

15 - Roads and Highways

Introduction

The backbone of any regional transportation system is the roadway infrastructure of that system. Regional trips on this system involve automobiles, bicycles, and public transportation, as well as commercial vehicle travel. Meeting the needs of the different users of these facilities, while also meeting the larger livability goals for the region, requires a roadway network that is not weighted toward any one mode to the detriment of the others.

The Regional Road System chapter includes:

- identification of the roadways that comprise the regional highway system in the Salem-Keizer area;
- a description of the functional classifications of these facilities;
- the goals, objectives, and policies for these facilities;
- a description of necessary improvements to increase the safety, efficiency, and capacity of the regional highway system over the next 24 years.

The projects contained in this chapter represent a mix of investments that will ensure that the regional highway system provides adequate levels of mobility for people and goods, while at the same time maintaining the quality of life in the area and meeting the financial constraints that confront the area over the next 24 years.

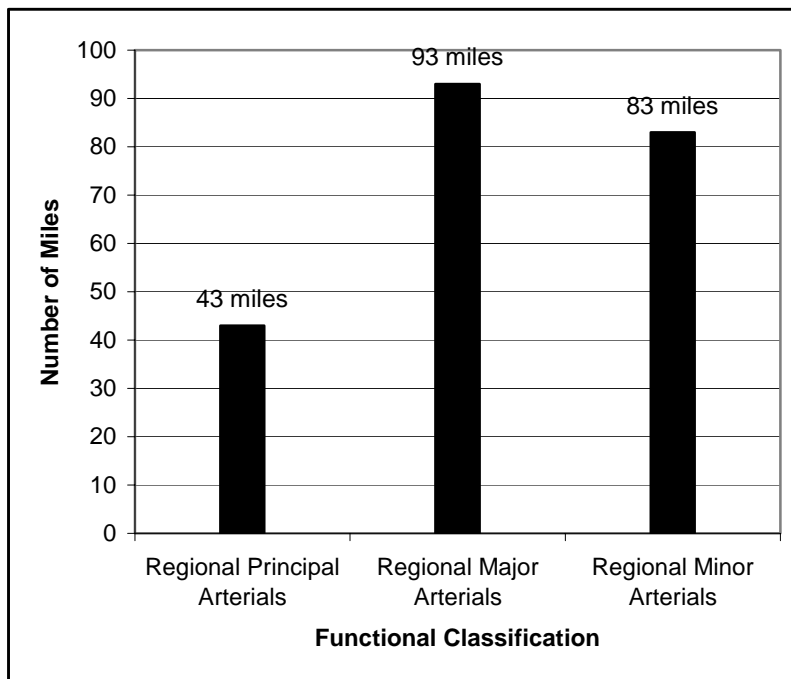
The Road System of Regional Significance

The Regional Road System and Functional Classifications

The Regional Transportation Systems Plan (RTSP) establishes the road system of regional significance (see **Map 15-1**). This system is comprised of facilities that function as Regional Principal Arterials, Regional Major Arterials, and Regional Minor Arterials. These “functional classifications” are useful in ensuring that the “regionally significant” travel movements of people and goods can be adequately and appropriately accommodated by our transportation system. State and local comprehensive plans also contain functional classification systems that apply to the facilities within their jurisdiction, including the types listed above as well as others such as the collectors and local streets designated in local plans. Since SKATS, as the designated Metropolitan Planning Organization (MPO), does not have jurisdiction over any actual facility, it would be inappropriate for this plan to address specific physical aspects of the system such as cross-section design, which, along with traffic volume, is often tied to functional classifications at the local level. Rather, it is the purpose of this plan to identify the “regionally significant” functions necessary to accommodate the travel demand associated with the

movements of people and goods in our area and provide for those functions in the coordinated design of the overall regional transportation system. The regional interest is that these functions be consistent across jurisdictional boundaries, although there may be some variation in local cross-sectional design. The regional functions must, however, be provided for in the local Transportation Systems Plans (TSPs) developed by the local jurisdictions in the region, and the locally designated systems must be consistent with, and adequate to support the functional intent of, the regional system. This approach allows appropriate flexibility in the relationship between intended function and facility design. **Figure 15-1** shows the mileage of the regional road system by functional classification. The functional classifications of the region's roads are reviewed periodically to ensure that their classifications remain appropriate.

Figure 15-1
Regional Road System by Functional Classification (in Miles)



Each of the regional functional classifications is described below and listed in order of decreasing emphasis on longer, through-trip movements (see **Map 15-1, Functional Classification System**).

