2031 Regional Transportation Systems Plan

Adopted by the SKATS Policy Committee on
May 22, 2007

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Salem-Keizer Area Transportation Study
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1 - Introduction

Overview

Description of the Problem

Since World War II, our travel choices and our land use actions have combined to produce a behavioral and development pattern that depends on the single-occupant vehicle (SOV) for meeting our daily travel needs. Over the recent past, the number of automobiles per person of driving age in our region has nearly reached a one-to-one ratio. In addition, the number of daily trips per person that we make driving alone in an automobile has been steadily increasing as our lives have become more complex and our opportunities more diverse. Compounding these trends, the region is expected to grow by nearly 39 percent (both in jobs and residents) over the next 24 years. As a result, future travel demand projections strongly indicate an ever-widening gap between the amount of vehicular travel demand and the physical capacity of the transportation system to adequately accommodate it, particularly during the morning and evening peak travel periods.

There are, however, several reasons why merely adding additional new highway capacity to our transportation system, and continuing to promote "automobility" at the expense of mobility, is probably not the best way to meet our overall livability goals. First, automobile emissions are a major polluter of our airshed even with recent improvements in technology. Second, even if vehicles did not pollute the atmosphere, there are significant right-of-way constraints associated with siting new and widened highway facilities and an increased reluctance in our neighborhoods to convert more land to pavement. Third, the negative impacts on our livability resulting from the disruption, dislocations, fragmentation, air and water pollution, and physical danger associated with new and expanded highway facilities are often unacceptable. Fourth, construction of new highway capacity is generally very expensive, and due to the increased costs necessary to maintain the system we already have, there are progressively limited amounts of tax dollars to finance and subsidize the capital expenditures associated with these types of projects. Finally, the increasing rate of growth in vehicle travel relative to the overall increase in the amount of total person and goods movement being provided (less people and goods being moved in each vehicle), produces a gradual, but noticeable, decline in the operational efficiency of our transportation system. All of these conditions are made worse by the expansion of automobile-dependent development patterns. As a consequence, we need to continue to diversify and balance our transportation system investments and land use actions so that we can:

- provide viable modal alternatives to the single-occupant automobile (such as transit, carpooling, bicycling, and walking);

- encourage the use of those alternative modes in our daily trip-making activities;

- maximize the efficiency of the transportation investments we have already made in our existing system;

- improve the connectivity and flexibility of our transportation systems; and

- increase our overall mobility and reduce transportation-related impacts that contribute to the degradation of our livability.

Why do we need a regional transportation plan?

The daily movement of people and goods in our region crosses several city and county boundaries and results in transportation problems that require cooperative and coordinated efforts to solve. In addition, the transportation facilities in our region are owned and operated by a complex mixture of different entities, such as the cities, counties, Salem Area Mass Transit District, and the Oregon Department of Transportation (ODOT). In order to ensure a seamless overall transportation network, it is critical that the planning for investments in our system be consistent and integrated. Furthermore, some activities, like rideshare promotion programs, need to be implemented on a regionwide basis to be most effective. Finally, the interdependence of mobility and the other aspects of the quality of life in our region, such as affordability, environmental considerations, and access to opportunities, require a broad and comprehensive approach to system planning and development. Often, changes in one area affect many others and we need to evaluate the impacts of transportation actions carefully in the context of our overall livability.

The development of the Regional Transportation Systems Plan represents a cooperative effort of the Salem-Keizer Area Transportation Study (SKATS), the cities of Salem, Keizer and Turner, Marion and Polk counties, the Salem Area Mass Transit District (SAMTD), and the Oregon Department of Transportation (ODOT). Adoption of this Plan represents:

- endorsement by the affected jurisdictions of the level and location of transportation investments needed to adequately serve the land use patterns contained in the adopted local comprehensive plans and the expected growth in the region over the next 24 years;

- endorsement of a set of 10-year regional priority improvements to the regional transportation systems;

- endorsement of the interrelated roles of the individual modal systems (highway, public transportation, bicycle, pedestrian, rail, aviation, and maritime), as well as the regionwide goods movement, intermodal and efficiency management systems;

- endorsement of the definitions and functions of the transportation systems of regional significance;

- a commitment to cooperatively seek the necessary funding for the implementation of the investments called for in the Plan;

- fulfillment of federal and state requirements as a condition for the continued receipt of federal and state transportation funds.

What area does the regional transportation plan cover?

The SKATS Regional Transportation Systems Plan (RTSP) covers the cities of Salem, Keizer, and Turner and portions of Marion and Polk counties that are within the SKATS boundary. The SKATS area is shown in **Map 1-1** and can be described in general terms as being bounded on the south by Hylo and Delaney Roads and the Turner Urban Growth Boundary and on the north by Brooklake Road. The eastern boundary is composed of Witzel Road, 72nd and 71st around Highway 22, then following 63rd north until the Little Pudding River. The western edge is just past the Highway 22/51 intersection, following Oak Grove until Orchard Heights and then north along Eagle Crest and Spring Valley to Oak Knoll.

What is the overall goal of the regional plan?

The goal of the Regional Transportation Systems Plan is to provide an adequate level of mobility for area residents and businesses while maintaining or improving the overall quality of life in the region.

In addition to identifying improvements needed on the regional transportation systems to provide adequate levels of mobility and increased safety, this Plan also embodies policies, programs, and strategies that serve to:

- make more efficient use of the transportation facilities we already have by increasing people and goods capacity, rather than merely vehicle capacity;

- develop a more balanced multimodal transportation system by providing viable options for mode choices other than just the single-occupant vehicle. This entails the improvement of transit service, bicycle facilities, and pedestrian amenities and can reduce our near-total reliance on the automobile for our mobility needs;

- improve the connectivity and accessibility of our system for the intermodal movements of both passengers and freight;

- recognize the impact transportation choices have on the environment, whether it be air or water quality, and the community around us and its livability;

- recognize the important interrelationship of land use patterns and transportation infrastructure and promoting land use, zoning, and architectural design choices that support a more balanced, efficient transportation system; and

- balance overall system costs and anticipated revenues. Currently, we can barely afford to operate and maintain basic levels of service on the systems that we already have. We must continue to develop extremely cost-effective solutions that do not require massive capital outlays or jeopardize our ability to preserve the system that is currently in place.

Content of the regional plan

To achieve these goals the RTSP identifies and evaluates current and expected problems and opportunities associated with transportation systems in the Salem-Keizer urban area, provides a recommended package of integrated, multimodal investments to improve these systems, and presents a financial analysis to ensure that the resources necessary to implement this Plan can be provided.

Why are we updating our regional plan now?

The Regional Transportation Systems Plan (RTSP) was last adopted by the jurisdictions in the region in 2005. Many changes have taken place in our region since that time that need to be incorporated in our long-range plan. In addition, we have begun to recognize the limits of our ability to merely build our way out of congestion and must continue to develop new strategies and programs to increase modal balance, emphasize system efficiency, and improve the coordination of land use, travel behaviors, and transportation planning. Furthermore, we need to reflect these plans and policies as well as updated federal and state regulations in our regional transportation plan if we are to remain in compliance and continue to be eligible for available transportation funds.

The Regional Transportation Planning Process: The Seven "C's"

This plan has evolved through a process that ensures that transportation planning activities affecting the overall regional system are comprehensive, coordinated, cooperative, continuing, consistent, coherent, and cost-effective.

Comprehensive

- Together with the state and local transportation planning efforts, the process encompasses the entire transportation system needed to serve the land uses contained in the adopted local comprehensive plans in the region.

- The planning process is both multimodal and intermodal in scope; it addresses concerns related to all the transportation modes— automobile, truck, motorcycle, transit, bicycle, and pedestrian—as well as the connectivity between them.

- The process includes all the jurisdictions, agencies, and citizens that own, operate, regulate, and use the various portions of our overall transportation system.

- The planning process addresses the mobility needs of both people and goods on our transportation system.

- The process provides a forum to make decisions about adequate levels of mobility in the context of the effect on other important aspects of our overall quality of life, such as environment, affordability, and community character.

Coordinated

- The process ensures that the various planning activities and investments undertaken by the various jurisdictions fit together in terms of intent, timing, and effect.

- The regional planning process is intended to provide a transportation system that is "seamless" in the service that it provides, preventing situations where the "left hand" seems to have no idea what the "right hand" is doing, such as a five-lane arterial in one jurisdiction suddenly turning into a two-lane residential street as it crosses the boundary into another.

Cooperative

- The process embodies the understanding that the region's political jurisdictions, governmental agencies, and citizens are "all in this together." We need to develop a plan that addresses, and ultimately works, for all the members of our community.

- This type of planning process enables a plan to emerge from the process of its development, rather than dictating its design from the outset.

Continuing

- The process is ongoing and produces a plan that is flexible and designed to incorporate periodic updates to respond to changing conditions, opportunities, and priorities in our community.

Consistent

- The regional planning process serves as a framework for the development of uniform databases (both current and future) and a common set of assumptions to be used in our estimations of future travel demand, thereby ensuring that the various planning efforts all share a similar foundation.

- The process provides a basis for the development of common goals and objectives, as well as a common understanding of the problems we face and the opportunities we have available to meet those challenges, ensuring that we are not only all “on the same page," but also looking at the same "book."

Coherent

- The planning process provides the mechanism by which all of the various land use and transportation activities undertaken in the region can be seen to make sense when taken

as a complete whole and that our actions work together to complement and reinforce each other, rather than working at cross purposes or canceling each other out.

Cost-effective

- The cooperative process produces a blueprint for decisions and improvements that are prudent and cost-effective, maximizing the mobility available through existing facilities and leveraging as much benefit as possible from new transportation system investments.

Derived from this process, the integrated Regional Transportation Systems Plan provides the region with an affordable, coordinated blueprint of transportation investments and related activities over the next twenty years that can ensure adequate levels of mobility while maintaining or improving our overall quality of life in the region. The regional transportation planning process serves as a comprehensive framework within which to consider the various transportation and land use issues in our community, identify the opportunities and constraints associated with possible responses to those issues, and determine a coordinated and consensus course of action.

The Regional Transportation System Concept

This Plan addresses issues associated with the "regionally significant" components of the overall transportation system. Only certain portions of our total transportation systems, such as regional principal and major arterials and transit trunk routes in major corridors, serve "regional" travel movements. Most of the transportation system infrastructure is intended to serve fairly localized travel movements and is most appropriately planned for at the local level.

The underlying concept of the regional transportation system embodies the following three principles:

- There is a basic interdependence among all the elements of a cost-effective and efficient transportation system in the region: highway facilities; transit service and facilities; bicycle routes and support facilities; goods movement routes and support facilities; intermodal passenger and freight facilities; rail, aviation, maritime, and pipeline systems; pedestrian facilities; and efficiency management strategies and programs. (The latter include demand management activities such as ridesharing, carpooling, parking management, bicycling enhancements, and pedestrian amenities that promote alternatives to the use of the single-occupant vehicle; localized facility treatments such as channelization and access management, which can improve facility performance in a cost-effective manner; and transportation-related land use actions such as density increases, mixed-use developments, and building design and orientation requirements that accommodate modes other than the automobile);

- There is a desire for, and a need to provide, a transportation system that offers viable choices among alternative modes of travel to increase our trip-making options; and

- There are cost, efficiency, and convenience benefits associated with ensuring systemwide connectivity, coherence, and coordination among the various transportation facilities and services in the region.

Much as the load bearing beams and walls of our houses support most of the structure's weight, the regional elements of the transportation system should function as carriers of the heaviest and longest loads associated with the travel demand in our area. The SKATS Regional Transportation Systems Plan (RTSP) provides for adequate levels of service for regional travel movements through a balanced and prudent combination of strategic investments in each of the system elements of the overall regional transportation system. This Plan provides a policy framework for the encouragement of the implementation of pedestrian infrastructure improvements and the creation of a pedestrian-friendly urban landscape by the responsible local jurisdictions within the region.

Each of these system elements is expected to provide appropriate portions of the total transportation capacity needed to ensure adequate levels of mobility for the regional travel demand (see below), which is defined as the longer-distance movement of people and goods associated with the population and employment anticipated in the local comprehensive plans adopted by the jurisdictions in the SKATS area. The critical interdependence of these elements is such that a lack of investment in any individual element—and its consequential failure to carry its portion of the overall transportation load—will seriously overburden the remaining elements and result in not only a collapse of levels of service on the regional system, but a significant and inappropriate intrusion of regional trips onto the subregional and local systems, degrading the quality of life in our neighborhoods.

Transportation System of Regional Significance

The SKATS Regional Transportation Systems Plan specifically defines and addresses the transportation system of regional significance in the Salem-Keizer urban area. The regional components of the individual system elements are described in detail in the following chapters of the Plan. These regional components represent the transportation facilities and services that serve the mobility needs of the relatively longer travel movements of people and goods across, into, out of, and through the SKATS area—trips of a "regional" nature. Since SKATS, as the designated Metropolitan Planning Organization (MPO), does not have jurisdiction over any actual facility, the designation of regional transportation systems and the inclusion of the functional aspects of these systems in both the regional plan and in the transportation systems plans (TSPs) of the local jurisdictions ensures that these travel movements are accommodated in a coordinated, consistent, and connected manner across jurisdictional boundaries. As a result, the regional systems and improvements identified in this Plan must be included in the local TSPs, and the locally designated systems must be consistent with, and adequate to support the functional intent of, the regional systems.

Relevance of the Regional System Designations

The designation of the transportation systems of regional significance in the Plan is important for the following reasons:

- With the requirement that local plans be consistent with the regional functional classifications, a continuous, consistent, and coordinated functional system to accommodate regional travel movements of people and goods across jurisdictional boundaries is ensured.

- Levels of service can be differentially established for classes of facilities, particularly for the highway system, that relate directly to their intended function(s).

- Plan policies, improvement strategies, and project designs can be tailored to facility function and the nature of the particular movement of people and/or goods to be emphasized and/or preferentially accommodated.

- For the highway system, rather than associating function solely with current and projected traffic volumes and specific cross-section design, we can rationalize the classification system – and encourage design treatments and the provision of alternative modal opportunities – geared to the specific nature of the predominant intended movement of people and/or goods to be accommodated on the facility.

- The identification of the systems and facilities of "regional significance" are required to adequately comply with federal and state transportation planning and air quality regulations.

Local Transportation Systems Not Included in the Regional Systems

The remainder of the transportation systems in the area are intended to distribute trips from the regional systems, provide connections between and within neighborhoods, and serve direct property access needs.

While these facilities must provide adequate levels of transportation service to ensure that this more localized travel demand does not inappropriately hinder the regional system functions, these systems are addressed in the respective transportation systems plans of the various local jurisdictions in the region and are outside the scope of this regional Plan.

Policy, Planning, and Regulatory Context

There are several federal and state policies and regulations that affect our regional and local transportation planning process. These policies provide guidelines for determining specific issues that need to be addressed in the plan as well as some benchmark targets for evaluating plan performance. Among the more important federal and state policies and regulations are the following.

Federal Policies and Regulations

Intermodal Surface Transportation Efficiency Act, 1991 (ISTEA)
Transportation Equity Act for the 21st Century, 1998 (TEA-21)
Safe, Accountable, Fair, Efficient Transportation Equity Act – A Legacy for Users, 2005 (SAFETEA-LU)

SAFETEA-LU is the umbrella federal legislation that affects transportation planning, services, and funding nationwide. SAFETEA-LU continues the policy directions set in the ISTEA legislation. This legislation provides for the expenditure of the federal Highway Trust Fund revenues that represent a large portion of the funding used to sustain and improve the federal and state portions of the regional highway system (see Chapter 5). SAFETEA-LU requires the regional plan to address a series of considerations, including: financial constraint; environmental impacts; socioeconomic impacts; equity; multimodal systems; energy consumption; and consistency with federal, state, and local plans affecting transportation.

Clean Air Act Amendments of 1990

- Projects in the transportation plan must not contribute to worsening air quality or violations of standards set by the Environmental Protection Agency.

- Failure to show conformance with the standards will result in withdrawal of federal funds.

Americans with Disabilities Act (ADA) of 1990

- Mandates access of public transportation to persons with disabilities.

- Establishes requirements for paratransit services comparable to mass transit with an annual update of an ADA Paratransit Plan.

- Requires local review and integration of the ADA Paratransit Plan with the Transportation Plan.

State Policies and Regulations

Oregon Transportation Plan

- Sets policies for the state's transportation facilities and services for the next 40 years.

- Outlines the broad strategies the state has developed for implementing federal and state policies.

Oregon Benchmarks

- Establishes benchmarks to measure the state's progress toward the vision outlined in the state's strategic plan.

- Measures address air quality, reduced reliance on the single-occupant vehicle for commute trips, commute trip lengths, transit ridership, and roadway and bridge maintenance and preservation.

State Land Use Planning Goals

Oregon has adopted a series of statewide planning goals that are to be implemented through the comprehensive land use plans of each city and county in the state. These goals, and the plans which are adopted to implement these goals, address the manner in which the land, air and water resources of the state will be used and determine the need for improved public facilities. With the Goal 12 Transportation Planning Rule (TPR), SKATS must adopt a transportation systems plan consistent with the state plan (see above) and this rule (see below).

