of Wilsonville Rd and I-5 Southbound Ramp	$0.9	C-30
S-33		Intersection of Wilsonville Rd and Boones Ferry Rd	$0.7	C-30
S-34		Intersection of Airport Road and Miley Road	$0.3	W-11
S-35		Intersection of Elligsen Rd and 65th Ave	$0.3	$0.3
S-40		Intersection of Grahams Ferry Rd and Clutter	$0.3	n/a
S-41		Intersection of Wilsonville Road and Boeckman Road	$0.3	W-4f
CS-02		SW Clutter Rd. bike lanes and sidewalk improvements	$1.2	$1.2

n/a – not applicable
tbd – to be determined
asc – area of special concern

Note: Total cost figure does not include the cost for all projects listed since cost estimates for several projects (labeled tbd) were beyond the scope of study and have yet to be determined.

Table 4.r (continued)
Long Range Plan Projects and Estimated Costs

Proj	Sub-Proj	Project Description	Alternative 1 Estimated Cost ($M)	Alternative 2 Estimated Cost ($M)
CS-03		Ridder Road improvements	$0.7	$0.7
CS-04		95th Avenue improvement	$0.5	$0.5
	B-2	N-S Ped and Bicycle facilities route along Kinsman Rd, Barber St, Boeckman Rd, 95th Ave to Boones Ferry Rd		
CS-05		SW Tooze Road improvements	(Outside of city limits)	W-20
CS-06		110th Avenue improvements	$1.8	$1.8
CS-07		Evergreen Drive improvements	$0.6	$0.6
CS-08		Wilsonville Rd improvements west of Willamette Way West	$1.2	$1.2
CS-11		Town Center Loop improvements	$2.1	$2.1
	B-4	Town Center Loop bicycle improvements		
CS-12		Vlahos Drive improvement	$0.5	$0.5
CS-14		Stafford Road improvements	$3.2	$3.2
CS-17		French Prairie Dr. W improvement	$2.7	$2.7
	B-12	Re-stripe French Prairie Drive for 2 traffic lanes and 2 bike/ped/golf cart lanes		
CS-18		French Prairie Dr. E improvements	$3.4	$3.4
	B-12	Re-stripe French Prairie Drive for 2 traffic lanes and 2 bike/ped/golf cart lanes		
CS-19		Miley Road improvements	$1.5	$1.5
	B-24	Miley Road Ped and Bicycle facilities improvements from French Prairie (east) to west of I-5		
CS-20		Boones Ferry Road improvements	tbd	tbd
	B-2a	Boones Ferry Road Ped and Bicycle facilities improvements from Wilsonville Rd to Boones Ferry Park		
CS-22		Boones Ferry Road widening for bike lanes and sidewalk	$1.7	$1.7

n/a – not applicable
tbd – to be determined
asc – area of special concern

Note: Total cost figure does not include the cost for all projects listed since cost estimates for several projects (labeled tbd) were beyond the scope of study and have yet to be determined.

Table 4.r (continued)
Long Range Plan Projects and Estimated Costs

Proj	Sub-Proj	Project Description	Alternative 1 Estimated Cost ($M)	Alternative 2 Estimated Cost ($M)
CS-23		Parkway Avenue improvements	$1.4	$1.4
CS-24		Meadows Loop and Meadows Parkway improvements	tbd	tbd
NC-2a		Parkway Center Drive to Wiedemann Road	n/a	$2.0
NC-3		Wiedemann Rd from Parkway Ave to Canyon Creek Rd N	n/a	$4.3
NC-8		Frog Pond Lane to Boeckman Road	n/a	$1.9
NC-12		Parkway Avenue to Canyon Creek Road	n/a	$1.4
NC-17a		Town Center to Town Center Loop W	n/a	$0.5
	B-19	Ped and Bicycle facilities from Town Center Park to Town Center Loop E		
NC-21		Boones Ferry Rd to Wilsonville Road	n/a	$2.5
NC-26		New road from Park Place to Town Center Loop East	n/a	$1.5
B-3		Willamette River Crossing Along I-5	n/a	tbd
B-5		Memorial Park Ped and Bicycle facilities for existing and future development	n/a	tbd
		Long-Range Plan Total Project Cost	**$34.2**	**$65.6**

n/a – not applicable
tbd – to be determined
asc – area of special concern

Note: Total cost figure does not include the cost for all projects listed since cost estimates for several projects (labeled tbd) were beyond the scope of study and have yet to be determined.

4.5.4 Beyond the 20-Year Planning Horizon Projects and Grand Total Estimated Cost for All Alternatives

The FAS analysis of future freeway access needs concluded that additional freeway access improvements (the Boeckman Interchange, for example) will be required beyond 2020. Identifying transportation solutions outside the planning horizon is normally beyond the scope of a TSP.

For planning purposes, however, it is important that the Boeckman interchange continue to be regarded as a required long-term transportation improvement for the City of Wilsonville as a new interchange or other new freeway access must be

planned for years ahead of actual design and construction. As a result, a transportation solution outside of the 20-year planning horizon has been included in this TSP. **Table 4.s** shows the 20-year plus range project chosen by City staff and the ATPC. **Table 4.s** also provides the grand total for both Alternative 1 and Alternative 2. Note that Alternative 1 does not include network connectivity projects and that Alternative 2 includes street connectivity improvements.

Table 4.s
20-Year + Range Plan Projects and Total Estimated Cost for All Alternatives

Proj	Sub-Proj	Project Description	Alternative 1 Estimated Cost ($M)	Alternative 2 Estimated Cost ($M)
C-5		Boeckman Road Interchange or other freeway access improvement alternative (outside of the 20-year planning horizon.) Boeckman Road Interchange cost estimate is given, other alternatives have not been estimated.	n/a	$40.2
Sub-Total for Short/Medium/Long Range Projects including substandard street improvements within the 20-year planning horizon			**$68.3**	**$155.1**
Total Project Costs All Ranges (20-year and 20+-year)			**$69.6**	**$195.3**

4.6 POLICIES

The City of Wilsonville shall...

Policy 4.1.1 Design the City street system per the street standards set forth in this TSP and to meet LOS D, which is the standard in the City. As may be approved by the City Council, possible exceptions to the LOS D standard are a change to LOS E on Boones Ferry Road and/or Elligsen Road, and on Wilsonville Road between and including the intersections with Boones Ferry Road and Town Center Loop West. Other capacity improvements intended to allow continued development without exceeding LOS E may also be approved by the City Council in permitted locations.

Policy 4.1.2 Require developers to provide transportation improvements as may be required or conditioned by a land use decision, expedited land use division, or limited land use decision, on a roughly proportional basis of the developer's impacts to the benefits received.

Policy 4.1.3 Require bicycle and pedestrian linkages for all cul-de-sacs and encourage similar linkages between neighborhoods that would otherwise be separated.

Policy 4.1.4 Connect the existing motor vehicle system within the City and across Interstate 5 (I-5) where appropriate. All connections shall be evaluated for their impacts to future operations of the City's road network.

Policy 4.1.5 Promote other existing routes and/or provide connections to other regional roadways that provide alternative routes into and out of the City to reduce the reliance on I-5 and its interchanges within the City.

Policy 4.1.6 Develop a system of signal coordination and tie in with the I-5 ITS system providing a system of integrated parallel arterials and collectors.

Policy 4.2.1 Continue to plan, schedule, and coordinate all public street improvements through a Capital Improvements Program.

Policy 4.2.2 Provide an adequate motor vehicle system that serves commercial vehicle/truck traffic to and from land uses requiring the use of commercial vehicles/trucks.

Policy 4.3.1 Evaluate and minimize the environmental impacts of all new public road projects.

Policy 4.4.1 Work with ODOT to improve the general community awareness of its access permitting authority.

Policy 4.4.2 Require that the TSP be reviewed no more than five years after the date of adoption.

4.7 IMPLEMENTATION MEASURES

Implementation Measure 4.1.1.a Use this Plan as the basis for the general location of routes for vehicle travel and the basis of design of all street improvements. All of the projects and programs listed in Section 4.5 – Project Prioritization and in **Tables 4.p, 4.q, and 4.r** will be regarded as Implementation Measures of this TSP.

Implementation Measure 4.1.1.b Use the Roadway Design Standards (Section 4.4.1 and Figures 4.12 through 4.22) as the standard for designing all street improvements in the city.

1. For streets not constructed by a public entity, these standards may be waived on a case-by-case basis in accordance with the waiver provisions of Wilsonville Development Code, Section 4.118(.03).
2. Amend Wilsonville Development Code, Section 4.118(.03)(A.), by adding a new item 8, and renumbering the balance accordingly, to read as follows:

   "8. curb, gutter, and median systems for managing storm water consistent with the Storm Water Master Plan;"

3. For publicly constructed streets, these standards may be waived for major alternatives by the City Council and for minor alternatives by the City Engineer. A major alternative is one that involves a significant change

from the standards impacting capacity and speed, that changes pedestrian safety and convenience, or that alters large areas of required landscaping. Examples include but are not limited to changing the number of lanes, moving a sidewalk from the property-line to the curb-line, using alternatives to standard curb, gutter, and median systems for managing storm water, or eliminating the landscaped strip. A minor alternative is one that involves a small change from the standards that does not affect capacity or speed and does not diminish safety or aesthetics for the project as a whole. Examples include but are not limited to moving a sidewalk to go around landscape features, or a small narrowing of lanes to fit tight right-of-way.

Implementation Measure 4.1.1.c Based upon Engineering Division analysis and Development Review Board findings, streets in mixed-use areas should provide pedestrian orientation and include street design elements such as wide sidewalks, marked crosswalks, bikeways, street trees, landscaping that separates the sidewalk from the street, street lighting, bus shelters and corner curb extensions to provide a safer environment that can slow traffic and encourage walking, bicycling and transit use, as described in the Technical Appendix.

Implementation Measure 4.1.5.a. Continue to actively participate in all regional transportation planning efforts, including activities of ODOT, Metro, Clackamas County, and Washington County, advocating for Wilsonville's needs including funding allocations. The commitment to jointly plan and program for transportation projects will be made in new or updated intergovernmental agreements with the counties and other appropriate agencies.

Implementation Measure 4.1.6 Develop a program to implement Intelligent Transportation Systems and tie in with the ODOT I-5 ITS system. ITS projects will be prioritized and included in the Capital Improvement Program.

Implementation Measure 4.2.1.a. Amend the Wilsonville Comprehensive Plan Policy 3.1.2 on Timing and Concurrency Issues by changing the language of Implementation Measure 3.1.2.b.1 to read as follows:

"1. Planning approval may be granted when evidence, including listing in the City's adopted Capital Improvement Program, supports the finding that facilities/services will be available within two years for surface streets and four years for all improvements to Interstate-5 and its associated crossings, interchanges, and approach streets."

Implementation Measure 4.2.1.b In accordance with Chapter 9 of this Plan, funding, schedule and coordinate all street improvements using the City's ongoing Capital Improvement Program process and annual budget process.

Implementation Measure 4.2.1.c Immediately after adoption of this Transportation System Plan, and in accordance with Chapter 9, establish funding strategies and systems that will help provide for the investments in

major street improvement projects necessary to implement the goals and policies of the Comprehensive Plan.

Implementation Measure 4.2.2.a The importance of freight to the Wilsonville economy will be acknowledged in all transportation planning and funding efforts. The need to accommodate trucks, truck routing, and truck-based street design will be integrated into the Development Code and in all subsequent and appropriate planning projects. To accommodate the movement of freight, the City shall work with other jurisdictions along the south I-5 corridor to promote needed improvements to I-5 and its interchanges.

Implementation Measure 4.3.1.a Develop Comprehensive Plan and/or Development Code language requiring a review of environmental impacts of road projects and compliance, if necessary, with federal, State, and local regulations for mitigation of those impacts.

Implementation Measure 4.4.1.a Modify Subsection 4.167.01 of the Development Code to require all applicants for all site development permits proposing access to state highways within the City limits to demonstrate compliance with the access management standards of the Oregon Highway Plan and ODOT's access permitting authority.

Implementation Measure 4.4.1.b Require that there be further communications and efforts to work with ODOT to ameliorate their use of the signals at the ODOT controlled areas of the Wilsonville Road/I-5 interchange and Elligsen Road/I-5 interchange.

CHAPTER 5
PEDESTRIAN AND BICYCLE FACILITIES

CHAPTER 5
PEDESTRIAN AND BICYCLE FACILITIES

5.1 GOAL

Goal 5.1: To promote non-motorized travel and provide a safe, interconnected system of pedestrian and bicycle facilities.

5.2 INTRODUCTION

This chapter provides a framework for current and future pedestrian and bicycle needs in the City of Wilsonville. Pedestrian and bicycle issues were previously addressed in the *Bicycle and Pedestrian Master Plan* that was adopted December 20, 1993, with minor amendments made in the City's *Parks and Recreation Master Plan* that was adopted in December 1994. The City of Wilsonville has elected to keep many components of the 1993 Plan, but has updated them to 2000 conditions, where applicable, for this *Transportation Systems Plan* (TSP). This adopted TSP replaces the 1993 *Bicycle and Pedestrian Master Plan.* This TSP is consistent with the portions of the 1994 *Parks and Recreation Master Plan* dealing with bicycle and pedestrian facilities. In case of conflict, however, the 1994 *Parks and Recreation Master Plan* takes precedence over off-street facilities.

This chapter is divided into the following sections: Goal, Introduction, Planning Process, Updated Bicycle and Pedestrian Master Plan Recommendations, Implementation Process, Policies, and Implementation Measures. These sections have been adapted from the 1993 Plan and updated to 2000 conditions. The Planning Process, Updated Bicycle and Pedestrian Plan Recommendations, and the Implementation Process are integrated with the road network described in Chapter 4 of this TSP.

It is important to note that the proposed improvements, along with all related maps, figures, and tables are provided for conceptual purposes only. Specific design issues, including project alignment, and concerns regarding private property and the environment, will be addressed later, during the design of each specific improvement. At that point, project staff will hold public meetings with private property owners and other interested parties to fully address such concerns.

5.3 THE PLANNING PROCESS

The basic steps of the bicycle and pedestrian facilities planning process were to:

1. Involve the community;
2. Review the *1993 Bicycle and Pedestrian Master Plan*;
3. Develop a clear and objective rationale for selecting a recommended systems plan;
4. Identify existing facilities and programs;
5. Identify system plan options for improving facilities and programs; and

6. Refine the recommended option into a final transportation system plan with accompanying preliminary phasing, costs, and recommendations.

The following sections summarize the process and analysis that led to the update of the 1993 *Bicycle and Pedestrian Master Plan* with Chapter 5 - Bicycle and Pedestrian Facilities in the 2002 Transportation Systems Plan (TSP.)

5.3.1 Community Involvement

From the outset of the TSP project, every activity was designed to build a solid foundation of consensus support for the final plan. The consulting team, the Adjunct Transportation Planning Committee (ATPC), key advisors, and City staff combined their efforts to build a thorough understanding of the issues followed by an evaluation of the best methods to promote bicycling and walking.

The 1991 *Transportation Master Plan* (TMP) was built upon a consensus to develop a comprehensive bicycle and pedestrian element for the City. The 1993 Bicycle and Pedestrian Master Plan, which was based upon the 1991 TMP, was revised by the ATPC to reflect existing 2002 conditions and to provide an up-to-date, comprehensive bicycle and pedestrian element for this TSP.

5.3.1.1 Public Workshops

Public workshops were held during critical project phases to ensure that the TSP recommendations reflected community needs. The workshops presented information to the group and solicited comments regarding bicycle and pedestrian issues and solutions. The input received was used to develop the Plan recommendations and served as the basis for the recommendations by the ATPC.

5.3.1.2 Committee Structure

The ATPC was established to provide representation from a variety of interests in the city. This group was appointed by the City Council to make recommendations on the TSP and assist in improving the bicycle and pedestrian program. The ATPC included members who were actively involved with earlier master planning efforts and members of the Planning Commission.

5.3.2 Decision Criteria

An important technique for developing consensus on recommendations was to establish clear decision criteria that provided the framework to resolve competing choices. By developing decision criteria, the input from parties could be constructively channeled to help the City create a plan that best met community needs.

The decision criteria listed below were developed through group discussions with the general public and the Bikeway Advisory Task Force (BATF) during public workshops in September 1992 and February 1993. The participants were asked to list those qualities and functions that they would like the bicycle and pedestrian

program to serve. Following review of the comments made at the second public workshop, the BATF adopted Decision Criteria for the project. These criteria articulated community values regarding bicycling and walking and were intended to serve as the guiding principles for the creation, implementation, and future revisions of the Bicycle and Pedestrian portions of future plans.

The ATPC agreed that the previously adopted decision criteria are still representative of current public concerns. Consequently, the criteria served as the basis for the policies and implementation measures found at the end of this chapter.

5.3.2.1 Establish a Vision for a bicycle and pedestrian program that:

- Strives for a livable community.
- Creates a long-range plan that accommodates future growth.
- Accommodates the needs of all user groups.
- Identifies long-range goals and methods for measuring their achievement.
- Is flexible to take advantage of unforeseen opportunities to improve facilities and programs.

5.3.2.2 Create a Master Plan that is Consistent with Other Planning Programs Including:

- The City of Wilsonville
  - ✓ Comprehensive Plan
  - ✓ Transportation Systems Plan
  - ✓ Parks and Recreation Master Plan
  - ✓ Public Works Design Standards
- Metro
  - ✓ Urban Growth Management Functional Plan
  - ✓ Regional Transportation Plan
- Clackamas and Washington Counties
- Other local governments, agencies, and districts
- The State
  - ✓ Transportation Planning Rule
  - ✓ Plans for street and interchange facilities
  - ✓ 1995 Oregon Bicycle and Pedestrian Plan

5.3.2.3 *Create an Environment, which Promotes Bicycling, Walking, and Reduces Dependence on the Automobiles, that:*

- Features a commitment for the direct involvement of residents, employees, visitors, schools, businesses, agencies, and organizations in the development and implementation of the City's bicycle and pedestrian program.
- Identifies bicycling and walking opportunities and benefits for City residents, employees, and visitors.
- Creates and/or coordinates safety and education programs sponsored by the City and/or schools, other agencies, organizations, and employers.
- Provides the mobility, convenience, and safety necessary to encourage bicycling and walking.

5.3.2.4 *Provide a Comprehensive System by:*

- Creating a connected system of bicycle and pedestrian facilities.
- Providing routes for both commuter and recreational purposes that connect important local and regional destinations.
- Overcoming physical barriers.
- Considering future growth areas.
- Coordinating programs and improvement projects with other agencies.
- Establishing clear project implementation priorities.

5.3.2.5 *Give Bicycling and Walking Equal Status with Other Transportation Modes by:*

- Providing adequate funding for construction and maintenance.
- Including the updated Bicycle and Pedestrian Master Plan facility improvement priorities in the City's Capital Improvement Program.
- Regarding signage, lighting, and other amenities or safety features to be equally important for bicyclists and pedestrians as for motorists.
- Establishing an ongoing advocacy group.

5.3.2.6 *Provide Properly Designed Facilities to Encourage Bicycling and Walking by:*

- Emphasizing safety in the location, design, construction, and maintenance of facilities.
- Considering aesthetics and the creation of a pleasant environment for bicycling and walking.

- Establishing standards for public bicycle and pedestrian facilities that are consistent with American Association of State Highway and Transportation Officials (AASHTO) guidelines, the Oregon Department of Transportation (ODOT) standards, and the current standards of the Americans With Disabilities Act as codified in the Uniform Building Code, State of Oregon Structural Specialty Code and the City's Public Works Standards.
- Establishing facility standards for destinations, including minimum standards for bicycle parking.
- Integrating the planning and design of all facility improvements with relevant bicyclist and pedestrian needs.

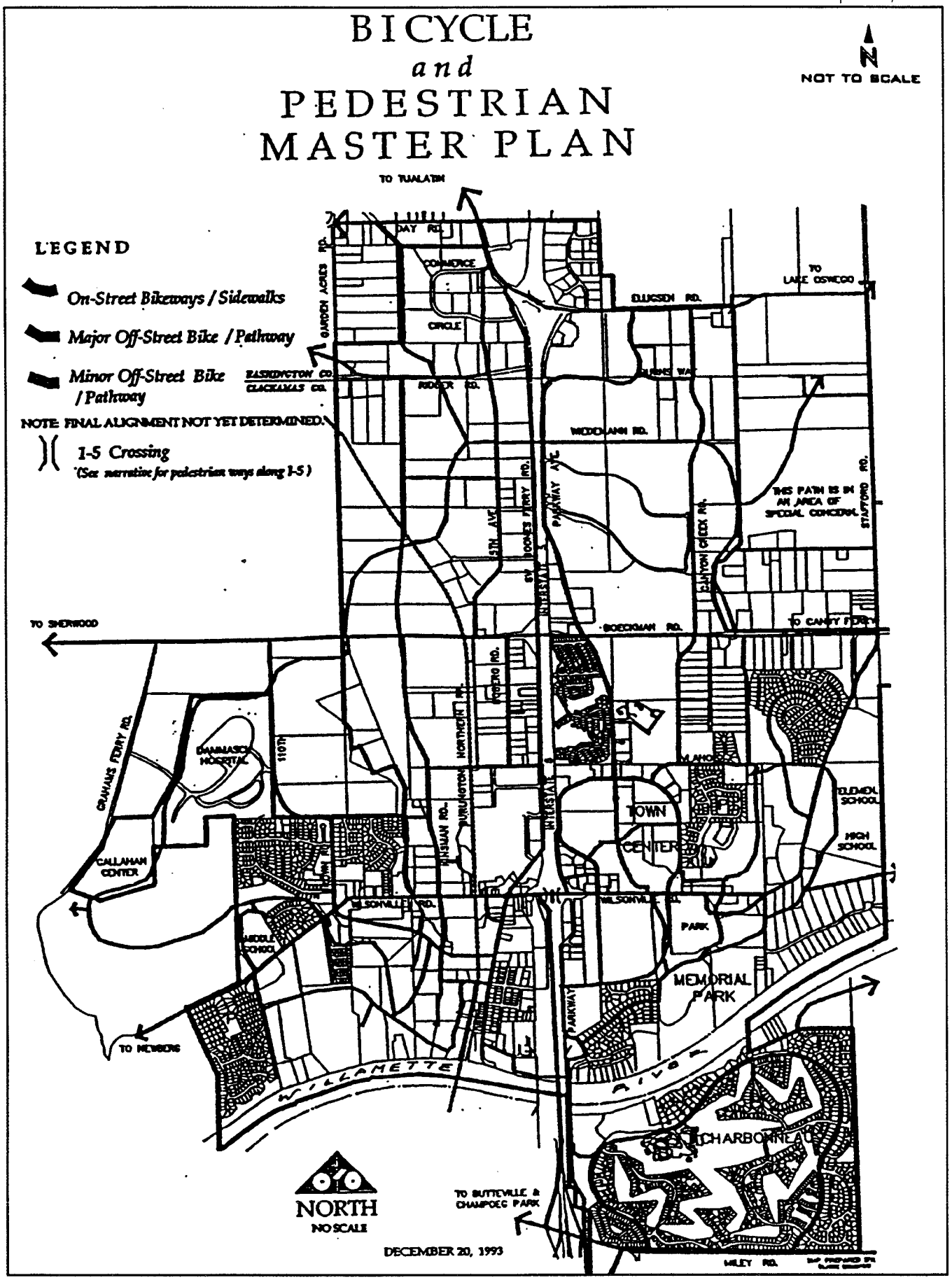
5.4 THE BICYCLE AND PEDESTRIAN FACILITIES PLAN RECOMMENDATIONS

5.4.1 Bicycle and Pedestrian Facility System

To encourage bicycling and walking in the City it is critical to provide safe and convenient systems that connect all destinations. Therefore, major and minor collector and arterial street designs shall include bicycle facilities on the streets. Sidewalks shall be provided on all streets. The multi-use path system shall be expanded to provide off-street pathways and trails for convenience, safety, and recreation. Finally, the citywide bicycle and pedestrian facility system shall connect with existing and potential routes outside of the City limits. All bicycle and pedestrian facilities shall be designed to the current standards of the Americans with Disabilities Act as codified in the Uniform Building Code and the City's Public Works Standards. To this end, the City shall continue to coordinate with the counties, the State and Metro to further a regional approach to bicycle and pedestrian issues.

The 1993 *Bicycle and Pedestrian Master Plan* system map (**Figure 5.1**) was reviewed and amended by the *Park and Recreation Master Plan* as part of that Plan's process. The *Park and Recreation Master Plan* was reviewed by the City Council and adopted on October 3, 1994 pending further review of certain off-street trails and pathways by the Planning Commission. **Figure 5.2** is the revised *Park and Recreation Master Plan* dated February 7, 1995. **Table 5.a** is a guide to the labels in the 1995 *Park and Recreation Master Plan* Map.

The City of Wilsonville *Parks and Recreation Master Plan* map is referenced in the TSP to ensure that the two plans are complementary and consistent. **Figure 5.3a** shows the existing, as of 2002, on-street bicycle and pedestrian network for arterials and collectors along with their associated projects. **Figure 5.3b** shows the existing pedestrian network and trail system for information purposes. (Note: the existing trail system is shown for connectivity information. **Figure 5.3a** shows the proposed improvements for both bicycle and pedestrian pathways.) **Figure 5.4** is the 2020 Recommended Bicycle and Pedestrian Plan map, which includes the existing network plus recommended future improvements/additions to the network.



City of
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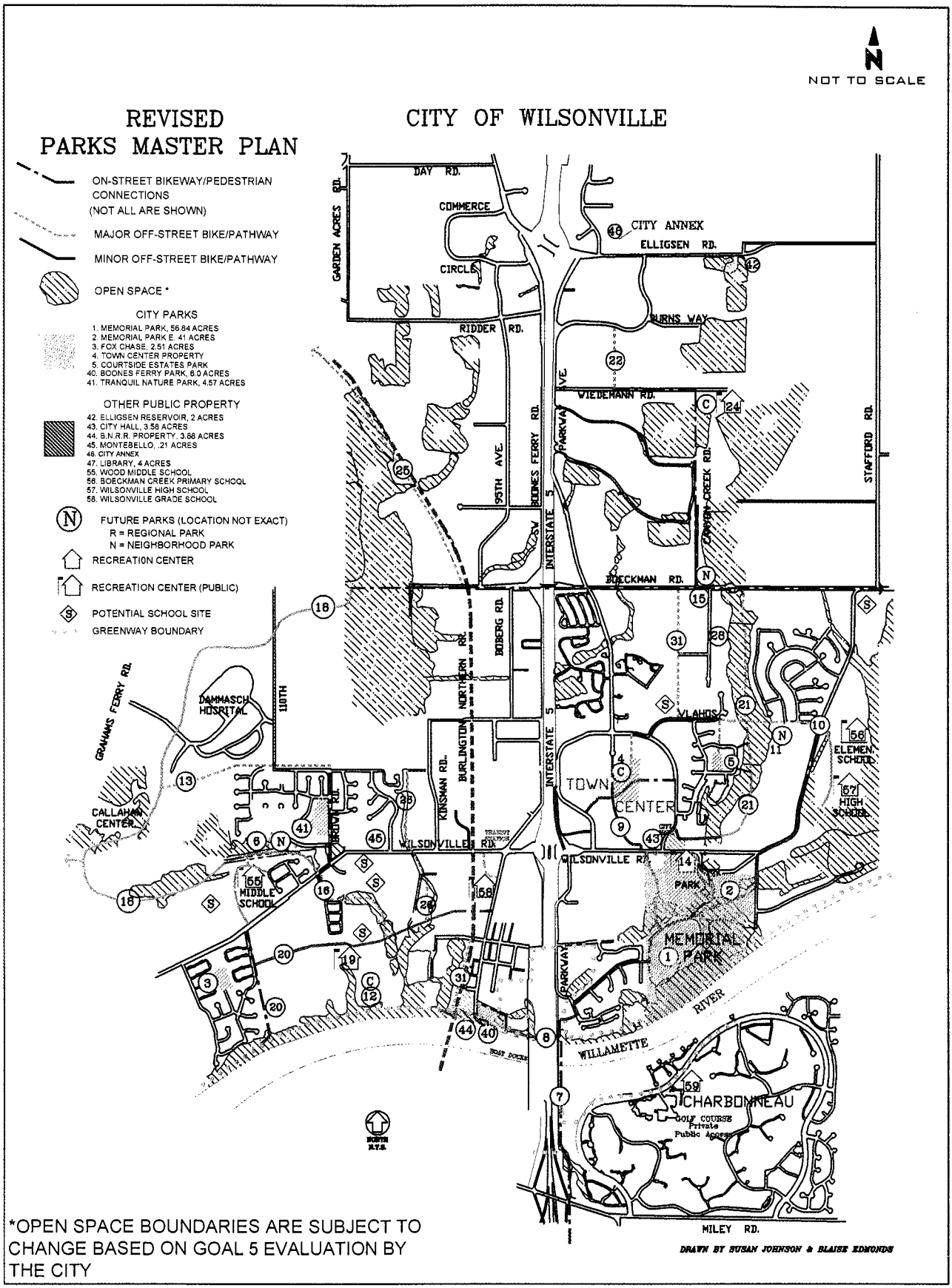
Transportation
Systems Plan

Figure 5.1
1993 Bicycle and Pedestrian Master Plan



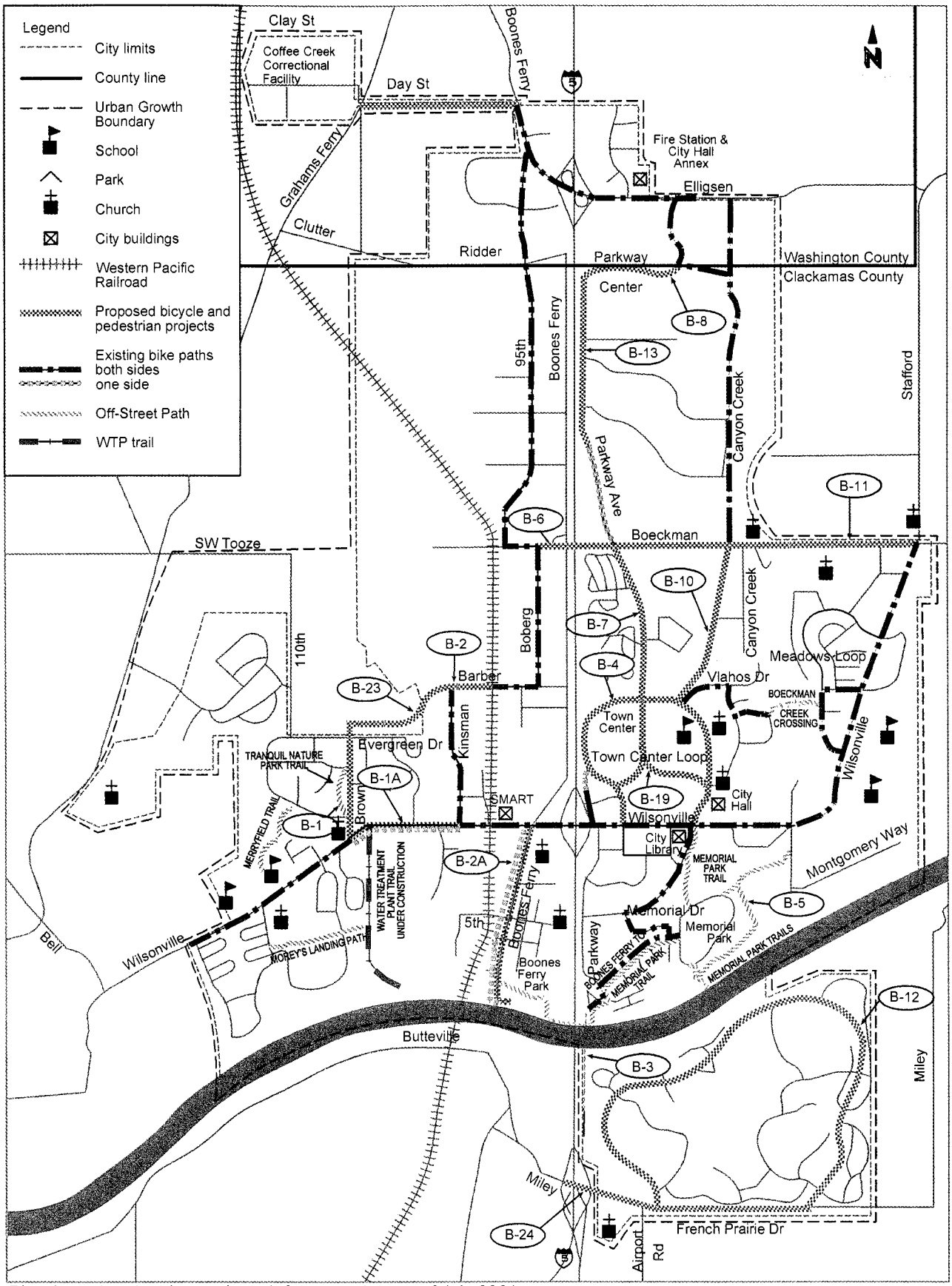
*OPEN SPACE BOUNDARIES ARE SUBJECT TO CHANGE BASED ON GOAL 5 EVALUATION BY THE CITY

Note: The information shown is from the 1994 Parks and Recreation Plan.