Regional Principal Arterial

Regional principal arterials provide the primary structural support, “the backbone,” of the regional road network. These facilities are intended to function as the carriers of trips of statewide significance entering and leaving the SKATS area, as well as the travel passing through the region destined for other areas. This system includes interstates, other freeways and expressways, and routes of statewide significance. The SKATS area contains 43 miles of highways and streets that are regional principal arterials.

Regional Major Arterial

Regional major arterials serve as the supporting framework for the regional road network. In combination with the regional principal arterials, the regional major arterials provide for the highest level of mobility into, out of, and within the urban area. The trips that stay within the region, but move across it through a series of adjacent subareas, should be provided for on the regional major arterial system. In addition, movements across the Urban Growth Boundary (UGB) to and from the nearby rural communities surrounding the SKATS area are most appropriately served by this level of facility. Access to regional principal arterials and major regional destinations such as the Capitol Mall area should generally be provided by these types of facilities as well. In the SKATS area, there are currently 93 miles of streets classified as regional major arterials.

Regional Minor Arterial

The regional minor arterial system complements the regional principal and major arterial systems, but primarily functions to accommodate travel moving between broadly defined subareas within the region. An adequate minor arterial system is necessary to prevent these more localized trips from using up the capacity of the principal routes and major arterials and forcing the longer distance, higher speed travel demand off those facilities and into local neighborhoods. Regional minor arterials should also function to provide access to and from the major arterial into individual subareas and to provide community access to significant activity centers, such as the Chemeketa Community College campus. In the SKATS area, there are currently 83 miles of streets classified as regional minor arterials.

Local Classifications Not Included in the Regional System

Local jurisdictional functional classification systems also include collectors and local streets. In general, collectors are contained entirely within communities and provide mobility between adjacent neighborhoods and access to the major arterial and local street system. While individual land uses are often directly accessible, the emphasis of this level of facility is on collection and distribution of trips within the arterial grid. Local streets provide for limited distance local circulation and the highest level of direct property access. This part of the street network generally comprises the vast bulk of the total roadway mileage.

While these facilities must provide adequate levels of transportation service to ensure that this more localized travel demand does not inappropriately burden the regional system functions, it is not within the scope of this plan to address the designation and location of these types of facilities.

Goals, Objectives, and Policies

Goal 1: An adequate system of regional highway facilities to serve the vehicular movements of people and goods into, out of, across, and through the Salem-Keizer urban area.

Objective 1: Establish a system of regional highway facilities within the Salem-Keizer urban area, the Regional Road System, that adequately serves the "regional" vehicular movements of people and goods.

Policy 1: Identify, designate, and adopt as part of the RTSP the facilities that comprise the highway system of regional significance for the Salem-Keizer urban area.

Objective 2: Establish and maintain an accurate, up-to-date inventory of the characteristics of the Regional Road System.

Policy 1: The Regional Road System facility inventory shall be updated on an ongoing basis to maintain currency and accuracy.

Goal 2: An adequate level of mobility on the regional highway system for all users.

Objective 1: Ensure adequate levels of service on the Regional Road System for the "regional" movement of people and goods.

Policy 1: Capacity deficiency shall be considered to exist where the Level of Service (LOS) in the peak periods on a regional highway facility exceeds the E/F boundary (volume to capacity ratio > 1.0). Regional highway facilities approaching capacity deficiency shall be defined as those facilities operating within the LOS E range (volume to capacity ratio from 0.88 to 0.99) in the peak periods.

Policy 2: Recognize that state-operated facilities will be held to ODOT's mobility standards, as defined in the current Oregon Transportation Plan. As such, these may be different from the standards for the rest of the regional road system.

Policy 3: The RTSP shall identify prudent investments necessary to improve capacity deficient segments of the Regional Road System. Capacity deficient segments for which a preferred solution cannot be identified at this time shall be considered an "outstanding issue" location or area requiring further study. Improvements on facilities that are approaching capacity deficiency that add capacity, improve the safety and/or operation of a facility, or otherwise meet the goals, objectives, and policies of the RTSP may also be recommended in the RTSP.

Policy 4: The improvements of facilities at LOS F should be designed to provide operating characteristics within the LOS D (peak period) range, unless circumstances warrant a lesser degree of improvement.

Policy 5: Improvements that significantly modify capacity on Regional Road System facilities must be consistent with the Congestion Management System (CMS) provisions of the RTSP.

Goal 3: A safe system of regional highway facilities within the Salem-Keizer urban area.