Transportation Planning Rule

- Promotes intent to provide viable alternatives to reduce our reliance on the single-occupant vehicle.

- Targets a reduction in vehicle miles traveled per person by five percent over the next twenty years and ten percent over the next thirty years, or the adoption of alternative standards.

- Targets a reduction in the number of certain types of parking spaces per person by ten percent over the next twenty years.

- Requires local governments to adopt transit, bicycle, and pedestrian-friendly land development and subdivision ordinances.

State Conformity Rule

- Regional emissions must not contribute to worsening air quality or violations of EPA standards.

- Regionally significant projects must also demonstrate conformity.

Local Plan Consistency Requirements

In addition to the consistency of the Regional Transportation Systems Plan with federal and state policies and regulations, the transportation systems plans (TSPs) produced by the local jurisdictions in the region must be consistent with this regional Plan. The TPR also requires that the local jurisdictions adopt the regional Plan as part of their local comprehensive plans. In the

SKATS area, the local jurisdictions plan to adopt the regional Plan concurrently with the adoption of the local TSPs.

In addition to the inclusion of the regional Plan in local comprehensive plans, the following principles of consistency between the local and regional plans are embodied in the RTSP:

- All transportation projects in the local public facility plans must be consistent with the RTSP, and improvements affecting the regional systems as defined in this Plan must be included in the RTSP.

- All projects must be shown to demonstrate consistency with the adopted RTSP prior to their inclusion in the region's Transportation Improvement Program (TIP).

- Local jurisdictions within the region must plan their local transportation systems to be consistent with the RTSP requirements and to adequately serve the nonregional travel demand so as to not overburden the regional systems with local trips.

SKATS will review local transportation systems plans (TSPs) and requests for the inclusion of projects in the regional Plan or Transportation Improvement Program for consistency with the adopted RTSP. Should inconsistencies arise, the SKATS Policy Committee may determine:

- that the inconsistency is significant and the RTSP should be changed; or

- that the inconsistency is significant, and the local TSP or project inclusion request should be changed; or

- the inconsistency is significant, and direct regional staff to work with the local jurisdiction to identify and implement a process to develop a consensus resolution to the inconsistency; or

- an inconsistency exists, but does not materially affect the integrity of the Plan or TIP and no further action on the part of SKATS or the local jurisdiction is required.

The Organization of the Regional Transportation Plan and Associated Documents

The remaining chapters in the Plan document and the additional materials related to the Plan are organized as follows:

Chapter 2, Livability, discusses issues related to livability and growth in the region.

Chapter 3, Growth and Travel Demand, discusses the linkage between growth in population and employment and the travel demand associated with that growth.

Chapter 4, Safety and Security of the Regional Transportation System, discusses the issues that surround ensuring that the transportation system is secure from disasters and enables a safe use.

Chapter 5, Finance, presents a financial analysis of the costs and revenues associated with the regional transportation systems and evaluates the ability of the region to maintain and operate the existing systems and to afford the investments called for in the Plan.

Each of the following 10 chapters of the Plan deals with a specific element of the overall regional transportation system and defines the regionally significant components of that system, examines the current and expected future-year (where possible) performance of that system, and identifies the investments called for in the Plan to provide adequate levels of mobility on that system.

Chapter 6, Regional Pedestrian System, discusses a regional policy framework for the pedestrian facilities of regional significance.

Chapter 7, Regional Bicycle System, deals with the bicycle facilities of regional significance.

Chapter 8, Regional Goods Movement System, addresses issues related to the regionally significant movements of freight on the regional highway, rail, aviation, maritime, pipeline, and intermodal freight system.

Chapter 9, Regional Aviation System, deals with the aviation services of regional significance.

Chapter 10, Regional Maritime System, deals with the ferry system in the region.

Chapter 11, Regional Rail System, discusses the regionally significant rail services and facilities.

Chapter 12, Regional Intermodal Systems (Freight and Passenger), deals with issues related to the regionally significant intermodal movements of people and goods in the SKATS area.

Chapter 13, Regional Transportation System Efficiency Management, addresses the regionally significant programs and actions to reduce reliance on the single-occupant vehicle, achieve more balance among transportation modes, and improve system efficiency.

Chapter 14, Regional Public Transportation System, deals with the region's mass transit, ADA/Elderly-related, intercity public transportation, and private-for-hire transportation systems.

Chapter 15, Roads and Highways, deals with the roadway system of regional significance.

Chapter 16, Environmental and Cultural Review, contains a summary of the natural, historical, and cultural resources within the SKATS area and a description of how they may be affected by transportation systems and projects.

Chapter 17, Outstanding Issues, describes the regional transportation system problems that remain beyond the implementation of this Plan.

Appendix A, Population and Employment Forecasts, describes the procedures used to forecast the increases in population and employment that the region is to experience over the next 24 years.

Appendix B, Travel Characteristics of the Salem-Keizer Region, provides an overview of travel into, out of, and through the area, detailing all modes where data is available

Appendix C, Data Sources for Cultural, Environmental and Historical Resources, is a list of sources for data and other information used in Chapter 16.

Appendix D, Acronyms and Terms Used in this Document, is self-explanatory.

Supporting documents to this Plan, available under separate cover, include:

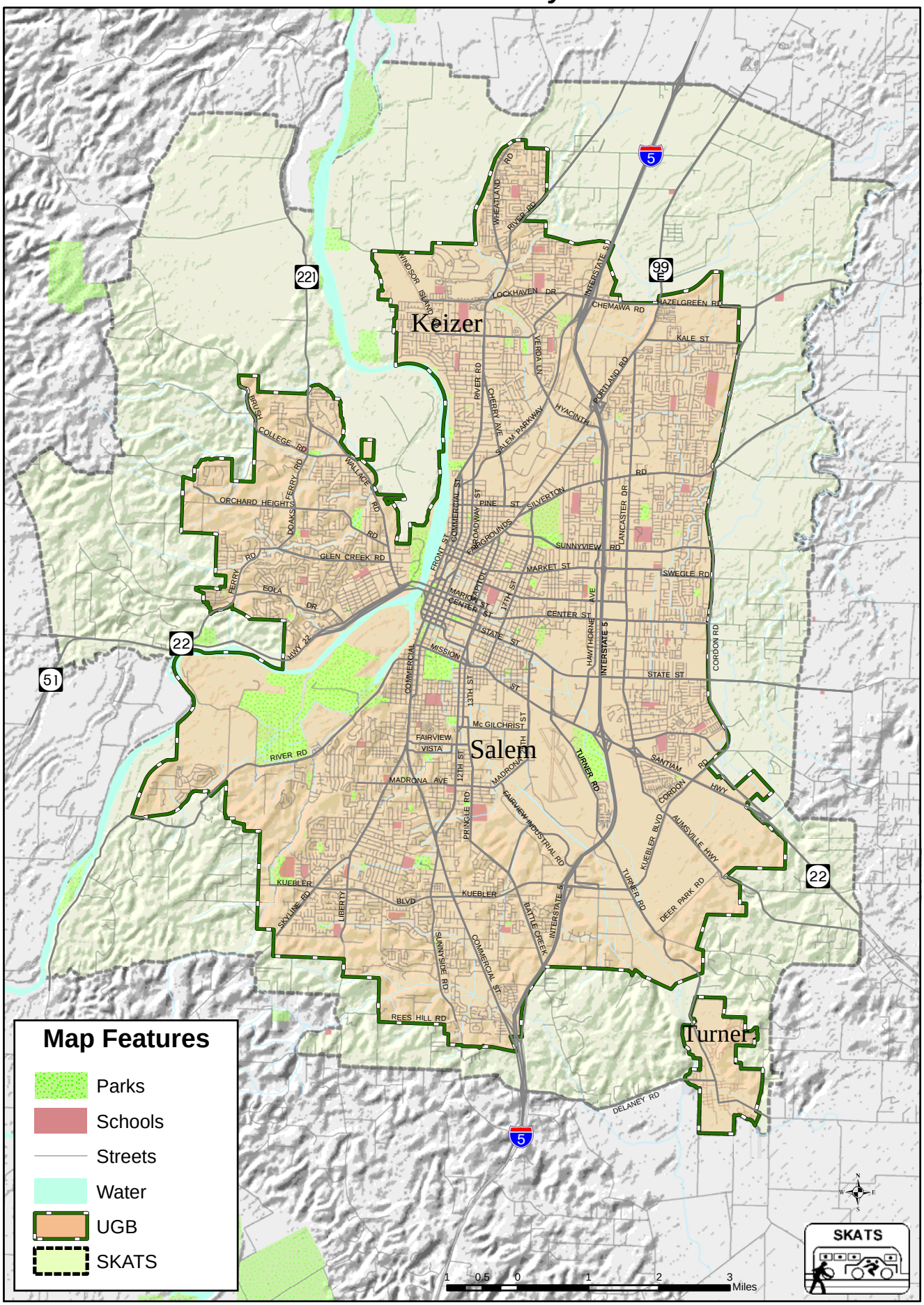
- *Air Quality Conformity Determination for the SKATS 2031 Regional Transportation Systems Plan and the FY 2008 – FY 2011 Transportation Improvement Program* (accompanies adoption), which provides the determination that the investments called for in the Plan meet federal and state air quality regulations.

- *Transportation Disadvantaged Populations in the SKATS Region, a Geographic Profile* (2005), which provides the analysis of census data necessary to evaluate equity issues associated with the Plan.

- *Public Participation Plan for the Regional Transportation Planning Process in the Salem-Keizer Urban Area* (2005), adopted by the SKATS Policy Committee, which sets forth the guidelines for the public involvement processes associated with the regional transportation planning process activities, including the RTSP, the TIP, and the annual Planning Work Program.

Map 1-1

TMA Boundary



January 17, 2007

SKATS 2031 RTSP Update

2 – Livability

Quality of Life or "Livability" Issues

We hear a lot about "livability" and "quality of life," but what does that really mean? Our day-to-day experience of living in the Salem-Keizer region is what truly comprises our sense of livability or the quality of life that we associate with our community. This experience is made up of many discrete elements that, taken together, provide the overall texture of our daily lives. These elements are interrelated and interdependent; actions taken in one particular arena often have effects in many of the others. For example, the decision to improve or not improve some portion of the transportation system may affect several aspects of livability simultaneously: affordability, mobility, the environment, land use, and the level and distribution of public infrastructure. As a result, the overall goal of the Regional Transportation Systems Plan (RTSP), which is "To provide adequate levels of mobility on the regional transportation system while maintaining or improving our overall quality of life," entails choices and trade-offs among many, if not all, of the elements that manifest our core values and comprise our sense of livability. It is critical, therefore, that the community considers an entire range of affected issues in the development of the land use patterns that shape the urban landscape and the transportation systems designed to serve that land use pattern. Specific livability issues that need to be considered as we plan for our future include:

Affordability

- Cost of living (housing, food, clothing, travel, etc.)
- Cost of doing business (wages, benefits, distribution, etc.)
- Cost of providing public services/infrastructure

Mobility

- Access to opportunities (residential, employment, commercial, educational, etc.)
- Convenience of travel
- Safety
- Availability of modal choices
- Cost

Environmental Considerations

- Geography/climate
- Air quality
- Water quality
- Ambient noise quality

Public Services/Infrastructure (Transportation Systems, Schools, Police, Fire, etc.)

- Level of service
- Distribution/availability

Opportunities

- Economic (jobs, markets, suppliers)
- Residential (housing, customer base)
- Commercial (retail, services)
- Social (clubs, organizations)
- Spiritual (churches, synagogues, other places of worship)
- Entertainment (cultural, popular)
- Recreational (open spaces, scenic places, indoor and outdoor activities)
- Educational (schools, colleges, libraries)
- Civic (public services, public spaces, community events)

Community Character

- Urban forms (land use patterns, architectural style)
- Neighborhood characteristics
- Sense of community (interaction, cohesion)
- Security (person, property)

Obviously, many (if not most) of these issues are beyond the scope of a transportation plan, and are most appropriately addressed through the community-wide development of a vision for the future that can provide a focused overall direction for the individual plans that deal with specific issues. It is essential, however, for those "specific issue" (i.e., transportation) plans to take into account important interrelationships that do directly affect the core concentration area of a given plan.

Issues Addressed by this Plan

The development of the Regional Transportation Systems Plan has attempted to recognize the fundamental relationships between land uses, lifestyles, population and employment growth, and transportation demand. All parts of the region to some degree share common transportation needs for going to work, school, shopping, recreation, etc. The geographic extent of our community; its particular land use pattern; the number and distribution of opportunities for working, shopping, and other activities; the viability of transportation options among modes; and the street system all serve to influence our travel choices and the subsequent transportation demand. As new development alters the types and locations of activities we engage in, our daily travel patterns shift and evolve in new directions. Over a 20-year period, the sum of these land use changes can have a significant impact on the travel patterns in the area and the transportation system necessary to accommodate the travel demand associated with them. It is useful, therefore, to examine the interrelationship between land use patterns,

lifestyle characteristics, demographic trends, and infrastructure systems in the development of the long-range transportation plan.

The Importance of Land Use and Development Patterns

The arrangement, density, and diversity of land uses contained in the comprehensive plans of the local jurisdictions in the region are the most significant shapers of travel demand. Much of our reliance on the automobile stems from historical land use policies that have encouraged the separation of land uses, limited density, and treated developable land as a limitless resource. As a result, our urban landscape has often embodied a pattern of sprawled development which makes most destination points too far apart or too geographically diverse to be within reasonable walking or biking distance or to be effectively served by transit. In addition, land uses have often been designed to specifically accommodate the automobile at the expense of other modes of transportation. As a result, we often feel forced to drive in order to meet our daily travel needs.

Historical development patterns also serve to limit the mobility of particular groups within our society who are unable or cannot afford to drive. These groups include youth, the poor, the elderly, and the disabled. Individuals within these groups are thus dependent on public transportation or other parties for meeting their daily transportation needs.

Although alterations in the land use patterns embodied in the adopted local comprehensive plans of the region are beyond the scope of this Plan, local jurisdictions are encouraged to incorporate the following activities in their plan review cycles:

- Allow proposals for more compact development. This could make walking or bicycling between destinations attractive and possible. It could also promote the higher population densities necessary to support an improved transit system. Specific strategies to increase compact development could include:

  - Emphasizing infill development in the currently developed area instead of new development on the outskirts of the town or city

  - Allowing higher density residential uses such as row houses, apartments, small-lot single family, and cluster developments

- Encourage a proximate mixture of land uses. For example, siting housing within one quarter of a mile of offices and retail opportunities could enable people to work and shop within walking/biking distance of their homes. Aside from the added convenience, this approach could substantially increase the transportation independence of the mobility-limited.

- Increase allowable densities along transit corridors. This could provide a larger potential ridership for improved mass transit systems by making them more efficient and thus more cost effective. Specific strategies include:

- Increasing housing density along transit corridors

- Siting transit-oriented commercial and office facilities along transit corridors

- Encourage transit- and pedestrian-sensitive designs for new business and office park developments. These designs make it easier for people to get to these destinations by taking the bus. Specific strategies include:

  - Siting buildings to minimize the walking distance to entrances of office park buildings

  - Providing bus connection points near the front entrances of major buildings

  - Equipping waiting and pedestrian areas with amenities such as benches, lighting, weather protection, and information

- Encourage pedestrian-friendly and bicycle-friendly design considerations for new developments. These considerations facilitate the circulation of pedestrians and cyclists at the site and encourage these modes of transportation. Specific examples include:

  - Providing a separate internal circulation system for pedestrians and cyclists,

  - Developing paths through the site, as opposed to along its perimeter, for direct access and better safety

  - Selecting attractive landscaping, adequate lighting, and amenities to enhance the pedestrian/bicycling environment

  - Providing secure bicycle lockers, storage areas, and other amenities such as showers and changing rooms at worksites

3 – Growth and Travel Demand

Mobility is essential for a person to meet many of life's requirements, such as shopping, going to work, and traveling for recreational purposes, etc. Trips can be described with a how, why, and where. "How" relates to the mode that is used for a trip. This may be walking, biking, taking a bus, or by automobile either driving alone, as the passenger, or driving with others. The "why" describes the purpose of the trip: a trip to work, to go shopping, to drop the kids off at school, or for recreation. The "where" involves the origin and destination for the trip and the route followed.

Numerous factors influence the decisions made for each trip. If an automobile is not available for a trip — whether due to lack of a driver's license, more drivers in a household than autos, or not owning a car — then the selection of how a trip is made is limited to other available modes. The time of day when a trip is made is often associated with a particular type of trip. Travel in the morning usually involves going to work, dropping off a child at school, or both. The length of the trip plays a part in the mode used. Long trips will more than likely be via a motorized mode, either public or private, while short trips have a higher likelihood of being made by a person walking or biking to their destination.