Table 5.a
Guide to Off-Street Paths in the 1994 Park and Recreation Master Plan Map

Park & Rec #	Project	From	To	1994 Park & Rec Priority	Associated TSP Project	93 TSP Priority	Completed
7	South Interstate Trail	Day Dream Ranch	Charbonneau	early	B-3	long	no
8	Boones Ferry-Day Dream Trail	Boones Ferry Park	Day Dream Ranch	early			yes
9	Town Center Walks	Interior of Town Center		short	B-19	long	75%
10	Courtside Trails	Boeckman Creek Corridor	Memorial Park	short			no
13	Brown Road Trail	Brown Road	Dammasch State Hospital	short			no
16	Merryfield-Boones Trail	Park @ Merryfield	Wood-Boones Ferry Trail	long			no
18	Coffee Lake - Wood Trail	95th Avenue	Wood Middle School	long			no
20	Wood-Boones Trail	Willamette Way East	Old Boones-Ferry School Site	long			portions
21	Boeckman Creek Trail	Boeckman Road	Wilsonville Road	long			no
22	Wiedemann-Elligsen Trail	Parkway Center Drive	Canyon Creek N.	long			no
25	Burlington Northern Trail	North of Boeckman Rd	Along railroad right-of-way	long			no
26	Seely Ditch Trail	Industrial Way	Wood-Boones Trail	long			no
31	Vlahos-Boeckman Trail	Boeckman Road	Vlahos Drive	long	B-10	short	no

Note: This guide is for the off-street pathways only. If an item is in question from Figure 5.2, then it is either a park, proposed community center or school site. Consult the 1994 Park and Recreation Master Plan for further information



Bicycle and pedestrian projects left to complete as of July 2001

City of WILSONVILLE in OREGON

Transportation
Systems Plan

Figure 5.3a
2002 Bicycle Map and
Proposed Bicycle/Pedestrian Projects
(adopted by City Council June 2, 2003)

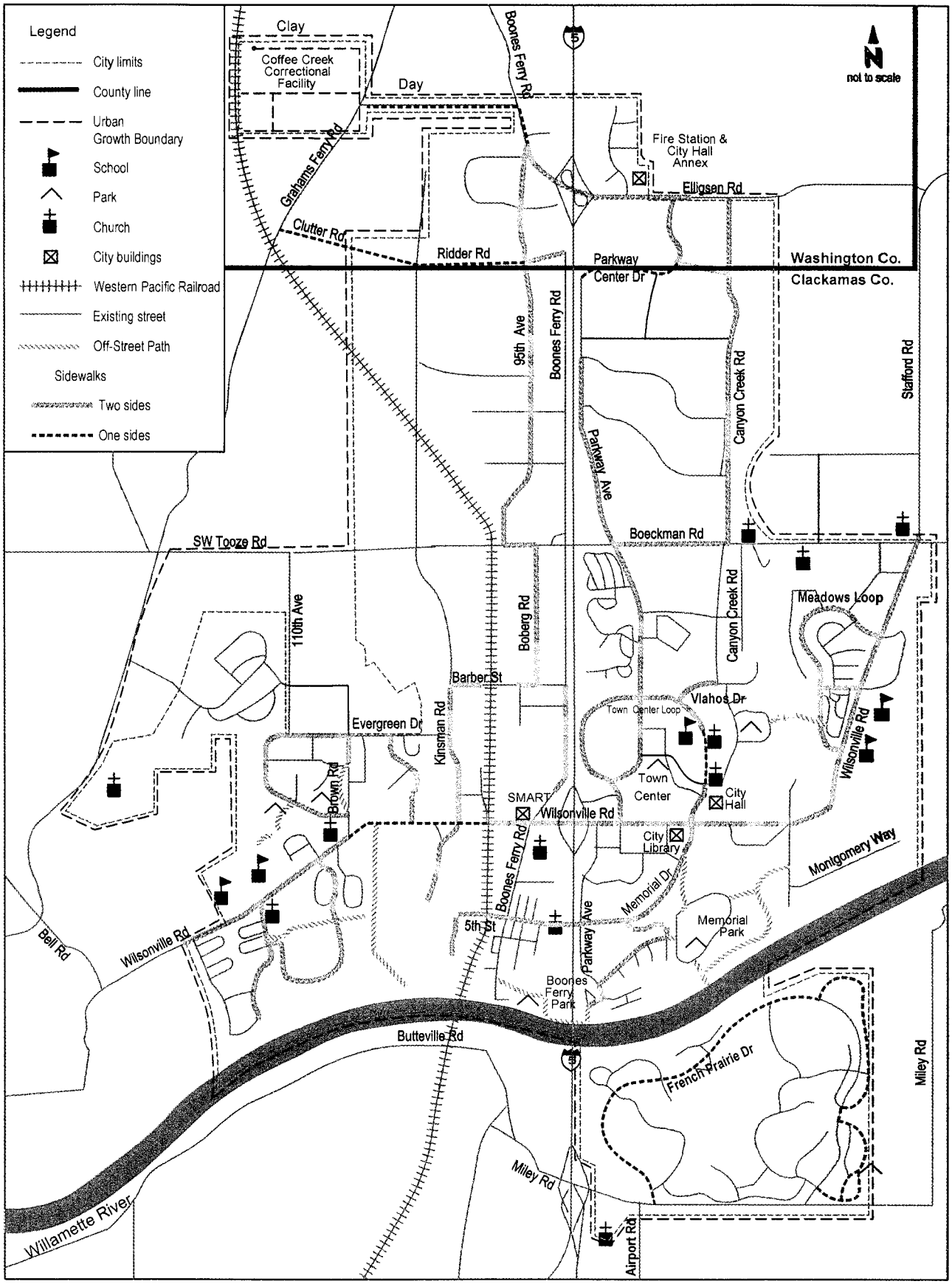


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Figure 5.3b
2002 Sidewalks and Trail Map

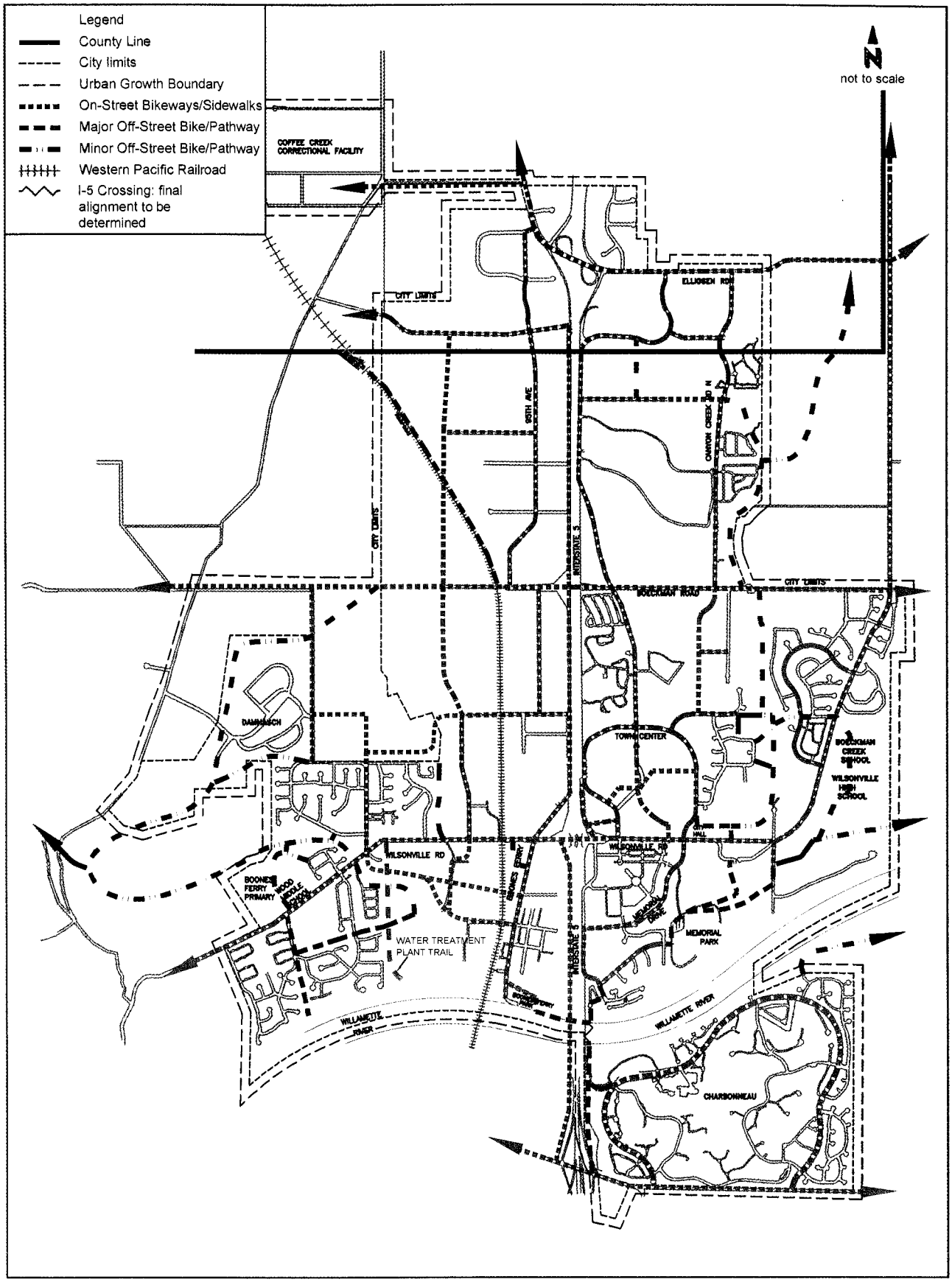

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Figure 5.4
2020 Bicycle and Pedestrian Facilities Plan
(adopted by City Council June 2, 2003)

5.4.2 Public Bicycle and Pedestrian Facility Standards

The City shall adopt all applicable AASHTO and ODOT design standards for bicycle and pedestrian facilities. These standards shall address on-street, off-street, and special situations. The standards, as described below, shall be incorporated into the City of Wilsonville *Public Works Standards.*

5.4.2.1 On-street Standards

On-street standards for different situations are described below. It is recommended that bicycle lanes be the preferred facility design. Other facility designs should only be used if the bicycle lane standard cannot be constructed due to physical or financial constraints. The alternative standards are listed in order of preference.

- **Bicycle Lane.** This design includes 12-foot minimum travel lanes for motor vehicles with 5- to 6-foot paved shoulders or 5-foot paved lanes where on-street parking is allowed that are striped and marked as bicycle lanes. Where bicycle lanes are a portion of the roadway designated for exclusive use by bicyclists, five-foot bicycle lanes are the minimum. This shall be the basic standard applied to bicycle lanes on all arterial and collector streets in the City.
- **Shoulder Bikeway.** This design includes a 12-foot minimum travel lane for motor vehicles with 5- to 6-foot paved shoulders that are striped but not marked as bicycle lanes. This design should only be used in rural situations when it is determined by the City Engineer that a marked bicycle lane is inappropriate.
- **Shared Roadway.** This design features a 14- to 16-foot minimum travel lane width for both motor vehicles and bicycles. This standard should be applied to all arterial and collector streets only when sufficient pavement width is not available for a separate bicycle lane. On arterial and collector streets, bicycle route signage is required to alert motorists to the potential presence of bicyclists.

5.4.2.2 Off-street Standards

Standards for off-street facilities are as follows:

- **Major Off-Street (Multi-Use) Path.** This facility is separated from the roadway by a barrier or by a minimum of 5 feet of open space and is a minimum width of 10 feet for two-way multi-use traffic and 12 feet where high multi-use is expected. A 2-foot clear distance on both sides of the path is also required.
- **Minor Off-Street (Recreational Trail) Path.** This is an ADA-accessible surface with a usable width of 4–6 feet.

5.4.2.3 Sidewalks

- **Location**. Pedestrian facilities shall be installed based on City standards. Final facility location and design are subject to the approval of the City Engineer.
- **Easements**. All publicly owned pedestrian facilities shall be constructed within a public right-of-way or an easement.

  All new development or redevelopment shall consider access to adjacent properties in their development plans, especially schools, retail, and commercial areas. Easements shall be provided as necessary for compliance with the Americans with Disabilities Act (ADA) standards and City Street Design Standards.
- **Design**. Sidewalks shall be a minimum of 5 feet in width, exclusive of curb and obstructions, and constructed in accordance with the City's *Public Works Standards* and the standards of the Americans with Disabilities Act as contained in the City's *Public Works Standards* and the *Uniform Building Code*. The latest AASHTO *Guide for the Development of Bicycle Facilities* and the *Oregon Bicycle and Pedestrian Plan* for the year in which the project is built shall be used to design all bicycle and pedestrian facilities within the City of Wilsonville. Any deviation from the AASHTO, ODOT, and City standards will require approval from the City Engineer.

5.4.2.4 Bikeways

- **Location.** Bicycle and pedestrian facilities shall be installed on the basis of the City's TSP.
- **Easements.** All publicly owned bicycle facilities shall be constructed within public right-of-way or an easement. When a bicycle facility must be constructed outside the public right-of-way, an appropriate easement shall be granted to the City for construction and maintenance of the facility. A temporary construction easement may also be required.

  All new development or redevelopment shall consider providing an easement to access adjacent properties, especially schools, retail, and commercial areas. The intent of these easements is to reduce the length of travel to desired destinations from residential areas, thereby promoting bicycle/pedestrian travel.
- **Design.** The latest AASHTO *Guide for the Development of Bicycle Facilities* and the *Oregon Bicycle and Pedestrian Plan* for the year in which the project is built shall be used to design all bicycle and pedestrian facilities within the City of Wilsonville. Any deviation from the AASHTO, ODOT, and City standards will require approval from the City Engineer.

5.4.2.5 Special Standards

The physical environment shall be enhanced to encourage bicycling and walking by following these standards:

- Minimum sidewalk standard of 8 feet in commercial/retail districts.
- Simply providing facilities that are safe may not necessarily encourage walking. Issues should be addressed to encourage walking by providing a more pleasant environment. Urban design features to provide pedestrian amenities such as street trees, furniture, kiosks, and trash receptacles; and bicycle amenities such as bike racks, shall be provided when necessary.
- Provide reasonably direct pedestrian connections between major transit stops and building entrances for all new retail, office and institutional buildings.
- Pedestrian facilities shall be consistent with ADA standards.

5.4.3 Support Facilities

In addition to improving public facilities and routes to connect destinations, it is recommended that the City require basic design considerations for bicyclists and pedestrians when they arrive at their destination. These requirements, although more general than those currently in the Development Code, should continue to be included in the City's Development Code and required as conditions of development permits. The requirements are:

- **On-site bicycle and pedestrian circulation for all new developments.**

  Walkways and driveways shall provide a direct connection to existing and planned walkways and driveways on adjacent developments.

  Sidewalks and walkways must connect the pedestrian circulation system to other areas such as buildings, vehicle and bicycle parking, children's play areas, required outdoor areas, and any pedestrian amenities, such as open space, plazas, resting areas, and viewpoints. The pedestrian system must connect the site to adjacent streets and nearby transit stops. Whenever practicable, bicycle and pedestrian connections, meeting applicable TPR and Metro standards, are to be established from one side of a large development site to another.

  Walkways shall be located so that pedestrians have a short, reasonably direct distance to walk between a transit stop or public sidewalk and building entrances.

- **Bicycle and pedestrian paths.**

  Bicycle and pedestrian paths shall be located to provide a reasonably direct connection between likely destinations. A reasonably direct connection is a route that minimizes the need to deviate from a bicyclist's chosen direction considering terrain, physical barriers, and safety. The objective of this standard is to achieve a convenient grid of routes.

  Bicycle and pedestrian paths shall be lighted either by street lights on adjacent streets or pedestrian scale lighting along the access way. Lighting shall not shine into adjacent residences.

- **Bicycle parking requirements for new development.**

  Bicycle parking facilities shall be provided as part of: multifamily residential developments and all commercial, industrial, and institutional developments; transit transfer stations; and park-and-ride lots.

- **Bicycle parking.**

  Bicycle parking facilities shall either be lockable enclosures in which the bicycle is stored, or secure stationary racks, which support the frame so the bicycle cannot easily be pushed or fall to one side. Racks that require a user-supplied lock shall accommodate locking the frame and both wheels using either a cable or U-shaped lock.

  Bicycle parking spaces shall be at least 6 feet long and 2.5 feet wide, and overhead clearance in covered spaces shall be a minimum of 7 feet.

  A 5-foot aisle for bicycle maneuvering shall be provided and maintained beside or between each row of bicycle parking.

  Bicycle racks or lockers shall be securely anchored.

  Required bicycle parking shall be located in a well lighted, secure location within 50 feet of an entrance to the building, but not farther from the entrance of the building than the closest standard or compact vehicle parking space. Bicycle parking inside a building may be allowed with Development Review Board (DRB) approval, but the location must be easily accessible for bicyclists.

  Bicycle parking shall not obstruct walkways. A minimum 5-foot-wide aisle shall remain clear.

  All required bicycle parking for multiple-family residential uses shall be covered.

- **Bicycle lockers or other secure parking facilities for long-range needs at work, transit centers, etc.**

  Fifty percent of the required bicycle parking at transit stations and park-and-ride lots shall be lockable enclosures.

- **Location standards for bicycle parking.**

  All required bicycle parking shall be located on the site within 50 feet of main building entrances and not farther from the entrance than the closest standard or compact motor vehicle parking space. Bicycle parking shall have direct access to both the public right-of-way and to the main entrance of the principal use.

  For buildings or developments with multiple entrances, required short-range bicycle parking shall be distributed proportionally at the various public entrances. Required long-range public parking also shall be distributed at the various public entrances, while employee parking shall be located at the employee entrance, if appropriate.

  Bicycle parking may be located in the public right-of-way with the approval of the City Engineer.

Bicycle parking may be provided within a building with Development Review Board approval, but the location must be easily accessible for bicyclists.

- **Commuter facilities for employees.**

  Facility standards should provide greater convenience to commuters. Long-range parking needs are addressed in Chapter 8. It is recommended that employers be encouraged to provide facilities for bicycle commuters such as changing rooms, lockers, and showers but that it should not be mandatory. Recognizing the need to increase bicycling, it is recommended that the City continue to evaluate possible methods to provide this incentive. Possible methods to encourage provision of these facilities include reducing the number of required vehicular parking spaces.

5.4.4 Education and Safety

Programs to promote education and safety for bicyclists and pedestrians should involve several City departments in coordination with a City bicycle and pedestrian advocacy group. The information and personnel resources presently exist and the City primarily needs to focus on pooling these resources to establish a continuous education and safety program. The City should explore ordinance amendments that would enhance education and safety programs. A policy commitment should be made by the City for coordinated safety and education programs with other agencies and groups such as:

- School districts (West Linn/Wilsonville, Canby, and Sherwood School Districts) for programs involving primarily elementary age students;
- State Traffic Safety Commission for training materials and personnel;
- BTA - Bicycle Transportation Alliance;
- Alliance for Community Traffic Safety;
- Clackamas County Sheriff s Office for training personnel;
- Youth Groups (e.g., Boy Scouts, Girl Scouts, etc.); and
- Local service organizations.

5.5 IMPLEMENTATION PROCESS

5.5.1 Establishing Bicycle and Pedestrian System Priorities

Establishing a major network of facilities in conjunction with all major streets and supplemental routes, as shown on the 2002 Recommended Bicycle and Pedestrian Facilities Plan map (**Figure 5.4**), may be the ideal end result, but these improvements will obviously take a considerable period to construct and finance. Therefore, priorities must be established for a usable system of routes that will provide links to all major destinations in the City.

The 1993 recommended bicycle and pedestrian priorities represent the projects that were considered to be the most important by the BATF and the public at that time. The projects were grouped in three categories of early opportunities, short-range, and long-range projects. **Table 5.b** is the 1993 recommended projects list. The table shows the projects' 1993 priority, whether or not completed, and a 2001 project cross reference, if applicable. The 2002 Recommended Bicycle and Pedestrian priorities represent the projects that were considered to be the most important by the ATPC. These projects are grouped into three categories of short-range, mid-range, and long-range projects. The priority listing is based on the road project that the bicycle and pedestrian improvements are associated with. These projects are listed in **Table 5.c**; project descriptions follow. The projects listed that are off-street and have recreational attributes are noted with an asterisk. A fourth category of projects, that require coordination with other agencies or programs, is also presented.

Projects that have not been completed as of this 2002 update are shown in **Figure 5.3a.** Because of the time involved to complete these projects, the City should re-evaluate project priorities to take advantage of funding opportunities and related construction of streets or utilities that will reduce construction costs. In addition to these improvements that will be largely financed by the City, other street, bicycle, and pedestrian improvements should be required as appropriate with new development (i.e., street frontage improvements, etc.)

Funding priorities for City projects should be considered under the heading of transportation facilities for motorists, bicyclists, pedestrians, and transit users. The needs of all these groups should be evaluated during the annual budget process. Street improvements based on motor vehicle traffic should not be the only criteria for prioritizing projects.

Table 5.b
1993 Bicycle and Pedestrian Master Plan Recommended List

1993 Project List	#	Project	From	To	Completed	TSP Priority	Associated Project
Early Opportunity Projects (1 to 2 years)							
1		Boeckman Rd	Boberg	Parkway	partial		W-4
2		Town Center	Fun Center	Wilsonville Rd	yes	n/a	
3	B-2	Continuous route along 95th/Boeckman/Boberg/ Barber/Kinsman	Boones Ferry Rd	Wilsonville Rd	no	short	CS-4 & CS-21
4	B-1A	Continuous route along Wilsonville Rd	Boeckman Rd	Willamette Way West	no	short	W-9
5	B-2a	Boones Ferry Rd	Wilsonville Rd	Boones Ferry Park	no	long	CS-20
6	B-1	Brown Rd	Evergreen Ave.	Wilsonville Rd	no	mid	W-12
7	B-8	Parkway Center Dr	Parkway Ave	Elligsen Rd	yes	n/a	CS-9
Short-Term Projects (2 to 10 years)							
1	B-3	Crossing the Willamette River	I-5 South of River	I-5 North of River	no	long	none
2	B-4	Town Center Loop Ped & Bicycle Improvements	Wilsonville Rd & TCLE	Wilsonville Rd &TCLE	no	long	CS-11
2 (cont)	B-19	Town Center Loop Connector	Town Center Park	TCLE	no	long	NC-26
3	B-5	Memorial Park	Memorial Park	Existing & future development	no	long	
4		Hazelwood Path	Matzen Dr	Wood Middle School	yes	n/a	
5	B-6	Boeckman Rd I/5 Overpass	Boberg Rd	Canyon Creek North	partial	short	CS-16 and W-4
6	B-7	Parkway Ave	Town Center Loop	Boeckman Rd	no	mid	CS-10
7		Parkway Center Dr	Elligsen	Parkway	yes	n/a	
8		Memorial Dr	Town Center Loop	Parkway	yes	n/a	
9	B-10	Canyon Creek N Extension	Boeckman Rd	Vlahos		short	C-6
10		Boeckman Creek Crossing	Vlahos Ave.	Meadows Parkway	yes	n/a	
11		Old Wilsonville Rd/Boeckman Creek	Kolbe Lane	Schroeder Way	yes	n/a	
12		Canyon Creek Rd N.	Elligsen	Boeckman Rd	yes	n/a	
13		Stafford Interchange	Parkway Court	95th Ave.	yes	n/a	
Long-Term Projects (10+ years)							
1	B-11	Boeckman Rd	Wilsonville Rd	Canyon Creek Rd	no	long	W-4f
2	B-23	Evergreen Rd North Extension	Brown Rd	Kinsman Rd	no	short	NC-25
3	B-12	French Prairie Dr	Miley Rd	Miley Rd	no	long	CS-17 & CS-18
4	B-13	Parkway Ave	Boeckman Rd	Parkway Center Dr	no	mid	W-15 & C- 10

Table 5.c
2002 Recommended Bicycle and Pedestrian Facilities

#	Project	From	To	Cost	TSP Priority	Associated Project	93 Priority
Short-Range Projects							
B-1A	Continuous route along Wilsonville Road	Boeckman Road	Willamette Way West	n/a	short	W-9	e4
B-2	Continuous route along 95th/Boeckman/Boberg/ Barber/Kinsman	Boones Ferry Road	Wilsonville Road	n/a	short	CS-4 & CS-21	e3
B-6	Boeckman Road I/5 Overpass	Boberg Road	Canyon Creek North	n/a	short	CS-16 and W4	s5
B-8	Parkway Center Drive	Parkway Avenue	Elligsen Road	n/a	short	CS-9	s7
B-10	Canyon Creek N Extension	Boeckman Road	Vlahos	n/a	short	C-6	s9
B-24	Miley Road	French Prairie (east)	west of I-5	n/a	short	W-11& CS-19	o1
B-23	Barber Street Extension	Brown Rd	Kinsman Rd	n/a	short	C-25	l2
Mid-Range Projects							
B-1	Brown Road	Evergreen Ave.	Wilsonville Road	n/a	mid	W-12	e6
B-7	Parkway Avenue	Town Center Loop	Boeckman Road	n/a	mid	CS-10	s6
B-13	Parkway Avenue	Boeckman Road	Parkway Center Drive	n/a	mid	W-15 & CS-10	l4
Long-Range Projects							
B-2a	Boones Ferry Road	Wilsonville Road	Boones Ferry Park	tbd	long	CS-20	e5
B-3	Crossing the Willamette River	I-5 South of River	I-5 North of River	tbd	long	none	s1
B-4	Town Center Loop Ped & Bicycle Improvements	Wilsonville Rd & TCLW	Wilsonville Rd &TCLE	n/a	long	CS-11	s2
B-5	Memorial Park	Memorial Park	Existing & future development	tbd	long		s3
B-11	Boeckman Road	Wilsonville Road	Canyon Creek Road	n/a	long	W-4f	l1
B-12	French Prairie Dr	Miley Rd	Miley Rd	n/a	long	CS-17 & CS-18	l3
B-19	Town Center Loop Connector	Town Center Park	TCLE	n/a	long	NC-26	s2

5.5.1.1 Short-Range Projects

Short-range improvement projects focus on providing access between major destination areas and residential development. If fully implemented, the short-range projects will begin to form a basic network. Medium- and long-range improvements can then be made to further enhance safety and convenience for the user.

B-1A. Wilsonville Road from Boeckman Road to Willamette Way West

This street represents a major link from the southwest side of the City to the northeast side of the City. Improvement for bicyclists and pedestrians is a very high priority. This goal has been partially met as of this TSP. B-1A is a project for a pedestrian and bicycle path on both sides of Wilsonville Road between Oak Leaf Loop and Kinsman Road. This improvement is a part of Phase 3 of the Wilsonville Road Project. (See Project W-9, in **Figure 4.10** in Chapter 4.) The Phase 3 Area currently contains a bike lane on the south side and a pedestrian path on the north side of Wilsonville Road.

B-8. Parkway Center Drive

Striping for bicycle lanes was added as part of the Elligsen Road project in the fall of 1999. Striping was not added to the entire street, but bike lanes are now available to connect Elligsen Road with Canyon Creek North via Burns Way. The project still requires the addition of a few signs, but the intent of the goal can be considered met. (See Project CS-9 in **Figure 4.23** in Chapter 4)

B-10. Canyon Creek Road

A bicycle lane has been striped on Vlahos Drive as of 1997. This TSP recommends a Canyon Creek Road North extension south from Boeckman to Vlahos, which would include pedestrian and bicycle facilities. (See Project C-6 on **Figure 4.10,** Chapter 4.)

B-24. Miley Road

This project was proposed in the 1993 bike Plan to connect with the Willamette River Crossing. Construction of the bicycle and pedestrian connection will occur along with Miley Road improvements. (See Project W-11 on **Figure 4.10** and Project CS-19 on **Figure 4.23** in Chapter 4.)

B-23. Barber Street Extension from Brown Road Extension to Kinsman Road

This project is proposed as part of the Dammasch area development. Construction of the bicycle and pedestrian connection is intended to coordinate with a road and waterline extension. During the interim, grant funds were used to complete other north/south bicycle goals (Kinsman Road, part of Barber Street and Boberg Road). The project is slated to be built along with the Barber Street Extension from Brown

Road to Kinsman Road. (See Project C-25 on **Figure 4.10** in Chapter 4.)

5.5.1.2 Mid-Range Projects

When the list of 1993 short-range projects was created (re-named mid-range projects for the 2002 TSP), it was anticipated that these projects would be completed in approximately 2 to 10 years. The projects listed below are those that were included in the 1993 list, but have not yet been constructed as of 2002.

B-1. Brown Road from Evergreen Ave. to Wilsonville Road

The TSP recommends widening Brown Road to three lanes, which will include bicycle and pedestrian facilities on both sides of Brown Road from Wilsonville Road to Evergreen Avenue (See Project W-12, **Figure 4.10.)** Though this is a short street section, it is important due to the connection it can provide for the many residents to Wilsonville Road, Boones Ferry Primary School, and Wood Middle School.

B-2. Continuous north-south bicycle/pedestrian route from Boones Ferry Road to Wilsonville Road along 95th/Boeckman Rd/Boberg Rd/Barber St/Kinsman Rd.

On the west side of I-5, bicycle and pedestrian access has been greatly improved by the 95th Avenue extension. A continuous route between the Willamette River and Commerce Circle is nearly complete using Boones Ferry Road (south of Wilsonville Road), Wilsonville Road, Kinsman Road, Barber Street, Boberg Road, Boeckman Road, and 95th Avenue. With the restriping of Boeckman Road between 95th and Boberg in Fall of 2001, the section left to complete for bicycles along this route is on Barber Street between the railroad tracks and Kinsman Road. (See Projects CS-4, CS-20, and CS-21 in **Figure 4.23** in Chapter 4.)

B-7. Parkway Avenue

Between Town Center Loop and Boeckman Road, Parkway Avenue does not have sufficient width with its current three-lane design to have a bicycle lane. However, because of the limited number of accesses requiring the center-turn lane, its width may be reduced creating a shared roadway design with wider outside lanes for vehicles and bicycles. If more detailed study confirms that the striping can be changed without excessively impacting cars, this work could probably be added into the annual pavement-marking program and completed in the next year or two within the operating budget. (See Project CS-10 in **Figure 4.23** in Chapter 4)

B-13. Parkway Avenue (north of Boeckman)

Within the City, the only north-south streets east of I-5 between Boeckman Road and Elligsen Road are Parkway Avenue (via Parkway Center Drive) and Canyon Creek Road North. Parkway Avenue should

be widened to improve the existing substandard situation. The cost for this improvement is high. Bicycle lanes/paths and pedestrian ways were included on Canyon Creek Road North when it was constructed in the mid1990s to provide an alternative route for bicyclists and pedestrians. Twenty-five percent of the Parkway Avenue project has been completed as of 2001. (See Project CS-10 on **Figure 4.23** and Project W-15 on **Figure 4.10** in Chapter 4.)

5.5.1.3 Long-Range Projects

Long-range projects are ones that were anticipated to be completed within the next 20 years in the 1993 Plan. The projects shown below are those long-range projects that are still left to complete.

B-2A. Continuous north-south bicycle/pedestrian route from Wilsonville Road to Boones Ferry Park along Boones Ferry Road.

The Wilsonville Road Phase 1 project improved the intersection with Boones Ferry Road to the vicinity of the old Post Office. Additional improvements have been delayed on Boones Ferry Road pending future commercial development anticipated on the Fred Meyer property. It is not fully known how the sale of Wilsonville Primary School will change this area. With the school moving to the west, the priority of this project will likely change from early opportunity in the 1993 plan to long-range in the 2002 plan. It appears that this goal will not be met until private development proceeds. (See Project CS-20 in **Figure 4.23** in Chapter 4.)

B-3. Willamette River Crossing

A link between Charbonneau and other destinations south of the river and the central portion of the City is a very important component of the proposed bicycle and pedestrian system. The I-5 Bridge provides the only connection between Charbonneau and the rest of the City. Facility improvements on the bridge would encourage pedestrian and bicycle use to this part of the City as well as recreational bicycling opportunities along the south side of the Willamette River. During recent improvements, ODOT chose not to construct a bicycle and pedestrian facility on the existing bridge. The City should pursue this multi-modal project issue further with ODOT.

B-4. Town Center Loop

Town Center Loop has sidewalks around the perimeter of the area but space has not been provided for bicyclists. This, coupled with Project B-19 Town Center Loop Connector, will provide good park access. It will also provide a desirable alternate route for pedestrians and bicyclists who do not require use of the Town Center Loop Connector. (See Project CS-11 in **Figure 4.23** in Chapter 4.)

B-6. Boeckman Road/I-5 Overpass-Boberg Road to Canyon Creek North

The overpass does not have sidewalks or bicycle lanes. However, the pavement width is generally sufficient for lanes between Parkway Avenue and Boberg Road. This section should be striped and widened as necessary for bicycle lanes. This project can be completed as an intermediate step to the bridge-widening project, which would include pedestrian and bicycle facilities, (See Project W-4 in **Figure 4.10.**)

Between Parkway Avenue and the future Canyon Creek Road North, Boeckman Road currently has a shared 8-foot-wide sidewalk on the north side of the street and insufficient street width for bicycle lanes. The sidewalk can provide a temporary route for bicyclists and pedestrians. The south side of the street should be improved with bicycle and pedestrian facilities in conjunction with future development. (See Project CS-16 in **Figure 4.23** in Chapter 4.)

To improve bicycle and pedestrian access from the Canyon Creek Road S./Boeckman intersection west to the Boeckman Road improvements and future Canyon Creek N. Street extension, a short improvement on the south shoulder of Boeckman Road is recommended to provide a safe temporary connection to the sidewalk on the north side of Boeckman Road.

B-11. Boeckman Road from Wilsonville Road to Canyon Creek Road

This section of Boeckman Road has only motor vehicle lanes and no bicycle or pedestrian facilities. As the City grows, it will become increasingly important to provide these facilities along this major east-west route. (See Project W-4f on **Figure 4.10** in Chapter 4.)

B-12. French Prairie Drive from Miley Road to Miley Road

Facilities for bicyclists and pedestrians are limited along this major street in the Charbonneau area. It may be possible to convert this 4-lane street to 2 traffic lanes and a bike/ped/golf cart lane on each side if this is found to be desirable by the residents. (See Project CS-17 on **Figure 4.23** in Chapter 4.)

B-19. Town Center Loop Connector

This goal is intended to provide bike and pedestrian connections to the north, east, and south of Town Center Park. A sidewalk connection was made to the north as part of the construction of Town Center Park during FY 1998-99. A proposed network connection project would connect the west side of the park and Town Center Loop East. (See Project NC-26 on **Figure 4.25** in Chapter 4.)

5.5.1.4 Off-Street Trail Project

B-5. Memorial Park

This project provides improved connections between the park and nearby development. A path from Memorial Drive to the lower parking lot was constructed during the summer of 1997. A pedestrian connection between the proposed Civic Park on the Boozier property and the Willamette River is a priority.

5.5.1.5 Other System Improvements

These projects are very important components of the TSP that should be implemented at the earliest opportunity. However, they typically require coordination with other agencies before they may be implemented. Their implementation schedule should be flexible, depending upon funding and the level of assistance received from other agencies.

1. Stafford Road

   North of Boeckman Road, Stafford Road represents a logical northern extension of Wilsonville Road. However, it is outside of the Urban Growth Boundary (UGB). It is under Clackamas County jurisdiction and is not presently designated as a bicycle route in the County Comprehensive Plan. The City should encourage the County to designate this portion of Stafford Road as part of the County bicycle system.

2. Elligsen Road

   Beyond Canyon Creek Road N, this road is also outside the UGB and is within Washington County. It is not presently designated as a bicycle route in the County Comprehensive Plan. The City should encourage the County to designate this portion of Elligsen Road as part of the County bicycle system.

3. Boones Ferry Road

   ODOT made some bicycle and pedestrian improvements along Boones Ferry Road when it was terminated with a cul-de-sac north of Ridder Road. A pathway was improved from Commerce Circle north to Elligsen Road. Unfortunately, no pathway was provided between the cul-de-sac at Ridder Road and Commerce Circle. The City and ODOT should evaluate the feasibility of opening that strip between Ridder Road and Commerce Circle for bicyclists and pedestrians.

4. I-5 Bicycle/Pedestrian Path

   In addition to a possible crossing on the I-5 bridge, the City should work with ODOT regarding a path paralleling I-5 to provide connections with the Stafford/I-5 interchange, Wiedemann Road (future), Boeckman Road, Wilsonville Road/I-5 interchange, the Willamette River Greenway, and a crossing of the Willamette River.

5. County Coordination

   The City should encourage Washington and Clackamas Counties to designate the roads between Boeckman Road and Elligsen Road, Day Road, Clutter Road, Grahams Ferry Road, Wilsonville Road (west), and Miley Road as bicycle routes on their maps.

6. Coordination with Transit Providers

   As a transit service provider itself through SMART, the City should work with Tri-Met to include bicycle parking (preferably lockable enclosures) at park-and-ride transit facilities and to provide improved access for bicyclists. Tri-Met's bicycles on the bus program has been successful and it recently committed to continue and expand the program. A Tri-Met representative has indicated that the agency would be willing to consider a cooperative arrangement with the City to provide bicycle rack facilities on the No. 96 route that serves Wilsonville.

   The City's bus service (SMART) consists of fixed route and "on call" service. However, the service may become more comprehensive in the future and coordination of this program with the bicycle and pedestrian program will be increasingly important in the future, especially with the planned addition of commuter rail service to Wilsonville.

5.5.2 Other Projects

5.5.2.1 Bicycle Map

Once continuous bicycle routes are constructed, the City should produce a bicycling map and guide for Wilsonville and the surrounding area to promote bicycling. As an alternative to producing its own map, the City could request that Metro include the Wilsonville area in its next edition of the "Getting There by Bike" map that covers most of the Portland metropolitan area. The typical format of these maps is to provide route information on one side and safety recommendations on the reverse side.

5.5.2.2 Bicycle Route Signs

Bicycle route signs are a common method for identifying bicycle routes. If a City map is developed, the routes could be identified with a name or number on both the map and signs to help guide bicyclists to their destinations.

5.6 POLICIES

The City of Wilsonville shall:

Policy 5.1.1 Continue to improve and expand pedestrian and bicycle facilities, as needed throughout the community, with a focus on improved connectivity both within the City and with the Metro Regional Bicycle System.

Policy 5.1.2 Ensure that pedestrian and bicycle networks provide direct connections between major activity centers and minimize conflicts with other modes of transportation.

Policy 5.1.3 Regard facilities for bicyclists and pedestrians as important parts of the overall transportation system and not just recreational facilities.

Policy 5.1.4 Increase the bicycle share mode throughout the City and improve bicycle access to the City's transportation system.

5.7 IMPLEMENTATION MEASURES

Implementation Measure 5.1.1.a Determine the actual location, design, and routing of pedestrian and bicycle facilities with user safety, convenience, and security as primary considerations.

Implementation Measure 5.1.1.b Schedule and coordinate all pedestrian and bicycle pathway improvements using **Table 5.c** and Sections 5.5.1.1, 5.5.1.2, 5.5.1.3, and 5.5.1.4 of the TSP as a guide for the City's ongoing Capital Improvement Program for such improvements.

Implementation Measure 5.1.1.c Retrofit existing pedestrian and bicycle facilities to current standards to promote safety, connectivity, and consistency, as funds become available to do so.

Implementation Measure 5.1.1.d Discourage the use of cul-de-sac street designs without pedestrian and bicycle connectivity when feasible alternatives exist to establish a system of connecting local streets.

Implementation Measure 5.1.1.e Require pedestrian and bicycle connections within and between developments to provide convenience and safety for pedestrians and bicyclists. The purpose of this measure is to provide alternative routes to the collector and arterial street system.

Implementation Measure 5.1.1.f Revise appropriate Code sections (Sidewalk and Pathway Standards) to require pedestrian connections between building entrances, streets, and adjoining buildings.

Implementation Measure 5.1.1.g: Create a bicycle and pedestrian advocacy group to monitor, advise and coordinate the efforts of local and regional agencies to develop a convenient, safe, accessible and appealing system of bicycle and pedestrian pathways. Purposes - Bicycle Education and Safety, Driver Education regarding Bicycle and Pedestrian laws; advise Planning Commission and Parks and Recreation Advisory Board on local needs; track implementation of facilities in the Transportation Systems Plan and report status annually to Planning Commission and Park and Recreation Advisory Board; coordinate with Washington County, Clackamas County and Metro on regional bicycle issues; coordinate with Bicycle Transportation Alliance and other organizations; coordinate with ODOT, and other appropriate agencies.

Implementation Measure 5.1.1.h: Identify and apply for all available state and federal grant funding opportunities to fund the system improvements identified in Section 5.5.1.5 of the TSP.

Implementation Measure 5.1.2.a Require development of secondary pedestrian and bicycle pathways internal to individual developments, consistent with the Transportation Planning Rule and Metro's Urban Growth Management Functional Plan.

Implementation Measure 5.1.2.b Based upon Planning Division analysis and Planning Commission findings, revise appropriate code sections to designate pedestrian districts in mixed-use areas and implement street and site design standards that support this designation.

Implementation Measure 5.1.3.a Establish pedestrian and bicycle pathway construction standards to be incorporated into the City's *Public Works Standards.*

Implementation Measure 5.1.3.b Require that all primary pedestrian and bicycle pathways be constructed in a manner that addresses environmental conditions, such as natural, cultural, and historical features. Pathways shall be provided as specified in Chapter 5 *Pedestrian and Bicycle Facilities* of the 2002 Transportation Systems Plan."

Implementation Measure 5.1.3.c Require concrete sidewalks on both sides of all streets with appropriate buffering, and with emphasis on safety, accessibility, and functionality, unless other facilities can provide the same services or it is found that sidewalk facilities are not needed for other reasons. The Development Review Board or City Council must approve exceptions.

Implementation Measure 5.1.3.d Continue to offer bicycle safety programs through the Parks and Recreation and Sheriff's Departments.

Implementation Measure 5.1.3.e As with the formation of the Bicycle Advisory Task Force before the preparation of the original Bicycle and Pedestrian Master Plan, the City will seek the advice of knowledgeable individuals before making significant changes to these Policies or Implementation Measures. This may include bicyclists, pedestrians, and those who use wheelchairs or other assistive devices, as well as others with particular expertise.

