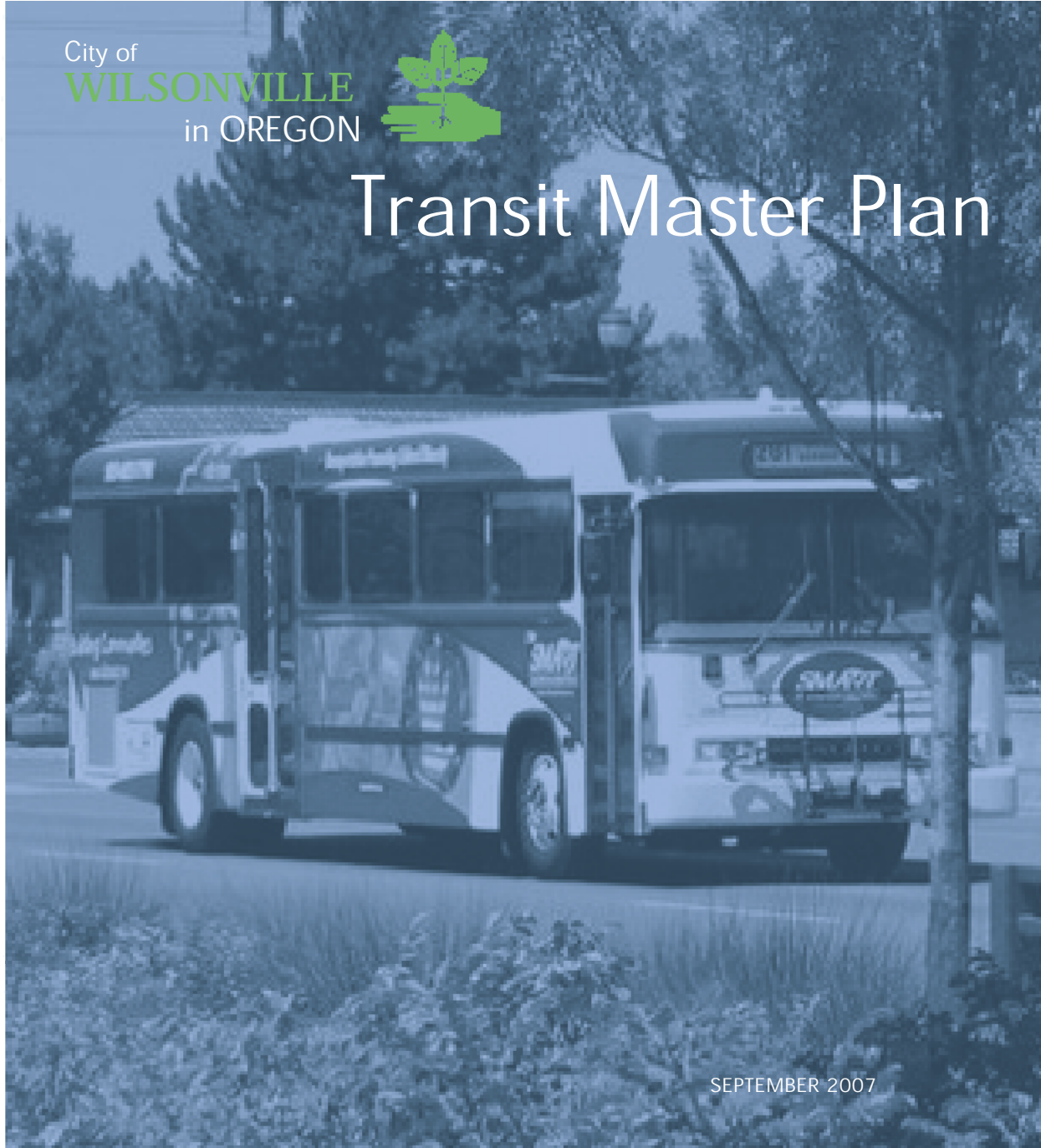




City of
WILSONVILLE
in OREGON



Transit Master Plan



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Executive Summary

Transportation and recreation are critical facets of life in Wilsonville, and include parks and natural areas; play and sports facilities; recreational amenities and programs; public transit services and connections; and on-street and off-street bikeways, walkways, and trails. Planned separately, each of these elements provides benefits to residents across the spectrum of age, economic status, physical ability, neighborhood location, and daily activity set. Planned in unison, these elements offer complete community connectivity and interrelated opportunities for work, play, shopping, and exercise for residents, employees, and visitors in and between every neighborhood in the City.

From 2004 to 2006, the City of Wilsonville updated its Parks and Recreation, Bicycle and Pedestrian, and Transit Master Plans. Recognizing the unique opportunity afforded by simultaneous planning processes, the City integrated plan development with public involvement. This effort brought together the disparate parts into a complete transportation and recreation package, providing linkages, connections, and experiences for residents in every neighborhood citywide.

The vision of the Master Plans is for Wilsonville residents to be able to easily and safely access a variety of parks and natural areas from neighborhoods; walk or bicycle to parks, schools, commercial areas,

employment centers, and transit stops; and take transit to parks, other Wilsonville destinations, and neighboring communities. The community will reap the health, economic, and safety benefits of these improvements for generations to come.

System Linkages

The following list demonstrates the connections that have been incorporated into the Master Plans. All of Wilsonville's citizens will have enhanced abilities to:

- Incorporate the concept of "active living" into daily activities
- Walk, bike, skate, scoot, or roll from wherever you are to wherever you want to go
- Bus around town, to Charbonneau, Canby, Salem, or Portland
- Play sports, recreate, and enjoy nature in every neighborhood
- Walk, bike, or ride to parks on the river, and paddle on the river
- Walk or bike to bus stops, then take a bus to your destination

Each of the three Master Plans evaluates the completeness of the individual system (bicycle and pedestrian, parks and recreation, or transit) and forges strong connections among the three systems.



Clean, green, safe, and connected — the future vision of Wilsonville

Parks and Recreation

This Plan analyzes the location of Wilsonville's parks and recreation sites, and plans for future growth and expansion of the City's park system. The Plan reviews the adequacy of parks in each neighborhood in order to create a priority parks project list. The Bicycle and Pedestrian Plan was coordinated with this plan to ensure complete connections to existing and planned parks, and the Transit Plan analyzes transit connections to parks and other important recreation destinations.

Transit

The Transit Plan locates key destinations within and outside of Wilsonville, in order to plan for the future of the multi-modal transit center. Both the Bicycle and Pedestrian Master Plan and the Transit Plan analyze the location of sidewalks in relation to transit stops, and prioritize sidewalk infill projects that enhance the ability of citizens to access transit. Over the next few years, the transit system will add more service as commuter rail arrives in Wilsonville, creating a hub at the Barber Street Station and connecting to other communities.

Bicycle and Pedestrian

This Plan focuses on complete community connectivity via a hierarchy of trail types. The location of existing and planned parks, neighborhoods, schools, and industrial development are integrated with the existing and proposed on- and off-street bike and pathway system. For example, regional and community trails are closely coordinated with parks and schools, and industrial area waysides are tied to planned trails on the west side of Wilsonville.

Master Planning Process

Led by the Advisory Committee on Master Planning (ACMP), community involvement and input has been a key part of the planning process. ACMP members represent diverse community interests, and have guided the process and advised staff and consultants every step of the way. In addition, staff met with over a dozen stakeholder groups, held six well-attended public meetings, sent mailings to every household in the City, provided information through its website, conducted a (telephone or mail) survey, and integrated hundreds of comments into every facet of each plan. As such, these plans truly represent a community consensus on the long-term vision of how

Wilsonville can enhance its quality of life by the way it looks, functions, and allocates resources for the next 20 years.

Throughout the planning processes, the community expressed key priorities, including:

- improving access to and across the Willamette River,
- providing a comprehensive system of bikeways and walkways,
- developing a pool and aquatic center,
- serving and connecting underserved neighborhoods, and
- providing park and natural area experiences close to home and work.

The following key projects emerged as elements to be addressed through the Master Plans: improving crossing of the Willamette River; providing bicycle parking at the Multi-Modal Transit Center; implementing master plans for Boones Ferry, Villebois, Montebello, and Canyon Creek parks; and improving Town Center Loop.



1. Introduction

Plan Overview

Plan Organization

Public Involvement

The Role of the Transit Master Plan

1. Introduction

Public transit service has been a high priority for Wilsonville since 1989 when the City successfully petitioned to withdraw from TriMet's service district. Wilsonville's South Metro Area Rapid Transit (SMART) is now supported by local businesses and grant funds. SMART provides fare-free service within the City of Wilsonville and charges nominal fares for service to areas outside of Wilsonville, such as Salem, Canby, and Tualatin.

In addition to providing transportation within the City of Wilsonville, SMART serves as an important link in the regional multimodal transportation network. The value of the



Boarding SMART at Xerox

SMART services is greatly increased by being well connected with other transportation networks, including neighboring transit systems and bicycle and pedestrian networks. These connections increase the level of choice and overall mobility for people in and around Wilsonville, whether they are traveling to jobs, school, shopping, parks, or social and recreational events. Recognizing the importance of these linkages, the Transit Master Plan was developed jointly with the Bicycle and Pedestrian Master Plan and the Parks and Recreation Master Plan. In order to further support effective linkages, SMART also operates a SMART Options Program, to promote vanpooling, carpooling, bicycling, walking, telework, and transit. Policies involving the SMART Options Program are included in the Transit Master Plan.

Public transit provides a valuable option for people who might otherwise have no choice but to drive. Transit also provides mobility for people who do not have vehicles. For those who use transit as a primary mode of transportation, it is a safe, reliable, and inexpensive option. For those who use other modes of transportation, transit can still serve as a connector, allowing bicyclists to ride for a portion of their trip and

providing motorists with the opportunity to drive and then board a bus at a park & ride lot. For others, transit serves provides the assurance of a viable alternative when the car is being repaired or in the event of inclement weather. Area residents and visitors, whether they ride the bus or not, benefit from reduced traffic congestion and air pollution, as transit reduces overall automobile trips.

Plan Overview

In order for SMART to exist as 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 innovative strategies to manage mobility.

The Transit Master Plan provides proposals for increased and improved transit service as well as strategies to help reduce the demand on roads and parking. The Transit Master Plan, with its combined transit and transportation demand management (TDM) approaches, replaces Chapters 6 and 8 of the 2003 Wilsonville Transportation System Plan (TSP) and incorporates the two primary goals of the existing chapters:



Boarding SMART at City Hall

Goal 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.

Goal 2

To develop and implement Transportation Demand Management strategies in order to create greater choice and mobility; reduce automobile trips; make more efficient use of the roadway system; and minimize air pollution.

The Plan expands on the previous transit and TDM chapters of the TSP and provides a stronger emphasis on integrating transit with other transportation modes.

The policies detailed in this plan include:

- POLICY 1** Increase public awareness of transit and other transportation options, so that customers can make informed decisions.
- POLICY 2** Provide coordinated service that is convenient, comfortable, and safe.
- POLICY 3** Promote land use patterns and development standards that improve accessibility of transit to pedestrians, bicyclists, motorists, and transit-dependent populations.
- POLICY 4** Expand service to meet the demands of a growing population and employment base in Wilsonville.
- POLICY 5** Strive to improve air quality and traffic congestion by increasing transit efficiency, promoting transportation options, and implementing transportation systems management.
- POLICY 6** Create a sense of community ownership of the transit system by encouraging citizen involvement.

Plan Organization

This introduction is followed by a chapter detailing recommended transit routes, including the primary purpose of each route and how the routes work together to meet identified needs.

Plan Implementation follows this chapter and describes implementation measures to achieve the goals set forth in this plan. This chapter contains implementation measures pertaining to public

information, service quality, improving access to transit, increasing efficiency, and creating a sense of community ownership.

The Finance chapter describes funding sources and funding outlook along with estimated project costs.

Existing Conditions details SMART's current routes and services along with data on ridership and historical background.

Transit Demand looks at factors likely to affect future demand for transit service, including passenger preferences, new development, and commuter rail.

Finally, the appendices include a glossary of terms, transit design guidelines, TDM methods, and a comparative look at alternative fuels.

Public Involvement

A series of public involvement events and research efforts provided valuable information on passenger preferences, travel needs, and feedback on proposed changes. Many of these efforts were conducted jointly with the Bicycle and Pedestrian and the Parks and Recreation Master Plans. The City of Wilsonville has compiled all of the outreach materials from the three plans as a separate publication. To ensure that community sub-groups were represented and community priorities were well understood, SMART gathered input from a variety of sources, including:

- Master Plan Visioning event (September 2004)
- Monthly meetings of the Advisory Committee on Master Planning (September 2004 – May 2006)
- Separate surveys for adults and children in English and Spanish (Fall 2004)
- Employer survey (March 2005)
- Zip code data of employees, provided by Wilsonville employers (March 2005)
- Charbonneau residents meeting (January 2005)
- Senior Center meeting (January 2005)
- Wood Middle School Workshop (February 2005)
- Boeckman Creek Elementary School assembly and survey (March 2005)
- Feedback from the Wilsonville Master Planning Update Brochure (Summer 2005)

The Role of the Transit Master Plan

In addition to identifying the transit needs of Wilsonville residents and employees, SMART must also ensure that the local transit plan is consistent with federal, state, and regional goals and objectives. The hierarchy of plans is such that federal goals and strategies tend to be broad, while state, regional, and local plans provide more detail about required specific actions and implementation strategies. Overall, these goals and objectives contribute to:

- providing safe, efficient, accessible, and equitable transportation;
- providing mobility to people of all ages and incomes; and
- reducing air pollution, energy use, and traffic congestion.

State, regional, and County strategies place a strong emphasis on transit-oriented design.

The SMART Transit Master Plan provides a tool for local implementation of transit- and Transportation Demand Management (TDM) related provisions in the Oregon Transportation Plan (OTP), the Oregon Transportation Planning Rule (TPR), the Regional Transportation Plan (RTP), Americans with Disabilities Act (ADA), and the Tri-County Elderly and Disabled Transportation Plan (EDTP). Goals, objectives, and implementation measures of our local transit plan must support the City's overall goals as well as the county, regional, state, and federal goals. The TMP also builds on previous local transit studies and reports.

This chapter contains a brief overview of the various transportation plans that affect the SMART Transit Master Plan.

U.S. DOT

The United States Department of Transportation goals target transportation infrastructure, congestion, reliability and access. Their strategies are designed to produce improvements in these measures of mobility throughout the U.S. transportation network in an effort to improve commerce and air quality, reduce energy consumption, and improve the quality of life.

Federal strategies also state that, "It is our obligation to ensure that transportation is not only safe and

efficient, but that it is also accessible. Transportation must be within reach of all Americans, including those with low incomes, the elderly, and persons with disabilities. Where barriers to accessibility exist, we will seek to eliminate them."

ADA

The Americans with Disabilities Act (ADA) requires public entities that operate fixed-route local systems to provide paratransit or other special service to individuals with disabilities that is comparable to the level of service provided to individuals without disabilities who use the fixed route system.

State of Oregon - Statewide Planning Goal 12

The Transportation Planning Rule (TPR) is designed to implement Statewide Planning Goal 12 (Transportation) and promote the development of safe, convenient, and economic transportation systems that are designed to reduce reliance on the automobile so that the air pollution, traffic, and other livability problems faced by urban areas in other parts of the country might be avoided.

The TPR requires that metropolitan planning organizations (MPOs) such as Metro prepare and adopt regional transportation plans consistent with the State Transportation Plan (STP). Local jurisdictions are also required to adopt the Regional Transportation Plan (RTP) and local Transportation Systems Plans (TSPs) for their jurisdiction. The local TSP must establish a system of transportation facilities and services adequate to meet identified local transportation needs and be consistent with the regional TSP and adopted elements of the Oregon Transportation Plan (OTP). The local TSP should also be consistent with county TSPs.

Oregon's TPR contains measures designed to reduce reliance on the automobile. The TPR's intent is that the planned transportation system support 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 five percent reduction in VMT per capita within 30 years.

The TPR permits regional planning agencies to adopt alternative standards in order to comply with the TPR. Metro has adopted an alternative standard based on non-single-occupant-vehicle (SOV) modal splits. These goals, if met, would result in satisfying the VMT requirements of the TPR.

Employee Commute Options (ECO)

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. 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 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.

Although ECO places requirements on individual employers and not on the City of Wilsonville, the City is in a position to assist employers with meeting these requirements.

Oregon Public Transportation Plan (OPTP) 1997

The OPTP is the public transportation element of the Oregon Transportation Plan required by Oregon's TPR. The OPTP provides guidance for the development of transit, rideshare, and transportation demand management services in Oregon. The OPTP sets first priority on service to those who are most dependent on the public transportation system (seniors, people with disabilities, low-income, and youth). The plan describes transit service as a lifeline for many people in need of transportation to medical appointments, employment, and educational services.

The OPTP also recognizes the value of transit service to serve those who use transit by choice, in particular commuters. These services have a positive impact on traffic congestion, air quality, and community livability and protect and enhance the quality of life in Oregon's larger communities.

In order to effectively meet the transportation needs of the State's residents, the OPTP emphasizes the

importance of coordination and cooperation between jurisdictions as a means of achieving a comprehensive, interconnected, and dependable public transportation system. The OPTP also sets a minimum level of service for transit of 1.7 service hours annually per capita in cities of 2,500 or more by 2015. SMART already exceeds the minimum level of service, providing 2.1 hours of service per capita in 2004.

Regional Transportation Plan (RTP) 2004

The RTP establishes regional transportation policies and objectives to meet projected transportation needs in the Portland Metro Region. The RTP is an important tool in the implementation of Metro's 2040 Growth Concept, linking urban form to transportation and serving all forms of travel. The RTP also sets SOV mode split goals for the Metro Region; these are the percentage of trips made in and to the area by carpool, transit, walking, and bicycling. The target non-SOV mode-split target for Wilsonville is 45%.

Other policies of the RTP that apply to transit include:

- Provide an appropriate level, quality, and range of public transportation options to serve this region and support implementation of the 2040 Growth Concept.
- Expand the amount of information available about public transportation to allow more people to use the system.
- Continue efforts to make public transportation an environmentally-friendly and safe form of motorized transportation.
- Provide transit service that is fast, reliable and has competitive travel times compared to the automobile.
- Provide an appropriate level, quality, and range of public transportation options to serve the variety of special needs individuals in this region and support the implementation of the 2040 Growth Concept.
- Provide a seamless and coordinated public transportation system for the special needs population.
- Encourage the location of elderly and disabled facilities in areas with existing transportation services and pedestrian amenities.

The Tri-County Elderly and Disabled Transportation Plan (EDTP) 2006

The EDTP seeks to support the creation of a regionally-coordinated E&D transportation system that is efficient, effective, and founded on present and future need. Although the EDTP addresses the provision of specific transportation services and coordination among providers, it also emphasizes land use and design which support and encourage walking and transit.

Clackamas County Transportation Plan (2005)

In addition to provisions for efficient, affordable transit service, the Transit Chapter of the Clackamas County Transportation Plan strongly emphasizes the link between land use and transportation. It calls for increasing transit use by encouraging land use patterns, development designs, and street and pedestrian/bikeway improvements that support transit. It also calls for requiring major developments or road construction projects along transit routes to include provisions for transit shelters, pedestrian access to transit, and/or bus turnouts where appropriate.

The Clackamas County Transportation Plan sets a goal of transit service within 1/4 mile of most residences and businesses within the Portland Metropolitan UGB.

Washington County Transportation Plan (2002)

Washington County's Transportation Plan places a strong emphasis on regional connections and on strategies to increase transit efficiency and access. The Plan calls for improving bicycle and pedestrian access to transit stops. It also calls for road improvements and for private development in close proximity to major bus stops, commuter rail stations, and existing and proposed light rail stations to include appropriate features to support and complement existing and future transit services.



2. Recommended Bus Routes and Service

Service Goals to Accommodate Growth

The SMART Network

New Service Priorities

Fares

Recommended SMART Routes

Vanpools

2. Recommended Bus Routes and Service

This chapter details service needs, proposed routes, and the purpose of individual routes as well as how they work together to meet identified needs and form an integrated network. It also looks at vanpools as an option to provide service for specific routes where fixed route service is not feasible. See Chapter 6 for a detailed look at customer preferences, travel destinations, and the factors affecting travel demand.

The following two goals form the basis of SMART's services and implementation measures:

Goal 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.

Goal 2 To develop and implement Transportation Demand Management strategies in order to create greater choice and mobility; reduce automobile trips; make more efficient use of the roadway system; and minimize air pollution.

Implementation measures detailed in Chapter 3 focus on both goals. This chapter focuses primarily on the first goal and the following specific service goals to effectively meet growth demands.

Service Goals to Accommodate Growth

1. Provide service to new developments in Wilsonville.
2. Provide increased opportunities for residents, employees, and visitors to connect to jobs, shopping, parks, and community activities.
3. Facilitate connections between transit and other travel modes, including walking, bicycling, rail, and air travel.
4. Facilitate regional/intercity connectivity
5. Increase frequencies to improve convenience and coordination between routes.

6. Extend service times to accommodate travel needs

One of the objectives of the proposed SMART bus network is to provide bus service within a quarter mile of development within City limits, so that residents and employees are able to easily walk to bus stops. (See Map 1 on page 12) Current SMART service meets this goal with the exception of Daydream Ranch, Charbonneau, the Villebois area, and a few small areas. Bicyclists have a larger travel shed; however, they also depend on the ability to store or transport a bicycle. Bike racks are provided on all buses, so that passengers can bicycle at either end of their bus trips. Bicycle storage will also be provided at the commuter rail station in Wilsonville.

Local service is designed to link residential areas with shopping, schools, jobs, parks, and the civic center. The network is designed so that local routes connect to intercity routes, providing regional connectivity and access to jobs.

Major Transit Streets and Stops

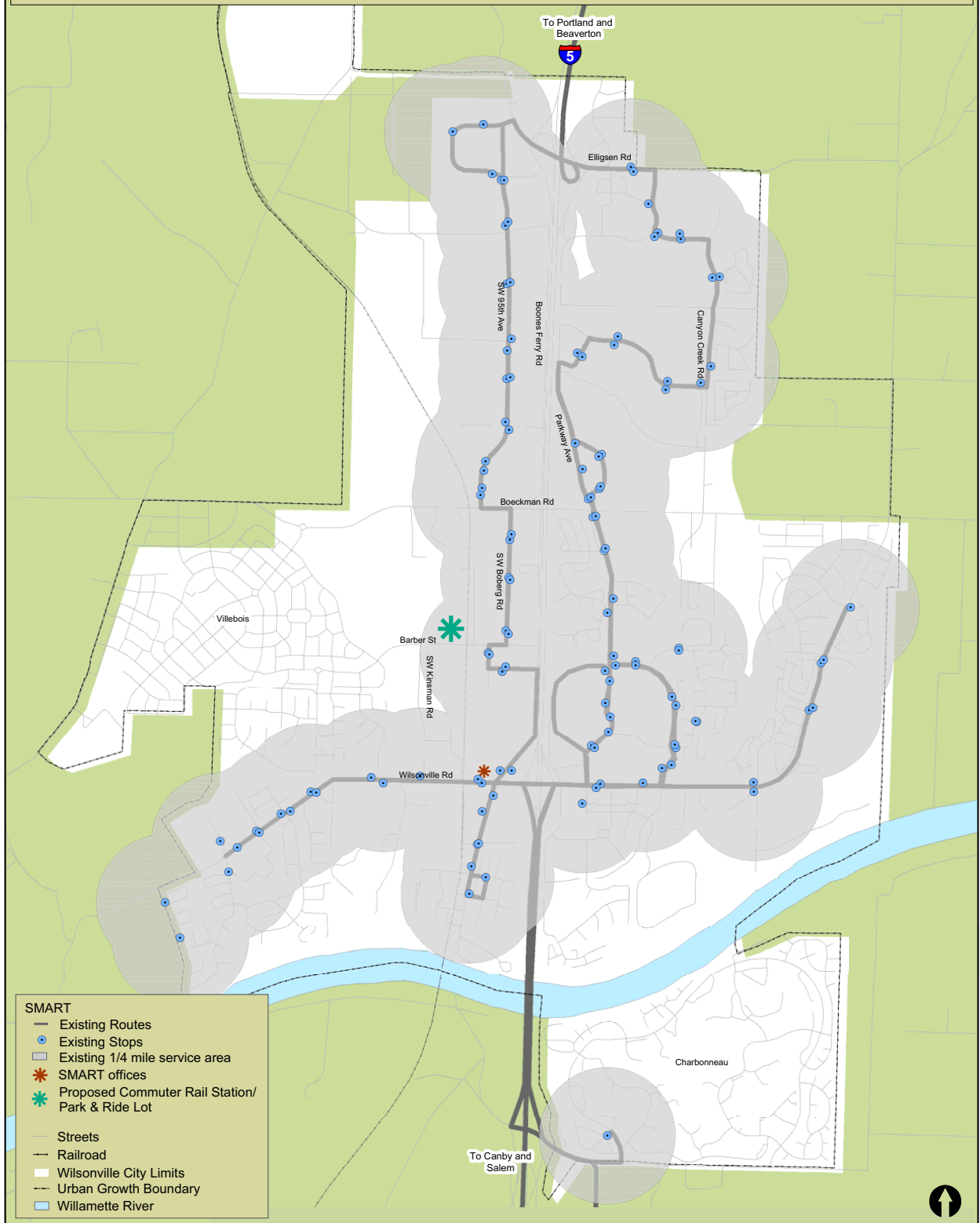
A major transit street is a primary corridor for transit, receiving half-hour or better service during peak traffic hours. Typically, these streets are also arterials or major collectors. The designation of major transit streets allows the City to set standards for encouraging land use patterns, development designs, and street and bicycle/pedestrian improvements that support transit. See Map 2 on page 13.

Major transit stops are those which are located at existing or planned:

- Intersection of two or more routes
- Transfer locations between transit systems
- Park & Ride lots
- Shopping centers and other major destinations

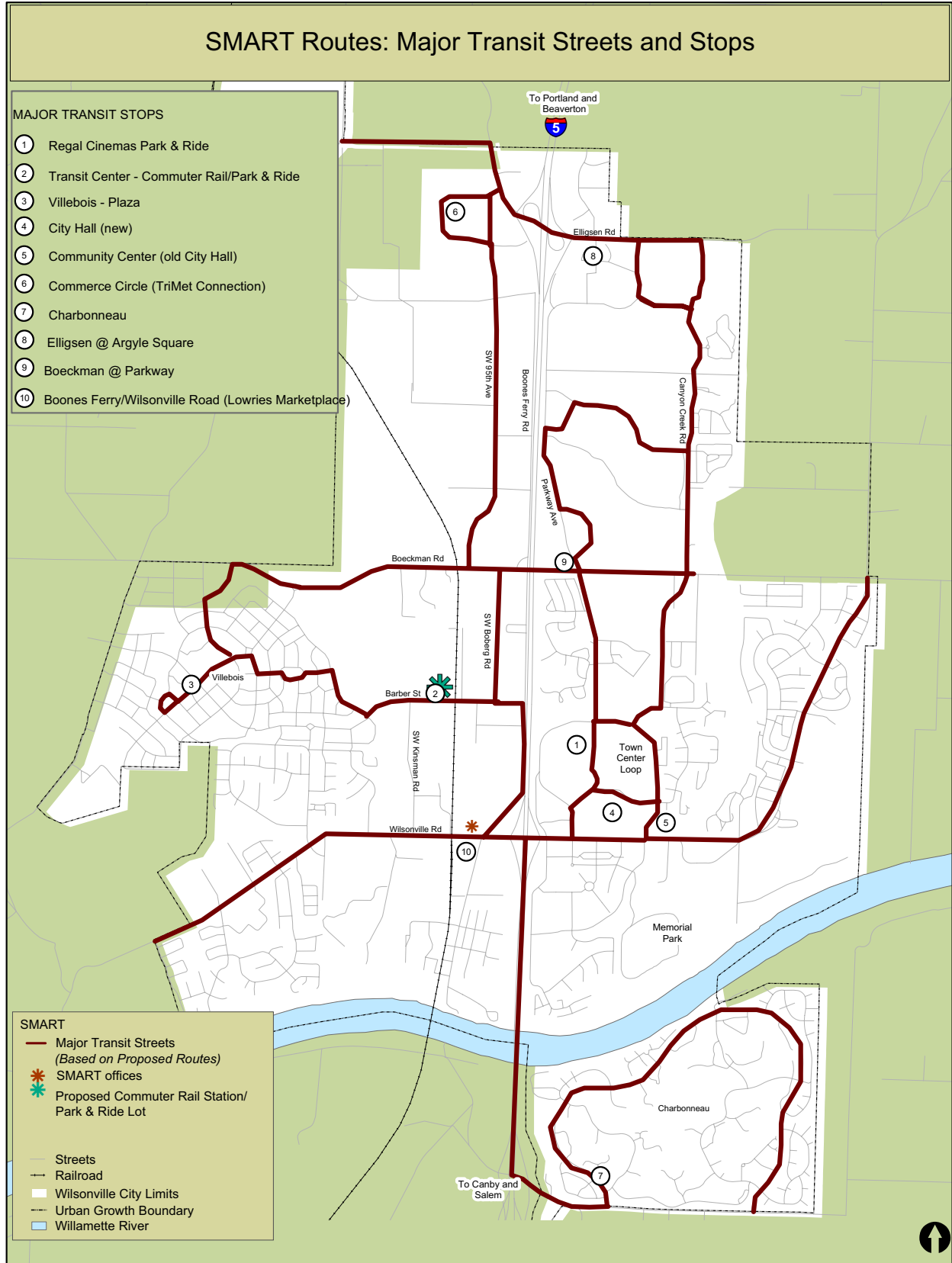
Major transit stops receive priority when transit stop upgrades are being considered.

SMART Routes: Existing 1/4 Mile Coverage



Map 1. Existing Quarter-Mile SMART Coverage

2. Recommended Bus Routes and Service



Map 2. Major Transit Streets and Stops Based on Proposed Routes

The SMART Network

The basis of SMART's proposed fixed-route network is to coordinate routes so that they all converge at a primary hub location at the same time, facilitating transfers between routes. The commuter rail station in Wilsonville will serve as the primary hub location, with bus arrival and departure times coordinated with rail service. The coordinated service ensures that a person arriving in Wilsonville on commuter rail can reach any destination in Wilsonville within 15 minutes of the train's arrival. Connections to employment sites on 95th Avenue and on Parkway would be considerably faster. The planned location of a park & ride lot at the commuter rail station also facilitates multimodal connections at the hub location, as do the provision of designated vanpool and carpool spaces and bicycle parking.

During the peak morning and evening commute hours, service times will be coordinated with commuter rail service, however during mid-day, when commuter rail isn't running, bus routes can be scheduled for better connections with other routes, including TriMet and CAT.

New Service Priorities

Based on existing demand and projections of future demand, SMART has designated the following prioritized fixed-route service expansions to meet the transit needs of Wilsonville:

1. Change existing routes to coordinate with the Washington County Commuter Rail service.
2. Add phase one of new service (Route 206) to serve east side employers and Boeckman Road.
3. Extend Route 201 to Downtown Portland.
4. Extend Route 205 to provide additional service to Charbonneau.
5. Add a Woodburn stop on the Route 1X, upon ODOT's completion of the Woodburn I-5 interchange and Park & Ride lot.
6. Add phase two of new service (Route 206) to serve the north side of Villebois.
7. Add new service (Route 202) to connect Villebois with Town Center and Memorial Park.
8. Add new service to other communities as merited.

The implementation of these priorities is dependent on availability of funding and the progress of projects such as Villebois, Boeckman and Barber Road extensions, Commuter Rail, and the Woodburn I-5 interchange and park & ride lot.

Fares

SMART charges a fare for all intercity routes. Currently, the fare charged on Route 1X is \$2 per ride or \$40 for an unlimited monthly pass. For routes serving Portland, Tualatin, and Canby, the fare is \$1.25 or \$30 for an unlimited monthly pass. Other fare options include an all-zone monthly pass for \$65, discounted punch passes, and reduced fares for seniors, students, or persons with disabilities.

Recommended SMART Routes

In order to balance the various divergent needs for transit service, individual routes are designed with a primary purpose, which is the stronger focus. For example, one route may be designed primarily as an intercity commuting route whereas another is designed primarily as a local service route. A mix of primary purposes ensures that there are routes to serve all needs. In cases where fixed-route transit cannot meet the access needs of a passenger, dial-a-ride service is available during normal service hours and within program parameters. SMART also plans to use vanpools to provide service which is competitive with the automobile for commuters in areas where fixed-route service is not currently provided.

Route 201 – Portland

Primary Purpose: Commuter service linking Wilsonville, Tualatin, and Portland.

Secondary Purpose: Enhance regional connectivity. Provide passengers with a link to commuter rail, TriMet buses, MAX, Amtrak, and CTran (Vancouver).

Currently, travel between Wilsonville and Portland requires at least one transfer with TriMet and total trip time makes the option impractical for most potential passengers. Results from SMART's general and employer surveys indicated a strong demand for SMART service between Portland and Wilsonville. Respondents also expressed a strong interest in connecting with MAX and TriMet. Zip code data from employers suggests that approximately 12 percent of Wilsonville employees live in Portland. Another four percent live in outer Southeast Portland or Gresham, an area served by the MAX line.

Route 201 would provide direct service to Portland, connecting with TriMet, MAX, and the Portland Streetcar (see Map 3 on page 16). This service would allow easy commuting between Portland and

2. Recommended Bus Routes and Service

Wilsonville and would also provide Wilsonville residents with convenient access to the airport and other connections. In addition to providing practical travel options for Wilsonville residents and employees, the Portland-Wilsonville service would contribute greatly to the goal of an interconnected regional transportation network.

The Portland service would be an extension of the existing SMART Route 201, which already serves Barbur Transit Center and the south end of Portland. The proposed extension would continue north on Barbur, with stops at Bertha and Terwilliger. The next stop would be Harrison and 12th near Portland State University, after which the bus would proceed north on 10th, providing connections with TriMet buses, the streetcar, and MAX, before turning around on or near Yamhill. Travel time between Wilsonville and Portland is estimated to be about 45 minutes. Travel time on this route (including parking) would be competitive with automobile commuting (approximately 30 minutes).

Service hours will also be extended on this route to better accommodate the various shifts of workers in both Wilsonville and Portland. This expansion addresses the need of Wilsonville workers to be at work by 6 a.m. The first bus would leave Portland at 5:00 a.m., with the last bus leaving Portland at 7:41 p.m. Service would continue to run Monday through Friday on Route 201. The extended service is planned for 2010. When the demand for the service is sufficient to warrant greater than half-hour frequency, every other run will be operated as an express route. The express runs will go straight from commuter rail to the I-5 on-ramp at Wilsonville Road, with no in-town stops on the east side of Wilsonville. Fares will be charged on Route 201 for trips outside of Wilsonville; in-town service will remain fareless.

Route 201 will play an important role in transferring passengers from the commuter rail station to employment sites on the east side of Wilsonville. Transit schedules will be coordinated with commuter rail to ensure that employees are able to reach their worksites within 15 minutes of arriving in Wilsonville.

Route 202 – Villebois Shuttle

Primary Purpose: Local service to connect Villebois and Town Center, including Village at Main Street and Memorial Park.

Secondary Purpose: Connect Villebois and Town Center with commuter rail.

Route 202, the Villebois Shuttle, would operate hourly Monday through Friday with half-hourly service during peak commute hours (see Map 4 on page 17). It would allow Villebois residents to travel to the commuter rail station, where they could transfer to other routes or continue on to Town Center. Route 202 service is planned for 2011, but initiation of service will depend on development progress and level of demand at Villebois. Additional Saturday service is expected to be added around 2015.

Route 203 – Coffee Creek

Primary Purpose: Local service to employment sites on the west side of Wilsonville

Secondary Purpose: Enhance regional connectivity by linking with TriMet, Commuter Rail, and other SMART routes.

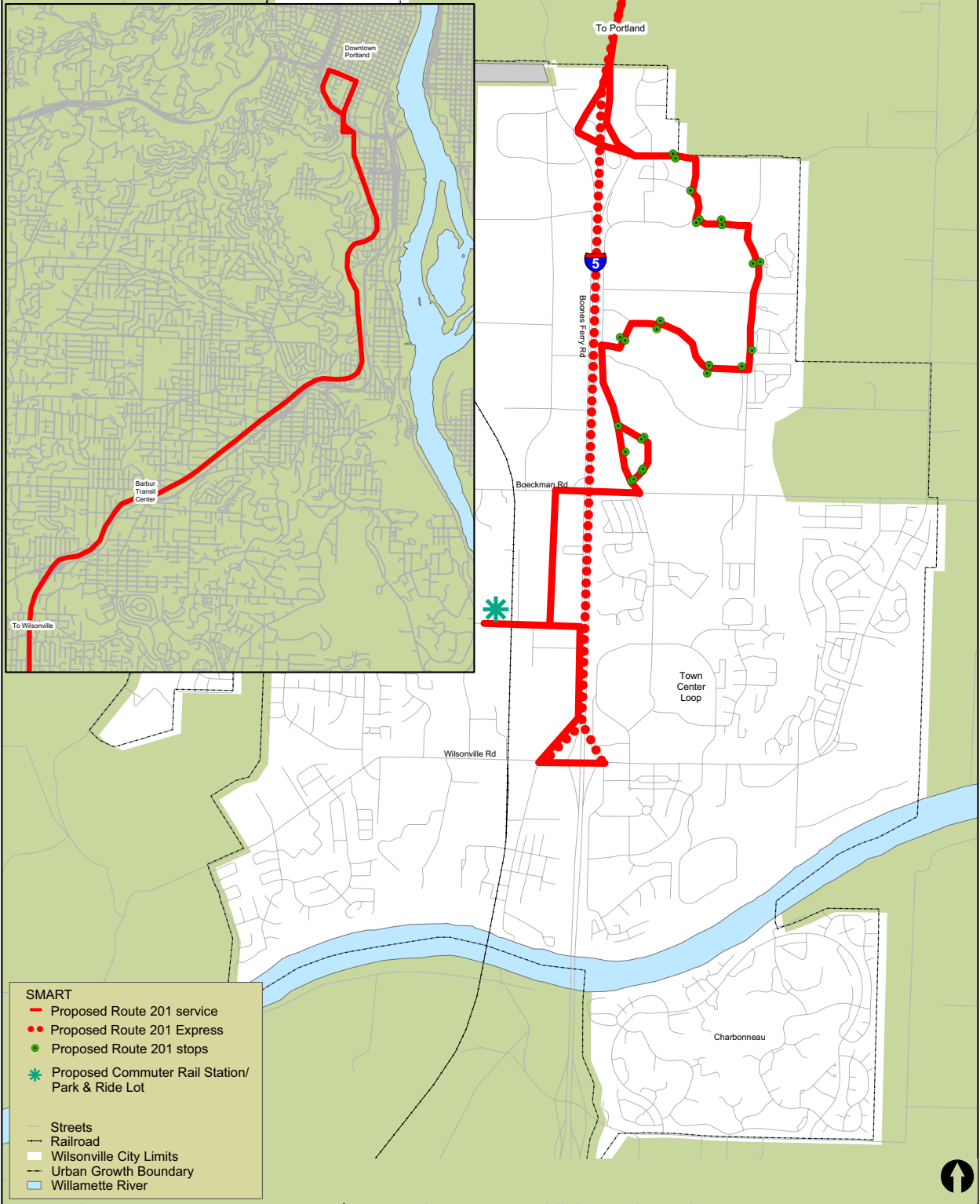
The existing Route 203 provides an important link between TriMet's Route 96 and employment sites on the west side of Wilsonville. With the advent of commuter rail, this route will provide even greater access to jobs on the west side of Wilsonville.