How much travel occurs in an area will depend on many factors: available infrastructure; number of persons in the households; number of workers; the location of jobs, housing, and recreational opportunities relative to each other; and the time it takes to go between the origin and destination via the modes available.

This chapter addresses, to a degree, the link between a growing population and employment and the increased travel demand on the regional transportation system. It focuses on indicators that could be affected by the goals, policies, and projects contained in this plan. The population and employment for the area is presented, detailing the growth that has occurred and that is forecast to happen in the next 24 years. Indicators of travel in the Salem-Keizer-Turner area, including travel time in selected corridors, congestion along the major roads, and transit ridership are presented in subsequent sections. Additional information is presented in **Appendix A** (Population and Employment) and **Appendix B** (Travel Characteristics).

Population and Employment for 2000 and 2031

Population and employment in the SKATS area has experienced cycles of slow and fast growth over the decades. During the 1970s, the population grew by almost 50 percent, while growth slowed considerably in the 1980s. However, a population surge of over 40,000 persons occurred during the 1990s. Two-thirds of the area's population growth is due to migration to the area and is intertwined with the region's economic health. Trends show an eventual slowing of this growth as the region develops more of the remaining land within the existing urban growth boundary (**Table 3-1**).

With the 2000 U.S. Census, the SKATS area grew in two ways: in population and by geographical extent. The population in the urbanized area surpassed 200,000 persons, which resulted in SKATS being designated as a Transportation Management Area (TMA). This threshold was reached as a result of the U.S. Bureau of the Census combining the urbanized area of Salem-Keizer with the city of Turner, along with areas along the edges of the previous SKATS boundary. A summary of the population and employment for sections within the SKATS TMA boundary, for the years 2000 and 2031, is shown in **Map 3-1**. For the SKATS area, the population and employment is forecast to grow 40 and 39 percent respectively between 2000 and 2031. Complete details of the methodology used, along with additional population and employment forecasts, are available in **Appendix A**.

Table 3-1
Summary of SKATS Population and Employment, 1970 to 2000 and 2031 Forecast

Population

	1970	1980	1990	2000	2031	Increase 2000-2031	Percent Increase
Salem UGB				171,072	245,015	73,943	42%
Keizer UGB				32,203	39,994	7,791	24%
Salem-Keizer UGB	93,000	138,700	160,229	203,275	285,009	81,743	40%
Turner UGB				1,199	2,933	1,734	145%
Remainder of SKATS				10,109	11,920	1,811	18%
Total SKATS	**93,000**	**138,700**	**160,229**	**214,583**	**299,862**	**85,279**	**40%**

Employment

	1970	1980	1990	2000	2031	Increase 2000-2031	Percent Increase
Salem UGB				85,309	117,180	31,871	37%
Keizer UGB				3,972	8,864	4,892	123%
Salem-Keizer UGB	45,450	58,454	70,578	89,281	126,044	36,763	41%
Turner UGB				321	426	105	33%
Remainder of SKATS				2,286	2,386	100	4%
Total SKATS	**45,450**	**58,454**	**70,578**	**91,888**	**128,856**	**36,968**	**40%**

Demand for Travel

The increased population and employment projected over the next 24 years will have an impact on the amount of travel on the regional transportation system. This impact can be measured via a number of performance measures, which indicate how the system is performing, both today and for a given future land use resulting from the allocation of the SKATS population and employment forecast.

The performance measures described below are derived from two main sources. The first is by the direct measurement of existing conditions. These include travel time studies along select corridors and regional transit ridership. The second set is derived from the regional demand model maintained by SKATS. This is a multi-modal travel demand model for the Salem-Keizer-Turner urbanized area, estimating the number of trips by automobile, bus, bicycle, and walking, as well as by purpose, whether the trips are to work, recreation, shopping, school, or for another purpose. This model is used to calculate several performance measures to compare current conditions with the forecasted future travel demand.

The first performance measure considered is the ratio of travel demand to built road capacity. Increases in the amount of travel will affect the ability of the regional roads to successfully handle the demand. This demand will determine whether the system is functioning smoothly or whether it is near or at "capacity deficiency." Capacity deficiency is defined as when the built capacity of the road, in terms of the number of vehicles per hour, is met or exceeded by the volume of demand in a particular hour.

Two scenarios are shown below. The first is for the base year of 2000; the second for the 2030 "no-build" scenario. The 2030 "no-build" scenario represents the regional road network as it exists today, with the inclusion of projects that are currently under construction (as of 2006), combined with the population and employment forecast for 2030. This provides a view into how the system would function if no additional projects or funds were available in the future.

Maps 3-2 and **3-3** depict, for the years 2000 and 2030 respectively, the roadway segments that experience congestion at or above an acceptable level. Two thresholds are defined. The first is where the ratio of the demand to the capacity of the segment is greater than 0.85. This is defined as "approaching capacity deficient." The second threshold is when the demand is equal to or greater than the capacity of the roadway segment. This condition is defined as "capacity deficient." The majority of corridors in the Salem-Keizer area operate throughout the day below either threshold. However, certain locations, especially at chokepoints, do experience congestion, typically during the peak travel periods in the morning (7 to 8 A.M.) and evening (5 to 6 P.M.).

Table 3-2 shows an estimate of the miles of roadways, by functional class, that meet either congestion thresholds for the 2000 and 2030 "no-build" scenarios. In the next 24 years, the forecast shows a considerable increase in the miles of congestion on the region's main roads assuming no increase in capacity beyond that built within the next several years. For all the classes of roads considered, the percentage increase is greater than the increase in population.

Table 3-2
Congestion by Functional Class [miles]

		2000	2030 No-Build
Interstate	Approaching Capacity Deficient	0	12.87
	Capacity Deficient	0	0.97
Principal Arterials	Approaching Capacity Deficient	4.31	19.74
	Capacity Deficient	3.23	19.02
Minor Arterials	Approaching Capacity Deficient	0.4	4.53
	Capacity Deficient	0	2.92

The increase in the congestion for automobiles will result in increases in the travel time in the region's corridors. While travel time information is not available for 2030, data was collected for four corridors in 1995 and 2006. These corridors represent movement along the major thoroughfares linking downtown Salem with the rest of the region. Results presented in **Table 3-3** are for the P.M. peak period.

Table 3-3
Travel Time in Selected Corridors (P.M. Peak) [minutes]

	1995		2006		Percent Change	
Corridor	**Northbound**	**Southbound**	**Northbound**	**Southbound**	**Northbound**	**Southbound**
Portland Road: Hazelgreen to Hood	9.8	7.6	10.31	10.1	5.2%	32.9%
Lancaster Drive: Ward to not-quite Kuebler	15.8	15.8	17.39	17.07	10.1%	8.0%
S. Commercial: Trade/Ferry to Kuebler	10.3	11	14.01	15.18	36.0%	38.0%
	Westbound	**Eastbound**	**Westbound**	**Eastbound**	**Westbound**	**Eastbound**
Wallace Road: Brush College to 12th via Marion/Center St Bridges	5.6	6.3	9.15	9.52	63.4%	51.1%

As shown in the table, travel time has increased in each of the corridors except Salem Parkway (which is likely due to the changed lane configuration in the southbound direction at the Commercial St. NE and Division St. NE intersection). The increase is highest on the Wallace Road corridor, which is the principal arterial in west Salem, an area of SKATS with the fastest population growth, comparatively few job or shopping opportunities and no alternate facilities available for travel. South Commercial, which is the main arterial connecting south Salem with downtown, has also experienced a significant increase in travel delay, coincident with its housing and employment growth over the decade.

Transit Usage

Increasing demand for travel is not limited to automobiles. Transit ridership has been increasing in the Salem-Keizer area since 1992 (see **Appendix B**). Between 1990 and 2000,

population in the SKATS area increased an average of 3.4 percent per year, and employment increased 3.0 percent. Annual transit ridership increased 5.5 percent per year between 1991 and 2001, and grew 5.8 percent per year from 2000 to 2005 (**Table 3-4**). This increase is due to several factors: the increased level of transit service (both frequency and extending service into the evenings) starting in 1996, improvements to routes, changes in the population demographics, changes in gas prices and parking prices and supply, and increases in "choice" riders. "Choice" riders are people who have a variety of modes available for their trip, but choose to use transit.

Table 3-4
Transit Ridership, 1991 to 2005

	Yearly
1991	2,882,512
1992	3,059,723
1993	3,148,726
1994	3,115,611
1995	2,965,656
1996	3,166,305
1997	3,839,972
1998	3,941,948
1999	4,157,421
2000	4,194,574
2001	4,622,046
2002	4,933,000
2003	5,225,000
2004	5,474,886
2005	5,392,202

The transit district reduced service beginning September 2006 in response to a failed levy vote in May of 2006. The ballot in the November 2006 election did not pass either. No modeling of this scenario has been performed for either the base year or the future year.

Table 3-5
Actual and Forecasted Growth in the Salem-Keizer Area

Actual growth from 1990 to 2005	
Population	44 %
Employment	21 %
Vehicles over river	42 %
Transit ridership	87 % (1991-2005)

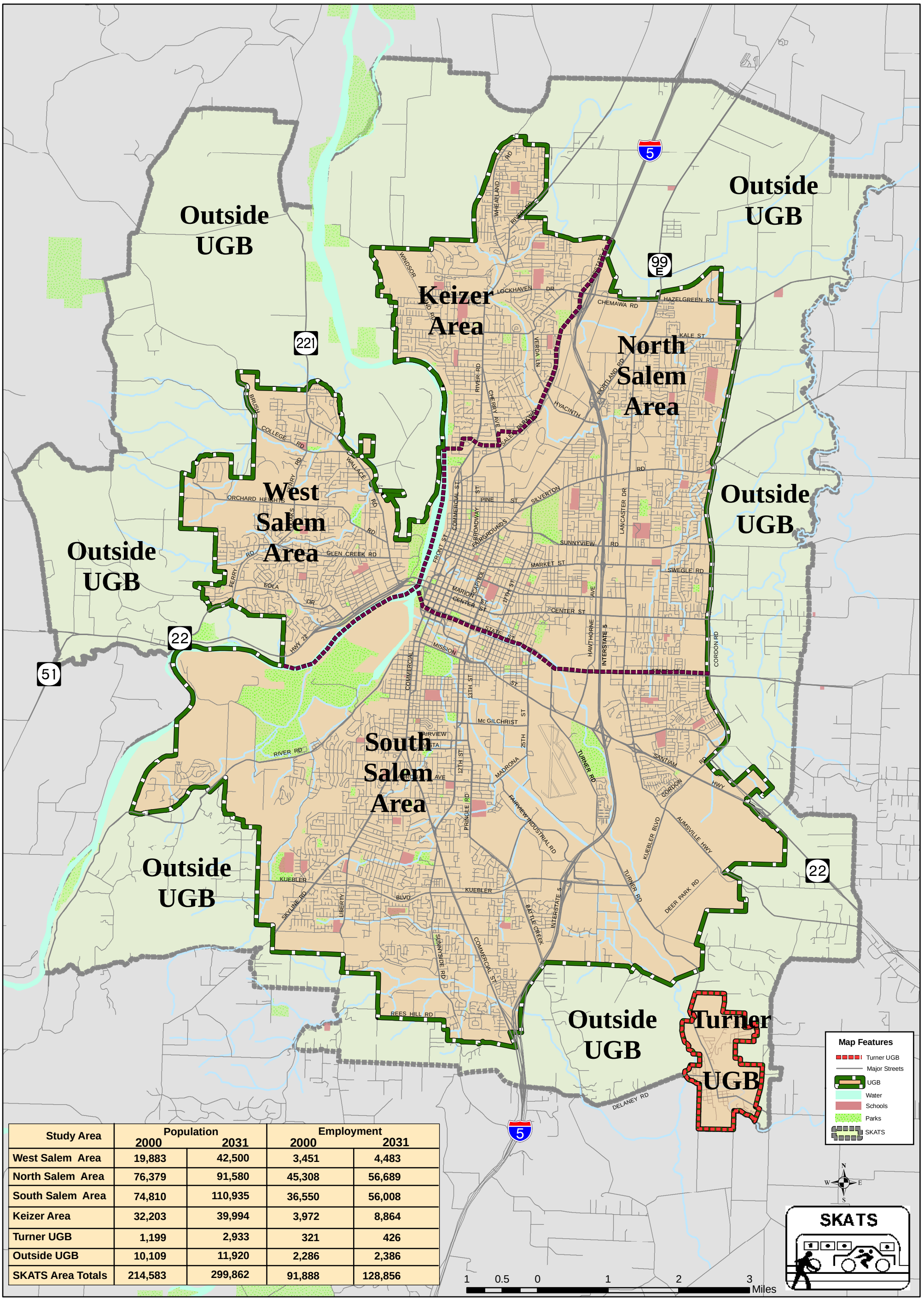
Forecasted growth for 2005 to 2031	
Population	30 %
Employment	32 %
Demand over river	64 %
Transit ridership	40 %

Conclusion

As can be seen from the information presented in this chapter and data provided in Appendix B, and summarized in **Table 3-5**, travel demand in the Salem-Keizer urbanized area has been, and is projected to continue, increasing. This increase can be attributed not only to an increase in the region's population and employment, but also significant increases in through traffic within the Willamette Valley. Over the next 24 years, the region's roads will experience further demands, adding to the congestion problem at numerous locations on the regional roadways and resulting in longer travel times during the peak travel periods. The following chapters of this Plan discuss projects and methodologies to help alleviate this increased congestion and impact to the area's mobility.