CHAPTER 6
TRANSIT SYSTEM

CHAPTER 6
TRANSIT SYSTEM

6.1 GOAL

Goal 6.1 To promote an effective transit system that is a viable alternative to the single occupant vehicle; responds to the mobility needs of residents, employers, and employees; permits easy shifts from one mode to another; offers choice and convenience; and connects to other regional transportation systems.

6.2 INTRODUCTION - THE SMART SYSTEM

The City of Wilsonville operates South Metro Area Rapid Transit, also known as SMART. SMART's service area encompasses the entire city. SMART is funded by a 0.3 percent payroll tax (one-half of the rate currently levied by Tri-Met, the region's largest transit provider). SMART does not charge a fare. SMART provides a range of services including fixed route, demand response, and community event transportation. SMART currently operates five fixed routes with connections to Tri-Met in or from Portland and Cherriots in Salem and two demand response routes.

Future transit needs include providing service to activity and employment centers that are created as a result of future development in Wilsonville. These activity centers will have significant employment generation and will be major destinations. With development of more local shopping opportunities for both transit-dependent and transit-choice riders, use of transit will reduce the number of out-of-town trips. An increase in commuting trips in and out of Wilsonville is expected to continue. Thus, SMART maintains communication with ODOT, Tri-Met, Metro, Salem (Cherriots), and Clackamas and Washington Counties to improve service and increase ridership. Expansion of commuter rail service to Wilsonville will also require transit service to connect passengers to retail and employment centers. Future housing developments, such as Villebois, will also require additional service. SMART continually reviews its transit service to determine the need for expanded local and intercity service.

SMART operates a demand-response "Dial-A-Ride" service for the general public during regular operating hours. Dial-A-Ride provides curb-to-curb service within Wilsonville City limits, with priority given to ADA-eligible customers who have a disability and are unable to use the fixed route services. All SMART buses are ADA accessible. Since SMART does not charge a fare for any of its services, it provides enhanced mobility to individuals who cannot afford other modes of transportation.

Provision of readily available information on routes and services is an important tool in ensuring that SMART services are accessible to all Wilsonville residents. In addition to printed schedules, SMART provides schedule information and personalized trip planning over the phone (503-682-7790) during regular business hours. SMART also offers training and assistance to residents who want to learn more about the system.

Information on routes, schedules, and connections to other transportation providers is available on the Internet web page (www.ridesmart.com) in both English and Spanish.

Many of SMART's bus stops do not yet meet accessibility standards and require upgrading to comply with the Americans with Disabilities Act. Improved pedestrian and bicycle connections and amenities can make waiting for the bus a safer and more attractive experience. Several shared park-and-ride areas are located within Wilsonville and are served by transit. These facilities are used by commuters coming into and through the city as well as by residents.

6.3 TRANSIT STRATEGIES

This chapter outlines policies and implementation measures to encourage future growth of transit service and ridership to serve the growing needs of Wilsonville. Development of transit facilities and services is essential to the livability and economy of the city. Transit provides safe, accessible and direct services to activity centers such as shopping and employment areas. Transit also provides mobility for people who do not have a vehicle.

For transit to provide a viable transportation option for the residents, employers, and employees of Wilsonville, it must be part of an integrated transportation system that considers land use, fixed route buses, demand response service, taxis, carpools, vanpools, employer shuttles, bicycles, pedestrians, and other innovative strategies to manage mobility. These options include limiting private vehicle space in developments, using technological enhancements for improved passenger information and systems, using low-floor buses to reduce delays at stops, and engaging in car sharing and innovative marketing programs. (Also, see Chapter 8, Transportation Demand Management.)

The policies and strategies outlined in this chapter seek to promote transit as a means to reduce the number of single occupant vehicles (SOVs). Reducing the number of SOVs reduces the demand for roadway capacity and parking. The City's targeted mode split for transit for the year 2020 is 2.5 percent for all trips from Wilsonville and 1.4 percent to Wilsonville. Mode split refers to the share of trips made by a mode of transportation, such as auto, transit, walking, bicycling, etc. These figures are based on Metro's regional model trip analysis data.

This chapter also identifies potential corridors on which transit will operate and a network of park-and-ride areas and transit centers that make the transit system more efficient. Other projects include traffic mediation measures and implementation of Intelligent Transportation Systems (ITS) projects to improve transit information for passengers and bus operators. The City continually monitors and expands bus service in response to the needs of residents, employees, and employers.

A separate, but related, Transit Master Plan, intended to guide the internal operations of SMART, is currently in the draft stage. The Transit Master Plan will outline operational plans and strategies, service goals, delivery alternatives, and performance measures for the City of Wilsonville's transit system. The Transit Master Plan is not intended to be adopted as part of the Comprehensive Plan.

6.3.1 Major Transit Streets

Major transit streets are those that provide connectivity between densely developed areas, have major development along them, or are planned for future development. These streets are generally arterials or major collectors that serve as major auto and pedestrian streets as well. **Figure 6.1** identifies existing and possible future major transit streets for the year 2020 in Wilsonville. These streets may not have bus service on them now, but as the City grows, new service should be added. While there may well be local transit service on other streets, it is on these major transit streets that the City will commit to the highest level of transit service, and therefore the highest level of transit-orientation and transit preferences.

6.3.2 Pedestrian and Bicycle Access to Bus Stops

Pedestrian and bicycle access between transit and destinations can be unnecessarily difficult. When pedestrians must cross large parking lots or walk far out of their way to find a safe path of travel, transit is much less attractive.

Efforts are already underway to make Wilsonville friendlier to pedestrians and cyclists. For transit service along major transit streets (**Figure 6.1**), it is important that every stop be accessible to as many homes and activities as possible that requires planning the shortest possible walking distances.

For commercial and activity center destinations, the best assurance of a minimal walking distance is a building orientation that places at least one entrance of the building contiguous to and facing with the sidewalk. This point of contiguity needs to be as close as possible to a crosswalk, so that pedestrians can access bus stops on both sides of the street. For residential areas, minimal walking distance requires ensuring that streets are connected within a residential development—if not for vehicular traffic then at least for pedestrians and cyclists.

Additionally, major entrances to businesses should face or be clearly visible from the sidewalk. Pathways between these entrances and the street that traverse the parking areas or driveways should be clearly marked and differentiated with striping, pavement changes, and signage. Pedestrians should have the right-of-way on these pathways. Out-of-direction walking distance should be minimized; pathways should be designed to accommodate pedestrians, not vehicles.

6.3.3 Intercity Park-and-Rides and Transit Centers

Park-and-ride facilities are an important element of intercity service. Riders can often be induced to leave their cars at major, secure park-and-ride locations and take the bus to intercity destinations. Park-and-rides rarely attract riders that arrive by bus to local transit service; most of these riders arrive by car.

Currently, SMART serves two shared park-and-ride areas within Wilsonville. The maximum number of spaces is 63 and both are located in the Town Center Shopping Center. Commuters parking in these areas are typically passengers with destinations in Salem and Portland. Approximately half of these commuters come

from local areas, and half come from areas outside of Wilsonville. The two shared park-and-ride areas within Wilsonville are currently at capacity. More park-and-ride Facilities are needed in Wilsonville to accommodate forecasted growth in SMART ridership (see **Figure 6.1**).

Park-and-ride demand will grow considerably as the transit system improves and with the addition of commuter rail service in Wilsonville (see Chapter 7). This demand will require new and expanded facilities. The locations and sizes of these facilities should be identified in advance, to ensure that appropriate land is available.

Park-and-rides require high-quality access, both for the buses and the motorists, if they are to provide an attractive service. If a park-and-ride is sited in a place that requires buses to make complex route deviations, SMART will lose other through-riders due to delays in serving the park-and-ride market. If the park-and-ride access is especially complex, most potential riders will be discouraged from using it. Because of the long life of park-and-ride facilities, and the high annual costs of transit operations, it is critical that facilities be sited in ways that minimize operating costs, not just capital costs.

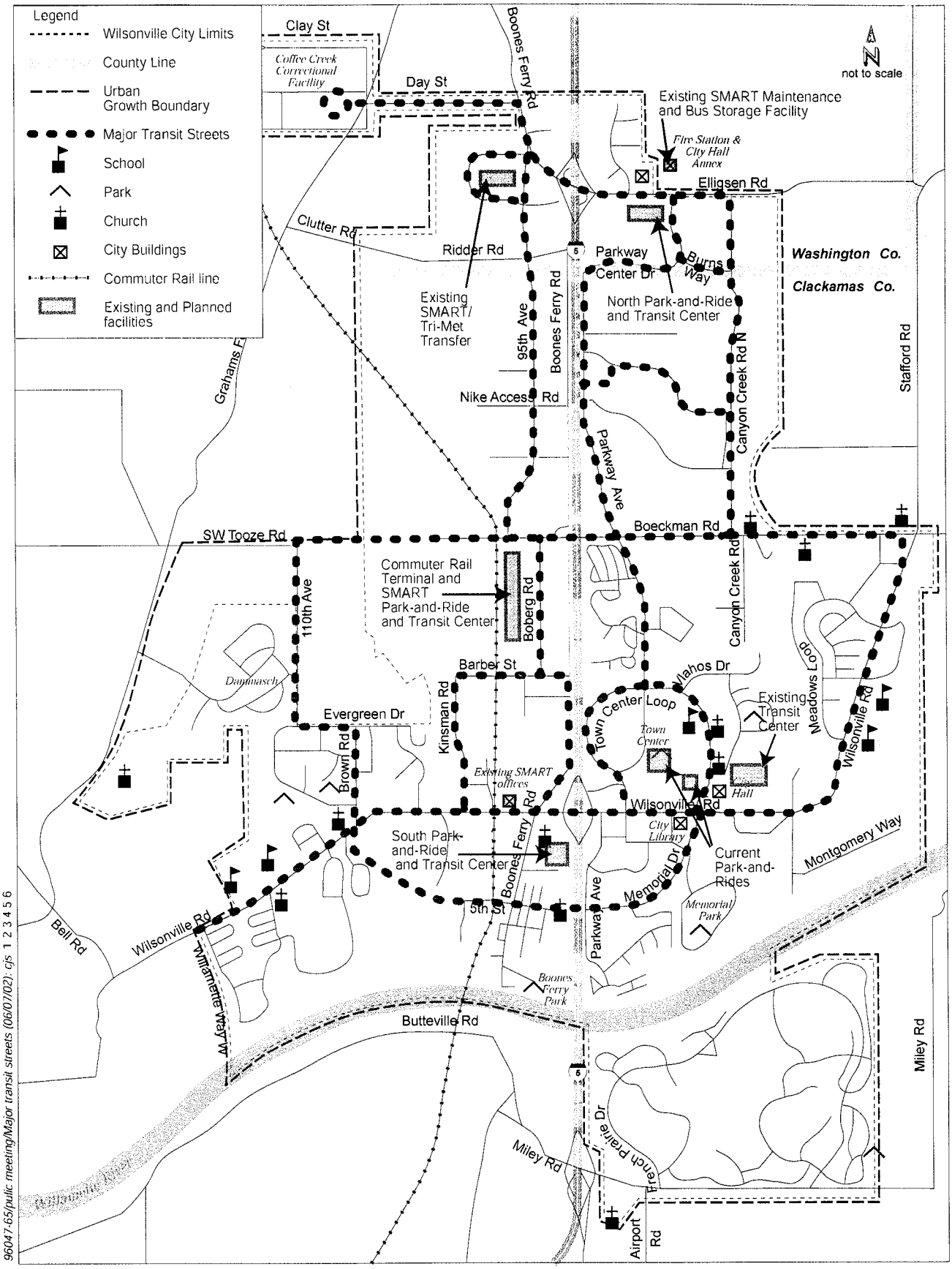
Park-and-ride facilities should be sited at locations convenient to the intercity corridor where service is already justified by existing development and near the commuter rail terminus. This will require identifying park-and-ride facilities along either Elligsen, Parkway or Town Center Loop and one located near the commuter rail terminus.

Transfer centers are also needed for passengers to make connections to other routes. City Hall is currently one of two transfer centers for SMART buses and is an important transfer point for local travel within the City. All routes currently make connections at City Hall. 95th and Commerce Circle is the current north location for transfers between SMART and Tri-Met. All but one of SMART's existing routes have transfers at this location. A long-term objective is to site transfer centers on both the north end of Wilsonville near the I-5/Elligsen interchange and on the southern end near Wilsonville Road.

6.3.4 Transportation Systems Management Measures

For transit to help alleviate congestion, service must strive to be competitive with the automobile. Most transit service is gradually deteriorating in quality, due to lower operating speeds caused by increasing congestion. By 2020, Wilsonville can expect travel speeds to decrease by at least 10 percent along arterials with an approximate 17 percent decrease in transit speeds along the major transit streets. This decrease in speeds will translate into longer running times for SMART and, therefore, higher costs to run the same level of service.[1] Moreover, the slower the buses run, the less likely they are to attract riders from cars.

[1] According to Nelson/Nygard Consulting Associates in 1999.



City of WILSONVILLE in OREGON
Transportation *Systems Plan*

Figure 6.1
Major Transit Streets and Capital Facilities by 2020

Transportation System Management (TSM) focuses on low-cost strategies to enhance operational performance of the transportation system. Measures that can optimize performance of the transportation system include, but are not limited to, signal improvements, HOV lanes, ramp metering, rapid incident response, and programs that smooth transit operation.

The City is investigating use of the following strategies over future years to mitigate transit speed loss. These traffic design measures and capital improvements can increase transit-operating speeds and thus protect current service times from degrading. A description of some of the available strategies is provided here for informational purposes only. Review and consideration of any of these techniques will be made in conjunction with planned intersection improvements and when levels of service are below acceptable level of service. There are other transit operation techniques that may be used to maintain or improve levels of service. These include consolidating and relocating bus stops, adjusting schedules, and using low-floor buses.

6.3.4.1 Traffic Signal Priority

This is a simple concept that has been used in a number of different cities. Buses use the same mechanism as in queue bypass (see Section 6.3.4.3) to alert the traffic signal of their approach. The approach of a bus signals one of two things:

"early green" – the signal turns green earlier than it normally would to minimize time the bus has to wait at a red light; or

"green extension" – the signal stays green longer than it normally would to allow the bus to pass through the intersection before the light turns red

Both minimize the amount of time buses waste sitting at red lights. The cost of adding transit signal priority capabilities to existing signals varies depending on the signal priority technology. In Wilsonville, where all signals are relatively new and already carry Opticom[2] equipment for prioritization of emergency vehicles, the cost-would be about $15,000 per signal. The cost would be somewhat higher if only one or a few signals are converted at once, but lower per signal if many signals are converted at once. In addition to the cost of signal technology, the buses would need sensors to use the signal technology (about $1,030 per bus). The existing Street System Development Charges (SDC) could cover at least part of these expenses.

It should be noted that ODOT controls the traffic signal timing at all intersections near I-5 on-ramps and off-ramps. In order to implement traffic signal priority changes at and near these locations, coordination with ODOT will be required.

[2] Opticom is a trademark of 3M, Inc.

6.3.4.2 *Signal Additions*

It is especially difficult for buses to travel through busy, unsignalized intersections. Simply adding a signal (even without priority for transit) can reduce the time buses spend waiting at intersections. However, before signals can be installed at an intersection, engineering standards, called "signal warrants," must be met. Signal warrants depend on traffic volumes, vehicle delay, accident histories, pedestrian volumes, and engineering judgment.

Depending on the complexity of the intersection and the other infrastructure needs, a new signal can cost anywhere between $160,000 and $200,000. With a new signal, the cost of transit prioritization mechanisms tends to be lower than when retrofitting existing signals.

6.3.4.3 *Queue Bypass*

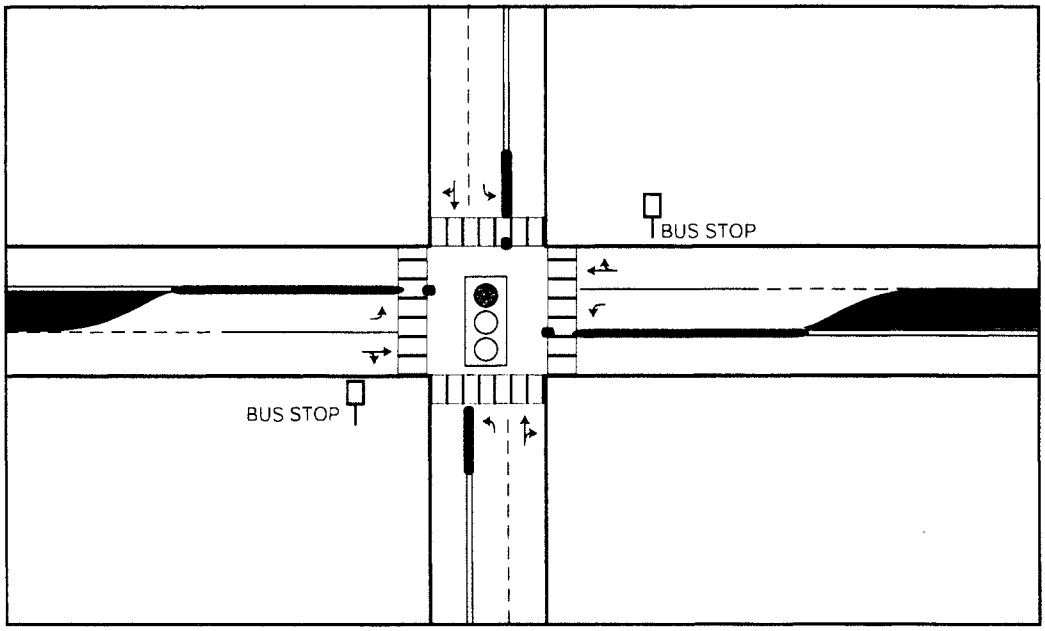
In a queue bypass, buses are allowed to use a right-turn-only lane to proceed through the intersection. Regular traffic is prohibited from using this lane except for right turns. Buses can then bypass the line of through-traffic queuing up at the red light. This can be done with an existing right-turn lane, or by constructing a new right-turn lane if it is needed for traffic management. If there is no room for a bus zone and bus stop on the opposite side of the intersection, the bus will need a "queue jump" which allows the right turn signal to turn green several seconds early to allow the bus to get out in front of the through-traffic.

Queue bypasses focus on getting buses through the congested intersection as quickly as possible. An important element is ensuring that a stop location does not further limit transit speeds through the intersection. Stops should always be located on the far side of the intersection, so the transit vehicle clears the congested intersection before stopping for patrons. Two options are available for these far-side stops. First, the stop can be located farther from the intersection to reduce the chances that traffic will back up all the way into the intersection if the transit vehicle stops to load or unload passengers. A better option is a special bus zone immediately across the intersection for the bus stop (as shown in **Figure 6.2**), which allows buses to serve passengers without backing up traffic into the intersection.

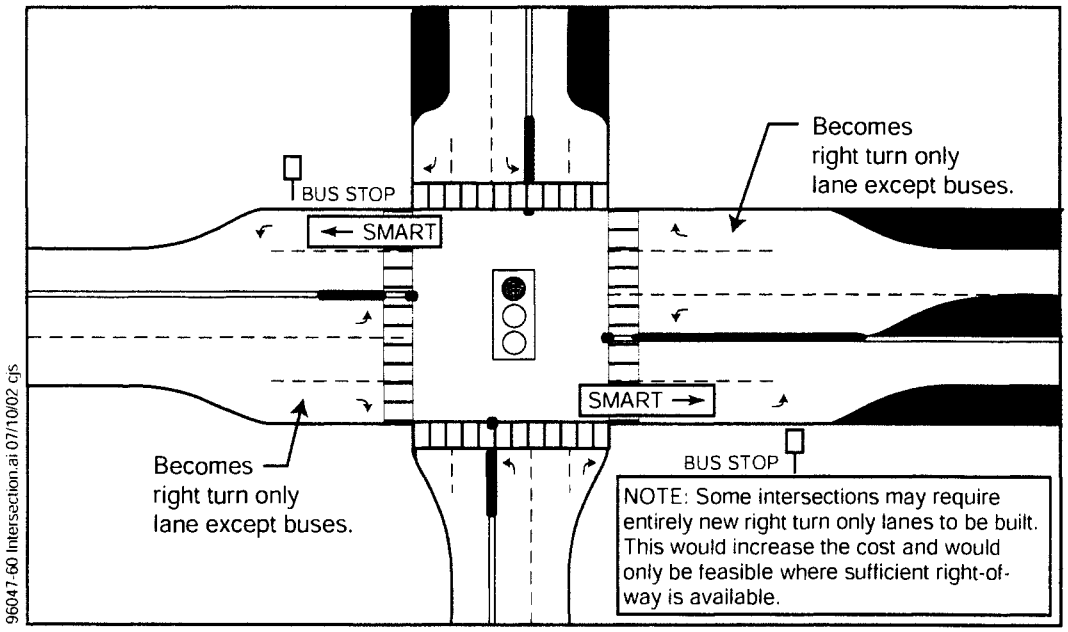
The cost for a queue bypass treatment varies dramatically depending on the specific needs of the intersection and whether new lanes must be constructed. Relocating bus stops costs between $500 and $2,000 (depending on whether a new concrete pad must be installed at the new site). The cost for signal priority equipment is about $15,000 per signal and $1,030 per bus. Constructing new lanes is considerably more expensive and increases the distance and difficulty for pedestrians at intersections. Of course, the cost of adding a lane would be reduced if it were included in an already-planned upgrade of the intersection and the width of the road needed were already part of the right-of-way. Land acquisition often outweighs the cost of construction. Use of the queue bypass

will be proposed when transit levels of service fail and will be subject to engineering and planning review.

Figure 6.2 shows a schematic of a queue bypass treatment with far-side stops.



Intersection before queue bypass treatment



Intersection with queue bypass lane and stop moved to far side of intersection

Figure 6.2
Queue Bypass Treatment

6.3.5 Transit Capital Program

This section identifies a transit capital program and funding sources for the City of Wilsonville. Funding for these projects will come from a range of sources including:

- SMART Payroll Tax
- Federal Transit Administration
- Oregon Department of Transportation
- Street SDCs
- Other developer contributions
- Metro

It may also be necessary to implement rider fares or raise payroll tax rates if other income services are insufficient to cover costs. The following projects listed in **Table 6.a** are proposed for construction or implementation within the short term, the next five years, and the long term, beyond five years. Cost estimates for these projects are intended to give a general indication of each project's cost. A detailed cost estimate will be needed prior to designating funds for construction or project implementation. **Table 6.b** is a proposed vehicle replacement program for the short-term only. The long-term capital equipment needs are difficult to forecast, because although service expansions are expected, the services and vehicle types are not yet identified. All costs are in year 2002 dollars. A description of each project follows **Table 6.b**.

6.3.6 Description of Projects

6.3.6.1 Transportation System Management Measures

Transportation System Management (TSM) measures such as signal additions, signal priority, and queue bypass will be considered to help protect transit-operating speeds. Signal priority treatments will extend the "green time" at traffic signals for buses running behind schedule; the queue bypass measures will facilitate buses proceeding through an intersection by using a right-turn-only lane. The signal priority improvements are identified as both short- and long-term projects while the queue bypass is programmed for the longer term. Intersections identified for these treatments will be proposed when transit levels of service deteriorate and will be subject to planning and engineering review.

Table 6.a
Transit Capital Program

Project	Cost
Short-Term Projects (within 5 years)	
1. Transportation System Management Measures[1]	$155,000
2. 250-Space Park-and-Ride and Transit Center adjacent to Commuter Rail	$3,700,000
3. Transit Maintenance and Bus Storage Facility	$2,000,000
4. Bus Shelters and ADA Upgrades[1]	$265,000
5. Intelligent Transportation Systems Improvements	$300,000
Total	**$6,420,000**
Long-Term Projects (beyond 5 Years)	
1. Shelters and ADA Upgrades[1]	$360,000
2. Transportation System Management Measures[1]	$1,093,000
3. Intelligent Transportation Systems Improvements	$400,000
4. 250 Space North Wilsonville Park-and-Ride and Transit Center	$4,000,000
5. 250 Space South Wilsonville Park-and-Ride and Transit Center	$4,000,000
Total	**$9,853,000**

[1]Eligible for System Development Charges funding
[2]ODOT funding
ADA = Americans with Disabilities Act,
HOV = high occupancy vehicle

Table 6.b
Transit Vehicle Replacement and Expansion Program

Project	Cost
Short-Term Vehicle Replacement (within 5 years)	
Replacement schedule according to federal guidelines. Three vehicles replaced at a total estimated cost of $260,000 per year.	$1,300,000
Long-Term Vehicle Replacement and Expansion (beyond 5 years)	
Ongoing replacement costs are unclear due to expected service expansion. Costs will increase significantly if larger, low-floor and alternative fuel transit coaches are purchased.	(Unknown at this time)

6.3.6.2 *Intelligent Transportation System Improvements*

Intelligent Transportation Systems (ITS) involve the application of advanced technology to solve transportation problems, to improve safety, to provide services to travelers, and to assist transportation service providers in implementing suitable traffic management strategies. The proposed improvements under consideration will improve SMART's transit information systems and performance and also build on the region's ITS infrastructure. Some examples of ITS benefits include improvement of SMART's on-time performance, better information for travelers through real-time transportation data, reduced costs, and increased ridership. Real-time customer information displays, automated stop announcements, and kiosks at major activity centers providing information regarding highway operating conditions are several improvements proposed for both the short- and long-term.

6.3.6.3 *Park-and-Ride and Transit Center Adjacent to Commuter Rail*

A 250-space SMART park-and-ride and transit center is planned adjacent to the commuter rail terminus in Wilsonville. As a condition of approval, the traffic study for the construction of this park-and-ride should examine the traffic concurrency needs with reference to the Wilsonville Road/I-5 interchange access improvements as envisioned by the Freeway Access Study. This City facility will be in addition to the 450-space park-and-ride area that is planned by Washington County for commuter rail passengers. The transit center and the park-and-ride facilities are essential government facilities. Co-locating a SMART park-and-ride at the commuter rail terminus will create a centralized transfer hub for Wilsonville and provide convenient access for both bus and rail passengers. Currently, 14,000 employee trips are made into and out of the City during peak hours and about 110,000 daily trips are made along I-5 to points north and south of Wilsonville. A park-and-ride and transit center will provide much needed access and connectivity for commuters to use local and regional public transportation services in Wilsonville.

6.3.6.4 *Transit Maintenance and Bus Storage Facility*

SMART's fleet is currently maintained by the City's Public Works Department and housed at a facility owned by the City on Elligsen Road. This facility is inadequate at present, with limited maintenance bays and bus parking, and will not meet SMART's future needs. Expanding or building a new facility is estimated to cost $2,000,000.

6.3.6.5 *North Wilsonville Park-and-Ride and Transit Center*

A strong case can be made for creating a north Wilsonville transfer center east of the freeway at the I-5/Elligsen Road interchange. A fast circulation pattern could be provided so that passengers destined west of the freeway would not experience such a long deviation as at the current Commerce Circle site. This

site will serve commuters from Wilsonville and those traveling north or south on I-5.

It must be stressed that the functions of a north Wilsonville facility could be quite different from those of a commuter rail station. Commuter rail typically offers only a few peak-hour trips that are best served by specialized feeders. By contrast, a north Wilsonville transfer center will serve an all-day transit market with much more frequent connections and the potential for much higher overall daily ridership. The commuter rail project is important to Wilsonville, but it will not meet all of the community's needs for a transit facility in an appropriate location for I-5 services.

6.3.6.6 South Wilsonville Park-and-Ride and Transit Center

A south Wilsonville transit center is needed to serve connections between local and regional lines for trips to and from the south of Wilsonville. City Hall currently serves as a southern transfer location for passengers using SMART. In the long term, a more centralized, larger location is needed on the south end to accommodate future connections with other regional providers and to reduce traffic on Wilsonville Road for those travelers heading north. The southern station is recommended only in addition to the northern area, not as a substitute for it.

6.3.6.7 Bus Shelters and ADA Upgrades

The City currently requires major developers to install shelters, but otherwise the City does not have a formal program for building shelters. A shelter program is important to provide reasonable comfort for waiting passengers, especially at high-volume stops. In general, a shelter should be placed in both directions along the major transit streets at spacing of no more than one-quarter mile, except where no significant market is expected. For example, near the edges of development or if corridors travel through undeveloped green spaces. At this time, only 20 percent of SMART's bus stops are ADA compliant. These planned improvements are listed as both short- and long-term projects **(Table 6.a)**.

6.3.6.8 Vehicle Replacement Program

SMART's fleet replacement schedule is based upon vehicle type. Presently, the fleet has minivans, minibuses, and three sizes of transit coaches, which have a replacement schedule ranging between four and twelve years. In the next five years, SMART plans to replace approximately three vehicles that average out to an estimated cost of $260,000 per year. For service expansion, minibuses are currently priced at $85,000 and low-floor, alternative fuel 35- to 40-foot buses are $300,000 per vehicle. Beyond the short-term, replacement costs are difficult to project and are dependent upon the type of vehicles identified for purchase.

6.3.6.9 Alternative Fuels for Transit Vehicles

SMART's fleet currently consists of vehicles that are either gasoline or diesel powered. There may be cost-effective alternative fuels available in the future

and the City needs to keep informed of alternatives that are either less expensive or more environmentally sensitive than the current fuels.

6.4 POLICIES

The City of Wilsonville shall:

POLICY 6.1.1 Promote land use patterns and development standards that support transit as an alternative to the single occupant vehicle. In all land use decisions, especially as they affect density or intensity of development, impacts on transit shall be considered.

POLICY 6.1.2 Continue to develop inter-modal facilities, transfer locations, and/or express service to other regional systems and programs that meet the modal targets of the RTP.

POLICY 6.1.3 Strive to maintain transit levels of service on major transit streets.

POLICY 6.1.4 Improve local transit and service to employees during peak commuter times to and from Wilsonville, with consideration of costs and funding sources.

POLICY 6.1.5 Improve pedestrian and bicycle connections to transit facilities.

POLICY 6.1.6 Continue to improve SMART capital equipment and facilities as needed for quality service, keeping pace with changing circumstances.

6.5 IMPLEMENTATION MEASURES

Implementation Measure 6.1.1.a Require each traffic study to include the effects on transit services, circulation, and access for pedestrians and bicyclists on major transit streets.

Implementation Measure 6.1.1.b Amend the City's Comprehensive Plan and the Development Code as appropriate, to include Transit Facilities Design Standards. (These standards are expected to be developed and adopted after adoption of the Transportation Systems Plan.)

Implementation Measure 6.1.1.c Continue to require that new development on major transit streets be designed to support transit use through site planning and pedestrian accessibility.

Implementation Measure 6.1.1.e Amend the City's Comprehensive Plan to encourage transit-oriented development along major transit routes.

Implementation Measure 6.1.1.f Improve pedestrian and bicycle connections to transit facilities.

Implementation Measure 6.1.2.a Plan, fund, and construct park-and-rides and transfer centers near the north and south I-5 interchanges and at the

commuter rail station. Work with regional, state and private entities to develop funding packages.

Implementation Measure 6.1.2.b Plan for facilities and services to meet anticipated demands in new growth areas such as Day Road (near the prison) and the Dammasch (Villebois) neighborhood.

Implementation Measure 6.1.2.c Continue to seek commitment from Tri-Met to upgrade transit service to the greatest extent possible, in coordination with SMART.

Implementation Measure 6.1.2.d Support new peak-hour commuter rail service, the regional studies for commuter rail all-day service, and for an extension from Wilsonville to Salem using existing railroad tracks. Support this passenger rail service with *SMART* bus service.

Implementation Measure 6.1.2.e Work with ODOT, Metro, and other jurisdictions beyond the city limits to improve Wilsonville's transit viability.

Implementation Measure 6.1.3.a Develop a Transportation System Management Plan as one option for moving buses through traffic.

Implementation Measure 6.1.3.b In coordination with other traffic flow, revise traffic signal timing sequences as appropriate to help buses. Timing sequences shall be examined whenever there is an indication that buses are not meeting their schedules due to intersection delays or when the level of service for the intersection is more congested than the City adopted standard for the intersection.

Implementation Measure 6.1.3.c Evaluate bus pullouts on a case-by-case basis to ensure safety for passenger loading and unloading and to balance delays to cars and buses.

Implementation Measure 6.1.3.d Educate motorists to yield the right-of-way to buses re-entering traffic from bus pullouts. It is noted that this measure may require the addition of new-lighted "YIELD" signs on buses.

Implementation Measure 6.1.4.a Establish a coordinated system of public and private buses and shuttles connecting neighborhoods and major Wilsonville retail and employment areas to accommodate the expected growth in population and employment. Support use of private mobility services such as taxi and charter bus.

Implementation Measure 6.1.4.b Continue exploration of new, innovative solutions to traffic problems (e.g., developments with limited private vehicle space, frequent transit connections, HOV lanes, mixed-use developments, etc.)

Implementation Measure 6.1.4.c Develop an implementation plan to ensure that the mobility needs of transit-dependent people are met and all services are compliant with the requirements of the Americans with Disabilities Act (ADA).

An example is to upgrade bus stops with curb cuts and loading pads to provide improved access and safer passenger loading.

Implementation Measure 6.1.4.d Assure that all new transit facilities meet ADA requirements.

Implementation Measure 6.1.4.e Design and provide express service to and from regional transit centers and Wilsonville employment centers to assure that transit can compete with the automobile. The standard of service must be such that it will attract not only the people dependent on public transportation but also people with a choice.

Implementation Measure 6.1.4.f Provide an appropriate level, quality, and range of public transportation options to serve the variety of special needs in Wilsonville. Support other area transit service providers, employers, and social service agencies in their efforts to respond to the transit and transportation needs of the youth, elderly, disabled, and economically disadvantaged.

Implementation Measure 6.1.5.a Improve pedestrian and bicycle connectivity to transit routes to the maximum extent possible.

Implementation Measure 6.1.5.b Construct sidewalks, crosswalks, etc. adjacent to transit routes and facilities. Focus on enhancing pedestrian and bicycle access from all points that are within one-quarter mile of bus stops.

Implementation Measure 6.1.5.c Identify walking routes to and from bus stops that will benefit from sidewalks and lighting improvements.

Implementation Measure 6.1.5.d Identify bus stop amenity criteria that are appropriate for developments based upon average peak-hour traffic trips generated. At higher volume stops, offer a variety of conveniences for passengers, depending on the location of the stop, including adequate lighting, trash receptacle, newspaper stand, pay telephone, bicycle rack or locker, bench, bus shelter, bus pull-out, etc. (Per the requirements of 660-045(4)(b)(C) of the State Transportation Planning Rule and Section 6.4.10 of the Regional Transportation Plan.)

Implementation Measure 6.1.6.a Develop and maintain a SMART capital improvement plan that identifies needs, costs, and funding sources. Equipment and facilities should meet the requirements of the Americans with Disabilities Act. Target improved accessibility and environmentally sound options such as low-floor buses and alternative fuels.

Implementation Measure 6.1.6.b Develop a program to implement Intelligent Transportation Systems. Examples include real-time customer information displays, automated stop announcements, regional multi-jurisdictional transit scheduling, dispatch, rideshare, and other technologies.

Implementation Measure 6.1.6.c Research potential alternative fuels for transit vehicles, with a focus on environmental sustainability as well as cost efficiency.

Implementation Measure 6.1.6.d Provide transit improvements concurrent with roadway improvements, including improved pedestrian and bicycle access and bus shelters, where appropriate.

Implementation Measure 6.7 Require that the Transit Master Plan is to be reviewed and adopted within a year after TSP adoption.

CHAPTER 7
OTHER MODES AND MULTI-MODAL COORDINATION

CHAPTER 7
OTHER MODES AND MULTI-MODAL COORDINATION

7.1 GOALS

Goal 7.1: **To coordinate with local, regional, and State jurisdictions in the development and operation of the multi-modal transportation system.**

Goal 7.2: **To provide multi-modal facilities properly integrated with the citywide transportation system.**

7.2 INTRODUCTION

This chapter summarizes the existing and future transportation needs for rail, air, and water in the City of Wilsonville.

It is important to note that the proposed improvements, along with all related maps, figures, and tables, are provided for conceptual purposes only. Specific design issues, including concerns regarding private property and the environment, will be addressed later, during the design of each specific transportation improvement. At that point, project staff will hold public meetings with private property owners and other interested parties to fully address such concerns.

7.3 RECOMMENDED FACILITIES

7.3.1 Rail

The rail lines located in Wilsonville are privately owned. Freight traffic varies between three and eight trains daily, depending on shipper demand. Train frequencies are expected to increase in the future as Western Pacific pursues an aggressive campaign to serve new markets and to compete with trucks for local freight trips in western Oregon. Initiatives potentially affecting the train volumes through Wilsonville include extending line operations between Salem and Eugene, and acquiring the Cornelius Pass line.

In 1995, an Inter-Urban Rail Feasibility Study was conducted to examine the potential for commuter rail service from Wilsonville to Beaverton using existing tracks, running parallel and west of I-5 and Highway 217, for a distance of approximately 15 miles. Stations would be located in Wilsonville, Tualatin, Tigard, and Beaverton. The Beaverton Transit Center Station would connect with Westside MAX Light Rail and buses serving Portland and Washington County employment centers. The commuter rail terminus in Wilsonville will serve the city's employment centers. In 2001, FTA approved the Wilsonville to Beaverton Commuter Rail Environmental Assessment. Final design is expected to be complete in 2004 and construction is planned to begin late that same year. Commuter rail service is planned to start in 2006.

A station site has been selected in Wilsonville between the proposed Boeckman Road and Wilsonville Road Interchanges at the intersections of Barber Street and Boberg Road. The Wilsonville to Beaverton Commuter Rail station will include a commuter rail maintenance facility as well as a 450-space park-and-ride lot. SMART plans to provide an additional 250-space park-and-ride facility and transit center to facilitate multi-modal connections between Portland and Salem and other surrounding communities. SMART will also prove additional bus and shuttle service between the station and local employment centers.