In the short term, Route 203 will be extended to offer service to Coffee Creek Correctional Facility (CCCF). A large percentage of CCCF employees live outside of the Wilsonville area, but have no practical alternatives to commuting via automobile. Individual requests and SMART survey results indicate that there is a demand for transit service to CCCF.

Future annexation of industrial lands will require new service or extension of existing routes on the northwest side of Wilsonville near Coffee Creek. An extension of Route 203 is planned to serve the Coffee Creek I area in approximately 2016, depending on the progress of development. Further development of the Coffee Creek II area and land north of Wilsonville may require additional frequency or service to meet demand. See Map 5 on page 18.

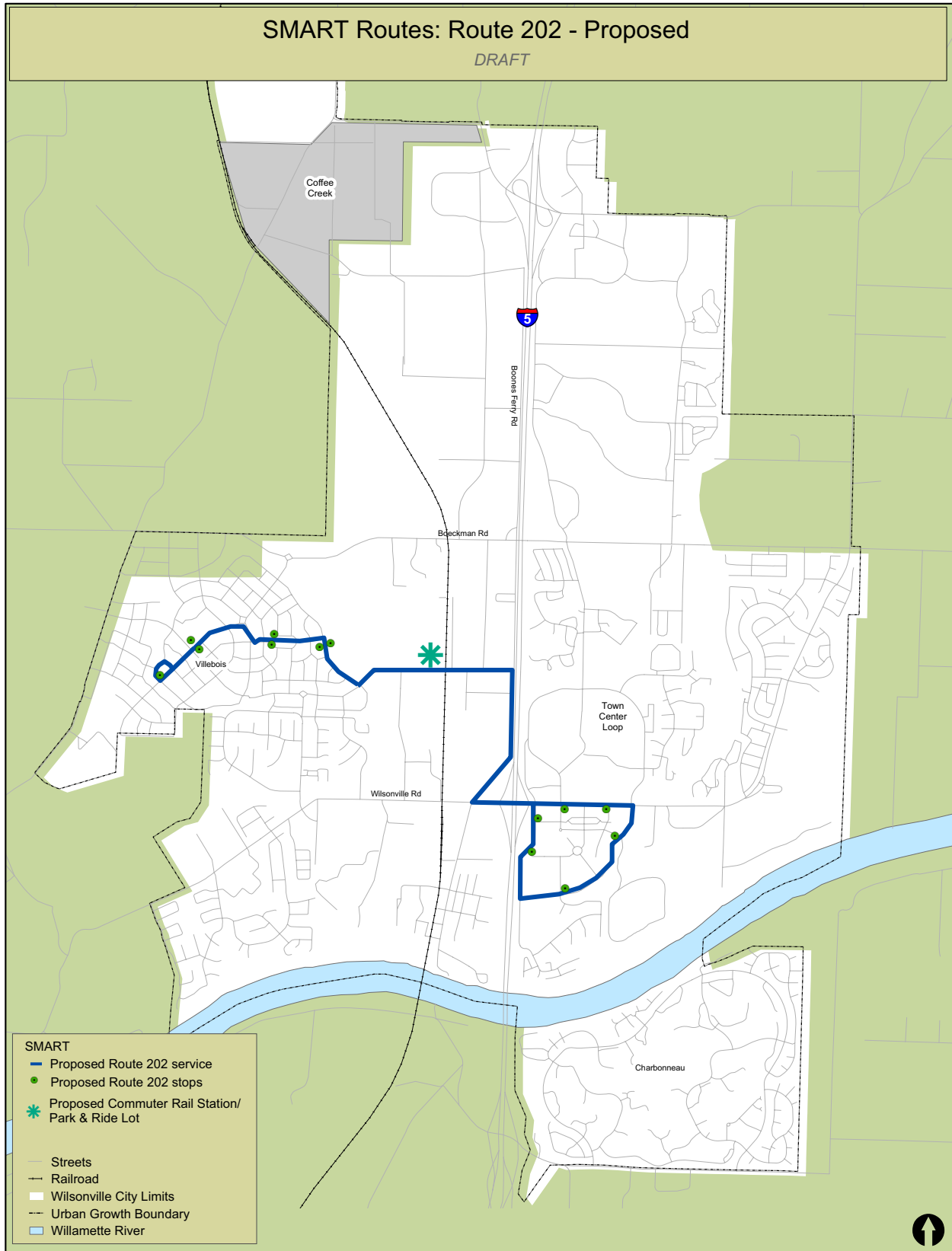
SMART Routes: Route 201 - Proposed

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Map 3. Proposed Route 201

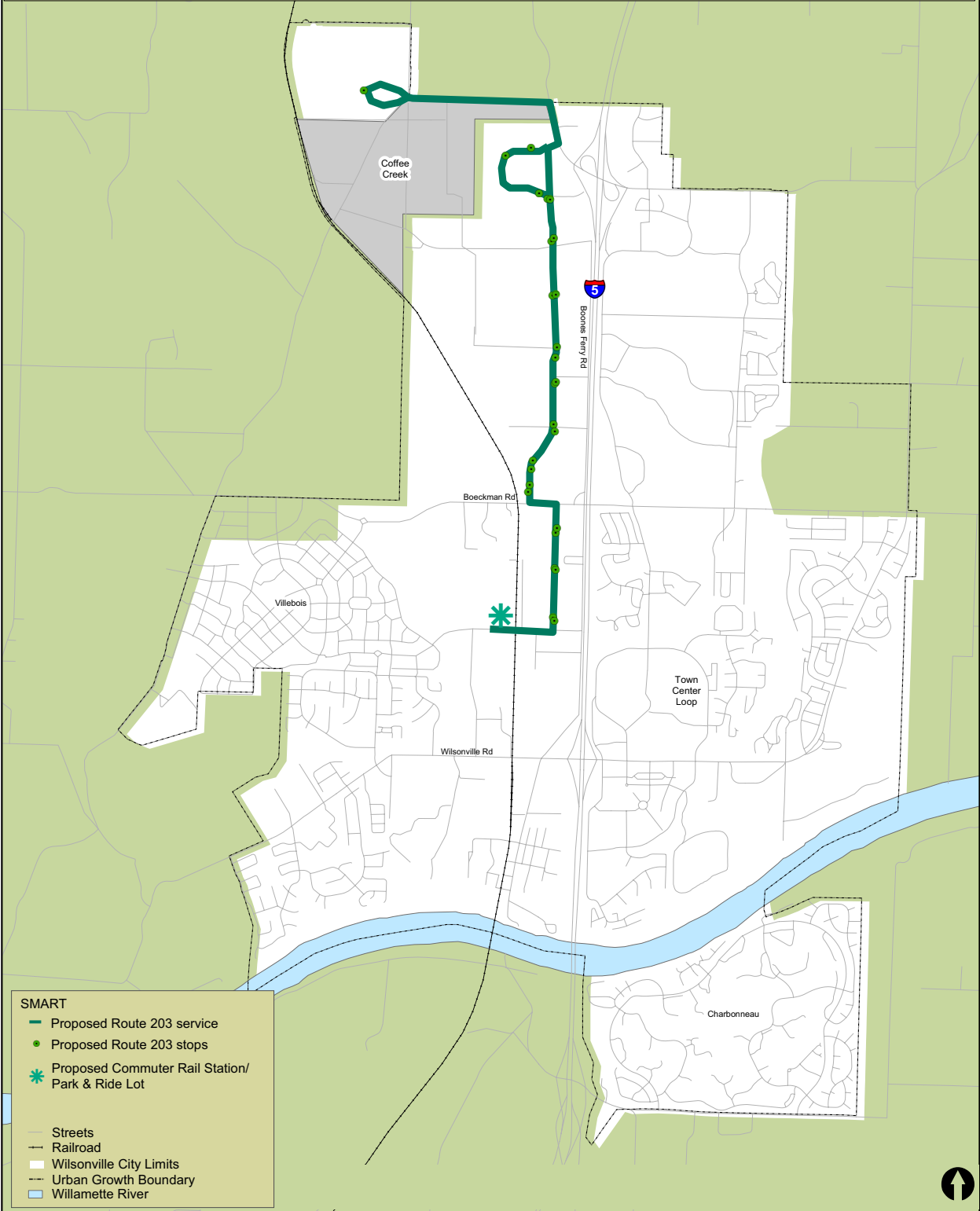
2. Recommended Bus Routes and Service



Map 4. Proposed Route 202

SMART Routes: Route 203 - Proposed

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Map 5. Proposed Route 203

2. Recommended Bus Routes and Service

Route 204 – Crosstown Shuttle

Primary Purpose: Local service to link residential areas on the east and west sides of Wilsonville with Town Center, the Wilsonville Library, schools and parks.

Secondary Purpose: Connect to other SMART routes and commuter rail.

Route 204 Crosstown will continue to provide crosstown service, but will also serve an important role in connecting residents with commuter rail and transfers to intercity service (1X Salem, 205 Canby, and 201 Barbur Boulevard) at the commuter rail station. Passengers arriving on intercity service will be able to use Route 204 to travel to jobs in Town Center.

A proposed change in Route 204 will extend on the east side to accommodate additional growth, including development in the Frog Pond area. Service to Frog Pond will be added in approximately 2017. Frog Pond will also be served by Route 206.

Route 205 – Canby

Primary Purpose: Commuting service between Canby and Wilsonville.

Secondary Purpose: Enhance regional connectivity by connecting SMART routes and commuter rail with CAT and SCTD (Molalla).

The 205 Canby service will connect passengers with commuter rail during peak hours and allow for connections to other local and intercity bus routes. During peak hours, the 205 Canby service will provide hourly service to the commuter rail station.

Currently, there are only two bus stops in Charbonneau. For many people who live on the east side of Charbonneau, this is impractical, especially since there is no parking available at the bus stop at Springridge. At the Master Plan Open House event, feedback from Charbonneau residents was in favor of adding a stop at Charbonneau Village Center and near the eastern entrance to Charbonneau. Route 205, connecting Canby and Wilsonville, would continue to serve Charbonneau, but would eventually make a loop around French Prairie Drive (see Map 7 on page 21). There has been some business resistance to extended service; however, Charbonneau board members are currently considering designating Park & Ride spaces in the Charbonneau commercial center. Service could be extended at any time. The estimated date for service expansion is 2010.

Route 206 – Canyon Creek

Primary Purpose: Local service to connect Villebois and commuter rail with employment, shopping, and residential areas on the east side of Wilsonville.

Secondary Purpose: Connect to other SMART routes.

Route 206 will help provide a fast, efficient connection between commuter rail and employment sites in the northeast quadrant of Wilsonville. It will also offer a convenient connection to outbound commuter rail for residents in the Canyon Creek area of Wilsonville. The proposed Route 206 would offer hourly service connecting Villebois and commuter rail with recent and planned development along Canyon Creek North as well as employment sites such as Mentor Graphics, Xerox, Sysco, and Argyle Square (see Map 8 on page 22). Service will run half-hourly during peak periods. Route 206 will provide direct service to the planned school site at Villebois. This route would start service in 2011 (see Map 9 on page 23).

Future residential development in the Frog Pond area could add an additional 1,200 housing units. Route 206 is tentatively scheduled to serve this area in 2013, depending on the progress of development .

Route 1X – Salem

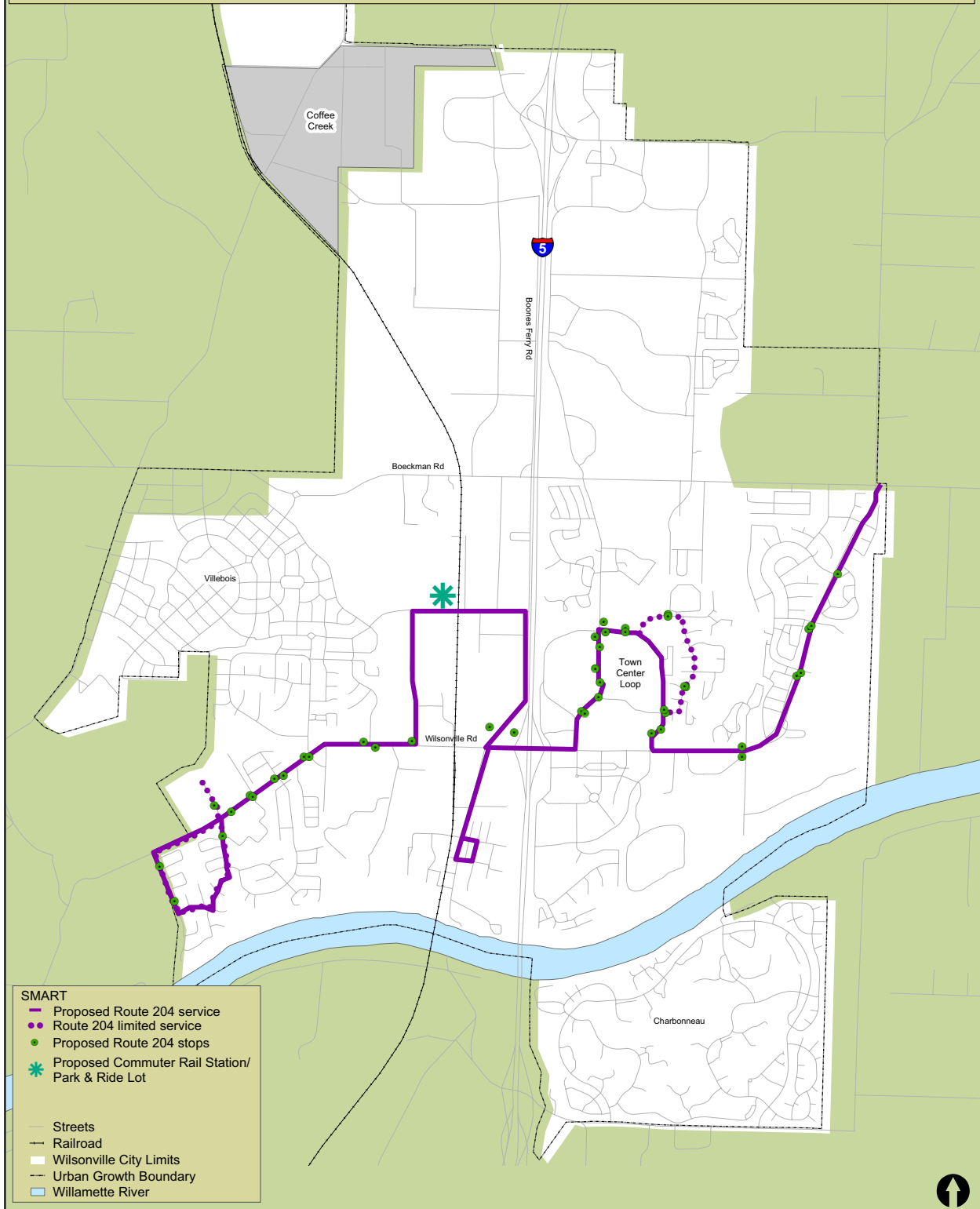
Primary Purpose: Provide express commuting service between Salem and Wilsonville.

Secondary Purposes: Commuting service between Woodburn and Wilsonville. Enhance regional connectivity by connecting with Cherriots routes in Salem.

Once ODOT completes construction of an interchange and Park & Ride lot on I-5 at Woodburn, SMART will stop in Woodburn and pick up passengers there with almost no delay. It is likely that this service would be provided as part of the existing 1X route between Salem and Wilsonville, beginning after the Woodburn Park & Ride facility is completed (see Map 10 on page 24).

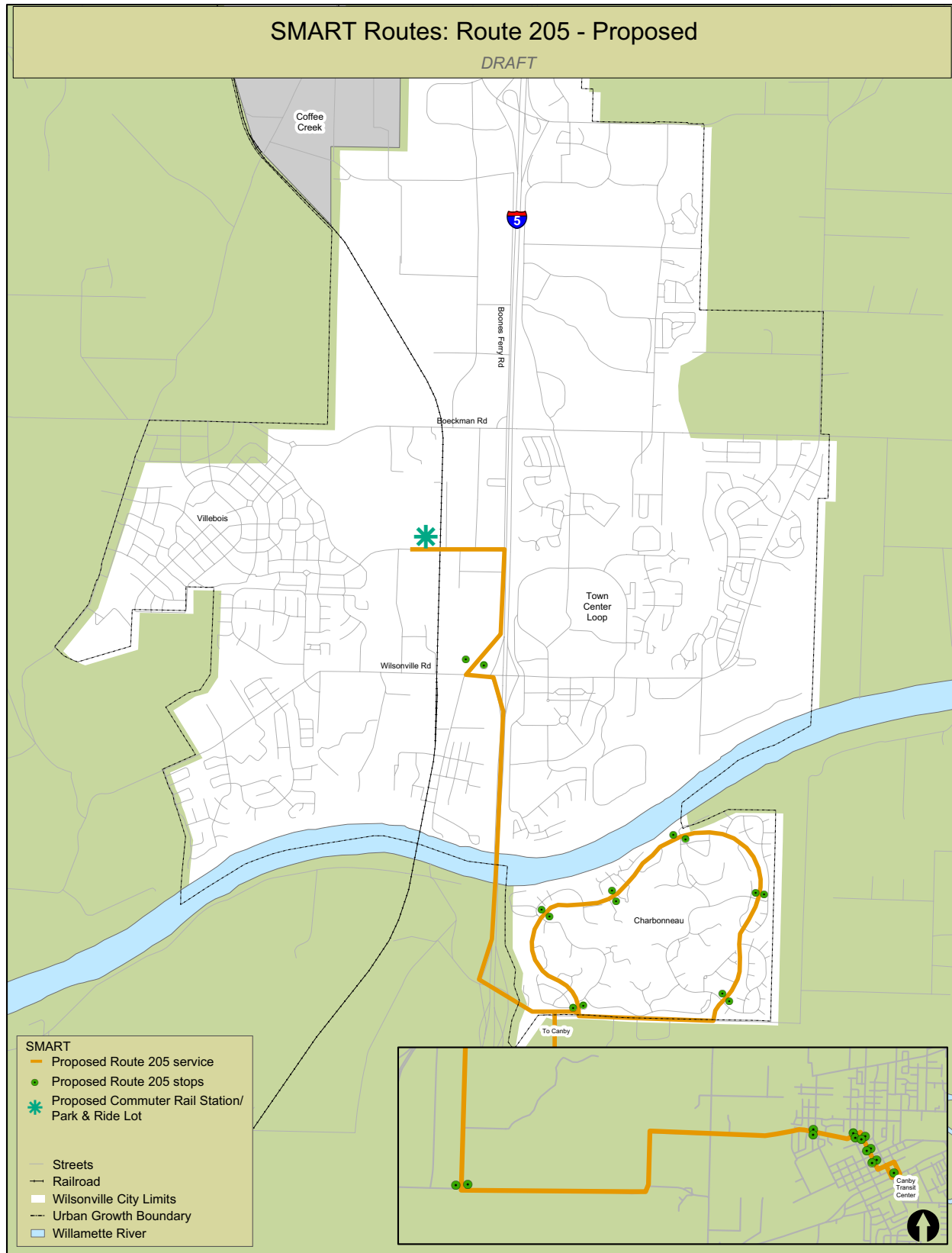
SMART Routes: Route 204 - Proposed

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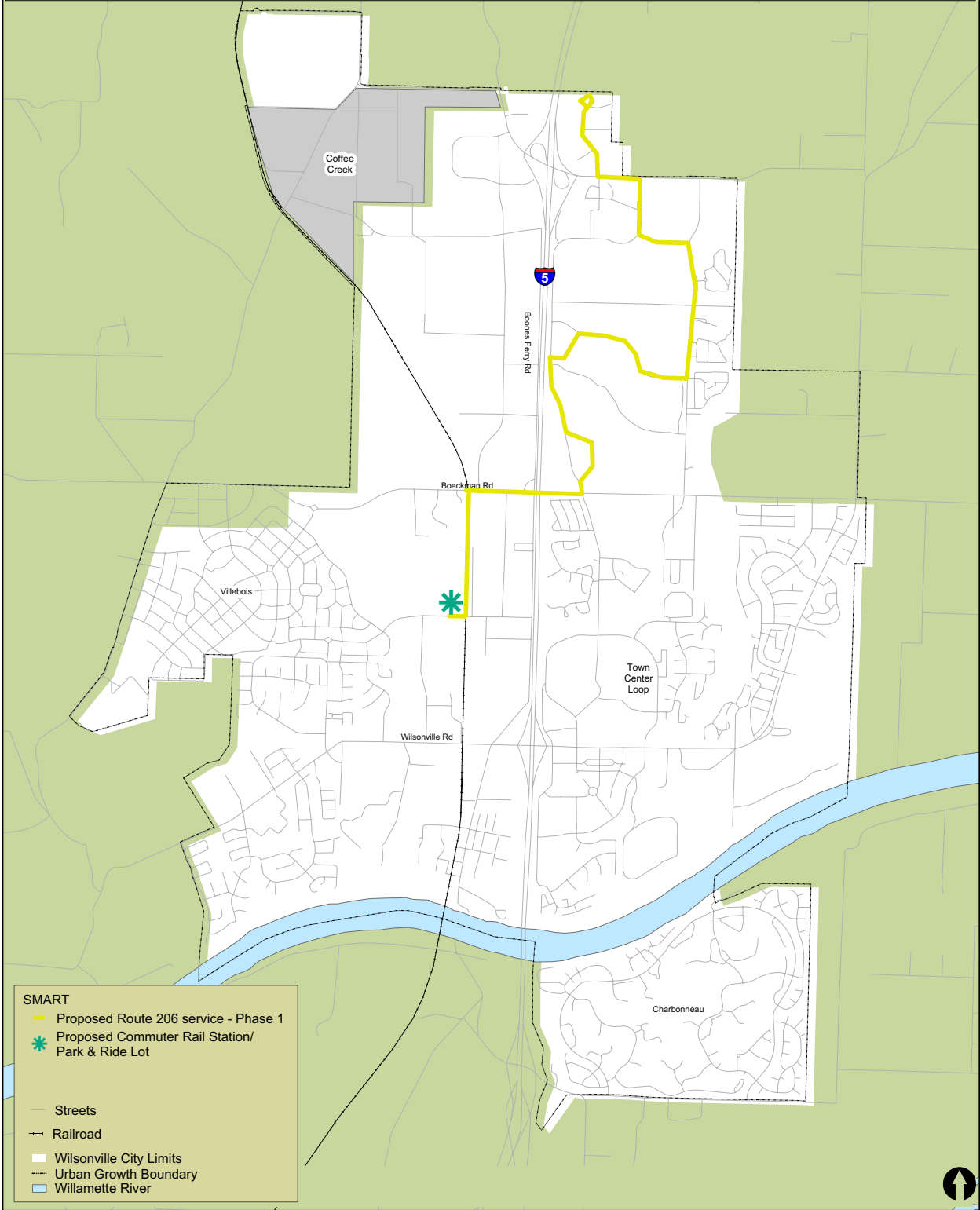
Map 6. Proposed Route 204

2. Recommended Bus Routes and Service



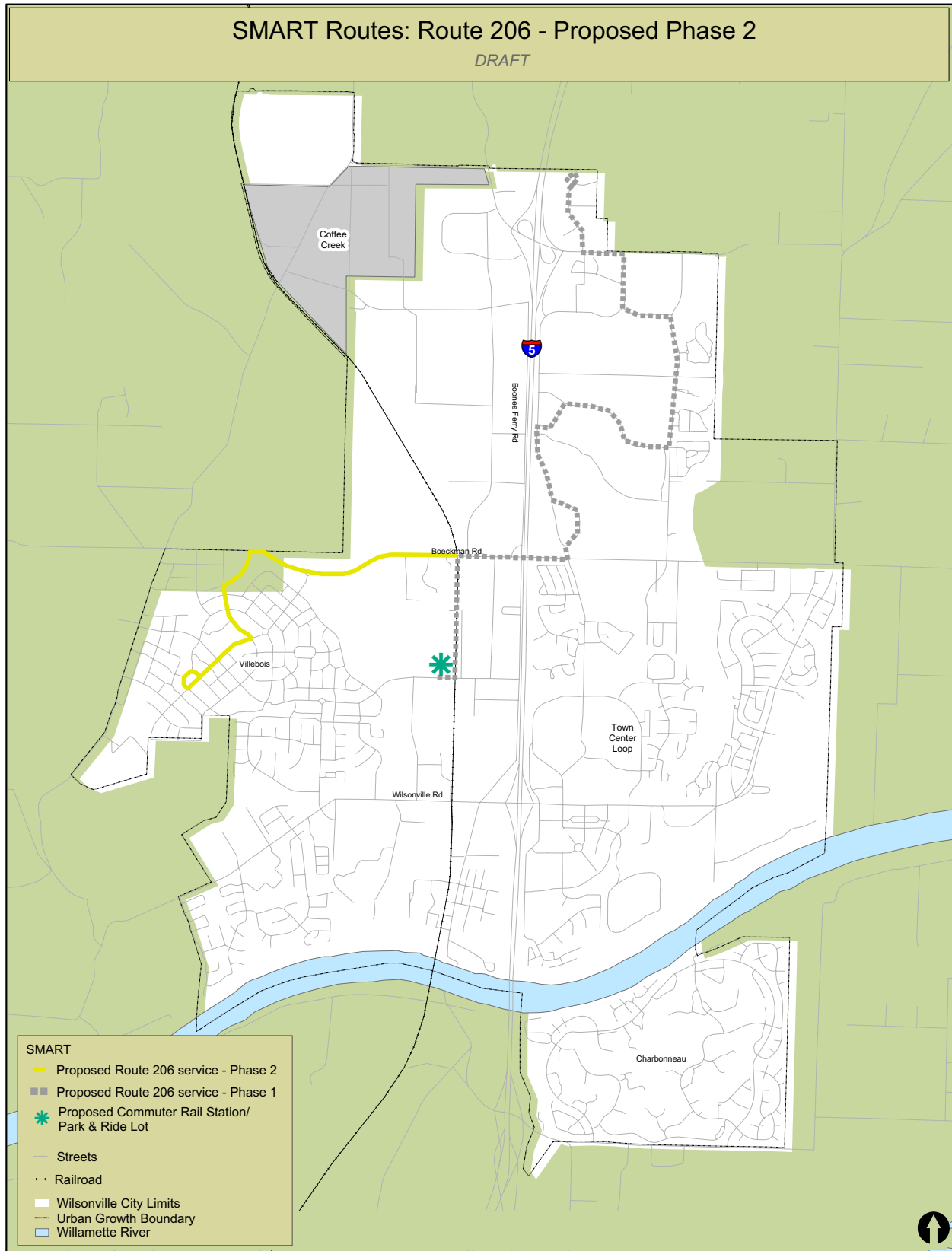
SMART Routes: Route 206 - Proposed Phase 1

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Map 8. Proposed Route 206 - Phase I

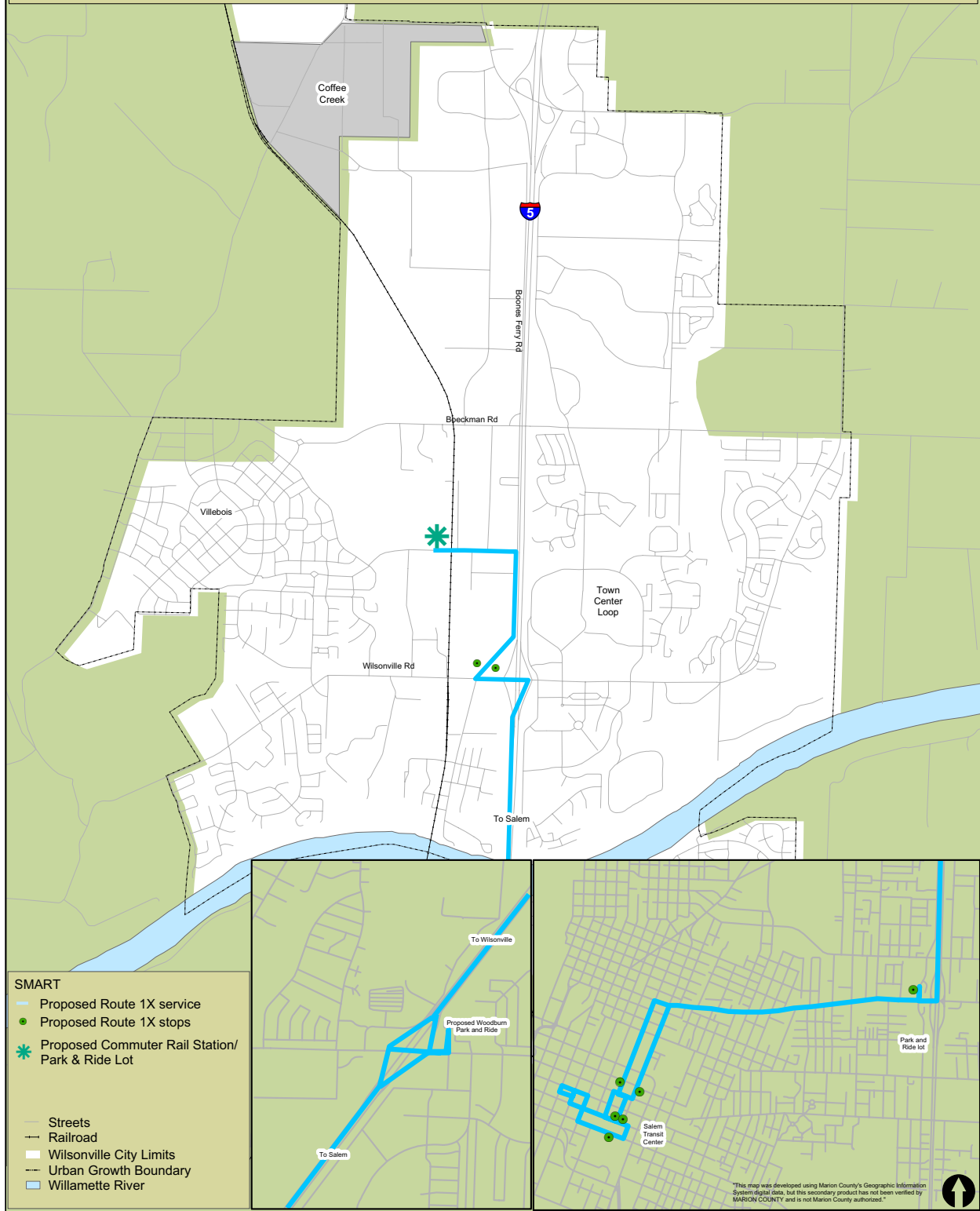
2. Recommended Bus Routes and Service



Map 9. Proposed Route 206 - Phase II

SMART Routes: Route 1X - Proposed

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Map 10. Proposed Route 1X

2. Recommended Bus Routes and Service

Sherwood, Newberg, and Other Communities

The area around Wilsonville is growing rapidly, and an increasing number of residents from cities such as Sherwood, Newberg, West Linn, or Oregon City work in Wilsonville. The zip code survey suggests that roughly 885 of Wilsonville employees live in these communities. Service to these areas is contingent upon completion of the availability of routes that allow efficient service that is competitive with the automobile. However, in the interim, these areas are good candidates for vanpools or carpools.

Vanpools

Vanpools can serve as a cost-effective alternative to providing new fixed-route service in some locations. Vanpools are a good choice for groups of 8 to 15 employees who share a similar commute. Riders generally meet in a specific common location, such as a Park & Ride lot, and drive to the worksite. Vanpools are typically organized in the destination location, where a concentration of employees with common destinations makes vanpool formation most practical. Vanpools are most likely to be a practical cost-saving option if the one-way commute is at least 15-20 miles; however, vanpools for shorter distances can also be viable where the commute is difficult or congested. A vanpool used as a shuttle between commuter rail and a worksite also has high potential, but would be organized somewhat differently than a conventional vanpool. This option is described in more detail later in this chapter.

Generally, commuters share the costs of the vanpool and the vanpool driver is allowed to ride for free and often allowed some personal use of the van on weekends. Nevertheless, finding volunteer drivers for a vanpool is often the biggest obstacle to forming a vanpool.

Another obstacle to forming vanpools is designating an appropriate pick-up location. If passengers have to drive five miles to park and board a vanpool, they may be inclined to just drive the entire distance. It can also be difficult to find a location where all of the vanpoolers can park their cars for the day. On the other hand, it is generally impractical to pick up each passenger at home. A practical compromise can be achieved by designating 2-5 pick-up locations, allowing passengers to travel to whichever location is

closest. This arrangement can also accommodate passengers who do not have access to an automobile.

The TMP project team identified several target destinations for vanpools based on the following criteria:

1. There is a sufficient concentration of employees in Wilsonville from the specific home origin to make a vanpool viable. Considering differences in schedules, work locations, and desire to join a vanpool, there should be at least 100 employees from the designated area.
2. The location is at least 15 miles from Wilsonville and/or driving conditions are unpleasant.
3. There is no direct fixed-route service from the location.
4. Direct fixed-route service is not planned for the near future.

Using zip code data provided by employers, the following locations were selected for potential vanpool formation:

1. Sherwood/Newberg
2. Oregon City/West Linn
3. Hillsboro/Rock Creek
4. Vancouver, Washington
5. Gresham

The next steps to vanpool formation involve securing funding and setting up meetings at worksites to present vanpool options and identify potential riders and drivers. From there, the origin and destination locations can be mapped to determine potential pick-up and drop-off points. These steps are also included in the implementation measures of Chapter 3. The potential for vanpooling is very high in Wilsonville in part because of the concentration of large employment sites.

Vanpools are operated in a variety of ways, with both privately and publicly owned vans. The most likely scenario for Wilsonville vanpools is that SMART would apply for funding to subsidize the vanpool. Metro will be administering funds for regional vanpools, previously administered by TriMet, making SMART eligible for start-up subsidy funds. Funding could become available as soon as late 2006. Final selection of the vanpools would depend on demonstrated interest from potential riders and available funds.

The vanpool itself would be provided by a private company, such as FlexCar, VPSI, or Enterprise. Typically, the cost of the van includes a mileage allowance, insurance, maintenance, and roadside assistance. Some even provide an emergency ride home program. Without subsidies, a 15-passenger vanpool from Vancouver to Wilsonville (approximately 25 miles each way) would cost approximately \$115 monthly per passenger with the driver riding for free. A subsidy would reduce the fare to approximately \$85. The fixed cost for the van represents a large percentage of the total cost, so a vanpool from Newberg/Sherwood (14 miles each way) would still cost approximately \$100 per passenger before subsidies.

Employers could also subsidize their employees' fares. Currently, tax laws allow an employer to contribute up to \$110 monthly per employee in benefits to commute by vanpool. This amount is tax-free for the employee and a business deduction for the employer. In the event that the employer does not wish to subsidize the employee's vanpool fare, the employee can still have a maximum of \$110 per month withheld from their pay as a pre-tax benefit. Direct payment and pre-tax deduction can also be combined in any proportion, up to a combined maximum of \$110.

SMART would also play a role in helping to form the vanpools, assisting in vanpool administration, and promoting the vanpool to attract new riders. Initially, SMART Options staff would contact employers to set up meetings and invite interested employees from target locations. SMART would map home locations and set up potential pick-up locations in order to facilitate formation of a vanpool.

Although this is the most likely scenario for vanpool formation in Wilsonville, there are a number of other options. For instance, an individual employer could apply for a Business Energy Tax Credit (BETC), which would provide a credit for 35% of the cost of the van. SMART could still provide the administrative assistance for such a vanpool as described above. See Appendix C for a description of a conceptual vanpool model.

Commuter Rail Vanpool Shuttle

Vanpool shuttles between the commuter rail station in Wilsonville and large employment sites could provide a practical alternative to fixed-route service or an interim solution until service is implemented. The arrangement



FlexCar/Norm Thompson minivan at Orenco Station

between FlexCar and Norm Thompson is a good example of a program that could work well in Wilsonville. Flexcar provided Norm Thompson Outfitters with a Honda Odyssey minivan at the Orenco Station MAX stop. During commute hours, the van is driven by an employee and used to shuttle employees between the MAX Station and Norm Thompson headquarters. During the day, the van is parked at Norm Thompson for use by employees to run errands or provide transportation during lunch. After 7 p.m. and on weekends, the van is parked at the station and is available for Flexcar users to rent. More information on vanpool shuttles can be found in Appendix C - TDM Methods.

SMART could provide a partial subsidy for the vanpool through grant funding, with the employer providing an employee to do the driving. Grant funding and State credits are available to help offset vanpool setup costs. Carpools can also be an effective option, particularly for commutes that are not long enough to make a vanpool cost effective. The SMART Options program works with employers to help set up carpool and other programs at worksites. Implementation measures related to SMART Options are detailed in Chapter 3-Plan Implementation Measures.

2. Recommended Bus Routes and Service

Table 1. Timeline for Proposed Service

Route	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
201					Extend service to Portland		Increase Frequency. Add express runs			
202 (Villebois Shuttle)						Start service				Add Sat. service
203 West Side			Extend to serve CCCF					Extend to serve Coffee Creek I		
204 Crosstown										
205 Canby & Charbonneau					Extend Charbonneau service					
206 Villebois-Commuter Rail-Boeckman				Start Phase I service				Start Phase II service		
1X						Add Woodburn stop				
Service to Other Communities										

Route	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
201										
202 (Villebois Shuttle)										
203 West Side	Extend to serve Coffee Creek II Industrial Area					Increase frequency				
204 Crosstown		Add service to Frog Pond								
205 Canby & Charbonneau										
206 Villebois-Commuter Rail-Boeckman		Add service to Frog Pond								
1X										
Service to Other Communities							Start service			



3. Plan Implementation Measures

Policies

Increasing Public Knowledge of Transit

Improving Service Quality

Improving Access to Transit

Service Expansion

Increasing Efficiency and Improving Air Quality

Creating a Sense of Community Ownership

3. Plan Implementation Measures

This chapter presents policies and implementation measures to guide SMART and the City of Wilsonville in meeting the following goals:

- Goal 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.