Objective 1: Maximize the safety of the Regional Highway System wherever practicable.

Policy 1: Safety issues shall be considered a priority when comparing alternative projects for inclusion in the RTSP.

Policy 2: Prudent investments necessary to improve current safety problems shall be identified in the regional TIP.

Policy 3: All locations of bicycle and pedestrian accidents on the Regional Road System should be evaluated for potential safety improvements.

Goal 4: Preserve the existing facilities that comprise the regional highway system.

Objective 1: The preservation of the existing Regional Road System should be given priority over building new facilities.

Policy 1: Improvements related to the maintenance and preservation of existing regional facilities shall be considered a high priority.

Policy 2: The costs associated with maintaining the existing Regional Road System at an acceptable condition shall be determined and addressed prior to the allocation of funds for new construction in the RTSP.

Goal 5: An efficient system of regional highway facilities within the Salem-Keizer urban area.

Objective 1: Maximize the efficiency of existing and planned Regional Road System facilities wherever practicable.

Policy 1: The Regional Road System shall utilize existing facilities and rights-of-way, using Transportation System Efficiency Management techniques to improve traffic flows to the extent practicable.

Policy 2: Access management strategies shall be employed where appropriate on major regional arterials and above to improve safety and facilitate through-traffic flow.

Goal 6: A regional highway system that minimizes adverse neighborhood, environmental, and energy impacts associated with regional travel demand.

Objective 1: The Regional Road System should serve to protect and minimize adverse impacts on neighborhoods and environments wherever practicable.

Policy 1: In cooperation with local jurisdictions, actions to provide sufficient mobility on the regional system and/or discourage through trips on local streets will be considered in order to minimize neighborhood infiltration by "regional" travel movements.

Policy 2: The design and construction of new regional transportation facilities shall minimize disruption to neighborhoods.

Objective 2: The projects and programs included in the Regional Transportation Plan should reduce regional ambient air pollutants, as required. Highway projects in the plan should be designed to not increase localized pollutants, as required, and further reduce localized pollutants whenever practicable.

Policy 1: The Regional Road System and recommended improvements included in the Highway chapter of the RTSP shall meet the requirements stipulated in the Clean Air Act Amendments (CAAA) of 1990 and the Oregon State Conformity Rule (OAR Section 340-20-700, et. seq.)

Objective 3: The Regional Road System should minimize adverse effects on environmentally sensitive areas such as wetlands and endangered species habitat(s).

Policy 1: Analysis of potential future highway facilities shall consider potential impacts to environmentally sensitive areas. Facilities that avoid those areas shall be encouraged.

Policy 2: The planning and construction of future highway facilities shall meet the requirements of applicable federal, state, and local environmental legislation.

Policy 3: Facility modernization and construction improvements shall include measures for environmental remediation, where necessary.

Objective 4: The Regional Road System should minimize adverse effects on water quality in the Salem-Keizer urban area.

Policy 1: Potential impacts from increased surface runoff associated with facility modernization and construction improvements shall be evaluated when comparing alternative projects for inclusion in the RTSP.

Policy 2: Facility modernization and construction improvements shall be in compliance with all federal, state, and local water quality regulations.

Goal 7: An integrated system of regional highway facilities in the Salem-Keizer area.

Objective 1: Integrate the Regional Road System with other transportation modes.

Policy 1: Improvements to the Regional Road System shall be integrated with other modes where practicable to assure the opportunity for both multi- and inter-modal connectivity and efficiency.

Objective 2: Integrate the Regional Road System with current and projected land uses.

Policy 1: Regional Road System facilities and the land uses they provide access to should be functionally compatible, both currently and in the future.

Objective 3: Ensure the continuity and connectivity of the Regional Road System.

Policy 1: The Regional Road System shall provide connectivity and continuity of travel between regional ingress and egress points and major regional destinations and activity centers to minimize out-of-direction travel and circuitous routing.

Regional Road System Deficiencies and Recommended Improvements

The projects presented in this Plan come from six sources: The 2005 Update to the Regional Transportation Systems Plan (RTSP), Salem’s 1998 Transportation Systems Plan (as amended, currently being updated), Keizer’s 2000 Transportation Systems Plan, Marion County’s 2004 Rural Transportation Systems Plan, Turner’s 1999 Transportation System Plan, and ODOT’s 2006-2009 State Transportation Improvement Program (STIP). These projects address both near-term and long-term needs of the Salem-Keizer-Turner area to provide the residents and businesses with an adequate level of mobility. The financially constrained portion of the RTSP includes a total of 71 recommended projects and 56 committed projects from these documents. However, due to the financial shortfall facing the area over the next 24 years, as detailed in Chapter 5, there are an additional 154 projects that have been identified as necessary for maintaining the region’s mobility but no funding is anticipated for them during the 24-year life of this Plan. These improvements are identified in the RTSP as “illustrative.”