The City supports regional studies for commuter rail all-day service and for an extension from Wilsonville to Salem using existing railroad tracks.

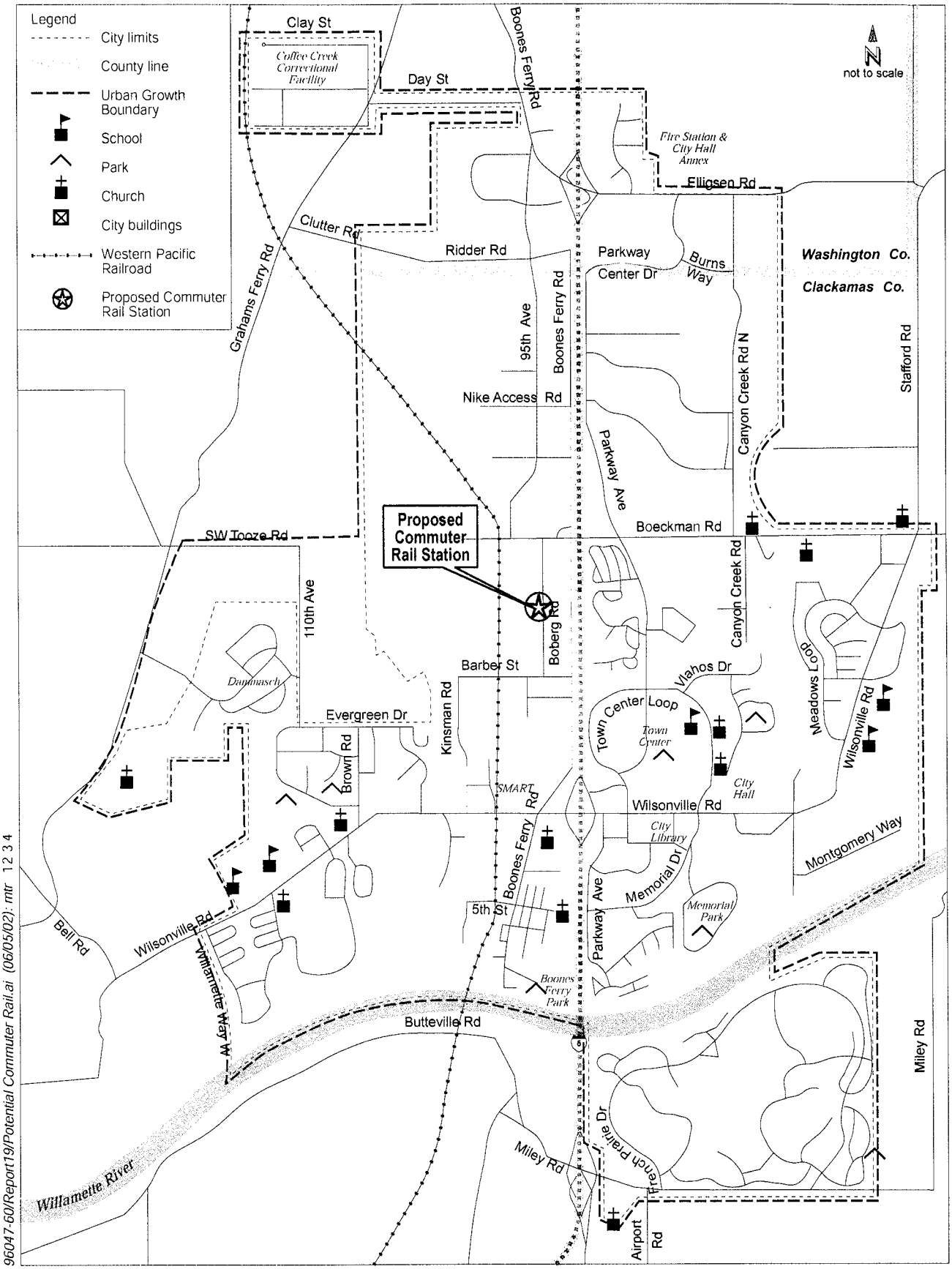
7.3.2 Air

There is no airport within the Wilsonville city limits. The closest airport is the Aurora Airport, which is located south of Charbonneau on Airport Road and is not within the planning area. Therefore, policies or recommendations for the air transportation mode beyond maintaining access to Airport Road at designated LOS standards are not provided in this Transportation Systems Plan. However, the City shall attend all future airport master plan meetings and provide comment.

In addition, the City recognizes that floatplanes occasionally land in the Willamette River. The City should also be mindful of building height limitations within the Willamette River Greenway and Charbonneau as well as any significant docks constructed in the River that may impede floatplane traffic.

7.3.3 Marine

The Willamette River is navigable through Wilsonville. While there has historically been ferry service in Wilsonville at the Boones Ferry Landing, there are no plans to resume the service. Also, long-distance ferry service between Wilsonville and cities to the north is not planned. For marine transportation, it is recommended that development along selected water access areas continue to be monitored, to ensure that if ferry service is considered in the future, space exists for facilities. Discussions have occurred that resulted in the idea that an occasional use docking facility for river excursions could be desirable, especially in connection with the Old Town historic district. Future development along the Willamette River shall include such facilities.



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City of WILSONVILLE in OREGON
Transportation *Systems Plan*

Figure 7.1
Potential Commuter Rail Station

7.3.4 Multi-modal Coordination

The recommended regional transportation facilities for the City of Wilsonville contribute to multi-modal coordination. Based on increased traffic volumes for future years, the proposed commuter rail station (shown in **Figure 7.1**) with a park-and-ride, improved roadway network, and a non-motorized network will be part of the solution to relieving traffic.

Use of the commuter rail is assumed to increase resulting in a demand for a park-and-ride at the proposed rail station. The 2020 Recommended Alternative (Alternative #2) includes an enhanced Wilsonville Road interchange, widening and extension of Boeckman Road, plus intersection mitigations that will provide better access to the rail station. These road network improvements are shown in **Figure 4.10.** The improved roadway system will also include the required design standards (**Figures 4.12** through **4.22**), and pedestrian and bicycle facilities that will allow the commuter traffic from I-5 and surrounding areas to access the rail station. This will provide a coordinated multi-modal network. This improved transportation network would help relieve some traffic from the Elligsen Road interchange and provide a better traffic flow pattern through the Wilsonville Road interchange. The rail station, improved roadway network, and proposed interchange enhancements will help develop coordination between four forms of transportation:

- Bicycle and Pedestrian Facilities
- Rail Lines
- Private Vehicles
- Transit

Other ways the City is implementing multi-modal coordination is through design standards. All roadway classifications within the city will require sidewalks on both sides of the street, with the sidewalks being generally separated from the street by at least 4 feet of landscaping. In addition, bicycle lanes will be provided on minor collector streets or higher classifications.

Finally, multi-modal coordination on existing streets will be implemented by considering transit signal priority and pre-emption for Wilsonville's most congested streets. This will improve transit speed and reliability.

7.4 POLICIES

The City of Wilsonville shall...

Policy 7.1.1 Actively encourage the Federal Highway Administration, Federal Transit Administration, Oregon Department of Transportation, and Metro to provide improvements to regional transportation facilities.

Policy 7.1.2 Continue to work in concert with the State, Metro, Clackamas and Washington Counties, and adjacent jurisdictions to develop and implement a regional transportation plan that is complementary to and

supportive of the City's Plan while addressing regional concerns. The City expects a reciprocal commitment from other agencies.

Policy 7.2.1 Maintain access to the Willamette River so that the river may be used for transportation purposes in the future. Acquire or improve access to Willamette River for public docking purposes.

Policy 7.2.2 Assist in efforts to improve the viability of the railroad, not only for freight, but for passenger service as well.

Policy 7.3.1 Minimize conflicts and facilitate connections between modes of transportation.

7.5 IMPLEMENTATION MEASURES

Implementation Measure 7.1.1.a Continue to work with the Oregon Department of Transportation and the Federal Highway Administration to assist in the construction of additional enhancements to the Wilsonville Road Interchange as well as an interchange on Interstate 5 at Boeckman Road or similar freeway access enhancements.

Implementation Measure 7.1.2.a Remain actively involved in transportation meetings at the county, regional, State, and federal level, as they affect the implementation of this Plan.

Implementation Measure 7.1.2.b Ensure that the Transportation Systems Plan, and related provisions of the Comprehensive Plan and Development Code, remain consistent with the Transportation Planning Rule, the State Transportation System Plan, the Urban Growth Management Functional Plan, and the Regional Transportation Plan.

Implementation Measure 7.2.1.a Preserve and improve the potential transportation value of the river when preparing plans or reviewing development proposals. Protect existing river access in the process.

Implementation Measure 7.2.2.a Coordinate with the rail line owner and commuter rail operator to enhance the viability of both freight and passenger service. The City will continue to advocate extending the commuter rail service south of Wilsonville.

Implementation Measure 7.3.1.a Review and revise, where appropriate, the City's Development Code to require appropriate connections between modes of transportation.

CHAPTER 8
TRANSPORTATION DEMAND MANAGEMENT

CHAPTER 8
TRANSPORTATION DEMAND MANAGEMENT

8.1 GOAL

Goal 8.1: **To develop and implement Transportation Demand Management strategies to decrease the use of single occupancy vehicles, to decrease the need for costly additions to the roadway system, and to minimize air pollution.**

8.2 OREGON TRANSPORTATION PLANNING RULE, EMPLOYEE COMMUTE OPTIONS, AND METRO GOALS

Oregon's Transportation Planning Rule (TPR) contains measures designed to reduce reliance on the automobile. The TPR's intent is that the planned transportation system supports a pattern of travel and land use in urban areas that will minimize air pollution, traffic, and livability problems. Three objectives in the TPR for the Portland metropolitan area, of which Wilsonville is a part, are: no increase in automobile vehicle miles traveled (VMT) per capita within the first ten years following the adoption of this transportation system plan, a 10 percent reduction in VMT per capita within 20 years, and an additional 5% percent reduction in VMT per capita within 30 years.

In 1996, the Oregon Legislature passed a series of laws designed to protect air quality in the Portland metropolitan area that included Employee Commute Options (ECO). The ECO sets more specific goals for trip reduction than the TPR, and specifically targets businesses with more than 50 employees at one site. The ECO requires these businesses to provide commuting options to encourage employees to reduce single-occupancy vehicle (SOV) commute trips. For instance, employers with more than 50 employees at one site must provide their employees with options that have the potential to reduce SOV auto trips to worksites by 10 percent within three years of the employer's plan and to maintain the trip reductions as long as ECO is in effect. The City does not have a responsibility to implement the ECO rule, however it is in a position to assist employers with compliance by helping them to develop and implement trip reduction plans. The ECO rule looks at vehicle miles traveled (VMT) in terms of auto trip rate (number of cars arriving at the work site divided by the number of employees arriving at the work site). Metro uses a similar VMT alternative measure: the percentage of all trips made by a mode other than single-occupant automobile. Both of these measures allow for increase in employment without a reduction in auto trip rate.

Metro established a non-SOV modal performance for the City of Wilsonville for the year 1994. The non-SOV modal performance is the percentage of all trips that are made using an alternative to the single-occupant automobile, such as bicycling, walking, carpooling, vanpooling, or transit. Metro has adopted this measure as an alternative to measuring VMT in order to comply with the State TPR. Local adoption of the modal targets is necessary to demonstrate compliance with the TPR.

Metro has projected what the rate will be in 2020 without any major TDM efforts and set a goal that the City can reach by implementing various measures that encourage the use of alternative transportation modes. Wilsonville's non-SOV modal performance for 1994 was 32%. The projected non-SOV modal performance for 2020 is 37%. The City's goal for 2020 is a 45% non-SOV modal performance.

The City of Wilsonville will meet this goal through implementation of policies throughout this TSP, which will provide:

- An inter-connected street system that encourages walking and bicycling (Chapter 4).
- Addition of bike lanes and sidewalks throughout the City of Wilsonville (Chapter 5).
- An effective transit system that responds to the mobility needs of residents and employees and permits easy shifts from one mode to another (Chapter 6).
- Multi-modal facilities that are properly integrated with the citywide transportation facilities (Chapter 7).
- Transportation demand management strategies to decrease the use of single-occupancy vehicles (Chapter 8).

8.3 TRANSPORTATION DEMAND MANAGEMENT STRATEGIES

One of the primary methods used to reduce reliance on the automobile is Transportation Demand Management (TDM). The essence of TDM is that by transporting more people in fewer vehicles we can effectively reduce the demands on the transportation system and thereby make more efficient use of the system. Reducing the overall demand and spreading out the timing of trips so that fewer are made during the morning and evening "rush-hour" peaks results in reduced traffic congestion. These efforts can also delay or eliminate the need for road widening or new construction. The term TDM encompasses alternatives to driving alone and the measures and techniques that encourage the use of these alternate modes. The TDM programs are designed to:

- reduce the number of automobile trips
- shorten trip lengths
- switch the times of trips to less congested periods of the day
- encourage transit, carpooling, bicycling, and walking as alternatives to driving

The TDM programs make the transportation system more efficient and reduce pollution without adding major infrastructure.

The most important strategy of all is good land use -- well-designed compact, mixed-use, people-oriented developments support walking, bicycling, and public transit. Future land-use planning decisions must continue to make non-auto travel possible and take greater steps to support alternate modes.

The TDM programs are most effective when complementary elements are packaged together to fit the needs and conditions of a given site or area. Supporting infrastructure,

such as functional sidewalks, bicycle racks and showers, as well as transit services are important to a successful program.

This chapter details policies and strategies aimed at reducing the demand for SOV use in the City of Wilsonville.

8.4 POTENTIAL AUTO TRIP REDUCTIONS

The TDM methods for reducing auto trips vary in effectiveness, implementation cost and success potential. A variety of methods will be required in order to meet the needs of different business types and employees' commute needs. **Table 8.a** lists the potential that each strategy has for reducing SOV auto trips.

Unless otherwise noted, the information in the following tables was derived from a report produced by JHK and Associates, Inc., in June 1995, for the Oregon Department of Environmental Quality. The potential auto trip reductions are based on Tri-Met's previous experience with employers in the metropolitan area who have developed transportation programs in the region. See Glossary for definitions.

Table 8.a
Potential Transportation Demand Management Methods

Method	Potential SOV Auto Trip Reductions[a]
Commuting Alternatives	
Full Transit Subsidy (employers pay 100% of transit passes)	
High transit service	19-32%
Medium transit service	4-6%
Low transit service	0.5-1%
50% Transit Subsidy (employers pay 50% of transit passes)	
High transit service	10-16%
Medium transit service	2-3%
Low transit service	0-0.5%
Full Subsidy for All Commuting Alternatives	
High pedestrian access and transit service	21-34%
Medium pedestrian access and transit service	5-7%
Low pedestrian access and transit service	1-2%
50% Subsidy for All Commuting Alternatives	
High pedestrian access and transit service	10-17%
Medium pedestrian access and transit service	2-4%
Low pedestrian access and transit service	0.5-1%
Time Off with Pay for Using Commuting Alternatives	1-2%
Other Rewards for Using Commuting Alternatives	0-3%
On-site Carpool Matching	1-6%[b]
Vanpooling	
Company subsidizes vans	15-25%
Company provides vans for a fee	30-40%
Carpooling and Vanpooling Parking Subsidies	1-3%
Carpool and Vanpool Preferential Parking	c
Employer Shuttles	c
Bicycling Program	0-10%
Walking Program	0-3%

[a]The range of percentages listed for each strategy reflects employers' varied situations. The more applicable a strategy is to your company's situation, the more your company could expect to fall at the higher end of the range.

[b]DEQ reports 1-2 percent potential auto trip reductions for this strategy. The percentages listed are based on Tri-Met's previous experiences with employers who have developed transportation programs.

[c]Potential auto trip reductions for this strategy are not reported by DEQ. Any reduction listed is based on Tri-Met's previous experience with employers who have developed transportation programs. However, this strategy is considered a supplemental strategy by DEQ. For compliance with the ECO rule, DEQ requests that at least two of these supplemental strategies be included in the auto trip reduction plan filed by affected employers.

Table 8.a (continued)
Transportation Demand Management Methods

Method	Potential SOV Auto Trip Reductions[a]
Work Alternatives	
Telecommuting	
Full-time	82-91%
1-2 days per week	14-36%%
Compressed Work Week	
9 days/80 hours	7-9%
4 days/40 hours	16-18%
3 days/36 hours	32-36%
Parking Management Alternatives	
Adopting Parking Cash-out or Fees	
High transit service	8-20%
Medium transit service	5-9%
Low transit service	2-4%
Support Programs	
Transportation Coordinator	0.5-1%
Information and Promotion	0.5-1%
Employee Recognition Program	c
Using Fleet Vehicles (for company business)	0-1%
Guaranteed Ride Home Program (used with other commuting alternative strategies)	1-3%
On-site Transit Pass Sales	c
On-site Amenities	1-2%

[a]The range of percentages listed for each strategy reflects employers' varied situations. The more applicable a strategy is to your company's situation, the more your company could expect to fall at the higher end of the range.

[b]DEQ reports 1-2 percent potential auto trip reductions for this strategy. The percentages listed are based on Tri-Met's previous experiences with employers who have developed transportation programs.

[c]Potential auto trip reductions for this strategy are not reported by DEQ. Any reduction listed is based on Tri-Met's previous experience with employers who have developed transportation programs. However, this strategy is considered a supplemental strategy by DEQ. For compliance with the ECO rule, DEQ requests that at least two of these supplemental strategies be included in the auto trip reduction plan filed by affected employers.

8.5 POLICIES

The City of Wilsonville shall:

Policy 8.1.1 Promote land use patterns and development standards that support alternatives to the single-occupant vehicle and reduce reliance on the automobile.

Policy 8.1.2 Improve pedestrian and bicycle connectivity and amenities to ensure they are viable commuting options.

Policy 8.1.3 Participate in local and regional trip reduction strategies.

8.6 IMPLEMENTATION MEASURES

Implementation Measure 8.1.1.a Encourage developments that effectively mix land uses to reduce vehicle trip generation, especially the number and length of home-to-work trips.

Implementation Measure 8.1.1.b Encourage design and location of complementary activities that support public transit, ride-share programs, and use of other alternative modes of transportation.

Implementation Measure 8.1.1.c Promote the expansion of establishments for commercial goods and services within the City to reduce the need for out-of-town trips.

Implementation Measure 8.1.1.d Amend the City's Development Code to require new large developments and high employment and/or traffic generators (i.e. new businesses that bring at least 50 new on-site employees to Wilsonville) to submit Transportation Demand Management programs to the City indicating how they will reduce transportation impacts, the activities they intend to undertake, and how they will implement these activities. All such proposals shall be subject to review by the City Engineer, SMART and, if applicable, ODOT. The City shall coordinate all employer-based TDM efforts with Oregon DEQ to prevent duplicative requirements.

Implementation Measure 8.1.1.e Revise the Development Code's parking standards to be in compliance with the most recently adopted Regional Transportation Plan and the Urban Growth Management Functional Plan including the continued imposition of maximum parking limits for large developments and high employment and/or traffic generators.

Implementation Measure 8.1.1.f Allow for a reduction from minimum parking standards for developers who implement a TDM Plan approved by SMART. Those parking spaces devoted to the TDM plan should be excluded from the required parking maximum calculations in subsequent changes of use of the property, subject to approval by the Development Review Board.

Implementation Measure 8.1.1.g Accommodate the expected growth in population and employment and the resulting transportation needs in the City by improving arterial and collector street networks and the pedestrian and bikeway system.

Implementation Measure 8.1.1.h: Study the traffic generation implication of reducing the traffic trip generation of all new "mixed-use, pedestrian-friendly center, or neighborhood" developments as defined by OAR 660-012-0060(7)(a)&(b) by 10% of that identified in the most recent ITE manual on the City's traffic capacity. Should these types of developments prove to generate 10% fewer traffic trips, revise Section 4.140(.09)(J) of the Development Code to require a 10% credit in the number of calculated traffic trips per OAR 660-012-0060(5)(a)-(d).

Implementation Measure 8.1.2.a Encourage employers to improve on-site provisions for bicyclists such as weather-protected parking facilities, showers, and lockers at point of destination.

Implementation Measure 8.1.2.b Make accommodations for bicyclists and walkers at park-and-ride lots and transportation transfer locations, including bicycle lockers or racks, sidewalks, pedestrian refuges, and marked crossings as appropriate.

Implementation Measure 8.1.2.c Encourage large employers (50 or more employees) to include preferential parking for carpools and vanpools.

Implementation Measure 8.1.3.a Work to reduce the number of vehicle miles traveled in the City by monitoring transportation demand management programs of area businesses.

Implementation Measure 8.1.3.b Establish a TDM program to work with area businesses and market travel demand management and commuting alternatives. Provide incentives that encourage employees to reduce SOV commute trips. Identify a lead individual within the City to be responsible for program coordination.

Implementation Measure 8.1.3.c Establish and market a rideshare program. Take part in regional and state efforts to reduce the number of vehicle miles traveled.

Implementation Measure 8.1.3.d Establish a coordinated system of public and private buses and shuttles connecting neighborhoods and major Wilsonville retail and employment areas to enable the growing number of residents and employees to make work and shopping trips without using an SOV vehicle. Facilitate the formation of vanpools as appropriate.

Implementation Measure 8.1.3.e Develop and distribute materials which educate and enable children to more readily use transit and other non-motorized modes of travel.

Implementation Measure 8.1.3.f Coordinate with ODOT, Metro, Tri-Met, and the Counties of Washington and Clackamas on the development of park-and-ride

areas and transfer stations at freeway interchanges, and the planned commuter rail station in Wilsonville to ensure that service is coordinated and allows for inter-modal connectivity.

Implementation Measure 8.1.3.g Develop and adopt City policies which encourage reduced reliance on the automobile by City employees and allow the City to act as a role model for other Wilsonville employers. These policies shall include provisions for flex- and compressed workweek schedules, telecommuting, preferred parking, and other policies that encourage the use of alternative transportation modes.

Implementation Measure 8.1.3.h Assist in the provision of alternative transportation options that provide a link between employment sites, retail services, and transportation transfer points for both mid-day and commuting trips. These transportation options could take the form of shuttles or vanpools between park-and-ride lots or commuter rail stations and employment sites. Other options could include small alternative-fuel vehicles, scooters, or bicycles.

CHAPTER 9
FUNDING

CHAPTER 9
FUNDING

9.1 INTRODUCTION

This chapter outlines potential funding sources that may be implemented to meet the needs of the Transportation Systems Plan (TSP). In addition to defining funding resources currently used by the City to finance transportation facilities, this element of the TSP will identify methods and programs that may be available to contribute additional revenue sources. Each option will be evaluated including ease of administration and public acceptance.

Municipal transportation funding has primarily relied on a user fee system whereby system users contribute toward maintenance through motor vehicle fees, including gas taxes. This is supplemented with systems development charges (SDC), traffic impact fees and street frontage improvements adjacent to property (exaction) under development. Most capital improvements are paid through SDCs and local improvement districts (LIDs).

Motor vehicle fees have become a limited source of funding for municipalities due to many factors:

- Gasoline taxes have been applied on a cents per gallon basis, not a true cost basis to the price of gas. Increases in the gas tax have not kept pace with the cost of transportation needs. Although the amount of federal gas tax has increased from 4 cents to 18.4 cents per gallon (diesel is 24.4 cents) between 1965 (when interstate construction was at its peak) and 1995, the buying power of this money has declined by 41 percent due to inflation and reduced fuel consumption.
- Oregon motor fuel vehicle tax, currently 24 cents per gallon, has not increased since 1992 and registration fees have been at $15 per vehicle per year for over 10 years. However, title fees were adjusted to $30 in 2001. The Legislature proposed to add a 5-cent per gallon increase and to eliminate the truck weight-mile tax in favor of a more equitable diesel fuel tax. Also, the Legislature authorized $600 million in bonds for highway construction projects. However, when the legislation was referred to the voters in May 2000, the measure was defeated.
- Net revenues from the above taxes and fees are deposited into an account known as the State Highway Fund. With minor exceptions, the Oregon Constitution dedicates the highway revenues to construction, improvement, maintenance, and operation according to the following formula:
  - 60.05 percent is retained for State Highway use;
  - 24.38 percent is allotted to counties, using vehicle registration as the basis for distribution; and
  - 15.57 percent is distributed to cities based on population.

9.2 EXISTING TRANSPORTATION FUNDING PROFILE

The federal gas tax was allocated through the Inter-modal Surface Transportation Efficiency Act (ISTEA). However, ISTEA was recently reauthorized as The Transportation Equity Act For The 21st Century or "TEA-21", with a guaranteed $198 billion in surface transportation improvements. The funds are allocated through several programs including the National Highway System (NHS), Surface Transportation Program (STP), and Congestion Management and Air Quality (CMAQ) Improvement Programs.

Federal transportation funds are distributed in the Portland region by Metro. Wilsonville is one of 24 cities within Metro. Metro is a directly elected regional government having primary responsibility for regional land use and transportation planning along with other responsibilities such as solid waste disposal, operation of arts and cultural facilities, and the zoo and parks. Metro's relationship with cities and counties is to provide long-range regional growth management and transportation planning for the tri-county area, and prioritize and allocate federal and state transportation funds for major projects.

Metro has adopted a *Regional Transportation Plan* (RTP), which is a 20-year blueprint that establishes transportation policies for all forms of travel—motor vehicles, transit, pedestrian, bicycle, and freight. The RTP, first adopted in 1983, has been updated to implement the *2040 Growth Concept* and the state *Transportation Planning Rule*. The *2040 Growth Concept* provides the land use direction for the *RTP*, with planned improvements tied to the needs of different areas. For example, areas with concentrated development, such as downtown Portland, will be targeted with a balance of transit, pedestrian, and bicycle projects to complement needed auto improvements. In contrast, projects in areas along highways will be largely oriented toward auto and truck travel. Along mixed-use corridors, such as Wilsonville's proximity to Interstate 5 (I-5), the *RTP* will provide for new ways to travel, including vanpools and commuter rail. In response, a plan is currently underway to establish a heavy rail single-car commuter from Wilsonville to Beaverton (see Chapters 6 and 7). These plans will place an additional burden on Wilsonville to identify and implement innovative funding sources to finance the City's transportation facilities.

To develop a list of revenue and financing options that may be available, current funding sources were reviewed. Current transportation revenue for the City of Wilsonville is summarized in the Fiscal Year 2003–2003 Adopted Budget with funds set up for a particular purpose. **Table 9.a** lists the funds that the City currently uses for transportation, project construction, operation, repair, and maintenance.

Table 9.a
Current City Funds Used for Transportation Projects

Fund Type	Fund Name
General	General Fund
Special Revenue	Transit Fund Road Operating Fund Street Lighting Fund Road Maintenance Regulatory Fund Debt Service Fund
Debt Service	Local Improvement Districts
Capital Projects	Road Capital Improvements System Development Charges Urban Renewal Fund

9.2.1 Transportation-Related Funds

9.2.1.1 General Fund

The General Fund is used to account for all revenues and expenditures of a general nature not required to be recorded in another fund. Revenue is received from property taxes, licenses and permits, franchise fees, charges for services, and revenue from other government agencies. Funds may be used for ordinary expenditures of the City.

9.2.1.2 Transit Fund

The City of Wilsonville's Transit Fund records the revenues and expenditures associated with South Metro Area Rapid Transit (SMART) system (Wilsonville withdrew from the Tri-Met District and launched SMART in 1989). The transit system is funded through a 0.3 percent payroll tax. All businesses within the City limits are billed quarterly for their portion, based on payroll wages.

9.2.1.3 Road Operating Fund

The Road Operating Fund records the revenues and expenditures associated with maintaining rights-of-way, streets, and traffic control devices. The primary revenues within this fund are received through the state gas tax program, based on the City's population proportionate to the State's population.

9.2.1.4 *Street Lighting Fund*

The Street Lighting Fund records the revenues and expenditures associated with operating and maintaining streetlights within the public right-of-way. Revenues are generated through user fees assessed to all Wilsonville residents and businesses, based on the cost of street lighting in their neighborhoods.

9.2.1.5 *Road Maintenance Regulatory Fund*

All residential, commercial, and industrial customers are charged this fee on their monthly utility bill, based on a flat fee for residences and a formula that considers traffic impact, square footage, and amount of truck traffic for commercial and industrial customers. All revenues generated within this fund are used to repair existing roads. No new construction is funded with these dollars.

9.2.1.6 *Debt Service Fund*

This type of debt pertains to publicly sold bonds and loans from the State of Oregon to finance street and utility improvements within a designated area, known as a Local Improvement District (LID). Following completion of the project, the costs are apportioned to the specially benefited property owners with payments used to repay the debt. As of July 2002, four LIDs were active:

- LID 10 95th Avenue
- LID 11 Ridder Road
- LID 12 Canyon Creek Road North
- Wilsonville Road at Village at Main Street

9.2.1.7 *Capital Projects Fund*

The majority of the resources needed to construct the City's capital projects are collected as SDCs or as revenues in other operating funds. Both sources are transferred into the Capital Projects Fund through interfund transfers to fund construction. Currently, a majority of these outside revenues are a result of contributions from the Oregon Department of Corrections associated with the prison site development, along with other Federal and State grants.

9.2.1.8 *Systems Development Charges (SDCs) Road Fund*

Systems development charges (SDCs) are assessed on all new construction and redevelopments resulting in additional traffic within the City. These charges are based on a formula related to the increased demands on the City's infrastructure caused by development. The City of Wilsonville currently collects five different types of SDCs—sewer, water, storm water, parks, and street. The revenues are earmarked for improvements needed within the City specifically attributable to the growing demands on these types of infrastructure. All SDCs collected by the City are segregated into special funds and are only transferred to the Capital Projects Fund when specific improvement projects are ready for construction.

9.2.2 Potential Transportation Revenue Sources

Clearly, implementation of a capital program cannot be accomplished on a "pay as you go" basis within the existing revenue stream, even if periodic gas tax increases are approved. In addition, federal funding is not likely to increase.

A review of Wilsonville's current funding mechanisms indicate an aggressive and comprehensive application of customary transportation-related revenue sources including the 1992 creation of an urban renewal area and the introduction of driveway/sidewalk fees. A number of funding programs may also be available to generate revenue for the City's transportation investment. These are described below with attention given to legality, ease of administration, and public acceptance.

9.2.2.1 General Obligation (G.O.) Bonds

General obligation bonds are issued upon voter approval and sold to finance capital construction or improvements to arterial and major collector streets. Taxpayers repay the bonds over a set period of time, e.g., 10,15, 20, 25, years. Ad valorem (property) taxes are assessed each year against all properties that are subject to taxation. Because the bonds are voter approved, the levied taxes do not count toward the general government tax rate limitation of $10.00 per $1,000 of real market value. The combined general government's tax rate was $9.75 per $1,000 of assessed value as of June 2002.

The City may not extend the sum of all G.O. bonds beyond 3 percent of the real market value of the taxable property within the City. As of June 30, 2002, the City had $4,025,000 in G.O. bonds and taxable property totaling $1,868,633,977at real market value. Therefore, the City's current percentage of G.O. bonds to real market value is 0.00215 percent.

9.2.2.2 Local Improvement District (LID)

Local improvement districts are an area of properties that may benefit specifically from the construction of a capital improvement, which can include arterial or major collector streets. Improvement bonds are sold for construction of the improvements within the district and, to the extent the properties are specially benefited; they are assessed to repay the financing. The general public benefit is paid by the city, and may be paid from the general fund or by one of the bond financing options.

An LID may be formed on the Council's own motion or by a petition of two-thirds of the owners of the specially benefited properties. If remonstrations are filed by over two-thirds of the affected property owners, the matter is subject to a three-month delay and as a practical matter probably would lead to abandonment. To date, the City has used 12 LIDs to fund improvements.

Local improvement district (LID) financing is usually done through "true" special assessment bonds or limited tax general obligation bonds. Special assessment bonds are backed solely by assessment contracts and do not carry any additional pledge of City resources. Limited tax G.O. bonds carry a pledge of

available resources of the City's general fund, but do not allow an additional tax to be levied to pay debt service on the bonds should assessment payments be insufficient to meet debt service needs. As a general rule, the municipality's financial standing and the security proposed determine the bond rate—the greater the security the better the rating. A better rating lowers the cost in terms of interest paid on the bonds.

Under the Oregon Constitution, such special benefit assessment for public improvements is not subject to the $10.00 per $1,000 tax rate limitation.

9.2.2.3 Alternative Financing

Alternative financing may be used to construct improvements and special assessments may be levied according to benefits derived to cover any remaining costs (see Section 3.246(4) of the Wilsonville Code). Again, the general/special benefit dichotomy must be appropriately proportioned as described for LIDs.

The "Alternative Financing" language relates to the City Council's right to use revenue sources other than Bancroft bonds to finance LID projects and to levy assessments. Those reserved financing options include general obligation bonds, revenue bonds and other financing mechanisms already defined and analyzed in this chapter. While the City has the authority to levy assessments, typically it has only been used in conjunction with LID's or as a safety net bond covenant. Generally, municipalities reserve directly levying assessments for smaller municipal projects such as neighborhood sidewalk construction where special benefit occurs in greater proportion to general benefit.

9.2.2.4 Systems Development Charges

The SDC funds provide for the construction of planned capital improvements to utility systems. Charges are paid into the funds by development for its increased use of utility systems (roads included) to construct improvements and reimburse earlier oversized improvements. These charges are incurred and, therefore, are not subject to the $10.00 per $1,000 tax rate limitation.

The SDC funds may also be paid by installments in the same manner as assessments for Bancroft Bonds, provided there is financing for construction of improvements. The assessment methodology must be rationally based and proportionate to tie development to a pro rata share for the off-site improvement, otherwise an assessment would be a tax and would be subject to the $10.00 per $1,000 tax rate limitation.

One complication in using SDCs is the application to a capital improvement where the capital improvement would normally not be part of a system-wide approach and paid by all development proportionately. An example of a special SDC was the State of Oregon 283 (I-5/Wilsonville Road) Interchange reconstruction. This project was not part of the City's SDC transportation improvements and had a direct impact and benefit on the development of the geographic area affected by the improvements.

9.2.2.5 *Special Tax Revenue Bonds*

Revenue bonds are issued on the expected receipt of special taxes. Examples of such revenues are gas taxes, hotel/motel taxes, and toll road charges. The City could pass a gas tax such as the City of Woodburn's to fund capital road improvements. This would not be an ad valorem tax and, therefore, would not be subject to the rate limitation. However, revenue bonds can be subject to voter approval. It is necessary to publish a 60-day notice of a proposed revenue bond sale, to provide an opportunity for citizens to petition for a citywide election on the matter.

9.2.2.6 *Certificates of Participation (COPs)*

Certificates of Participation (COPs) are a form of lease financing. In lease financing, the City enters into a long-term capital lease agreement to use and/or construct a facility. At the end of the lease, anywhere from one to twenty years, the title of the facility is turned over to the City. These leases are subject to annual appropriations in the City's budget process and, therefore, are a less secure method of borrowing (typically resulting in a higher interest rate).

A transportation-related COP issue would have the City pledge gas tax, SDC, or other specified revenues to the payment of the COPs. It would also allow the appropriate General Fund revenues to cover any shortfall in revenues available to pay debt service. Again, to the extent that General Fund revenues were not required to pay debt service, these revenues would not be available for other City programs and services typically funded from the General Fund. The City has one current outstanding COP that has street SDC resources pledged as collateral—the City's portion of Wilsonville Road in front of Town Center.

9.2.2.7 *Tax Increment/Urban Renewal Financing*

Urban renewal districts have the authority to issue bonds for the purpose of urban renewal and redevelopment. Only the revenues derived from the tax increment generally secure the bonds. The City is currently exploring the possibility of an increase to the existing area or identifying new areas that may be subject to tax increment financing. At the time a district is established, the assessed value is frozen. This is called the "frozen base. " As the assessed value rises, the tax rate of the over-lapping municipal authorities is applied to the increment above the frozen base to give the district its revenue.

9.2.2.8 *Private Financing*

There are two private financing options applicable to the City:

- One option is the development agreement. Usually there is some quid pro quo or consideration for the construction of the off-site public improvements beyond the direct impact or benefit to the development involved, such as credits against system development charges. It usually complements a condition of development approval, such as where a developer is required to build a half street improvement to City standards and deed (dedicate) the half

street improvement to the City due to the direct impacts and benefits of the development. Conditions to build improvements must meet the proportionality test for impact of and benefit to site development set forth in the U.S. Supreme Court case, Dolan vs. City of Tigard.

- Private funding of the extension of local and minor collector roads as a road utility. This is commonly referred to as advanced refunding or payback financing. The first developer makes the initial payment. The construction must be by public bids to public standards. Repayment to the first developer is by the undeveloped properties adjacent to the extension, which are required to connect upon development. Payback is a pro rata share of the construction funding upon connection. If no development occurs on adjacent property within ten years of the enacting ordinance or resolution, then there is no payback. In Wilsonville, this repayment system has been used for utilities other than roads. Arterial and major collector roads have not been viewed as all special benefit, and the private financier would not get a payback for the public use of the road unless the City agreed to pay its portion up front or finance the payment over the ten years, e.g., by a bond or from its general funds. To assess the adjacent properties an amount inclusive of the public benefit, as the payback charge would have the adjacent property owners not only pay an excessive amount over their share, but also pay an assessment, which would not be paid uniformly by all taxpayers. To date, it has made more sense to use an LID approach with installment assessment payments rather than an extension/payback for public roads based on the category of road involved. However, if the road were a local road or possibly a minor collector that would service only the undeveloped property upon intensification of use by development, then a pro rata payback based on a reasonable methodology is a potential alternative, albeit one that has not yet presented itself to the City. To encourage use of private development funds, Chapter 3 of the Wilsonville Code should be modified to extend the advance funding and payment option to local streets.