- Goal 2** To develop and implement Transportation Demand Management strategies in order to create greater choice and mobility; reduce automobile trips; make more efficient use of the roadway system; and minimize air pollution.

The policies and implementation measures in this chapter are designed to ensure that transit and other transportation options, such as car- and vanpooling, bicycling, and walking are viable alternatives, even as the City of Wilsonville grows and the demands for transportation change. 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, employment areas, parks, and community functions.

Transit also provides mobility for people who do not have vehicles. 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 innovative strategies to manage mobility.

Recognizing the interdependence of transit and Transportation Demand Management, SMART has integrated a TDM program (SMART Options) into its operations. SMART Options staff members work with employers, community groups, and schools to promote carpooling, vanpooling, walking, bicycling,

telework, and transit. Staff also assists employers in designing and implementing programs and assistance with commuting surveys. These efforts and assistance with commuting surveys help employees find practical commuting options and help employers meet the requirements of the State ECO rule.

This chapter presents measures to implement the following policies.

Policies

The City of Wilsonville shall:

- Policy 1** Increase public awareness of transit and other transportation options, so that customers can make informed decisions.

- Policy 2** Provide service which is coordinated, convenient, comfortable, and safe.

- Policy 3** Promote land use patterns and development standards that improve accessibility of transit to pedestrians, bicyclists, motorists, and special needs groups.

- Policy 4** Expand service to meet the demands of a growing population and employment base in Wilsonville.

- Policy 5** Strive to improve air quality and traffic congestion by increasing transit efficiency, promoting transportation options, and implementing transportation systems management.

- Policy 6** Create a sense of community ownership of the transit system by encouraging citizen involvement.

The chapter is divided into six sections, each of which explores options and issues of a specific policy and provides recommended implementation measures. Table 2 on page 49 lists implementation measures and their relationship to federal, state, and regional plans and other factors.

Policy 1 Increase public awareness of transit and other transportation options, so that customers can make informed decisions.

Increasing Public Knowledge of Transit

Marketing and information are key elements in maintaining and increasing ridership. SMART can provide service that effectively meets passengers' needs, but if people don't know it's there, they won't use it. It is apparent from the SMART survey data that there is both an opportunity and a need for more marketing of SMART's services. In all of the surveys, (general, Spanish-language, schools) and outreach events, people indicated that they would ride SMART or ride more often if they knew more about it.

There is also a great opportunity to leverage outreach efforts through coordination with other providers and existing resources. The actions that need to be taken in order to get the information to the intended audience are often very inexpensive and represent a good value in terms of returns.

Signs, Schedules, and General Marketing

Survey respondents and people who attended the public outreach events said they were not aware of bus schedules or did not know where to find the necessary information. Both adults and children said the schedules were difficult to read.



A SMART bus stop sign

Students participating in a focus group at Wood Middle School indicated that transit maps with street names do not provide them with a meaningful reference. They suggested maps that show places they recognize, such as Bullwinkle's Fun Center, the movie

theatre, library, schools, and shopping centers. Although suggested by children, this approach is likely to also be very useful for adults.

Popular resources such as the Thomas Guide, online services such as Mapquest and Google, or phone book maps could serve as useful informational tools for SMART services. Often, the publishers of these resources are eager to add information if it is available or if they receive a request to do so. Locations of transit centers, Park & Ride lots, and commuter rail stations would enhance the utility of these maps for transit users.

Community Events and Information Kiosks

Community events such as the Clackamas County Fair provide an opportunity for people who are interested in transit to find out more. These fairs also allow the opportunity for individualized trip planning for passengers as well as information on carpooling and other options.



The SMART booth at the County Fair

Kiosks are a useful means of providing information on a variety of transportation options in one location where there are likely to be crowds of people. Kiosks can consist of maps and brochures only or they can include an interactive computer screen that provides information on everything from transit routes, to carpools, vanpools, shuttles, bicycle routes, taxis, and local attractions, including restaurants and accommodations. In Wilsonville, the most obvious location for a kiosk would be at the commuter rail station.

Implementation Measure 1.1

Provide signage at all SMART bus stops that indicates which routes stop there and at what times. Provide route maps at major transit stops.

Implementation Measure 1.2

Create a new bus schedule that can be easily read and understood by passengers of all ages, including a map with points of reference, such as parks, schools, community buildings, Park & Ride lots, and transfer points.

3. Plan Implementation Measures

Implementation Measure 1.3

Send out press releases to publicize schedule changes. Recipients of the press releases could include The Wilsonville Spokesman, the Boones Ferry Messenger, the Wilsonville Chamber of Commerce, Wilsonville TV, schools and employment sites, and various community newsletters. SMART should also provide schedule racks to civic buildings, large businesses, and the Wilsonville Chamber of Commerce and ensure that they are regularly stocked.

Implementation Measure 1.4

Publicize services such as Travel Training and SMART Options by creating and distributing brochures and other information.

Implementation Measure 1.5

Provide local publicity for national and regional events such as *Bike to Work Month*, *Walk to School Week*, *Walk to Lunch*, and other commuter challenge events.

Implementation Measure 1.6

Create one or more transit information kiosks in Wilsonville at locations such as the commuter rail station, the Wilsonville Library, City Hall or the Chamber of Commerce.

Implementation Measure 1.7

Participate in community events to increase general public knowledge of SMART services, connections with other transit systems, and options for carpooling, vanpooling bicycling, and walking.

Web Sites

Many SMART passengers are also passengers of other transit systems, either TriMet in Portland, CAT in Canby, Cherriots in Salem, or SCTD in Molalla. Some even connect from CTran in Vancouver. Transfers between transit systems are made difficult by the lack of information. Looking at one website will generally not provide all of the information needed to make a transfer to another system. SMART will need to work closely with other transit agencies to ensure that website links and information are provided.

The SMART website can serve as a valuable reference for current and prospective passengers who want to find out more about routes and schedules. It can also be much more. The work completed for Wilsonville's Transit, Bicycle and Pedestrian, and Parks & Recreation

Master Plans provides up-to-date information and map resources which could be combined to create a powerful, user-friendly website that not only provides information on activities and events in Wilsonville, but also provides different options to get there.

A customer could click on Memorial Park on the map and they would see a data sheet that includes a photograph of the park and information on facilities, including tennis courts, ball fields, picnic areas, restrooms, ADA accessibility, bus routes, and a calendar of events or activities. It would also provide graphic representations of bus routes and trails connecting with the park.

A customer could also click on the Wilsonville Library and get information on hours, activities, and phone numbers as well as a link to the Library's website. The SMART website could also provide information on walking and bicycling routes throughout the City.

Another important feature which could be added to the website is a separate section for employers, providing information on the SMART Options program, including:

- Services offered, such as transportation fairs, designing and conducting surveys, and assistance setting up commute options programs for their worksites.
- Downloadable "How-To" packets for setting up carpool, vanpool, walking, or telework programs.
- Information on using the Emergency Ride Home Program.
- Information on energy tax credits and incentives for employers, and details on eligible expenditures.

Implementation Measure 1.8

Update the SMART website to include interactive maps and additional transportation program resources for Wilsonville employers.

Implementation Measure 1.9

Request neighboring transit systems and ODOT Public Transit Division to include information about SMART on their websites and on their schedules.

Implementation Measure 1.10

Contact the publishers of mapping resources such as the Thomas Guide, AAA, Mapquest, Google, and the phone book to provide them with locations for the commuter rail station, transit centers, and park & ride lots, and ensure that these locations are shown on maps and websites.

Targeted Marketing

Ensuring that necessary information is readily available and easy to understand will make it much easier for people to ride SMART. These marketing efforts are likely to attract people who already have an interest in riding transit. Additional targeted marketing efforts are likely to attract new passengers and people who had not previously considered transit as a transportation option. Targeted marketing could be tailored to provide specialized information for employees, new residents, schools, or other specific groups. Marketing should include information on carpooling, vanpooling and other alternatives in addition to transit.

Employment Sites

Employers have a particular interest in attracting the best employees available. The better the transportation options, the better their chances of attracting employees from a larger area.

Due to employee turnover, it is important to maintain a presence at employment sites, so that employees are aware of their transportation options. Marketing programs at employment sites should aim to provide a service or benefit in conjunction with the information. Many worksite programs which help to reduce traffic congestion and air pollution also provide a benefit for employees, including flex-time, telework, staggered work hours, parking cash-out, and preferred parking for carpools.

Providing additional information on the cost savings over driving and environmental benefits can serve as



A SMART information booth at an employment site

an added incentive. Low-cost incentive and promotional programs can also serve as effective tools to increase transit ridership and participation in carpools, vanpools and bicycling. Many employers will not be aware of tax incentives for subsidizing vanpool and transit fares, and purchasing equipment such as bicycles, bicycle lockers, and telework equipment. SMART can ensure that they have the information. SMART can also assist in developing and implementing programs at worksites. Establishing strong relationships with employers is essential in ensuring that these programs are well supported.

Schools

Marketing and information for school-age children is particularly important, because travel habits often become ingrained at an early age.

The traffic impacts of children

switching from car trips to other transportation modes is also higher because parents often have to make two round trips in order to deliver and pick up a child at a destination. Education on SMART and other transportation alternatives can often be integrated into the existing school curriculum. For instance, for the past several years, SMART has sponsored a SMART Art on the Bus program at Wilsonville schools. Students work together in small groups to produce art that depicts bus and other forms of travel. During the process, the costs and benefits of various transportation modes are also discussed. Each year, winning pictures are selected to be included on the exterior design of a SMART bus.



SMART Art on the Bus program

Seniors and People with Disabilities

Since many seniors and people with disabilities do not drive, they are more likely to rely on public transit to meet their basic transportation needs. Ensuring that seniors and people with disabilities have ready access to transit information provides them with greater freedom of mobility. Without adequate information, there is a greater likelihood that seniors and people with disabilities will forego some trips altogether or be totally reliant on friends or family to drive them

3. Plan Implementation Measures

around. Dial-a-Ride is available by calling 24-hours ahead of time to reserve a ride. If the passengers have sufficient information on fixed-route service, they may be able to use it instead of Dial-a-Ride. This not only provides them with greater flexibility, but it also results in a lower per-trip cost than Dial-a-Ride.

Travel Training

Travel training consists of showing people who have never taken the bus where they need board and how to read the schedules. A trainer goes with an individual or a group and shows them how it works. This training is extremely valuable, since "fear of the unknown" keeps many people from trying transit even though they would like to. Travel training is a particularly effective tool to introduce seniors and people with disabilities to the benefits of using fixed-route transit.

SMART currently offers travel training for anyone who requests it. The service is promoted on SMART schedules and is occasionally marketed to seniors by Wilsonville Community Center staff. SMART could promote this service more heavily and tailor it to meet the needs of specific groups, including seniors and students.

TravelSmart is an intensive approach to individualized travel training/marketing. This travel behavior change program originated in Australia and has generated pilot projects in many other areas, including Portland. TravelSmart has shown great success in getting people to try alternatives to driving alone, such as transit, walking, and bicycling. TravelSmart uses a survey process to identify people who want more information on alternatives and then provides them with individualized information on how to use the alternatives available to them. Evaluation surveys have shown a 10% reduction in car driver trips. Surveys conducted one and two years later showed these changes to be sustained.

The past success of individualized travel marketing highlights the importance of adequate information as a motivation for using travel alternatives such as transit, bicycling, and walking. Individualized travel marketing projects are labor intensive and fairly expensive to implement, so it could not be implemented in Wilsonville without grant funding. It is likely that individualized travel marketing projects will be considered for regional funding in the future. The City of Wilsonville, with commuter rail and numerous

connecting transit systems, is an ideal location for a future individualized travel marketing project.

Implementation Measure 1.11

Develop and distribute targeted marketing materials to employment sites, schools, new commercial and residential developments, and other groups. These materials should provide an overview of SMART services including:

- Route schedules
- Other transportation options, such as bicycling, carpooling, vanpooling, and telework
- Information on SMART's Walk SMART program
- Information of specific interest to the targeted group, whether it be seniors, children, or commuters.

Materials for employment sites should include information on telework, flex time, staggered work hours, and parking management programs. Information for new residents and employees should include an invitation to a free trolley tour of Wilsonville.

Implementation Measure 1.12

Offer specialized travel training for seniors, students, and other interested groups.

Implementation Measure 1.13

Actively pursue funding for a Travel Smart project through Metro's Regional Travel Options funding process or other sources.

Policy 2 Provide service which is coordinated, convenient, comfortable, and safe.

Improving Service Quality

Attaining a high quality of service is paramount if transit is to be competitive with the automobile. Providing a safe, dependable, convenient, and comfortable service is the key to maintaining and increasing the current customer base. Passengers must be assured quality service free of any discrimination based on minority status, age, gender, ethnicity, or disability. Customers must be confident that the bus will arrive on time and that the bus is clean, safe, and well-maintained.

SMART can also improve its competitiveness with the automobile by addressing an issue that prevents many people from taking the bus; they are worried they won't be able to get home in the event of an emergency. Emergency Ride Home programs have served as an effective incentive for people who worry about being stranded without a ride if they travel by transit, carpool or vanpool. The program provides a free ride home for participants in the event of an emergency that prevents them from taking the bus or meeting a scheduled carpool or vanpool.

Schedule and Program Coordination

The coordination of schedules between routes and transit providers is key in assuring that travel times are competitive with the automobile. SMART will need to work as closely as possible with TriMet, Cherriots, CAT, and SCTD to ensure that connections are convenient and wait times are minimized.

The SMART Options Program provides assistance to employers in setting up transportation options programs at their worksites. However, SMART can get additional leverage for the program by working cooperatively with Metro, Carpool Match NW and other jurisdictions and agencies that support transportation options.

Customer Service Monitoring

SMART may be unaware of consistent complaints and their resolution if no consolidated records are kept. By maintaining a record of customer service calls, letters, and e-mail along with resolution or action taken, SMART will be able to assess whether or not customer complaints are being resolved.

Passenger surveys also represent an opportunity to assess customer satisfaction and the provision of equitable service. Passenger surveys should include demographic questions in order to identify any service inequalities or unmet needs of specific demographic groups.

Emergency Ride Home Program

Nationwide, Emergency Ride Home programs have proved themselves to be an inexpensive insurance policy; they act as a strong incentive, yet few people actually end up needing to use the ride-home feature. The Emergency Ride Home Program in Salem costs less than \$2,500 per year to administer and covers 1,600 commuters.

Programs can be structured so that participants are limited to a specified number of rides each year or quarter. SMART already has an unofficial guaranteed ride home program for passengers, however there are no set guidelines and the program is not publicized. Developing guidelines, extending the program to carpoolers, and vanpoolers, and publicizing the program could provide a valuable tool in attracting and retaining passengers. The program also provides a benefit for employers and employees who participate in transportation options programs.

Maintenance, Security, and Vehicle Replacement

In order to attract and retain transit customers, buses must be clean, attractive and well-maintained. SMART needs to replace worn and unreliable buses and continue to inspect and repair all buses on a set maintenance schedule to ensure that there are no breakdowns during service hours.

On-Board Amenities

In order to attract passengers away from their cars, SMART must provide service which is competitive in terms of cost, comfort, and convenience. On-board amenities are a way of adding comfort and convenience. If passengers can access the internet, listen to music, watch the news, or relax in comfortable seats, transit is may seem more attractive than driving. SMART should survey current and potential passengers to assess the value and cost-effectiveness of any on-board amenity being considered.

Implementation Measure 2.1

Coordinate SMART bus route schedules as closely as possible with TriMet, Cherriots, and CAT to ensure that connections are convenient and wait times are minimized.

Implementation Measure 2.2

Coordinate with ODOT, Metro, Tri-Met, and the counties of Washington and Clackamas on the development of Park & 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 intermodal connectivity.

Implementation Measure 2.3

Strive to maintain a record of 85% on-time service on all routes.

Implementation Measure 2.4

Maintain 100% satisfaction of Dial-A-Ride requests from elderly and disabled passengers.

Implementation Measure 2.5

Maintain a record of customer service calls, letters, and e-mail along with resolution or action taken.

Implementation Measure 2.6

Conduct passenger surveys in English and Spanish on an annual or more frequent basis to assess customer satisfaction, unmet needs, and provision of equitable service.

Implementation Measure 2.7

Expand SMART's existing Emergency Ride Home Program to cover commuters who participate in worksite programs as a means to encourage transit, carpooling, vanpooling, bicycling and walking.

Implementation Measure 2.8

Provide regular training for bus drivers in customer service, emergency preparedness, cultural sensitivity, and Spanish language.

Implementation Measure 2.9

Increase the number of security cameras to include cameras in the back of buses where feasible.

Implementation Measure 2.10

Inspect and repair all buses on a set maintenance schedule to ensure that there are no breakdowns during service hours. Ensure that buses are kept clean during service and that they are thoroughly cleaned at the end of each day.

Implementation Measure 2.11

Continue to research and implement new technologies which provide improvements in customer service and are cost effective. Examples include real-time customer information displays, automated stop announcements, regional multi-jurisdictional transit scheduling, dispatch, and other technologies.

Implementation Measure 2.12

Research the feasibility and cost-effectiveness of adding passenger amenities, designed to attract new passengers who currently drive.

Policy 3 Promote land use patterns and development standards that improve accessibility of transit to pedestrians, bicyclists, motorists, and transit-dependent populations.

Improving Access to Transit

Good access to transit means that it is safe, practical, and convenient to get to and from bus stops. It means that when you get to the bus stop, there is shelter and it is well lit and in a safe location. Ideally, transit is located no more than a quarter mile from all residences and businesses. It also means you are able to access the information you need to ride transit, such as schedules and maps.

Providing good pedestrian and bicycle networks helps to ensure that there will be good access to transit as well, particularly if pedestrian, bicycle, automobile, and transit are well interconnected. In an ideal situation, a person would be able to use any mode of transportation or combination of modes to reach a destination; this provides the greatest level of choice in mobility. Reality is more likely to present gaps in the pedestrian and bicycle networks which also create problems in accessing bus stops. Unfortunately, it is the people who rely on transit for their basic transportation needs who are most affected by this lack of access.

Other issues which can adversely affect access to transit are the lack of:

- Sidewalks
- ADA sidewalk ramps
- Street lighting
- Traffic signals
- Bus shelters
- Information for non-English speakers
- Bike racks on buses
- Secure bike parking at destinations

General Access

Factors such as transit shelters and building design and orientation affect all transit users. SMART and the City of Wilsonville will need to work closely with new developments to ensure that they accommodate and encourage transit use.

Transit shelters provide improved access by providing shelter from weather, an opportunity to sit down, lighting, and a display of route and schedule information.

SMART maintains a shelter priority list to determine where new shelters will be located.

Many buildings are designed with a priority for automobile access, making access from the sidewalk difficult or hazardous. Buildings with entrances that front onto parking lots present a particular problem. Bus service within parking lots is inadvisable because of the many hazards from motorists backing out and people walking to and from their cars. However, if a person has to endure a long walk through the parking lot with bags of groceries to get to a bus stop, transit is still not a practical option.

This problem highlights the importance of orienting buildings towards the sidewalk. State, regional, and county policies strongly promote transit-oriented design. SMART should work closely with other City departments to ensure that pedestrian and bicycle access in the City is expanded and that new developments are designed to be transit friendly.

Bus Shelters and Bus Seat Poles

Bus shelters and benches provide the best shelter and comfort at bus stops. SMART has a bus shelter priority list of ten locations that are designated to get shelters within the next year. After that, an updated bus stop priority list should be based on the following criteria:

1. Number of passenger boardings per day - this criterion leverages limited resources to benefit the greatest number of customers.
2. Designation as a major transit stop - Since major transit stops are often transfer points, shelters are particularly important for these locations.
3. Type of population served - Locations that serve higher concentrations of transit-dependent populations are given priority for shelter placement. This frequently includes bus stops at medical facilities and public service agencies.
4. Availability of a nearby shelter - Shelters are distributed to obtain maximum coverage and equal access.
5. Preparation required - All other criteria being equal, level sites that provide adequate placement

area with minimal impact to surrounding properties are preferred.

Bus stop poles also represent an opportunity for passengers to sit down while they wait for the bus. Although it does not provide shelter from the elements, it is particularly useful for people who are not able to stand for long periods of time. The seat is attached to the bus stop pole and can be flipped down when someone wants to use it.

Implementation Measure 3.1

Install bus shelters based on the following priority list. Update future priority lists on an annual basis.

- Wilsonville Road at Willamette Way E.
- Wilsonville Road in front of SMART office
- Parkway Avenue at Ash Meadows
- Parkway Avenue south of Thunderbird Drive
- Wilsonville Road at Brown Road
- Boulder Creek Apartments
- Wilsonville Road at Montebello (both sides)
- Wilsonville Road at Boones Ferry Road
- Willamette Way E. at Chantilly
- 95th Avenue at Nike Access Road
- Parkway Avenue at Boeckman Road (both sides)
- Wilsonville Road at Rose Lane
- 95th Avenue at Hillman Court

Implementation Measure 3.2

Purchase and install seats that attach to the bus pole at all Wilsonville bus stops where the following criteria are met:

1. There is currently no shelter at the bus stop.
2. No bus shelter is anticipated to be built at the location within the next year
3. No other seating is located adjacent to the bus stop.
4. Installation of the bus pole seat would not present a safety hazard.

Implementation Measure 3.3

Require each traffic study to include the effects on transit services, circulation, and access for pedestrians and bicyclists on major transit streets.

Implementation Measure 3.4

Amend the City's Comprehensive Plan and the Planning and Land Development Code as appropriate, to include Transit Facilities Design Standards.

Implementation Measure 3.5

Continue to require new developments on major transit streets to be designed to support transit use through site planning and pedestrian accessibility. Amend the City's Development Code to include provisions that new developments on major transit streets are designed so that:

- Location of the building frontage and entrance is within 20 feet of the transit stop or transit street.

A direct pedestrian connection is provided between transit stops and building entrances.

Implementation Measure 3.6

Require new developments generating an average of 49 or more peak trips to provide an approved bus shelter with concrete boarding pad, bus stop sign and pole, bench, lighting, information display unit, garbage receptacle and bicycle rack. New developments generating more than 199 peak-hour trips shall also provide a bus pullout and additional bus shelters, if SMART determines it is necessary. New developments generating more than 500 peak-hour trips shall also provide on-site circulation to accommodate transit service, including appropriate street design, building orientation, and turning radii.

Implementation Measure 3.7

Amend the City's Development Code to require large developments and high employment and/or traffic generators (i.e., those with at least 50 on-site employees) 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, Planning Director, and SMART. The City will monitor and enforce, if necessary, to ensure plans meet modal targets and are implemented.

Pedestrian and Bicycle Access

Most people who ride transit walk to the bus stop. This is particularly true of the very young and very old. Even a short gap in the sidewalk network or one unsafe crossing can render the trip to a transit stop impractical. Pedestrian access is therefore the key ingredient in assuring accessibility to transit.



Gaps in the sidewalk hinder pedestrian access to transit.

The Draft Wilsonville Bicycle and Pedestrian Master Plan identifies gaps in the sidewalk network and recommends improvements, based on a number of factors including connections to bus stops. Completing these gaps will greatly improve safe access to transit. In particular, the identified improvements to Boeckman Road would provide pedestrian and bicycle connections between the commuter rail station and residential and employment sites on the east side.

Provisions for safe pedestrian crossings also need to be required of new construction, including, where applicable, curb ramps, bulbouts, medians or pedestrian refuges, flashers or signals, and traffic-calming measures, to ensure that pedestrians can safely travel to and from bus stops.

Encouraging bicycle access to transit allows transit to attract customers from an area beyond walking distance. There are a number of reasons that people combine bicycling and transit:

- Either the origin or destination is not within walking distance of a transit stop.
- They want to get some exercise, but their trip is too long to bicycle the entire distance.
- They may want to go for a recreational ride at their destination.
- They don't drive or don't want to drive

Some of the obstacles that limit bicycle access to transit are:

- Lack of bicycle parking at the destination.
- Lack of safe bike routes between the origin or destination and the transit stop.
- Shortage of bike rack space on the buses.

Although all SMART buses have bike racks with space for two bikes, this is not always sufficient. SMART drivers will allow bicycles in the bus if space permits, however if the rack is full and there is no space in the bus, passengers must wait for the next bus. If the rack is full and a passenger has a bicycle inside the bus, he or she faces the possibility of having to disembark if a person in a wheelchair wants to board.

Recently, bike racks which accommodate three bicycles have become available. There is also a possibility of installing vertical racks inside buses, which would take up little room and would not



All SMART buses have bike racks with space for 2 bikes.

interfere with wheelchair access. Bicycle racks can also be installed on the back of the bus. Lack of visibility makes these racks less desirable, as it is possible for the bus driver to pull away while someone is loading or unloading a bicycle. There is also greater potential for the bicycles to be stolen while the bus is stopped at traffic lights.

In order to assure bicycle access to transit, there must also be safe, secure (and ideally sheltered) places to park bicycles. Bicycle racks can be included with the installation of bus shelters, but more secure parking is warranted at locations such as the commuter rail station. Bicycle lockers and/or a BikeStation™, as described in the Draft Wilsonville Bicycle and Pedestrian Master Plan, should be considered for the commuter rail station.

Implementation Measure 3.8

Improve pedestrian and bicycle connectivity to transit routes to the maximum extent possible, by constructing bicycle lanes, and bicycle parking and storage, sidewalks, crosswalks and other provisions for safe pedestrian crossings such as curb ramps, bulbouts, medians or pedestrian refuges, flashers or signals, and traffic-calming measures.

Implementation Measure 3.9

Purchase bicycle racks which accommodate three bicycles for all new bus purchases and all replacement racks. Trade out new racks with old ones when necessary to ensure that buses with highest demand have the new racks. Investigate the availability of vertical racks to be installed inside the buses.

Implementation Measure 3.10

Encourage employers to improve on-site provisions for bicyclists such as weather-protected parking facilities, showers, and lockers at point of destination.

Implementation Measure 3.11

Make accommodations for bicyclists and pedestrians at park-and-ride lots and transportation transfer locations, including bicycle lockers or racks, sidewalks, pedestrian refuges, and marked crossings as appropriate.

Implementation Measure 3.12

Develop a loaner bicycle program. Bicycles would be purchased by SMART and stored in lockers at the Commuter Rail station/ transit center. Program participants could then ride the bicycles from the transit center to their destination and return them to the lockers for their return trips.

Automobile Access (Park & Ride)

Currently, there is a 120-space Park & Ride lot at Wilsonville's Town Center. This Park & Ride is provided on a short-term basis by Wilsonville Regal Cinemas as a courtesy for SMART passengers. It operates at near capacity.



According to a recent SMART survey, the majority of people using the Town Center Park & Ride were passengers on Route 1X, intercity service between Salem and Wilsonville. When commuter rail begins service in 2008, the 1X will no longer stop at Town Center. Instead, it will originate at the Wilsonville Commuter Rail Station/ SMART Transit Center, where there will be a 650-space Park & Ride lot.

There may still be a future need for an additional Park & Ride lot in North Wilsonville. Ideally, such a lot would be located near Wilsonville's northern I-5 Interchange. Complicating any such plans is the short supply of vacant land near the freeway interchange. However, there are other ways to put more Park & Ride spaces into service.

Implementation Measure 3.13

Construct a park-and-ride lot at the commuter rail station. Work with regional, state and private entities to develop funding packages.

Implementation Measure 3.14

Reassess the need for an additional park & ride lot after the commuter rail lot is operational. At that time options can be evaluated based on number of spaces needed.

Senior and Disabled Access

Improving access to transit not only creates a greater sense of freedom and mobility for senior and disabled passengers, it can also prove to be more cost-effective in the long run. When people who are elderly or disabled and don't drive are unable to access transit,

they have few options. If they cannot find a friend or family member to drive them, then they must use Dial-A-Ride. Although Dial-A-Ride provides mobility, it does not provide the flexibility of fixed-route service since reservations must be made ahead of time. Specific improvements to fixed route service can make it more accessible to many senior and disabled passengers, and also result in cost savings to the transit provider.

Mobility and independence are important quality-of-life issues for seniors and people with disabilities. Transit can provide an important lifeline, linking people to work, shopping, community connections, and medical appointments. Seniors and people with disabilities are also likely to be more sensitive to access issues. For instance a senior may be mobile enough to walk to a bus stop, but unable to stand and wait for any length of time. In such a case, the availability of a shelter determines whether or not transit is a viable option. Similarly, a person in a wheelchair may be able to get to the bus stop with no problem as long as there is a continuous sidewalk. For this reason, the previously-listed implementation measures for general and pedestrian access are of particular importance to seniors and people with disabilities.

All SMART buses are lift equipped and accommodate wheelchairs. Dial-a-Ride service is also available, but must be scheduled a day in advance. SMART also provides transportation to medical appointments in the Portland area for Wilsonville seniors and people with disabilities. TriMet provides lift service between Portland and Commerce Circle in Wilsonville. Dial-a-Ride customers can transfer between SMART and TriMet services at Commerce Circle, but they must schedule the two services separately. A coordinated effort with TriMet and other providers would help to streamline the process for Dial-a-Ride trips between districts, so that reservations for one trip can be made with a single phone call.

SMART should continue to coordinate with the Wilsonville Community Center to offer senior luncheon, shopping and activity trips, providing seniors with mobility, and an opportunity to run errands and socialize. SMART could also expand service to accommodate evening classes one or two days a week.

SMART should conduct an overall evaluation of the transit system's accessibility for seniors and people

with disabilities. The evaluation should be performed in consultation with a group, such as Elders in Action, which represents seniors and people with disabilities. This process would provide SMART with a list of obstacles or deficiencies that need to be addressed.

Implementation Measure 3.15

Assure that all new transit facilities meet ADA requirements.

Implementation Measure 3.16

Purchase low-floor buses whenever feasible, to facilitate easy boarding for seniors and people with disabilities.

Implementation Measure 3.17

Coordinate with TriMet and other providers to streamline the process for Dial-a-Ride trips between districts, so that reservations for one trip can be made with a single phone call.

Implementation Measure 3.18

Continue to coordinate with the Wilsonville Community Center to provide senior luncheon, shopping and activity trips to provide seniors with mobility, and an opportunity to run errands and socialize. Work with the Community Center to expand service to accommodate evening classes.

Implementation Measure 3.19

Evaluate the SMART system's accessibility for seniors and people with disabilities. The evaluation should be performed in consultation with a group, such as Elders in Action, which represents seniors and people with disabilities. This process would provide SMART with a list of obstacles or deficiencies that need to be addressed.

Access for Non-English Speakers

Language barriers limit access to transit when prospective passengers are unable to get the information they need on routes and schedules. The largest concentration of non-English speakers in Wilsonville speaks Spanish. According to the 2000 U.S. Census, 3.5% of Wilsonville's population spoke Spanish as a native language and spoke English "less than very well". SMART provides limited information in Spanish on the schedules and on the website. Additional information in Spanish could assist many residents in planning transit trips.

The transit schedule pages are primarily graphic and numeric and therefore understandable to most non-English speakers, however the section on Dial-a-Ride and service for seniors and people with disabilities should be translated. Revising the maps to include recognizable landmarks and points of reference will help to ensure that non-English speakers have a good idea of route destinations. SMART should also make provisions so that Spanish-speaking customers can get basic assistance over the phone or from drivers.

Implementation Measure 3.20

Provide Spanish translations for information on Dial-a-Ride and services for seniors and people with disabilities on schedules and on the website.

Implementation Measure 3.21

Offer Spanish-language training to bus drivers and SMART office staff.

Policy 4 Expand service to meet the demands of a growing population and employment base in Wilsonville.

Service Expansion

Chapter 2 provides detailed plans for service expansion. The following implementation measures provide additional steps to accommodate growing demand for transit.

The goals of service expansion are to:

1. Provide service to new developments in Wilsonville.
2. Ensure that service adequately addresses the needs of low-income and transit-dependent populations.
3. Provide increased opportunities for residents, employees, and visitors to connect to jobs, shopping, parks, and community activities.
4. Facilitate connections between transit and other travel modes, including walking, bicycling, rail, and air travel.
5. Facilitate regional/intercity connectivity.
6. Increase frequencies.
7. Extend service times to accommodate travel needs.

Transit serves an important role in providing mobility to people who do not have access to automobiles,

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including the young, old, minorities, low-income residents, and people with disabilities. Transit-dependent individuals often rely on transit as a lifeline to connect them with jobs, shopping, medical appointments, and social interactions. SMART's first priority must always be to provide transportation for transit-dependent individuals. This includes measures to provide service within walking distance of all development in Wilsonville, to provide schedule information in Spanish, and to offer demand-response service help to ensure that transit is accessible to those who need it most. Providing fare-free service within Wilsonville also ensures that cost is not a barrier. Although fares are charged for service outside of Wilsonville, these fares remain much lower than the cost of driving an automobile. Half-price fares are also available for youth, seniors, and people with disabilities.

In order to finance SMART transit service to newly-annexed areas, it is important that SMART receive the payroll taxes generated by businesses there. When a piece of land is annexed by Wilsonville, it does not automatically become part of the SMART service area. The area remains in the TriMet Service District and pays payroll taxes to TriMet until TriMet takes action to remove it. SMART should draft and sign an intergovernmental agreement with TriMet well before the first annexations to ensure that annexed areas are promptly moved to SMART's service area.

Transportation Management Association (TMA)

A TMA is a valuable option to provide increased services as Wilsonville grows.

A TMA is a public/private partnership of business members, transportation providers and governmental entities that addresses important transportation issues and provides cooperative service. Members work together to organize commuting options for employees, customer, and the community. These options include carpools, vanpools, transit, bicycling, walking, and telework. The goal of a TMA is to provide commuting solutions for the community, while also helping to reduce traffic congestion and improve the air quality.

Metro currently provides funding to help start up and run TMAs in the Portland Metropolitan region. The Lloyd District TMA in Portland is an example of a particularly

successful local TMA. The Lloyd TMA sells bus passes, rents bike lockers, and provides information on carpooling, transit, bicycle parking. It serves as a one-stop shop for transportation questions. Many TMAs also organize vanpools and provide other services.

Wilsonville does not have a sufficient concentration of employees to justify a TMA now, however with development of the industrial lands near Coffee Creek and other increases in employment, a TMA would probably be viable within the next five or six years.

Implementation Measure 4.1

Plan for facilities and services to meet anticipated demands in new growth areas such as Villebois and the industrial lands near the Coffee Creek and Frog Pond areas.

Implementation Measure 4.2

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.

Implementation Measure 4.3

Coordinate with TriMet to draft and sign an intergovernmental agreement facilitating the transfer of any lands annexed by Wilsonville from TriMet's service district into the SMART service area.

Implementation Measure 4.4

Strive to provide service within ¼ mile of all existing and new development, to ensure that residents and employees can walk to bus stops.

Implementation Measure 4.5

Conduct follow-up surveys of residents and employees to provide updated information on the travel needs and preferences of riders and non-riders, with a special emphasis on seniors, youth, low-income, minorities, and people with disabilities.

Implementation Measure 4.6

Expand or extend service based on needs of new development, transit-dependent populations, increasing ridership counts, origin-destination studies, or survey results from current and/or potential passengers indicating travel preferences.

Implementation Measure 4.7

Charge fares for any intercity service. Evaluate fare levels on an annual basis with the objective of maximized revenue and minimized loss of ridership.

Implementation Measure 4.8

Evaluate routes on an annual basis based on criteria such as ridership levels, overall cost, passenger boardings, and costs per passenger mile. Targeted marketing campaigns should be conducted for routes with performance levels below the norm. Service alterations should be considered for routes which continue to perform below the norm.

Implementation Measure 4.9

Continue to provide demand-response service within the City of Wilsonville to help meet the demands of the transit-dependent population, with priority given to people with disabilities.

Implementation Measure 4.10

Support new 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 4.11

Work with employers to assess the viability of vanpools from various locations, based on employee zip code data and shift times. Assist in setting up vanpools where sufficient interest exists.

Implementation Measure 4.12

Pursue funding for vanpools to Wilsonville employment sites.

Implementation Measure 4.13

Research the feasibility and interest in forming a Transportation Management Association (TMA) in Wilsonville once the Coffee Creek I area is developed.

Policy 5 Strive to improve air quality and traffic congestion by increasing transit efficiency, promoting transportation options, and implementing transportation systems management.

Increasing Efficiency and Improving Air Quality

Transit already provides air quality and traffic congestion benefits over automobile travel. However, there are ways to create even greater benefits. Promoting other transportation options such as carpooling, vanpooling, bicycling, walking, and telework can also help to reduce traffic congestion and air pollution. The use of alternative fuels provides an opportunity for transit to reduce its impact on the environment and air quality.

Transportation Options or 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. Transportation Options programs are designed to:

- Reduce the number of automobile trips
- Switch the times of trips to less congested periods of the day
- Encourage transit, carpooling, vanpooling, bicycling, walking, and telework as alternatives to driving

Transportation Options programs make the transportation system more efficient and reduce pollution without adding major infrastructure. These programs are most effective when complementary elements are packaged together to fit the needs and conditions of a given site or area. Supporting

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infrastructure, such as functional sidewalks, bicycle racks and transit shelters, as well as transit services are important to a successful program

The City of Wilsonville's TDM mode split target for the RTP is 15 percent. TDM mode split refers to the share of trips made by a mode of transportation other than a single-occupant vehicle (SOV), such as transit, vanpools, carpooling, walking, and telework. In order to meet the target, SMART will need to:

1. Work closely with employers to assist them in designing and implementing work-site programs
2. Require that large employers (50 or more employees) submit TDM plans to show how they will reduce transportation impacts.

Implementation Measure 5.1

Work to reduce the number of vehicle miles traveled in the City by monitoring transportation demand management programs of area businesses and assisting employers in meeting ECO rule requirements.

Implementation Measure 5.2

Continue to operate the SMART Options program to work with area businesses and market travel demand management and commuting alternatives. Provide incentives that encourage employees to reduce SOV commute trips.

Implementation Measure 5.3

Take part in regional and state cooperative ridesharing, vanpooling, and marketing efforts to reduce air pollution and traffic congestion.

Implementation Measure 5.4

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 work-week schedules, telework, preferred parking, and other policies which encourage the use of alternative transportation modes, including transit, walking, and bicycling.

Implementation Measure 5.5

Continue to impose maximum parking limits in conformity with Metro standards for large developments and high employment and/or traffic generators.

Implementation Measure 5.6

Allow for a reduction from minimum parking standards for developers who implement a TDM Plan approved by SMART.

Transportation Systems Management (TSM)

TSM approaches work to increase the operational efficiency of the existing transportation infrastructure. As applied to transit, TSM measures help to reduce bus travel times, making transit more competitive with the automobile.

The two TSM measures that are most likely to work for SMART are traffic signal priority and queue bypass. Even these measures may not be warranted for some time. They should also be carefully reviewed by traffic engineers to ensure that they do not result in negative impacts on overall traffic flow. The most effective location for implementation of either measure would be on Wilsonville Road between Town Center Loop E and the I-5 Interchange.