Funded projects are those that address the most pressing roadway needs facing the area over the next 24 years. These projects are located throughout the Salem-Keizer area and range from bridge modernization to improving the efficiency of a road to bringing roads up to “urban standards.” These projects are part of the federally mandated financially constrained plan.

Unfunded projects are those that, while representing important and needed improvements to address the mobility needs of the area, can be deferred until after the life span of this Plan, or until new funding sources can be identified. They are included to provide an insight into the

magnitude of projects that cannot be funded with current resources, and the issues that they address. These projects are not part of the adopted Plan, and thus are not included in any air quality or other system modeling. Before any of the unfunded projects could be built, the Plan would need to be amended.

The projects have been classified into eleven categories based on the main focus of the roadway improvement: Bridge Modernization, Safety, Signals and Interconnects, Efficiency, Intelligent Transportation System (ITS), Pedestrian, Bicycle, Environmental, Transit, Urban Standards, and Capacity Increasing. These categories are discussed in more detail below.

Bridge Modernization

Many of the bridges in the Salem-Keizer area are either reaching the end of their design life or need to be updated to meet new seismic and environmental standards. The projects identified will either replace the existing bridge with a new one, or will reconstruct the necessary parts of the bridge to lengthen its lifetime of service and to meet the newer regulations. Seismic standards are designed to increase the survivability of a bridge in the event of an earthquake. The environmental regulations address the accessibility of streams to spawning fish. In particular, culverts and bridge spans must be designed to allow for fish to swim upstream unimpeded to reach spawning grounds.

There are ten bridge modernization projects on the funded list at an estimated cost of \$13.9 million over the next 24 years.

Safety

Safety projects are targeted at intersections and sections of roads that are hazardous or unsafe to the users of the facility. There are four projects worth \$5.3 million identified for funding during the next 24 years.

Signals and Interconnects

Two types of signal projects are included in this category: new signal installation and interconnecting signals. New signals are installed at intersections where the volume of traffic has grown too large for stop signs to efficiently or safely control. Traffic signal interconnect projects connect existing or new signals in a corridor to the Regional Traffic Control Center. By connecting to this center, the signals can be optimized to allow for better timing of the signals, as well as reacting to special events. This control allows traffic to move without the stop-and-go nature that might otherwise result. Twenty-nine projects worth \$16 million are scheduled to be built over the life of the Plan.

Efficiency

Efficiency projects cover a wide range of possible improvements. These include providing center turn lanes, modifying the characteristics of an intersection, and providing bus pullouts. \$30.6 million for 23 projects is identified for funding over the next 24 years.

Intelligent Transportation System (ITS)

ITS projects utilize technological means to provide the users and operators of the transportation system with information on its functioning, as well as to facilitate the operation and functioning of the system. Example projects include installing Variable Message Signs at key locations, activating a Highway Advisory Radio (HAR) system for the Salem-Keizer area and making information on travel conditions available on the www.tripcheck.com website. Six projects worth approximately \$1.9 million are included in the Plan.

Pedestrian

Regional pedestrian projects focus on improving the safety of the pedestrian in regional destinations, such as downtown Salem. These projects include providing sidewalks along arterials, constructing bulb-outs at intersections, and constructing multi-use paths along arterials. Urban standard projects and new road construction will typically also provide pedestrian facilities. Six projects worth \$1.1 million are scheduled for construction over the life of the Plan.

Bicycle

Bicycle projects included in this category, are adding bicycle lanes to existing roads that are not scheduled for reconstruction in the time frame of the Plan. Additional projects include converting the Union Street Railroad Bridge to function as a bicycle and pedestrian link between downtown Salem and west Salem. In addition, Urban Standard projects and new road construction projects, listed in the Capacity Increasing category, include bicycle lanes as appropriate. Three bicycle projects worth \$2.2 million are included in the Plan.

Environmental

The purpose of these projects is to address the impact to the environment by previous or existing projects. Currently, there is one project in the RTSP in this category, with an estimated cost of \$1.2 million. This project would result in removal of barriers to fish passage along Mill Creek that were introduced in earlier construction along the I-5 corridor. It is anticipated that future RTSP updates will include more projects in this category as the jurisdictions work to restore habitat for endangered species.