9.2.2.9 State of Oregon, Department of Economic Development Special Public Works Fund

The state sells economic development bonds (or packages them with other state bonds for sale), and uses the economic development proceeds to loan for local public works projects that advance economic interests such as job creation. The City has received such loans. The City's first loan was used to construct 95th Avenue, with LID. 10 being formed to assess the benefiting properties for repayment supported by a pledge against the general fund.

9.2.2.10 Economic District

ORS 223.112-161 provides for "economic improvements" by creating an economic improvement district. While it provides, among other things, for "improvements in parking system or parking enforcement" and "any other economic improvement activity for which an assessment may be made on

property specially benefited thereby," the levying of assessments is limited to five years. If supported by 33 percent of those conducting business within the proposed district, an additional business license fee may be surcharged to the existing license fee for the businesses in the district. The district for such a license fee cannot include any property that is not zoned for commercial or industrial use. Thus, it is highly doubtful that the limits presented for this method of financing would aid in transportation financing of any length or of any large cost.

9.2.2.11 Reimbursement District

The city is exploring a financing mechanism for development refunding of advanced funding by the public sector for streets that directly benefit development. This mechanism allows the construction of programmed transportation system improvements for a group of benefited properties ahead of development of all those benefited properties. Reimbursement districts may be initiated by a public entity or through a development proposal by a property owner. The trigger is a transportation facility that affects additional properties not anticipated to be part of a specific development proposal. Several payment options are possible within identified reimbursement district boundaries. As other benefiting property owners develop their holdings, they are required to reimburse either the private or public entity who initiated and constructed the transportation improvement. Limitations include the need for a narrow definition of benefit to specific properties, which may limit a district to construction of a lower street classification projects; time limits on the duration of such a district; and difficulty of establishing the proportion of payback responsibility for each affected property.

9.3 WILSONVILLE TRANSPORTATION PROJECTS FUNDING ARRAY

The recommended improvements identified for the Wilsonville TSP fall under five categories as follows:

- Capacity projects (C), including new streets, widening of existing streets (W), and new traffic signals or spot improvements (S). These improvements will typically also serve to provide pedestrian and bicycle facilities per the street standards identified in Chapters 4 and 5.
- The City substandard street projects (CS), including improvements to streets and portions of roads. These improvements will satisfy the City's design standards identified in Chapters 4 and 5.
- Connectivity projects, including streets not needed for capacity but necessary for street network connections (NC) between primary activity areas in Wilsonville. These improvements will typically also serve the function of providing pedestrian and bicycle facilities per the street standards identified in Chapters 4 and 5.
- Bicycle projects (B), including improvements for bicycles on existing streets. These improvements could also incorporate some pedestrian amenities.

- Transit projects (T), including new facilities and street improvements not included in other categories.

The letter designations indicated in each bullet refer to the numbering system by category (i.e., C-4, W-3, S-5, NC-2, B-4, etc.) used to identify recommended projects throughout this TSP. The locations of capacity projects are shown in **Figures 4.4** and **4.10**; connectivity projects are presented in **Figure 4.25**; substandard street projects are shown in **Figure 4.23**; bicycle projects are illustrated in **Figure 5.3a**; and transit projects are presented in **Figure 6.1**.

Tables 4.e, **4.k**, **4.m**, **4.n**, **5.c**, and **6.a** give the project number, description, limits, and 2001 estimated cost of each improvement for capacity, City substandard projects, connectivity projects, bicycle/pedestrian projects, and transit projects. **Table 9.b** shows the total cost for all recommended improvements that is estimated to be approximately $85.9 million for Alternative 1 and $172.7 million for Alternative 2 (not including the cost of the Boeckman Interchange). Although challenging, this estimate seems reasonable based on estimates by City staff that the current construction cost of all existing streets in the City would be about $118 million, and the increase in TSP projects shown here are for a City that will more than double in both employment and population by the year 2020.

The most critical and expensive category in the TSP is the list of capacity improvements (new streets and street widening) needed to meet the City's level of service (LOS) standard, which remains at LOS D for most intersections. These improvements are necessary to allow the development trends based on current land use designations to continue without degrading transportation facilities below the LOS threshold. The funding plan presented in this chapter is intended to outline a plan for the City to implement the improvements needed to coincide with planned growth in the City. If this funding plan cannot be achieved, the City will need to consider either lowering the LOS standard in some, or all, areas within the City, or adopting land use changes that will slow growth in the City and allow some improvements to be deferred or deleted from the project list.

The funding plan for the TSP addresses both short-range and long-range needs. The short-range plan identifies projects for implementation in the next 5 years, and focuses on projects that will be most effective in increasing capacity in areas where the LOS threshold is currently an issue. These projects are shown in **Table 4.p**. The medium range plan includes projects that are forecasted to be built within 6–10 years. These projects are shown in detail in **Table 4.q**. The long-range projects are shown in **Table 4.r**. These long-range projects are expected to be completed within 11-20 years. All of these prioritized projects were selected based on the modeling results, input from members of the Adjunct Transportation Planning Committee (ATPC), and the Freeway Access Study.

Funding sources for TSP improvements are summarized in **Table 9.a**.

Table 9.b
2020 Transportation Systems Plan Projects for Alternatives 1 and 2

Improvement Types	Alternative 1 (in millions)	Alternative 2 (in millions)
Capacity Improvements[1]		
Short-Range Projects	$25.4	$76.4
Mid-Range Projects	$4.8	$9.2
Long-Range Projects	$11.7	$29.0
Capacity Improvements Total	$41.9	114.6
City Substandard Projects		
Short-Range Projects	$1.3	$1.3
Mid-Range Projects	$2.4	$2.4
Long-Range Projects	$22.5	$22.5
City Substandard Projects Total	$26.2	$26.2
Connectivity Projects[2]		
Short-Range Projects	$0.0	$0.0
Mid-Range Projects	$0.0	$0.0
Long-Range Projects	$0.0	$14.1
Connectivity Projects Total	$0.0	$14.1
Bicycle Implementation Projects	$0.2	$0.2
Transit Projects	$16.3	$16.3
Total Estimated Cost	$84.6	$171.4

[1]Capacity Improvements includes capacity projects (C-), road widening projects (W-) ,and spot mitigation projects (S-).

[2]Costs shown are only for those projects not included in a capacity project.

9.4 IMPLEMENTATION MEASURES

Implementation Measure 9.2.1: Use the following principles, at a minimum, in preparing a feasibility study of "reimbursement assessment for advancing action": (1) develop a definition for when a financing mechanism for a refund of advanced funding by the public sector for streets which directly benefit development could be required; (2) identify equity principals for ascertaining a benefiting property owner's fair share payment, and identify mechanisms such as advance private funding and proportionate repayment upon use, that

would be appropriate for a benefiting property's share; (3) specify the types of development that are likely to be either simultaneous with or constructed within ten years from the completion of the identified street improvements; (4) analyze and establish the formula for development exaction that would provide for a portion of the adjacent right-of-way and improvements roughly proportionate to the development's impacts and benefits; and (5) analyze the circumstances under which public funds above an exaction for full street improvement may be subject to a reimbursement assessment for the exaction portion of the improvement.

Implementation Measure 9.3.1: In accordance with Chapter 4 of this Plan, schedule and coordinate all street improvements using the City's ongoing Capital Improvement Program process and annual budget process. (Refer to Implementation Measure 4.2.1.b)

Implementation Measure 9.3.2: Immediately after adoption of this Transportation System Plan, and in accordance with Chapter 4, establish funding strategies and systems that will help provide for the investments in major street improvement projects necessary to implement the goals and policy of the Comprehensive Plan. (Refer to Implementation Measure 4.2.1.c)

Implementation Measure 9.3.3: That City Staff make available within 6 months of the acceptance of the TSP to the Planning Commission further information on the breakdown of funding types for projects listed in Tables 4p, 4q and 4r. Said information should include at a minimum: the estimated costs of projects in the Short-Range list; and the percentages of funding that is anticipated to be from private development proposals, from Urban Renewal funds, from regional sources, such as the Metro Transportation Improvements Plan, from City transportation funds, and from other sources as are likely to be available.

APPENDIX A
PUBLIC INVOLVEMENT

APPENDIX A
PUBLIC INVOLVEMENT

OCTOBER 1996 TELEPHONE INTERVIEWS

A telephone questionnaire was developed in October 1996 by Pacific Rim Resources with input from the Adjunct Transportation Planning Committee that was intended to solicit opinions from a select group of individuals on the condition of the transportation system in Wilsonville now, expectations for the future, and expectations for the Transportation Systems Plan. Originally twenty individuals were selected for the interview based on their affiliation with or employment by groups that would have an interest in the development of the Transportation Systems Plan. Fourteen individuals from the fire department, school bus company, SMART, real estate, Metro, Chamber of Commerce, City of Wilsonville, West Clackamas CPO, a developer, and AMOC eventually participated in the questionnaire. The following is a summary of the questionnaire and responses received.

1. **What do you see as the major transportation issues in Wilsonville?**
    - Traffic congestion during both peak and off-peak hours
    - Population growth
    - Safety
    - Access to Charbonneau
    - No grid system/lack of adequate local street circulation within and through the city
    - Uncontrolled development
    - Lack of east-west connectors/I-5 barrier
    - Lack of pedestrian and bicycle facilities
    - Freeway access
    - Not meeting TPR requirements
    - Truck traffic
2. **How did these issues get to this point?**
    - Poor planning/planning has not been proactive
    - City has no authority to slow down development/uncontrolled development
    - Money has not been spent on appropriate projects
    - Lack of grid system/poor connectivity
    - There is no public funding to secure grid system
    - Existing city and county policies require structural solutions to traffic problems (i.e., adding lanes)
    - Auto needs must be weighed with other values and needs of the community
    - Multi-modal issues have not been addressed in the past

3. **How might these problems be resolved?**
   - Slow development until roads are adequate
   - Improve freeway access/add interchange at Boeckman
   - Promote SMART
   - Improve east/west connections across freeway
   - Charge households for individual trips
   - Implement TDM strategies
   - Educate the public
   - Control land use
   - Give the public information about public funding options for a grid system
   - Maintain and add neighborhood connectivity
   - Consider changing LOS standard and how it relates to land use development approval
4. **Assuming there is not enough money to address all these problems at the same time, which should be addressed first?.....Second?**

   First
   - Freeway access
   - Increase capacity where needed
   - Implement TDM strategies
   - Educate the public

   Second
   - Slow development until roads are adequate
   - North-south access
   - Improve east/west connections across freeway
   - Give the public information about public funding options for a grid system
   - Maintain and add neighborhood connectivity
   - Consider changing LOS standard and how it relates to land use development approval
5. **How would you measure or determine if our efforts are successful?**
   - Decrease in congestion
   - Decrease in travel times
   - Congestion meets Regional Transportation Plan standards
   - Plan elements are implemented
   - Proceed with development while protecting existing residences and businesses and the natural environment while achieving a manageable level of congestion
   - SMART ridership increases
   - Wilsonville Road interchange is improved

6. **What results would you like to see?**
   - Education
   - Decrease in travel time
   - Land use development tied to transportation
   - Shorter time frame between plans
   - Ability to proceed with development
   - Grid system
   - Bridge connecting Charbonneau to the rest of Wilsonville
   - Implement TDM strategies to take more cars off of the road
   - Provide local services so people don't have to drive
   - Improve Wilsonville interchange
   - Educate public of need for tax funding of projects
7. **What happens if we are not successful? What are the consequences? Both short term and long term?**
   - Stifle population and economic growth
   - More safety problems
   - Less pedestrian friendly
   - Grid-lock
   - Increasing imbalance between commercial and housing
   - Town slowly dies
   - People move away
   - Interchange over capacity
   - Longer commute times
   - Land owners lose ability to build
   - Lose our sense of place/become like any generic suburb with grid locked streets
8. **Have you changed your travel patterns in Wilsonville because of traffic congestion? If so, how?**
   - Avoids traveling through town to get to I-5
   - Use Boeckman Road more often to avoid traffic
   - Avoids Wilsonville Road/I-5 interchange
   - Avoids Wilsonville
   - Avoids west side of town
   - Avoids driving altogether during peak hours
9. **Any other comments?**
   - SMART is great
   - Keep public aware of construction

- Emphasize higher density in town center to provide efficient access to goods and services
- Recognize community aesthetics and values
- Identify areas of resistance—what would we NOT like to see

JUNE 12, 1997 OPEN HOUSE

Transportation Concerns

An open house for the Wilsonville TSP was held on June 12, 1997 at the Wilsonville Community Center. 45 residents, city staff and Metro officials attended the event. Concerns or comments were recorded on easels at the open house as well as on the questionnaire, which requested participants to list their top three transportation concerns.

Bicycle and pedestrian issues and the connectivity of Wilsonville's roads were the concerns identified most frequently at the open house. Most open house attendees felt that greater connectivity is needed in Wilsonville for several main roads, bicycle lanes and sidewalks. In general, participants thought that better east-west travel options for automobiles, transit and bicyclists were a necessity to ease traffic flow and aid in relieving congestion.

Many participants did not feel there were enough pedestrian paths and bicycle ways available for this mode to be an alternative to the automobile. One respondent stated that currently the town center area was not bicycle and pedestrian friendly and several respondents were concerned that there were no bicycle and pedestrian paths connecting the Town Center area to the Post Office.

In addition, some attendees felt that transit alternatives to automobile travel must be made available and convenient in order to relieve congestion. A few attendees stated that, currently, routes are limited and connections take too long. One participant felt that public transit should offer a ride from any point in town to a Tri-Met connection at Commerce Circle in 15 minutes. Another participant mentioned that bus shelters were needed in strategic areas to protect riders from rain and wind.

Safety for both automobiles and bicyclists was felt to be another important issue. It is felt that several of the roads are large and unsafe. Together with perceived high speeds, residents feel these conditions are causing traffic accidents.

A few respondents felt that additional capacity was needed to be improved, especially near and on I-5. One respondent felt that there is a lack of collector roads adjacent to I-5. Additional comments focused on the role of the state, conditions of approval relating to traffic control for developers, and maintaining the integrity of separate neighborhoods.

Suggested Solutions

The majority of participants felt that improving street connectivity could address many of the transportation problems in Wilsonville. Other frequently mentioned options included an emphasis on multi-modal transportation options and capacity improvements. The

comments reflected that capacity improvement responses were tied to the issue of connectivity. Most participants felt that the TMP could address improved capacity by connecting major routes through Wilsonville.

Bicycle/Pedestrian Connections and Improvements

The following are summarized comments offering specific solutions to address issues of connectivity, safety and recommended routes for bicyclists and pedestrians.

- Create pedestrian/bicycle access route over I-5 (Barber to Town Center Loop).
- Add Jersey barriers to I-5 bridges to make safe bicycle lanes on bridge.
- Connect the Town Center area to Post Office.
- Improve sidewalk connection on north side of town.
- East-west connections are needed along Wilsonville Road.
- North-South routes and connections are needed on both sides of I-5.
- Pedestrian connection is needed west to Tooze Road.
- Create trail on railroad bridge over Willamette River.
- Create walkways on Wilsonville Road going from destination to destination rather than from corner to corner.
- Remove unsafe two-way bicycle paths.

Safety

The following comments offer suggestions to improve traffic safety.

- Improve traffic education.
- Improve the grade at Stafford Road to Elligsen Road and 65th Avenue. Currently, it is an uphill turn onto a thoroughfare where cars travel at high speeds with limited sight distances.
- Improve left turn from Stafford Road to 65th Avenue.
- Provide longer crossing times at crosswalks with signals and provide sound to accompany the signals.
- Increase enforcement for the illegal right turns on west bound Wilsonville Road.
- Improve merging of vehicles at Wilsonville and the I-5 interchange.
- Provide proper signage at road construction sites.

Transit Options

The following suggestions recommend options for improving transit.

- Increase core densities on transit lines.
- Increase transit to neighboring communities.
- Improve routes/connections on SMART bus system.

- Adjust SMART routes so that buses are not turning left across Wilsonville Road.
- Construct bus shelters for SMART bus routes involving citizens/youth in design/decor and construction.
- Adjust SMART routes and times to serve residential community.
- Expand SMART's operation hours to 9:30 or 10:00 p.m.
- Commuter rail is a good idea and should begin as soon as possible.

Capacity Improvements

Suggestions below recommend areas where greater capacity is needed.

- Create collector streets/thoroughfares on both sides of I-5.
- Dedicate a lane from Charbonneau to Wilsonville on I-5 to make travel between the two easier.
- Create a Boeckman interchange.
- Create an over/under pass near the river.
- Relocate the proposed Brown Road to Boones Ferry Road route further south.
- Provide connection from Wilsonville Road to Evergreen Road or Barber.
- Create a truck route that routes trucks to the Elligsen Road interchange instead of Wilsonville Road.

Connectivity

Several attendees offered the following suggestions for improving connectivity.

- Connect 5th Street to Memorial Drive east to west across I-5.
- Connect Boeckman Road to Tooze Road.
- Extend Kinsman to 95th Avenue/Boones Ferry Road.
- Connect Brown Road to 5th Street.

Other

- Improve management of the turn lane from Parkway to Wilsonville Road. Only two cars can turn within a light change.
- Mark roads clearly to direct traffic flow.
- Encourage local business to hire locally.
- Maintain livability.
- Put in attractive streetlights.
- Extend green light times.
- Turn Filbert Orchard into a park-and-ride for light rail.
- Consult other plans when determining TMP recommendations.

Open House Comments

Many of the open house participants responded favorably to the format and personal attention they received at the open house. The following suggestions and/or improvements were offered:

- Would rather have written pieces explaining options.
- Perhaps tape the conversations at different stations and in crucial spots throughout the room—that's where the comments come out.
- Add more information on freeways, schedules of completion and design, and how this will affect the interchanges.
- Provide an understanding of where current plans are, not necessarily how options will be prioritized or funded.
- Give more detail on Capital Improvement Plan (CIP) so people can see the plans for the immediate future.
- City Planners should always present a good rationale for their plans. For example, what are the requirements of Metro governments vs. local requirements (so citizens will know the reasons why things are happening in a certain way).

NOVEMBER 28, 2001 PUBLIC MEETING

The second public meeting of the Transportation Systems Plan was held on November 28, 2001 at the Wilsonville Community Center. Thirty-five people, including committee members attended the public meeting. The meeting began with a brief PowerPoint presentation by City staff outlining the history and elements of the Wilsonville Transportation Systems Plan. They explained a number of issues to the audience using simple terminology to allow better understanding of the issues. After the presentation, citizens were invited to visit a number of "stations" to gather more information and to make suggestions. Each station dealt with one particular aspect of the Transportation Systems Plan through the use of large maps and charts. The stations were each staffed by a member of the City or the consultants. Staff members recorded citizen questions, concerns, and suggestions on large flip charts located at each station.

Not all stations received an equal amount of comments. Some aspects of the transportation plan prompted more input from citizens compared with other topics. The following is a summary of comments made by the citizens at each station. The comments have been edited for clarity.

Suggested Solutions

Existing Transportation System Station

- One citizen stated that the intersection of Grahams Ferry Road and Tooze Road is prone to many accidents.

Motor Vehicle Improvements Station

- One citizen suggested a "half" interchange at I-5 and Boeckman Road.

- One citizen suggested that a toll facility be integrated into the I-5/Boeckman interchange.
- One citizen questioned whether the function of Barber Street and Boberg Road would change as a result of an I-5/Boeckman interchange.
- One citizen stated that neighborhoods near the proposed Boeckman interchange will need sound walls.
- Three citizens objected to the proposed 5th Street under crossing at I-5.
- One citizen argued that there is low demand for a 5th Street under crossing at I-5.
- One citizen suggested that the 5th Street under crossing remain in the Transportation Plan even if immediate plans for construction do not yet exist.
- One citizen wanted to know how the plan "allows for alternate routes that serve the same function" (i.e. Bailey Street vs. 5th Street).
- One citizen suggested that the function between Bailey Street and 5th Street be "split" to allow more options for the Brown Road extension.
- Three citizens raised concerns regarding impacts of the Brown Road extension, specifically property acquisitions in the Parkwood Subdivision.

Bicycle/Pedestrian Improvements Station

- One citizen noted that the northern portion of Parkway Avenue is dangerous for bicycle travel, and suggested that a shoulder be constructed for bicyclists and pedestrians.
- One citizen suggested that a bicycle/pedestrian trail be constructed along Canyon Creek Road.
- One citizen would like to see a Willamette River bicycle/pedestrian crossing as well as a trail along the river.
- One citizen stated that many employees living in the southern portion of the city would use a north-south bikeway through Wilsonville.
- One citizen pointed out a need for pedestrian improvements on Parkway Avenue to connect with the proposed 5th Street underpass.
- One citizen would like to see the Barber Street and Kinsman Road bikeways completed.
- One citizen pointed out the need for a trail through the ravine that lies behind the high school.
- One citizen pointed out the need for regional greenway connections.
- One citizen did not see the feasibility of constructing a bike path "down the Seely Ditch", given existing development and terrain in the area.

Transit Improvements Station

- One citizen pointed out the need for Saturday transit service after 7:00 p.m.
- Two citizens suggested that transit extend to the Canby and Woodburn areas.
- One citizen questioned the reasoning for siting a transit station on Bailey Street, given that the street is not heavily used.

May 2003 Public Meeting Comments

To gain public input after viewing the various transportation alternatives, citizens were given a questionnaire to complete at the end of the meeting. The exit questionnaire contained four topics pertaining to the Transportation Systems Plan as well as the process through which the plan is undergoing. Of the thirty-five attendees, two citizens completed the questionnaire by the end of the meeting and submitted the document to the consultants. Two citizens mailed questionnaires to City Hall in the days following the public meeting. The following text contains questions included in the questionnaire as well as responses given by meeting attendees.

After reviewing the maps showing the road, bicycle, pedestrian, and transit improvements, please record any comments you have below. Include ideas about new improvements or improvements you don't agree with.

Road Improvements

Alternative 1

- "This would give the most efficient attention for Wilsonville Road and side roads around the North Industrial areas."
- "I favor this because it's necessary in order to develop the Dammasch site. The housing that development will provide helps fulfill Metro's housing requirements. Without the interchange, other Wilsonville streets are not equipped to handle the resulting traffic. Hopefully ODOT will see the wisdom in granting the interchange!"
- "This is the likely scenario, unless ODOT or the federal government rejects it. This alternative must be connected to a plan policy prohibiting traffic-intensive uses in the vicinity of the intersection, or the same will be at capacity almost as soon as it opens. If the intersection is aimed at encouraging an urban village at Dammasch and supporting a light-rail line in the vicinity, it must also be supported by uses on Wilsonville Road that are more traffic-intensive than the uses currently allowed. Wilsonville Road, especially at its intersection with the freeway, is already unacceptably over capacity and must not be allowed to get worse."
- Even though this is the most expensive alternative, it's the one I favor – by far! I can make a great case for every new or improved road. The interchange on Boeckman Road is the key!"

Alternative 2

- "Good 'Plan B'."
- "If alternative 1 does not happen, the City must undertake the remaining steps set out in its TSP. An urban village at Damrnasch will then be impossible under that plan, and the railhead proposal will be very difficult indeed. In that event, further degradation of capacity of Wilsonville Road, especially at the freeway interchange, must be a City priority."

Alternative 3

- "No."

- "Won't happen."
- "I'm not in favor of this at all. The missing link between Boeckman and Tooze would really hurt."

Pedestrian and Bicycle Improvements

- "I would like to see a bike path from South Wilsonville to North Wilsonville."
- "Commendations for the new sidewalk along West Wilsonville Road. Enabling pedestrians to walk safely on all city streets should be a goal. Bike paths are great. Many people enjoy cycling and these paths provide a relatively safe place for children to ride."
- "Proposal looks good."
- "The pedestrian improvements I would like to see:
  - A shoulder/path along Parkway between the Burns Brothers property and the entrance to Xerox. It is currently very dangerous!
  - A trail connecting Boones Ferry Park to at least the water treatment plant (parallel to the river), ideally all the way to Willamette Way West.
  - Pedestrian access to cross the Willamette into Charbonneau.
  - Build path along Canyon Creek from Canyon Creek Meadows neighborhood all the way to Memorial Park.
  - Build trail system behind Wilsonville High School, possibly starting at Boeckman Road all the way to Montgomery Way.
  - A pedestrian path built where Wiedemann Road is supposed to be.
  - Build pedestrian bridge over Canyon Creek stream connecting Canyon Creek Meadows neighborhood to Frog Pond Lane.
  - Build pedestrian path where the new Kinsman Road extension is proposed all the way to Day Road. Path will eventually be replaced by road at some point."

Transit Improvements

- "Would like to see Saturday service. Service to and from Salem late in the day – 10:30 p.m. pick-up in Salem. 8 p.m. pick-up in North Wilsonville."
- "Wilsonville is indeed fortunate to have such a great transit system, SMART. Keeping Wilsonville Cab as a viable business is a goal, too. The future train system to Beaverton will be a welcome addition to add flexibility."
- "We support the light-rail proposal."

Do you have concerns about transportation in Wilsonville that have not been addressed during tonight's public meeting?

- "You have an excellent grasp of the current traffic issues."
- "Keep up the good work. Many thanks to all who have devoted so many hours on a sustained basis to help our city manage its transportation challenges."
- "No."
- "No, I believe the committee has done an excellent job!"

APPENDIX B
OREGON TRANSPORTATION PLANNING RULE

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OREGON TRANSPORTATION PLANNING RULE

OAR 660-012-0020
Elements of Transportation System Plans

(1) A TSP shall establish a coordinated network of transportation facilities adequate to serve state, regional and local transportation needs.

Staff Response: The City of Wilsonville's proposed TSP evaluates the existing transportation of the City (Chapter 2) and identifies a coordinated system of road improvements (Chapter 4), pedestrian and bicycle facilities (Chapter 5), transit facilities (Chapter 6) and multi-modal opportunities (Chapter 7) to meet the transportation needs of the state (in the region), the regional, and the City of Wilsonville through the year 2020.

(2) The TSP shall include the following elements:

(a) A determination of transportation needs as provided in OAR 660-012-0030;

Staff Response: See response to OAR 660-012-0030 beginning on page 7 of this document.

(b) A road plan for a system of arterials and collectors and standards for the layout of local streets and other important non-collector street connections. Functional classifications of roads in regional and local TSPs shall be consistent with functional classifications of roads in state and regional TSPs and shall provide for continuity between adjacent jurisdictions. The standards for the layout of local streets shall provide for safe and convenient bike and pedestrian circulation necessary to carry out OAR 660-012-0045(3)(b). New connections to arterials and state highways shall be consistent with designated access management categories. The intent of this requirement is to provide guidance on the spacing of future extensions and connections along existing and future streets which are needed to provide reasonably direct routes for bicycle and pedestrian travel. The standards for the layout of local streets shall address:

Staff Response: Chapter 4 of the TSP identifies two (2) alternative road plans for the year 2020, including arterials and collectors (Figures 4.2, 4.8, and 4.13). Chapter 4 also contains functional classifications and access management standards for streets within the City (Table 4.q and Figures 4.16 through 4.26) consistent with the TPR, RTP, and the TSP's of Washington and Clackamas Counties.

(A) Extensions of existing streets;

Staff Response: Subsection 4.236(.02) of the City's Planning and Land Development Ordinance (Development Code) requires land divisions to provide for the continuation of the principal streets existing in adjoining areas. Tables 4.a, and 4.g of the TSP list the proposed roadway network improvements and new road additions for 2020 Alternatives 1 and 2 respectively. Tables 4.p, 4.q, and 4.r list respectively short, mid, and long range projects for each of the identified alternatives. It is the City's policy to

hold public hearings on any project taken out of sequence and not installed as part of a new development. Table 9.b estimates costs associated with Alternatives 1 and 2.

(B) Connections to existing or planned streets, including arterials and collectors; and

Staff Response: Section 4.4.3 of the TSP addresses the issue of connectivity to existing and planned streets.

(C) Connections to neighborhood destinations.

Staff Response: Section 4.4.3 and Figures 4.24 and 4.25 of the TSP address the issues of connections to neighborhood destinations.

(c) A public transportation plan which:

Describes public transportation services for the transportation disadvantaged and identifies service inadequacies;

Staff Response: Chapter 6 of the TSP describes and identifies improvements to the City's transit system (SMART) for expanded public transportation services. Section 6.2 identifies services available to ADA-eligible customers.

(A) Describes intercity bus and passenger rail service and identifies the location of terminals;

Staff Response: Section 6.3.3 of the TSP describes the City's park-and-ride system. Section 6.3.6.3 describes the City's planned park-and-ride center and commuter rail station.

(B) For areas within an urban growth boundary which have public transit service, identifies existing and planned transit trunk routes, exclusive transit ways, terminals and major transfer stations, major transit stops, and park-and-ride stations. Designation of stop or station locations may allow for minor adjustments in the location of stops to provide for efficient transit or traffic operation or to provide convenient pedestrian access to adjacent or nearby uses.

Staff Response: Section 6.3.1 and Figure 6.1 identify 'major transit streets'. The City does not utilize exclusive transit ways. The City's existing and planned park-and-ride and transit centers are discussed in Sections 6.3.3 and 6.3.6.3 and identified in Figure 6.1.

(C) For areas within an urban area containing a population greater than 25,000 persons, not currently served by transit, evaluates the feasibility of developing a public transit system at build out. Where a transit system is determined to be feasible, the plan shall meet the requirements of paragraph (2)(c)(C) of this rule.

Staff Response: The City currently operates and plans to continue operating a transit system.

(d) A bicycle and pedestrian plan for a network of bicycle and pedestrian routes throughout the planning area. The network and list of facility improvements shall be consistent with the requirements of ORS 366.514;

Staff Response: Chapter 5 of the TSP updates the City's 1994 Bicycle and Pedestrian Master Plan to show existing bicycle and pedestrian routes in the City and develops policies and planned facilities to maintain and improve the City's bicycle and pedestrian system.

(e) An air, rail, water and pipeline transportation plan which identifies where public use airports, mainline and branchline railroads and railroad facilities, port facilities, and major regional pipelines and terminals are located or planned within the planning area. For airports, the planning area shall include all areas within airport imaginary surfaces and other areas covered by state or federal regulations;

Staff Response: Sections 7.3.1, 7.3.2, and 7.3.3 of the TSP describe the City's current rail, air, and marine transportation facilities respectively. Section 7.4 and 7.5 describe the City's policies and implementation measures to address these facilities in the future.

(f) For areas within an urban area containing a population greater than 25,000 persons a plan for transportation system management and demand management;

Staff Response: The City is part of Metro's Regional Transportation Plan (RTP), which contains plans for transportation system management and demand management. The City's TSP is designed to be in compliance with the RTP.

(g) A parking plan in MPO areas as provided in OAR 660-012-0045(5)(c);

Staff Response: See response to OAR 660-012-0045(5)(c) beginning on page 23 of this document.

(h) Policies and land use regulations for implementing the TSP as provided in OAR 660-012-0045;

Staff Response: See response to OAR 660-0125-0045(5)(c) beginning on page 23 of this document.

(i) For areas within an urban growth boundary containing a population greater than 2500 persons, a transportation financing program as provided in OAR 660-012-0040.

Staff Response: See responses to OAR 660-012-0040 beginning on page 14 of this document.

(3) Each element identified in subsections (2)(b)–(d) of this rule shall contain:

(a) An inventory and general assessment of existing and committed transportation facilities and services by function, type, capacity and condition:

Staff Response: Section 2.4 of the TSP discusses the current functional classification system, pavement conditions and traffic volumes of the City's street system in the base year. Bicycle and pedestrian facilities were inventoried (Figures 2.12 and 2.13 respectively) and their conditions evaluated. This evaluation was used in the development of Figures 5.3a (2002 Bicycle Map and Proposed Bicycle Pedestrian Projects), 5.3b (2002 Sidewalk and Trail Maps) and 5.4 and (2020 Bicycle and Pedestrian Master Plan). Section 6.3.6 provides a general description of existing transit facilities including bus

maintenance facilities, bus shelters, and existing vehicles. A more thorough inventory and assessment of the transit facilities will be conducted as part of the Transit master plan. Staff is conferring with ODOT Freight to complete the inventory and add the necessary existing information. The City has not published a complete inventory of all bicycle, pedestrian, transit, and freight facilities, but rather has relied on the historical assessment and recent evaluation of such facilities by staff, City boards and commissions and the public to determine the their future needs.

(A) The transportation capacity analysis shall include information on:

(i) The capacities of existing and committed facilities;

Staff Response: Figure 2.5 of the TSP identifies substandard streets based on the 1991 Transportation Master Plan. Table 2.m and Figure 2.9 identify the Level of Service for the existing major intersection in the City.

(ii) The degree to which those capacities have been reached or surpassed on existing facilities; and

Staff Response: Table 2.m and Figure 2.9 of the TSP also identify intersection that currently operate below the City's established level of service 'D'.

(iii) The assumptions upon which these capacities are based.

Staff Response: Section 2.7 of the TSP discusses the models used to determine the operational level of service at the intersections identified in Table 2.m. The notes of Table 2.m also identify assumptions used in the level of service analysis.

(B) For state and regional facilities, the transportation capacity analysis shall be consistent with standards of facility performance considered acceptable by the affected state or regional transportation agency;

Staff Response: Figure 2.9 identifies both the level of service and volume to capacity ratios for the major intersections and street segments within the City, including those that are significant at the state and regional level.

(C) The transportation facility condition analysis shall describe the general physical and operational condition of each transportation facility (e.g., very good, good, fair, poor, very poor).

Staff Response: Section 2.4.4 and Figure 2.4 of the TSP describe the pavement condition of major thoroughfares in the City as of 2001. Figure 2.5 identifies the location of needed sidewalks, bicycle lanes, and the location of needed road widening based on the 1991 TMP. Figure 2.12 identifies existing bicycle facilities in the City while Table 5.c lists short, mid, and long range recommendations for pedestrian and bicycle facilities. Chapter 5 does not describe the general physical and operational condition of bicycle and pedestrian facilities. However, the survey work completed to produce Figure 2.4 (existing pavement conditions) noted the general conditions of these facilities. This information is the basis for the bicycle and pedestrian improvements in Figure 5.3a. Figure 2.11 identifies existing transit facilities while section 6.3.6.3 through 6.3.6.9 of the TSP identify future facility and vehicle needs for SMART. Chapter 6 (Transit System) does not describe the

general physical or operational condition of the SMART transportation facilities. Tables 4.e, 4.k, and 4.p estimates the costs of capacity improvements, street widening, signal improvements, substandard connection improvements, bicycle and transit projects, associated with Alternatives 1, and 2 respectively.

(b) A system of planned transportation facilities, services and major improvements. The system shall include a description of the type or functional classification of planned facilities and services and their planned capacities and levels of service;

Staff Response: Section 4.3 of the TSP describes two (2) road network alternatives including the functional classifications, P.M. peak-hour traffic volumes and traffic levels of service for each of the networks proposed. Section 6.3 describes transit strategies of the TSP including major transit streets, the transit capital program, and transit centers. Section 5.4 and Figures 5.3a, 5.3b, and 5.4 identify existing and proposed bicycle and pedestrian facilities as well as standards for public bicycle and pedestrian facilities.

(c) A description of the location of planned facilities, services and major improvements, establishing the general corridor within which the facilities, services or improvements may be sited. This shall include a map showing the general location of proposed transportation improvements, a description of facility parameters such as minimum and maximum road right of way width and the number and size of lanes, and any other additional description that is appropriate;

Staff Response: Section 4.3 of the TSP identifies roadway network improvements, new road additions, functional classifications, p.m. peak-hour traffic volumes, intersection spot improvements, and traffic levels of service for each of the identified road network alternatives. Section 6.3 describes transit strategies of the TSP including major transit streets, the transit capital program, and transit centers. Section 5.4 and Figures 5.3a, 5.3b, and 5.4 identify existing and proposed bicycle and pedestrian facilities as well as standards for public bicycle and pedestrian facilities.

(d) Identification of the provider of each transportation facility or service.

Staff Response: With the exception of state and federal highway facilities, rail facilities, and pipelines, the TSP identifies the City of Wilsonville as the provider transportation facilities within the City. Chapter 9 of the TSP identifies a variety of funding sources for these facilities.

Stat. Auth.: ORS 183, ORS 197.040 & ORS 197.245
Stats. Implemented: ORS 195.025, ORS 197.040, ORS 197.230, ORS 197.245, ORS 197.712 & ORS 197.717
Hist.: LCDC 1-1991, f. & cert. ef. 5-8-91; LCDC 4-1995, f. & cert. ef. 5-8-95

OAR 660-012-0025
Complying with the Goals in Preparing Transportation System Plans; Refinement Plans

(1) Except as provided in section (3) of this rule, adoption of a TSP shall constitute the land use decision regarding the need for transportation facilities, services and major improvements and their function, mode, and general location.

Staff Response: Chapter 3 of the TSP identifies the land use assumptions in the development of the traffic model used to predict future traffic volumes and road network needs. Bicycle and pedestrian facilities were also considered in the modeling to determine the need for these facilities.

(2) Findings of compliance with applicable statewide planning goals and acknowledged comprehensive plan policies and land use regulations shall be developed in conjunction with the adoption of the TSP.

Staff Response: Chapter 2 of the TSP describes how it complies with applicable statewide planning goals, the City's Comprehensive Plan Policies and Development Code. Chapters 4-8 identify policies and implementation measures to ensure compliance of the TSP to all applicable local, regional, and state criteria for the development of a TSP.

(3) A local government or MPO may defer decisions regarding function, general location and mode of a refinement plan if findings are adopted which:

(a) Identify the transportation need for which decisions regarding function, general location or mode are being deferred;

(b) Demonstrate why information required to make final determinations regarding function, general location, or mode cannot reasonably be made available within the time allowed for preparation of the TSP;

(c) Explain how deferral does not invalidate the assumptions upon which the TSP is based or preclude implementation of the remainder of the TSP;

(d) Describe the nature of the findings which will be needed to resolve issues deferred to a refinement plan; and

(e) Demonstrate that the refinement effort will be completed within three years or prior to initiation of the periodic review following adoption of the TSP.