Traffic Signal Priority

Buses use a mechanism to alert a traffic signal of their approach. The approach of a bus either allows for the light to turn green earlier or to stay green longer. Signal priority is not the same as signal preemption, which is reserved for emergency vehicles. Preemption alters the normal operation of the signal, while priority is much less disruptive. See Appendix B for a diagram of traffic signal priority.

Queue Bypass

Buses are allowed to use a right-turn-only lane to proceed through the intersection. Buses can then bypass the line of through traffic at the intersection, making the bus more time efficient. See Appendix B for a diagram of a queue bypass.

Implementation Measure 5.7

Work with City Public Works staff to determine what effects signal prioritization and queue bypass would have on travel times for the bus and if the measures could be expected to have a negative impact on overall traffic flow.

Implementation Measure 5.8

Evaluate bus pull-outs on a case-by-case basis to ensure safety for passenger loading and unloading and to balance delays to cars and buses.

Implementation Measure 5.9

In coordination with other traffic flow, revise traffic signal timing sequences as appropriate to help buses.

Alternative Fuels and Solar Options

SMART currently uses low-sulfur diesel, and would like to further reduce environmental impacts by switching to a cleaner fuel source. Alternative fuels are currently being used or tested by a number of transit providers with varying results. In many cases, initial costs are prohibitive. SMART may not be able to switch to alternative fuels in the short-term, but as the alternatives become more available, less costly, and more reliable, these options should be re-examined.

As diesel prices continue to rise, alternatives become more cost competitive. Increasing production and distribution of alternative fuels is also likely to reduce the costs. At this writing, nearly all of the alternatives to diesel are more expensive. Some of these, such as hybrid buses have a much higher initial cost, but could recoup some of the difference over the life of the bus, due to reduced fuel usage and reduced maintenance costs for brakes and transmission. Others, such as compressed natural gas or fuel cell, require a new fueling system.

Grant funding and credits are available to offset the higher costs of implementing clean fuel technologies. For additional information on alternative fuels, see Appendix D.

Clean Fuel Formula Grant Program

The Clean Fuels Formula Grant Program is sponsored by the Federal Transit Administration (FTA) to encourage deployment of advanced bus technologies. Public transit operators in clean air non-attainment or maintenance areas are eligible. The Portland Metropolitan Region is currently classified as a maintenance area for carbon monoxide.

The grant program was developed to assist transit systems in:

- Purchasing low-emissions buses and related equipment
- Constructing alternative fuel fueling facilities
- Modifying existing garage facilities to accommodate clean fuel vehicles
- Assisting in the utilization of biodiesel fuel
- Re-power and retrofitting of pre 1993 engines

Expenditures on clean fuel technologies also qualify for Oregon Business Energy Tax Credits. A Pass-through option allows tax exempt entities to receive a portion of the credit by partnering with a tax-paying business. SMART would qualify for a credit of 25-30% of project costs.

Solar Power and Photo-Luminescent Materials

Solar panels are being used more widely now to power electronic parking meters, emergency phones, and a number of other uses. Solar panels could also be used to power lighting at shelters. This would also reduce the cost of running electrical conduit to the sidewalk. An installed photo-voltaic lighting system currently cost about \$1,450 per bus shelter.

Photo-luminescent materials are another means of lighting informational displays at bus shelters. The light-weight material can be applied as a decal or as an entire panel. It absorbs light during the day and continues to provide light many hours after dark. A side panel would cost a few hundred dollars, while photo-luminescent tape would cost considerable less.

Implementation Measure 5.10

Research potential alternative fuels for transit vehicles, with a focus on environmental sustainability as well as cost efficiency. As new technologies mature and become readily available, evaluate their costs and benefits for SMART.

Implementation Measure 5.11

Install solar-powered lighting at new bus shelters, wherever it is viable and the cost is not prohibitive when compared with conventional power. Encourage new developments providing bus shelters to use solar power for shelter lighting. Explore the use of photo-luminescent materials as another option for lighting at shelters.

Implementation Measure 5.12

Become a member of the Columbia-Willamette Clean Cities Initiative to work cooperatively with other jurisdictions and organizations to promote clean and efficient energy use.

Policy 6 Create a sense of community ownership of the transit system by encouraging citizen involvement.

Creating a Sense of Community Ownership

The Wilsonville community has a strong sense of pride in their community and the SMART transit system. Additional efforts could be made to create a real sense of ownership within the community. Previous projects such as the SMART Art on the Bus contests in the schools have created buses that displayed local children's artwork. Children and parents are proud to see the artwork displayed, and their sense of ownership is shared by other residents. SMART could involve the community in additional ways to ensure that SMART:

- Represents the quality and character of the community in a unique way
- Provides buses and shelters which are not only highly functional, but also unique and aesthetically pleasing
- Provides a sense of fun

Transportation to community events not only provides a convenient option, it also fosters a sense of community among riders who are able to travel as a group. SMART occasionally provides transportation to community functions such as sports events and the County Fair. Providing these services is an effective way to encourage people who would not normally ride the bus to try it out. Once they are familiar with the service, they may feel more comfortable using it on a regular basis.

Other community services, such as the trolley tours of Wilsonville, present an opportunity for SMART to help promote the community and local businesses to visitors and new residents. While SMART can provide local trips and regular subscription trips, special trips are limited by a law which prohibits competition with

charter services. For instance, SMART could not take a group of Wilsonville residents on a trip to the Portland Art Museum or a wine country tour, because this would be considered competition with charter services. On the other hand, regular subscription trips are a possibility if the cost is covered by fares. If a group of people wanted to attend the entire Portland Symphony season, the service could be offered with scheduled times. Appendix E provides information on FTA regulations regarding charter service.

Naming Bus Routes

Naming bus routes after landmarks or symbols provides an easier frame of reference for passengers than a route number. It can also provide a sense of ownership for the community. Bus routes can be named after important destinations along the route, mascots, historical figures, or local flora and fauna.

Implementation Measure 6.1

Review existing bus route names and rename routes as needed to create a consistent naming system which provides an easy frame of reference and fosters a sense of community ownership.

Community Involvement in Shelter Design

SMART could allow neighborhoods and businesses the opportunity to design their own bus shelters, providing them with a shelter that reflects the character of the individual neighborhood. While there are basic functional requirements for a bus shelter, there is also plenty of room for innovation and individuality. Even a basic shelter could be decorated with artwork produced by local adults or children. The artwork is then transferred onto the shelter as decals (similar to the ones used on the buses), or the glass could be etched to create a monochrome image.

Employer Recognition

Many employers have innovative programs that encourage their employees to ride transit and use other transportation options. Recognizing these employers with an annual awards program would let them know that their efforts are appreciated. SMART could also recognize and support Wilsonville employers by displaying informational materials on environmental programs or health and wellness

efforts at particular worksites. SMART could even post local employment opportunities in the bus.

Unique Vehicles

The SMART trolley is a good example of a unique vehicle that Wilsonville residents recognize as a mobile community landmark. SMART could look at additional opportunities to acquire vehicles which are distinct, aesthetically pleasing, and fun, but also very functional. One such option would be a double-decker bus, which could provide the capacity needed for routes that have standing room only without adding the expense of another bus and driver. These buses have the same turning radius as the regular 40-foot buses.

Art and Poetry on the Bus

SMART already sponsors a very successful Art on the Bus Program, which provides Wilsonville students with an opportunity to display their artwork on the bus. SMART could also sponsor poetry contests several times a year, with the selected poetry displayed on cards in the bus in the area above the windows that is often used for advertising cards on other transit systems. For each contest, participants would focus on a particular subject, which could range from Wilsonville, parks, transportation, seasons, or a number of other subjects. The costs to offer such a program would be very low and would provide an opportunity for many residents to see their work displayed.

Implementation Measure 6.2

Allow neighborhoods and businesses the opportunity to participate in the design of their bus shelters, providing them with a shelter that reflects the character of the individual neighborhood. Residents could either provide their own designs or could participate in judging architectural competitions for shelter design. Sculptural artwork in proximity to the bus shelters could also be included in this process.

Implementation Measure 6.3

Research opportunities to provide transportation to community events such as races, art festivals, charity events, concerts, and special programs.

Implementation Measure 6.4

Expand the Art on the Bus Program to allow children a more frequent opportunity to display their artwork or writing on the bus.

Implementation Measure 6.5

Recognize Wilsonville employers with an annual awards program that acknowledges the best efforts to promote transit, walking, bicycling, carpooling, vanpooling, or telework at the worksite.

Implementation Measure 6.6

Recognize and support Wilsonville businesses with posted information in the bus. This information could include recognition of health and wellness or environmental programs and could also include employment opportunities.

Implementation Measure 6.7

Explore opportunities to purchase vehicles which provide a unique representation for the City of Wilsonville and SMART.

Table 2. Implementation Measures

This table provides an overview of the proposed implementation measures presented in this chapter, along with timelines for implementation and role in supporting specific goals or requirements of other plans, acts, and rules. The following abbreviations are used: TPR for Oregon Transportation Planning Rule, OPTP for Oregon Public Transportation Plan, RTP for the Metro Regional Transportation Plan, ECO for the Oregon DEQ's Employee Commute Options Rule, ADA

for American with Disabilities Act, and EDTP for the Tri-County Elderly and Disabled Transportation Plan. The provisions of these plans, acts, and rules are described in greater detail in the Introduction of this Plan.

The text for some of listed measures has been abbreviated to fit in the table format. For full text of the measures, consult earlier sections of this chapter.

Measures	Timeline	TPR	OPTP	RTP	ECO	ADA	EDTP
1. Increasing Public Knowledge of Transit							
1.1 Provide signage at all SMART bus stops that indicates which routes stop there and at what times. Provide route maps at major transit stops.	2006/ 2007 ongoing			X			
1.2 Create a new bus schedule that can be easily read and understood	2007			X			
1.3 Send out press releases to publicize schedule changes.	ongoing			X			
1.4 Create brochures for Travel Training and SMART Options	2006			X	X		
1.5 Provide local publicity for national and regional events such as <i>Bike to Work Month</i> , <i>Walk to School Week</i> , <i>Walk to Lunch</i> , and other commuter challenge events.	ongoing			X	X		
1.6 Create one or more transit information kiosks	2008			X			
1.7 Participate in community events to increase knowledge of SMART/SMART Options	ongoing			X			
1.8 Update the SMART website	2007						
1.9 Request neighboring transit systems and ODOT Public Transit Division to include information about SMART on their websites and on their schedules.	ongoing			X			
1.10 Get commuter rail and park and rides in Thomas Guide, AAA, Mapquest, Google, and the phone book	2007 and ongoing			X			
1.11 Develop and distribute targeted marketing materials to employment sites, schools, new commercial and residential developments, and other groups.	ongoing			X	X		
1.12 Offer specialized travel training for seniors, students, and other interested groups.	ongoing			X			X
1.13 Actively pursue funding for a Travel Smart project through Metro's Regional Travel Options funding process or other sources.	2008	X		X			
2. Improving Service Quality							
2.1 Coordinate SMART bus route schedules as closely as possible with TriMet, Cherrlots, and CAT to ensure that connections are convenient and wait times are minimized.	ongoing			X			
2.2 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 commuter rail	ongoing			X			

Measures	Timeline	TPR	OPTP	RTP	ECO	ADA	EDTP
2.3 Strive to maintain a record of 85% on-time service on all routes.	ongoing			X			
2.4 Maintain 100% satisfaction of Dial-A-Ride requests from elderly and disabled passengers.	ongoing					X	X
2.5 Maintain a record of customer service calls, letters, and e-mail along with resolution or action taken.	2006 and ongoing						
2.6 Conduct passenger surveys in English and Spanish on an annual or more frequent basis to assess customer satisfaction, unmet needs, and provision of equitable service.							
2.7 Expand SMART's existing Emergency Ride Home Program	2007			X	X		
2.8 Provide regular training for bus drivers in customer service, emergency preparedness, cultural sensitivity, and Spanish language.	ongoing			X			
2.9 Increase the number of security cameras to include cameras in the back of buses where feasible	2007			X			
2.10 Inspect and repair all buses on a set maintenance schedule	ongoing						
2.11 Continue to research and implement new technologies which provide improvements in customer service and are cost effective.	ongoing			X			
2.12 Research the feasibility and cost-effectiveness of adding passenger amenities, designed to attract new passengers who currently drive	ongoing			X			
3. Improving Access to Transit							
3.1 Install bus shelters based on the priority list	2006 and ongoing					X	X
3.2 Purchase and install seats that attach to the bus pole at all Wilsonville bus stops where criteria are met.	2007 and ongoing					X	X
3.3 Require each traffic study to include the effects on transit services, circulation, and access for pedestrians and bicyclists on major transit streets.	ongoing	X		X			
3.4 Amend the City's Comprehensive Plan and the Planning and Land Development Code as appropriate, to include Transit Facilities Design Standards.	2006 and ongoing	X		X		X	X
3.5 Continue to require new development on major transit streets to be designed to support transit	ongoing	X		X		X	X
3.6 Development conditions for transit amenities based on traffic generation	ongoing	X		X			
3.7 Requirement for TDM plans for large developments and high employment and/or traffic generators	ongoing	X		X			
3.8 Improve pedestrian and bicycle connectivity to transit routes to the maximum extent possible, by constructing bicycle lanes, and bicycle parking and storage, sidewalks, crosswalks and other provisions for safe pedestrian crossings such as curb ramps, bulbouts, medians or pedestrian refuges, flashers or signals, and traffic-calming	ongoing	X	X	X		X	X
3.9 Purchase bicycle racks which accommodate three bicycles for all new bus purchases and all replacement racks	2006 and ongoing						

3. Plan Implementation Measures

Measures	Timeline	TPR	OPTP	RTP	ECO	ADA	EDTP
3.10 Encourage employers to improve on-site provisions for bicyclists such as weather-protected parking facilities, showers, and lockers at point of destination.	ongoing			X	X		
3.11 Make accommodations for bicyclists and pedestrians at park-and-ride lots and transportation transfer locations, including bicycle lockers or racks, sidewalks, pedestrian refuges, and marked crossings as appropriate.	ongoing	X		X			
3.12 Develop a loaner bicycle program.	2008						
3.13 Construct a park-and-ride lot at the commuter rail station. Work with regional, state and private entities to develop funding packages.	2008						
3.14 Reassess the need for an additional park & ride lot after the commuter rail lot is operational. At that time options can be evaluated based on number of spaces needed.	2009 on						
3.15 Ensure that all new transit facilities meet ADA requirements.	ongoing		X	X		X	X
3.16 Purchase low-floor buses whenever feasible, to facilitate easy boarding for seniors and people with disabilities.	ongoing		X				
3.17 Coordinate with TriMet and other providers to streamline the process for Dial-a-Ride trips between districts	ongoing		X	X			X
3.18 Continue to coordinate with the Wilsonville Community Center to provide senior luncheon, shopping and activity trips	ongoing		X			X	X
3.19 Evaluate the SMART system's accessibility for seniors and people with disabilities.	2007		X	X		X	X
3.20 Provide Spanish translations for information on Dial-a-Ride and services for seniors and people with disabilities on schedules and on the website.	2006 and ongoing					X	X
3.21 Offer Spanish-language training to bus drivers and SMART office staff.	ongoing						

4. Service Expansion							
4.1 Plan for facilities and services to meet anticipated demands in new growth areas such as Villebois and the industrial lands near the Coffee Creek and Frog Pond areas.	ongoing	X		X			
4.2 Develop and maintain a SMART capital improvement plan that identifies needs, costs, and funding sources.	ongoing			X			
4.3 Coordinate with TriMet to draft and sign an intergovernmental agreement facilitating the transfer of any lands annexed by Wilsonville from TriMet's service district into the SMART service area.	2006						
4.4 Strive to provide service within ¼ mile of all existing and new development, to ensure that residents and employees can walk to bus stops.	ongoing			X			
4.5 Conduct follow-up surveys of residents and employees to provide updated information on the travel needs and preferences of riders and non-riders, with a special emphasis on seniors, youth, low-income residents, minorities, and people with disabilities.				X			X

Measures	Timeline	TPR	OPTP	RTP	ECO	ADA	EDTP
4.6 Expand or extend service based on needs of new development, transit-dependent populations, increasing ridership counts, origin-destination studies, or survey results from current and/or potential passengers indicating travel preferences.	ongoing	X	X	X			
4.7 Charge fares for any intercity service. Evaluate fare levels on an annual basis with the objective of maximized revenue and minimized loss of ridership.	2006 and ongoing						
4.8 Evaluate routes on an annual basis based on criteria such as ridership levels, overall cost, passenger boardings, and costs per passenger mile.	ongoing						
4.9 Continue to provide demand-response service within the City of Wilsonville to help meet the demands of the transit-dependent population, with priority given to people with disabilities.							
4.10 Support new 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.	ongoing						
4.11 Work with employers to assess the viability of vanpools from various locations, based on employee zip code data and shift times. Assist in setting up vanpools where sufficient interest exists.	2006 and ongoing			X	X		
4.12 Pursue funding for vanpools to Wilsonville employment sites.	2006 and ongoing				X		
4.13 Research the feasibility of forming a TMA in Wilsonville once the Coffee Creek I area is developed.	2012			X	X		
5. Increasing Efficiency and Improving Air Quality							
5.1 Work to reduce the number of vehicle miles traveled in the City by monitoring transportation demand management programs of area businesses and assisting employers in meeting ECO rule requirements.	ongoing			X	X		
5.2 Continue to operate the SMART Options program to work with area businesses and market travel demand management and commuting alternatives. Provide incentives that encourage employees to reduce SOV commute trips.	ongoing	X		X	X		
5.3 Take part in regional and state cooperative ridesharing, vanpooling, and marketing efforts to reduce air pollution and traffic congestion.	ongoing	X		X	X		
5.4 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.	2007				X		
5.5 Continue to impose maximum parking limits in conformity with Metro standards for large developments and high employment and/or traffic generators.	ongoing	X		X			
5.6 Allow for a reduction from minimum parking standards for developers who implement a TDM Plan approved by SMART.	ongoing	X					
5.7 Work with City Public Works staff to determine what effects signal prioritization and queue bypass would have on travel times for the bus and impact on overall traffic flow.	ongoing						
5.8 Evaluate bus pull-outs on a case-by-case basis to ensure safety for passenger loading and unloading and to balance delays to cars and buses.	ongoing			X			

3. Plan Implementation Measures

Measures	Timeline	TPR	OPTP	RTP	ECO	ADA	EDTP
5.9 In coordination with other traffic flow, revise traffic signal timing sequences as appropriate to help buses.	ongoing			X			
5.10 Research potential alternative fuels for transit vehicles, with a focus on environmental sustainability as well as cost efficiency. As new technologies mature and become readily available, evaluate their costs and benefits for SMART.	ongoing			X			
5.11 Install solar-powered lighting at new bus shelters, wherever it is viable and the cost is not prohibitive when compared with conventional power. Encourage new developments providing bus shelters to use solar power for shelter lighting. Explore the use of photo-luminescent materials as another option for lighting at shelters.	2006 and ongoing			X			
5.12 Become a member of the Columbia-Willamette Clean Cities Initiative to work cooperatively with other jurisdictions and organizations to promote clean and efficient energy use.	2007	X		X			
6. Creating a Sense of Community Ownership							
6.1 Review existing bus route names and rename routes as needed to create a consistent naming system which provides an easy frame of reference and fosters a sense of community ownership.							
6.2 Allow neighborhoods the opportunity to participate in the design of their bus shelters, providing them with a shelter that reflects the character of the individual neighborhood. Residents could either provide their own designs or could participate in judging architectural competitions for shelter design. Sculptural artwork in proximity to the bus shelters could also be included in this process	2007 and ongoing						
6.3 Research opportunities to provide transportation to community events such as races, art festivals, charity events, concerts, and special programs.	2006 and ongoing						
6.4 Expand the <i>Art on the Bus</i> Program to allow children a more frequent opportunity to display their artwork or writing on the bus.	2007 and ongoing						
6.5 Recognize Wilsonville employers with an annual awards program that acknowledges the best efforts to promote transit, walking, bicycling, carpooling, vanpooling, or telework at the worksite.	2007 and ongoing						
6.6 Recognize and support Wilsonville businesses with posted information in the bus. This information could include recognition of health and wellness or environmental programs and could also include employment opportunities.							
6.7 Explore opportunities to purchase vehicles which provide a unique representation for the City of Wilsonville and SMART.	ongoing						



4. Funding Resources

Overview of SMART Funding Sources

Funding Sources

Expenditures

Service Increases and Revenue Needs

Projected Costs vs. Revenues- Closing the Gap

Additional Revenue Sources

Conclusion

4. Funding Resources

Overview of SMART Funding Sources

SMART receives revenue from a variety of sources that include federal, state, and local funding. A total of twelve different programs currently or historically have provided revenue for SMART's operations, capital expenditures, Transportation Demand Management program, and transportation planning efforts. This combination of resources is budgeted to provide a total of \$1,177,880 or 32% of SMART's annual budget in fiscal year 2008 for SMART. Not all funding sources can be used for all types of SMART's expenditures. Following are descriptions of the various programs, their source, and limitations on their use.

Funding Sources

Federal Programs

All federal funds received by SMART are subject to the policies and regulations of the Federal Transit Administration (FTA). There are seven federal funding programs that either directly or indirectly come to SMART to support regular operations and capital purchases.

FTA Section 5307 Urbanized Formula Funds are distributed by formula to urbanized areas with a population greater than 50,000. The program divides urbanized areas into two primary categories that are determined by the size of the metropolitan area where the transit property is located:

1. Small urbanized areas are considered to be greater than 50,000 but less than 200,000 in population.
2. Large urbanized areas with a population above 200,000.

The funds may be used for operations, capital expenditures, and some planning activities in small urbanized areas. For large urbanized areas, these funds may only be used for capital expenditures as defined by the FTA. This funding source is expected to grow at a moderately steady rate as it is a formula-based program that serves a wide number of agencies across the country.

FTA Section 5309 Bus and Bus Facility Earmark program funds are distributed through a competitive Congressional earmarking process. These funds can be used only for the purchase of rolling stock or the construction of transit facilities that support transit bus operations. These funds are allocated on an annual basis through a highly competitive process. Future awards are dependant on the earmarking process and the strength of other project proposals competing against SMART's requests for funding.

FTA Section 5310 Elderly and Disabled Capital program funds are managed by the Oregon Department of Transportation (ODOT). These funds may be used to make purchases of capital equipment or construction of small facilities. The expenditures must be used to support transportation services for seniors and persons with disabilities. The funds are provided through a competitive grant program administered by ODOT on a biennial cycle. Although the grants come from ODOT, they are FTA funds and follow all federal requirements associated with the program. Projects funded with this program are intermittent and on an as needed basis. Federal support of this program is strong and it will remain a vital resource for some of SMART's capital replacement needs.

FTA Section 5311 Small City and Rural Program funds are also managed by ODOT and are allocated on an annual basis by formula. These funds may be used to support operations, capital purchases, and planning activities for general public transit systems providing service in non-urbanized cities with less than 50,000 people and in rural areas. In the past five years, SMART has received approximately \$461,000 from this source. Prior to the 2000 US Census, the City of Wilsonville was not included in the Portland urbanized area and therefore qualified for these funds. The City of Wilsonville was added to the Portland urbanized area, and after a transition period ending in 2002, SMART was moved from this program to the FTA Section 5307 program. The resulting difference is that SMART now receives a higher annual amount under the 5307 program, but it is only allowed to be used for FTA defined capital expenditures.

FTA Section 3037 Job Access and Reverse Commute (JARC) funds are allocated to TriMet for the Portland, Oregon urbanized area. These funds are used to provide assistance to transit providers, enabling them to enhance their system to better serve entry level worker's commuting needs. This is especially targeted to provide reverse commuting—commuting from inner-city neighborhoods to suburbs—where a higher number of manufacturing, warehouse/distribution, or hospitality industry jobs are available. In the past, funds for this program were allocated using a Congressional Earmark process. As a result of changes brought about by SAFETEA-LU, funds in this program are now allocated by a formula process. This has resulted in SMART's allocation of JARC funds being reduced from approximately \$225,000 per year to approximately \$5,000 per year.

These first five programs are direct sources of funding that come from FTA programs either directly to SMART or through ODOT to SMART. Two additional sources of federal funds also are available to SMART and provide funding for programs or specific projects: the Surface Transportation Program (STP) and Congestion Mitigation and Air Quality (CMAQ).

The STP source of revenue is Federal Highway Administration (FHWA) funds that can be transferred into other U.S. Department of Transportation (USDOT) programs. Once the funds have been transferred, they take on the same program requirements and then become the program into which they were transferred. In Oregon, the Oregon Department of Transportation (ODOT) transfers these funds, either at their discretion or in accordance with a legislative directive. One such directive is a five million dollar transfer of these funds into the FTA Section 5310 Elderly and Disabled Capital program on an annual basis. Remaining projects funded with STP funds transferred to FTA programs must compete with other transportation projects such as road maintenance, bridge repair, safety enhancements to roadways, and bicycle / pedestrian improvements.

Similarly, CMAQ funds are transferred to other USDOT programs that fund projects that result in a reduction of air pollution or assist in relieving congestion. The funds are only available in urbanized areas that fall outside of air quality standards set by the U.S. Environmental Protection Agency (EPA). In the Portland, Oregon urbanized area these funds are administered by Metro, the regional metropolitan

planning organization (MPO). SMART has used these funds to purchase land for the development of a multi-modal transit center and to support its transportation demand management (TDM) program.

State Programs

There are two sources of funding that are available through the State of Oregon: the Special Transportation Fund (STF), administered by ODOT; and the Business Energy Tax Credit (BETC) program, administered by the Oregon Department of Energy (ODOE).

The STF program is a program funded by a combination of cigarette tax, non-highway use portion of gas tax, and fees for personal identification cards issued by the Driver and Motor Vehicle Division (DMV) of ODOT. These funds may be used to support operations, capital purchases, and planning for services that provide transportation to seniors and persons with disabilities. These funds are distributed through a combination of formulas and competitive grants. The formula takes approximately 75% of the annual fund and distributes it by a population-based formula to a designated STF agency. TriMet is the designated agency for SMART and is responsible for conducting a competitive process to determine the allocation of the funds to projects within their designated area. This program has strong legislative support and is likely to provide a steady level of support for senior and disabled transportation funding in the future. In 2006, SMART received \$95,000 in STF funds.

The Business Energy Tax Credit (BETC) program is a tax credit program for private businesses administered by the ODOE. This program is currently going through an Administrative Rule revision that may impact future opportunities for SMART funding from BETC. The program is based on a tax credit program to businesses that engage in practices or support programs that save energy. The opportunity for public agencies comes in a mechanism in the program that allows private businesses to pass through a portion of their tax credit to a public agency that is involved in saving energy. Public transportation is viewed as conserving energy in that it reduces the number of trips made by single occupant vehicles. SMART received just under \$600,000 from this program in Fall 2005. However, future availability of funding from this program is subject to the availability of a business

pass-through partner and the Oregon Legislatures continuation of the program.

Local Programs

Local SMART revenue is generated from one primary source with two smaller supplemental sources.

The primary source is a local payroll tax. The rate that has been in place from 1990 to 2006 was 0.3%. In 2006, the rate was raised to 0.33% and in fiscal year 2007 generated \$2,544,000 in revenue for the SMART. These funds are used to fund operations and leverage funding from federal and state grants. Table 3 shows the amount of payroll tax revenue received by SMART from fiscal year 1992 to 2007 and the percentage of gain or loss from the previous year.

Table 3. SMART Payroll Tax Revenue, 1992 - 2007

Fiscal Year	Payroll Tax Revenue	Percent of Change
1991-1992	\$ 836,214	
1992-1993	\$ 918,014	9.8
1993-1994	\$ 985,117	7.3
1994-1995	\$ 1,148,649	16.6
1995-1996	\$ 1,248,396	8.7
1996-1997	\$ 1,361,647	9.1
1997-1998	\$ 1,648,767	21.1
1998-1999	\$ 1,535,866	-6.8
1999-2000	\$ 1,714,716	11.6
2000-2001	\$ 1,830,887	6.8
2001-2002	\$ 1,874,554	2.4
2002-2003	\$ 1,924,184	2.6
2003-2004	\$ 2,105,301	9.4
2004-2005	\$ 2,082,524	-1.1
2005-2006	\$ 2,233,915	7.3
2006-2007	\$ 2,544,000	13.8
	Annual Average	7.9

The other two sources of revenue are small in comparison. The first is proceeds from the sale of surplus property, which amounts to less than \$10,000 per year. The second started in September 2005, with farebox revenue from the Salem to Wilsonville route that generates approximately \$60,000 annually. This was followed by the addition of fares for all services outside of Wilsonville that generate approximately an additional \$107,000 annually. These revenues are

placed back into the SMART general fund to provide revenue for capital purchases or operating support.

Expenditures

Current and Projected Future Costs

The current adopted budget for fiscal year 2008 is listed in Table 4:

Table 4. SMART Expenses

Category	Amount
Salaries and wages	\$ 1,151,199
Employee benefits	\$ 583,475
Professional / technical services	\$ 56,500
Supplies	\$ 37,550
Utility services	\$ 28,000
Non-fleet repairs and maintenance	\$ 5,000
Fleet services (includes fuel)	\$ 689,600
Rents and leases	\$ 27,240
Insurance	\$ 24,760
Community services programs	\$ 8,500
Employee development	\$ 33,000
Fees, dues, advertising	\$ 49,600
Machinery and equipment capital	\$ 20,000
Vehicle purchases	\$ 5,000
Total	\$ 2,719,424

These expenses are anticipated to increase by an annual average of approximately 5% over the next 20 years while maintaining the current service levels. The most volatile components of SMART's expenses are fuel, health insurance costs, and PERS related benefits.

Service Increases and Revenue Needs

SMART anticipates future increases in expenses associated with changes to existing service or the addition on new routes, such as extending Route 201 into downtown Portland. These changes are due to growth in the area in both housing and commercial development. Three key developments that impact this growth are: the Washington County Commuter Rail that is slated to begin revenue service to Wilsonville in the fall of 2008; the development of over 800 acres of industrial lands set aside for development over the next 20 years; and the completion of Villebois, an urban village housing development that is anticipated to add approximately 7,000 new residents to Wilsonville. Each of these will result in a major increase on the demand for transit service in Wilsonville. A summary of the increase in total expenses is included in Table 6 on page 62.

Following are detailed descriptions of the proposed new routes serving the Washington County Commuter Rail, Villebois, and the extension into Portland.

Priority 1: Washington County Commuter Rail Related Services and Expenses

All current SMART routes will be changed to coordinate with the Washington County Commuter Rail and provide more efficient transfers between routes. The proposed changes will alter all routes so that they begin and end at the Washington County Commuter Rail Station, and will add necessary buses and drivers needed to maintain scheduled connections that are integral parts of SMART's existing service. At this time, Wilsonville will also begin paying TriMet for its share of commuter rail operating expenses. These changes will result in additional estimated annual operating expenses of approximately \$575,000 starting in 2009.

Route 206 Phase I - New Employer Shuttle

Route 206 would connect to the main eastside employment areas via Boeckman Road and Canyon Creek North, serving Mentor Graphics, Xerox, Sysco, and Argyle Square. Hours would be from 5:40 am - 10:00 am and 3:00 pm - 7:30 pm Monday through Friday, with half hour service during commute

hours only. The estimated annual operating costs will be approximately **\$130,000** starting in 2009.

Route 1X providing service from Salem to Wilsonville will need the addition of another trip in the morning to accommodate additional demands on this route. Primary commute trips are currently at or near capacity and need room for expansion of capacity. The estimated operating cost for this additional run is \$70,000 starting in 2009.

In addition to the new or expanded bus routes, SMART will be paying an annual share in the operating costs of the Washington County Commuter Rail. The first five years are capped at \$300,000 per year with an adjustment based on the Portland, Oregon CPI-U for all subsequent years. The total initial annual cost of this additional service is **\$300,000**.

Priority 2: Route 201-Downtown Portland Extension

This service would be extended from the Barbur Boulevard Transit Center in southwest Portland into downtown Portland via Barbur Boulevard serving Portland State University, with connections to TriMet MAX light rail and buses, and Portland streetcars. Service hours would also be extended, with service starting in the morning from downtown Portland at 5:00 am (from the current 6:20 am from Barbur Boulevard) and extending into the evening hours with the last bus leaving downtown at 7:41 pm (currently the last bus leaves Barbur Blvd. at 7:11 pm). This expansion would be Monday through Friday only. The estimated annual operating cost for this expansion is approximately **\$405,000** starting in 2010.

Priority 3: Expansions

Route 202 - New Villebois Route

This new route would serve the first phase of Villebois to Town Center. Initially, the service may be provided on Brown Road, pending completion of the Barber Street extension. Route 202 will serve the commuter rail station and Memorial Drive. Hours would be from 6:00 am to 7:30 pm Monday through Friday with half hourly service during peaks; hourly during base periods. The estimated annual operating cost is approximately **\$365,000** starting in 2011. Hourly Saturday service from 8:30 am to 5:30 pm would begin in 2013. The estimated annual operating Saturday costs will be approximately **\$33,000**.

Route 206 Phase 2 - North Villebois Service
 Route 206 would serve the subsequent expansion at Villebois when the north end of the development is completed. Hours would be from 6:00 am to 7:30 pm Monday through Friday, with half hour service during peaks; hourly during base periods. The estimated annual operating costs will be **\$207,000** starting in 2017.

Major Capital Projects

For the duration of this plan, there is one major capital projects with two parts identified: the SMART Multi-Modal Transit Center and the Fleet Services Building.

SMART Multi-Modal Transit and Fleet Maintenance Facility

The Multi-Modal Transit Center and Fleet Services Building is a project that is being designed in conjunction with the Washington County Commuter Rail Wilsonville station project managed by TriMet. This project has multiple phases and at full development will have the following components:

- Park and Ride facilities with 400 parking spaces in phase one and a total of approximately 650 parking spaces at the completion of phase two (phase two will be completed by TriMet when demand merits the expansion). The parking includes designated areas for disabled permit parking, van-pools / car pools, a short-term "kiss and ride" area, and general parking. Traffic from the Park and Ride will be separated from bus traffic.
- The Transit Center will be designed with 12 bus bays (two for lay-over) and will include passenger shelters at each bus bay, platform lighting, trash receptacles, directional and route identification signage, and an illuminated flag pole in the center of the bus turnaround.
- A plaza area between the Transit Center and the Commuter Rail Platform designed to allow convenient pedestrian travel between various modes of travel. The plaza area will include bicycle lockers and racks, information kiosks, a SMART Administrative building with driver's break room, an art pad, and public restrooms.
- A Commuter Rail Station that provides level boarding for passengers, canopy shelter, benches, TriMet fare vending machine, and platform lighting (TriMet portion of the project only).
- The commuter rail maintenance facility will be constructed on the east side of the rail alignment .

The rail maintenance facility (TriMet portion of the project only) will be located adjacent to the rail alignment.

- On the eastern portion of the property where the rail maintenance facility will be constructed, the City of Wilsonville will construct a fleet maintenance and Public Works facility. This project will fall into the five- to fifteen-year window of the Transit Master Plan and may be phased as funding is available. This facility will have parking for the City's Transit, Public Works, and Community Development fleets. Fleet Services and Public Works offices, as well as storage for Public Works equipment, will be included in this facility.

The total cost for the Transit portion of this project, including value of property purchased by the City of Wilsonville, is estimated to be approximately \$12,400,000. A breakdown of the costs in 2006 dollars is provided in Table 5.

Table 5. Capital Projects

Section	Unit	Qty.	Unit Cost	Total
Maintenance building*	sq. ft.	12,000	\$350	\$4,200,000
Maintenance office*	sq. ft.	1,000	\$350	\$350,000
Storage*	sq. ft.	4,000	\$250	\$1,000,000
Indoor trolley storage	sq. ft.	600	\$150	\$90,000
SMART building**	sq. ft.	5,800	\$350	\$2,030,000
Bus transit area	bays (12)	12	\$40,000	\$480,000
Parking lot	parking spaces	250	\$7,000	\$1,750,000
Construction Total				\$9,900,000
Land Already Purchased				\$2,500,000
Total Project				\$12,400,000
Already Paid with Grants and Local Funds				\$4,022,038
Remaining Balance				\$8,377,962

* Transit portion only

** Includes administrative offices, driver's breakroom, customer service area, and public restrooms

Funding for these projects will be paid out of congressional earmark funds, state transportation funds, and local reserves earmarked for these projects.

Projected Costs vs. Revenues- Closing the Gap

Anticipated revenues vs. expenses for operations and vehicle replacements over the next 20 years are shown in Table 6. These amounts reflect a base of an approximate average of 5% growth in expenses each year, based on the current service levels plus the recommended changes identified in this plan. The revenue growth in the table below is based on an average of approximately 5% per year.

Table 6. Anticipated Revenues and Expenses, 2007 - 2026

Year	Revenue	Expense
2007	\$5,279,400	\$3,291,200
2008	\$6,203,600	\$5,233,800
2009	\$5,863,300	\$4,749,000
2010	\$16,469,600	\$14,717,400
2011	\$8,112,834	\$6,549,600
2012	\$8,457,300	\$6,687,700
2013	\$9,281,600	\$7,231,500
2014	\$9,432,200	\$7,016,500
2015	\$10,548,500	\$7,749,100
2016	\$11,146,700	\$8,048,600
2017	\$12,019,300	\$8,772,000
2018	\$12,499,000	\$8,984,000
2019	\$12,917,600	\$9,164,400
2020	\$13,691,600	\$9,841,700
2021	\$14,102,000	\$10,264,000
2022	\$15,476,600	\$10,990,300
2023	\$16,790,300	\$11,695,800
2024	\$18,007,300	\$12,546,800
2025	\$18,963,800	\$13,328,700
2026	\$19,788,600	\$14,199,200

* Note: Columns include operations and vehicle replacement revenues and expenses, as well as capital improvement projects identified in Table 5.

Additional Revenue Sources

The current availability of new grant sources is fairly limited to one state funded program and one federally funded program. The state program is associated with the Connect Oregon bill that was approved in the 2005 Legislative session. This bill provided \$100 million in lottery backed funds for transportation projects throughout the state. Public transportation was allocated a portion of these funds. The distribution of funds and project selection for Connect Oregon II is still under development.

The new source of federal funds comes with the most recent transportation bill passed by the U.S. Congress (SAFETEA-LU), which establishes a new program of formula-based transit grants, the FTA Section 5317 New Freedom Program. This is part of a larger, government-wide "New Freedom Initiative" that President Bush has been promoting since his first presidential campaign. Formally established in 2001 through Presidential Executive Order, the New Freedom Initiative is a means to integrate persons with disabilities into the workforce, and into daily community life, through a variety of strategies carried out by the federal departments of Labor, Health and Human Services, Housing and Urban Development, Education, Justice, Veterans Affairs, and—now—Transportation. For more information on the government-wide initiative and its related resources, go on-line to www.disabilityinfo.gov.