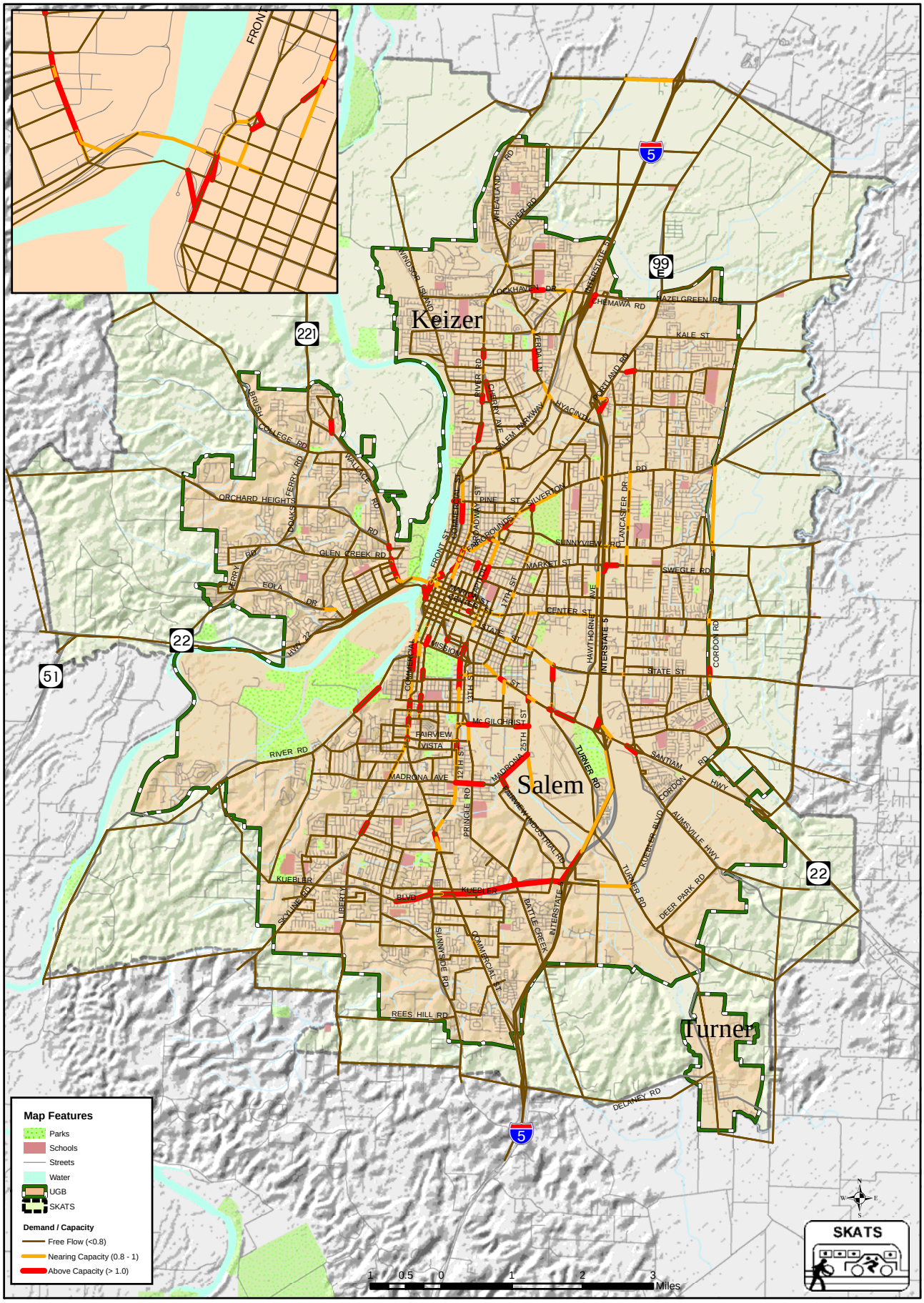
Map 3-1

Population (2000), Employment (2000) and Forecast for 2031

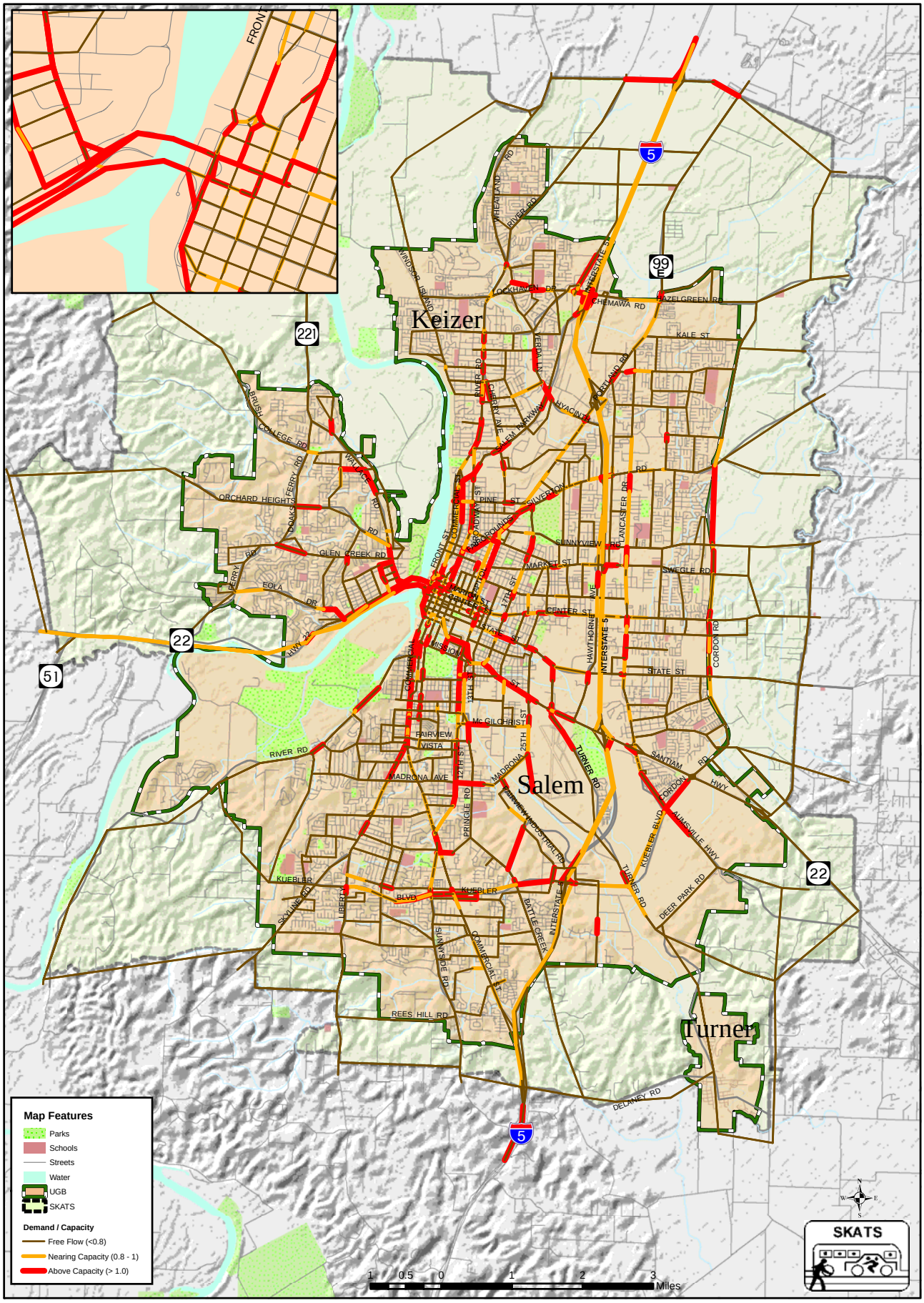


Study Area	Population 2000	Population 2031	Employment 2000	Employment 2031
West Salem Area	19,883	42,500	3,451	4,483
North Salem Area	76,379	91,580	45,308	56,689
South Salem Area	74,810	110,935	36,550	56,008
Keizer Area	32,203	39,994	3,972	8,864
Turner UGB	1,199	2,933	321	426
Outside UGB	10,109	11,920	2,286	2,386
SKATS Area Totals	214,583	299,862	91,888	128,856

Map 3-2
2005 PM Demand / Capacity



Map 3-3
2031 PM Demand / Capacity



4 - Safety and Security of the Regional Transportation System

Introduction

The passage of the Safe Accountable Fair Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU) has brought increased attention to addressing the safety and security of the transportation system. These issues were first identified in TEA-21 (Transportation Equity Act for the 21st Century, 1998) as important factors for consideration when developing the long-range plan. Ensuring the current and proposed regional transportation infrastructure is safe to use has long been a goal for all the partners in the urban area. Addressing the security of the system has received increased attention since the events of September 11, 2001.

This chapter includes a discussion of the concepts of transportation safety and security. Areas with safety issues will be documented and projects or concepts that have been identified to address these will be discussed. The chapter ends with a discussion of future steps to follow to ensure that the regional system operates in a safe and secure manner.

Concepts of Transportation Safety and Security

What is meant by a transportation system that is safe and secure? Can any network that allows the free movement of people and goods ever reach such a goal? Are there limitations in meeting this goal, either monetarily or in the reduction of the easy use of the system? These are some of the questions that need to be answered when developing a strategy to ensure a transportation system that is safe for users and secure from disruption.

Safety and security are two different aspects of the regional transportation system. A safe system is not necessarily secure, and a secure system does not mean the safety of the users is assured. For the purposes of this Plan, safety will be defined as the ability of a person to use the regional transportation system, regardless of mode, to convey themselves, their passengers, and any goods they might be transporting in a manner that does not endanger others using the system or the population and environment, built and natural, along the route.

A secure transportation system is one that is functional in the event of disasters, either man-made or natural, or during severe weather conditions. Ensuring the security of the system does not mean installing gates, guards, and surveillance cameras everywhere. Instead, the focus is on providing multiple routes between locations, and ensuring that components of the transportation system can survive impact from disasters or incidents.

Disasters that can impact the regional system are classified as either natural or man-made, through either deliberate action or accidents. Natural disasters that have occurred or could potentially occur in the SKATS area include earthquakes, floods, fires, and extreme weather. Man-made disasters include acts of terrorisms, major collisions, and derailment.

Realizing a Safe and Secure Regional Transportation System

The member agencies and jurisdictions of SKATS have developed plans and strategies that address the safety and security of their facilities on the regional transportation network. In addition, this Plan sets out Goals and Policies stressing the importance of building, maintaining and operating a regional transportation system, irregardless of mode, that is safe for the users.

ODOT's *Transportation Safety Action Plan* and *Amendment 1*, adopted in 2004 and 2006 respectively, identifies 69 actions with nine key actions for ODOT to strive for in making their road network safer, and in particular, working toward reducing the number of accidents on the State's roads. For the most part the key actions, those that ODOT will attempt to meet by 2014, identify areas to address beyond traditional transportation projects, such as education of drivers and training of judges and traffic police. Within the sixty remaining actions, there are ones that address facility design, construction and maintenance to ensure that the state system is not a safety issue itself, as well as developing a comprehensive database of incident information to assist in developing strategies and projects to address locations with a high number of incidents. Pertinent goals in this Plan that include the actions identified in the ODOT document include Goal 1 in the pedestrian chapter (chapter 6), Goal 2 in the bicycle chapter (chapter 7), Goal 2 in the rail chapter (chapter 11) and Goal 3 in the roads chapter (chapter 15).

The Salem-Keizer Transit District has updated their *System Security and Emergency Preparedness Plan* (2006) to address the additional requirements specified in the SAFETEA-LU legislation. This document details the procedures the transit district will follow when responding to the many possible scenarios that arise due to disasters, emergencies, or other situations.

In addition to these plans, a number of other documents have been developed addressing specific issues, such as rerouting traffic on the Willamette Bridges or Interstate 5 in the event of a closure in one or both directions. Drills and course-of-actions for evacuating the Capitol Mall area have been developed and practiced.

The *Salem-Keizer Metropolitan Area Intelligent Transportation System (ITS) Plan* (2005) identified a number of projects that either address providing for the safety of the transportation system user or toward providing the network some degree of security. Projects identified in that plan focus on providing connections between the traffic operation centers and the emergency responders, in particular the E-911 center for Salem-Keizer. In addition, projects were identified that install cameras at key locations to observe how the system is operating, and signs and radios to inform travelers of bottlenecks, diversions, and other hazards. Relevant projects have been incorporated into this Plan's project list; a list of ITS projects is presented in **Table 13-3**.

Securing the regional system against possible events is made difficult by the degree of openness that exists and is expected by the users. The first priority should be to ensure that the system functions during and after an event, whether it is extreme weather related or from an act of man. To achieve this, redundancy in the network is critical to allow multiple paths between

origin and destination. In addition, for sections of the network where no redundancy exists, it is critical that they be sufficiently "hardened" to allow them to survive the majority of events that may happen.

The Oregon Department of Transportation maintains a listing of the bridges in the area and whether they have any structural issues. Currently, 44 of the 91 bridges in the area have been identified as having structural issues. This list should be used to prioritize projects on high-volume routes to address any structural issues that may cause failure or closure of the bridge after an earthquake of suitable magnitude.

Accident locations in the SKATS area are shown in **Map 4-1**. The data comes from ODOT and represents the sites rated in the Safety Priority Index System (SPIS) database. This database includes information regarding collisions on the roads in the state and calculates an index of the severity of the safety issues of the location in relation to the other locations in the area. In addition, information for collisions occurring on city of Salem and Marion County roads is displayed. The number of crashes and resultant fatalities and injuries that occurred in the three cities between 1996 and 2005 is presented in **Table 4-1**. During this time period, 89 people were killed and over 19,000 injured due to crashes on the region's roads.

Table 4-1
Crashes, Injuries, and Fatalities, 1996 to 2005[1]

Jurisdiction	Total Crashes	Deaths	Injuries
Keizer	1,816	7	1,336
Salem	26,203	82	17,969
Turner	54	0	36

Between 1993 and mid-2004, 30 pedestrians were struck and killed by trains in the Salem-Keizer area. The majority of these fatalities occurred along the Union Pacific line running through Salem. Approximately 30 trains a day use this rail line, which runs alongside 12th Street in downtown Salem and bisects the neighborhoods just to the northeast of downtown. Construction began in 2001 on the 12th Street promenade, providing a wide sidewalk with a decorative wall alongside the Union Pacific rail line through downtown. This was constructed in an attempt to reduce the number of fatalities and to provide a pedestrian-bicycle link between the Salem Railroad Station and the north end of downtown. The final phase of this project was completed in 2006, crossing Mill Creek to connect to North Salem HS and Olinger Pool. Since mid-2004 there have been no fatalities along the UP rail line.

Throughout the region there are a number of common safety issues. These include:

- Interaction between modes (pedestrian and train, bicycle and car, car and train, etc.)
- Interaction between vehicles and animals (e.g. car and deer)
- Road design and/or geometry issues

[1] Data from ODOT Crash Analysis and Reporting Unit. Information from the 1996 to 2005 Summary by City available at: www.oregon.gov/ODOT/TD/TDATA/car/CAR_Main.shtml

- Identification and removal of bottlenecks and other congested locations

In addition, several safety issues can occur more sporadically in the area, including power outages affecting streetlights and stoplights, and the need to inform motorists of high water and other impediments.

A number of projects included in the current Plan, as well as in previous plans, are designed to address the underlying issues of critical locations in the SKATS area. The purpose of these projects is to reduce the potential for collisions and incidents by installing signals and widening intersections to provide better channelization of the traffic movements.

Solutions have been identified for several of the issues listed above, and are being implemented for particular locations in the SKATS area. In general, retrofitting streets with sidewalks, curbs, gutters, and bike lanes—typically referred to as an "urban standard" project—provides a degree of safety to pedestrians and bicyclists that is otherwise missing. One specific area with safety concerns is downtown Salem, where the installation of bulb outs at many intersections shortens the path pedestrians have to cross the street. Another specific concern that is being addressed is the development of plans to reroute traffic on Interstate 5 and the Willamette Bridges in the event of a lane or span closure.

In addition, solutions that are applicable throughout the urban area include, but are not limited to:

- Properly lighted streets to see hazards and pedestrians
- Well marked pedestrian crossings, crosswalks, and bike lanes
- Installation of center turn lanes and dedicated turn lanes with "protected turn" signals
- Bulb outs at intersections in areas with pedestrian traffic

The results of these projects will need to be tracked over time to determine whether they have been successful in addressing safety issues. See **Chapter 15** for a list of projects that address safety issues. These are classified under Safety, Efficiency, ITS, Pedestrian or Urban Standards.

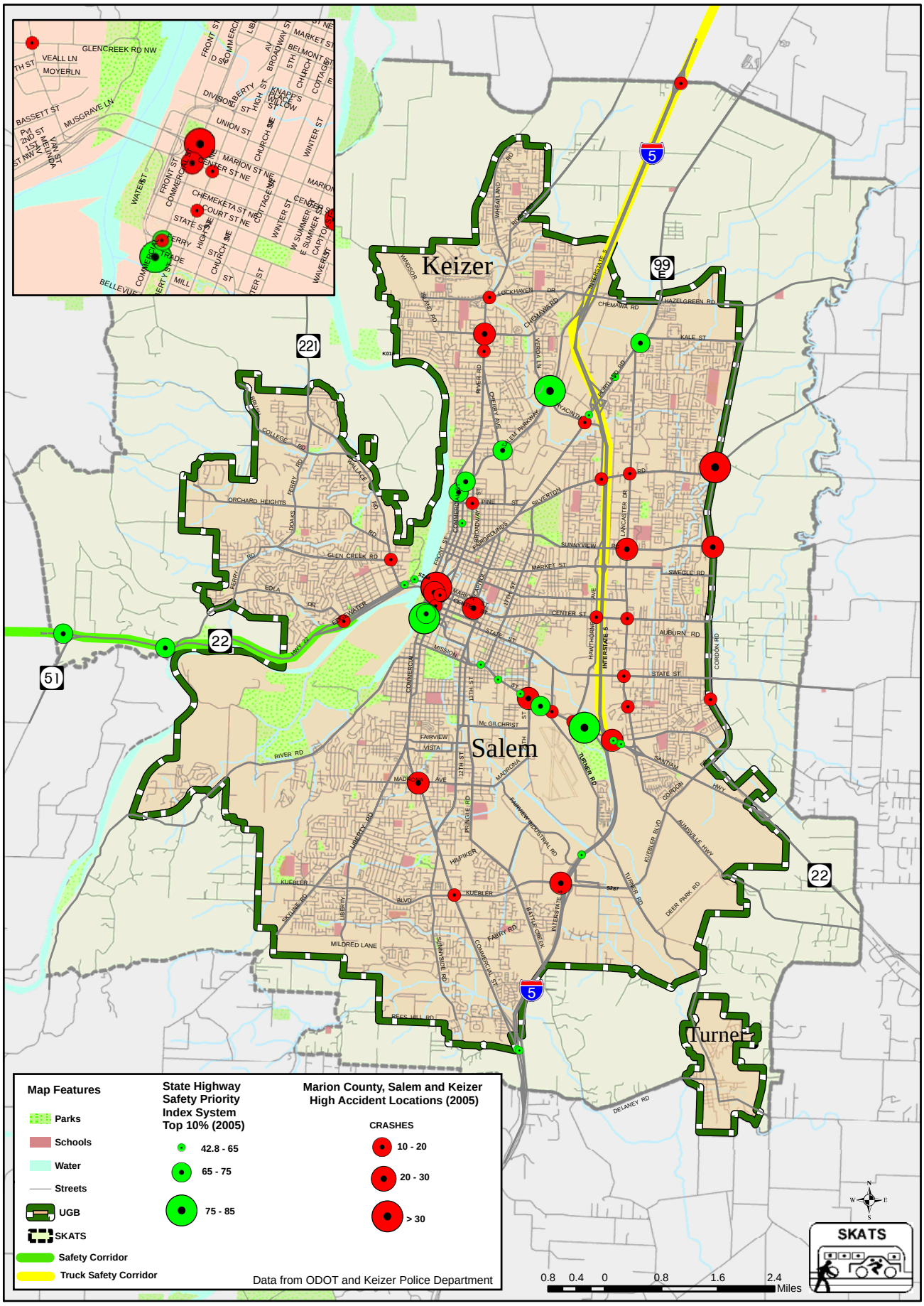
Outstanding Issues

Ensuring the region has a transportation system that is safe to use has long been a goal of the Plan. However, additional data and analysis are required to better inform the decision making process where scarce funds would provide the most return on investment. Future updates to the Plan will include additional data on where incidents have occurred and how successful the proposed solutions have been in addressing the underlying issues. Further information is necessary to establish any trends regarding the safety of the region's transportation system.