Staff Response: Not applicable. The proposed TSP is not a refinement plan, but a replacement of the 1991 Transportation Master Plan. Subsequent refinement plans will comply with the this rule section.

(4) Where a Corridor Environmental Impact Statement (EIS) is prepared pursuant to the requirements of the National Environmental Policy Act of 1969, the development of the refinement plan shall be coordinated with the preparation of the Corridor EIS. The refinement plan shall be adopted prior to the issuance of the Final EIS.

Staff Response: The road network alternatives in the TSP show conceptual alignments of future roads and are not of a detail to determine future environmental impacts. The City will, as a matter of course, take all necessary steps to participate in and comply with any EIS conducted for a road project, including the development of a refinement plan of the TSP if deemed necessary.

Stat. Auth.: ORS 183 & ORS 197.040
Stats. Implemented: ORS 195.025, ORS 197.040, ORS 197.230, ORS 197.245, ORS 197.712 & ORS 197.717
Hist.: LCDC 1-1991, f. & cert. ef. 5-8-91

OAR 660-012-0030

Determination of Transportation Needs

(1) The TSP shall identify transportation needs relevant to the planning area and the scale of the transportation network being planned including:

(a) State, regional, and local transportation needs;

(b) Needs of the transportation disadvantaged;

(c) Needs for movement of goods and services to support industrial and commercial development planned for pursuant to OAR 660-009 and Goal 9 (Economic Development).

Staff Response: The modeling conducted to determine the City's transportation needs through the year 2020 considered state (Interstate-5), regional, and local transportation needs (see Chapter 3). Chapters 5 (pedestrian and bicycle facilities) and 6 (transit system) address the needs of bicycles, pedestrians and the transportation disadvantaged within the City. Chapters 4 (motor vehicle facilities) and 7 (other modes and multimodal coordination) address the needs for the movement of goods and services within and through the City.

(2) Counties or MPOs preparing regional TSPs shall rely on the analysis of state transportation needs in adopted elements of the state TSP. Local governments preparing local TSPs shall rely on the analyses of state and regional transportation needs in adopted elements of the state TSP and adopted regional TSPs.

Staff Response: The modeling conducted as part of the TSP's determination of needed network improvements was performed by Metro and City staff. State and regional transportation needs from the State of Oregon's TSP and the Regional Transportation Plan were factored into the modeling performed for the City's TSP.

(3) Within urban growth boundaries, the determination of local and regional transportation needs shall be based upon:

(a) Population and employment forecasts and distributions which are consistent with the acknowledged comprehensive plan, including those policies which implement Goal 14, including Goal 14's requirement to encourage urban development on urban lands prior to conversion of urbanizable lands. Forecasts and distributions shall be for 20 years and, if desired, for longer periods;

Staff Response: Sections 3.4.1, 3.4.2.1 through 3.4.2.2.4 and Tables 3.b through 3.g of the TSP detail the land use and employment information used to develop the population and employment forecasts used in the development of the traffic model.

(b) Measures adopted pursuant to OAR 660-012-0045 to encourage reduced reliance on the automobile.

Staff Response: See response to 660-012-0045(c) beginning on page 23 of this document.

(4) In MPO areas, calculation of local and regional transportation needs also shall be based upon accomplishment of the requirement in OAR 660-012-0035(4) to reduce reliance on the automobile.

Staff Response: See response to OAR 660-012-0035(4) beginning on page 10 of this document.

Stat. Auth.: ORS 183 & ORS 197.040
Stats. Implemented: ORS 195.025, ORS 197.040, ORS 197.230, ORS 197.245, ORS 197.712 & ORS 197.717
Hist.: LCDC 1-1991, f. & cert. ef. 5-8-91

OAR 660-012-0035

Evaluation and Selection of Transportation System Alternatives

(1) The TSP shall be based upon evaluation of potential impacts of system alternatives that can reasonably be expected to meet the identified transportation needs in a safe manner and at a reasonable cost with available technology. The following shall be evaluated as components of system alternatives:

(a) Improvements to existing facilities or services;

(b) New facilities and services, including different modes or combinations of modes that could reasonably meet identified transportation needs;

(c) Transportation system management measures;

(d) Demand management measures; and

(e) A no-build system alternative required by the National Environmental Policy Act of 1969 or other laws.

Staff Response: Sections 4.3.1 through Section 4.3.2 including Tables 4.a through 4. f and Figures 4.1 through 4.5 describe the TSP's Alternative 1 which relies on improvements to existing facilities as well as those improvements listed in the City 1991 Transportation Master Plan but not yet built. Section 4.3.3 describes Alternative 2, the City's recommended transportation system. Chapters 5, 6, and 7 describe the TSP's proposals for pedestrian and bicycle facilities, transit services, and multi-modal operations respectively. Chapter 8 describes the TSP's transportation demand management measures.

(2) Local governments in MPO areas of larger than 1,000,000 population shall, and other governments may also, evaluate alternative land use designations, densities, and design standards to meet local and regional transportation needs. Local governments preparing such a strategy shall consider:

(a) Increasing residential densities and establishing minimum residential densities within one quarter mile of transit lines, major regional employment areas, and major regional retail shopping areas;

(b) Increasing allowed densities in new commercial office and retail developments in designated community centers;

(c) Designating lands for neighborhood shopping centers within convenient walking and cycling distance of residential areas;

(d) Designating land uses to provide a better balance between jobs and housing considering:

(A) The total number of jobs and total of number of housing units expected in the area or sub-area;

(B) The availability of affordable housing in the area or sub-area; and

(C) Provision of housing opportunities in close proximity to employment areas.

Staff Response: Working in conjunction with the City and ODOT, Metro produced a sub-area/sub-regional transportation model for the City that evaluated higher of land use densities, mixed use developments, and employment assumptions in the development of the TSP.

(3) The following standards shall be used to evaluate and select alternatives:

(a) The transportation system shall support urban and rural development by providing types and levels of transportation facilities and services appropriate to serve the land uses identified in the acknowledged comprehensive plan;

Staff Response: Modeling efforts used to determine the transportation needs for 2000 and 2020 used land use information obtained from the City's adopted Comprehensive Plan.

(b) The transportation system shall be consistent with state and federal standards for protection of air, land and water quality including the State Implementation Plan under the Federal Clean Air Act and the State Water Quality Management Plan;

Staff Response: The City of Wilsonville is contained in the umbrella of Metro's Regional Transportation Plan and therefore is in compliance with the State Implementation Plan of the Federal Clean Air Act and the State's Water Quality Management Plan. The City's adopted Natural Resource Plan complies with the natural resource protection measures of Statewide Planning Goal 5 and Metro Title 3.

(c) The transportation system shall minimize adverse economic, social, environmental and energy consequences;

Staff Response: Chapter 9 of the TSP identifies a variety of potential funding strategies to implement the preferred Alternative of the TSP. Funding of the proposed improvements will ultimately be the decision of the City Council who must weight the economic and social consequences of setting priorities for these improvements. The concurrency requirement of the City's Comprehensive Plan and

Development Code ensure that most needed transportation projects will be constructed within two (2) years of their need. The City's Development Code incorporates Statewide Planning Goal 5 and Metro's Title 3 natural resource protection requirements; however, many public transportation projects are exempt from these requirements. The City's Comprehensive Plan, Development Code, and TSP do not comprehensively address adverse energy consequences associated with the City's transportation system.

(d) The transportation system shall minimize conflicts and facilitate connections between modes of transportation;

Staff Response: Chapter 7 discusses the TSP's proposed multi-modal connections. Chapters 5 and 6 discuss the proposed pedestrian and bicycle facilities and transit system respectively of the TSP. To ensure greater connection between different modes of transportation, staff recommends City's Development Code be reviewed and updated where appropriate to require appropriate connections (within the limits of the "rational nexus" Dolan test) for new planned developments and that waivers to this requirement be only for barrier constraints as identified in the block and access standards of the Development Code. See Policy 7.3.1 and Implementation Measure 7.3.1.a of the TSP.

(e) The transportation system shall avoid principal reliance on any one mode of transportation and shall reduce principal reliance on the automobile. In MPO areas this shall be accomplished by selecting transportation alternatives which meet the requirements in section (4) of this rule.

Staff Response: The TSP details the City's commitment to bicycle and pedestrian facilities (Chapter 5), transit system (Chapter 6), and multi-modal transportation (Chapter 7).

(4) In MPO areas, regional and local TSPs shall be designed to achieve the objectives listed in (a)-(c) below for reducing automobile vehicle miles traveled per capita for the MPO area. The VMT target and alternative standards are intended as means of measuring progress of metropolitan areas towards developing and implementing transportation systems and land use plans that reduce reliance on the automobile. It is anticipated that metropolitan areas will accomplish reduced reliance by changing land use patterns and transportation systems so that walking, cycling, and use of transit are highly convenient and so that, on balance, people need to and are likely to drive less than they do today:

(a) In MPO areas of less than 1 million population, a 5% reduction within 20 years of the adoption of a plan as required by OAR 660-012-0055(1);

(b) In MPO areas of more than 1 million population, 10% reduction within 20 years of adoption of a plan as required by OAR 660-012-0055(1); and

(c) Through subsequent planning efforts, an additional 5 percent reduction within 30 years of adoption of a plan as required by OAR 660-012-0055(1).

Staff Response: The Policies and Implementation Measures of Chapter 8 describe the TSP's methodology to implement transportation demand management programs to reduce the City's VMT per the requirements of this section of the TPR.

(5) The Commission may authorize metropolitan areas to use alternative standards in place of the VMT reduction standard in 0035(4) to demonstrate progress towards achieving reduced automobile reliance as provided for in this section:

(a) The Commission shall approve such alternative standards by order upon demonstration by the metropolitan area that:

(A) Achieving the alternative standard will result in a reduction in reliance on automobiles;

(B) Achieving the alternative standard will accomplish a significant increase in the availability or convenience of alternative modes of transportation;

(C) Achieving the alternative standard is likely to result in a significant increase in the share of trips made by alternative modes, including walking, bicycling, ridesharing and transit;

(D) VMT per capita is unlikely to increase by more than 5%; and

(E) The alternative standard is measurable and reasonably related to achieving the goal of reduced reliance on the automobile as described in OAR 660-012-0000.

(b) In reviewing proposed alternative standards for compliance with (a), the Commission shall give credit to regional and local plans, programs, and actions implemented since 1990 that have already contributed to achieving the objectives specified in (A)–(E) above;

(c) If a plan using an alternative standard, approved pursuant to this rule, is expected to result in an increase in VMT per capita, then the cities and counties in the metropolitan area shall prepare and adopt an integrated land use and transportation plan including the elements listed in (A)–(E) below. Such a plan shall be prepared in coordination with the MPO and shall be adopted within three years of the approval of the alternative standard:

(A) Changes to land use plan designations, densities, and design standards listed in 0035(2)(a)–(d);

(B) A transportation demand management plan that includes significant new transportation demand management measures;

(C) A public transit plan that includes a significant expansion in transit service;

(D) Policies to review and manage major roadway improvements to ensure that their effects are consistent with achieving the adopted strategy for reduced reliance on the automobile, including policies that provide for the following:

(i) An assessment of whether improvements would result in development or travel that is inconsistent with what is expected in the plan;

(ii) Consideration of alternative measures to meet transportation needs;

(iii) Adoption of measures to limit possible unintended effects on travel and land use patterns including access management, limitations on subsequent plan amendments, phasing of improvements. etc.

[For purposes of this section a "major roadway expansion" includes new arterial roads or streets and highways, the addition of travel lanes, and construction of interchanges to a limited access highway.]

(E) Plan and ordinance provisions that meet all other applicable requirements of this division.

(d) Alternative standards may include but are not limited to:

(A) Modal share of alternative modes, including walking, bicycling, and transit trips;

(B) Vehicle hours of travel per capita;

(C) Vehicle trips per capita;

(D) Measures of accessibility by alternative modes (i.e. walking, bicycling and transit); or

(E) The Oregon Benchmark for a reduction in peak hour commuting by single occupant vehicles.

(e) Metropolitan areas that receive approval of an alternative standard shall adopt TSP policies to evaluate progress towards achieving the alternative standard at regular intervals, including monitoring and reporting of VMT per capita.

Staff Response: The TSP does not propose to use alternative standards to meet the requirements of OAR 660-012-0035(4).

(6) Regional TSPs shall specify measurable objectives for each of the following and demonstrate how the combination selected will accomplish the objectives in section (4) of this rule:

(a) An increase in the modal share of non-automobile vehicle trips (i.e., transit, bicycle, pedestrian); for example, a doubling of the modal share of non-automobile trips;

(b) An increase in average automobile occupancy (i.e., persons per vehicle) during; for example, an increase to an average of 1.5 persons per vehicle; and

(c) Where appropriate, a decrease in the number or length of automobile vehicle trips per capita due to demand management programs, rearranging of land uses or other means.

Staff Response: Not applicable: The City of Wilsonville's proposed TSP is not a regional TSP.

(7) Regional and local TSPs shall include interim benchmarks to assure satisfactory progress towards meeting the requirements of this section at five year intervals over the planning period. MPOs and local governments shall evaluate progress in meeting interim benchmarks at five year intervals from adoption of the regional and local TSPs. Where interim benchmarks are not met, the relevant TSP shall be amended to include new or additional efforts adequate to meet the requirements of this section.

Staff Response: The City's Comprehensive Plan undergoes period review with the Land Conservation an Development Commission approximately every five years at which time the TSP will also be reviewed and updated. Tables 4.p, 4.q, and 4.r specify short, mid, and long range transportation system improvement projects in the 0-5, 5-10, and 10-20 year time frame respectively. At a minimum, the five year periodic review process will evaluate these schedules of improvements will be evaluated and adjust them as necessary to meet the needs of the City's transportation system.

(8) The Commission shall, at five-year intervals from the adoption of this rule, evaluate the results of efforts to achieve the reduction in VMT and the effectiveness of the standard in achieving the objective of reducing reliance on the automobile. This shall include evaluating the requirements for parking plans and a reduction in the number of parking spaces per capita.

Staff Response: Not Applicable: Commission's responsibility.

(9) Where existing and committed transportation facilities and services have adequate capacity to support the land uses in the acknowledged comprehensive plan, the local government shall not be required to evaluate alternatives as provided in this section.

Staff Response: The TSP acknowledges the City's existing and committed transportation facilities in the 1991 TMP will not provide adequate capacity to support the land uses in the adopted comprehensive plan. The proposed transportation improvements in the TSP will provide adequate transportation facilities through the year 2020.

(10) Transportation uses or improvements listed in OAR 660-012-0065(3)(d) to (g) and (o) and located in an urban fringe may be included in a TSP only if the improvement project identified in the Transportation System Plan as described in section (11) of this rule, will not significantly reduce peak hour travel time for the route as determined pursuant to section (10) of this rule, or the jurisdiction determines that the following alternatives can not reasonably satisfy the purpose of the improvement project:

(a) Improvements to transportation facilities and services within the urban growth boundary;

(b) Transportation system management measures that do not significantly increase capacity; or

(c) Transportation demand management measures. The jurisdiction needs only to consider alternatives that are safe and effective, consistent with applicable standards and that can be implemented at a reasonable cost using available technology.

Staff Response: The modeling performed in the development of the TSP considered connectivity with the existing and planned transportation networks of Clackamas and Washington Counties. The TSP does not plan for any transportation improvements outside of the City's urban growth boundary. Road improvements for the anticipated Villebois development (Special Area of Concern B of the Comprehensive Plan) will be an amendment to the TSP.

(11) An improvement project significantly reduces peak hour travel time when, based on recent data, the time to travel the route is reduced more than 15% during weekday peak hour conditions over the length of the route located within the urban fringe. For purposes of measuring travel time, a route shall be identified by the predominant traffic flows in the project area.

Staff Response: No response necessary.

(12) A "transportation improvement project" described in section (9) of this rule:

(a) Is intended to solve all of the reasonably foreseeable transportation problems within a general geographic location, within the planning period; and

(b) Has utility as an independent transportation project.

Staff Response: All the transportation improvement projects identified in the TSP comply with this rule requirement.

Stat. Auth.: ORS 183, ORS 197.040 & ORS 197.245
Stats. Implemented: ORS 195.025, ORS 197.040, ORS 197.230, ORS 197.245, ORS 197.712 & ORS 197.717
Hist.: LCDC 1-1991, f. & cert. ef. 5-8-91; LCDC 3-1995, f. & cert. ef. 3-31-95; LCDC 4-1995, f. & cert. ef. 5-8-95; LCDD 6-1998, f. & cert. ef. 10-30-98

OAR 660-012-0040

Transportation Financing Program

(1) For areas within an urban growth boundary containing a population greater than 2,500 persons, the TSP shall include a transportation financing program.

Staff Response: Chapter 9 describes the funding program for the improvements identified in the TSP.

(2) A transportation financing program shall include the items listed in (a)–(d):

(a) A list of planned transportation facilities and major improvements;

(b) A general estimate of the timing for planned transportation facilities and major improvements;

(c) A determination of rough cost estimates for the transportation facilities and major improvements identified in the TSP; and

(d) In metropolitan areas, policies to guide selection of transportation facility and improvement projects for funding in the short-term to meet the standards and benchmarks established pursuant to 0035(4)–(6). Such policies shall consider, and shall include among the priorities, facilities and improvements that support mixed-use, pedestrian friendly development and increased use of alternative modes.

Staff Response: Table 9.b identifies a cost summary of transportation systems plan projects for alternative 1 and 2 of the TSP (specific projects are listed in Alternatives 1 and 2 in Chapter 4). Section 4.5 prioritizes transportation improvements into short, mid, and long-range projects. Table 4.p identifies short-range plan projects and estimated costs for all alternatives. Table 6.a list short and long term capital projects for the City's transit system. The Policies and Implementation Measures of Chapter 8 describe the TSP's methodology to implement transportation demand management programs to reduce the City's VMT per the requirements of section 0035(4) of the TPR. Section 0035(5)-(6) are not applicable to the City's TSP.

(3) The determination of rough cost estimates is intended to provide an estimate of the fiscal requirements to support the land uses in the acknowledged comprehensive plan and allow jurisdictions to assess the adequacy of existing and possible alternative funding mechanisms. In addition to including rough cost estimates for each transportation facility and major improvement, the transportation financing plan shall include a discussion of the facility provider's existing funding mechanisms and the ability of these and possible new mechanisms to fund the development of each transportation facility and major improvement. These funding mechanisms may also be described in terms of general guidelines or local policies.

Staff Response: Section 9.2 of the TSP describes the City's existing transportation funding profile. Section 9.2.1 describes the City's transportation related funds and Section 9.2.2 describes potential transportation revenue sources.

(4) Anticipated timing and financing provisions in the transportation financing program are not considered land use decisions as specified in ORS 197.712(2)(e) and, therefore, cannot be the basis of appeal under ORS 197.610(1) and (2) or ORS 197.835(4).

Staff Response: Land use decisions (as defined in ORS 197.712(2)(e)) are not based on the TSP or its anticipated schedule of transportation improvement projects as may be reflected in the City's capital improvements program.

(5) The transportation financing program shall provide for phasing of major improvements to encourage infill and redevelopment of urban lands prior to facilities and improvements which would cause premature development of urbanizable lands or conversion of rural lands to urban uses.

Staff Response: The financing program of the TSP (Chapter 9) proposes transportation improvements within the City's urban growth boundary. The financing program contained within the TSP would not fund projects outside of the City' UGB.

Stat. Auth.: ORS 183 & ORS 197
Stats. Implemented: ORS 197.040
Hist.: LCDC 1-1991, f. & cert. ef. 5-8-91; LCDC 4-1995, f. & cert. ef. 5-8-95; LCDC 11-1995, f. & cert. ef. 12-22-95; LCDD 6-1998, f. & cert. ef. 10-30-98

OAR 660-012-0045

Implementation of the Transportation System Plan

(1) Each local government shall amend its land use regulations to implement the TSP.

(a) The following transportation facilities, services and improvements need not be subject to land use regulations except as necessary to implement the TSP and, under ordinary circumstances do not have a significant impact on land use:

(A) Operation, maintenance, and repair of existing transportation facilities identified in the TSP, such as road, bicycle, pedestrian, port, airport and rail facilities, and major regional pipelines and terminals;

(B) Dedication of right-of-way, authorization of construction and the construction of facilities and improvements, where the improvements are consistent with clear and objective dimensional standards;

(C) Uses permitted outright under ORS 215.213(1)(m) through (p) and ORS 215.283(1)(k) through (n), consistent with the provisions of 660-012-0065; and

(D) Changes in the frequency of transit, rail and airport services.

(b) To the extent, if any, that a transportation facility, service or improvement concerns the application of a comprehensive plan provision or land use regulation, it may be allowed without further land use review if it is permitted outright or if it is subject to standards that do not require interpretation or the exercise of factual, policy or legal judgment;

(c) In the event that a transportation facility, service or improvement is determined to have a significant impact on land use or to concern the application of a comprehensive plan or land use regulation and to be subject to standards that require interpretation or the exercise of factual, policy or legal judgment, the local government shall provide a review and approval process that is consistent with 660-012-0050. To facilitate implementation of the TSP, each local government shall amend its land use regulations to provide for consolidated review of land use decisions required to permit a transportation project.

Staff Response: The City's operation, maintenance, and repair of existing and proposed transportation facilities are not subject to the City's land use regulations. The City's acquisition of right of way and road construction projects are not reviewed under the City's land use regulations. The City's operation of its transit system is not subject to land use regulations. The policies and implementation measures in Chapter 4 of the TSP require the revision of the City's Comprehensive Plan and Development Code to incorporate the street improvement standards of the TSP. These standards will require discretionary review and approval from the City's Development Review Board, Planning Commission, City Council, or staff for all street improvements in the City. Pedestrian and bicycle facilities are also subject to land use regulations. While the operations of the City's transit system are not subject to land use regulations, the TSP will require transportation demand management programs of new developments with more than 50 employees. All discretionary use of land use authority by the City will utilize and review and approval process that is consistent with 660-012-0050.

(2) Local governments shall adopt land use or subdivision ordinance regulations, consistent with applicable federal and state requirements, to protect transportation facilities, corridors and sites for their identified functions. Such regulations shall include:

(a) Access control measures, for example, driveway and public road spacing, median control and signal spacing standards, which are consistent with the functional classification of roads and consistent with limiting development on rural lands to rural uses and densities;

(b) Standards to protect future operation of roads, transit ways and major transit corridors;

(c) Measures to protect public use airports by controlling land uses within airport noise corridors and imaginary surfaces, and by limiting physical hazards to air navigation;

(d) A process for coordinated review of future land use decisions affecting transportation facilities, corridors or sites;

(e) A process to apply conditions to development proposals in order to minimize impacts and protect transportation facilities, corridors or sites;

(f) Regulations to provide notice to public agencies providing transportation facilities and services, MPOs, and ODOT of:

(A) Land use applications that require public hearings;

(B) Subdivision and partition applications;

(C) Other applications which affect private access to roads; and

(D) Other applications within airport noise corridors and imaginary surfaces which affect airport operations.

(g) Regulations assuring that amendments to land use designations, densities, and design standards are consistent with the functions, capacities and levels of service of facilities identified in the TSP.

Staff Response: Implementation Measure 4.1.1.a of the TSP would use the TSP as "the basis for the general location of routes for vehicle travel and the basis of design of all street improvements". Section 4.4.6 describes the TSP's provisions for access management. Policies 4.1.5 and 4.1.6 of the TSP promote plans to reduce reliance on I-5. The City is also in compliance with Metro's standards for local streets in the Regional Transportation Plan, which incorporates ODOT's access management spacing requirements. The City does not have a public use airport within its urban growth boundary. Implementation Measure 4.1.5.a proposes a commitment to jointly plan and program transportation projects with surrounding counties and Metro. Policy 4.1.2 of the TSP requires developers to provide transportation improvements roughly proportionate to the developer's impacts. Subsection 4.011(.02)(D) of the City's Development Code requires the City to provide copies of (site development) application materials to other affected agencies and City departments, requesting their input and recommendations. The procedures prescribed in the City's Comprehensive Plan and Development Code for changes to land use designations (comprehensive plan and zoning maps), densities (comprehensive plan map), and

design standards (development code) requires that the proposed amendments be in conformance with those portions of the plan that are not being considered for amendment. This would include the functional classifications of the TSP, concurrency requirements of the Comprehensive Plan and the Level of Service requirements of the Development Code.

(3) Local governments shall adopt land use or subdivision regulations for urban areas and rural communities as set forth below. The purposes of this section are to provide for safe and convenient pedestrian, bicycle and vehicular circulation consistent with access management standards and the function of affected streets, to ensure that new development provides on-site streets and accessways that provide reasonably direct routes for pedestrian and bicycle travel in areas where pedestrian and bicycle travel is likely if connections are provided, and which avoids wherever possible levels of automobile traffic which might interfere with or discourage pedestrian or bicycle travel.

(a) Bicycle parking facilities as part of new multi-family residential developments of four units or more, new retail, office and institutional developments, and all transit transfer stations and park-and-ride lots;

Staff Response: The City's parking standards are in compliance with those of the Regional Transportation Plan. The City's parking standards require bicycle parking spaces for apartments of 10 or more units, commercial retail, office, institutional, and park & ride / transit facilities.

(b) On-site facilities shall be provided which accommodate safe and convenient pedestrian and bicycle access from within new subdivisions, multi-family developments, planned developments, shopping centers, and commercial districts to adjacent residential areas and transit stops, and to neighborhood activity centers within one-half mile of the development. Single-family residential developments shall generally include streets and accessways. Pedestrian circulation through parking lots should generally be provided in the form of accessways.

(A) "Neighborhood activity centers" includes, but is not limited to, existing or planned schools, parks, shopping areas, transit stops or employment centers;

(B) Bikeways shall be required along arterials and major collectors. Sidewalks shall be required along arterials, collectors and most local streets in urban areas, except that sidewalks are not required along controlled access roadways, such as freeways;

(C) Cul-de-sacs and other dead-end streets may be used as part of a development plan, consistent with the purposes set forth in this section;

(D) Local governments shall establish their own standards or criteria for providing streets and accessways consistent with the purposes of this section. Such measures may include but are not limited to: standards for spacing of streets or accessways; and standards for excessive out-of-direction travel;

(E) Streets and accessways need not be required where one or more of the following conditions exist:

(i) Physical or topographic conditions make a street or accessway connection impracticable. Such conditions include but are not limited

to freeways, railroads, steep slopes, wetlands or other bodies of water where a connection could not reasonably be provided;

(ii) Buildings or other existing development on adjacent lands physically preclude a connection now or in the future considering the potential for redevelopment; or

(iii) Where streets or accessways would violate provisions of leases, easements, covenants, restrictions or other agreements existing as of May 1, 1995, which preclude a required street or accessway connection.

Staff Response: Implementation measures 5.1.1.b, 5.1.1.d, 5.1.1.e, and 5.1.2.a of the TSP require bicycle and pedestrian facilities within the corridors of the 1993 Bicycle and Pedestrian Plan, discourage the use of cul-de-sacs without pedestrian and bicycle connectivity, and require bicycle and pedestrian facilities within, between and internal to individual developments. Figure 5.4 depicts the 2020 Bicycle and Pedestrian Master Plan that, with the exception of Parkway Ave (minor collector) north of Memorial Drive and the Kinsman Road (minor collector) extension north of Ridder Road, shows on-street bikeways and sidewalks on all arterials and collectors of Alternative 1. Implementation Measure 5.1.3.a requires the establishment of pedestrian and bicycle pathway construction standards to be incorporated into the City's Public Works Standards. Subsection 4.124(.06) of the Development Code contains the City's Block and Access standards, including exemptions for physical or topographic barriers, consistent with Regional Transportation Plan.

(c) Where off-site road improvements are otherwise required as a condition of development approval, they shall include facilities accommodating convenient pedestrian and bicycle travel, including bicycle ways along arterials and major collectors;

Staff Response: Implementation Measure 5.1.3.c of the TSP requires concrete sidewalks on both sides of all streets.

(d) For purposes of subsection (b) "safe and convenient" means bicycle and pedestrian routes, facilities and improvements which:

(A) Are reasonably free from hazards, particularly types or levels of automobile traffic which would interfere with or discourage pedestrian or cycle travel for short trips;

(B) Provide a reasonably direct route of travel between destinations such as between a transit stop and a store; and

(C) Meet travel needs of cyclists and pedestrians considering destination and length of trip; and considering that the optimum trip length of pedestrians is generally 1/4 to 1/2 mile.

Staff Response: Implementation Measure 5.1.1.e of the TSP requires pedestrian and bicycle connections within and between developments to provide safety and convenience for pedestrians and bicyclists. Subsection 4.178(.05) of the Development Code requires "bicycle and pedestrian paths shall be located to provide a reasonably direct connection between likely

destinations". Additionally, this subsection states "the objective of this standard is to achieve the equivalent of a ¼ mile grid of routes".

(e) Internal pedestrian circulation within new office parks and commercial developments shall be provided through clustering of buildings, construction of accessways, walkways and similar techniques.

Staff Response: Implementation Measure 4.1.2.d of the City's Comprehensive Plan, and the Plan generally, support the clustering of commercial activities to minimize "strip development" and transient traffic impacts on the Wilsonville Road interchange with I-5.

(4) To support transit in urban areas containing a population greater than 25,000, where the area is already served by a public transit system or where a determination has been made that a public transit system is feasible, local governments shall adopt land use and subdivision regulations as provided in (a)–(f) below:

(a) Transit routes and transit facilities shall be designed to support transit use through provision of bus stops, pullouts and shelters, optimum road geometrics, on-road parking restrictions and similar facilities, as appropriate;

Staff Response: Chapter 6 of the TSP details the City's transit needs and proposes programs and improvements including transit centers, shelters, and queue bypass lanes to improve the operations of the City's transit system.

(b) New retail, office and institutional buildings at or near major transit stops shall provide for convenient pedestrian access to transit through the measures listed in (A) and (B) below.

(A) Walkways shall be provided connecting building entrances and streets adjoining the site;

Staff Response: The City's Development Code does not explicitly require a direct connection from building entrances to streets at major transit stops. Section 4.131 of the City's Development Code allows the Development Review Board to determine appropriate conditions of approval to assure adequate connectivity for pedestrians and bicycles in new development. Staff recommends that Section 4.178 of the Development Code be modified to require pedestrian connections between building entrances and streets and to adjoining properties. Waivers to this requirement should only allowed under the provisions of Subsection 4.118(.03)(B) of the Code: "The following shall not be waived by the Board, unless there is substantial evidence in the whole record to support a finding that the intent and purpose of the standards will be met in alternative ways". See Implementation Measure 5.1.1.f.

(B) Pedestrian connections to adjoining properties shall be provided except where such a connection is impracticable as provided for in OAR 660-012-0045(3)(b)(E). Pedestrian connections shall connect the on site circulation system to existing or proposed streets, walkways, and driveways that abut the property. Where adjacent properties are undeveloped or have potential for redevelopment, streets, accessways and walkways on site shall be laid out or stubbed to allow for extension to the adjoining property;

Staff Response: Implementation Measure 5.1.1.e of the TSP requires pedestrian and bicycle connections within and between developments. The City's land division process under Sections 4.236 and 4.237 of the Development Code requires connection to or a projection of how streets, sidewalks, and pedestrian ways will extend to existing and future adjoining developments. See staff's recommendations in response to (A) above.

(C) In addition to (A) and (B) above, on sites at major transit stops provide the following:

(i) Either locate buildings within 20 feet of the transit stop, a transit street or an intersecting street or provide a pedestrian plaza at the transit stop or a street intersection;

(ii) A reasonably direct pedestrian connection between the transit stop and building entrances on the site;

(iii) A transit passenger landing pad accessible to disabled persons;

(iv) An easement or dedication for a passenger shelter if requested by the transit provider; and

(v) Lighting at the transit stop.

Staff Response: Figure 6.1 of the TSP identifies major transit streets and capital facilities for 2020.

(c) Local governments may implement (4)(b)(A) and (B) above through the designation of pedestrian districts and adoption of appropriate implementing measures regulating development within pedestrian districts. Pedestrian districts must comply with the requirement of (4)(b)(C) above;

Staff Response: The TSP does not propose any pedestrian districts.

(d) Designated employee parking areas in new developments shall provide preferential parking for carpools and vanpools;

Staff Response: Implementation Measure 8.1.2.c of the TSP encourages employers with 50 or more employees to include preferential parking for carpools and vanpools.

(e) Existing development shall be allowed to redevelop a portion of existing parking areas for transit-oriented uses, including bus stops and pullouts, bus shelters, park and ride stations, transit-oriented developments, and similar facilities, where appropriate;

Staff Response: Implementation Measure 8.1.1.f allows for a reduction from minimum parking standards for developers who implement a transportation demand management plan approved by SMART. The TSP does not address subsequent maximum parking requirements for these developments when there is a change of use that requires a greater number of parking spaces. Subsection 4.118(.03)(C) of the Development Code does not allow the Development Review Board to waive maximum parking standards "unless there is substantial evidence in the whole record to support a finding that the intent and purpose of the standards will be met in alternative ways, and the action taken will not violate any applicable federal, state, or regional standards". Staff recommends this implementation measure be revised to allow those parking spaces devoted to transit-oriented uses be excluded from the

required parking maximum calculation in subsequent changes of use of the property, subject to approval from the DRB. See revised Implementation Measure 8.1.1.f

(f) Road systems for new development shall be provided that can be adequately served by transit, including provision of pedestrian access to existing and identified future transit routes. This shall include, where appropriate, separate accessways to minimize travel distances;

Staff Response: Implementation Measure 6.1.1.c requires a new development on major transit streets to be designed to support transit use through site planning and pedestrian access.

(g) Along existing or planned transit routes, designation of types and densities of land uses adequate to support transit.

Staff Response: Figure 6.1 of the TSP identifies the City's likely transit streets in the year 2020. The streets have functional classifications of either arterial or collector and serve the City's primary residential, commercial, and industrial bases, which currently do and will continue to support the City's transit system.

(5) In MPO areas, local governments shall adopt land use and subdivision regulations to reduce reliance on the automobile which:

(a) Allow transit-oriented developments (TODs) on lands along transit routes;

Staff Response: Implementation Measure 6.1.1.d of the TSP would amend the City's Comprehensive Plan to encourage transit-oriented development along major transit routes.

(b) Implements a demand management program to meet the measurable standards set in the TSP in response to 660-012-0035(4);

Staff Response: Chapter 8 of the TSP details the City's Transportation Demand Management program. Implementation Measure 8.1.1.d of the TSP would amend the City's Development Code to require employers with more than 50 employees to submit transportation demand management programs to the City.

(c) Implements a parking plan which:

(A) Achieves a 10% reduction in the number of parking spaces per capita in the MPO area over the planning period. This may be accomplished through a combination of restrictions on development of new parking spaces and requirements that existing parking spaces be redeveloped to other uses;

(B) Aids in achieving the measurable standards set in the TSP in response to OAR 660-012-0035(4);

(C) Includes land use and subdivision regulations setting minimum and maximum parking requirements in appropriate locations, such as downtowns, designated regional or community centers, and transit oriented-developments; and

(C) Is consistent with demand management programs, transit-oriented development requirements and planned transit service.

Staff Response: The City's parking standards in Section 4.155 of the Development Code specify minimum and maximum parking ratios in compliance with the parking spaces per capita reduction goals of the Regional Transportation Plan and OAR 660-012-0035(4) of the Transportation Planning Rule.

(d) As an alternative to (c) above, local governments in an MPO may instead revise ordinance requirements for parking as follows:

(A) Reduce minimum off-street parking requirements for all non-residential uses from 1990 levels;

(B) Allow provision of on-street parking, long-term lease parking, and shared parking to meet minimum off-street parking requirements;

(C) Establish off-street parking maximums in appropriate locations, such as downtowns, designated regional or community centers, and transit-oriented developments;

(D) Exempt structured parking and on-street parking from parking maximums;

(E) Require that parking lots over 3 acres in size provide street-like features along major driveways (including curbs, sidewalks, and street trees or planting strips); and

(F) Provide for designation of residential parking districts.

Staff Response: The TSP is not proposing alternatives to (c) above.

(e) Require all major industrial, institutional, retail and office developments to provide either a transit stop on site or connection to a transit stop along a transit trunk route when the transit operator requires such an improvement.

Staff Response: Implementation Measure 6.1.1.c requires new development on major transit streets to be designed to support transit use.

(6) In developing a bicycle and pedestrian circulation plan as required by 660-012-0020(2)(d), local governments shall identify improvements to facilitate bicycle and pedestrian trips to meet local travel needs in developed areas. Appropriate improvements should provide for more direct, convenient and safer bicycle or pedestrian travel within and between residential areas and neighborhood activity centers (i.e., schools, shopping, transit stops). Specific measures include, for example, constructing walkways between cul-de-sacs and adjacent roads, providing walkways between buildings, and providing direct access between adjacent uses.

Staff Response: Tables 4.p through 4.r of the TSP identify short, mid, and long-range plan projects that will implement the City's transportation improvements, including bicycle and pedestrian facilities, to meet the travel needs of the City and the region. The implementation measures of Chapter 5 (Section 5.7) are designed to provide greater connectivity for bicycles and pedestrians within and between existing and new developments.

(7) Local governments shall establish standards for local streets and accessways 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 and accessways in order to reduce the cost of construction,

provide for more efficient use of urban land, provide for emergency vehicle access while discouraging inappropriate traffic volumes and speeds, and which accommodate convenient pedestrian and bicycle circulation. Not withstanding subsection (1) or (3) of this section, local street standards adopted to meet this requirement need not be adopted as land use regulations.