The FTA Section 5317 transit program allocates money based on states' and urbanized areas' populations of persons with disabilities. Sixty percent of each year's FTA Section 5317 appropriation is distributed to the urban transit systems in areas with populations greater than 200,000. Twenty percent is distributed to the states for use in their urban areas with populations between 50,000 and 200,000, and the remaining twenty percent is distributed to the states for use in their rural areas.

SAFETEA-LU guarantees the following levels of FTA Section 5317 New Freedom Transit funding for the whole country:

FY 2006, \$78.0 million
 FY 2007, \$81.0 million
 FY 2008, \$87.5 million
 FY 2009, \$92.5 million

States and large-urban transit systems receiving these FTA Section 5317 allocations are not to engage in New Freedom transit activities themselves. Instead, they are to carry out area wide competitive solicitations for local New Freedom projects. The eligible subrecipients are units of state or local government, nonprofit organizations, and other operators of public transportation services. Starting in FY 2007, these projects, if they are to receive FTA Section 5317 funds, are to be selected through locally developed, coordinated public transit-human services transportation plans. This is the same type of process that SAFETEA-LU now requires of states and urbanized areas with regard to FTA Section 5316 Job Access and Reverse Commute grants, and for states' FTA Section 5310 elderly and disabilities transit grants.

FTA Section 5317 funds are to be used to provide public transportation services and alternatives above and beyond the baseline requirements of the Americans with Disabilities Act (ADA), especially to help persons with disabilities access jobs and employment-related services. These funds may be used for capital expenses (at an 80 percent federal share) or operating expenses (at a 50 percent federal share); the "non-federal" share may be derived from cash, service agreements with state, local or private social services organizations, or from other federal funding sources, including Temporary Assistance for Needy Families (TANF), that allow their funds to be expended on transportation activities.

Thus far, there are no further pieces of guidance from the Federal Transit Administration (FTA) on the details of the New Freedom transit program. Some information is likely to be issued in conjunction with the FY 2006 annual apportionment of FTA formula grants, whenever that occurs, but most of the FTA guidance on this program is likely to be timed to help states and urban areas prepare for the FY 2007 program year.

Increased Employment

Historically, SMART's payroll tax revenue has grown at an annual average of 7.5% over the last thirteen years. This growth is expected to continue for the next several years as existing businesses experience growth and new commercial developments in newly designated industrial lands in north Wilsonville. Once the available industrial land has been developed, the only increase will come through business growth

resulting in a slower, but steady level of payroll tax revenue increase.

Fare Revenue

Revenue from fares is anticipated to continue to be a small supplemental source of revenue that will serve to help offset costs associated with providing service on particular routes. Currently, SMART charges fares for all routes that travel outside of the City of Wilsonville. Projected annual fare revenue for for these routes in 2007 is approximately **\$150,000** from pass sales and cash fares.

Payroll Tax Increase

Even if SMART maintained current service levels, inflationary factors have outpaced additional payroll tax revenues generated by business growth in Wilsonville over the last 16 years. With this fact facing SMART's future, an increase in the payroll tax rate must be considered in order to maintain the current level of service. The only other alternative is to reduce service levels. Choosing this option will eventually lead to the City of Wilsonville no longer being able to provide its own transit service and reverting to a single route service being provided by TriMet at a much higher payroll tax rate. New service demands create a need for new routes and increased frequencies of service. This is all at a price that will require an increase in the payroll tax rate that is above the level needed to maintain current service levels. However, even with all service levels proposed in the Transit Master Plan, SMART will be able to provide a much higher level of service and enhance public transportation options in and around Wilsonville. Over the 20-year duration of the Transit Master Plan, the payroll tax rate will eventually need to rise to an estimated 0.5% to maintain status quo service levels and as high as an estimated 0.673% to implement all additional services proposed. The changes are proposed to be implemented in a way that minimizes the number of times the rate would increase over the 20-year period.

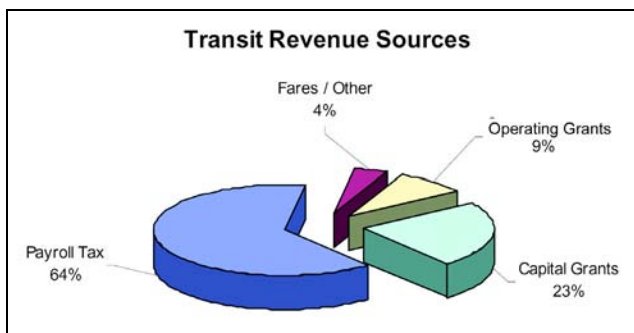
Conclusion

Priorities Based on Best- and Worst-case Scenarios

In the best case, SMART will continue to grow with demands identified by the residents, commuters, and business owners in Wilsonville. Growth would be supported by a variety of funding resources that allow flexibility in system design and SMART's ability to respond to changing needs. In addition, greater stability for the local payroll tax base comes from a larger number of moderate sized employers with a stable market for their goods and services. Currently, the top 20 businesses in Wilsonville provide just over 65% of the payroll tax revenue for SMART. A loss of even half of these businesses would create a significant loss in revenue for SMART. The chart below indicates the split between various revenue sources.

In the worst case, SMART will focus on maximizing the service within available resources in order to provide service to commuters, seniors and persons with disabilities, and local citizens. SMART's services are multi-faceted, allowing the overall system to be scaled up or down as resources are available. SMART's first priority will always be to provide service to those in Wilsonville first and then areas outside Wilsonville as resources allow.

Based on the fiscal year 2008 budget, SMART's future revenue and expenses are expected to be 64% payroll tax, 9% operating grants, 23% capital gains, and 4% from fares and other sources (see the chart below).





5. Existing Conditions

Overview

Existing Conditions

Existing SMART Routes

Travel Times and Connections

Demand-Response and Special Event Trips

Travel Training

SMART's Fleet

5. Existing Conditions

Overview

South Metro Area Rapid Transit (SMART) is operated by the City of Wilsonville and is supported by a Wilsonville payroll tax and by grant funding. SMART's payroll tax rate is 0.33%, less than half of the rate levied by TriMet. SMART provides fixed-route service within the City of Wilsonville and operates connecting service to Canby, Salem, and the south end of Portland. SMART also provides Dial-a-Ride services within the Wilsonville area, and transportation to medical appointments in Portland and other nearby cities for Wilsonville seniors and people with disabilities. There is no charge for any of the services inside of the the City of Wilsonville. All intercity services charge a fare.

SMART sponsors a grant-funded SMART Options program, which promotes alternatives to driving alone, including transit, carpooling, vanpooling, walking, bicycling, and telework. SMART Options provides employers with assistance in designing and implementing commute alternatives for their worksites. SMART Options staff works cooperatively with regional partners, including TriMet, City of Portland, Clackamas and Washington Counties, and Metro to coordinate regional programs.



Transportation District of Oregon (TriMet). At that time, the transit service consisted of one route, which only operated during commute hours. In 1988, the Wilsonville Innovative Transportation Association was formed to look at alternative methods of providing transit service at a better cost/benefit ratio for local businesses. In 1989, the City of Wilsonville successfully petitioned to withdraw from TriMet's service district.

For the first two years, the City contracted with Bucks Ambulance Service to provide rides on a demand-response basis. In 1991, Wilsonville began to provide demand-response service on its own. Wilsonville also contracted with TriMet to extend Route 96 into Wilsonville, providing Wilsonville residents and employees with transportation between Wilsonville and Portland.

In an effort to create a more professional image for its transit system, the City decided to change its name from Wilsonville Area Rapid Transit



(WART) to South Metro Area Rapid Transit (SMART) in 1993, and to South Metro Area Regional Transit in 2007. In 1993, SMART also began providing service to Tualatin Park & Ride, Barbur Transit Center, and Oregon City Transit Center. The Oregon City service was dropped in 2002 due to low ridership.

Mission Statement

SMART's mission is to provide convenient, safe, and reliable transportation services in a fiscally responsible manner to meet the needs of Wilsonville residents, employees, and visitors of all ages, ethnicities, and income levels. SMART is dedicated to providing mobility for those who do not drive and to creating a viable, attractive transportation option for those who do.

History

Prior to 1989, transit service in Wilsonville was provided by the Tri-County Metropolitan

In 1994, SMART began providing the in-town service that had previously been contracted through TriMet. Ridership increased dramatically between 1994 and 1995. New routes were introduced in 1995, 1996, 1998, and 2003. Currently, SMART operates five fixed routes as well as Dial-A-Ride, medical trips, and special services for the elderly and disabled.

Situated on I-5 between Portland and Salem, Wilsonville serves as a hub and has established itself in the past two decades as an important employment center in the Portland Metropolitan area, with

employment figures exceeding the City population. Employees commute to jobs in Wilsonville from Portland, Salem, Sherwood, Gresham, Vancouver, and many other locations. In addition, people commuting between Portland and Salem travel through Wilsonville, whether they are driving through or using Salem Transit or TriMet to connect to SMART.

Existing Conditions

SMART currently operates five fixed routes, providing service within Wilsonville and intercity connections to Salem, Canby, and the south end of Portland. SMART provides weekday Dial-a-Ride service within Wilsonville and transportation to medical appointments in Portland and other areas. SMART also provides pre-scheduled weekday transportation to the Wilsonville Community Center for lunch, shopping, and other special trips.

SMART currently provides fare-free service within the City of Wilsonville, but charges fares for service outside the City. In 2006, the one-way fare for Salem Route 1X was \$2, with monthly passes selling for \$40. One-way fares on Canby Route 205 and Route 201 to Tualatin and Barbur Boulevard Park & Ride were \$1.25, with monthly passes selling for \$30. In all cases, youth, seniors, and people with disabilities are eligible for half-price fares.

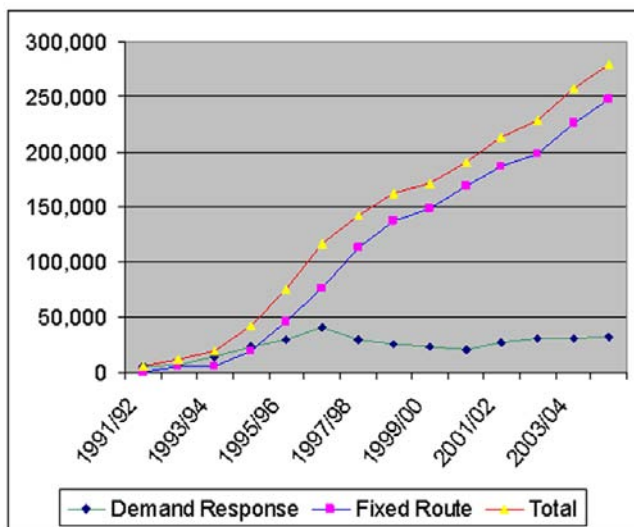


Figure 1. SMART Historic Ridership

SMART ridership has grown steadily with the introduction of new routes, increased route frequency, and improved connections between transit systems. In 2006, SMART provided over 284,000 rides.

Existing SMART Routes

Currently, all routes connect at the Wilsonville Civic Center (see Map 11 on page 71). This is the primary location for transfers to other SMART routes. Three routes also connect with TriMet lines at Commerce Circle.

Route 201

Route 201 (see Map 12 on page 72) provides an intercity connection between Wilsonville, the Tualatin Park & Ride, and the Barbur Boulevard Transit Center in southwest Portland. This route provides a connection to TriMet for Wilsonville employees who live in Portland, Sherwood, Beaverton, and King City. It also provides a connection for Wilsonville residents who work in Portland.

TriMet's Line 96 is the most popular connection for Route 201 riders. Line 96 provides express service from Commerce Circle and the Tualatin Park & Ride to downtown Portland. The average wait time to transfer at the Tualatin Park & Ride is seven minutes. On Saturdays, Route 201 provides hourly service as far as the Tualatin Park & Ride, where passengers can connect with TriMet Line 76. At 16 minutes, the average wait time to transfer is considerably longer than on weekdays, since Line 96 does not operate on Saturdays.

Table 7. Route 201

Destination	Barbur Boulevard Transit Center
Frequency	Half-hour service during peak hours, hourly during mid-day
Service Days	Monday -Friday, Saturday, hourly service from 8:21 am - 5:41 pm
First and last northbound departure	5:40 am 8:16 pm
First and last southbound arrival	6:38 am 7:33 pm *
Approximate travel time from end to end	35 minutes
Connections	TriMet lines 96, 12B, 64X, 94X, 36, 38, 76, 96, and all other SMART routes at City Hall
Park & Ride Access	Town Center, Tualatin, Barbur Transit Center
Boardings/service hour	14.1
Total rides in 2007	85,347

* An abbreviated final run meets TriMet Route 96 at Commerce Circle at 8:19 pm.

Route 203

Route 203 (see Map 13 on page 73) provides north-south service on the west side of Wilsonville and connects with TriMet at Commerce Circle. Route 203 service begins at Wilsonville Civic Center and continues west on Wilsonville Road before heading north on Boones Ferry Road. Route 203 provides a connection to employment sites on the west side of Wilsonville for local employees as well as those who live in Portland and surrounding areas. It also provides a connection to Portland for Wilsonville residents. Transfers are well timed with TriMet's Line 96, with average wait times of less than six minutes.

Table 8. Route 203

Destination	Commerce Circle - City Hall
Frequency	Every 40 minutes during commute hours
Service Days	Monday -Friday
First and last northbound departure	6:13 am 5:42 pm
First and last southbound arrival	6:40 am 6:08 pm
Approximate travel time from end to end	11 minutes
Connections	TriMet line 96
Park & Ride Access	None
Boardings/service hour	12.6
Total rides in 2007	14,289

Route 204

Route 204 (see Map 14 on page 74) serves the east and west sides of Wilsonville, connecting residential areas and schools with Town Center and shopping opportunities. Route 204 provides limited service to Courtside Drive and Willamette Way East and West during the week. On Saturdays, the service operates hourly between 8:30 a.m. and 5:20 p.m. Route 204 has the highest ridership of any SMART route, with 112,754 riders in 2007. Ridership is at its highest during the school year, when students account for a large percentage of ridership.

Table 9. Route 204

Destination	Wilsonville Road
Frequency	Every half-hour during peak hours, hourly during midday and on Saturdays
Service Days	Monday - Saturday
First Run	5:39 am
Last Run	7:16 pm
Travel time from end to end	21 minutes
Connections	All SMART routes at City Hall
Park & Ride Access	Town Center
Boardings/service hour	23.34
Total rides in 2007	112,754

Route 205

Route 205 (see Map 15 on page 75) provides service between Wilsonville Town Center, Charbonneau, and Canby. The service operates hourly from 6:05 am to 9:51 am and from 3:05 pm to 6:51 pm. Two mid-day trips are provided by Canby Area Transit between 11:30 am and 2:26 pm. Connections with Canby Area Transit (CAT) allow for additional connections with TriMet at the Oregon City Transit Center, South Clackamas Transportation District (Molalla) in Canby, Woodburn Transit, and Chemeketa Area Regional Transit System (CARTS) in Woodburn.

Table 10. Route 205

Destination	Charbonneau, Canby
Frequency	Hourly
Service Days	Monday - Friday
First and last southbound departure	6:03 am 6:03 pm
First and last northbound arrival	6:53 am 6:53 pm
Travel time from end to end	23 minutes
Connections	CAT routes, SCTD route to Molalla
Park & Ride Access	Town Center, Canby Transit Center
Boardings/service hour	10.93
Total rides in 2007	13,115*

* This number is only 16 of 20 trips per day. The remaining four trips are provided by Canby Area Transit.

Route 1X

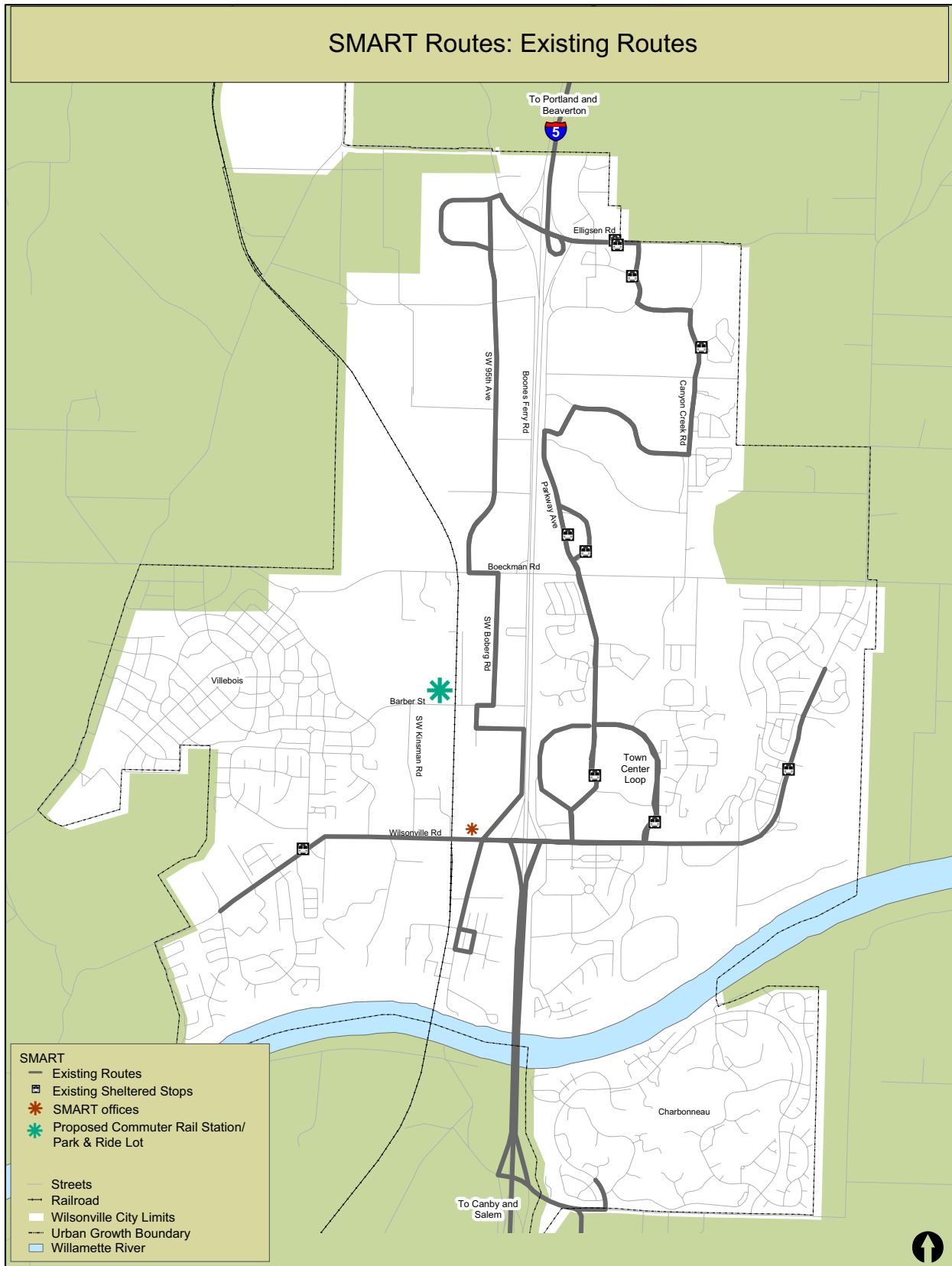
Route 1X (see Map 16 on page 76) provides intercity service connecting Wilsonville and Salem. This SMART route charges a fare (\$2 each way or \$40 for a monthly pass). From Salem, Route 1X is designed to deliver employees directly to their worksites throughout Wilsonville. The southbound route delivers riders to stops in the Capitol Mall area and the Salem Transit Center, where they can connect to Cherriots and other bus routes.

Table 11. Route 1X

Destination	Salem
Frequency	Nine runs each direction during commute hours*
Service Days	Monday - Friday
First and last southbound departure	6:20 am 6:38 pm
First and last northbound arrival	5:36 am 7:52 pm
Travel time from end to end	49 - 70 minutes
Connections	TriMet line 96, all Salem routes
Park & Ride Access	Town Center, Market Street in Salem
Boardings/service hour	16.92
Total rides in 2007	38,846**

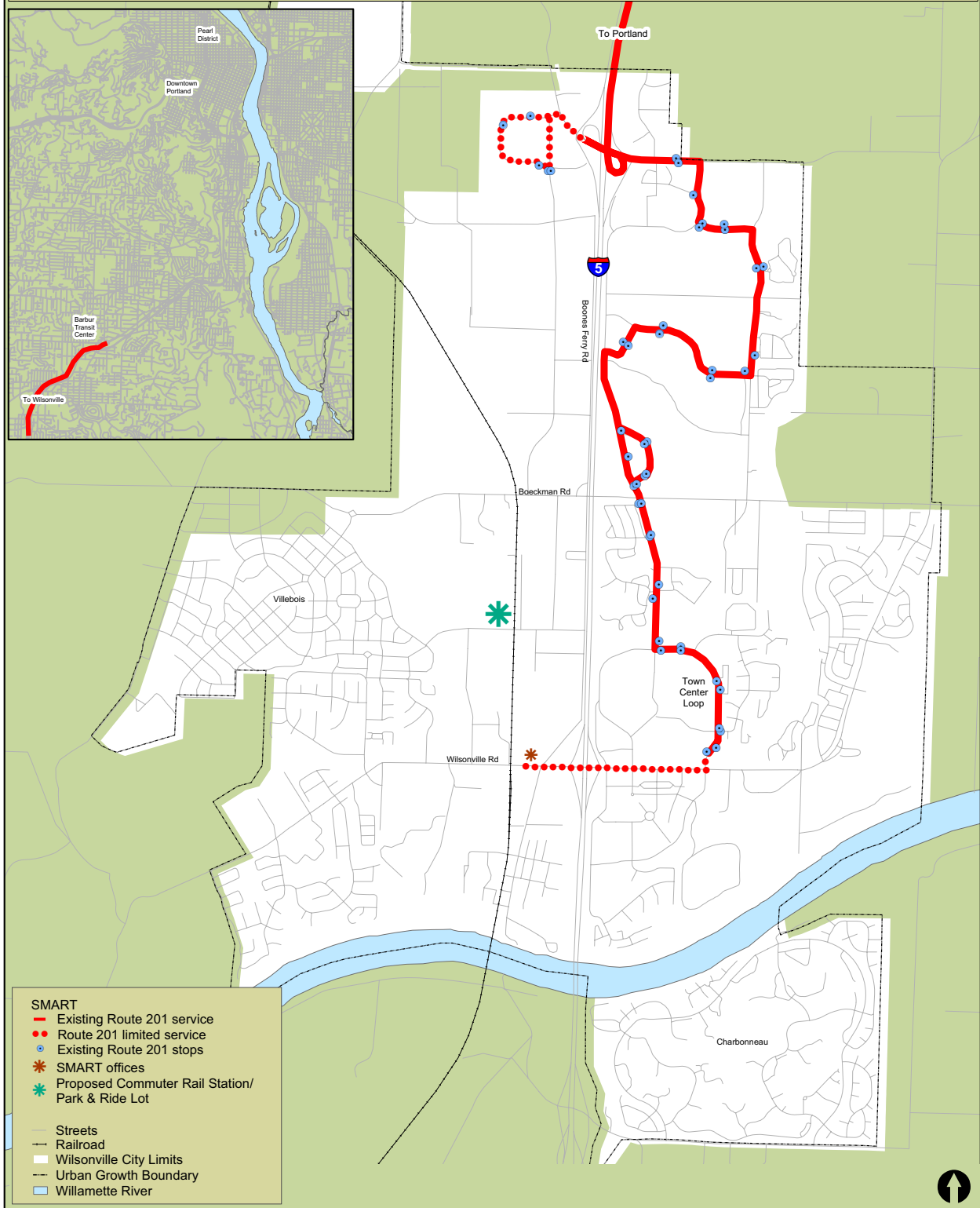
* Cherriots operates four of these runs in each direction.

** This number is only 10 of 18 trips per day. The remaining eight trips are provided by Salem Area Mass Transit District.

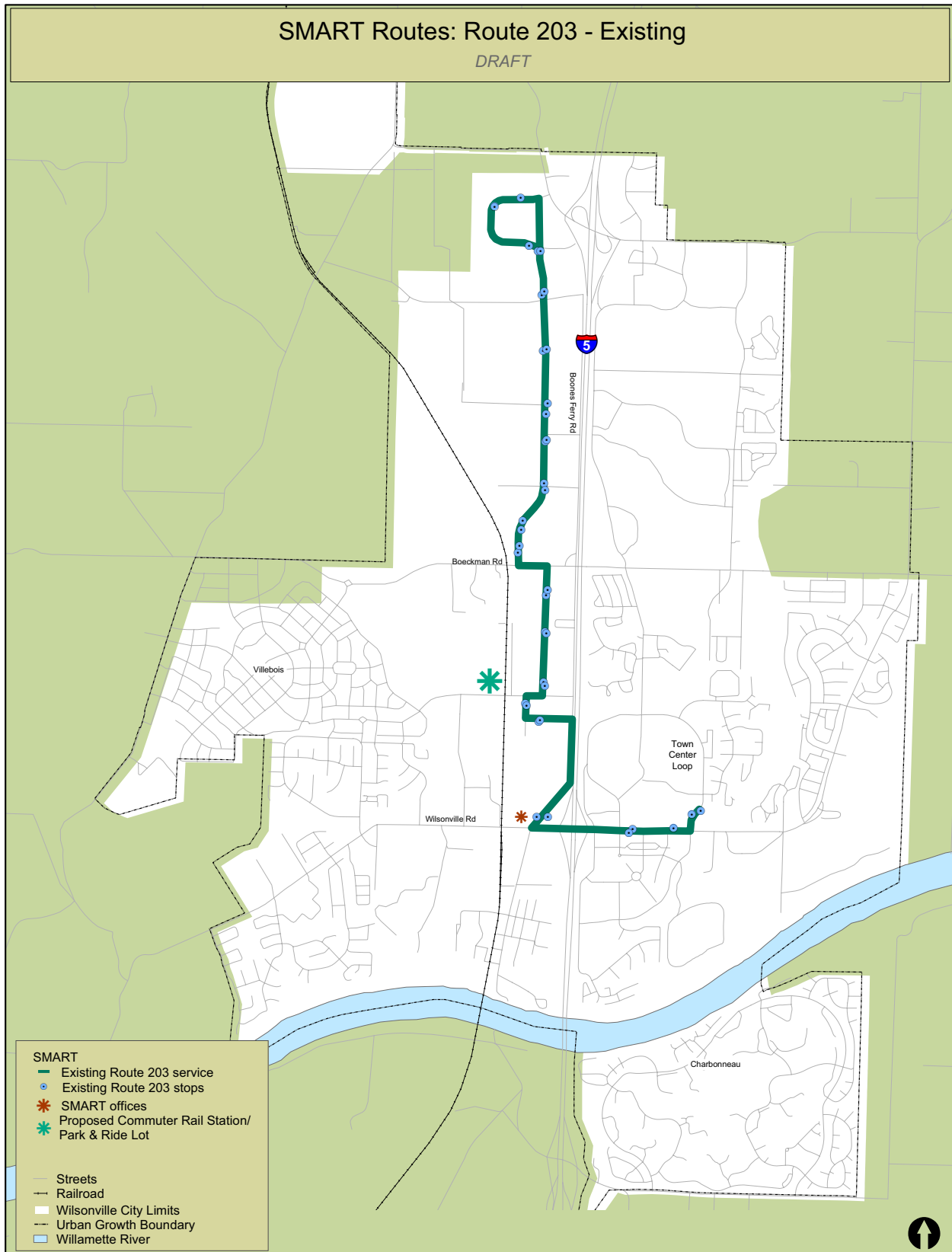


SMART Routes: Route 201 - Existing

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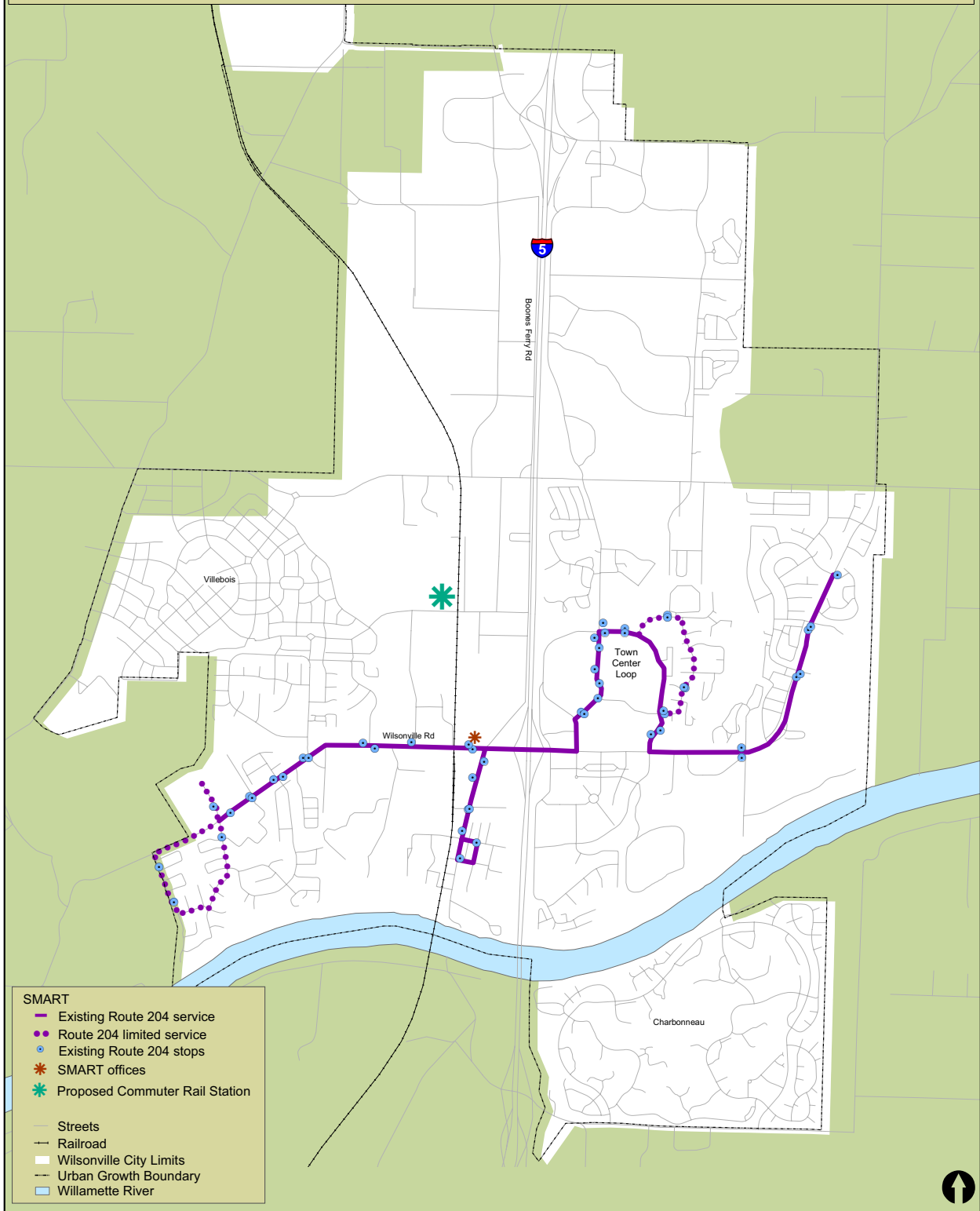
Map 12. Existing Route 201



Map 13. Existing Route 203

SMART Routes: Route 204 - Existing

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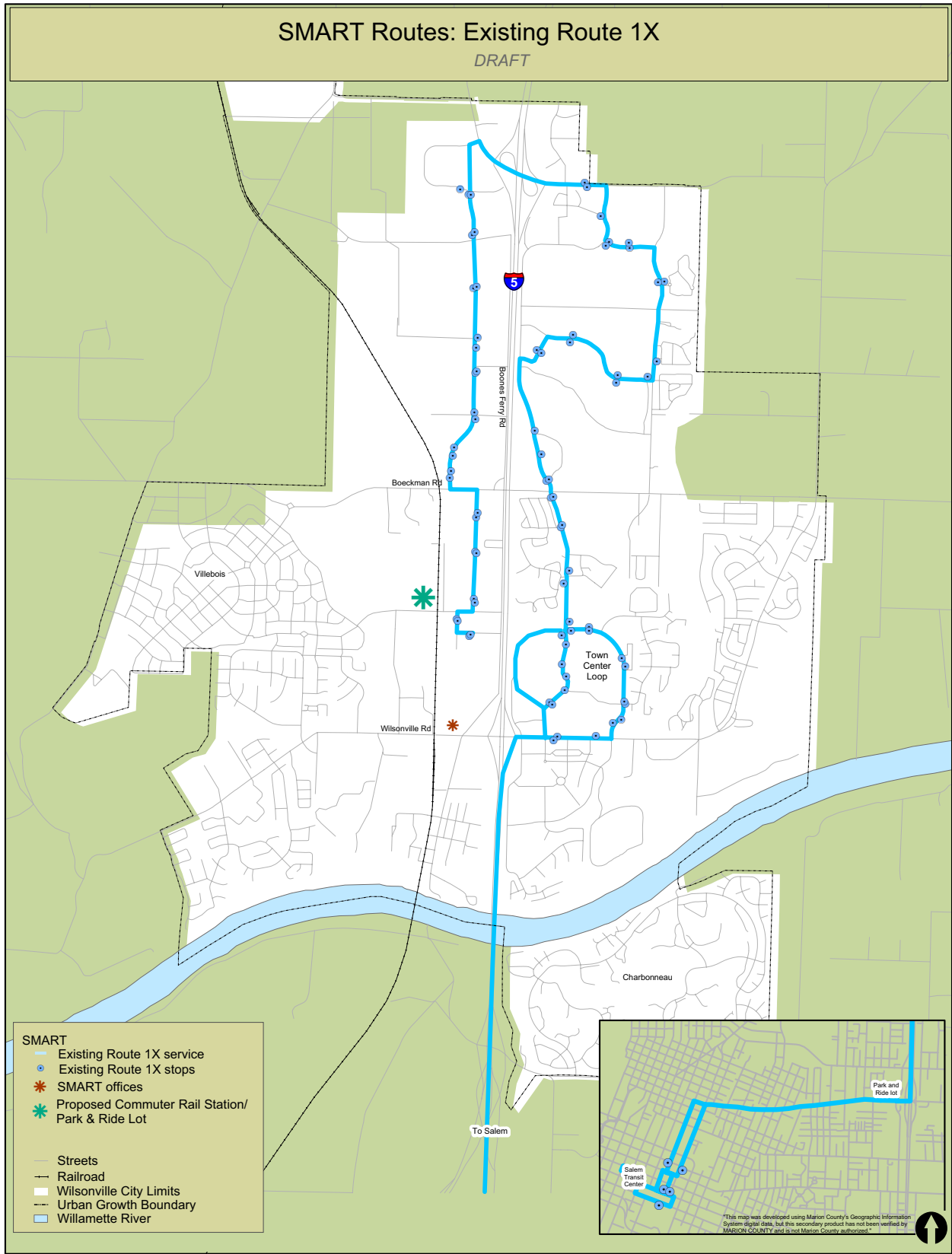
Map 14. Existing Route 204



Map 15. Existing Route 205

SMART Routes: Existing Route 1X

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Map 16. Existing Route 1X

Travel Times and Connections

Travel times and connections have a strong impact on the number and types of riders who are likely to use the service. The less competitive the travel times are with the automobile, the less likely "choice" riders are to use it. Choice riders are those who have access to an automobile, but choose to ride transit because of cost, convenience, environmental, or other factors. People who are dependent on transit will be more willing to endure long waits and travel times to get to their destinations.

The Regional Transportation Plan (RTP) sets an objective for transit travel time on regional bus routes to be no slower than 200 percent of the total auto-travel time. Rapid bus routes should be no slower than 150% of the auto-travel time. While these objectives are attainable for direct routes, they are difficult to achieve when there are transfers involved, making longer trips less competitive with the automobile.

To a large degree, long waits between transfers are a function of the size of the transit system and the number of connections to other transit systems. SMART is still a relatively small transit system with limited route frequencies. Coordinating a bus schedule to create good connections with a particular route may mean that the connection is that much worse for another route. Since SMART connects with four other transit providers, this is likely to present an ongoing challenge.

Demand-Response and Special Event Trips

Demand-response trips include pre-scheduled rides for:

- seniors and people with disabilities;
- other people who are unable to use fixed-route service;
- trips to the Community Center for lunches; and
- scheduled shopping and recreational trips for seniors.

In 1991/92, during SMART's first year of operation, demand-response, or Dial-A-Ride, was the only public transportation offered. In the following three years, the number of demand-response riders still exceeded

fixed-route riders. Demand-response rides peaked in 1996/97 at 40,229 rides, but declined to 20,890 by 2000/01, when fixed routes were added. Since then, the number has been on the rise again, reaching 31,643 in 2004/2005. New managed care facilities have contributed to some of the increased demand, but SMART can expect the increase in demand to continue as baby boomers continue to age. SMART does not charge for in-town Dial-a-Ride trips, but charges a \$2 fare for trips to outlying areas such as Canby and Tualatin.

Special Event

SMART provided a total of 3,811 special event trips in 2004/05, including the trolley tours of Wilsonville that are offered twice a month during the Summer, as well as transportation to special events, such as art fairs and the county fair. Special event trips make up a very small part of SMART's service, but provide an important community service and an opportunity for new residents and visitors to learn about Wilsonville.



SMART provides trolley tours of Wilsonville in the summer.

Travel Training

SMART offers travel training to people who would like some assistance taking the bus for the first time. This training provides a newfound mobility and independence for people who might otherwise rely entirely on their cars, rides from friends and family, or on demand-response service. Travel training can be arranged by contacting the SMART office at (503) 682-7790.



Guide dog training with SMART

Trainers accompany the person on the bus and assist them with locating the most convenient bus stops and interpreting schedules. Community Center staff assist individuals and groups, especially seniors, to reach destinations of interest to them, including Washington Square in Beaverton. They show them where to board the bus and assist them in making transfers to TriMet. After an assisted ride, passengers are generally comfortable making subsequent trips on their own.



SMART's Fleet

SMART maintains a fleet of 35 vehicles, ranging from 40-foot buses to minivans and a trolley. All vehicles are wheelchair accessible and accommodate bicycles. Peak vehicles are used for regular service, while spares are maintained as a back-up for peak vehicles. The contingency fleet would be used as emergency back-up.