By necessity, this chapter focused on those modes that are funded with public dollars. Private industries, such as railroads and pipeline companies, face many of the same issues identified above, but their solutions will, for the most part, use their own funding and are outside the scope of this plan.

Map 4-1

High Accident Locations



April 4, 2007

SKATS 2031 RTSP Update

5 - Finance

Introduction

The financial situation that faces the SKATS area is one of constant flux. Funding for the projects included in this Plan come from a variety of federal, state, local and private sources. These sources are tied to the local, state, and national economies and reflect how they are performing. In years where the economy is expanding, more tax revenues will flow into the government coffers, and development will push the demand for implementation of transportation solutions in the area. But this can also lead to higher costs as materials and labor are in high demand in other sectors of the economy. In years when the economy is contracting, less tax and development related revenues are collected by government as people curtail their driving and purchasing of homes, resulting in less funds available for transportation projects.

In August 2005, SAFETEA-LU (Safe Accountable Fair Equitable Transportation Efficiency Act – A Legacy for Users) was passed following two years of continuing resolutions that extended the funding as specified in TEA-21, the previous transportation authorization bill. SAFETEA-LU provides a five-year direction of funding that will be available from the federal government.

This chapter includes updates of the revenue forecast and project costs for the Salem-Keizer-Turner area, including the sections covering the operation and maintenance of the regional network, and the situation facing the transit district.

Financial Constraint

Fiscal responsibility, as well as federal and state regulations, requires that the Plan exhibit "financial constraint." This means that prior to calling for the expenditure of resources to expand the regional transportation systems, it must be demonstrated that adequate funding is expected to be available to maintain and operate the existing transportation facilities and services. If new revenue sources are required, the Plan must present the actions to be taken to acquire the new funding. In addition to demonstrating that funding is available to adequately maintain and operate the existing transportation systems, the financial plan must also identify which Plan improvements can be implemented using current and committed revenues and funding sources, which investments would be implemented using "reasonably anticipated" resources, and which projects would require the development of new revenue sources.

Adequate Maintenance and Operation of the Existing System

The preservation of the existing transportation infrastructure is a regional priority. In order to produce a financial plan that demonstrates that the necessary resources are reasonably available to implement the improvements called for in the Plan, the responsible operating agencies (i.e., city of Salem, Salem-Keizer Transit District, etc.) must have the financial capacity to finance the maintenance, operations, and capital replacements required to preserve the existing

transportation system. Although SKATS, as the MPO for the Salem-Keizer urban area, has no direct maintenance or operation authority, its responsibilities involve the cooperative development of a financial plan indicating the ability of the various operating jurisdictions to adequately maintain, operate, and provide for the capital replacement of their existing transportation facilities.

Revenues and Funding Sources

Beyond maintenance and operation of the existing transportation systems, funding for projects identified in the Plan must be currently available, committed, or reasonably anticipated. "Currently available funds" means those funds derived from an existing source dedicated to or historically used for transportation purposes. "Committed funds" are those included in the region's adopted Transportation Improvement Program (TIP) or are specifically identified in local Capital Improvement Programs (CIPs) or other programming documents such as bond issue descriptions.

Funding for improvements identified in the RTSP may also be shown to be "reasonably anticipated" if they are not currently available or committed but a successful past experience with obtaining this type of funding (e.g., success in obtaining legislative and/or voter approval for new bond issues, tax increases, special appropriations, etc.) can be demonstrated. New funding sources that may require some steps (legal, executive, legislative, voter approval, etc.) before a jurisdiction, agency, or private party can commit such revenues to transportation projects can also be considered as appropriate to offset the cost of Plan improvements. However, the financial plan must identify the steps that will be taken to ensure the availability of these funding sources within the timeframe shown in the plan, such as how the support of the public, elected officials, the business community, and special interests will be obtained. New funding beyond that which is demonstrated to be "reasonably anticipated" or likely to be available because of a commitment to a specific course of action must be regarded as speculative and any improvements to be implemented using this type of funding are regarded as "desirable," but not formally included in the Plan.

The following describes the funding categories identified in the Regional Transportation Systems Financial Element:

1) **Currently Available Funds:** Funds derived from an existing or ongoing source of funds dedicated to or historically used for transportation purposes that the region expects to continue to be available to fund projects (e.g., authorized federal funds, local tax revenues, etc.).

2) **Committed Funds:** Funds derived from an existing or ongoing source that have been committed to specific improvements in the region's TIP, local CIPs, or local bond issues.

3) **Reasonably Anticipated:** Funds that are likely to be available in light of historical evidence (e.g., future federal authorizations that do not exceed previous federal authorizations; local bond issues with a history of successful passage by voters).

4) **New Funding Sources:** New funding sources that do not currently exist or require some steps (e.g., legal, executive, legislative) before a jurisdiction, agency, or private party can commit such revenues to transportation projects but which are affirmatively supported by the MPO as part of the Plan. If required to implement an improvement called for in the RTSP, the Plan must include a specific plan of action that describes the steps that will be taken to ensure that the funds will be available within the time frame shown in the financial plan.

5) Funds Not Expected to be Reasonably Available:

a) Past efforts to enact new revenue sources have generally not been successful;

b) The extent of current support by the public, elected officials, business community, and/or special interests indicates passage of a pending funding measure is doubtful;

c) No specific plan of action exists for securing the funding source, and/or no other information exists that demonstrates a strong likelihood that funding will become available.

Two tiers of transportation systems improvements are called for in the RTSP. The first tier—all of the identified highway capital projects and basic maintenance activities; transit capital projects and maintaining existing levels of service; and bicycle lane, transportation system efficiency management, goods movement, and intermodal freight highway system improvements in the RTSP—is expected to be implemented using currently available, committed, or reasonably anticipated revenues. Improvements to the regional rail (freight), aviation, pipeline, maritime, and pedestrian systems are likely to be funded using federal, local, and/or private resources that are outside the scope of this Plan.

The second tier—desirable investments identified in the Plan that do not, as of yet, have reasonably anticipated funding—includes improved levels of transit operations, enhanced Amtrak passenger rail service, and trackage improvements required for the development of high speed rail service in the Willamette Valley. Unidentified highway improvements associated with outstanding issue areas, such as the Willamette River bridges, are not predicted to be affordable without new revenues.

Regional Nontransit Systems Capital Cost and Revenue Analysis

Estimated Revenues

In order to develop a financially constrained long-range transportation plan, the estimated revenue sources expected to be used to pay for identified transportation system improvements should be reasonably available in order to successfully implement the plan. In the SKATS region, the projected revenues that are expected to be reasonably available during the 24-year planning period for non-transit regional capital projects is estimated at $435.9 million

(expressed in 2006 dollars). The estimated 24-year revenues available for nontransit regional capital projects are illustrated in **Figure 5-1a and 5-1b**.

Transportation funding sources that are available and the types of projects for which the funds may be used on are illustrated in **Table 5-1.** As will be discussed later in this chapter, few sources of federal funds can be "flexed" for either transit operations or roadway maintenance and operations. Some local sources of funds (such as systems development charges, bond issues, and urban renewal funds) are also limited to capital improvements.

Figure 5-1a. Regional Revenues 2007-2031

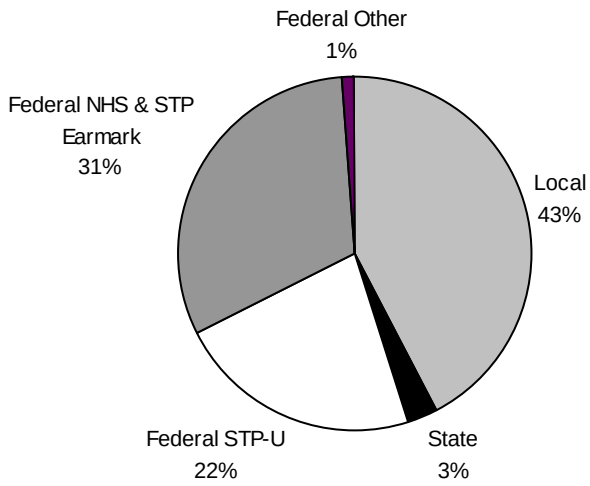


Figure 5-1b. Estimated Costs of Regional Projects 2007-2031

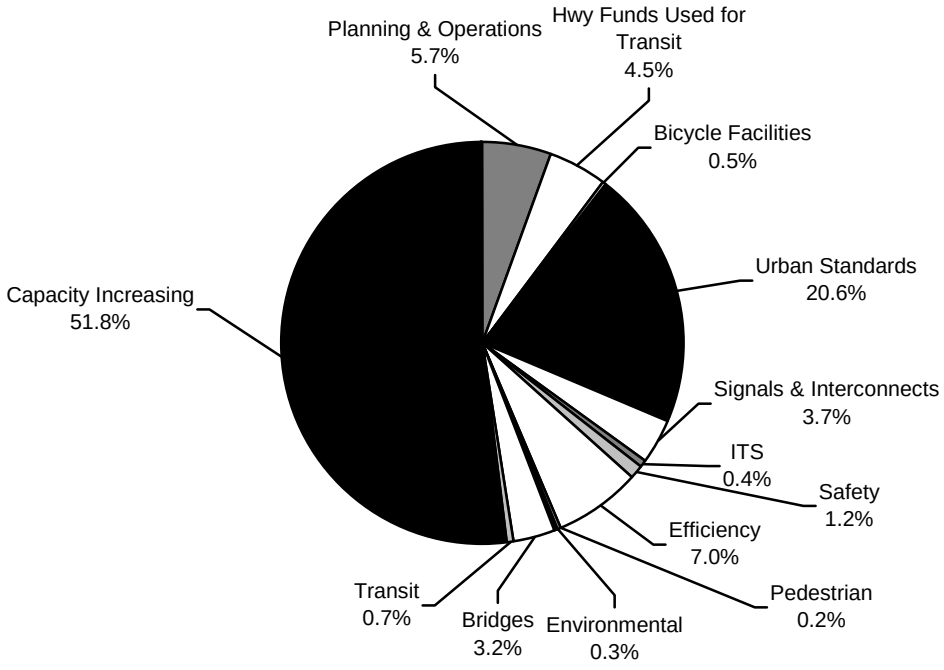


Table 5-1
Funding Flexibility Matrix – General Guidelines for the Use of Transportation Funding

	Transit			Highway					Other
POTENTIAL USES	**Transit Operations**	**Capital Improvements**	**ADA/Elderly & Handicapped**	**Maintenance & Operations**	**Roadway Capacity**	**Bicycle**	**Pedestrian**	**Rideshare/TDM**	**Passenger Rail and Facilities**
FUNDING SOURCES									
Federal									
(a) National Hwy System (NHS)	no	no	no	yes	yes	yes	yes	no	(b)
Federal Sec. 11X earmarks	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)
ODOT STP	no	yes	yes	yes	yes	yes	yes	yes	yes
STP Enhancements	no	yes	yes	no	no	yes	yes	no	(d)
FTA Section 5307 (formerly Section 9)	yes	yes	yes	no	no	no	no	no	no
FTA Section 5309 (formerly Section 3)	no	yes	yes	no	no	no	no	no	no
(e) FTA Section 5310 [(formerly Section 16b(2)]	no	no	yes	no	no	no	no	no	no
(f) FTA Section 5303 (formerly Section 8)	no	no	no	no	no	no	no	no	no
(g) Marion County Nat'l Forest Revenues	no	no	no	yes	yes	yes	yes	no	no
State									
Gas Tax Revenues	no	no	no	yes	yes	yes	yes	(h)	no
(j) Special Transportation Fund (STF)	yes	yes	yes	no	no	no	no	no	no
Transit in Lieu Payments	yes	yes	yes	no	no	no	no	no	no
Regional									
SKATS STP-U	no	yes	yes	no	yes	yes	yes	yes	yes
Local									
Salem G.O. Bonds	no	no	no	yes	yes	yes	yes	no	no
(i) Transportation System Development Charges	no	no	no	no	yes	yes	yes	no	no
Gas Tax Revenue	no	no	no	yes	yes	yes	yes	yes	no
Keizer Urban Renewal	no	yes	no	no	yes	yes	yes	no	no

(a) Up to 50% of NHS funds can be transferred to STP funds; 100% if approved by U.S. Secretary of Transportation.
(b) May be used for passenger rail facility use if resulting improvements to NHS facilities can also be demonstrated.
(c) Specific earmarks for individual projects.
(d) STP Enhancement funds can be used for the rehabilitation and operation of historic railroad facilities.
(e) Limited to private, nonprofit organizations or public bodies that coordinate transportation services for the elderly and disabled persons.
(f) FTA Section 8 is dedicated for transit planning activities.
(g) National Forest Revenues are allocated for roads (75%) and schools (25%).
(h) Potential uses may include park-and-ride facilities only as part of eligible highway improvements projects.
(i) May be used for transit capital improvements and ADA/elderly & handicapped operations; cannot be used for transit system operations.
(j) Limited to roadway capacity projects. Bicycle and pedestrian facility improvements may be included as part of roadway capacity projects.
(k) TSDCs are currently implemented by the cities of Keizer, Salem, and Turner and Marion County.

Federal Revenue Sources: $239.5 Million

- **NHS & STP-Earmark**
  Projects identified on the National Highway System (NHS), such as Phase IV of the Interstate 5 project, will be funded from the NHS and/or STP Enhancement programs, less any local share match required. The timing will be dependent on appropriation by the US Congress. Previous appropriations paid for Phases I through IIIb of the Interstate 5 project in sums of $6.65 million in 1992 (Market Street Interchange), $40 million in 1994 (Silverton to State), $36.58 million in 1996 (Phase II SPRR-Silverton, Hayesville Interchange), $23.97 million in 1997 (State St to Highway 22) and $62 million in 2005 (Highway 22 to Kuebler). As such, it can be reasonably anticipated that this funding source will be available in the future. Also included in this amount is the earmark Polk County has received for work on in the area of Highway 22W and Highway 51. Approximately $136,126,000 in anticipated over the next 24 years for projects located on the National Highway System.

- **SKATS STP-U Funds**
  Currently, SKATS receives approximately $2,400,000 a year in Surface Transportation Program (STP) funds from the federal government via ODOT as a Transportation Management Area (TMA). Current estimates indicate that the yearly value of these funds will rise to $5,600,000 in 2031 based on the current trend. The total for 2007-2031 is estimated at $98,020,000. While this is an increase from the estimate in the 2005-2030 Plan, it is a reduction from the estimate from the 2003 Plan amendment, which set the starting year fund allocation at $3 million. The STP program began with the authorization of ISTEA and was renewed with the passage of TEA-21. As such, the funding can be considered to be a relatively secure source. In addition, it is one of the few sources of revenue that can be used for a variety of different types of projects, as illustrated in Table 5-1.

- **STP Enhancement Funds**
  Each state must set aside 10 percent of its yearly STP revenues for Transportation Enhancement Activities. Enhancement funds are allocated to the local jurisdictions through the state on a competitive basis. The estimated revenues from STP Enhancement Funds for the SKATS region are based on: 1) the continuation of the enhancement program during the 24-year planning period; and 2) the five-year average of enhancement funds programmed in the SKATS TIP for FY 1995 through 2000. A total of $1,107,400 in enhancement funds have been programmed for capital improvement projects in the SKATS TIP for fiscal years 1995 through 2000. The city of Turner received $900,000 in TE funds in 2003. The potential revenue from STP Enhancement Funds available to the SKATS region for the 24-year planning period is a minimum of $4,614,150.

- **Marion County National Forest Revenues (NFR)**
  In the past, Marion County has used revenue from the National Forest Reserve to fund transportation projects within their boundaries, including projects in the SKATS area. Based on the percentage of Marion County projects that are within the Salem-Keizer-Turner urbanized area, the amount that is reasonably anticipated to be

available for projects in the Salem-Keizer-Turner urban area is $757,500. This amount differs from the estimate in the 2002 RTSP Update and was derived after consultation with Marion County staff. The methodology used to arrive at this value is presented in more detail in the Marion County Gas Tax discussion.

State Revenue Source: $12.1 Million

- **Gas Tax Revenues**
  The distribution formula of state highway fund (gas tax) revenues is established by the Oregon legislature. Currently, 60.05 percent is dedicated to state highway programs, 24.38 percent is dedicated to county road programs, and 15.57 percent is dedicated to city road programs. The county share is proportionately distributed based on vehicle registrations and the city share is based on population. Oregon statute (ORS 366.514) requires that cities and counties expend a minimum of one percent of their state gas tax revenues to provide and maintain walkways and bikeways.