Transit

Transit projects included in the RTSP focus mainly on the roadway modifications made in support of the High Priority Transportation Corridor project. This project links downtown

Salem with Keizer via Broadway and River Roads. Four projects are included in the Plan at an estimated cost of \$3.2 million.

Urban Standards

The purpose of urban standards projects is to improve existing roads to provide for the multimodal nature of the transportation system in a safer, more aesthetically pleasing manner. Many roads are essentially paved walking routes; that is, they support two travel lanes and nothing else. Reconfiguring such a road to meet urban standards would involve retaining the two travel lanes and adding other features to provide for the safe and efficient movement of other modes. Typically, this includes bike lanes, sidewalks with landscaping, and either a center median that is landscaped with left turn pockets or a continuous left turn lane.

Nineteen urban standards projects are included in the funded portion of the Plan and represent an investment of \$89.8 million over the next 24 years.

Capacity Increasing

Capacity increasing projects are those that result in an increased in the number of travel lanes or construction of a new road. New roads of regional significance are rarely built, in contrast to local roads that are built to service new subdivisions or industrial areas. Projects that increase the number of travel lanes on a road occur more frequently, but are usually done only if no other types of projects can address the mobility needs of the areas residents.

Twenty-three capacity increasing projects are included in the funded portion of the Plan, representing a total expenditure of approximately \$225.7 million over the life span of this Plan.

Projects must conform to the requirements and procedures specified in Chapter 13 relating the Congestion Management Program. These procedures dictate the steps required for projects that add or subtract significant capacity to or from an existing road, or construct new roads, to alleviate congestion in a corridor.

Table 15-1 lists the projects by jurisdiction and category and delineates the funded projects from the unfunded ones. Unfunded projects are included for illustrative purposes only and are not part of the adopted Plan, and thus are not used for air quality or systems modeling. Before any of the unfunded projects could be built, the Plan would need to be amended. The table also provides a brief description of each project and the estimated cost to complete the project. **Map 15-2** shows the approximate location of the committed and included projects to provide an insight into the context each is associated, while **Map 15-3** shows the approximate location of the illustrative projects.

Outstanding Issues

The improvements, both funded and unfunded, called for in this Plan do not solve all our roadway problems. In fact, some of our more obvious problems are not fully addressed by the improvements identified in this Plan. The reasons for this are:

- 1) The nature of these problems is very complex and further analysis is required to adequately understand the underlying travel demand contributing to the problems;
- 2) Several potential approaches might be useful, either alone or in combination, to address these problems;
- 3) No consensus solutions are currently available to address these problems, and additional public deliberation and input is required before a preferred alternative can be selected and included in the Plan; and
- 4) Several of these problem areas are the subjects of current ongoing planning studies and as such do not have any recommended solutions at this time.

Several areas where outstanding issues have been identified are discussed in more detail below.

River Crossing Capacity

The Willamette River Crossing Capacity Study (2000) identified the Tryon/Pine Corridor as the preferred location for the eastern terminus of a new bridge across the Willamette. The next step is to conduct environmental, design, and public involvement activities necessary to prepare an EIS on a project to construct a bridge in this corridor. Currently, the Salem River Crossing EIS is being conducted and jointly led by ODOT and the city of Salem. Results from this process are anticipated in 2009. One goal of the EIS is to identify a viable consensus combination of funding sources to construct the preferred alternative. To protect the right-of-way that may result from this process, \$20 million is allocated over the life of this Plan. This is the first step for the region to take to show its commitment to the construction of a new bridge.

In addition, the Willamette River Crossing Capacity Study resulted in a recommendation to further study an additional bridge in the Kuebler/Doaks Ferry area to the south of the existing bridges and the consideration of a "beltline" highway around the Salem-Keizer area. At this time, there is neither the funding nor consensus regarding a future Kuebler bridge and beltline. For these reasons, they are not included as specific projects in this plan, but are identified as components of a future vision of the area that will continue to draw attention over time.

I-5 Interchanges

Three facilities within the SKATS area are either congested or becoming congested and not operating at their full potential. In addition, recent or proposed developments in several of the areas are expected to place additional demands on the interchanges. Interchange Area Management Plans (IAMPs) are required to identify the severity of the expected problems and to evaluate and recommend preferred solutions.