The SMART van

Table 12. SMART Bus Inventory

Size (ft)	No. of Seats	Year	Bus Manufacturer	Peak	Spare	Contingency	Condition	Photos
40	45	2002	Blue Bird	3	0	0	Good	 <p><i>Aerotech</i></p>  <p><i>Champion</i></p>
40	39	1989	RTS	0	1	1	Poor	
40	45	1983	RTS	0	2	0	Fair	
36	35	1997	Trolley	1	0	0	Good	
35	35	2006	Champion	2	0	0	New	
35	34	1980	RTS	1	2	0	Fair	
35	35	1979	RTS	1	0	0	Poor	
30	23-27	1997	E-Z Rider	2	1	0	Good	
26	21	2005	Champion	3	1	0	Good	
26	20	2004	Aerotech	1	0	0	Good	
26	21	2003	Aerotech	1	0	0	Good	
26	21	2002	Aerotech	3	1	0	Good	
26	19	1997	Aerotech	0	0	2	Poor	
22	11	2006	Sprinter	1	0	0	Excellent	
20	12	2003	Commtrans	1	0	0	Good	
18	5	2003	Chevy minivan	2	0	0	Good	
18	6	1998	Chrysler minivan	1	0	0	Poor	
			TOTAL	23	8	3		

The fuel efficiency of SMART's fleet ranges from 15.2 miles per gallon (mpg) for the minivans to 3.7 mpg for the 35-foot buses. The 40-foot buses drive more freeway miles and, therefore, get better mileage (7.7 mpg) than the 35-foot buses.



6. Transit Demand

Planning for Future Transit Demand

Factors Likely to Affect Transit Demand

Customer Preferences

6. Transit Demand

Planning for Future Transit Demand

As Wilsonville and the Portland Metropolitan Region continue to grow, the demand for transit services will also increase. Specific developments in and around Wilsonville are also likely to affect not only the level of demand, but also the overall nature of transit needs. Information on future trends and developments, along with customer preferences and availability of funding, form the basis for planning future service. See Chapter 2 -Recommended Bus Routes and Service, for detailed information and maps on future bus routes.

Based on the many factors influencing transit ridership, it can be difficult to accurately predict future demand. A variety of studies have measured the effects of various transit system changes on ridership. For instance, a report prepared for the Transportation Research Board (TRB) in 2004 found that new systems produced an average of 3-5 riders per capita per year and that service expansions resulted in a ridership increase between 0.6% and 1% for every 1% increase in service.¹ Another study in 2005 concluded that, "The most significant ridership increases are generally the result of a combination of initiatives or actions. Seldom does a single initiative result in significant or sustained increases."² A third study from 1997 found that external factors have the largest effect on ridership. "Factors such as land use, parking availability, and population density are very important determinants of transit ridership."³ As a rule of thumb, the Transit Research Board (TRB) has identified the minimum densities to support hourly service as three household units per gross acre or four jobs per gross acre.

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1. Pratt, Richard and Evans, John. *TCRP Report 95, Chapter 10 - Traveler Response to Transportation System Changes: Bus Routing and Coverage*, p. 10-4.
 2. Cambridge Systematics, Inc. *TCRP Research Results Digest 69, Evaluation of Recent Ridership Increases*, p.1.
 3. Charles River Associates. *TCRP Report 27 - Building Transit Ridership: An Exploration of Transit's Market Share and the Public Policies that Influence It*, p.11.

Factors Likely to Affect Transit Demand

Population Growth

According to the U.S. Census, Wilsonville had a population of 13,999 in 2000. Portland State University has calculated Wilsonville's 2006 population at 16,885. Future growth is guaranteed for Wilsonville with ongoing development at Villebois, expansion of the urban growth boundary (UGB) near Coffee Creek and future residential development in the Frog Pond area. Additional residential development on Canyon Creek will also add to population. Based on preliminary Metro household estimates, Wilsonville's population will be in the range of 30,000 by 2030.

Villebois, Frog Pond, and Other Residential Developments

Villebois, the new urban village currently under construction on the west side of Wilsonville, will add approximately 2,500 housing units to the City and an estimated 7,000 new residents. At the same time, there are approximately 120 acres of developable residential land near Frog Pond on the east side of Wilsonville, which could support 1,200 housing units or a population of approximately 2,000. Although such developments create the need for additional bus service, they do not provide income to fund the transit system, since SMART is supported by a payroll tax on employment. Residential infill within existing City limits will also create additional demand; however, these areas are likely to be adjacent to existing routes, which can easily be extended or modified to service new developments.

Commuter Rail

Beginning in 2008, commuter rail will provide service between Beaverton and Wilsonville with stops in Tigard and Tualatin. The service will operate on existing heavy rail lines and allow passengers to bypass traffic congestion on I-5 and Highway 217. Parking will be provided at four of the stations, including Wilsonville. Transit connections will also be available at all stations, with eleven TriMet bus lines and both the red and blue Max lines connecting with commuter rail

in Beaverton. TriMet estimates daily ridership between 3,000 and 4,000 trips by 2020, with half of the riders new to transit. TriMet also estimates that 60% of the riders will be traveling in the southbound (Wilsonville) direction in the morning. Wilsonville employees arriving on commuter rail will need quick and convenient transportation to their worksites. Outbound passengers will need a convenient way to get to the commuter rail station. Commuter rail is expected to increase overall demand for transit, but it will also change the type of demand.

Industrial Lands and Growing Employment

Metro has designated 464 acres in the Coffee Creek area just west of Wilsonville for future industrial development. Future development of this site could add to the increasing demand for transit services.

Traffic Congestion, Fuel Prices, and Greater Connectivity

Regionally and locally, traffic congestion has increased with population growth. Increased traffic congestion and higher fuel prices tend to make transit a more attractive option than the automobile. At the same time, local population growth creates a need for more transit service. As individual transit providers increase service frequency and add routes, transfer options also tend to improve, which can lead to increased overall demand for transit. Other improvements in Park & Ride lots, sidewalks, bike lanes, and trails can also increase the options for connecting with transit and, thus, affect overall demand.

Fares

A fareless transit system helps to attract maximum ridership by making transit more competitive with the automobile. Service times are also reduced as there is no need to collect money or issue tickets at each stop. The objective of transit pricing is to increase revenue while minimizing ridership loss. Route and service recommendations in this plan are based on charging fares for new intercity service and maintaining a fare-free service for routes within Wilsonville. In a 2004 study, researchers found that on average, transit systems can expect a .4% loss in bus ridership for every 1% increase in fare.⁴

Aging Population

The City of Wilsonville had a population of 13,999 according to the 2000 U.S. Census. At that time, 14% of the City's population was 65 or older. Based on Portland State University's 2005 population figures, we can assume there are approximately 2,300 Wilsonville residents over age 65. Beginning in 2011, baby boomers will start to reach retirement age, and seniors will account for a larger proportion of the population. This is likely to create an increased demand for SMART's Dial-a-Ride and medical trips. Elderly residents who are less confident in their driving abilities may also add to the increased demand for fixed route transit service.

Free Parking

Free and plentiful parking is a powerful incentive to drive rather than using alternatives such as transit or carpooling. Transit and other transportation options are most successful in areas where parking is constrained or where there is a charge for parking. In Wilsonville, parking is free and plentiful, and is likely to remain that way at least for the near future. This means that Wilsonville may have to work harder to obtain increases in transit ridership and other transportation options.

Public Perception of Transit

Future transit demand also relies on the public image of transit. If people perceive it as unsafe or undignified, they are less likely to try it. Current passengers may also be influenced by public perception, even if it doesn't match their experience. Teenagers, in particular, are likely to avoid riding transit if it is perceived as "uncool." If, on the other hand, transit is viewed as a good way to relax, save money, and help the environment, it may influence more people to ride on a regular basis. Local and regional marketing efforts, as well as national trends, will play a major role in the public perception of transit.

Balancing Needs

The greatest challenge of transit service planning is finding and maintaining the delicate balance between the many divergent and often conflicting needs of passengers. Although most routes are planned based

4. McCollom, Brian, and Pratt, Richard. *TCRP Report 95, Chapter 12 - Traveler response to Transportation System Changes: Transit Pricing and Fares*, p. 12-1.

on a particular passenger need, ideally these routes are also able to effectively accommodate other needs at the same time.

Commuter Service vs. Local Service

The travel needs of commuters are generally very different from the needs of local residents traveling to school, shopping, medical, and recreational destinations. Commuter trips tend to be very time-sensitive, with commuters being less tolerant of frequent stops. On the other hand, local bus riders have a variety of trip destinations and require many stops.

The preferred destinations of commuters and local users are often divergent enough that a single route cannot effectively meet both needs. In many cases, the travel times of commuters and local users are also very different. However, there is considerable overlap in travel times of commuters and students in Wilsonville. This is in part due to the early morning shifts at a number of employment sites that end around 2 or 3 pm.

Service on Transit Corridors vs. into the Neighborhoods

Limiting transit service to transit corridors ensures a shorter travel time from route beginning to end. It also ensures that neighborhoods do not have the traffic and noise impacts of buses traveling down small streets. While bus service into neighborhoods makes for longer route times and potential neighborhood impacts, it also ensures the greatest level of access, particularly for those who cannot walk very far.

Transit Dependent vs. Choice Riders

Transit serves an important role in providing mobility to people who not have access to automobiles, including the young, old, people with disabilities, and people with low incomes. SMART's first priority must always be to provide transportation for transit-dependent individuals, particularly those with disabilities. However, in order for transit to effectively reduce automobile trips and the overall demand on the transportation system, SMART must also provide a service which is attractive as an alternative to those who drive. Decreased travel times and increased convenience and comfort are most likely to attract additional choice riders.

Although the needs of transit dependent riders and choice riders are not mutually exclusive, they are likely

to have differing priorities. Choice riders are likely to place a greater value on fewer stops and faster travel times, whereas transit dependent passengers may prefer more closely spaced stops that allow for shorter travel distance to the bus stop.

Coordinating Route Schedules

If a route schedule is designed to ensure timely connections with a neighboring transit system, it may result in connections that are much worse with another neighboring system or another route within the SMART system. SMART route timing will be based on commuter rail schedules during the peak commute hours. There will be more scheduling flexibility during midday and with buses that operate with a greater frequency than commuter rail.

Customer Preferences

Survey data collection and public outreach events are some of the most important steps in the development of the Transit Master Plan because they help to identify SMART customers and provide information about customers' preferences and travel needs. In order to plan for future transit service, SMART needs to have a good understanding of current passenger preferences, including:

- Who rides SMART?
- Why do they ride transit?
- What are passenger origins and destinations?
- What is the purpose of their trips?
- What are their travel times?
- How satisfied are they with the services SMART provides?
- What improvements would they like to see?
- What other destinations would they like to reach?
- Are they likely to ride commuter rail and, if so, how would they get from their house/work to the station?
- Are they willing to pay a fare and, if so, how much?

SMART also needs to have a good understanding of the reasons that people do not ride transit and what changes could be made to attract non-riders. Current and potential passengers include people of all ages and residents as well as employees, visitors, and people connecting to and from other transit systems.

To ensure that community sub-groups were represented and community priorities were well understood, SMART gathered input from a variety of sources, including:

- Master Plan Visioning event
- Advisory Committee on Master Planning (ACMP)
- Separate surveys for adults and children in English and Spanish (2004)
- Employer survey (2005)
- Zip code data of employees, provided by Wilsonville employers (2005)
- Charbonneau residents meeting
- Senior Center meeting
- Wood Middle School Workshop
- Boeckman Creek Elementary School assembly and survey (2005)
- Feedback from the Wilsonville Master Planning Update Brochure

SMART also used information from a 2002 on-board survey of all routes. The sum of these inputs provides a good indication of system strengths and weaknesses, as well as measures that are likely to increase ridership and improve passenger satisfaction. Chapter 3 contains implementation measures responding to these findings. Comprehensive survey results and information on data collection are included in the compiled Citizen Input document for the three master plans.

SMART's Role in the Community

The ACMP and surveyed employers agreed that SMART's ideal role in the community is to provide commuting service for people who live or work in Wilsonville as well as service for youth, seniors, and others who don't drive. These priorities support both SMART's mission statement and the priorities set forth in the Oregon Public Transportation Plan (OPTP).

Both ACMP and employers strongly preferred expansion options which would provide connections to other transit systems and service to neighboring communities, connecting with TriMet, the commuter rail station in Wilsonville, and Portland Metro cities. Such expansions would also support the goals of the OPTP and the Regional Transportation Plan (RTP) to create an interconnected transportation system.

Who Rides SMART and Why?

An on-board survey conducted in 2002 provided the following profile of SMART passengers:

- 81% ride the bus once a week or more often
- 37% were between the ages of 18-34
- 54% were between the ages of 35-65
- 5% were over 65
- 4% were under 18
- 55% were male, 45% female
- 74% had attended college
- 62% reported household incomes of \$40,000 or less

The 2004 general survey provided very similar results, except that reported household incomes were considerably higher. In both the 2002 and the 2004 surveys, passengers indicated that the main reasons they rode SMART were:

1. Money savings
2. Convenience
3. Stress reduction
4. Don't own a car or don't drive

Other respondents cited environmental concerns; exercise (walking or bicycling to the bus); ability to nap, work, or read on the bus; and limited access to an automobile (one-car family).

Where Are They Going?

In the 2004 survey, most riders reported using the bus to get to and from work, with a much smaller percentage using the bus for shopping, school, and errands (see Figure 2). The "other" responses were varied and included destinations such as the VA hospital, Portland, working out at the gym, and visiting friends.

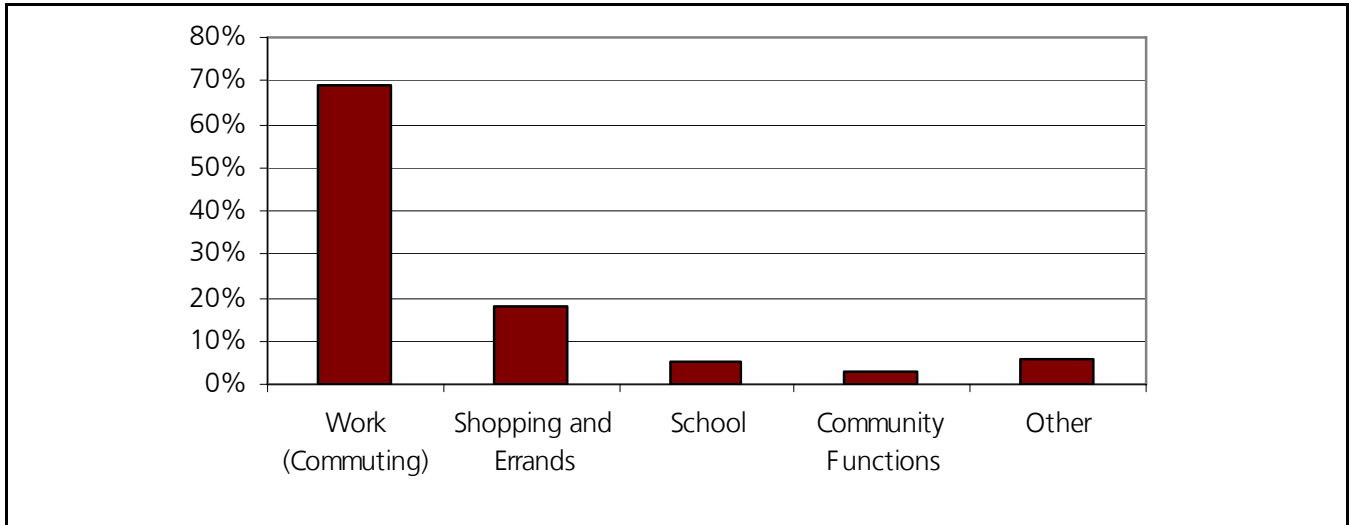


Figure 2. SMART Passenger Destinations

Other findings included:

- Commuters primarily use the 201 and 1X routes.
- 48% of frequent riders live in Wilsonville, with 18% coming from Portland and 14% from Salem.
- 26% of frequent riders who live in Wilsonville also work in Wilsonville.
- Children indicated that they primarily use the 204 Crosstown route for all of their trips, including school, shopping, and recreational.

reported that they got to the bus stop by transferring from another bus (TriMet or Cherriots). The fact that so many passengers walk to the bus stop and even more of them walk when they reach their destination emphasizes the importance of a safe and pleasant walking environment that connects bus stops with residential, work, shopping, and recreational destinations. Refer to the Wilsonville Bicycle and Pedestrian Master Plan for recommendations on how to improve the pedestrian environment in Wilsonville.

How Do Passengers Travel to the Bus Stop?

Most bus riders walk to the bus stop (see Figure 3 on page 85). These riders will also be walking from the bus stop when they disembark, as will virtually all of the passengers who drove or were dropped off. Nearly all of the respondents who answered "other"

Although just over 10% of riders reported that they bicycled to the bus stop, this is a significant number given that each bus has rack space for only two bicycles. SMART allows bicycles inside the buses as long as space permits; however, bicyclists have complained that there is not always sufficient space.

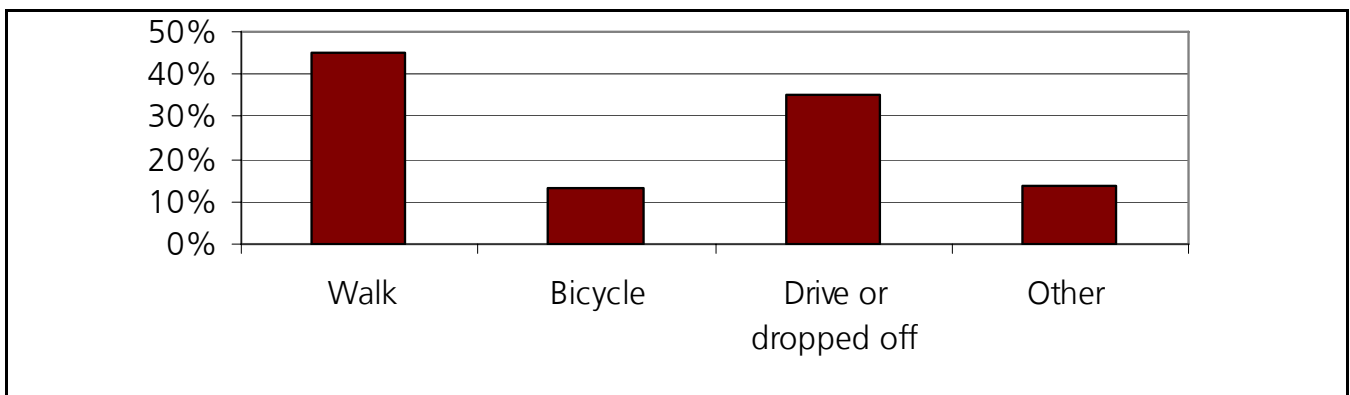


Figure 3. How Passengers Get to the Bus Stop

Satisfaction with SMART Services

Passengers reported a high level of satisfaction with nearly all of SMART services in both the 2002 on-board survey and the 2004 survey. Many praised SMART for running a fareless system and providing a reliable transportation alternative. Some even mentioned that SMART was a factor in choosing a job or residence in Wilsonville.

By far, the biggest reported need for improvement was in the provision of benches and shelters at bus stops. This sentiment was echoed by people who attended outreach events, particularly seniors and children. Other commonly-raised issues included:

- Survey respondents and ACMP members called for improvement in time and transfer issues, asking for better connections with TriMet, shorter waits between connections, and express service.
- Survey respondents and people who attended outreach events expressed the need for more information or clearer information, including schedules that are easier to read and better signage. Children at Wood Middle School suggested that the bus schedules were difficult to read and should include graphic depictions of destinations, not just street names.
- Seniors called for more marketing to seniors on SMART's services.
- Bicycle riders requested more bicycle space on buses.
- Charbonneau residents requested additional stops in Charbonneau, particularly at Charbonneau Village Center.
- A number of comments from Hispanic survey respondents complained of rude or unfriendly bus drivers, suggesting that bus drivers might benefit from cultural awareness training.

Current Non-Riders

The most common reason for not riding SMART is that it doesn't go everywhere people need to go (see Figure 4 on page 87). Over 50% of survey respondents said they didn't ride more often because the bus doesn't go where they need to go. Similar comments were also voiced at public outreach events.

Many people also are not aware of the routes and schedules or where they can get additional information. This issue was also raised at public outreach events and by the ACMP members and local

students. ACMP members and others specifically asked for more information posted at bus stops, including what buses stop there and when.

The other most commonly-cited reasons for not riding more often were:

- Times don't work
- Need car during the day
- Takes too long
- Need car after work
- Don't need to

Children were most likely to say they don't ride the bus because they don't need to. Many of them said their parents drive them everywhere they need to go.

What Might Convince Non-Riders to Ride SMART?

Not surprisingly, respondents to the 2004 survey said they would likely ride SMART more often if the bus went where they needed to go (see Figure 4). However, 82% also rated the availability of route and schedule information as either very or somewhat important. In addition, many people are worried about being stranded in the event of an emergency if they take transit; 80% said that a guaranteed ride home would be either very important or somewhat important in getting them to ride more often. Commuter rail was cited as very important by 42% of respondents.

Preferred Destinations

Survey respondents were asked what destinations they would like to be able to reach with the SMART bus. The question was designed to identify potentially popular destinations that SMART does not currently serve. These responses are important since so many people said they don't ride the SMART bus because it does not go where they need to go. See Figure 5.

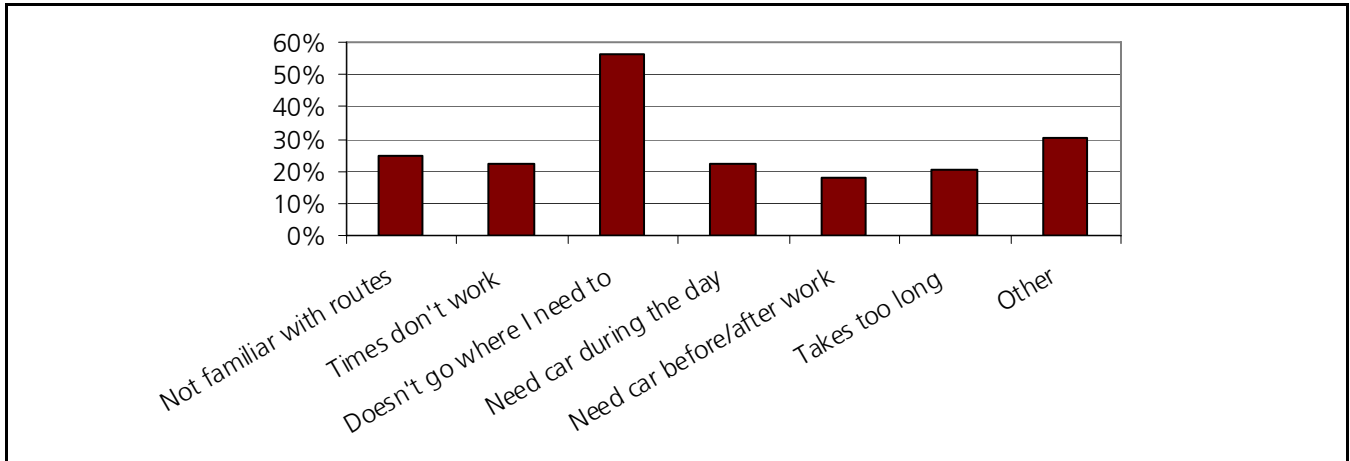


Figure 4. Why Non-Riders Do Not Ride SMART More Often

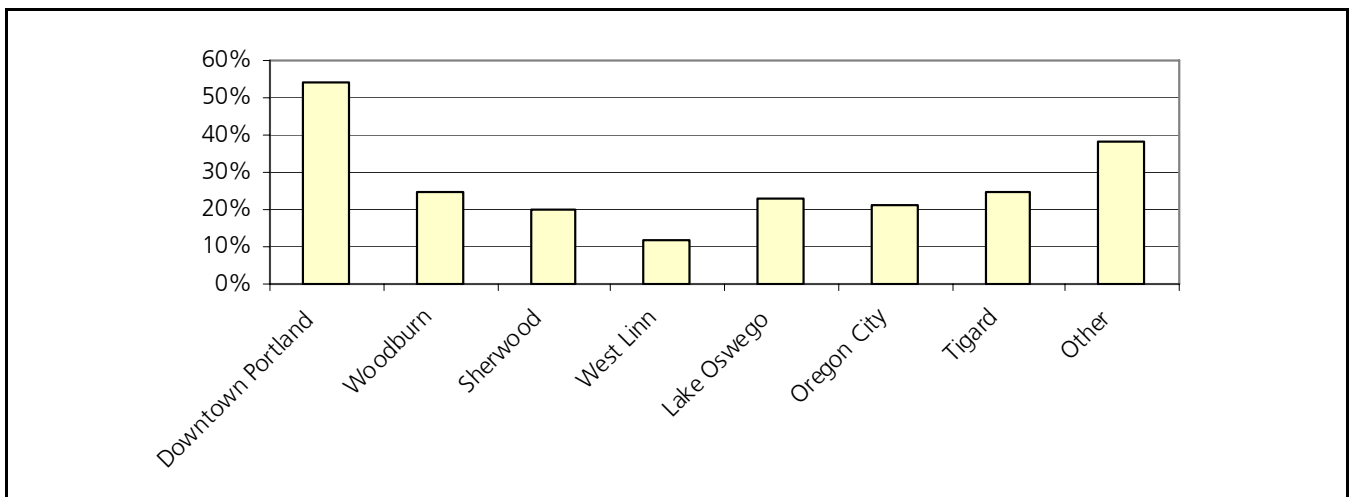


Figure 5. Preferred SMART Destinations (not currently served by SMART)

By far, the most popular destination mentioned in the "Other" category was Beaverton. Beaverton was not listed as a destination in the survey, because of the anticipated commuter rail service between Beaverton and Wilsonville. Of the 362 respondents who answered this question, 34 (9%) said they would like to reach Beaverton with SMART. Several respondents also mentioned that they would like to connect with light rail or reach the airport. Other destinations that were mentioned at least six times included Newberg, East Side of Portland, Coffee Creek Correctional Facility, and Hubbard.

The response from employers, public outreach meetings, and the ACMP on preferred destinations was very similar. ACMP members emphasized connections to the TriMet system and commuter rail,

and getting passengers to and from Portland and Beaverton in a timely fashion. Charbonneau residents expressed particular interest in reaching downtown Portland and the airport. They also supported having the bus stop at Village Center in Charbonneau, although there was some concern from merchants at Village Center about losing business due to bus service. Children at Boeckman Elementary and Wood Middle Schools were primarily interested in local destinations such as Bullwinkle's; however, older children also expressed a desire to go to Portland and shopping malls.

The zip code data provided by 26 Wilsonville employers provided useful information on employee commute patterns. Zip codes were provided for 6,437 employees, roughly a third of the Wilsonville

workforce. A large concentration of employees in particular areas provides an indication of demand for additional service. Some of these areas will be better served by making concerted efforts to set up carpools or vanpools, rather than fixed-route service.

The zip code results indicated that employees live in many scattered locations, including Corvallis, Washougal, and Azalea. Many of these areas only had one or two employees, and therefore do not present an opportunity for transit service, carpools, or vanpools. Table 13 shows only the areas where at least 100 Wilsonville employees live. This data provides a strong indication of the need for a convenient and practical alternative to driving alone for employees who live in Portland, Beaverton, and Salem. It also indicates a strong potential for vanpools from other locations.

Table 13. Employee Demographics

Number of Employees	Home Town/City
1,003	Portland
623	Beaverton
575	Wilsonville
344	Salem
314	Tualatin
301	Sherwood
270	Tigard
217	Woodburn
213	Tigard area/Washington County
206	Canby
204	West Linn
201	Oregon City
185	Lake Oswego
180	Newberg
151	Hillsboro
143	Vancouver
133	Rock Creek
101	Gresham

Travel Times, Frequencies, and Connections

It can be a challenge to coordinate bus schedules with the different work schedules at various employment sites in Wilsonville. However, as frequency increases, this becomes less difficult.

Fares or Fareless?

There was little consensus among survey respondents, ACMP members, or people attending outreach events on whether or not SMART should charge a fare or how much it should be. Some were adamant that SMART should remain fareless; others thought there should be a charge, especially for intercity trips. Survey respondents were also asked how much they would be willing to pay for a one-way trip if SMART started charging a fare. Children were most resistant to paying a fare, with over 50% of them responding that they were unwilling to pay any fare at all. There were significant differences between the responses from frequent riders and non-riders.

The data in Figure 6 raises the question: "Why would non-riders be willing to pay more than regular riders?" There are several possible reasons for these results:

1. In the survey, one of the main reasons regular riders cited for riding SMART was that it saves them money.
2. Non-riders may be considering how much they would pay for their ideal route, perhaps one that doesn't currently exist.
3. There may be a perception among respondents that if they express willingness to pay a fare, the fares will indeed go up. Non-riders are less likely to care if the fare goes up and may even support the idea that those who do ride should pay more.

The willingness to pay a fare also varied by where respondents live. For the most part, people who live farther away from Wilsonville (such as Salem or Portland) were willing to pay more than people who live within Wilsonville.

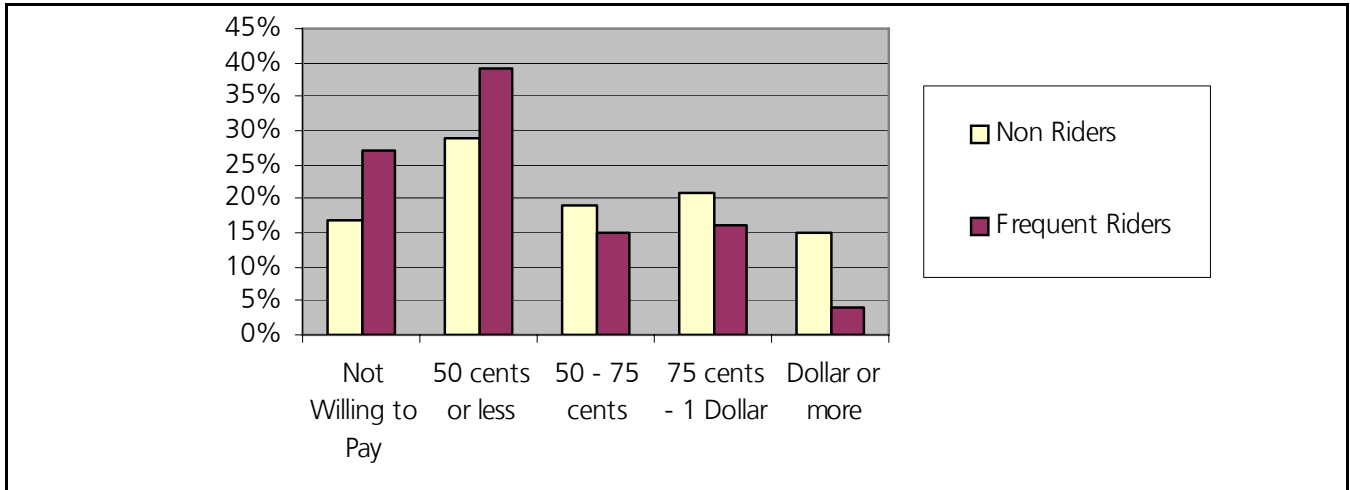


Figure 6. Fares Respondents Would Be Willing to Pay

Commuter Rail

When commuter rail begins service between Wilsonville and Beaverton, transportation needs in Wilsonville are likely to change significantly. The 2004 survey asked respondents if they would be likely to use commuter rail and how they would get to and from the station. Forty-eight percent of respondents said they would “rarely or not at all” use commuter rail; 32% said they would be likely to use commuter rail “on a regular basis;” and 20% said they would use it “once or twice a month.”

Since most of the survey respondents either live or work in Wilsonville, it is not surprising that Wilsonville is both the most popular origin and destination for potential commuter rail passengers.

SMART wants to know how people would like to get to and from the station in Wilsonville so they can provide service that fits those needs. The survey results were first filtered to focus only on respondents who said they are likely to ride commuter rail on a regular basis and will leave from Wilsonville in the morning. The results show a strong preference for either taking the bus or driving and parking near the station (see Figure 7 on page 89). A surprisingly large percentage of people said they would walk to the station. Many of these people probably do not know the exact location of the station, so the percentage of people who will actually walk is likely to be somewhat lower.

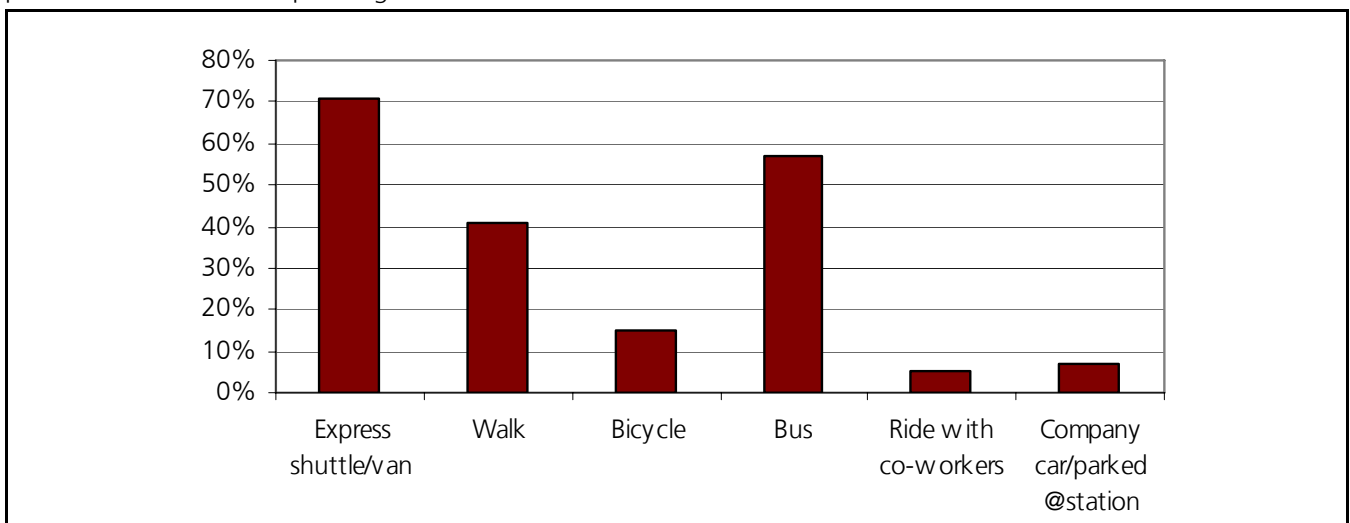


Figure 7. How Respondents Would Travel to the Wilsonville Station

Of the respondents who would take commuter rail from Wilsonville in the morning, 67% live in Wilsonville and 14% in Salem; the rest are divided primarily between Hubbard, Woodburn, and Canby. Within Wilsonville, the largest concentration of these respondents is in the southeast part of the City (38%), in the vicinity of City Hall and the Library, and the rest are scattered throughout the City, including 15% in Charbonneau. Since people are generally less tolerant of long bus rides when a transfer is involved, and since the potential commuter rail riders are not concentrated in any particular area, it may be a

challenge to provide express service to the station for all who want it.

The survey results were also filtered to look at only the respondents who would ride commuter rail on a regular basis with Wilsonville as their destination. While the survey results for people departing from Wilsonville in the morning indicate the need for bus service from residential areas and access to Park & Ride spaces at the station, the arrival results indicate other needs (see Figure 8).

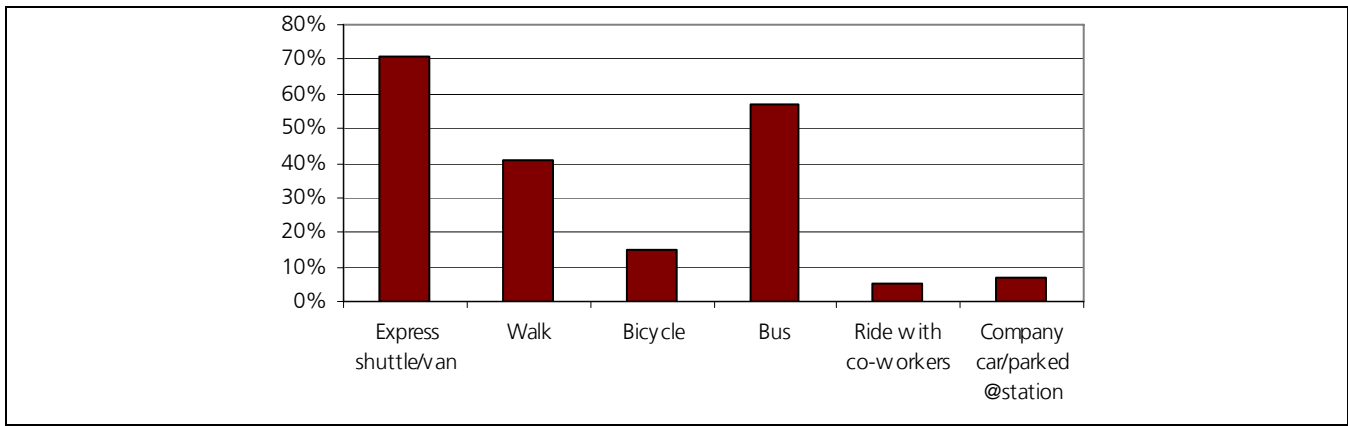


Figure 8. How Respondents Would Travel from the Station to a Wilsonville Worksite

The arrival and departure questions were structured differently, since SMART can offer additional alternatives for arrivals that it cannot necessarily offer for departures. For instance, SMART could offer door-to-door express shuttles to work sites, but could not offer this service to individual homes. There is also the option of working with FlexCar to provide station cars that are dedicated to particular worksites. Since there are a number of potential options for arrivals, respondents were asked to choose all of the options they might be interested in.

The survey results from people who would be arriving in Wilsonville by commuter rail show a strong preference for express shuttles and bus service; however, a significant number were also interested in walking or bicycling to their worksites. Sixty-four percent of the respondents work in the northeast part of Wilsonville near Xerox; another 9% work in Northwest Wilsonville. Express shuttles could serve both of these areas. Bicycling and walking are also viable options; however, access to the east side, where most of the large employers are, is limited since the

Boeckman Bridge does not have bike lanes or sidewalks. Refer to the Wilsonville Bicycle and Pedestrian Master Plan for suggested improvements to this area.

Overall, survey results, outreach events, and public input indicates that SMART is doing a good job and that it has some very good opportunities to improve its service. It is clear from the survey that simply getting information to people could make a big difference in ridership. As a hub location, SMART has passengers coming and going in all directions and at different times. It is impossible to accommodate all of their needs; however, SMART would likely see a substantial increase in ridership by offering service to Portland and connections to the MAX train system. Both current riders and non-riders expressed strong interest in commuter rail and in reaching destinations such as Portland, Beaverton, Woodburn, and Lake Oswego. Other improvements that are not completely within SMART's control, but affect their ridership, are schedule coordination with TriMet and other systems and good connections for pedestrians and bicyclists.