Staff Response: The functional classification of roads contained in Chapter 4 of the TSP is based on AASHTO's Policy on Geometric Design of Highways and Streets publication. Most street classifications in the TSP require six (6) additional feet of right of way from that required in the 1991 Transportation Master Plan due to the width and placement of bicycle lanes and street maintenance requirements. The pavement widths and right-of-way requirements are the minimum needed to meet the operational requirements of the proposed road facilities.

Stat. Auth.: ORS 183 & ORS 197
Stats. Implemented: ORS 197.040
Hist.: LCDC 1-1991, f. & cert. ef. 5-8-91; LCDC 4-1995, f. & cert. ef. 5-8-95; LCDC 11-1995, f. & cert. ef. 12-22-95; LCDD 6-1998, f. & cert. ef. 10-30-98

OAR 660-012-0050

Transportation Project Development

(1) For projects identified by ODOT pursuant to OAR Chapter 731, Division 15, project development shall occur in the manner set forth in that Division.

Staff Response: Implementation Measure 4.1.5.a commits the City to working with regional partners including ODOT in regional transportation planning efforts. The City will work with ODOT in the development of state owned or operated transportation projects pursuant to OAR 731, Division 15.

(2) Regional TSPs shall provide for coordinated project development among affected local governments. The process shall include:

(a) Designation of a lead agency to prepare and coordinate project development;

(b) A process for citizen involvement, including public notice and hearing, if project development involves land use decision-making. The process shall include notice to affected transportation facility and service providers, MPOs, and ODOT;

(c) A process for developing and adopting findings of compliance with applicable statewide planning goals, if any. This shall include a process to allow amendments to acknowledged comprehensive plans where such amendments are necessary to accommodate the project;

(d) A process for developing and adopting findings of compliance with applicable acknowledged comprehensive plan policies and land use regulations of individual local governments, if any. This shall include a process to allow amendments to

acknowledged comprehensive plans or land use regulations where such amendments are necessary to accommodate the project.

Staff Response: Not applicable. The City's TSP is a local TSP.

(3) Project development involves land use decision-making to the extent that issues of compliance with applicable requirements remain outstanding at the project development phase. Issues may include, but are not limited to, compliance with regulations protecting or regulating development within floodways and other hazard areas, identified Goal 5 resource areas, estuarine and coastal shoreland areas, and the Willamette River Greenway. Where project development involves land use decision-making, all unresolved issues of compliance with applicable acknowledged comprehensive plan policies and land use regulations shall be addressed and findings of compliance adopted prior to project approval. To the extent compliance has already been determined during transportation system planning, including adoption of a refinement plan, affected local governments may rely on and reference the earlier findings of compliance with applicable standards.

Staff Response: While the City's Comprehensive Plan and Development Code exempt many public roads, bicycle, and pedestrian paths from land use regulations, these regulations also require the careful planning of these projects to ensure the least amount of harm to significant natural resources. Unresolved transportation project issues subject to the City's land use regulations are addressed through the City's site development permitting process. The City conducts all required environmental impact studies for federally funded road projects and relies on its adopted Natural Resources Plan for the identification and protection of significant natural resources in road project planning.

(4) Except as provided in Subsection (1) of this section, where an Environmental Impact Statement (EIS) is prepared pursuant to the National Environmental Policy Act of 1969, project development shall be coordinated with the preparation of the EIS. All unresolved issues of compliance with applicable acknowledged comprehensive plan policies and land use regulations shall be addressed and findings of compliance adopted prior to issuance of the Final EIS.

Staff Response: See Policy 4.3.1 and Implementation Measure 4.3.1.a.

(5) If a local government decides not to build a project authorized by the TSP, it must evaluate whether the needs that the project would serve could otherwise be satisfied in a manner consistent with the TSP. If identified needs cannot be met consistent with the TSP, the local government shall initiate a plan amendment to change the TSP or the comprehensive plan to assure that there is an adequate transportation system to meet transportation needs.

Staff Response: It is the City's policy to build transportation improvements identified in the TSP. The TSP will be a component of the City's Comprehensive Plan. Amendment of the TSP would follow the process identified in the Comprehensive Plan for Plan modifications.

(6) Transportation project development may be done concurrently with preparation of the TSP or a refinement plan.

Staff Response: The City has identified transportation projects for the two alternatives identified in Chapter 4 of the TSP current with the preparation of the TSP.

Stat. Auth.: ORS 183 & ORS 197.040
Stats. Implemented: ORS 195.025, ORS 197.040, ORS 197.230, ORS 197.245, ORS 197.712 & ORS 197.717
Hist.: LCDC 1-1991, f. & cert. ef. 5-8-91; LCDD 2-1999 f. & cert. ef. 1-12-99

OAR 660-012-0055

Timing of Adoption and Update of Transportation System Plans; Exemptions

(1) MPOs shall complete regional TSPs for their planning areas by May 8, 1996. For those areas within a MPO, cities and counties shall adopt local TSPs and implementing measures within one year following completion of the regional TSP:

(a) If by May 8, 2000, a Metropolitan Planning Organization (MPO) has not adopted a regional transportation system plan that meets the VMT reduction standard in 0035(4) and the metropolitan area does not have an approved alternative standard established pursuant to 0035(5), then the cities and counties within the metropolitan area shall prepare and adopt an integrated land use and transportation plan as outlined in 0035(5)(c)(A)–(E). Such a plan shall be prepared in coordination with the MPO and shall be adopted within three years;

(b) Urban areas designated as MPOs subsequent to the adoption of this rule shall adopt TSPs in compliance with applicable requirements of this rule within three years of designation.

Staff Response: Adoption of the TSP by City Council is expected in mid 2003.

(2) For areas outside an MPO, cities and counties shall complete and adopt regional and local TSPs and implementing measures by May 8, 1997.

Staff Response: Not applicable. The City is inside an MPO.

(3) By November 8, 1993, affected cities and counties shall, for non-MPO urban areas of 25,000 or more, adopt land use and subdivision ordinances or amendments required by OAR 660-012-0045(3), (4)(a)–(f) and (5)(d). By May 8, 1994 affected cities and counties within MPO areas shall adopt land use and subdivision ordinances or amendments required by OAR 660-012-0045(3), (4)(a)–(e) and (5)(d). Affected cities and counties which do not have acknowledged ordinances addressing the requirements of this section by the deadlines listed above shall apply OAR 660-012-0045(3), (4)(a)–(f) and (5)(d) directly to all land use decisions and all limited land use decisions.

Staff Response: The City's Comprehensive Plan and Development Code were documents acknowledged by both LCDC and Metro in 1994.

(4) (a) Affected cities and counties that either:

(A) Have acknowledged plans and land use regulations that comply with this rule as of May 8, 1995, may continue to apply those acknowledged plans and land use regulations; or

(B) Have plan and land use regulations adopted to comply with this rule as of April 12, 1995, may continue to apply the provisions of this rule as they existed as of April 12, 1995, and may continue to pursue acknowledgment of the adopted plans and land use regulations under those same rule provisions provided such adopted plans and land use regulations are acknowledged by April 12, 1996. Affected cities and counties that qualify and make this election under this subsection shall update their plans and land use regulations to comply with the 1995 amendments to OAR 660-012-0045 as part of their transportation system plans.

(b) Affected cities and counties that do not have acknowledged plans and land use regulations as provided in subsection (a) of this section, shall apply relevant sections of this rule to land use decisions and limited land use decisions until land use regulations complying with this amended rule have been adopted.

Staff Response: The City's Comprehensive Plan and Development Code were acknowledged documents by both LCDC and Metro in 1994 and in compliance with OAR 660-012-0045(3).

(5) Cities and counties shall update their TSPs and implementing measures as necessary to comply with this division at each periodic review subsequent to initial compliance with this division. This shall include a reevaluation of the land use designations, densities and design standards in the following circumstances:

(a) If the interim benchmarks established pursuant to OAR 660-012-0035(6) have not been achieved; or

(b) If a refinement plan has not been adopted consistent with the requirements of OAR 660-012-0025(3).

Staff Response: The TSP will replace the City's 1991 Transportation Master Plan and will be the City's first TSP. Development of the TSP is being done in conjunction with the City's periodic review of its Comprehensive Plan and Development Code. The City reevaluated its land use designations, densities and design standards in the rewrite of its Comprehensive Plan and Development Code in November 2000. All subsequent periodic reviews will reevaluate the TSP.

(6) The director may grant a whole or partial exemption from the requirements of this division to cities under 10,000 population, counties under 25,000 population, and for areas of a county within an urban growth boundary that contains a population less than 10,000. Eligible jurisdictions may request that the director approve an exemption from all or part of the requirements in this division. Exemptions shall be for a period determined by the Director or until the jurisdiction's next periodic review, whichever is shorter.

(a) The director's decision to approve an exemption shall be based upon the following factors:

(A) Whether the existing and committed transportation system is generally adequate to meet likely transportation needs;

(B) Whether the new development or population growth is anticipated in the planning area over the next five years;

(C) Whether major new transportation facilities are proposed which would affect the planning areas;

(D) Whether deferral of planning requirements would conflict with accommodating state or regional transportation needs; and

(E) Consultation with the Oregon Department of Transportation on the need for transportation planning in the area, including measures needed to protect existing transportation facilities.

(b) The director's decision to grant an exemption under this section is appealable to the Commission as provided in OAR 660-002-0020 (Delegation of Authority Rule).

Staff Response: Not applicable. The City is not seeking an exemption from this division.

(7) Portions of TSPs and implementing measures adopted as part of comprehensive plans prior to the responsible jurisdiction's periodic review shall be reviewed pursuant to OAR Chapter 660, Division 18, Post Acknowledgment Procedures.

Staff Response: It is the City's intent to adopt and incorporate the TSP into the Comprehensive Plan as part of the periodic review process of the Plan and Code.

Stat. Auth.: ORS 183, ORS 197.040 & ORS 197.245
Stats. Implemented: ORS 195.025, ORS 197.040, ORS 197.230, ORS 197.245, ORS 197.610 - ORS 197.625, ORS 197.628 - ORS 197.646, ORS 197.712 & ORS 197.717
Hist.: LCDC 1-1991, f. & cert. ef. 5-8-91; LCDC 1-1993, f. & cert. ef. 6-15-93; LCDC 4-1995, f. & cert. ef. 5-8-95; LCDD 6-1998, f. & cert. ef. 10-30-98; LCDD 2-2000, f. & cert. ef. 2-4-00

OAR 660-012-0060

Plan and Land Use Regulation Amendments

(1) Amendments to functional plans, acknowledged comprehensive plans, and land use regulations which significantly affect a transportation facility shall assure that allowed land uses are consistent with the identified function, capacity, and performance standards (e.g. level of service, volume to capacity ratio, etc.) of the facility. This shall be accomplished by either:

(a) Limiting allowed land uses to be consistent with the planned function, capacity, and performance standards of the transportation facility;

(b) Amending the TSP to provide transportation facilities adequate to support the proposed land uses consistent with the requirements of this division;

(c) Altering land use designations, densities, or design requirements to reduce demand for automobile travel and meet travel needs through other modes; or

(d) Amending the TSP to modify the planned function, capacity and performance standards, as needed, to accept greater motor vehicle congestion to promote mixed use, pedestrian friendly development where multimodal travel choices are provided.

Staff Response: The City's Comprehensive Plan and Development Code both have provisions that require adequate transportation facilities be provided with any amendment of either the Comprehensive Plan Map or Zoning Map. The Plan Amendment process of the Comprehensive Plan (page 8), Section 4.d., requires that transportation access be adequately addressed with proposed change to the Comprehensive Plan (including map amendments). Section 4.197(.02)(D) of the Development Code requires that existing primary facilities (including transportation facilities) be adequate or can be made adequate to serve proposed developments. Neither the Plan nor Code are explicit about the potential need to amend the City's TSP should an amendment to the Plan or Code or a proposed development project necessitate a change to the planned transportation facilities of the TSP. The Plan and Code should be amended to require findings of compliance with the planned transportation facilities of the TSP with any amendment to the Plan or Code (including changes to the Plan Map or Zoning Map) or development proposal that would impact the City's planned transportation facilities. Should the TSP require amendment as a result of findings of noncompliance with the TSP, the TSP shall be amended per the requirements of the Oregon Transportation Planning Rule and the Oregon Highway Plan, Actions 1F.2 - 1F.6.

(2) A plan or land use regulation amendment significantly affects a transportation facility if it:

(a) Changes the functional classification of an existing or planned transportation facility;

(b) Changes standards implementing a functional classification system;

(c) Allows types or levels of land uses which would result in levels of travel or access which are inconsistent with the functional classification of a transportation facility; or

(d) Would reduce the performance standards of the facility below the minimum acceptable level identified in the TSP.

Staff Response: See response to (1) above.

(3) Determinations under subsections (1) and (2) of this section shall be coordinated with affected transportation facility and service providers and other affected local governments.

Staff Response: The City's Comprehensive Plan and Development Code require notification to DLCD and ODOT of all changes to the Plan and Code.

(4) The presence of a transportation facility or improvement shall not be a basis for an exception to allow residential, commercial, institutional or industrial development on rural lands under this division or OAR 660-004-0022 and 660-004-0028.

Staff Response: Not applicable. The City's urban growth boundary does not contain land intended for rural use.

(5) In determining whether proposed land uses would affect or be consistent with planned transportation facilities as provided in 0060(1) and (2), local governments shall give full credit for potential reduction in vehicle trips for uses located in mixed-use, pedestrian-friendly centers, and neighborhoods as provided in (a)–(d) below;

(a) Absent adopted local standards or detailed information about the vehicle trip reduction benefits of mixed-use, pedestrian-friendly development, local governments shall assume that uses located within a mixed-use, pedestrian-friendly center, or neighborhood, will generate 10% fewer daily and peak hour trips than are specified in available published estimates, such as those provided by the Institute of Transportation Engineers (ITE) Trip Generation Manual that do not specifically account for the effects of mixed-use, pedestrian-friendly development. The 10% reduction allowed for by this section shall be available only if uses which rely solely on auto trips, such as gas stations, car washes, storage facilities, and motels are prohibited;

(b) Local governments shall use detailed or local information about the trip reduction benefits of mixed-use, pedestrian-friendly development where such information is available and presented to the local government. Local governments may, based on such information, allow reductions greater than the 10% reduction required in (a);

(c) Where a local government assumes or estimates lower vehicle trip generation as provided in (a) or (b) above, it shall assure through conditions of approval, site plans, or approval standards that subsequent development approvals support the development of a mixed-use, pedestrian-friendly center or neighborhood and provide for on-site bike and pedestrian connectivity and access to transit as provided for in 0045(3) and (4). The provision of on-site bike and pedestrian connectivity and access to transit may be accomplished through application of acknowledged ordinance provisions which comply with 0045(3) and (4) or through conditions of approval or findings adopted with the plan amendment that assure compliance with these rule requirements at the time of development approval; and

(d) The purpose of this section is to provide an incentive for the designation and implementation of pedestrian-friendly, mixed-use centers and neighborhoods by lowering the regulatory barriers to plan amendments which accomplish this type of development. The actual trip reduction benefits of mixed-use, pedestrian- friendly development will vary from case to case and may be somewhat higher or lower than presumed pursuant to (a) above. The Commission concludes that this assumption is warranted given general information about the expected effects of mixed-use, pedestrian- friendly development and its intent to encourage changes to plans and development patterns. Nothing in this section is intended to affect the application of provisions in local plans or ordinances which provide for the calculation or assessment of systems development charges or in preparing conformity determinations required under the federal Clean Air Act.

Staff Response: The sub-area modeling performed by Metro for the City's TSP assumed 10 percent fewer p.m. peak hour trips from mixed-use developments.

(6) Amendments to acknowledged comprehensive plans and land use regulations which meet all of the criteria listed in (a)-(c) below shall include an amendment to the comprehensive plan, transportation system plan the adoption of a local street plan, access management plan, future street plan or other binding local transportation plan to provide for on-site alignment of streets or accessways with existing and planned arterial, collector, and local streets surrounding the site as necessary to implement the requirements in Section 0020(2)(b) and Section 0045(3) of this division:

(a) The plan or land use regulation amendment results in designation of two or more acres of land for commercial use;

(b) The local government has not adopted a TSP or local street plan which complies with Section 0020(2)(b) or, in the Portland Metropolitan Area, has not complied with Metro's requirement for street connectivity as contained in Title 6, Section 3 of the Urban Growth Management Functional Plan; and

(c) The proposed amendment would significantly affect a transportation facility as provided in 0060(2).

Staff Response: The City will seek acknowledgement of its November 2000 versions of its Comprehensive Plan and Development Code after adoption of the TSP. Subsection 4.236(.02) of the Development Code requires the continuation of the principal streets existing in the adjoining areas or a proper projection when adjoining undeveloped property.

(7) A "mixed-use, pedestrian-friendly center or neighborhood" for the purposes of this rule, means:

(a) Any one of the following:

(A) An existing central business district or downtown;

(B) An area designated as a central city, regional center, town center or main street in the Portland Metro 2040 Regional Growth Concept;

(C) An area designated in an acknowledged comprehensive plan as a transit oriented development or a pedestrian district; or

(D) An area designated as a special transportation area as provided for in the Oregon Highway Plan.

(b) An area other than those listed in (a) which includes or is planned to include the following characteristics:

(A) A concentration of a variety of land uses in a well-defined area, including the following:

(i) Medium to high density residential development (12 or more units per acre);

(ii) Offices or office buildings;

(iii) Retail stores and services;

(iv) Restaurants; and

(v) Public open space or private open space which is available for public use, such as a park or plaza.

(B) Generally include civic or cultural uses;

(C) A core commercial area where multi-story buildings are permitted;

(D) Buildings and building entrances oriented to streets;

(E) Street connections and crossings that make the center safe and conveniently accessible from adjacent areas;

(F) A network of streets and, where appropriate, accessways and major driveways that make it attractive and highly convenient for people to walk between uses within the center or neighborhood, including streets and major driveways within the center with wide sidewalks and other features, including pedestrian-oriented street crossings, street trees, pedestrian-scale lighting and on-street parking;

(G) One or more transit stops (in urban areas with fixed route transit service); and

(H) Limit or do not allow low-intensity or land extensive uses, such as most industrial uses, automobile sales and services, and drive-through services.

Staff Response: Not applicable to the City's TSP.

Stat. Auth.: ORS 183 & ORS 197.040
Stats. Implemented: ORS 195.025, ORS 197.040, ORS 197.230, ORS 197.245, ORS 197.610 - ORS 197.625, ORS 197.628 - ORS 197.646, ORS 197.712, ORS 197.717 & ORS 197.732
Hist.: LCDC 1-1991, f. & cert. ef. 5-8-91; LCDD 6-1998, f. & cert. ef. 10-30-98; LCDD 6-1999, f. & cert. ef. 8-6-99

OAR 660-012-0065

Transportation Improvements on Rural Lands

(1) This rule identifies transportation facilities, services and improvements which may be permitted on rural lands consistent with Goals 3, 4, 11, and 14 without a goal exception.

Staff Response: Not applicable. The City's TSP plans for urban lands within the City's urban growth boundary.

(2) For the purposes of this rule, the following definitions apply:

(a) "Access Roads" means low volume public roads that principally provide access to property or as specified in an acknowledged comprehensive plan;

(b) "Collectors" means public roads that provide access to property and that collect and distribute traffic between access roads and arterials or as specified in an acknowledged comprehensive plan;

(c) "Arterials" means state highways and other public roads that principally provide service to through traffic between cities and towns, state highways and major destinations or as specified in an acknowledged comprehensive plan;

(d) "Accessory Transportation Improvements" means transportation improvements that are incidental to a land use to provide safe and efficient access to the use;

(e) "Channelization" means the separation or regulation of conflicting traffic movements into definite paths of travel by traffic islands or pavement markings to facilitate the safe and orderly movement of both vehicles and pedestrians. Examples include, but are not limited to, left turn refuges, right turn refuges including the construction of islands at intersections to separate traffic, and raised medians at driveways or intersections to permit only right turns. "Channelization" does not include continuous median turn lanes;

(f) "Realignment" means rebuilding an existing roadway on a new alignment where the new centerline shifts outside the existing right of way, and where the existing road surface is either removed, maintained as an access road or maintained as a connection between the realigned roadway and a road that intersects the original alignment. The realignment shall maintain the function of the existing road segment being realigned as specified in the acknowledged comprehensive plan;

(g) "New Road" means a public road or road segment that is not a realignment of an existing road or road segment.

Staff Response: Not applicable to the City's TSP.

(3) The following transportation improvements are consistent with goals 3, 4, 11, and 14 subject to the requirements of this rule:

Staff Response: Not applicable to the City's TSP.

(a) Accessory transportation improvements for a use that is allowed or conditionally allowed by ORS 215.213, 215.283 or OAR 660, Division 6 (Forest Lands);

(b) Transportation improvements that are allowed or conditionally allowed by ORS 215.213, 215.283 or OAR 660, Division 6 (Forest Lands);

(c) Channelization not otherwise allowed under subsections (a) or (b) of this section;

(d) Realignment of roads not otherwise allowed under subsection (a) or (b) of this section;

(e) Replacement of an intersection with an interchange;

(f) Continuous median turn lane;

(g) New access roads and collectors within a built or committed exception area, or in other areas where the function of the road is to reduce local access to or local traffic

on a state highway. These roads shall be limited to two travel lanes. Private access and intersections shall be limited to rural needs or to provide adequate emergency access.

(h) Bikeways, footpaths and recreation trails not otherwise allowed as a modification or part of an existing road;

(i) Park and ride lots;

(j) Railroad mainlines and branchlines;

(k) Pipelines;

(l) Navigation channels;

(m) Replacement of docks and other facilities without significantly increasing the capacity of those facilities;

(n) Expansions or alterations of public use airports that do not permit service to a larger class of airplanes; and

(o) Transportation facilities, services and improvements other than those listed in this rule that serve local travel needs. The travel capacity and level of service of facilities and improvements serving local travel needs shall be limited to that necessary to support rural land uses identified in the acknowledged comprehensive plan or to provide adequate emergency access.

(4) Accessory transportation improvements required as a condition of development listed in subsection (3)(a) of this rule shall be subject to the same procedures, standards and requirements applicable to the use to which they are accessory.

Staff Response: Not applicable to the City's TSP.

(5) For transportation uses or improvements listed in subsection (3)(d) to (g) and (o) of this rule within an exclusive farm use (EFU) or forest zone, a jurisdiction shall, in addition to demonstrating compliance with the requirements of ORS 215.296:

(a) Identify reasonable build design alternatives, such as alternative alignments, that are safe and can be constructed at a reasonable cost, not considering raw land costs, with available technology. Until adoption of a local TSP pursuant to the requirements of OAR 660-012-0035, the jurisdiction shall consider design and operations alternatives within the project area that would not result in a substantial reduction in peak hour travel time for projects in the urban fringe that would significantly reduce peak hour travel time. A determination that a project will significantly reduce peak hour travel time is based on OAR 660-012-0035(10). The jurisdiction need not consider alternatives that are inconsistent with applicable standards or not approved by a registered professional engineer;

(b) Assess the effects of the identified alternatives on farm and forest practices, considering impacts to farm and forest lands, structures and facilities, considering the effects of traffic on the movement of farm and forest vehicles and equipment and considering the effects of access to parcels created on farm and forest lands; and

(c) Select from the identified alternatives, the one, or combination of identified alternatives that has the least impact on lands in the immediate vicinity devoted to farm or forest use.

Staff Response: Not applicable to the City's TSP.

(6) Notwithstanding any other provision of this division, if a jurisdiction has not met the deadline for TSP adoption set forth in OAR 660-012-0055, or any extension thereof, a transportation improvement that is listed in section (5) of this rule and that will significantly reduce peak hour travel time as provided in OAR 660-0120-035(10) may be allowed in the urban fringe only if the jurisdiction applies either:

(a) The criteria applicable to a "reasons" exception provided in Goal 2 and OAR 660, Division 4; or

(b) The evaluation and selection criteria set forth in OAR 660-012-0035.

Staff Response: Not applicable to the City's TSP.

Stat. Auth.: ORS 183, ORS 197.040, ORS 197.245, ORS 215.213, ORS 215.283 & ORS 215.296
Stats. Implemented: ORS 195.025, ORS 197.040, ORS 197.230, ORS 197.245, ORS 197.712, ORS 197.717, ORS 197.232, ORS 215.213 & ORS 215.283
Hist.: LCDC 1-1991, f. & cert. ef. 5-8-91; LCDC 3-1995, f. & cert. ef. 3-31-95; Administrative correction 9-29-98

OAR 660-012-0070

Exceptions for Transportation Improvements on Rural Land

(1) Transportation facilities and improvements which do not meet the requirements of OAR 660-012-0065 require an exception to be sited on rural lands.

Staff Response: Not applicable to the City's TSP.

(2) Where an exception to Goals 3, 4, 11, or 14 is required, the exception shall be taken pursuant to ORS 197.732(1)(c), Goal 2, OAR Chapter 660, Division 4 and this division.

Staff Response: Not applicable to the City's TSP.

(3) An exception adopted as part of a TSP or refinement plan shall, at a minimum, decide need, mode, function and general location for the proposed facility or improvement:

(a) The general location shall be specified as a corridor within which the proposed facility or improvement is to be located, including the outer limits of the proposed location. Specific sites or areas within the corridor may be excluded from the exception to avoid or lessen likely adverse impacts;

(b) The size, design and capacity of the proposed facility or improvement shall be described generally, but in sufficient detail to allow a general understanding of the

likely impacts of the proposed facility or improvement. Measures limiting the size, design or capacity may be specified in the description of the proposed use in order to simplify the analysis of the effects of the proposed use;

(c) The adopted exception shall include a process and standards to guide selection of the precise design and location within the corridor and consistent with the general description of the proposed facility or improvement. For example, where a general location or corridor crosses a river, the exception would specify that a bridge crossing would be built but would defer to project development decisions about precise location and design of the bridge within the selected corridor subject to requirements to minimize impacts on riparian vegetation, habitat values, etc.;

(d) Land use regulations implementing the exception may include standards for specific mitigation measures to offset unavoidable environmental, economic, social or energy impacts of the proposed facility or improvement or to assure compatibility with adjacent uses.

Staff Response: Not applicable to the City's TSP.

(4) To address Goal 2, Part II(c)(1) the exception shall demonstrate that there is a transportation need identified consistent with the requirements of OAR 660-012-0030 which cannot reasonably be accommodated through one or a combination of the following measures not requiring an exception:

(a) Alternative modes of transportation;

(b) Traffic management measures; and

(c) Improvements to existing transportation facilities.

Staff Response: Not applicable to the City's TSP.

(5) To address Goal 2, Part II(c)(2), the exception shall demonstrate that non-exception locations cannot reasonably accommodate the proposed transportation improvement or facility.

Staff Response: Not applicable to the City's TSP.

(6) To determine the reasonableness of alternatives to an exception under sections (4) and (5) of this rule, cost, operational feasibility, economic dislocation and other relevant factors shall be addressed. The thresholds chosen to judge whether an alternative method or location cannot reasonably accommodate the proposed transportation need or facility must be justified in the exception.

Staff Response: Not applicable to the City's TSP.

(7) To address Goal 2, Part II(c)(3), the exception shall:

(a) Compare the economic, social, environmental and energy consequences of the proposed location and other alternative locations requiring exceptions;

(b) Determine whether the net adverse impacts associated with the proposed exception site are significantly more adverse than the net impacts from other locations which would also require an exception. A proposed exception location would fail to meet this requirement only if the affected local government concludes that the impacts associated with it are significantly more adverse than the other identified exception sites;

(c) The evaluation of the consequences of general locations or corridors need not be site-specific, but may be generalized consistent with the requirements of section (3) of this rule.

Staff Response: Not applicable to the City's TSP.

(8) To address Goal 2, Part II(c)(4), the exception shall:

(a) Describe the adverse effects that the proposed transportation improvement is likely to have on the surrounding rural lands and land uses, including increased traffic and pressure for nonfarm or highway oriented development on areas made more accessible by the transportation improvement;

(b) Adopt as part of the exception, facility design and land use measures which minimize accessibility of rural lands from the proposed transportation facility or improvement and support continued rural use of surrounding lands.

Staff Response: Not applicable to the City's TSP.

Stat. Auth.: ORS 183 & ORS 197.040
Stats. Implemented: ORS 195.025, ORS 197.040, ORS 197.230, ORS 197.245, ORS 197.712, ORS 197.717 & ORS 197.732
Hist.: LCDC 1-1991, f. & cert. ef. 5-8-91

GLOSSARY OF TERMS

GLOSSARY OF TERMS

3/36 Schedule	A compressed work week schedule of three 12-hour days worked during a single workweek, creating two days off each week.
4/40 Schedule	A compressed work week of four 10-hour days worked during a single workweek, creating a day off each week.
9/80 Schedule	A compressed work week schedule of 80 hours worked in nine days during a two-week period. Usually consists of eight nine-hour days and one eight-hour day, creating a day off every two weeks.
American Association of State Highway and Transportation Officials (AASHTO)	This organization publishes *A Policy on Geometric Design of Highways and Streets.* This is a national publication that provides a general breakdown of roadway classifications, among many other things.
Baseline Auto Trip Rate	The daily average auto trip rates for a work site established by the initial employee commute options survey.
Base Network	The network representing all streets and transportation facilities that currently (2001) exist in Wilsonville and the surrounding Urban Growth Area, and including the additional facilities that have already been planned and funded for construction prior to June 30, 2002.
Bicycle Facility	Any path, lane, route, or shared roadway specifically designated in some manner as being open to bicycle travel, either for the exclusive use of bicycles or shared use with other modes of travel.
Bicycle Program	Provides support services to those employees that bicycle to work. Examples include: safe/secure bicycle storage, shower facilities, and subsidy of commute bicycle purchase.
Capital Improvements	Long-term physical street improvements traditionally identified with public transportation investments.
Carpool	An arrangement in which two or more people share the use and/or cost of traveling in privately owned automobiles between fixed points on a regular basis.
Collector Street	A street or roadway that typically provides land access and traffic circulation within residential, commercial, and industrial areas. It distributes trips from the arterial system to the ultimate destination and vice versa. Collector streets typically collect traffic from neighborhood streets. The City of Wilsonville further categorizes collector streets as major and minor.

Comprehensive Plan	A document that defines a jurisdiction's goals and policies and visualizes the direction the jurisdiction will take over the next twenty years. Specific elements and sub-elements of Wilsonville's Comprehensive Plan include Citizen Involvement, Urban Growth Management, Public Facilities and Services, Land Use and Development, and master plans dealing with transportation, parks and recreation, water, storm water, wastewater collection, and wastewater treatment.
Concurrency Management System	A management system that prohibits development if the development causes the level of service to decline below standards adopted in the Comprehensive Plan, unless transportation improvements or strategies to accommodate the development impacts are made concurrently with the development. The Public Facilities and Services chapter of Wilsonville's Comprehensive Plan contains the City's concurrency policies.
Congestion	Heavy traffic volumes make movement on the street or roadway at optimal legal speeds difficult.
Corridor	In planning, a broad geographical band that follows a general directional flow or connects major sources of trips. It may contain a number of streets, highways, and transit lines or routes.
Critical Volume	The sum of all conflicting movements, or movements that cannot occur at the same time, at an intersection. The critical volume is used in a volume-to-capacity calculation.
Cycle Failure	A cycle failure is when a vehicle must wait through more than one cycle length at a signalized intersection before clearing the intersection.
Cycle Length	The time in seconds allotted to a traffic signal to permit all movements to proceed through the intersection at least once.
Deficiency	Specific to this plan, a deficiency exists when a transportation facility does not operate at or is not designed to meet a predetermined standard.
Delay	Time lost by a traveler due to congestion. Delay is measured by the time needed to reach destinations at the posted speed limits versus a slower congested speed. A specific delay, known as stopped delay, refers to the time spent by a traveler when the vehicle is not moving.
ECO Rule	Employee Commute Options (ECO) rule. Part of the Oregon Department of Environmental Quality's regional air quality maintenance plan, needed for compliance with the Federal Clean Air Act. Requires affected employers with 50 or more employees at one work site to reduce the number of auto trips taken to the work site by 10 percent over three years.
EMME/2	Transportation planning (modeling) software.
Employer Shuttles	Employer shuttles connect employees with regional transit service that is nearby but not within walking distance. They are typically free of charge to employees.

Employment Center	Locations having a concentration of jobs or employment.
Facility	A physical structure allowing a transportation mode to operate (i.e., arterial streets, sidewalks, bicycle trails, etc.).
Full or Half Transit Pass	For employees who take transit to work on a regular basis, the employer pays for all or half of the cost of a monthly transit pass. This program is appropriate for Wilsonville employees who may use Tri-Met or other regional transit providers for a part of their commute even though SMART is fareless.
Functional Classification	A roadway designation system that categorizes roadways by purpose, intent, and design constraints.
Grade Crossing	A crossing of highways, railroad tracks, other guide ways, and/or pedestrian walkways at the same level (grade).
Grade Separated	The use of tunnels, bridges, and other structures to separate conflicting movements by levels. Conflicting movements can be the same or different modes of travel.
Guaranteed Ride Home Program	Free taxi rides for employees who leave their cars at home if a personal or family emergency arises. SMART and other regional transit providers offer this service.
High Occupancy Vehicle (HOV)	A vehicle occupied by two or more people, thereby qualifying for travel in a High Occupancy Vehicle (HOV) lane.
High Transit Service	Frequent rail and bus service of 15-minute intervals or less during peak commuting times with multiple bus routes serving the location.
Impact Fee	A charge imposed on growth that is proportionate to the cost of transportation improvements made necessary by growth (i.e., new development).
Intercity Transit	Transit service that is provided between two or more cities.
Intersection Accident	An intersection accident, as defined in this plan, is a vehicle-related accident that occurred within 150 feet of two or more intersecting streets.
Intracity Transit	Transit service that is provided within one city.
Land Use	A specific type of development that is generally associated with a particular property.
Level of Service (LOS)	A gauge for evaluating system performance for roadways, transit, and non-motorized and other transportation modes. For roadway intersections, the LOS is usually rated from LOS "A" (low delay of low volume-to-capacity ratios) to LOS "F" (delay exceeding 60 seconds per vehicle, or volume-to-capacity ratios greater than 1.0). See volume-to-capacity ratio in this glossary.
Low Transit Service	All locations with some bus service, but not defined as medium or high.

Major Arterial	A street, roadway, or highway that serves major centers of activity and usually has the highest traffic volumes in the region. A major arterial serves most trips entering and leaving urban areas and through trips, thus serving significant interurban travel between major suburban or business districts. A major arterial usually has access that is fully or partially controlled.
Measure of Effectiveness	A quantitative representation used to measure how well an activity, task, function, or implemented project has performed.
Medium Transit Service	At least two bus routes serving a location in 20-minute intervals, or less during peak commuting times.
Metropolitan Planning Organization (MPO)	An individual agency designated by the State governor in each federally recognized urbanized area to coordinate transportation planning for that metropolitan region. Metro is that agency for Clackamas, Multnomah and Washington Counties.
Midblock Accident	A midblock accident, as defined in this plan, is a vehicle-related accident that occurred more than 150 feet away from two or more intersecting streets.
Minor Arterial	A street or roadway that typically interconnects, augments, and serves trips of shorter distance and lower level of mobility than principal arterials. A minor arterial generally does not penetrate identifiable neighborhoods and places more emphasis on land access than a major arterial.
Mitigation	Measures required to improve a transportation facility to a specific standard.
Mobility	The ability of any individual to move about the region.
Mode	A particular form of travel distinguished by the means of transportation used, such as foot, bicycle, vehicle, bus, train, boat, plane, etc.
Mode Split Target	A mode split target refers to the split, or approximate percentage, of the modes of transportation envisioned for use within a designated area.
Model	A computerized mathematical representation of traffic movement through a network based on existing and future traffic volumes, employment centers, land uses, population, and capacity.
Multi-modal	Concerned with or involving more than one transportation mode.
Network	In planning, a computerized system of links and nodes that describes a transportation system. In highway engineering, the configuration of highways that constitutes the total system, and in transit operations, a system of transit lines or routes usually designed for coordinated operation.
Network Alternative	As pertaining to this plan, a network alternative refers to a unique set of transportation improvements coded into the model network.
Non-Motorized	Generally referring to bicycle, pedestrian, equestrian, or other modes of transportation not involving a motor vehicle.

On-Site Amenities/Services	Services that companies make available at their work sites. Examples include cafes or restaurants, dry cleaners, day care centers and bank machines.
Origin-Destination Study	A study of where person or vehicle trips begin and end. It may also include trip purposes and frequencies.
Paratransit	Transit service that is publicly or privately operated, scheduled or dispatched on demand, and providing point-to-point transit service. Normally used in specialized applications with user eligibility limitations (e.g., elderly, handicapped, etc.) or where demand is not sufficient to support fixed-route service.
Park-and-Ride	An access mode to transit and other HOV modes in which patrons drive private automobiles or ride bicycles to a transit station, stop, or carpool/vanpool waiting area and park the vehicle in the area provided for that purpose.
Parking Cash-out	A parking management strategy that discontinues free or subsidized employee parking and charges employees a fee to park. The employer then provides each employee an allowance, or cash-out amount, that covers the cost of the parking fee. Employees can choose to apply the full cash-out amount to the parking fee if they wish to continue driving alone, or they can receive it as a cash payment if they choose to use a commuting alternative.
Parking Fees	A parking management strategy that discontinues free or subsidized employee parking and charges employees a fee to park. This strategy is usually combined with other strategies for encouraging use of commuting alternatives, thereby creating strong incentives for employees to leave their cars at home.
Peak Period	The period of the day during which the maximum amount of travel occurs. It may be specified as the morning (a.m.) or afternoon or evening (p.m.) peak.
Pedestrian Access Level	The Pedestrian Environment Factor (PEF) of a location, which is a composite measure of pedestrian friendliness based on the ease of street crossings, sidewalk continuity, local street characteristics (grid vs. cul-de-sac), and topography. Detailed information is contained in *The Pedestrian Environment, Volume 4A*, prepared by Parsons Brinckerhoff Quade and Douglas for 1000 Friends of Oregon, December 1993.
Prioritization	The act of categorizing Transportation Improvement Programs into three separate groups (high, medium, and low) giving projects in some groups precedence over projects in other groups.
Public Transportation	Regular transportation service by bus, rail, paratransit, van, airplane, or ship offered by a public operator.
Right-of-Way (ROW)	Property purchased for and expected to contain transportation facilities.
Single-Occupancy Vehicle (SOV)	A vehicle occupied by only one person.