Chemawa Interchange with I-5

The interchange connecting Chemawa Road and I-5 was identified as an outstanding issue in the 2002 RTSP Update. At that time, work was ongoing on a Traffic Impact Study (TIS) for the proposed Chemawa/Keizer Station development. Improvements to the interchange were identified in that document as being needed to ensure that the operational characteristics of the interchange and that section of Chemawa Road do not degrade in the future. The implementation of the recommendations and their success will be closely watched in the future. Since the last RTSP update, development in the Keizer Station area has started. While full build out is not expected for at least several more years, it is important to plan now for future needs required of the interchange by the development, not just to the west, but also to the east of the ramps in Salem.

Brooks Interchange with I-5

The interchange connecting Brooklake Road and I-5 is currently controlled with stop signs on the ramp approaches. As the area's businesses develop, and more residents of the northern part of the SKATS area utilize this interchange to access the Interstate heading north for jobs or shopping, the ability of the existing facility to adequately meet the mobility needs while satisfying safety goals will be diminished. It is recognized by ODOT and SKATS that the question of how best to meet these twin requirements needs to be addressed.

Kuebler Boulevard Interchange with I-5

The interchange connecting I-5 and Kuebler Boulevard is currently undergoing an IAMP. The second phase of the project will include examination of the OR 22 E corridor between 25th and Gaffin and the operational characteristics of the current interchanges and a possible future interchange linking OR 22 E with Cordon Road. Results from these projects are expected by June 2007, and the identified improvements will be considered for inclusion in the next RTSP update.

OR 22 E (25th to Gaffin Road)

This is a congested section of a major statewide route and includes several key intersections that are severely congested and expected to worsen considerably in the future. The need for an interchange-type connection between Highway 22 and Cordon Road needs to be examined and environmental analyses need to be performed as part of an Expressway Management Plan (EMP) for this segment of Highway 22. Results from these projects are expected by June 2007, and the identified improvements will be considered for inclusion in the next RTSP update.

OR 22 W (OR 51 to Willamette River Bridges)

This section of OR 22 in West Salem is currently congested and quite dangerous. In addition, potential new development in the area can be expected to increase travel demand on this section of Highway 22. The BHES identified a TSM-type improvement at the west Bridgehead that has yet to be scheduled for implementation. An Expressway Management Plan (EMP) for

this section of OR 22 is necessary to identify the severity of the problem and recommend a coordinated set of preferred solutions for the area. In preparing this plan, ODOT and the local jurisdictions are working together on a study to identify, analyze, and narrow the number of feasible alternatives that address operational, safety, and geometric problems, consistent with the 1999 Oregon Highway Plan. In 2004, ODOT decided to focus on the western half of the Expressway Management Plan area, from Greenwood Road to Doaks Ferry Road, and leave development of the Doaks Ferry to Bridge section to a future-year phase. The Greenwood to Doaks Ferry portion of the plan is scheduled for completion in August 2007. One area of focus is the intersection of Highway 22 and 51, for which Polk County has been able to successfully lobby \$3 million in funds from Congress. ODOT has identified environmental document and development work as tasks for the next three years and is planning to start an Interchange Environmental Analysis of this area in 2007. Results from this study will be included in the next RTSP update.

High Priority Transportation Corridor

Many corridors in the area have reached their ultimate physical width. Other techniques besides road widening will need to be used to provide for the area's mobility.

The High Priority Transportation Corridor Study commenced in mid-2002, and the report was accepted by the SKATS Policy Committee in late 2003. The study investigated and identified methodologies and technologies that relieve congestion experienced by transit vehicles in a corridor. The recommendations from this study will allow transit service to improve to the point of being competitive with automobile travel. Approximately \$6.5 million in funds will be allocated to this project over the next several years to implement the proposed solutions along the Broadway/River Road North corridor. Solutions identified in this study will likely be implemented in other transit corridors in the Salem-Keizer area after their effectiveness has been shown in the current corridor.

Other Issues

In addition to those outstanding issues mentioned above, several other problem areas will be the subject of further study as part of the development of local TSPs by jurisdictions in the region, or as part of specific study processes associated with updating local comprehensive land use plans.

Although interrelated packages of improvements for each of these outstanding issue areas will likely be identified as a result of the foregoing study processes, there may be instances where specific projects or actions to preserve right(s)-of-way for eventual improvements are warranted prior to the completion of the entire study. If such actions can successfully demonstrate consensus support and operational separability, i.e., the action or improvement is warranted on its own merits and will not preclude elements of a comprehensive solution, then they may be advanced individually and remain consistent with this Plan without being specifically identified in it.