Appendix A–Glossary

A

Access Board

Common name for the Architectural and Transportation Barriers Compliance Board, an independent Federal agency whose mission is to develop guidelines for accessible facilities and services and to provide technical assistance to help public and private entities understand and comply with the Americans with Disabilities Act (ADA).

Access to Jobs

Federal funding for programs to increase work-related transportation available to low-income individuals. Authorized in TEA-21. Non-profit organizations and municipalities can apply to FTA for funding.

Accessibility

The extent to which facilities, including transit vehicles, are barrier-free and can be used by people who have disabilities, including wheelchair users.

ADA

Americans with Disabilities Act: Passed by the Congress in 1990, this act mandates equal opportunities for persons with disabilities in the areas of employment, transportation, communications and public accommodations. Under this Act, most transportation providers are obliged to purchase lift-equipped vehicles for their fixed-route services and must assure system-wide accessibility of their demand-responsive services to persons with disabilities. Public transit providers also must supplement their fixed-route services with paratransit services for those persons unable to use fixed-route service because of their disability.

Alternative Fuels

Vehicle engine fuels other than standard gasoline or diesel. Typically, alternative fuels burn cleaner than gasoline or diesel and produce reduced emissions. Common alternative fuels include methanol, ethanol, compressed natural gas (CNG), liquefied natural gas (LNG), clean diesel fuels and reformulated gasoline.

Alternative Mode

Any type of commuting transportation other than single occupancy vehicle that results in reduction of automobile commute trips, e.g. carpooling, vanpooling, bicycling, walking, transit, and telework.

Alternative Work Schedules

Any programs, such as compressed work weeks, flex time, telecommuting, staggered shifts, or any other program that eliminates pm peak hours trips through the impacted intersections.

Appropriation

The step at which a legislative body and chief executive have agreed and signed into law an approval to spend public funds on specified programs and projects. Within the federal government, no funds may be spent unless their appropriation has been approved by Congress and signed into law by the President.

AoA

Administration on Aging. The agency within the U.S. Department of Health and Human Services that oversees the implementation of the Older Americans Act, including senior nutrition programs, senior centers and supportive services for elders.

Automobile Dependency

Transportation and land use patterns that result in high levels of automobile use and limited transportation alternatives. In this case, "automobile" includes cars, vans, light trucks, SUVs and motorcycles.

B

Bulbout

See Curb Extension.

Bus Pullout or Turnout

A pullout is a specialized bus stop where a transit vehicle can load or unload passengers in an area separated from the traffic lanes.

Bus Rapid Transit

Bus Rapid Transit - BRT is designed to be an alternative to light rail service using bus vehicles. BRT usually is made up of dedicated bus lanes with stations spaced at train-like intervals. BRT can offer more frequent, and more convenient service than regular buses, similar to a rail line, but may be cheaper to build or more flexible where buses can leave the busway to reach other areas.

Bus Testing

Originally drafted in 1989, the Federal Transit Administration (FTA) Bus Testing regulations mandate that all transit vehicle models purchased with FTA money must undergo testing at FTA's Altoona, Pa. bus testing site.

Buy America

Federal transportation law which requires that all purchases of vehicles, equipment or any other manufactured item be of US-made and assembled components, unless the purchase price is less than \$100,000 or the DOT has given the purchaser a Buy America waiver.

C

Capital Costs

Refers to the costs of long-term assets of a public transit system such as property, buildings and vehicles. Under TEA-21, FTA has broadened its definition of capital costs to include bus overhauls, preventive maintenance and even a share of transit providers' ADA paratransit expenses.

Carpool

A prearranged ridesharing service in which a number of people travel together on a regular basis in a car. Some carpool arrangements involve the exchange of money in exchange for driving, while others simply trade off driving.

Carpool Match NW

CarpoolMatchNW.org is a free regional carpool matching website operated by Metro in cooperation with the City of Portland, SMART, TriMet, and CTran (Vancouver).

Carshare

Carshare refers to automobile rental services intended to substitute for private vehicle ownership. It makes occasional use of a vehicle affordable, even for low-income households, while providing an incentive to minimize driving and rely on alternative travel options as much as possible. Carsharing can also be used at worksites to provide transportation from commuter rail stations and for employees' midday errands.

CARTS

The Chemetka Area Regional Transportation System (CARTS) is a partnership between Marion, Polk, and Yamhill counties that coordinates resources to provide transportation for senior citizens, disabled, and economically disadvantaged residents access to medical services, employment, education, shopping, and recreation.

CAT

Canby Area Transit (CAT) provides fixed-route and dial-a-ride service in Canby and provides connections with SMART, TriMet, and SCTD.

Cherriots

The name given to the bus service operated by Salem Area Transit. In addition to Salem-area service, Cherriots also operates service between Salem and Wilsonville, coordinating with SMART's 1X service.

Clean Air Act

Federal regulations which detail acceptable levels of airborne pollution and spell out the role of state and local governments in maintaining clean air.

CDL

Commercial Drivers License: The standardized drivers license required of bus and heavy truck drivers in every state. Covers drivers of any vehicle manufactured to seat 15 or more passengers (plus driver) or over 13 tons gross vehicle weight. The CDL is mandated by the Federal government in the Commercial Motor Vehicle Safety Act of 1986.

Community Transportation

Transportation services that address the transit needs of an entire community, including the needs of both the general public and special populations.

Commuter Rail

Commuter rail is passenger train service that often shares tracks with freight or inter-city trains. Commuter rail trains are usually made up of coaches hauled by a locomotive and serve downtown travel markets. Most train service is concentrated in peak hours of travel. Train stations are usually about five miles apart to allow the heavier trains to accelerate and decelerate.

Compressed Work Week

An on-going alternative work schedule, in accordance with employer policy, that regularly allows a full-time employee to eliminate at least one (1) work day every two (2) weeks through working longer hours during the remaining days, resulting in fewer commute trips by the employee.

CMAQ

Congestion Mitigation and Air Quality Project: A flexible funding program administered by the Federal Highway Administration (FHWA) which funds projects and programs to reduce harmful vehicle emissions and improve traffic conditions. CMAQ funds may be used flexibly for transit projects, rideshare projects, high-occupancy vehicle lanes or other purposes.

Curb-to-Curb Service

A common designation for paratransit services. The transit vehicle picks up and discharges passengers at the curb or driveway in front of their home or destination. In curb-to-curb service the driver does not assist the passenger along walks or steps to the door of the home or other destination.

CTAA

Community Transportation Association of America. A national professional association of those involved in community transportation, including operators, vendors, consultants and federal, state and local officials.

CTAP

Community Transportation Assistance Project. This program of the U.S. Department of Health and Human Services offers training materials, technical assistance and other support services for community transportation providers across the country. CTAP services are currently delivered by CTAA through the National Transit Resource Center.

Curb Extension or Bulbout

An area where the sidewalk and curb are extended into the parking lane to decrease crossing distance for pedestrians. Curb extensions can also be used to allow buses to remain in the travel lane instead of pulling over to the curb at bus stops.

D***Demand-Response Service***

The type of transit service where individual passengers can request transportation from a specific location to another specific location at a certain time. Transit vehicles providing demand-response service do not follow a fixed route, but travel throughout the community transporting passengers according to their specific requests. Can also be called dial-a-ride. These services usually, but not always, require advance reservations.

Deviated Fixed Route

This type of transit is a hybrid of fixed-route and demand-response services. While a bus or van passes along fixed stops and keeps to a timetable, the bus or van can deviate its course between two stops to go to a specific location for a pre-scheduled request. Often used to provide accessibility to persons with disabilities.

Disabled

Any person who by reason of illness, injury, age, congenital malfunction or other permanent or temporary incapacity or disability is unable, without special facilities, to use local transit facilities and services as effectively as persons who are not so affected.

Discretionary Grant

Financial assistance that is awarded on the basis of competitive merits from among proposals that are submitted. Even in cases where projects are identified, or earmarked, by members of Congress, grant-making agencies generally will require recipients to file applications and abide by the procedures of what was designed as a competitive grant-making process.

Door-to-Door Service

A form of paratransit service which includes passenger assistance between the vehicle and the door of his or her home or other destination. A higher level of

service than curb-to-curb, yet not as specialized as door-through-door service (where the driver actually provides assistance within the origin or destination).

DOT

Department of Transportation, the federal agency that oversees how transportation money is spent and programs are conducted in the U.S.A. The DOT oversees over a dozen other agencies, including FTA and FHWA.

Drug and Alcohol Testing Regulations

DOT implemented the Omnibus Transportation Employee Testing Act in December 1992. The act requires drug and alcohol tests for all safety-sensitive employees of agencies receiving Section 5307, 5309 or 5311 funding (Section 5310 agencies are not included), including drivers, maintenance workers, dispatchers and supervisors.

E

E&D

An abbreviation commonly used to refer to services for the elderly and disabled.

Emergency Ride Home

Program that encourages employees to carpool, use transit, bike, or walk to work by guaranteeing them a ride home in the event of an emergency. A free taxi ride is provided when an employee becomes ill at work, has to work unexpected overtime, or has a family emergency such as a sick child. Also referred to as "Guaranteed Ride Home."

Employee Commute Options (ECO) Rule

Part of House Bill 2214, which was adopted by the 1992 Oregon Legislature. The rule directs the Environmental Quality Commission to institute an employee trip reduction program. The rule is designed to reduce 10 to 20 percent of commuter trips for all businesses employing 100 or more persons.

Employment Transportation

Transportation specifically designed to take passengers to and from work or work-related activities.

F

Far-Side Bus Stop

A bus stop that is located immediately following an intersection.

Fare Box Revenue

A public transportation term for the monies or tickets collected as payments for rides. Can be cash, tickets, tokens, transfers and pass receipts. Fare box revenues rarely cover even half of a transit system's operating expenses.

FHWA

Federal Highway Administration. A component of the U.S. Department of Transportation, provides funding to state and local governments for highway construction and improvements, including funds must be used for transit. FHWA also regulates the safety of commercial motor vehicle operations (vehicles which require a CDL to drive). FHWA is the lead agency in federal intelligent transportation activities and regulated interstate transportation.

Fixed-route

Transit services where vehicles run on regular, pre-designated, pre-scheduled routes, with no deviation. Typically, fixed-route service is characterized by printed schedules or timetables, designated bus stops where passengers board and alight and the use of larger transit vehicles.

Flex Schedules

An employer policy allowing individual employees some flexibility in choosing work schedules. Flex schedules allow employees to start earlier or later, avoiding peak traffic times.

FTA

Federal Transit Administration (before 1991, Urban Mass Transportation Administration). A component of the U.S. Department of Transportation that regulates and helps fund public transportation. FTA provides financial assistance for capital and operating costs and also sponsors research, training, technical assistance and demonstration programs. FTA was created by the passage of the Urban Mass Transportation Act of 1964.

G

Grant

The award of government funds to an entity. Federal funds are typically awarded either as formula (or block) grants, where a predetermined legislative process establishes the level of funding available to an entity, or discretionary grants, where the funding agency is free to determine how much (if any) funding an entity will be given based on the relative merits of the proposal. Private foundations also give grants based on their own criteria.

Guaranteed Ride Home

Program that encourages employees to carpool, use transit, bike or walk to work by guaranteeing them a ride home in case they cannot take the same mode home (e.g., if they need to work late or if an emergency occurs). Also referred to as "Emergency Ride Home."

High-Occupancy Vehicle (HOV)

A passenger vehicle carrying more than a specified minimum number of passengers. HOVs include carpools, vanpools, and buses. HOV requirements are often indicated as 2+ (two or more passengers required) or 3+ (three or more passengers required).

High Transit Service

This level of service is achieved when a location is served by multiple bus routes at intervals of 15 minutes or less during peak commuting hours.

HOV Lane

This is a traffic lane limited to carrying high occupancy vehicles (HOVs) and certain other qualified vehicles.

Human Services Transportation

Transportation related to the provision of human or social services. Includes transportation for the elderly and people with disabilities when the transportation is provided by an arrangement other than the public service available to all.

I

Intercity Transportation

Transportation service between two urban areas. Under FTA's Section 5311 (f), intercity transportation service

must receive no less than 15 percent of each state's total Section 5311 funding, unless a state's governor certifies that these needs are already being met.

J

Jitney

A privately-owned small vehicle that is operated on a fixed route but not on a fixed schedule.

K

Kiss-and-Ride

A Kiss-and-Ride is a designated passenger loading area for both departing and arriving passengers. Similar to airport loading and unloading areas, the driver must always remain in the car.

L

Linked/Unlinked Trip

An unlinked trip is a passenger trip made on a single vehicle, such as a single automobile or bus ride. A linked trip is a person's entire trip between an origin and destination, which may involve transferring between vehicles (e.g., Park & Ride or bus and rail transit), or multiple stops, such as stopping at a daycare center or store along a commute trip.

Low Transit Service

A location that has some transit service, but not enough to be considered medium or high transit service.

M

Match

State or local funds required by various federal or state programs to complement funds for a project. A match may also be required by states in funding projects which are joint state/local efforts. Some funding sources allow services, such as the work of volunteers, to be counted as an in-kind funding match. Federal programs normally require that match funds come from other than federal sources.

Medicaid

Also known as Medical Assistance, this is a health care program for low-income and other medically needy persons. It is jointly funded by state and federal governments. The Medicaid program pays for transportation to non-emergency medical appointments if the recipient has no other means to travel to the appointment. See for more information.

Medium Transit Service

This level of service is achieved when at least two bus routes serve a location with no longer than 20-minute intervals during peak commuting hours.

Mode

A method used by people or goods to get from one place to another, such as using cars and trucks, freight and passenger trains, walking, bicycling, and riding buses.

Mode Split

Travel modes include walking, biking, auto, and bus and light rail. The mode split is the percentage of total travel by each mode. For example if the mode split is 80% auto, this means that 80% of all trips are made by auto.

MPO

Metropolitan Planning Organization. The local bodies that set coordination standards and select projects in urban areas to be funded by TEA-21. In the Portland Metropolitan area, Metro serves as the MPO.

Multi-modal Transportation

The availability of transportation options using different modes within a system or corridor, allowing for greater choice and mobility.

N

National Transit Database Reports

Annual reports formerly known as Section 15, report financial and operating data, required of almost all recipients of transportation funds under Section 5307.

Near-side Bus Stop

A bus stop that is located immediately preceding an intersection.

O

OAA

Older Americans Act. Federal law first passed in 1965. The act established a network of services and programs for older people. This network provides supportive services, including transportation and nutrition services, and works with public and private agencies that serve the needs of older individuals.

Operating Assistance

Funding that helps support the day-to-day costs of operating or providing services; in transportation settings, this category often includes driver salaries and operating staff expense, as well as fuel, and other routine, ongoing costs of having and operating a transportation service.

Operating Costs

Non-capital costs associated with operating and maintaining a transit system, including labor, fuel, administration and maintenance.

Oregon Department of Transportation (ODOT)

State agency that oversees and maintains the State highway system, under the guidance of the Oregon Transportation Commission.

Oregon's Statewide Planning Goals

The 19 goals that provide a foundation for the State's land use planning program. The 19 goals can be grouped into four broad categories: land use, resource management, economic development, and citizen involvement. Locally adopted comprehensive plans and regional transportation plans must be consistent with the statewide planning goals.

P

Paratransit

Types of passenger transportation that are more flexible than conventional fixed-route transit but more structured than the use of private automobiles. Paratransit includes demand-response transportation services, subscription bus services, shared-ride taxis, car pooling and vanpooling, jitney services and so on. Most often refers to wheelchair-accessible, demand-response van service.

Park-and-Ride

A mode of travel usually associated with movements between work and home, that involves use of a private auto on one portion of the trip and a transit vehicle, carpool, or vanpool on another portion of the trip. Thus, a park-and-ride trip could consist of an auto trip from home to a parking lot, and transfer at that point to a bus, carpool, or vanpool in order to complete the trip to work.

Parking Management

Strategies aimed at making better use of available parking supply. Parking management strategies include preferential parking or price discounts for carpools and/or short-term parkers, and disincentives, prohibitions and price supplements for those contributing more to congestion.

Parking Cash-Out

This means that people (typically commuters, and sometimes residents of multi-family housing) who are offered a free parking space are also offered the cash equivalent when they use alternative transportation modes and so do not impose parking costs.

Passenger Mile

One passenger transported one mile. Total passenger miles are calculated by adding the sum of the distances ridden by each passenger.

Payroll Tax

The transit payroll tax was established by City Ordinance 340 in December, 1988. From January 1 1990 to October 2006, the transit tax rate has remained constant at .3% (3/10 of one percent). In October 2006, the rate was raised to 0.33% (33/100 of one percent). This tax is imposed for the provision of public transportation services in the local transit area.

Peak Hours

The rush hours of the day, generally 7-9 a.m. and 4-6 p.m.

Pre-Award/Post-Delivery Audit Requirements

Since 1991, FTA has required recipients of Sections 5307, 5309, 5310 and 5311 funds to carry out audits of vehicles and other rolling stock purchased with FTA money. These audits are to ensure that vehicles are manufactured according to specification and comply

with applicable Buy America and Federal Motor Vehicle Safety Standards.

R

Regional Transportation Plan (RTP)

The guiding document developed by Metro for all federally funded transportation planning efforts in the region, with a twenty year horizon and updated every three years. The RTP is the region's transportation system plan that is required by the Transportation Planning Rule.

Reverse Commute

A rideshare program facilitates the formation of carpools and vanpools, usually for work trips. A database is maintained for the ride times, origins, destinations and driver/rider preferences of users and potential users. Those requesting to join an existing pool or looking for riders are matched by program staff with other appropriate persons. In rural areas, a rideshare program is often used to coordinate Medicaid or volunteer transportation.

Regional Center

A design type designated in Metro's 2040 Growth Concept. After the Central City, regional centers have the region's highest development densities, the most diverse mix of land uses, and the greatest concentration of commerce, offices, and cultural amenities. They are very accessible by both automobile and public transportation, and have streets that are oriented to pedestrians.

Ridership

The number of rides taken by people using public transportation in a given time period.

Rideshare

A motor vehicle, carrying two or more people for any trip purpose, including work and shopping.

S

SAFETEA-LU

On August 10, 2005, President George W. Bush signed the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). SAFETEA-LU authorizes the Federal

surface transportation programs for highways, highway safety, and transit for 2005-2009.

SCTD

South Clackamas Transportation District (SCTD) provides bus service in the Molalla area and connections to Clackamas Community College and Canby.

SDC or Systems Development Charge

A system development charge (SDC) is a one-time fee imposed on new or some types of re-development at the time of development. The fee is intended to recover a fair share of the costs of existing and planned facilities that provide capacity to serve new growth.

Section 5307

The section of the Federal Transit Act that authorizes grants to public transit systems in all urban areas. Funds authorized through Section 5307 are awarded to states to provide capital and operating assistance to transit systems in urban areas with populations between 50,000 and 200,000. Transit systems in urban areas with populations greater than 200,000 receive their funds directly from FTA.

Section 5309

The section of the Federal Transit Act that authorizes discretionary grants to public transit agencies for capital projects such as buses, bus facilities and rail projects

Section 5310

The section of the Federal Transit Act that authorizes capital assistance to states for transportation programs that serve the elderly and people with disabilities. States distribute Section 5310 funds to local operators in both rural and urban settings, who are either nonprofit organizations or the lead agencies in coordinated transportation programs.

Section 5311

The section of the Federal Transit Act that authorizes capital and operating assistance grants to public transit systems in areas with populations of less than 50,000.

SMART Options

A grant-funded program operated by South Metro Area Rapid Transit (SMART). This program works with employers, schools, and individuals to help them find alternatives to driving alone. These alternatives include carpooling, vanpooling, transit, walking, bicycling, and

telework. SMART Options also works with SMART Options works closely with other regional providers and services

State Implementation Plan (SIP)

The statement of how the transportation, environmental, and health communities expect to meet federal air quality safety standards.

State Transportation Improvement Program (STIP)

A staged, multi-year, statewide, intermodal program of transportation projects, consistent with the statewide transportation plan and planning processes as well as metropolitan plans, TIPs, and processes.

T

TANF

Temporary Aid to Needy Families. Created by the 1996 welfare reform law, TANF is a program of block grants to states to help them meet the needs poor of families. It replaces AFDC, JOBS, Emergency Assistance and some other preceding federal welfare programs. Because of TANF-imposed time limits, states trying to place TANF recipients in jobs as quickly as possible, often using program funds to pay for transportation, child care and other barriers to workforce participation.

Technical Assistance

Non-financial support to help accomplish program goals, such as training, consulting, research or evaluation.

Telework or Telecommute

This term refers to a transportation demand management strategy whereby an individual substitutes working at home for commuting to a work site on either a part-time or full-time basis.

TOD

Transit Oriented Development- Development in which public transportation, walking, and biking are designed to play a large role in mobility. TODs sometimes have the features often identified with New Urbanism- that is- using traditional town planning strategies to increase livability.

Town Center

A Metro 2040 Growth Concept design type that functions as a local activity area and provides close access to a full range of local retail and services within a few miles of most residents. Town centers do not compete with regional centers in scale or economic diversity, but they will offer some specialty attractions of regional interest. Town centers have excellent multimodal access and connections to regional centers and other major destinations.

Traffic Calming

Various design features and strategies intended to reduce vehicle traffic speeds and volumes on a roadway as a means of promoting safe and pleasant conditions for motorists, bicyclists, pedestrians, and residents.. These measures can include medians, bicycle lanes, roundabouts, curb bulb-outs, tighter curb radii, landscaping, and narrower streets.

Transit

This term refers to publicly-funded and managed transportation services and programs within the urban area, including light rail, regional rapid bus, frequent bus, primary bus, secondary bus, mini-bus, paratransit and park-and-ride.

Transportation Options Program

A program that seeks to promote a variety of transportation options and alternatives to the single-occupant automobile.

Transportation Planning Rule (TPR)

The implementing rule of Statewide Planning Goal 12 dealing with transportation, as adopted by the State Land Conservation and Development Commission (LCDC). Among its provisions, the TPR requires reducing vehicle miles traveled (VMT) per capita by 15 percent in the next 30 years, reducing parking spaces per capita by 10 percent in the next 20 years, and improving opportunities for alternatives to the automobile.

Transportation System Management (TSM)

Strategies and techniques for increasing the efficiency, safety, or level-of-service of a transportation facility without increasing its size. Examples include, but are not limited to, traffic signal improvements, traffic control devices (including installing medians, channelization, access management, and ramp metering), incident response, targeted traffic

enforcement, preferential transit measures, and restriping for high-occupancy vehicle lanes.

Transportation System Plan (TSP)

A plan for one or more transportation facilities that are planned, developed, operated, and maintained in a coordinated manner to supply continuity of movement between modes and within and between geographical and jurisdictional areas.

TriMet

Tri-County Metropolitan Transportation District, the transit agency for most of Clackamas, Multnomah, and Washington Counties.

Transit-Dependent Populations

Low-income, minority, youth, seniors, and people with disabilities tend to be more dependent on transit than the population as a whole. These groups often rely on transit as a lifeline to connect them with jobs, shopping, medical appointments, and social interaction. Since these groups do not have the mobility choices available to other groups, providing them with adequate transit service is considered first priority.

Transportation Demand Management (TDM)

Various strategies that change travel behavior (how, when and where people travel) in order to increase transport system efficiency and achieve specific objectives such as reduced traffic congestion, road and parking cost savings, increased safety, improved mobility for non-drivers, energy conservation and pollution emission reductions. Also referred to as Travel Options or Mobility Management.

Transportation Improvement Program (TIP)

The multi-year capital program of transportation projects updated each year.

Trip

A one-way movement of a person or vehicle between two points. Many transit statistics are based on unlinked passenger trips, which refer to individual one-way trips made by individual riders in individual vehicles. A person who leaves home on one vehicle, transfers to a second vehicle to arrive at a destination, leaves the destination on a third vehicle and has to transfer to yet another vehicle to complete the journey home has made four unlinked passenger trips.

U

U.S. DHHS

United States Department of Health and Human Services. Funds a variety of human services transportation through AOA, Head Start, Medicaid and other programs.

User-Side Subsidy

A transportation funding structure in which qualified users (usually economically disadvantaged persons) are able to purchase vouchers for transportation services at a portion of their worth. The users then may use the vouchers to purchase transportation from any participating provider. The vouchers are redeemed by the provider at full value and the provider is reimbursed by the funding agency for the full value.

V

Vanpool

A prearranged ridesharing service in which a number of people travel together on a regular basis in a van. Vanpools may be publicly operated, employer operated, individually owned or leased.

VMT

Vehicle Miles of Travel - the measure of how many miles vehicle travel in a given period- use to assess the amount of roadway travel in the region.

W

Walk SMART

A grant-funded two-year program operated by SMART. The objective of the Walk SMART project is to increase the number of walking trips by employees, senior citizens, and students in Wilsonville.

Workforce Investment Act

This 1998 legislation consolidates the former Job Training Partnership Act (JPTA) and many other federal job training programs into state-managed block grants. This law also replaces Private Industry Councils (PICs) with Workforce Investment Boards.

Appendix B–Transit Design Guidelines

Introduction

Infrastructure design strongly affects transit operations, passenger safety, and access to transit. This chapter provides an overview of transit design guidelines and a discussion of factors that are likely to influence transit operations and design decisions. The examples provided here are intended as guidelines. The Wilsonville Public Works Standards should be consulted for specific requirements.

SMART can provide better service when developments are designed with transit in mind. Better service means that riders are offered more convenient bus stops with designed infrastructure, more desirable routing, and reduced travel times. To the developer, good transit service is a means of offering residential and commercial occupants a more accessible location, an expanded labor market, and an overall reduction in transportation and traffic mitigation problems. In terms of the final outcome, designing for transit leads to bus stops within the development that are attractive yet unobtrusive. In general, designing for transit means planning for transportation as an asset, rather than considering transit as an afterthought.

Bus Dimensions

Figure 9 on page 102 presents the basic vehicle specifications for the largest buses currently in the SMART fleet. These maximum specifications may change as buses are replaced. Vehicles in the current fleet with different specifications will operate within these guidelines. SMART owns standard 26-, 30-, 35-, and 40-foot buses. Special consideration needs to be given when designing facilities which will be used by transit buses. Compared to automobiles and most other types of vehicles, transit buses have longer wheelbases, more overhang, are wider, longer, and taller, have slow acceleration and deceleration rates, and have a wider turning radius.

Table 14. Bus Dimensions

Length	40 feet
Width	8 feet, six inches for body only. Total width may be 11 feet with mirrors.
Wheelchair Lift (Extension from bus)	5 feet, 8 inches
Wheel Base	22 feet, 9 inches
Height	10 feet, 8 inches
Weight	Full bus - 25,000 pounds
Doors	Distance from front of bus to middle of front door: 3 feet. Distance from front of bus to middle of rear door: 26 feet.

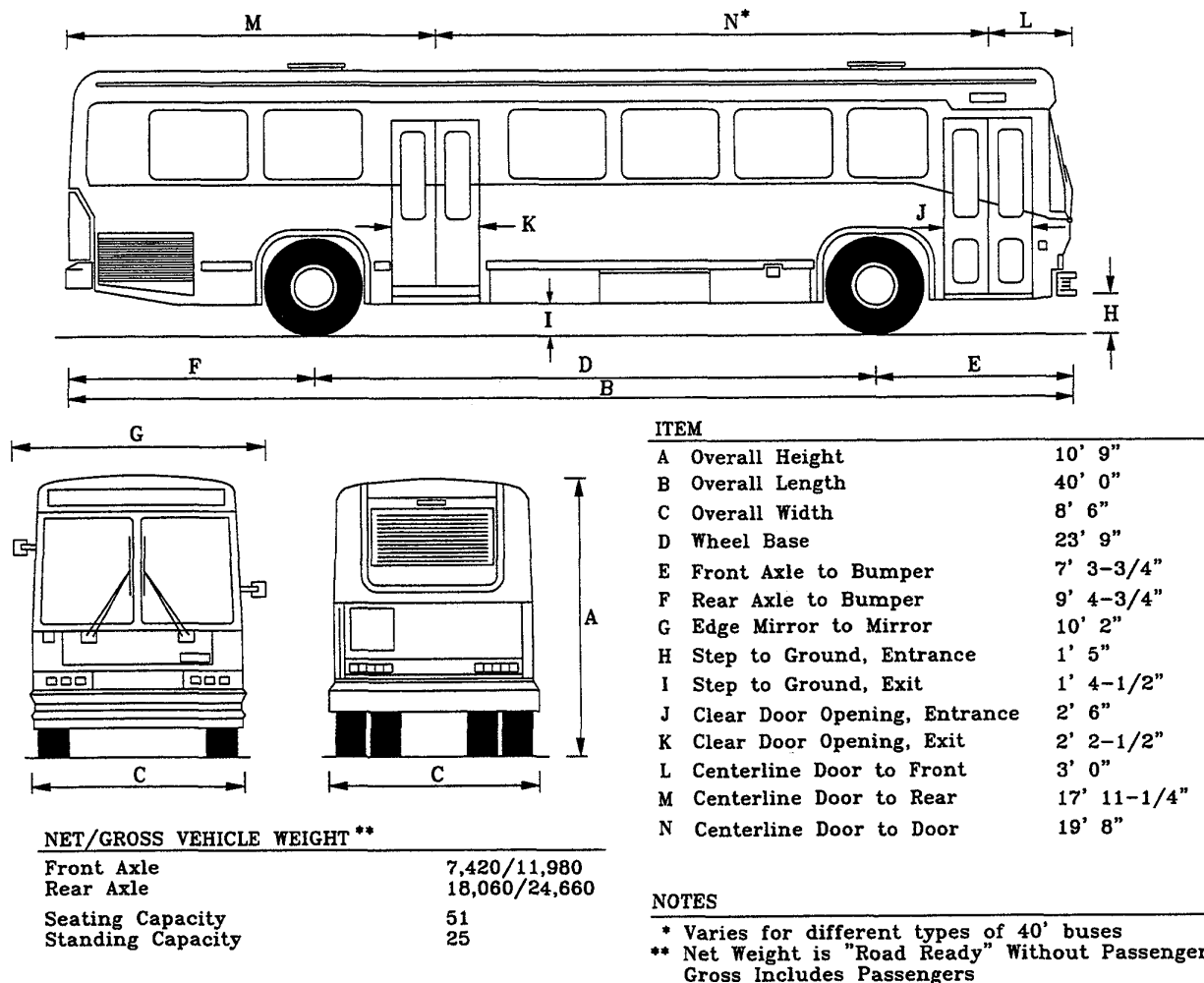


Figure 9. Typical 40-foot Bus

Bus Stop Locations

The safety of passengers, motorists, bicyclists, and pedestrians is paramount in determining the location of bus stops. Bus stops can be located either on the far or near side of intersections. There are also occasions where a mid-block bus stop is advisable. SMART generally favors far-side bus stops; however, the location of specific bus stops depends on individual site specifics. In almost all cases, there are advantages and disadvantages to either placement.

Far-Side Bus Stops

Far-side bus stops are recommended when:

1. Traffic in the direction the bus is traveling is heavier approaching the intersection than leaving the intersection.

2. There is a high demand for right turns in the direction the bus is traveling.
3. The crossing street is a one-way street where traffic flows from left to right.

Advantages of Far-side Stops

- Encourage pedestrians to cross behind the bus.
- Minimize conflicts between buses and right-turning vehicles.
- Gaps in traffic are created for buses re-entering the flow of traffic at signalized intersections.
- Minimize sight distance problems on approaching an intersection.

Disadvantages of Far-side Stops

- Stopping on the far side after stopping at a red light interferes with bus operations and traffic in general.

- A bus at a far-side stop obscures sight distance to the right of a driver entering the intersection from the right.
- Intersections may be blocked if other vehicles park illegally in the stop, obstructing buses and causing traffic to back up across the intersection.

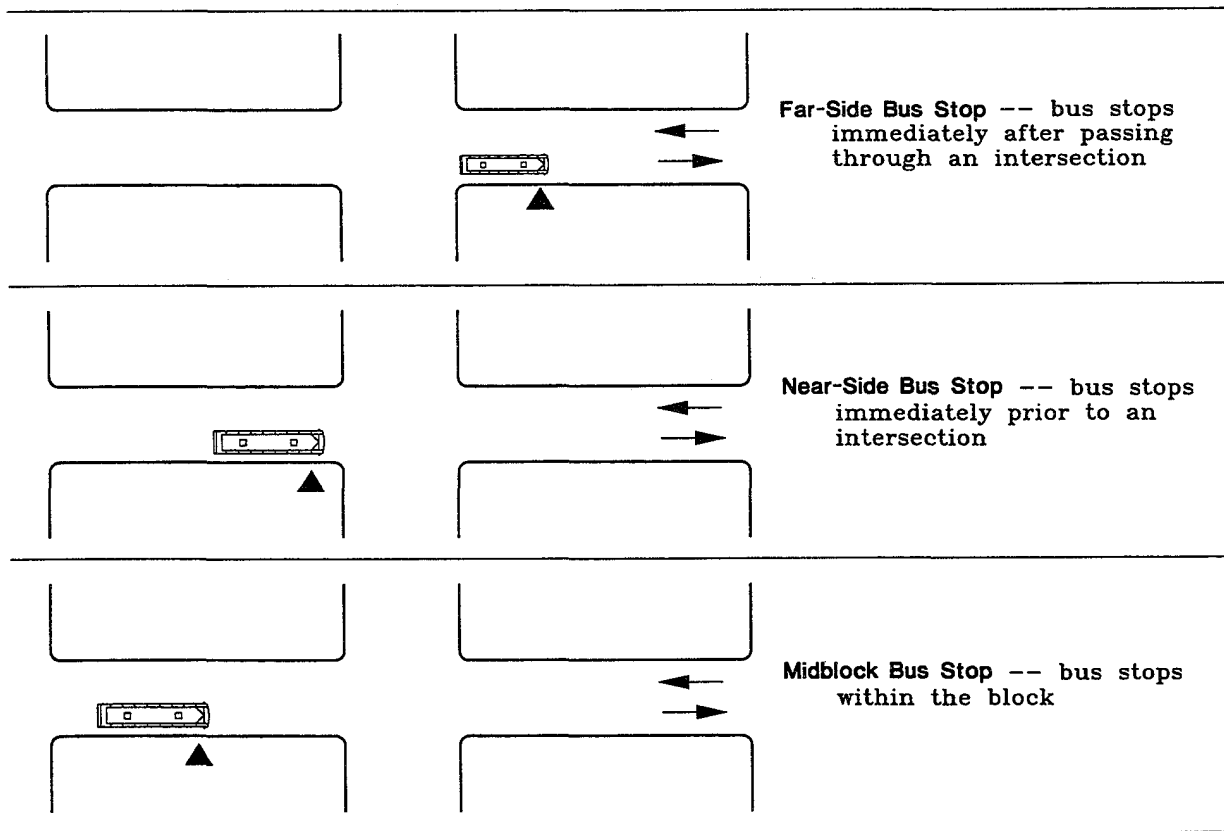


Figure 10. Bus Stop Locations

Near-side Bus Stops

Near-side stops are recommended under the following conditions:

1. Traffic is heavier on the departure side than on the approach side of the intersection.
2. The cross street is a one-way street where traffic flows from right to left.
3. Where the transit route turns right, a near-side stop should be established before the turn.
4. At intersections controlled by signals, stop or yield signs when transit operations are more critical than traffic or parking.

Advantages of Near-side Stops

- Create a minimum of interference at locations where traffic is heavier on the far side of an intersection.
- Passengers generally board buses closer to a crosswalk, minimizing walking distance.

Disadvantages of Near-side Stops

- Heavy vehicular right turns can cause conflicts, especially if a vehicle makes a right turn from the left of a stopped bus.
- Buses often obscure stop signs, traffic signals, or other control devices, as well as pedestrians crossing in front of the bus.

- The sight distance of a driver entering an intersection is diminished from the right.
- The bus re-entering traffic flow after stopping often must wait through several cycles.
- Lengthy separate right-turn lanes cause the bus stops to be located too far from the intersection.

Mid-Block Bus Stops

Mid-block stops are recommended under the following conditions:

1. Traffic or street characteristics prohibit a near- or far-side stop at an intersection.
2. Large transit passenger generators exist and heavy ridership makes the location desirable.
3. Blocks are long enough to allow adequate distance for the bus to merge into a left-turn lane if required.
4. There is a median island in the roadway.

Advantages of Mid-block Stops

- Buses create a minimum of interference with sight distance for both vehicles and pedestrians.
- Bus stop may be closer to front entrance.
- Waiting passengers assemble at less congested sections of the sidewalk.

Disadvantages of Mid-block Stops

- The removal of curbside parking may be required.
- Patrons from a cross-street may have to walk farther to board the bus.
- Pedestrian jaywalking is more prevalent, resulting in increased friction, congestion and potential accidents.

Bus Shelters and Pads

Shelter should provide bench, garbage, lighting, bus schedule, and a pole with a sign. SMART encourages private developers and other agencies to include passenger



shelters as part of new developments when warranted.

The most important criteria SMART uses to determine whether a shelter is warranted are:

- Number of passenger boardings per day -- A stop warrants a shelter if it has significant boardings per day. This criterion leverages limited resources to benefit the greatest number of customers.
- Designation as a major transit stop - Since major transit stops are often transfer points, shelters are particularly important for these locations.
- Type of population served -- Locations that serve higher concentrations of elderly customers or people with disabilities are given priority for shelter placement. This frequently includes stops at medical facilities and public service agencies.
- Availability of nearby shelter -- To achieve the best level of service for each customer, shelters are distributed to obtain maximum coverage and access.
- Preparation required - All other criteria being equal, level sites that provide adequate placement area with minimal impact to surrounding properties are preferred.

A private developer or agency may install a shelter of a different design, subject to SMART's approval. Any new alternative shelters must meet the following ADA standards:

- ADA requires a passenger landing area of at least 5 foot by 8 foot next to or as near as possible to the shelter.
- Shelter pad to be 1 foot by 1 foot larger than the dimension of the shelter i.e.: a 4 by 8 shelter would be placed on a 5 by 9 concrete pad.
- Inside the shelter, provide a minimum clear floor area of 30 inches by 48 inches for persons using mobility devices. The interior of the structure should not be construed to be any part of the separate 5 foot by 8 foot passenger landing area.