  Total gas tax revenues from the three jurisdictions that will be available for capital projects on the regional transportation system during the 24-year planning horizon are estimated to be $12,121,000. This value is less than half of the value estimated for the 1996 RTSP, is a decrease from the value in the 2002 RTSP, and is a slight decrease from the 2005 RTSP. This decline can be attributed to several factors. First, the assumptions made in the revenue projections at the state level have turned out to be rather optimistic. In particular, the rate of increase of the fuel tax has been smaller than predicted. In light of this, in 2003 ODOT convened a committee to revise the revenue projections based on changes at the federal level, specifically the authorization of SAFETEA-LU, and to revisit the assumptions that were made regarding the likely increases in the state fuel tax. This committee based much of its methodology on work by a previous committee convened to address similar issues in 1998 due to TEA-21. The assumptions that were adopted by the ODOT committee, and reported in the document, *Financial Assumptions for the Development of Metropolitan Transportation Plans* (December 2004) include:

  - Fuel tax rates increase at a rate of $0.01 per gallon per year through 2035. The increases would start in 2006.
  - An increase in vehicle registration fees of $15 every eight years starting in 2010.
  - Assume revenues would not be impacted by the implementation of the Transportation Planning Rule (TPR).
  - Assume that the current 60.05-24.38-15.57 split of fuel tax revenues between the state, counties, and cities would be modified to 50-30-20.

  These assumptions were used by ODOT as parameters in an econometric model that included inflation, fuel price and efficiency, population, employment, vehicle registration and other variables to determine the amount of revenue that could be expected through 2035.

Estimates for the cities and counties were prepared by SKATS based on the ODOT document and recent gas tax funds received by Keizer, Salem, and Marion County. One assumption used for preparing the estimates was to hold the share of gas tax funds that each city and the county received from the state as constant based on their 2005 value. This means that, for the cities, their population stays the same percentage-wise in relation to the state's total population. For counties, the number of vehicle registrations stays constant in relation to the other counties in the state.

City of Salem: Except for the minimum of one percent dedicated to pedestrian and bicycle system improvements and maintenance, it is anticipated that no gas tax revenues from the city of Salem will be spent on regional capital improvement projects. These funds will total approximately $353,000 over the next 24years.

City of Keizer: Currently, $400,000 a year is spent on modernization projects for the city of Keizer. It is estimated that 25 percent of these funds will be spent on projects involving the regional transportation system. This value will be refined in future RTSP updates to reflect historical patterns for the city of Keizer. The estimated revenue for the 24-year planning period is $3,006,000.

City of Turner: The city of Turner currently receives approximately $50,000 a year in state gas tax revenue. These funds are split between capital projects and operation and maintenance of the existing roads. At most, $762,000 will be available over 24 years for capital projects. This value will be refined in future RTSP updates to reflect information on actual expenditures by the city of Turner on the regional roads.

Marion County: The estimated regional share of Marion County's allocation of state gas tax revenue is based on: 1) the proportion (15 percent) of capital transportation projects located in the SKATS area that are listed in the Marion County CIP for 1995-1999; and 2) the proportion (12 percent) of reported county disbursements allocated to roadway construction and expansion projects during 1991 through 1994. The estimated regional share of Marion County's state gas tax revenues available for capital projects during the 24-year planning period is $8,000,000.

Local Revenue Sources: $184,069,000 (min)

- **City of Salem General Obligation Bonds**
  The city of Salem uses voter-approved general obligation bonds to fund street improvement and expansion projects. The taxing authority of the city is pledged to pay interest and principal to retire the debt. These bonds are backed by the city's full faith and credit, and in Salem's case, are repaid by property tax revenues. Since May 1974, there have been six successful and one unsuccessful street-related bond issues.

  Based on estimates from Salem Public Works, three bond measures for transportation will be offered during the time frame of the RTSP. The total value of the bond measures will be $85.6 million (in 2006 dollars). This is substantially less than was presented in the 2005-2030 Plan. Not all the bond funds will be used for capital projects. Approximately 33 percent will be used to maintain the existing system. Using the assumption that 70 percent of the total bond revenues will be

used on the regional transportation system, passage of all three of the measures will result in $39,300,000 for regional non-transit transportation projects. These funds are categorized as "reasonably anticipated." While the bond measure of November 2000 failed to pass, the city does have a history of passing transportation bonds. Compared with the 1996 and 2005 RTSPs, this amount is considerably less than what was anticipated for those plans [$101,320,000 (adjusted to 2000 dollars) and $71.2 million respectively].

- **City of Salem Transportation System Development Charge (TSDC)**
  In 1995, the Salem City Council adopted a Transportation System Development Charge (SDC) to help fund identified transportation system deficiencies that are expected to be created by future growth and development. Under Oregon law (ORS 223.297 through 223.314), only a portion of roadway improvement costs is eligible for funding through TSDCs. Improvement costs to maintain or improve the structure of an existing roadway that do not provide significant capacity increases are not eligible for funding through TSDCs. An estimated $80.5 million (in 2006 dollars) in TSDC revenue is projected to be available for roadway capacity projects through 2031. The estimated amount of SDC revenues available for funding regional highway projects is based on discussions with city of Salem Public Works staff, resulting in a determination that 50 percent of TSDC revenues will be used on regional projects. It is estimated that $40,233,000 in TSDC revenues are available for regional transportation projects. The Salem City Council last updated their TSDCs in 2002, and as of November 2006, is considering a proposal to update the fee structure and list of eligible projects.

- **City of Salem Urban Renewal District Financing**
  The city of Salem uses Urban Renewal District financing to help pay for public infrastructure improvements, which may include transportation system improvements. It is anticipated that approximately $23.7 million will be spent on projects located on the regional system that are within urban renewal districts during the lifetime of this Plan.

- **Other City of Salem Funds**
  Other revenue streams are available to the city to fund regional road projects. These include developer funding of projects and state and federal grants beyond those considered earlier for safety or bridge projects. It is anticipated that Salem will receive approximately $56 million for use on regional projects over the next 24 years. In addition, the city is currently carrying over approximately $7 million in funds that have not been obligated to projects yet. These projects and funds are anticipated to be obligated in the near future.

- **Marion County Transportation System Development Charge**
  In 1995, Marion County enacted a Transportation System Development Charge for the unincorporated portions of the county within the urban growth boundaries of Salem, Silverton, and Woodburn. This SDC is identical to the one adopted by the city of Salem, with the exception of the amount of funding that will be generated. The estimated revenue from the TSDC during the time frame of this plan is $3.065 million. As with Salem's TSDC, these funds may only be used for significant

capacity improvements to a road, or for constructing new roads. Marion County updated their TSDCs in 2002. Also available are funds from the Marion County Rural System Development Charge. This is anticipated to bring $1,500,000 in revenue to projects inside the SKATS boundary that are outside the UGB of Salem-Keizer and Turner. The total TSDC funds anticipated to be available is approximately $4,565,000.

- **Other Marion County Funds**
  Marion County receives contributions from developers for some road projects. In addition, they have a history of receiving grant money from the state for safety-related projects. It is anticipated that these funding streams will bring in $4,750,000 over the next 24 years.

- **City of Turner Transportation System Development Charge**
  The city of Turner levies a system development change on new development. Currently the charge brings in $10,000 a year, with the expectation that it will rise to $40,000 in 24 years. Assuming that 25 percent of these funds are used on the regional system, this funding stream will bring in approximately $156,000 over the next 24 years.

- **City of Keizer Transportation System Development Charge**
  The city of Keizer enacted a transportation system development change in the first part of 2005. In 2006 the charge brought in roughly $715,000. The expectation is it will raise approximately $5,500,000 within 24 years. This funding stream will bring in roughly $2,100,000 over the time frame of this Plan to be used on the regional system.

- **City of Keizer Urban Renewal District Financing**
  The city of Keizer relies on Urban Renewal District financing to help pay for public infrastructure improvements, which may include transportation system improvements. Between 1998 and 2002, approximately $1,250,000 in urban renewal funds were used each year on regional transportation system projects. Based on the information provided by the city of Keizer, an estimated $4.265 million in regional transportation system improvements are scheduled for construction within the urban renewal areas between 2002 and 2010. It is anticipated that any projects located within an urban renewal district can be funded with future revenue from the district.

- **Salem Area Mass Transit District Funds**
  There are a number of road projects that benefit the operation of the transit system in the SKATS area that are scheduled to be implemented over the next 24-years. It is anticipated that the transit district will contribute funds to assist in their development, either from earmarks or locally raised funds. During the time frame of this Plan, approximately $2 million is anticipated from the transit district.

Estimated Costs

This section of the Regional Transportation Systems Financial chapter provides a brief overview of the estimated 24-year capital costs for the nontransit regional capital projects recommended in the RTSP update. The estimated total capital costs are illustrated both with and without the inclusion of National Highway System (NHS) and state highway system projects. A more detailed description of the recommended regional transportation system projects are provided in the specific RTSP elements referenced below.

Nontransit regional capital projects include: 1) NHS, state, and regional highway capacity and safety improvement projects (i.e., widening, signalization, intersection improvements); 2) bicycle and roadway improvement-related pedestrian facility improvements; and 3) continued implementation of the regional Rideshare and TDM programs. The estimated 24-year capital costs and the percentage of total cost for these recommended projects are illustrated in **Figure 5-1b**.

Descriptions of the categories included for funding in the Plan are listed below. The first five categories are considered "regional operations" and use STP-U (Surface Transportation Program – Urban) funds from the Federal Highway Administration. The remaining categories are for funding capital projects, and utilize the variety of funding sources listed earlier in this chapter.

Regional Rideshare Program: $4,207,700
The estimated costs to the region for funding the Regional Rideshare Program during the 24-year planning period is approximately $4.2 million. This value does not include the STP funds paid by the state. The Regional Rideshare Program includes carpool matching, vanpool, and buspool referral services, employee/employer community outreach, and program development and coordination (described in chapter 13).

Regional TDM Program: $480,000
The Regional TDM Program will cost the region an estimated $480,000 to continue to operate at the current level during the 24-year planning period. This value does not include the match in STP funds provided by ODOT. This program is designed to work with employers to coordinate alternative transportation programs and also to complement the efforts of the Regional Rideshare Program described above (also described in chapter 13).

Regional Signal Program: $4,063,000
Operation of the Regional Signal Program is estimated at $4.06 million. This program supports the operation of the existing transportation system to a higher degree of efficiency by coordinating the traffic signals on the regional street system.

Regional System Monitoring Program: $2,308,000
The Regional System Monitoring Program is a necessary component to the successful implementation of the Congestion Management Program. It will provide data on the operational characteristics of all modes on the regional transportation system. [Note: There could be cost savings by combining this program with the Regional Signal Program.]

MPO Support: $13,668,000
Enhanced support of MPO planning, coordination, and administration will be required as a result of additional requirements associated with becoming a TMA and the recent trend of reduced support from ODOT. In addition, reduction in PL (planning) funds from the federal government has required additional expenditure of STP-U funds for this activity. This category now includes the Regional Modeling Program that previously was listed as a separate line item.

Regional Two Bus-a-Year Program: $19,580,000
This program provides support to the Salem-Keizer Transit District in the form of $600,000 per year for the purchase of two replacement buses to modernize their fleet. Over the 24-year period of the Plan, this totals $19.6 million after adjustments for inflation. This program began with the 2002 Update, when funds were allocated for one bus per year. Since 2002, funds have actually been allocated for two buses each year in the TIP.

Regional Bicycle System: $10,600,000
The 24-year costs for the recommended regional bicycle system projects, excluding those sections that are included as part of the regional highway system improvement projects identified below, are estimated at $10.1 million (see the Regional Bicycle System Plan).

Regional Highway System
Beginning with this RTSP update, the projects on the Regional Highway System are broken down into eleven categories, seven more than in the previous updates. The increase in categories is to facilitate understanding of which transportation projects are being funded, and what they seek to accomplish. However, there are projects that span multiple categories. For these projects, only one category was selected to describe the project.

Regional Highway System, Urban Standards: $89,812,000
The purpose of projects in this category is to bring existing roads up to urban standards. Urban standards are defined as roads with sidewalks and curbs. In many instances, bike lanes are also included. The projected cost during the time period of the Plan is $89.8 million.

Regional Highway System, Bridge Modernization: $13,891,000
Bridge modernization projects replace or repair existing bridges to bring the structures into compliance with the requirements of modern travel and seismic codes. Also, for bridges over streams identified as possible travel paths for spawning endangered fish, the bridge or culvert will be built in a way to allow easy passage for the fish. The estimated 24-year cost for these projects on the regional system is $13.9 million.

Regional Highway System, Signals & Interconnects: $16,033,000
This category includes projects for constructing new signals or modifying current signals to connect to the Regional Signal Control Center. The 24-year cost for the recommended projects of this type is estimated at $16.0 million.

Regional Highway System, Efficiency: $30,621,000
The purpose of projects in this category is to address the efficiency of the existing regional network. One example would be channelization of approaches to intersections. Currently, approximately $30.6 million in projects are identified over the next 24 years.

Regional Highway System, Safety: $5,318,000
These projects address safety issues such as providing dedicated left turn lanes and addressing areas with a high number of incidents. Many safety improvements are also provided by projects in other categories. There are $5.3 million in safety projects over the 24-year lifetime of this Plan.

Regional Highway System, Pedestrian: $2,223,000
At the regional level, pedestrian projects are designed to provide sidewalks in and around the regional destination areas, such as downtown Salem, and along the regional arterials. Regional pedestrian projects in the amount of $2.2 million have been identified for funding in this Plan.

Regional Highway System, Environmental: $1,232,000
Environmental projects seek to maintain or restore the environmental functions that previous projects may have degraded. Currently, one project costing $1,232,000 is identified in the RTSP.

Regional Highway System, ITS: $1,921,000
Projects in the Intelligent Transportation System (ITS) category often overlap with the other categories listed. It is likely that the number of ITS projects will increase in the next several RTSP updates due to the multiple benefits and typically reasonable cost of these types of projects. Currently, the projects included in the plan in this category are anticipated to cost approximately $1.9 million over the next 24 years.

Regional Highway System, Capacity Increasing: $225,718,000
Capacity increasing projects are defined as providing additional travel lanes on a road or multiple turn lanes at an intersection. These projects may also include elements of the other categories listed above. In addition, this category now contains the projects that are on the NHS and State Highway System that is funded and maintained by ODOT. The costs for the recommended projects are estimated at $225.7 million over the 24-year period of this Plan, including approximately $132.4 million in projects on ODOT facilities. [Note: This total does not include several projects that are listed, because the cost of the project is unknown at this time or will be paid by the developer.]

Regional Bridge System: $20,000,000
To prepare for the eventual construction of the Tryon corridor bridge, right-of-way needs to be acquired. For the time period of this Plan, the estimated cost for acquiring the land is $20,000,000.

Undefined Regional Transportation System Improvements: (Undefined Project Costs)
A number of recognized transportation needs in the SKATS area require further study in order to recommend potential system improvements and to be able to make reasonable project cost estimates. In addition, programs must be implemented to meet the federal

regulations applicable to a TMA. Consequently, these "outstanding issues" will be addressed in subsequent RTSP updates including any recommended facility improvements or system alternatives, as well as their estimated costs. Some of the transportation system needs and outstanding issues that require further study include: 1) Highway 22 Corridor Refinement Plan; 2) Salem River Crossing EIS; 3) the Chemawa Interchange; and 4) identification of a long-range strategic vision of the urban form and supportive transportation structure, to include the development of an integrated long-range land use and transportation plan and system performance measures related to reducing reliance upon the automobile.

Capital Costs and Revenues Comparison

The estimated 24-year revenues reasonably anticipated to be available for regional non-transit projects is approximately $303.6 million excluding ODOT, and approximately $435.9 million including ODOT funding, in 2006 dollars. The estimated 24-year capital costs for all non-transit projects is $804.7 million excluding ODOT and $937 million including ODOT projects on the NHS and state highway system.

The RTSP is a financially constrained plan, meaning that the projects included must have funding identified that is reasonably anticipated to be available over the life of the plan. Thus, the project cost cannot be greater than the revenues. Therefore, subtracting the estimated non-transit regional capital costs ($937 million) from the identified regional revenues ($436 million) results in an estimated deficit of approximately $501 million. These figures include all the projects on the regional system, including the NHS and State Highway system maintained and operated by ODOT. The ODOT projects are currently estimated to cost $132.4 million, and their funding is reasonably anticipated to be available over the next 24 years. This deficit is substantially higher than the $191 million forecast in the 2005-2030 RTSP. Several factors are involved, including a recent rapid increase in the cost of constructing projects and an increase in the projects proposed for inclusion in the Regional Plan.

As a result of this mismatch between forecast costs and revenue, projects must be moved into the “illustrative” list and are not considered as part of this Plan update, nor are they 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, funding identified and the revised Plan needs to fulfill a determination of Air Quality Conformity. The cost by category for the Plan is shown in **Table 5-2**.