Target Auto Trip Reduction	The percentage of auto trips taken to a work site that an employer expects to reduce from a particular strategy. The ECO rule asks employers to develop an overall target auto trip reduction of 10 percent of their baseline auto trip rate.
Telecommuting	Employees perform regular work duties at home or at a work center closer to home, rather than commuting from home to work. This can be full time or on selected workdays.
Traffic Analysis Zone (TAZ)	Well-defined areas in the transportation model that were designed to contain consistent land use and common points of access to the street system.
Transportation Demand	The quantity of transportation desired by users.
Transportation Demand Management (TDM)	The concept of managing or reducing travel demand rather than increasing the supply of transportation facilities. It may include programs to shift demand from single-occupant vehicles to other modes such as spreading the peak period by staggering work hours, using other modes of transportation such as walking, bicycling, or transit, promoting high occupancy vehicle (HOV) use, limiting parking to encourage other modes of travel, and/or telecommuting.
Transportation Improvement Program (TIP)	The five-year, specific multi-modal program of regional transportation improvements for highways, transit, and other modes. The TIP consists of projects drawn from the TSP as well as local plans and programs. The projects are directed at improving the overall efficiency and people-moving capabilities of the existing transportation system.
Transportation Planning Rule (TPR)	State Administrative Rule updated in September 1995, which sets requirements for the preparation, adoption, refinement, implementation, and amendment of transportation systems plans. The TPR requires all cities and counties to prepare and adopt a local transportation system plan consistent with TPR guidelines and other already adopted state and regional plans.
Transportation Master Plan (TMP)	A document intended to support and expand upon the goals and policies of the transportation element in the Comprehensive Plan. The TMP was intended to ensure that the City's transportation infrastructure and its management meet the needs of the City's population for safe, efficient, and economical local transportation and access to regional transportation services and facilities.
Transportation Systems Plan (TSP)	Much like a TMP, a TSP is a document intended to support and expand upon the goals and policies of the transportation element in the Comprehensive Plan. The TSP is intended to ensure that the City's transportation infrastructure and its management meet the needs of the City's rate of population and development growth for safe, efficient, and economical local transportation and access to regional transportation services and facilities.

Transportation Systems Management (TSM)	TSM challenges the existing transportation system to be used in a more efficient way. TSM techniques are usually considered low-cost fixes to transportation problems and can include implementing peak-hour reversible lanes, converting two two-way streets to a one-way couplet, adding signals, adding turn lanes at intersections, restricting peak-hour turning movements, using shoulders for through traffic during peak hours, or coordinating signal timing.
Urban Growth Area (UGA)	The urban growth area, as defined in this document, is the area outside the Wilsonville city limits where urban growth is expected within the next twenty years.
Urban Growth Boundary (UGB)	The boundary for the urban growth area limits.
Urban Growth Management Functional Plan (UGMFP)	The Urban Growth Management Functional Plan is one of the documents that implements regional goals and objectives as adopted by the Metro Council. All cities and counties in the Metro region are required to amend their Comprehensive Plans and development ordinances to conform to Functional Plan requirements.
Vanpool	A group of seven to fifteen commuters that live near each other and who share the ride in one vehicle, often a van. The employer may subsidize the cost of operating and maintaining the van.
Vehicle Hours of Travel	On highways, the aggregate amount of time spent by all travelers in the region on all facilities for a specified time period.
Vehicle Miles of Travel (VMT)	On highways, a measurement of the total miles traveled by all vehicles in the region for a specified time period.
Volume-to-Capacity Ratio (v/c)	A measure of potential roadway capacity -- the ratio of the existing amount of critical vehicular volume for a roadway or intersection to the amount of designed capacity on the roadway or intersection.
Vehicles Per Hour (vph)	The number of vehicles traversing a given point in one hour.

REFERENCES

REFERENCES

American Association of State Highway and Transportation Officials (AASHTO), Washington, D.C.

2000 Manual on Uniform Traffic Control Devices (MUTCD)

1999 Guide for the Development of Bicycle Facilities, 3rd Edition

1990 A Policy on Geometric Design of Highways and Streets

American Planning Association

APA Recommendations for Pedestrian, Bicycle, and Transit Friendly Development Ordinances

City of Wilsonville, Wilsonville, Oregon.

2001 Wilsonville Comprehensive Plan

2001 Planning and Land Development Ordinance (Development Code)

2001 City of Wilsonville Street Standards

1997 Historical Development Patterns

1994 Parks and Recreation Master Plan

1993 Bicycle and Pedestrian Master Plan

1991 Transportation Master Plan

1987 Wilsonville Public Works Standards

Dammasch Area Transportation – Efficient Land Use Plan (DATELUP)

Future Search

North Wilsonville Industrial Area Proposed Concept Plan

Public Facilities Transportation Strategy Ordinance No.463

SMART Transit Master Plan

Street Lighting Resolution No. 881

Traffic Management Ordinance 431

Urban Renewal Plan (The Year 2000 Plan)

West Side Master Plan

Clackamas County, Oregon

2002 Clackamas County's Comprehensive Plan. (Chapter 5, Clackamas County Transportation Plan)

Federal Guidelines

National Environmental Policy Act

Federal Americans with Disabilities Act (ADA)

Uniform Building Code

Institute of Transportation Engineers

1997 Trip Generation Manual, 6th edition

Lennertz Coyle & Associates

1996 The Wilsonville Land Plan, A Tool for Becoming a Garden City of Neighborhoods

Metro. Portland, Oregon

2000 Regional Transportation Plan. Adopted 1990, updated 2000

2000 Urban Growth Management Functional Plan. Updated 2000

2040 Growth Concept

Creating Livable Streets: Street Design for 2040

Employee Commute Options (ECO)

Green Streets, June 2002

Interim 1996 Congestion Management System (CMS)

Metro Regional Framework Plan

Metro's "Getting There by Bike" map

State of Oregon

1999 Oregon Highway Plan (OHP) (Table 7 amended 2000)

1995 Oregon Bicycle and Pedestrian Plan

1991 Oregon Transportation Planning Rule (OAR 660-12-045)

TPR Implementation Guidelines

OAR (Oregon Administrative Rules) 660-012-0015

OAR 734 Division 51, Access Management Rule

Oregon Public Transportation Plan

Roadway Functional Classification According to Jurisdiction

State of Oregon Structural Specialty Code

Travel Demand Model Development and Application Guidelines

Transportation Research Board, Washington, D.C.

1997 Highway Capacity Manual (HCM), Transportation Research Board Special Report 209

Tualatin Valley Fire and Rescue

Tualatin Valley Fire and Rescue Fire Code

Washington County, Oregon

1995 Inter-Urban Rail Feasibility Study

1988 Washington County Transportation Plan. Adopted 1988, updated 1999

ACKNOWLEDGEMENTS

ACKNOWLEDGEMENTS

City of WILSONVILLE in OREGON

2003 WILSONVILLE CITY COUNCIL

Mayor Charlotte Lehan
Councilor John Helser
Councilor Alan Kirk
Councilor Benny Holt
Councilor Sandra Scott-Tabb

ADJUNCT TRANSPORTATION PLANNING COMMITTEE

September 1996 - April 2002

ATPC
Mayor Charlotte Lehan
City Councilor Alan Kirk
City Councilor Lou MacDonald*
Dave Roth*
Gerry Hein
Pat O'Hogan
Ralph Hallock*
Ron Anderson
Tim Knapp

Planning Commission
Debra Iguchi
Helen Burns*
John Ludlow
Judy Eberle*
Mary Hinds
Mary Manning*
Merle Irvine
Mike Gilliland*
Paul Bunn
Randy Wortman
Richard Bernard*
Steve Spicer
Tim Leahy

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* = Resigned prior to the completion of the Transportation Systems Plan

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Dave Kanner, Public Affairs Director*
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Maggie Collins, Planning Director
Paul Cathcart, Associate Planner
Paul Silver, Associate Planner*
Linda Straessle, Planning Secretary
Sally Hartill, Planning Secretary
Mike Stone, City Engineer
John Michael, Engineering Associate
Jim Long, Senior Engineering Technician*
Gerald Fisher, Senior Engineering Technician
Cynthia Thompson, Transit Director*
Linda Floyd, Transit Director*

* - Resigned prior to the completion of the Transportation Systems Plan

ORDINANCE NO. 552

AN ORDINANCE ADOPTING THE CITY OF WILSONVILLE TRANSPORTATION SYSTEMS PLAN.

WHEREAS, Oregon law requires that state, local and regional governments adopt interrelated Transportation System Plans (TSPs). The purpose of a local TSP, according to the Transportation Planning Rule, is to "establish a system of transportation facilities and services adequate to meet identified local transportation needs consistent with regional TSPs and adopted elements of the State TSP"; and,

WHEREAS, the City of Wilsonville 1991 Transportation Master Plan constitutes the TSP and the transportation element of the City's Comprehensive Plan; and,

WHEREAS, since the adoption of the Transportation Master Plan, the city has experienced significant growth that has placed demands on the transportation system not envisioned in 1991, necessitating a reevaluation of the transportation needs, services and facilities; and,

WHEREAS, with the establishment of the Adjunct Transportation Planning Committee (ATPC) in 1996, the city initiated a process of extensive policy, planning and engineering analysis to, among other activities, inventory current transportation conditions and facilities, determine the needs and desires for roadway networks and non-motorized facilities, develop and evaluate transportation system alternatives, analyze and establish appropriate levels of service standards, determine short and long range plans, and develop a draft TSP; and,

WHEREAS, beginning July, 2002, the Wilsonville Planning Commission began a public review of a draft TSP under Planning File No. 02PC02, involving citizens, affected governments, and other interested parties; and,

WHEREAS, the Planning Commission conducted public hearings regarding the matter, Case 02PC02, on July 10, 2002, August 14, 2002, September 12, 2003, October 9, 2002, November 13, 2002, December 11, 2002, January 8, 2003, January 16, 2003, and February 12, 2003, developing in the process a comprehensive system to address comments and suggestions received in public testimony for the purposes of recommending revision to the draft TSP as appropriate; and,

WHEREAS, the Planning Commission recommended adoption of the draft TSP with modifications; and,

WHEREAS, the City Council has conducted a duly noticed public hearing on the draft TSP on May 19, 2003; and,

WHEREAS, the City Council has considered the Planning Commission's recommendation, the staff reports in this matter, and testimony and evidence of interested parties, and has evaluated the draft TSP against the Statewide Goals, state, county, and regional TSPs, Comprehensive Plan provisions, and other standards;

NOW, THEREFORE, THE CITY OF WILSONVILLE ORDAINS AS FOLLOWS:

Section 1. Findings. The City Council hereby adopts as findings of fact the above recitals, that document entitled "Application No. 02PC02 Findings," attached hereto as Exhibit A and incorporated herein as if fully set forth, and such findings as contained in Appendix B of the Transportation Systems Plan, in the staff report of March 19, 2003, filed in the record herein, and in the Staff Report Addendum dated May 12, 2003, which attaches amendments based upon public comments, ODOT comments, Metro comments, Clackamas County comments, Council comments and staff responses thereto, as Exhibit C, incorporated herein as if fully set forth, referenced below.

Section 2. Order. The City Council hereby adopts the proposed 2002 City of Wilsonville Transportation Systems Plan, attached as Exhibit B and incorporated herein as if fully set forth, together with the amendments set forth in the Staff Report Addendum dated May 12, 2003, attached Exhibit C, incorporated herein as if fully set forth. The Transportation Systems Plan shall be conformed to read "2003 City of Wilsonville Transportation Plan".

Section 3. Staff Directive. To reflect adoption of the TSP, staff is directed to return to City Council with conforming amendments to the city's Comprehensive Plan and Development Code.

SUBMITTED to the Wilsonville City Council and read for the first time at a regular meeting thereof on the 19th day of May, 2003, at the hour of 7:00 p.m. at the Wilsonville Community Center, 7965 SW Wilsonville Road, Wilsonville, Oregon, and scheduled for seco

reading on the 2nd day of June, 2003, commencing at the hour of 7:00 p.m. at the Wilsonville Community Center.

Sandra C. King
SANDRA C. KING, CMC, City Recorder

ENACTED by the City Council on the 2nd day of June 2003, by the following votes:

YEAS: -5- NAYS: -0-

Sandra C. King
SANDRA C. KING, CMC, City Recorder

DATED and signed by the Mayor this 4th day of June 2003.

Charlotte LeHan
CHARLOTTE LEHAN, Mayor

SUMMARY OF VOTES:

Mayor Lehan	Yes
Councilor Helser	Yes
Councilor Kirk	Yes
Councilor Holt	Yes
Councilor Scott-Tabb	Yes

Attachments:

- Exhibit A, Application No. 02PC02 Findings
- Exhibit B, 2002 Transportation Systems Plan dated April 17, 2003
- Exhibit C, Staff Recommended Revisions to the April 17, 2003, City Council Draft of the Transportation Systems Plan
- Planning Commission Record – Provided upon Request

EXHIBIT A
ORDINANCE NO. 552
APPLICATION NO. 02PC02 FINDINGS

1. ***Statewide Planning Goal #1: Develop a citizen involvement program that insures the opportunity for citizens to be involved in all phases of the planning process.***

   The series of public hearings described above, along with the original work of a citizen technical committee (Adjunct Transportation Planning Committee, which held its final meeting in February 2002) and the citizen involvement activities described in Chapter 2 and Appendix A of the revised TSP, have played parts in a strong, ongoing public involvement process for this planning file and for this project.

   - Finding 1. In that a series of activities and processes over a period of seven years were conducted where citizen opinion and recommendation have been solicited in a variety of ways, including formation of the Adjunct Transportation Planning Committee as the steering committee for development of the City's TSP, the City complies with Statewide Goal #1.

2 ***Statewide Planning Goal #12: To provide and encourage a safe, convenient and economic transportation system.***

   The City's Transportation Master Plan (TMP), adopted in 1991, has served as the major guide for the City's 20-year transportation system thinking. Additionally, the Transportation Element of the Wilsonville Comprehensive Plan includes policy statement as placeholders until such time as the City has adopted its TSP. It should be pointed out that the TMP, while dated, covers all the topics of the TSP, but in lesser detail. Therefore, even without the advantage of an adopted TSP as required by Oregon Administrative Rule (OAR), the City has managed growth and transportation facilities adequate to serve that growth using its adopted Transportation Master Plan. Findings outlining the compliance of the revised TSP with the State Transportation Planning Rule are found in Appendix B of the revised TSP.

   - Finding 2. In that a transportation systems plan has been completed that expands and presents in detail the multi-modal system and details required by OAR 660-012 (Transportation Planning Rule); and in that follow-up work for amending the transportation sub-element of the Wilsonville Comprehensive Plan will commence upon adoption of the revised TSP by the City Council, the City complies with Statewide Goal #12.

3. ***Wilsonville Comprehensive Plan Implementation Measure 3.1.6.o: The city shall take...steps to reduce VMT's and overall reliance on single occupancy vehicles:***

   Chapters 4, 5, 6, 7, and 8 contain policy for Motor Vehicles Facilities, Pedestrian and Bicycle Facilities, Transit System, Multi-Modal Facilities and Their Coordination, and Transportation Demand Management, respectively. Taken together, implementation of these policies adopted in this TSP will implement the

STAFF REPORT ADDENDUM
WILSONVILLE CITY COUNCIL
Wilsonville Planning Division

HEARING DATE:	**June 2, 2003**
DATE OF THIS REPORT	**May 27, 2003**

APPLICATION NO.:	02PC02
REQUEST:	Adoption of a Transportation Systems Plan for the City of Wilsonville
LOCATION:	Citywide
APPLICANT:	City of Wilsonville
CRITERIA:	Statewide Planning Goals #1 and 12; Wilsonville Comprehensive Plan: Public Facilities & Services Measure 3.1.6.o; Wilsonville Code: Section 4.000-4.033, and Section 4.197
STAFF REVIEWERS:	John Michael, Paul Cathcart, Maggie Collins, Eldon Johansen, Linda Straessle, Mike Kohlhoff, Paul Lee

DESCRIPTION OF ACTION:
Second Reading for adoption of Ordinance No. 552, which would adopt a Transportation Systems Plan (TSP), specifically, the City Council Public Draft dated April 17, 2003, with amendments, said plan having adequately identified and addressed the transportation needs of the City of Wilsonville through the year 2020.

BACKGROUND:
History of Project. See Staff Report dated May 12, 2003. On May 19, 2003, the City Council took public testimony on Ordinance No. 552, after which, and duly considering public comments, the Council moved unanimously for the First Reading of Ordinance No. 552, and continuance of the public hearing to June 2, 2003. The intent at the June 2, 2003 public hearing is to take further public testimony in accordance with a second reading of Ordinance No. 552, and to take action on any substantive amendments to the Draft TSP under consideration.
May 19, 2003 Public Hearing Staff Comments.
The following summarizes both comments and recommendations included in the record for the May 19, 2003 public hearing (Sections A, C, D, and E); and new points raised at that same hearing (Section B).

A. Comments from City Manager's Office to the City Council dated May, 15, 2003

1. Add to the bottom of page 4-44 the following:

Project C-30 Wilsonville Road Interchange Improvements	
Phase I: On-off Ramp Improvements	$10.5 million
Phase II: Set back Abutment Walls and Widen Wilsonville Road	$ 9.8 million
Phase III: Add Auxiliary Lanes to I-5	$11.0 million
Total:	$31.3 million

Staff Recommendation
Concur.

2. Delete Project 'C-21', the 5th Street/Memorial Drive crossing of I-5 from the TSP.

Staff Response
When the Adjunct Transportation Planning Committee (ATPC) was asked to look at network connections, the connection between 5th Street and Memorial Drive with a crossing, either under or over, is, on paper, a natural fit. Consequently, the ATPC proposed the crossing as project 'C-21.' At that time, the ATPC was informed that it would take a considerable amount of time and effort to generate a cost estimate or impact report. Thus, the project is currently listed in the TSP with a cost of 'to-be-determined.' Based on public response to the project, garnered from several open houses and public meetings, mostly negative, staff has completed a cursory analysis of the extent and the impact of a 5th Street/Memorial Drive crossing.

Using standard guidelines for deck height above a road, slope gradients and bridge widths, the potential 'landings' for either an over or under crossing would stretch from Magnolia Lane to the west and Rogue Lane to the east. If an under-crossing, Parkway Avenue could be excavated to provide an intersection. If an over-crossing, the elevation drop of Parkway Avenue south of the proposed crossing precludes an intersection. Further, if an over-crossing, Parkway Avenue would be disconnected from Memorial Drive, due to the landing. Finally, the impact of cut and/or fill slopes would adversely impact the neighboring properties.

In short, the impact of a crossing to the affected properties and existing residential areas would be so significant as to be unacceptable. The cost of a crossing (without additional extensive analysis) would probably be in the tens of millions of dollars. The cost/benefit ratio of potential users to cost during peak hours would be extremely high (the model predicts a peak hour traffic volume of between 200 to 300 vehicles for the crossing.) The short-term effect for the TSP model (short term being until the next update) of deleting the 5th Street/Memorial Drive crossing is nil, as the traffic volumes are predicated on full build-out. However, the long-term effect of modeling a 'basically' unbuildable crossing would be to skew the traffic volume results when the transportation system model is

updated. (partial staff response to Comment B.2, page 9 of Attachment #1 to the May 12, 2003 Staff Report).

Staff Recommendation
Staff recommends that project 'C-21', the 5th Street/Memorial Drive crossing be deleted from the TSP.

3. Consider changing the designation of Boones Ferry Road south of Wilsonville Road to Minor Collector from Major Collector.

Staff Response
See staff response and recommendation to Comment B.3 below.

B. Comments from the City Council to staff dated May 19, 2003

1. Councilor Lehan: Do the criteria for road project evaluation and design include concerns for environmental and societal impacts?

Staff Response
Goal 5 environmental requirements are met with Policy 4.3.1 and Implementation Measure 4.3.1. Goal 12 requirements need not be addressed at the project evaluation stage.

2. Councilor Helser: Page 6-12, Section 6.3.6.3- Park & Ride and Transit Center Adjacent to Commuter Rail. "The construction of this park-and-ride is contingent upon an agreement that Wilsonville Road/I-5 interchange access improvements as envisioned by the Freeway Access Study be built within one year after the park-and-ride facilities are built."

Staff Response
This sentence represents a concurrency linkage between the Transit Center Park-and-Ride and the Wilsonville Road/I-5 interchange improvements.

Staff Recommendation
Revise the sentence as follows:
"*As a condition of approval, the traffic study for* the construction of this park-and-ride *should examine the traffic concurrency needs with reference to the* ~~is contingent upon an agreement that~~ Wilsonville Road/I-5 interchange access improvements as envisioned by the Freeway Access Study ~~be built within one year after the park-and-ride facilities are built~~. This City facility will be in addition to the 450-space park-and-ride area that is planned by Washington County for commuter rail passengers. *The transit center and the park-and-ride facilities are essential government facilities.*"

3. Councilor Kirk: Change the designation in the map and written material regarding Boones Ferry Road south of Wilsonville Road so it's called Minor Collector, not Major

Collector.

Staff Response
Functional classifications provide guidelines for road design: lane width, bicycle and parking lanes if any, landscaping and sidewalks, access management, access spacing posted speed, and adjacent land uses. In the case of arterials there are also setback requirements that preserve right-of-way for future expansion. Thus when growth occurs developers must adhere to these several street guidelines and standards. The final arbiter of these standards and guidelines is the City Council as the Road Authority. Besides the difference of a median/left-turn lane in the major collector and not in the minor collector, access management and spacing requirements are different. Major collectors are appropriate for low or medium residential areas and are compatible with neighborhood commercial intersections. Minor collectors are primarily adjacent to low density residential areas.

Because of the ongoing commercial development of Boones Ferry Road between Wilsonville Road and Bailey Street, this section should remain a major collector. If the property east of the Lowries property develops, this section may need spot improvements to accommodate separate north-bound right-turn, through, and left-turn lanes, and two south-bound receiving-lanes (per Spot Improvement S-33, page 4-35 of the TSP.) Because of the prospects of a Brown Road extension to 5th Street and the commercial/high density residential land use on Boones Ferry Road between Bailey Street and 5th Street, a median/turn lane is or might be warranted in the future. This section should remain a major collector. The section of Boones Ferry Road south of 5th Street being low density residential can be lowered to a residential (transit) street classification. However, this designation may need Council action to approve engineering adjustments for local conditions.

Staff Recommendation:
Re-classify Boones Ferry Road south of 5th Street as a residential (transit) street.

4. Councilor Kirk: Page 4-83, Implementation Measure 4.2.3 – "Immediately after adoption of this Transportation System Plan, and in accordance with Chapter 9, establish funding strategies and systems that will help provide for the investments in major street improvement projects necessary to implement the goals and policies of the Comprehensive Plan." What does this mean, what does this require us to do?

   Staff Response
   Once the TSP is adopted, project funding strategies will be developed to identify possible sources, percentage of contribution, types and timing of funds. This information will be used for System Development Charge analysis, application for State and Metro funding, CIP budget information, and project development.

5. Councilor Kirk: Page 6-14, Transit Implementation Measure 6.1.2.a – "Plan, fund, and construct park-and-rides and transfer centers near the north and south I-5 interchanges and at the commuter rail station. Work with regional, state and private entities to develop funding packages." Plan, fund and construct, change to just "plan" or some other word

than "construct".

Staff Response
A thorough process would be undertaken to plan park-and-ride centers. Upon site approval, various funding packages may be presented, depending on the physical factors of the subject site and other pertinent points. As always, any construction is subject to local budgetary laws and approval by the City Council.

Staff Recommendation
Staff recommends keeping the language.

C. *Comments from the ODOT letter, dated May 16, 2003, to the City Council*

1. Access Management for Freeway Interchanges, Section 4.4.6 – For clarity, we suggest that the bulleted text be revised to more accurately reflect the policies of the *Oregon Highway Plan* and ODOT's access management rule, OAR 734.51.

   Staff Response
   This comment reflects ODOT's ongoing concern as reflected in their similar comment from the joint City and ODOT staff meeting on May 8, 2003. (see Planning Division Staff Report 02PC02, May12, 2003, Section D.6, page 13.)

   Staff Recommendation
   - Delete staff response to ODOT comment Section D.6, page 13, Planning Division Staff Report 02PC02, May 12, 2003.

   - Revise the following bullet point on page 4-68 (added words are italicized):
     "Existing access points within 750 feet of freeway interchanges *may* be closed *or* consolidated. *Existing access points between 750 feet and 1320 feet of freeway interchanges may be changed to right in/out access only and/or consolidated.* This can improve traffic flow through the interchange and reduce accidents. *(see OAR 734.51 for further information.)*"

2. We support the staff's proposed revised language for Table 4.s. Please note that the table's cost estimate for a Boeckman Interchange does not reflect the $63 million estimate developed for the *I-5 Freeway Access Study.*

   Staff Response
   The $63 million cost estimate for the Boeckman interchange is derived from the Technical Appendix to the FAS. This cost estimate was superseded by the cost estimate found in Table 9, page 66 of the FAS. The $40.2 million estimate was derived by subtracting the cost of the collector/distributor roadway, which was an option, the cost of the auxiliary lanes, which are a part of the Wilsonville Road interchange enhancements, and the cost of the Boeckman overpass reconstruction, which is a long range project, from the given Boeckman Road Interchange Improvement cost estimate. To this was

added mobilization, design and contingency factors to arrive at $40.2 million.

3. Project Cost Estimates. ODOT staff would like to review the *Wilsonville TSP Technical Appendix* when it is completed. At that time, we can provide a detailed response to cost estimates for proposed projects on or adjacent to state facilities.

   Staff Response
   Concur.

D. Comments from the Metro letter, dated May 19, 2003, to the City Council

1. Pedestrian District Designation - The 2000 RTP designates a pedestrian district in the Wilsonville town center area. The Wilsonville TSP does not apply a pedestrian district designation to the town center. This is an important pedestrian area that should be specifically called out in the plan's implementation measures to maintain consistency with the RTP and support the provision of more pedestrian-oriented improvements in this area.

   Please add the following implementation measure to Section 5.7, "Revise appropriate code sections to designate pedestrian districts in mixed-use areas and implement street and site design standards that support this designation. (Per the requirements of 660-045(4)(c) of the State Transportation Planning Rule and Section 6.4.10 of the Regional Transportation Plan.)"

   Staff Recommendation
   Add the following implementation measure to Chapter 5:

   > **Implementation Measure 5.1.2.b:** Based upon Planning Division analysis and Planning Commission findings, revise appropriate code sections to designate pedestrian districts in mixed-use areas and implement street and site design standards that support this designation.

2. Street Design Standards - The City's street standards do not adequately address Metro's street design policies for streets in mixed-use areas. As currently proposed, the standards treat all street design elements similarly by balancing all of the modes within the right-of-way regardless of land use. This is appropriate outside of mixed-use areas. However, the street standards should allow for more pedestrian-orientation and traffic calming features, such as narrowed travel lanes, curb extensions and on-street parking, in mixed-use areas. Metro's street design policies promote these types of design considerations in mixed-use areas to promote walking, bicycling and the use of transit.

   Please add the following to Section 4.7 implementation measure 4.1.1.b, "For streets in mixed-use areas, the street design should provide more pedestrian orientation and include street design elements such as wide sidewalks, marked crosswalks, bikeways, street trees, landscaping that separates the sidewalk from the street, street lighting, bus shelters and

corner curb extensions to provide a safer environment that can slow traffic and encourage walking, bicycling and transit use, as described in the Technical Appendix." The Technical Appendix would need to be updated to include this information as well after the TSP is adopted.

Staff Recommendation
Add the following implementation measure to Chapter 4:

> **"Implementation Measure 4.1.1.c**: Based upon Engineering Division analysis and Development Review Board findings, streets in mixed-use areas, should provide pedestrian orientation and include street design elements such as wide sidewalks, marked crosswalks, bikeways, street trees, landscaping that separates the sidewalk from the street, street lighting, bus shelters and corner curb extensions to provide a safer environment that can slow traffic and encourage walking, bicycling and transit use, as described in the Technical Appendix."

3. Level of Service Findings - The City's decision, findings and technical appendix for the TSP should identify how the plan meets the provisions in Section 6.4.7 of the 2000 RTP with regard to the City's level-of-service standard.

Staff Response
The technical Appendix will address the provisions of Section 6.4.7 of the RTP.

E. Staff Clarification Recommendation

1. The intent of Policy 4.1.1 is to acknowledge the authority of the City Council to amend the City Level-of-Service (LOS) standard from LOS 'D' to LOS 'E' when circumstances warrant such a change. The current language is awkward.

Staff Recommendation
Revise Policy 4.1.1 as follows:

> **Policy 4.1.1** Design the City street system per the street standards set forth in this TSP and to meet LOS D, which is the standard in the City. *As may be approved by the City Council,* possible exceptions to the LOS D standard are a change to LOS E on Boones Ferry Road and/or Elligsen Road~~, as may be approved by the City Council. Allow the standard to be LOS E~~ and on Wilsonville Road between and including the intersections with Boones Ferry Road and Town Center Loop West. Other capacity improvements intended to allow continued development without exceeding LOS E *may also be approved by the City Council* in permitted locations.

F. Staff Recommendations from the May 12, 2003, Staff Report Not Previously Addressed

1. Add language that clarifies Boeckman interchange role in Freeway Access Study. Refer to Comment D.4, page 13 of Attachment #1 of the May 19, 2003 Staff Report.

2. Revise Figures 4.7, 4.9 and 4.10 to remove project C-5 "Boeckman Interchange".
3. Move Phase 2 of Project C-2 from the medium-range project list to the short-range project list.
4. Adopt Errata recommendations i to ix on page 4 of the May 12, 2003 Staff Report.

G. Staff Recommendations from Clackamas County letter, dated May 30, 2003

1. Staff recommends that Stafford Road be designated as a major arterial from Wilsonville to Lake Oswego.
2. Staff recommends that Policy 4.1.6 incorporate signal coordination within Wilsonville with ODOT's I-5 ITS system.

What the TSP Provides.

- Compliance with State Statute, State Administrative Provisions, Statewide Planning Goal 12, and the Metro Regional Transportation Systems Plan (RTP). Adoption will assist the City in requests for transportation improvements funds.
- Replacement of the City's 1991 *Transportation Master Plan* by adoption of the TSP.
- Replacement of the City's 1993 *Bicycle and Pedestrian Master Plan* by adoption of TSP Chapter 5, "Pedestrian and Bicycle Facilities."
- Updated replacement language (Goals, Policies and Implementation Measures) for pages 29 though 35 of the Wilsonville Comprehensive Plan ("Roads and Transportation Plan" Section).

STAFF RECOMMENDATION:
Staff recommends that the City Council approve the Second Reading of Ordinance No. 552, with the attached as a replacement of Exhibit C from the May 19, 2003 First Reading of Ordinance No. 552.

ATTACHMENT:
Exhibit C, Ordinance No. 552

Exhibit C – Staff Recommended Revisions to the April 17, 2003, City Council Draft of the Transportation Systems Plan

A. Summary of Staff Recommendations to June 2, 2003 City Council Comments, letters from ODOT, ~~and~~ Metro, and Clackamas County and staff clarification

1. Add to the bottom of page 4-44 Wilsonville Road interchange improvement costs. (see page 4-44, attached)
2. Revise the concurrency link between the Wilsonville Road interchange improvements and the Transit Center park-and-ride. (see page 6-12, attached)
3. Change the designation of Boones Ferry Road south of 5th Street to Residential (Transit) Street from Major Collector. (see Figure 4-8, attached)
4. Revise the bullet point on page 4-68 to reflect ODOT's access management policy. (see page 4-68, attached)
5. Add implementation measures to Chapters 4 and 5 concerning pedestrian districts and street design policies in mixed-use areas. (see pages 4-84 & 5-27, attached)
6. Revise Policy 4.1.1 language to clarify intent. (se page 4-83, attached)
7. Revise Stafford Road from a minor arterial to a major arterial from Wilsonville to Lake Oswego. (see Figure 4-8, attached)
8. Add Implementation Measure 4.1.6 to tie Policy 4.16 - signal coordination between Wilsonville and ODOT's I-5 ITS system, and Implementation Measure 6.1.6.b – develop a program to implement an ITS, together. The new implementation measure will direct that ITS projects be included in the Capital Improvement Program. (see page 4-82)

B. Summary of Staff Recommendations from Attachment 1, May 19, 2003:

1. Delete Project 'C-21', the 5th Street/Memorial Drive crossing of I-5 from the TSP. (see pages 4-27, 4-41 & 4-78, and Figures 4.7, 4.8, 4.9, and 4.10 attached)
2. Add language that clarifies that the Boeckman interchange was not the only freeway access alternative referred to in the Freeway Access Study. (see pages 4-3, 4-44, & 4-82, attached)
3. Revise Figures 4.7, 4.9, and 4.10, to remove project C-5 'Boeckman interchange.' (see Figures 4-7, 4-9, & 4-10, attached)
4. Move Phase 2 of Project C-2 from the mid-range project list to the short-term project list. (see pages 4-71, 4-72, 4-75, & 4-76, attached)
5. Errata (formerly Roman numerals *i-ix*):
   - 5-1. Add language to Section 4.4.1 'Roadway Design Standards' that specifically reference Metro's regional street design guidelines. (see page 4-45, attached)
   - 5-2. Revise Figure 2.11 '2002 Transit Facilities' to add the Metro regional bus routes in the City. (see Figure 2-11, attached)
   - 5-3. Revise the TSPs concurrency language to reflect capacity concerns over a 20-year planning horizon. (see Appendix B pages 29 & 30, attached)
   - 5-4. Update Table 2.g 'TPR Implementation Measures.' (see page 2-12, attached)

5-5. Revise language on pages 2-18 and 2-26 to specify references in the TSP. (see pages 2-18 & 2-26, attached)

5-6. Add language referencing ODOT's access management standards for freeway ramps. (see comment #5 above per ODOT letter and page 4-68, attached)

5-7. Update Appendix B ' Oregon Transportation Planning Rule' with current references. (see updated appendix B distributed at the May 19, 2003, Council meeting)

5-8. Revise incorrectly referenced figure number. (see page 2-65, attached)

5-9. Revise incorrect tense on page 3-1. (see page 3-1, attached)

Comprehensive Plan Implementation Measure cited above, and will establish and carry out through time a coordinated network of transportation facilities adequate to serve state, regional and local needs, and geared toward avoiding principal reliance on the automobile (OAR 660-012-0020).

- Finding 3. In that the City's previously adopted plans and programs regarding automobile and truck facilities, pedestrian and bicycle facilities, the transit system, multi-modal facilities and transportation demand management are enhanced within this revised TSP; and in that Implementation Measure 3.1.6.o. of the Wilsonville Comprehensive Plan serves as City transportation planning policy, the revised TSP complies with existing City transportation planning policy.

4. ***Wilsonville Code Section 4.198: Comprehensive Plan changes by adoption of elements or ancillary documents must include findings that support:***
   - ***a. The proposal meets a public need that has been identified;***
   - ***b. The proposal meets the identified public need at least as well as any other amendment or change that could reasonably be made;***
   - ***c. The proposal supports applicable Statewide Planning Goals;***
   - ***d. The proposal will not result in conflicts with Comprehensive Plan portions not being amended.***

- Finding 4a. The public need for designing, funding and constructing a "safe, convenient, and economic transportation system" has been determined by Statewide Goal #12, and the accompanying Oregon Administrative Rule states local planning requirements for each city and county to use in establishing said system. In that the revised TSP under consideration enhances the multi-modal planning and other facilities identified in the City's adopted 1991 Transportation Master Plan, the City's adoption of this revised TSP fulfills its public need requirement as established by the State; and provides detail and augmentation to the City's multi-modal future.

- Finding 4b. The City complies with applicable Statewide Planning Goals as stated in Findings 1 and 2.

- Finding 4c. In that adoption of the revised TSP, its goals, policies and implementation measures comprise and replace Implementation Measures 3.1.6.a through 3.1.6.cc of the "Roads and Transportation" sub-element of the Wilsonville Comprehensive Plan (pages 29-35); and in that said sub-element has served as a placeholder for the more comprehensive and coordinated, goals, policies and implementation measures of the revised TSP, adoption of the revised TSP does not conflict with the Wilsonville Comprehensive Plan.

5. ***Wilsonville Code Section 4.000-4.033: Sections 4.008 through 4.030 stipulate procedures to be followed for hearing a legislative application; and Section 4.032.(.01) states that the Planning Commission has authority to make recommendations to the City Council on land use and transportation policy.***

   - Finding 5. In that all appropriate and required procedures have been followed and carried out for developing and hearing this legislative proposal by the Planning Commission, the proposal to recommend adoption of File 02PC02 complies with applicable Wilsonville Code Sections.

CONCLUSIONARY FINDING

- Finding 6. In that all efforts have been made to develop a comprehensive transportation systems plan that is coordinated with all affected bodies and agencies, that has considered and responded to public involvement and testimony, and that furthers the City's responsibility to ensure that a safe, convenient and economic transportation system is part of its growth management in the next two decades; and in that all state, regional and local concerns have been accommodated to the best level possible, the revised TSP meets all applicable criteria.