Shelter placement depends on the unique conditions at a bus stop and should be coordinated with SMART. In general, however, the following citing guidelines can be applied:

- Place shelters "downstream" from the bus stop front-door landing pad. This gives the driver a clear view of the bus stop area and promotes

- safety by locating waiting passengers away from the approaching bus.
- Locate shelters 5- 6 feet from the front door of the bus along the direction of travel. This placement provides adequate circulation space for persons in wheelchairs.
- Locate shelters within 20 feet of the front door landing area to facilitate timely passenger loading.
- Maintain a 5-6 foot pedestrian pathway on at least one side of the shelter, preferably in line with the existing sidewalk.
- Locate the back of a shelter no less than 12 inches from a building face, wall, or other broad vertical surface to facilitate trash removal and panel cleaning.
- Place shelters that have their back panels facing the street no closer than 2 feet from the curb face to allow safe passing clearance for buses and bus mirrors.
- Do not place shelters between a regularly used building exit and the curb so that pedestrian access between the building and the street is blocked.
- Do not locate shelters in front of building windows used for commercial purposes (e.g., advertising or displaying the business' name).
- Locate shelters where people will not be exposed to splashing water from passing vehicles or runoff from adjacent buildings and trees.
- Orient shelters so that they provide as much protection as possible from wind and rain.
- Do not place shelters where they block motorists' or pedestrians' views of opposing traffic movements.
- Do not place shelters within the 5 foot by 8 foot landing pad area required by ADA, or consider the shelter interior as part of the ADA landing.
- Locate bus stop signs a minimum of 1 foot 6 inches (1'-6") from the curb face to assure both visibility and clearance from passing vehicles.
- Place bus stop poles a minimum of 3 feet from utility poles, street signs, and other vertical elements within the right-of-way.

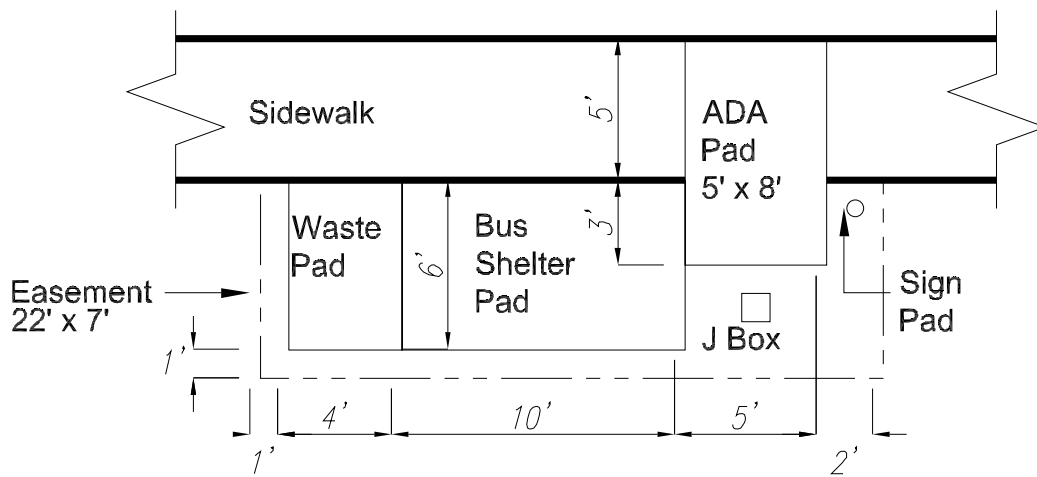


Figure 11. Typical SMART Bus Shelter and Pad

Bus Stop Lighting

The provision of adequate lighting at bus stops is important for safety reasons and to make sure that customers waiting at the bus stop are visible to the bus operator. Typical lighting should provide between 2 to 5 foot-candles. Ideally, bus stops should be located within 30-feet of an existing light.

Bus Pullout

A bus pullout is a specialized bus stop where a bus can load or unload passengers in an area separated from the traffic lanes.

Safety and traffic flow are important considerations in deciding whether to install a turnout. Turnouts may be helpful on roads that function with higher speeds (over 40 miles per hour) because there is less risk of rear-end collision while the bus is stopped to load or unload passengers. A stopped bus also will not impede traffic flow, which could be a significant advantage for traffic operation on a high speed road, especially if the stop time is long due to high passenger activity or boardings by persons in wheelchairs.

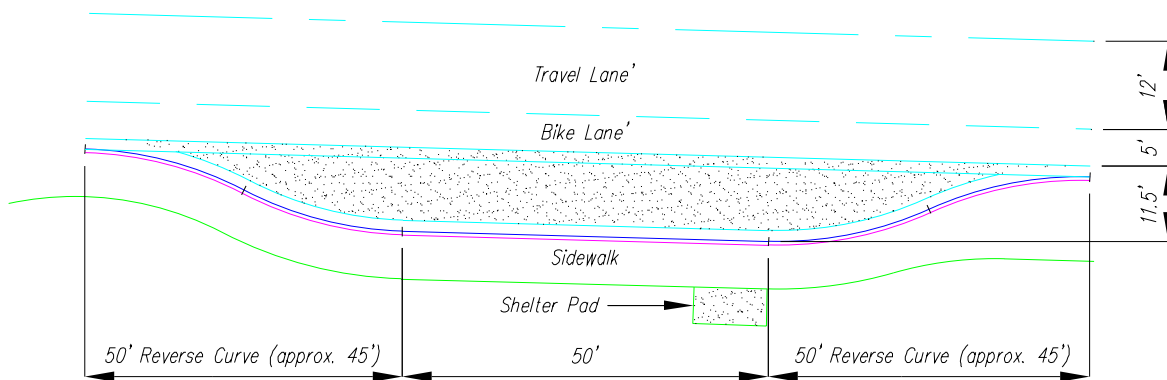


Figure 12. Bus Pullout

Bus Bulbs

A bus bulb is an extension of the sidewalk from the curb of the parking lane to the edge of the travel lane. A bus bulb speeds up transit service by allowing buses to remain in the traffic lane instead of pulling over to the curb at bus stops. See Figure 13 on page 107.

Queue Bypass

A queue bypass is a short lane used by buses to bypass traffic queues at signalized intersections. The bypass is usually a right-turn lane that allows through travel for buses only. In conjunction with traffic signal priority, however, bypasses can also be created with left-turn lanes. See Figure 14 on page 107.

Transit Access to Development

The design and layout of buildings and developments plays an important role in either encouraging or discouraging transit, walking, and bicycling. Buildings that are surrounded by parking lots or give priority to car access are often daunting for pedestrians and bicyclists and preclude safe transit access to building entrances. Buildings that face the street and provide for short, safe walking distances encourage transit, walking, and bicycling, but can still provide convenient access for automobiles. See Figure 15 on page 108.

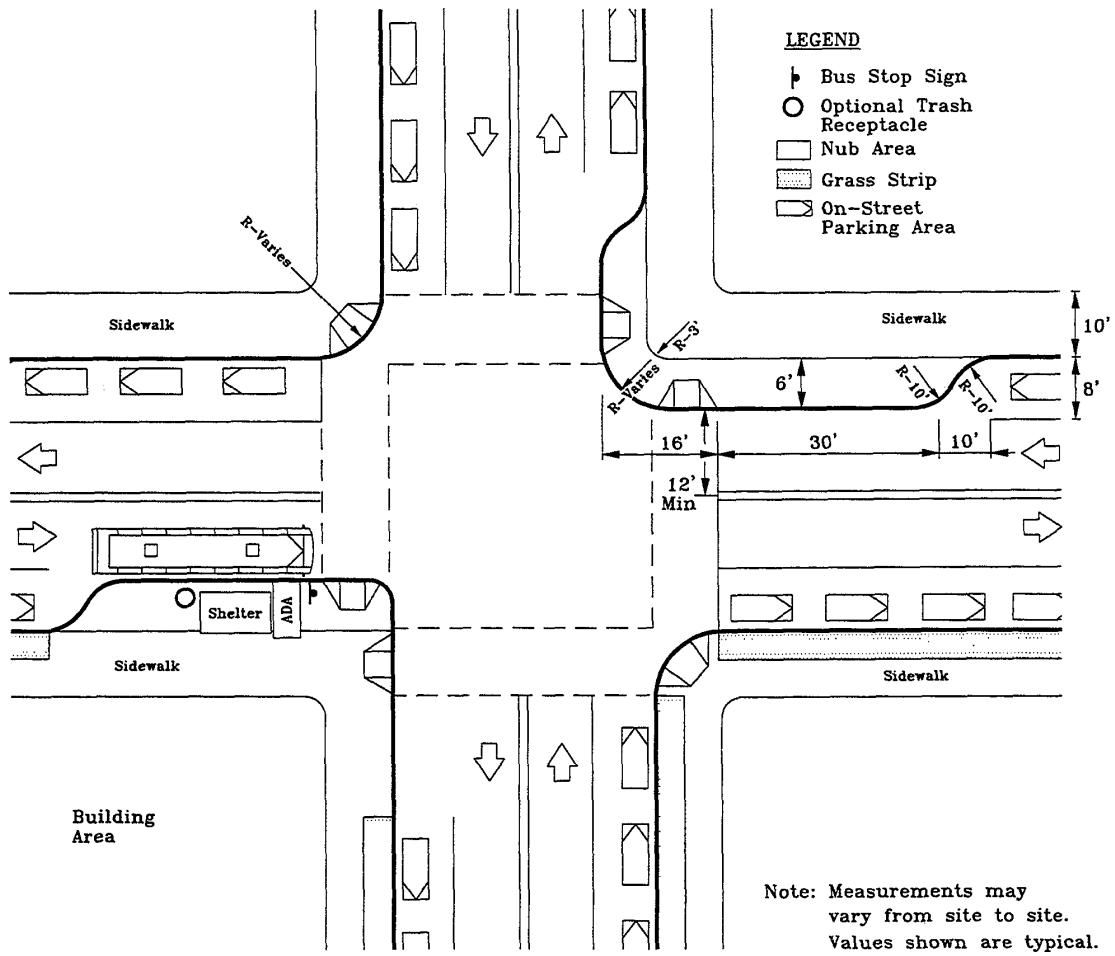


Figure 13. Bus Bulbs

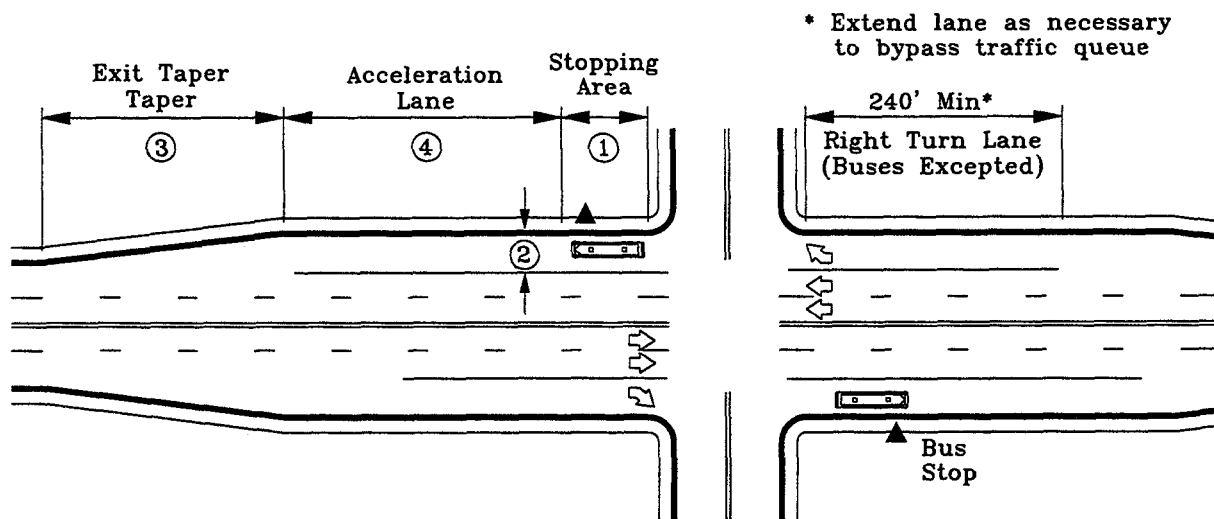
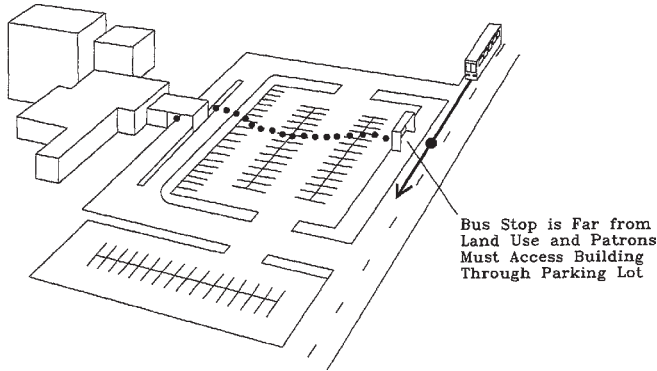
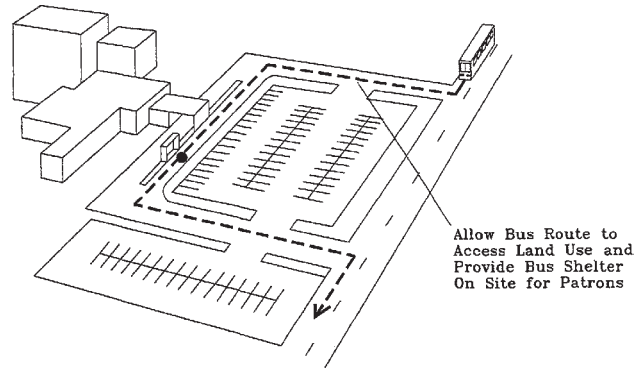


Figure 14. Queue Bypass

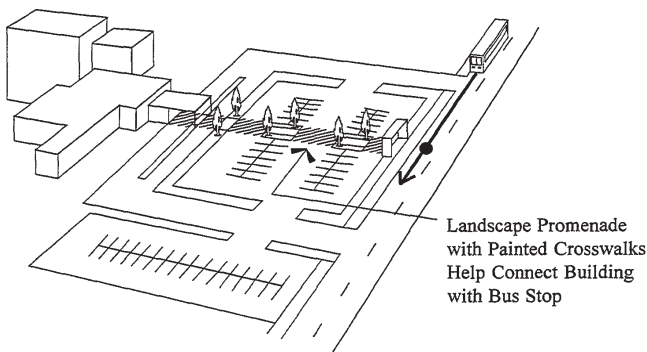
Providing access without coordination and cooperation



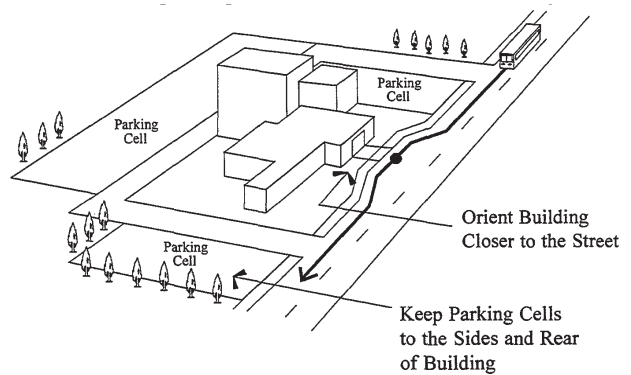
Deviating the route



Installing a pedestrian promenade through the parking lot



Orienting building closer to the street and having parking to the rear and sides of the facility



At right: Expanding facility

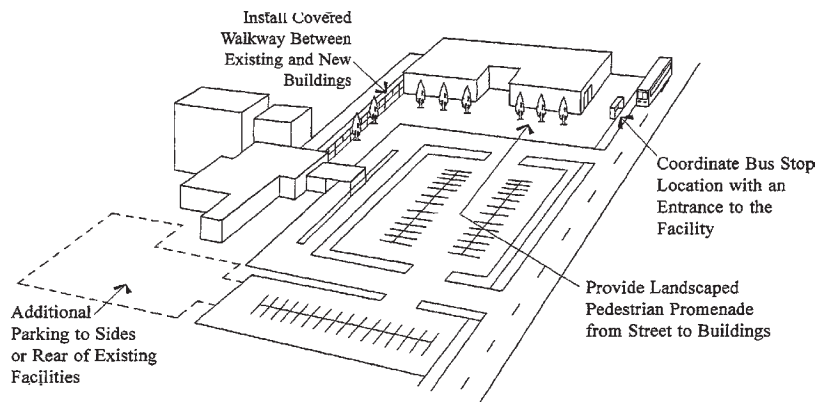


Figure 15. Transit Access to Development

Turning Radius

The minimum effective turning radius for the largest SMART bus is 25 feet. A properly designed corner curb radius will minimize conflicts between buses, cars,

bicycles and pedestrians at intersections. Standards for turning radius can vary depending on the effective radius such as whether a bicycle lane or parking lane is

available or if traffic volumes are so low as to allow transit vehicles to make full use of either or both of the departure or receiving lanes. At the same time, it should be noted that the larger curb radii needed to accommodate buses and fire trucks create conditions which are less favorable for pedestrians by encouraging faster vehicle speeds around corners and increasing crossing distances. Because of this, curb radii should be kept to the minimum required.

Appendix C–TDM Methods

Methods for reducing auto trips vary in effectiveness and implementation cost. Table 15 below 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 the Glossary in Appendix A for definitions.

Table 15: 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%

Table 15: Potential Transportation Demand Management Methods (Continued)

Method	Potential SOV Auto Trip Reductions ^a
Carpooling and Vanpooling Parking Subsidies	1-3%
Carpool and Vanpool Preferential Parking	c
Employer Shuttles	c
Bicycling Program	0-10%
Walking Program	0-3%
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%
Emergency 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.

Emergency Ride Home Sample Guidelines

Who can use the service?

The employer must be located in Wilsonville and registered with SMART in order to participate in the SMART-funded emergency ride home program. Any employee at a registered worksite is eligible to use the program on any day that he/she commuted to work by carpool, vanpool, transit, walking, or bicycling.

What does the program provide?

In the event of personal or family sickness or emergency, the employee is entitled to a free taxi ride:

- From work to home
- From work to hospital/doctor's office
- From work to school or daycare (e.g., pick up sick child)
- With one stop allowed (e.g., from work to doctor's office to home)

What qualifies as an emergency?

- Unscheduled overtime or late meeting (i.e., without advance warning)
- Sickness or accident of immediate family member (child, spouse, parent)
- Breakdown or accident of carpool vehicle on way to or from work (i.e., not a vehicle that was planned to be in the shop for several days)
- Carpool partner or vanpool driver had to unexpectedly leave work early (e.g., sickness)

What does not qualify as an emergency?

- Working late without a supervisor's request
- Weather emergencies and acts of God
- Building closings or evacuations
- ERH may not be used for personal errands, previously-scheduled appointments or business-related travel.

Program Limitations

Each employee can use a maximum of four emergency rides in a year.

How does it work?

The employee calls one of the listed taxi companies and presents the driver with a SMART voucher

provided by his/her supervisor. The employee fills out the section of the voucher that includes the employee name, date, and reason for trip. At the end of the trip, the driver fills out the distance driven and cost, and provides the employee with the duplicate copy. The original copy is submitted to SMART, which reimburses the taxi company directly.

Conceptual Vanpool Model

This section describes a model vanpool formation process and operation as an illustration of how a vanpool might work in Wilsonville. Actual details would vary.

SMART sets up a meeting at a Wilsonville employment site and finds that there are a number of employees who live in Vancouver, Washington and would like to vanpool to work in Wilsonville. Unfortunately, their schedules are not all compatible and there are only half the needed riders for a vanpool. However, SMART is able to find enough additional riders to fill the van at an adjacent worksite. SMART maps the prospective riders' home locations and helps to designate pick-up locations based on where the riders live. Although the riders are relatively spread out, they are able to agree on two pick-up locations in order to ensure a practical commuting time. One of the pick-up locations is a neighborhood church, which has agreed to let the vanpool riders use its parking lot. The other pick-up location is a Park & Ride lot. Some of the riders are dropped off by a commuting spouse, while others carpool or take transit to the pick-up location.

A driver and a back-up driver are recruited from the group of interested employees. In exchange for driving, the driver does not pay a fare and is allowed weekend use of the van. The driver is also responsible for collecting monthly fares from riders and tracking ridership.

A 15-passenger van is leased from a private company such as Enterprise, FlexCar, or VPSI. The company provides insurance, maintenance, roadside assistance, and a set mileage allowance. If the van requires service, the company provides a substitute van. All of the riders sign a contract agreeing to the terms of the vanpool. The contract can specify cancellation notice required, payment due dates, length of time the van will wait at a location, incentives for recruiting additional riders, and policies on music and smoking.

With the exception of the driver, all of the passengers pay \$115 monthly to ride in the vanpool. This amount includes the lease as well as fuel costs. SMART uses grant funding to subsidize the fares so that each rider only pays \$85 per month. SMART continues to work with the employer to help ensure that the vanpool is full and operating smoothly. SMART also works with the employer to assist them with other incentives that help to support the vanpool, such as preferred vanpool parking, pre-tax benefits, and employer subsidies.

Vanpool Shuttle

A vanpool shuttle would be similar to a traditional vanpool in many ways, but would differ in the distance and frequency of trips. A shuttle would provide quick transportation for short distances, such as between commuter rail and employment sites in Wilsonville. It would likely make several round trips during morning and evening commute hours. The shuttle could serve an individual worksite or it could serve several worksites in close proximity to each other. A vanpool shuttle makes sense when ridership numbers are insufficient to warrant fixed-route service. In some cases, vanpool shuttles provide an interim service until ridership warrants a fixed route service.

Although SMART could purchase the vehicles for vanpool shuttles, it would probably be more practical to lease the vans from a private company that also provides maintenance, insurance, and roadside assistance. When there is either an increase or decrease in demand, the lease can be changed to a larger or smaller vehicle. Leasing through a private company also allows non-SMART employees to drive the vans. Vanpool shuttles are most practical and flexible when the drivers are also employees of the worksites served by the vanpool shuttle.

Financing of the vanpool shuttles could come from several sources including grant funds, SMART operating funds, and the employers served. The employer also makes a contribution by providing drivers (employees) to make the shuttle runs. In some cases, rental use of the van to employees for weekends and mid-day errands can help to reduce the overall coat of operations, while also providing a useful benefit for employees.

Appendix D–Alternative Fuels

Table 16. Alternative Fuels Comparison

	No. 2 Diesel	Biodiesel (B20)	Compressed Natural Gas (CNG)	Electricity	Hydrogen	Liquified Petroleum Gas (LPG)
Main Fuel Source	Crude oil	Soy bean oil, waste cooking oil, animal fats, and rapeseed oil	Underground reserves	Coal, Nuclear, natural gas, hydroelectric, and renewable resources can also be used.	Natural Gas, Methanol, and other energy sources.	A by-product of petroleum refining or natural gas processing
Environmental Impacts of Burning Fuel	Produces harmful emissions; Diesel and diesel vehicles are rapidly improving and emissions are being reduced with after-treatment devices.	Reduces particulate matter and global warming gas emissions compared to conventional diesel. NOx emissions may be increased.	CNG vehicles can demonstrate a reduction in ozone-forming emissions compared to some conventional fuels. HC emissions may be increased.	EVs have zero tailpipe emissions; however, some amount of emissions can be contributed to power generation.	Zero regulated emissions for fuel cell-powered vehicles, and only NOx emissions possible for internal combustion engines operating on hydrogen.	LPG vehicles can demonstrate a 60% reduction in ozone-forming emissions compared to reformulated gasoline.
Energy Security Impacts	Manufactured using imported oil, which is not an energy secure option.	Biodiesel is domestically produced and has a fossil energy ratio of 3.3 to 1 - its fossil energy inputs are similar to those of petroleum.	CNG is domestically produced. The United States has vast natural gas reserves.	Electricity is generated mainly through coal fired power plants. Coal is the United States' most plentiful fossil energy resource and our most economical and price-stable fossil fuel.	Hydrogen can help reduce U.S. dependence on foreign oil by being produced by renewable resources.	LPG is the most widely available alternative fuel with an estimated 3,400 refueling sites nationwide. The disadvantage of LPG is that 45% of the fuel in the U.S. is derived from oil.

	No. 2 Diesel	Biodiesel (B20)	Compressed Natural Gas (CNG)	Electricity	Hydrogen	Liquified Petroleum Gas (LPG)
Fuel Availability	Readily available- SMART's current fuel source	Available in bulk from Albina Fuel and SeQuential Biofuels in Portland. Also available at the Pacific Pride station in Aurora	Fueling station would have to be developed.	Most homes, government facilities, fleet garages, and businesses have adequate electrical capacity for charging, but special hookup or upgrades may be required. More than 600 electric charging stations are available in California and Arizona.	Fueling station would have to be developed.	Propane is the most accessible alternative fuel in the U.S. There are more than 3,300 stations nation wide.
Maintenance Issues		Hoses and seals may be affected with higher-percent blends, lubricity is improved over that of conventional diesel fuel.	High-pressure tanks require periodic inspection and certification.	Service requirements are expected to be reduced. No tune-ups, oil changes, timing belts, water pumps, radiators, or fuel injectors are required. However, the batteries must be replaced every 3-6 years.	When hydrogen is used in fuel cell applications, maintenance should be very minimal.	Some fleets report service lives that are 2-3 years longer, as well as extended intervals between required maintenance.
Safety Issues (Without exception, all alternative fuel vehicles must meet today's OEM Safety Standards)	Diesel is a relatively safe fuel since people have learned to use it safely. Diesel is not biodegradable though, so a spill could pollute soil and water.	Less toxic and more biodegradable than conventional fuel, can be transported, delivered, and stored using the same equipment as for diesel fuel.	Pressurized tanks have been designed to withstand severe impact, high external temperatures, and automotive environmental exposure.	OEM EVs meet all the same vehicle safety standards as conventional vehicles.	Hydrogen has an excellent industrial safety record; codes and standards for consumer vehicle use are under development.	Adequate ventilation is important for fueling an LPG-fueled vehicle due to increased flammability of LPG. LPG tanks are 20 times more puncture resistant than gasoline tanks and can withstand high impact.

Source: U.S. Department of Energy

Biodiesel Fuel

Two primary varieties of biodiesel are currently available, B100 (100% biodiesel) and B20 (20% biodiesel and 80% conventional diesel). B20 can be used in nearly all diesel engines with no modifications. Pure biodiesel has a solvent effect and may release engine deposits from previous diesel use. This release of deposits may clog filters initially. Use of B100 in diesel engines may also require replacement of some gaskets and hoses, but does not require any major retrofitting. EPA tests found that B20 reduced hydrocarbons by up to 30%, carbon monoxide up to 20%, and total particulate matter up to 15%.

Currently, B20 costs between 7-15 cents more per gallon than regular diesel. There are two wholesalers in Portland that are able to make bulk deliveries to Wilsonville. B20 biodiesel is also available at the Aurora Pacific Pride station. Sequential Biofuels is planning to open a biodiesel plant in Salem, Oregon in the near future, which may help to reduce local prices.

Compressed Natural Gas (CNG) Buses

CNG buses are available for approximately \$50,000 more than their diesel counterparts. Fueling stations and their accompanying natural gas detectors and ventilation systems for the shop are expensive. A number of transit districts use CNG buses, including Salem/ Keizer Transit, Pierce Transit in Tacoma, and Rogue Valley Transit in Medford. Operating costs for CNG buses are slightly lower than for diesel buses. For a transit system of SMART's size, it would only make sense to convert to CNG buses if the entire fleet were converted. Even then, costs for the refueling infrastructure might be prohibitive.

Battery Electric Buses

The true advantage of battery electric buses is that they produce no emissions at their point of use. Another benefit is that they are very quiet. The drawbacks are that they have a high capital vehicle cost (150-200% of a conventional diesel bus), limited vehicle range, slow charge time (6-8 hours), increased vehicle mass, and significant space requirement for the battery pack. They may also contribute to emissions from older electricity plants, particularly those fueled by coal. Sacramento has used electric buses and reports that they are the least reliable buses in their fleet. Current battery electric buses tend to be limited to the smaller sizes (22-30 feet) and limited to a range of 100 or fewer miles. New developments in

battery size, weight, range, and cost may render this a more viable option.

Hybrid Electric/Gas Buses

Electric Hybrid buses are up to 50% more fuel efficient than regular diesel buses. The diesel engine powers an electrical generator which charges a battery pack on the roof. The batteries then power an electric motor. When the bus slows down during braking, it sends extra energy to further charge the batteries. Hybrid engines perform best in stop-and-go traffic, where they get the most benefit from regenerative braking. Hybrid buses are almost double the cost of regular buses. While a 40-foot diesel bus costs about \$280,000, a hybrid bus will cost upwards of \$500,000. Reduced fuel and maintenance costs may offset the higher costs over the life of the bus.

Hydrogen Fuel Cell Buses

Fuel cell buses contain their own compact power plant. The fuel cell produces electricity through a chemical process using hydrogen fuel and oxygen from the air. There have been a number of fuel cell bus pilot projects, which represent the beginning of the commercialization of fuel cells. Fuel cell buses are not likely to be a viable option for SMART until 2010 or later.

Propane Buses

Propane is readily available and has been used by school districts, including the Portland School District, for many years. There are a number of drawbacks or obstacles to using propane, including lack of suitable commercially available engines, higher operating costs, and lower emissions reductions than other alternatives. The available buses also cost \$25,000-\$50,000 more than conventional buses.

Other Alternatives

There are a few other alternatives available to reduce emissions, including particulate traps and ultra-low-sulfur fuel. Particulate traps cost between \$7,000 and \$10,000 per bus, including installation. They are reported to dramatically reduce emissions.

Appendix E–Federal Transit Administration (FTA) Rules Regarding Charter Service

This appendix provides relevant sections from FTA Regulations regarding charter service. Applicants for FTA assistance must formally agree that they will not provide charter service using equipment or facilities funded by FTA, unless there are no private charter operators willing and able to provide the charter service or another exception applies. This requirement is in law under 49 U.S.C. 5323(d) and regulations implementing the requirement are found in 49 CFR 604. The purpose is to ensure that Federally subsidized assets, such as buses owned by public transportation agencies, do not adversely compete with services provided by private purveyors, such as charter transportation services

Title 49–Transportation

Chapter VI–Federal Transit Administration, Department of Transportation

Part 604–Charter Service

§604.9 Charter service

(a) If a recipient desires to provide any charter service using FTA equipment or facilities the recipient must first determine if there are any private charter operators willing and able to provide the charter service which the recipient desires to provide. To the extent that there is at least one such private operator, the recipient is prohibited from providing charter service with FTA funded equipment or facilities unless one or more of the exceptions in §604.9(b) applies.

(b) Exceptions.

(1) A recipient may provide any and all charter service with FTA funded equipment and facilities to the extent that there are no willing and able private charter operators.

- (2) A recipient may enter into a contract with a private charter operator to provide charter equipment to or service for the private charter operator if:
 - (i) The private charter operator is requested to provide charter service that exceeds its capacity; or
 - (ii) The private charter operator is unable to provide equipment accessible to elderly and handicapped persons itself.
- (3) A recipient in a non-urbanized area may petition FTA for an exception to provide charter service directly to the customer if the charter service provided by the willing and able private charter operator or operators would create a hardship on the customer because:
 - (i) The willing and able private charter operator or operators impose minimum durations pursuant to State regulation and the desired trip length is shorter than the mandatory trip length; or
 - (ii) The willing and able private operator or operators are located too far from the origin of the charter service.
- (4) Any recipient may petition the Administrator for an exception to provide charter service directly to the customer for special events to the extent that private charter operators are not capable of providing the service.
- (5) A recipient may execute a contract with a government entity or a private, non-profit organization exempt from taxation under subsection 501(c)(1), 501(c)(3), 501(c)(4), or 501(c)(19) of the Internal Revenue Code to provide charter service upon obtaining a

certification from that entity or organization which states that:

- (i) [the entity/organization] certifies that it is a government entity or an organization exempt from taxation under subsection 501(c)(1), 501(c)(3), 501(c)(4), or 501(c)(19) of the Internal Revenue Code; there will be a significant number of handicapped persons as passengers on this charter trip; the re-quested charter trip is consistent with the function and purpose of [the entity/organization]; and the charter trip will be organized and operated in compliance with Title VI of the Civil Rights Act of 1964, as amended; and, section 19 of the Federal Mass Transit Act of 1964, as amended, and 49 CFR part 27; or, 45 CFR part 80; or,
- (ii) [the entity/organization] certifies that it is a government entity or an organization exempt from taxation under subsection 501(c)(1), 501(c)(3), 501(c)(4), or 501(c)(19) of the Internal Revenue Code; [the entity/organization] is a qualified social service agency under appendix A of 49 CFR part 604, as a recipient of funds, either directly or indirectly, under one or more of the Federal programs listed in appendix A; the requested charter trip is consistent with the function and purpose of [the entity/organization]; and the charter trip will be organized and operated in compliance with Title VI of the Civil Rights Act of 1964, as amended; and, Section 19 of the Federal Mass Transit Act of 1964, as amended, and 49 CFR part 27; or, 45 CFR part 80.
- (iii) [the entity/organization] certifies that it is a government entity or organization exempt from taxation under subsection 501(c)(1), 501(c)(3), 501(c)(4), or 501(c)(19) of the Internal Revenue Code; [the entity/organization] either receives or is eligible to receive directly or indirectly, from a State or local governmental body public welfare assistance funds for purposes whose implementation may require the transportation of a group of transit-advantaged or transit-dependent

persons; following a petition presented by the State in which the entity or organization resides, FTA has determined in writing that an FTA recipient may contract directly with the entity or organization for charter services; the requested charter trip is consistent with the functions and purposes of the entity or organization; and the charter trip will be organized and operated in compliance with Title VI of the Civil Rights Act of 1964, as amended; and section 19 of the Federal Mass Transit Act of 1964, as amended, and 49 CFR part 27; or, 45 CFR part 80.

- (6) A recipient in a non-urbanized area may execute a contract with a government entity or a private, nonprofit organization exempt from taxation under subsection 501(c)(1), 501(c)(3), 501(c)(4), or 501(c)(19) of the Internal Revenue Code to provide charter service upon obtaining a certification from that entity or organization which states that: [the entity/organization] certifies that it is a government entity or an organization exempt from taxation under subsection 501(c)(1), 501(c)(3), 501(c)(4), or 501(c)(19) of the Internal Revenue Code; more than 50% of the passengers on this charter trip will be elderly; the requested charter trip is consistent with the function and purpose of [the entity/organization]; and the charter trip will be organized and operated in compliance with Title VI of the Civil Rights Act of 1964, as amended; and, Section 19 of the Federal Mass Transit Act of 1964, as amended, and 49 CFR part 27; or, 45 CFR part 80.
- (7) A recipient may provide charter service directly to the customer where a formal agreement has been executed between the recipient and all private charter operators it has determined to be willing and able in accordance with this part, provided that:
 - (i) The agreement specifically allows the recipient to provide the particular type of charter trip;
 - (ii) The recipient has provided for such an agreement in its annual public charter

Appendix E—Federal Transit Administration (FTA) Rules Regarding Charter Service

- notice published pursuant to this part before undertaking any charter service pursuant to this exception; and
- (iii) If a recipient has received several responses to its annual public charter notice but ceased its review process after determining that one private operator was willing and able, it must, before concluding a formal charter agreement under this section, complete the review process to ensure that all the willing and able private operators are valid parties to the agreement.
- (8) During the demonstration period described in paragraph (b)(8)(iv) of this section, recipients in the FTA-selected sites may submit applications to provide charter service to an advisory panel equally representative of public transit providers or local business organizations and local private operators, and which has either been created for such purpose by the grantee, the State Department of Transportation (State DOT), or metropolitan planning organization (MPO), or which is part of the recipient's existing private sector consultation process.
- (i) The advisory panel will forward these applications to the State DOT or MPO, which will grant those recommended by unanimous vote of the advisory panel.
- (ii) If the advisory panel does not unanimously endorse an application, the State DOT or MPO will make a decision to grant or deny the application based on the following criteria:
- (A) *Cost evaluation.* A recipient may provide charter service when it can do so at a significantly lower cost than can private charter operators. Cost differences may be considered significant when there is approximately a twenty percent difference between the average charge for service by private operators and the recipient's fully allocated cost of providing the service, or when the advisory panel determines them to be significant.
- (B) *Equipment uniqueness.* A recipient may provide charter service using equipment that is not available from a private source, when such equipment is essential to the purpose of the charter trip.
- (C) *Service nature.* A recipient may provide unscheduled or demand responsive service that could not be provided by a private operator without advance notice or at a substantial surcharge to the customer.
- (D) *Specific local factors.* A recipient may provide service which responds to a clear need that cannot be met by the local private sector, and which is important to the economic or social health and vitality of the local area.
- (iii) The State DOT or MPO may not grant applications to provide service that would jeopardize the economic vitality of individual private charter operators or would seriously detract from private charter business.
- (iv) The service described in this subsection may be provided only during the demonstration program to be conducted through October 31, 1995, in the following sites:
- (A) Monterey, California;
- (B) Oklahoma City, Oklahoma;
- (C) St. Louis, Missouri;
- (D) Yolo County, California;
- (E) Four sites within the State of Michigan.
- (c) The process for requesting and granting an exception under 49 CFR 604.9(b)(3):

- (1) The recipient must provide the private charter operators that it has determined are willing and able in accordance with this part with a written notice explaining why it is seeking an exception and state that they have at least 30 days to submit written comments to the recipient on the request;
- (2) The recipient must send a copy of the notice, all comments received, and any further information it desires in support of its request to the Chief Counsel.
- (3) The Chief Counsel shall review the materials submitted and issue a written decision denying or granting in whole or in part the request. In making this decision, the Chief Counsel may seek such additional information as the Chief Counsel determines is needed.
- (4) Any exception that the Chief Counsel grants under 49 CFR 604.9(b)(3) shall be effective for not longer than 12 months from the date that the Chief Counsel grants it.

(d) The process for requesting and granting and exception under 49 CFR 604.9(b)(4):

- (1) The recipient must submit its petition for an exception to the Administrator at least 90 days prior to the day or days on which it desires to provide charter service.
- (2) The petition must describe the event, explain how it is special, and explain the amount of charter service which private charter operators are not capable of providing.
- (3) The Administrator will review the materials and issue a written decision denying or granting in whole or in part the request. In making this decision, the Administrator may seek such additional information as the Administrator determines is needed.
- (4) Any exception granted by the Administrator under 49 CFR 604.9(b)(4) shall be effective solely for the event for which the recipient requests an exception.

(e) Any charter service that a recipient provides under any of the exceptions in this part must be incidental charter service.

§604.11 Procedures for determining if there are any willing and able private charter operators.

(a) To determine if there is at least one private charter operator willing and able to provide the charter service that the recipient desires to provide, the recipient must complete a public participation process:

- (1) At least 60 days before it desires to begin to provide charter service if it is not doing so on May 13, 1987; or
- (2) Not more than 90 days after May 13, 1987 if the recipient is providing charter service on May 13, 1987 and desires to continue to provide charter service.

(b) The public participation process must at a minimum include:

- (1) Placing a notice in a newspaper, or newspapers, of general circulation within the proposed geographic charter service area;
- (2) Sending a copy of the notice to all private charter service operators in the proposed geographic charter service area and to any private charter service operator that requests notice;
- (3) Sending a copy of the notice to the United Bus Owners of America.