Table 5-2
Project Category by Funding Status

	2007 RTSP (2006 $1,000s)				
	Committed	Included	Financial Constraint	Illustrative	Total
Safety	$5,218	$100	$5,318	$500	$5,818
Signals & Interconnects	$4,475	$11,558	$16,033	$6,466	$22,499
Efficiency	$6,733	$23,888	$30,621	$22,027	$52,648
Urban Standards	$50,478	$39,334	$89,812	$131,412	$221,224
Capacity Increasing	$8,708	$217,010	$225,718	$309,394	$535,112
Transit		$3,200	$3,200		$3,200
Bridge	$10,379	$3,512	$13,891	$4,700	$18,591
Bicycle	$2,000	$223	$2,223	$10,600	$12,823
Ped	$323	$750	$1,073	$5,698	$6,771
Environmental	$1,232		$1,232		$1,232
ITS	$791	$1,130	$1,921	$11,109	$13,030
Road Subtotal	**$90,337**	**$300,705**	**$391,042**	**$501,906**	**$892,948**
Bus Purchases		$19,600	$19,600		$19,600
Regional Operations		$24,709	$24,709		$24,709
Total	**$90,337**	**$345,014**	**$435,351**	**$501,906**	**$937,257**

A list of all projects identified as necessary for providing an adequate level of mobility to the residents of Salem-Keizer, as well as meeting the requirements of financial constraint, is shown in **Table 15-1a** in Chapter 15. **Table 15-1b** lists the projects that are not included in the financially constrained Plan due to budgetary or other reasons.

In addition, there are many undefined transportation system improvements that do not have an identified revenue source. The undefined transportation system improvements, such as those expected to result from the in-progress Salem River Crossing EIS, will likely require major capital investments for the region that will exacerbate the financial deficit. As a result, additional revenue sources beyond those identified in this plan update will most likely be required for subsequent RTSPs to be financially constrained.

Regional (Nontransit) Maintenance and Operations Costs and Revenues

Overview

The preservation of the existing transportation infrastructure is a regional priority. Consequently, before calling for the implementation of new capital projects, the Plan should demonstrate that the region has financial capacity to finance the operations and maintenance activities required to preserve the existing transportation system. These activities include basic

maintenance of the streets, transportation system operations, and engineering/planning support. This section of the Regional Transportation Systems Financial chapter discusses the estimated aggregate cost for maintaining and operating the nontransit portion of the region's transportation system and the funding considered available for those activities over the 24-year planning period.

Each of the local jurisdictions has defined a level of maintenance for their facilities that they can fund given the resources available to them and that keeps the roads in adequate condition. Typically this level of maintenance is done "reactively" and not "proactively." Proactive maintenance is a continuous process to address issues before they require a more expensive fix. However, given that this also requires a higher funding level than is currently available, it is assumed that for the duration of this plan that maintenance expenditures will be based on the current procedures.

Assumptions

A number of key assumptions provided the basis for estimating nontransit maintenance and operating costs for the SKATS area during the 24-year planning period. A summary of those assumptions follows:

- The local jurisdictions within the SKATS area (Marion and Polk counties, and the cities of Turner, Salem and Keizer) have committed to providing an acceptable systemwide level of facility maintenance. The public works departments for the cities of Keizer and Salem, along with Marion County provided estimates for the cost of operating and maintaining their roads in the urban area.

- Polk County has jurisdiction over only one regional roadway in the SKATS region and can reasonably be expected to provide adequate maintenance on that facility.

- The Oregon Transportation Commission (OTC) has adopted a policy that preservation of the existing transportation system is its first priority and has directed the increase in funds to that purpose statewide. Therefore, for state owned and operated highway facilities—which includes Interstate 5, Highway 22, and Highway 221 (Wallace Road)— it is assumed that the state will allocate the necessary financial resources to adequately maintain and operate these facilities based on the highway preservation policies established by the OTC. As a result, no attempt to quantify the costs associated with state roadway maintenance was made in this analysis.

- Estimated maintenance and operating costs are expressed in constant dollars unless otherwise noted and, for the purposes of this aggregate analysis, it is assumed that future-year revenues will keep pace with the rate of inflation.

Estimated Aggregate Maintenance and Operating Costs And Revenues

City of Salem: The city of Salem currently budgets approximately $9.5 million year for transportation operations and maintenance of their entire system. This is funded through a combination of state motor fuel tax revenues, franchise fees, grants, and other sources. For the

regional system, this will total $232.8 million over the life of the Plan.

Marion County: Marion County's Public Works Department reports that it spends $1,000,000 per year on operating and maintenance projects within the Salem-Keizer urban area. It is assumed that that value stays constant, resulting in $25 million spent during the time period of this Plan.

For the next three jurisdictions, the estimates are for the total they spend on all roads inside their boundaries, not just the regional roads.

City of Keizer: Keizer's reported maintenance and operating disbursements also vary from year to year. Currently the city receives approximately $1.6 million a year in gas tax funds. These funds are used for both capital and operating and maintenance of Keizer's road system. Currently they allocate a minimum of $300,000 per year toward maintenance, which is an estimated $7.2 million for the 24-year planning period (2007 through 2031).

City of Turner: Turner receives approximately $50,000 a year in gas tax funds. It is assumed that half of this will be spent on maintaining their system, which will be $763,000 over the next 24 years.

Polk County: As mentioned earlier, Polk County "owns" only a few roads in the SKATS area, and less than a handful on the regional system. In the November 2006 election a bond measure to provide $20 million for maintaining and repairing their system passed. It is assumed that funds from this measure will provide for the maintenance of their roads in the SKATS area.

The information provided in **Table 5-3** summarizes the estimated 24-year revenues anticipated to be available to maintain the roads that makeup the regional system. An estimated $265.8 million will be spent to maintain and operate the nontransit portion of the transportation system in the SKATS area.

Table 5-3
Operation and Maintenance Funding, 2007 to 2031

Jurisdiction	Funding
Keizer	$7,200,000
Salem	$232,800,000
Turner	$763,000
Marion County	$25,000,000
Total	**$265,763,000**

Regional Public Transportation System Funding Analysis

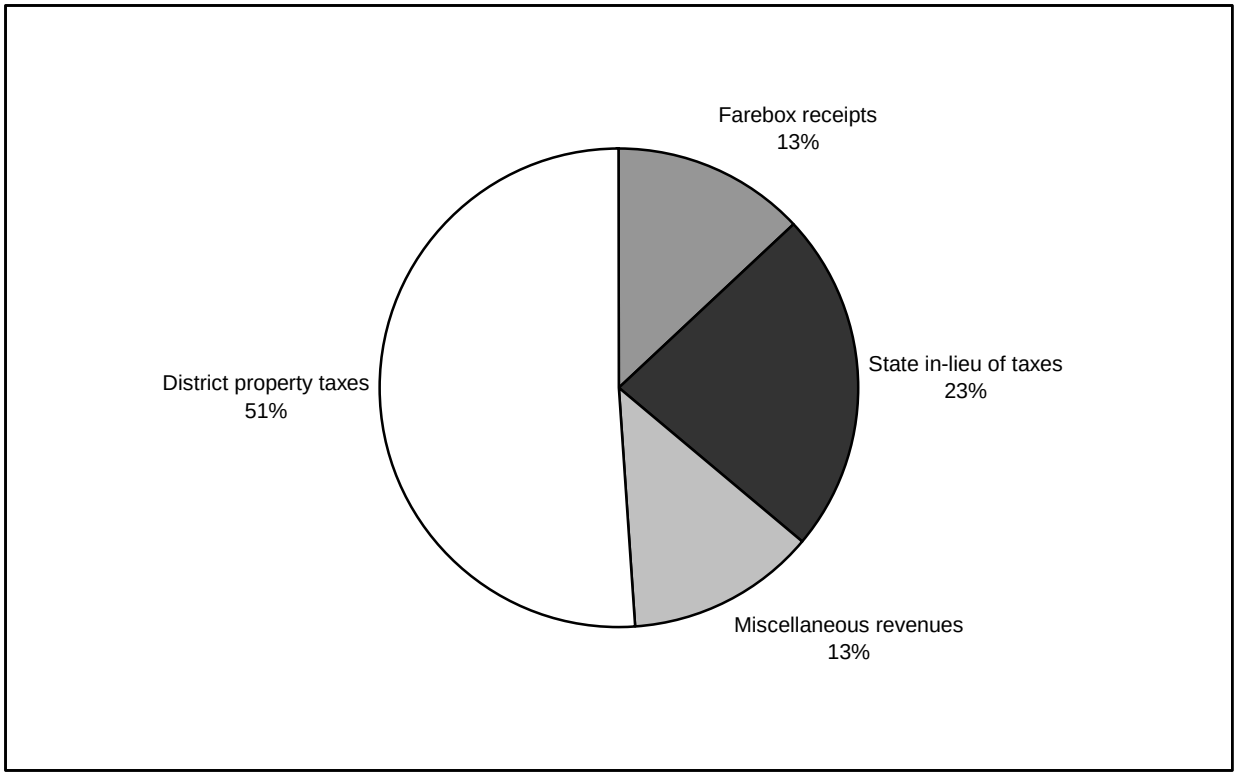
Mass Transit

Unlike some other transit systems in Oregon, such as TriMet in Portland and Lane Transit in Eugene, the Salem-Keizer Transit District does not have a dedicated funding source established in state statutes. The district must go before the voters on a periodic basis and compete with other public services for funds.

The transit district's FY 2006 budget identifies a total of $15,559,500 in operating revenues, other than carryover funds, for the fiscal year. These come from four major sources (**Figure 5-2**):

- District property taxes ($7,805,000, 50%)
- State in-lieu of taxes ($3,645,000, 23.5%)
- Farebox receipts ($2,086,500, 13.5%)
- Miscellaneous revenues ($2,023,000, 13%)

Figure 5-2
FY 2006 Transit Operating Revenue Sources



The district's source of local voter-approved funding—its property tax base—was approved in 1996 and comprises approximately one-half of the district's total operating revenues. That funding base provided the local resources needed to create a seven-to-ten-year financial plan.

The plan included a number of service improvements, including night service, frequency improvements, and park-and-ride routes. These services have been implemented, with a resulting large increase in transit ridership.

The 1996 tax base no longer will provide adequate funding to maintain the current transit service, nor allow Cherriots to provide for the development of new services that will generate higher numbers of riders. The district placed a tax levy measure on both the Spring and Fall 2006 ballots, but the measure did not pass either time. After the May 2006 election, service cuts of 20 percent were implemented. The transit district is currently, December 2006, discussing whether to implement further cuts now, or use a portion of their reserve funds and delay the cuts for several years. In addition, they are discussing placing a bond measure on the May 2008 ballot that would restore service to those portions cut, as well as allow the transit district to enhance operations.

With the 2000 Census, the Salem-Keizer area passed the 200,000 population figure, resulting in the area being designated as a transportation management area (TMA). This resulted in a significant change for the transit district, as some of the federal funds the transit district receives may no longer be used for operating purposes, but will be dedicated to capital use and certain elements of fleet maintenance only. Legislative changes are being sought, however, which could return some or all of these funds to the operating side of the ledger, and the financial chapter of the RTSP may need to be amended at a future date to reflect any changes that may occur.

Table 5-4 illustrates the projections in revenue for capital and operations for the next 24 years, as well the anticipated cost for capital projects and operating the existing transit system.

Capital Revenue Projections

The majority of revenue that the transit district will receive over the next 24 years for use on capital projects, buying new buses and the new mini-transit centers, will come from the federal government, either in the form of a yearly distribution determined by a formula devised by the Federal Transit Administration or from federal earmarks for specific projects. The current estimate is that the transit district will receive approximately $68.3 million over the next 24 years. These funds are from the FTA 5309 formula, special transportation fund and state support that is forecast to start in 2010. The transit district also receives 5307 funds; the majority anticipated to be used for preventive maintenance of the fleet. During the time frame of this Plan, the transit district is forecast to receive approximately $137.7 million in 5307 funds.

Capital Expenditure Projections

It is projected that capital expenditures for the transit system over the next 24 years will be approximately $73 million. The major capital expenses will be bus replacement ($350,000 per bus and six buses replaced per year), updating the west Salem transit center and development of outlying transit centers in south Salem, east Salem, and Keizer.

Other capital expenses will include bus shelter maintenance and expansion, transit facility maintenance, and intelligent transportation system (ITS) development.

Table 5-4
Transit Capital and Operation Revenue and Costs

	Capital	Operations
Revenue	$68,300,000	$531,885,000
Costs	$73,000,000	$779,741,000
Difference	($4,700,000)	($247,856,000)

Operating Revenue Projections

Operating revenue relies on the local property tax revenues as the primary source of district funds. The amounts shown in the table reflect the current tax base only. They do not include any additional levies that may be passed in the future to allow for continued operation of existing services or any service expansion. These estimates will be revisited after any successful, or unsuccessful, ballot measure to ensure they are still valid. The next anticipated ballot measure to provide additional transit operation funding is scheduled for May 2008. As of January 2007, it is estimated that approximately $532 million will be available to operate the existing transit system for the next 24 years.

Operating Expenditure Projections

It is expected that it will cost nearly $780 million to operate the current level of transit service over the next 24 years. It is important to note that this estimate represents costs to maintain the existing level of service only. The transportation plans of Salem and Keizer call for a significant increase in transit ridership as one means of reducing congestion and vehicle miles traveled (VMT) on local streets. To accomplish significant ridership increases, the district will have to expand the number of routes and frequency of service, which will have cost impacts. Even to just keep pace with population growth and increases in VMT, it is not unreasonable to expect a doubling or more of transit service levels.

Maintaining Existing Levels of Transit Service

Operating expenditures are compared to operating revenues over the 24-year plan horizon in **Table 5-4.** The forecast of anticipated funds available to the projected revenue stream leaves an estimated shortfall of approximately $247.9 million of the cost to maintain the existing level of transit service over the plan horizon period. In addition, the transit district has indicated that further cuts in service will be necessary to match the revenue available with the cost of providing the service. Furthermore, the funds available for operation and capital are also used to provide the CherryLift ADA paratransit service.

The cost of providing CherryLift ADA paratransit service is an ever-increasing component of the transit district's operating and capital costs. Provided under contract, the service carries about 1.3% of the district's total ridership and accounts for 4.5% of the total operating cost. Ridership on the paratransit van system has risen quickly over the first five years of service, resulting in the steep increase in expenses for the service. District staff believes that the rapid growth is beginning to slow down, and that ridership will reach a peak within the next several years and then grow at a similar rate to the fixed-route bus system. Costs for the ADA service, however, are expected to continue to increase disproportionately, as paratransit services are

much more labor-intensive and costly to provide than fixed route transit service.

One of the priorities of the district and the Salem-Keizer area jurisdictions must be to deal with the impacts of this deficit and determine how to fund transit and other transportation needs. It is difficult to estimate how quickly or successfully transit operating revenues can be enhanced. The district's tax base is limited to 3% growth annually. Additional tax measures are limited to five years in length and are subject to voter approval.

Providing Specialized Transportation Services

The *SAMTD Specialized Transportation Plan* (2007) includes the five-year operating and capital costs for CARTS service. First year operating costs for services in Marion and Polk counties are estimated at $1,020,600 and gradually increase to approximately $1.1 million by FY 2011-12. Capital costs vary by year depending on the need to replace older vehicles as they reach their useful lifecycle. Over the five-year planning period, capital costs are projected at $645,000. This includes replacement of six CARTS vans and $52,000 for implementing a marketing plan for improving marketing and public information materials for CARTS. Chapter 10 of the *Specialized Transportation Plan* describes how revenues for operating and capital expenses would come from a combination of passenger fares, FTA 5311 Funds, Special Transportation Funds, Special Transportation Grants, and other revenues.

In addition to operating and capital costs, CARTS is encouraged to establish a formal reserve fund to cover unanticipated operating expenses, and to have the required matching grant funds for equipment and replacement vehicles. Approximately five percent of CARTS' combined capital and operating budgets, approximately $55,000 to $65,000 per year, is recommended for this set aside. CARTS will continue to rely on three major sources of revenue: Federal Transit Administration (FTA) Section 5311, the Special Transportation Fund (STF) and Special Transportation Grants (STG), which include a combination of federal and state discretionary revenues.

Transit Service Improvements

The transit district would like to implement several major service improvements in the future, including adding Sunday bus service; increasing the frequency of service on several of the heaviest routes; constructing mini-transit centers in Keizer, south Salem and east Salem; and converting from a radial-pulse system to a connector-corridor-circulator system (see chapter 14 for more details).

However, a successful tax levy is needed to increase the service aspects, as funding for operations receives little federal support. The federal government will contribute funds for capital improvements, so these projects are likely to be built in the next 24 years. The transit district is increasingly finding itself in the untenable position of being able to purchase new buses and build new facilities, but unable to provide sufficient service frequency to address the needs of the majority of the area's residents.

6 - Regional Pedestrian System

Introduction

Why are pedestrian trips important? Because every trip—whether by automobile, public transit, or bicycle—begins and ends with a pedestrian movement. In addition, we can no longer afford, either monetarily or environmentally, to continue our recent practice of building our way to mobility solely via highway construction. A pedestrian-friendly environment, on the other hand, can be cost effective, reduce our reliance on the automobile, and support the use of other transportation modes.

Creating a pedestrian-friendly environment, however, poses some problems. The air quality, traffic congestion, and financing problems that we now face have evolved, to a large degree, from decades of public policies and investments that have heavily favored the automobile, often at the expense of other modes of transportation. To accommodate our increased use of the automobile, streets and building setbacks to allow convenient parking have increased, travel lanes are wider, and vehicle speeds are faster. All of these "automobility" improvements serve to discourage the pedestrian.

It has been traditionally assumed that if a basic "walking infrastructure," such as sidewalks, were provided, pedestrian activity would be encouraged. What we have seen is that while simply building sidewalks may facilitate pedestrian *movement*, truly encouraging pedestrian *activity* requires a broader effort. In addition to making appropriate improvements to the physical infrastructure, an environment must be created that is both convenient and comfortable for the walker to effectively promote pedestrian activity. Making pedestrians comfortable means creating development at a human scale, enabling individuals to better relate to, and feel a part of, that environment. Urban landscapes that embody this concept tend to make a pedestrian feel secure and more involved with his or her surroundings and provide a more interesting and accessible environment.

Until relatively recently, the main concern of most transportation planning related to the pedestrian was to attempt to avoid conflicts with the dominant mode, the automobile. Specific policies in this Plan designed to encourage walking, bicycling, and transit as an alternative to driving mark a distinct departure from past practices. This Plan recognizes that a significant relationship exists between land use patterns and densities and transportation systems that contributes to particular travel behavior choices. As a result, this Plan recognizes the important role of adequate pedestrian facilities in our overall mobility system.

Walking in the Salem-Keizer Area

Walking has become a popular activity for recreation, exercise, or simply for relaxation and enjoyment of the outdoors. However, its potential as a viable mode of "transportation" is just

beginning to be realized. According to the 1990 Nationwide Personal Transportation Survey (NPTS), 7.2 percent of all travel trips are currently made by walking. Approximately one-third of all walking trips were for social or recreational purposes.

The 2000 Census "Journey to Work" data indicates that 3.3 percent of workers in the SKATS area walked to work. The census data was collected during a one-week period in March, making it likely that walking trips were somewhat underreported for many parts of the country (like Salem) due to cold weather. Moreover, walking trips made to access transit or other modes were not recorded.

Some cities in Oregon, such as Portland and Ashland, demonstrate even greater levels of walking (15 percent of work trips, 1990 census). Furthermore, census data only measures work trips; more information needs to be collected to determine what share of our total trips are made by walking.

As expected, a greater number of walk trips occur in the central business district areas, like downtown Salem, where there are adequate sidewalks and awnings, higher densities, and mixed land uses. Convenient pedestrian facilities, along with closely linked destination points, make walking a highly efficient way to cover short distances. As a consequence, most walking trips are relatively short: the NPTS indicates that the average length of a walk trip is 0.6 miles. With an appropriate infrastructure, pedestrian-friendly design, and a supportive land use pattern, walking can be a realistic and enjoyable alternative for short trips and can be coupled with public transit for longer trips.

Benefits of Increasing Walking Trips

Increasing the share of overall trips made by walking can provide us significant benefits in terms of health and physical fitness, the environment, and transportation-related effects.

Promotes Health

Increased levels of walking can result in significant benefits in health and physical fitness. Research has shown that even low to moderate levels of exercise, such as regular walking or bicycling, can: (1) reduce the risk of coronary heart diseases, stroke, and other chronic diseases; (2) help reduce our personal and societal health care costs; and (3) contribute to greater functional independence in the later years of our lives.

Improves Public Transit and Reduces Traffic Congestion

Investments in pedestrian improvements can not only increase the number of walking trips, but can also increase the cost effectiveness of existing public investments in the transit system. By improving pedestrian accessibility, pedestrian-friendly street design and land use patterns can contribute to higher rates of transit ridership. Conversely, an effective transit system extends the mobility of the pedestrian, allowing more people to commute and meet other transportation needs without the use of the automobile.

Improves Air Quality

Although air quality in the SKATS area is expected to improve with the implementation of this Plan, significant increases in the use of the automobile will degrade our air. Promoting pedestrian travel can be one of the most cost-effective pollution reduction strategies because walking displaces shorter auto trips that are the most polluting on a per-mile basis.

Public Cost Savings

Many public costs associated with automobiles are not borne by actual vehicle user fees, such as fuel taxes and license fees. As a result, the general public indirectly subsidizes vehicle travel by paying some of the costs for road construction and maintenance, police and ambulance services, and uninsured medical costs, among others. Increasing the overall share of trips made by pedestrians can serve to contain these costs, reduce wear and tear on our roads, and enable more efficient investment of public monies.

Energy Efficiency

Walking is an extremely efficient means of transportation relative to motor vehicles. Increasing pedestrian travel reduces the need to import and consume petroleum fuels. Heavy reliance on petroleum fuels has a variety of environmental consequences including greenhouse gas emissions, urban air pollution, oil spills, and impacts of drilling operations. In addition, such imports contribute to a trade imbalance and have negative effects on the overall economy.

SKATS' Role in Pedestrian Planning

The primary role of SKATS (the local MPO) in pedestrian planning is to establish a series of regional policies that embody goals and objectives related to the pedestrian systems of regional significance to ensure that walking is a viable transportation option for meeting mobility needs in the Salem-Keizer area. As a consequence, the regional Plan deals specifically with only those issues related to accessibility to and within regional activity centers and major transit transfer stations. The actual network of pedestrian facilities in the SKATS area is planned, funded, constructed, and maintained by the area's jurisdictions (ODOT, Marion and Polk counties, and the cities of Salem, Keizer, and Turner). SKATS cooperates with these local jurisdictions to identify and implement priority pedestrian projects that improve the pedestrian environment in the areas and corridors of regional interest. Through policies identified in this Plan, pedestrian issues will also be considered in the planning and programming of multimodal projects for the regional transportation system.

The Regional Pedestrian System

The regional pedestrian system comprises those pedestrian facilities that serve a regional function, meaning that they serve the region's major activity centers and the major transit

transfer center. Major activity centers are focused concentrations of activities of regional significance. In the Salem-Keizer area the current major regional activity centers are:

- The Salem Central Business District (CBD)
- The Capitol Mall
- Willamette University
- Lancaster Mall
- Chemeketa Community College
- West Salem transfer station

Future activity centers were considered in the Salem-Keizer Transit's *Short-term Strategic Business Plan* (2004). Several centers and mixed use transit oriented centers are defined in the plan in addition to the ones listed above. These include:

- Keizer transfer station
- South Salem Mixed Use Transit Oriented Center

The regional transportation policies contained in this plan element are focused on access within and to these activity centers. At the present time, direct pedestrian connections from the adjacent portions of the regional highway system to these major activity centers and the downtown Salem transit transfer center already exist and require no major additional improvements at the regionally significant level. Pedestrian networks and connections that serve other parts of the region are considered to be of local rather than regional significance and are addressed in the local transportation plans being prepared by the respective local jurisdictions within the region.

Goals, Objectives, and Policies

Goal 1: A continuous network of safe, convenient, and accessible pedestrian facilities to and within regional activity centers and major transit facilities.

Objective: *To ensure a viable system of pedestrian facilities of regional significance.*

Policy: Pedestrian issues shall be included in the prioritization of projects for allocation of all regional funds.

Policy: Support continuation of current (or equivalent) federal, state, and local funding sources to construct or improve pedestrian facilities in the region.

Policy: Encourage the timely repair and maintenance of existing pedestrian facilities in regionally significant settings.

Policy: Ensure that all pedestrian facilities are accessible and constructed in accordance with ADA standards, including reasonable grades and adequate clearances.

Goal 2: **A substantial increase in the percentage of trips made by walking for all trip purposes in the region**.

Objective: *Encourage local land use patterns, densities, and designs that decrease trip lengths and that support walking as a practical and attractive transportation mode.*

Policy: Support an urban design that adequately considers pedestrian needs.

Policy: Encourage the delineation of safe pedestrian ways, emphasizing separation from vehicular areas using planting strips, crosswalks, and increased lighting where appropriate.

Objective: *Encourage appropriate linkages with other alternative modes of transportation, including public transit and bicycling.*

Policy: Support the incorporation of multimodal connections and modal balance into regional transportation facilities.

Recommended Improvements

Given supportive facilities and land use patterns, pedestrian travel can replace a significant number of auto trips. The following actions are necessary to facilitate walking as a viable mode of transportation. Local jurisdictions in the region are encouraged to incorporate these actions into their respective local transportation system plans and their land use, zoning, and building regulations, and implement them when feasible, appropriate, and practicable:

- Construction of new sidewalks and pedestrian facilities
- Creation of pedestrian-friendly environments
- Promotional campaigns to encourage walking

Construction of New Sidewalks and Pedestrian Facilities

There is a direct correlation between the provision of good walkway networks and their use. All things being equal, the construction of missing links in pedestrian facilities serving regional activity centers or major transit facilities should be prioritized over new facilities that have no immediate linkage in the overall circulation system. Regional pedestrian facilities comprise only a small fraction of all pedestrian facilities in the urban area, the majority of which serve a local function. For the facilities at the local level, providing a safe and convenient connection to schools, parks, shopping and transit stops are the priorities as defined by the local jurisdictions.

The projects listed in **chapter 15** either provide the linkages between regional centers that are necessary to support pedestrian movement, or address issues that are detrimental to the safe and convenient movement of pedestrians. Many of these projects are part of converting a road

to "urban standards," where the inclusion of sidewalks and bike lanes, as appropriate, are the norm. Several of the proposed projects utilize railway right-of-ways that have either been abandoned or are likely to be abandoned in the near future. These off-street paths will provide pedestrians and bicyclists a safe and attractive route to travel between regional activity centers.

One project that characterizes this is the 12th Street Promenade (see **Map 7-1**). The 12th Street Promenade project was developed to address the safety issue surrounding the Union Pacific rail line. The majority of collisions between trains and pedestrians have occurred on this stretch of track. In addition to improving the aesthetics of the environment for walkers, it will provide a connection between the Capitol Mall area and the Amtrak Station, facilitating the intermodal nature of the station.

Outstanding Issues

Providing safe and convenient pedestrian links along and across the regional road system is one of the policies of this Plan. Currently, there are several areas in the Salem-Keizer area where this is not being met. One such area is along Highway 22 between Lancaster and Cordon Road. On the south side of the highway is located a housing development with few to no stores or other amenities. On the north side is located a new elementary school and numerous retail and food stores. Due to the poor pedestrian linkages, and the circuitous route that walkers face, many people walk to the stores by crossing Highway 22, cutting through the fences that were erected along the right-of-way. Due to the high traffic volume and lack of any pedestrian accommodations along the highway, this current situation has the potential for pedestrian fatalities and injuries. Currently, ODOT has recommended the construction of a pedestrian bridge linking the two areas terminating around Connecticut Street on the north side.

Ensuring connectivity between Keizer and Salem for all modes is a continuing aim for the Regional Transportation Systems Plan. One option to address this situation would be the development of a multi-use path along the Willamette River, providing access for the residents of Keizer west of North River Road to downtown Salem. This path would be part of the larger Willamette Partnership (WP) plan to link cities along the Willamette River together via a multi-use path. Currently, this proposal is still in the conceptual stages, with no specific routes through Salem-Keizer identified. The completion of a path as envisioned by the WP is compatible with the goals of the RTSP to provide residents of Salem-Keizer with multiple mode and route options when traveling between origin and destination.

Combining the two issues above, there needs to be reexamination of the current regional bicycle and pedestrian networks to determine their suitability in facilitating the safe and easy movement of people using these modes.

These issues will require additional study and public deliberation and input before a preferred alternative can be identified and included in the Plan.

7 - Regional Bicycle System

Introduction

Bicycles offer a viable and economical mode of transportation with fewer negative impacts on air quality and finite land resources than those associated with the automobile. This chapter addresses issues associated with our need to provide an adequate network of facilities to accommodate regional bicycle trip demand.

By improving the efficiency of our existing transportation system, we can move more people and goods on the facilities we already have in place. The development of a balanced, multimodal transportation system provides us with more mode choices than just the single-occupant vehicle. By creating additional realistic travel options, such as bicycling, we can expand our transportation flexibility and improve our overall community mobility.

The bicycle is a tremendously efficient form of transportation. It burns no fossil fuels and requires very little road space. Bicycles can quickly transport people over distances of up to five miles (or even more) and do not use up significant amounts of our urban land resource for parking. Since many travel trips in the SKATS area are under five miles, there is a potential for shifting some car trips onto bicycles. For this reason, promoting the use of bicycles is an important strategy to reduce traffic congestion and air pollution and make more effective use of our existing transportation infrastructure.

Historically, one of the main barriers to increased bicycle use in the Salem-Keizer urbanized area is the lack of a direct, continuous, convenient, and safe system of bicycle facilities. A major result of recent transportation improvement efforts in the area has been to successfully plan and implement missing portions of the region's bicycle system. The Regional Bicycle System provides an adequate system of bicycle facilities in the Salem-Keizer area that will serve to facilitate our increased use of bicycles to meet our daily transportation needs. Significant increases in the use of bicycles requires that:

- an appropriate infrastructure of regional and local bicycle systems is in place; and
- adequate supporting facilities such as bicycle parking, storage, etc., are provided at key locations.

To this end, this chapter includes:

1) the bicycle system of regional significance and definitions of the Regional Bicycle System facilities;

2) an inventory of the current bicycle infrastructure and a description of its service area;

3) the goals, objectives, and policies related to the Regional Bicycle System;

4) the facility and financial needs associated with completing the Regional Bicycle System over the next 24 years; and

5) the regional strategies and specific improvements required to meet the goals and objectives of the Plan related to bicycle travel.

Regional Bicycle System (RBS) and Function

The designated RBS (**Map 7-1**) identifies the interconnected network of bicycle facilities that form the primary structure of the Salem-Keizer area's transportation system specifically designed to accommodate longer-length, "regional" bicycle trips. This system is intended to provide a safe and efficient bicycle network across and around the urban area and direct bicycle access to regional activity centers such as Salem's Central Business District, the Capitol Mall, Lancaster Mall, Chemeketa Community College, Salem Airport/Fairview Industrial Park, the State Fairgrounds, Salem Industrial/Cherry Business Park, Wallace Marine Park, and Minto-Brown Island Park.

SKATS "owns" none of the roadways in the area. Rather, the facilities that comprise the Regional Bicycle System are owned and operated by a number of different jurisdictions in the SKATS region: the city of Salem, the city of Keizer, Marion and Polk counties, and the Oregon Department of Transportation (ODOT). Each of these entities is responsible for planning, implementing, operating, and maintaining some portion of the overall Regional Bicycle System. Actual bicycle trips will probably use a mix of regional and local facilities. The "regional" system consists of a coordinated network of bicycle facilities on city streets, county roads, and state highways. The emphasis on "regional" bicycle travel characterizes the functional difference between the regional system and the local systems. The underlying function of the regional system is to accommodate longer distance bicycle trips and provide bicycle access to regional activity centers. The local bicycle systems are designed to accommodate shorter, more localized trips and provide connections to and from the regional facilities. For example, someone commuting by bicycle from a residence in the city of Keizer to a place of employment in the Capitol Mall area would be considered to be making a regional bicycle commute trip, while someone riding their bicycle to the corner store to buy a loaf of bread would be making a "local" trip. In general, regional bicycle trips normally seek the shortest and most direct route available. A person making a typical bicycle commute trip between East Salem and the Capitol Mall area would likely use one of the major east-west travel corridors on the regional system, such as State or Market streets, which provide the fastest and most direct travel route with the minimum amount of delay (from stop signs and intersections). The regional system identified

in this Plan complements the local bicycle system (which consists primarily of collector and local service facilities intended for shorter trips and more localized travel demand), and is either coincident with, or accessible to, the region's transit system (Cherriots) routes. This provides the bicyclist a greater opportunity for connectivity between bikes and buses and effectively expands the coverage and extent of the regional bicycle system.

Regional Bicycle System Facilities

"Bicycle facility" is a general term used to denote physical improvements and provisions designed to accommodate and encourage the use of bicycles as a viable and practical mode of transportation. The SKATS Regional Bicycle System has two classes of facilities: the routes that bicyclists take between origin and destination, and the supporting facilities that exist at the destination.

The SKATS Regional Bicycle System envisioned in this Plan contains approximately 174 miles of bicycle routes, consisting of bicycle lanes, multi-use paths, shoulder bikeways, and wide outside lanes and alternative bicycle routes. These routes are generally associated with the highway system of regional significance and provide access to major employment, shopping, business, and educational centers and major transportation connections in the Salem-Keizer area. The bicycle facilities identified in this plan are located within the SKATS boundary. Facilities located outside of this area are addressed in the transportation plans of the respective responsible jurisdiction.

Facilities to support the use of bicycles include racks on buses, provision of bicycle parking and signage. These facilities are an important part of the regional bicycle system, supporting the use of the bicycle as a practical means of transportation.

There are six basic types of bicycle routes on the Regional Bicycle System. A brief description of each type of bicycle route is provided below in descending order of classification.

Bicycle Lanes: A portion of a roadway that has been designated for the preferential or exclusive use of bicyclists. The standard width for bicycle lanes is six feet with a minimum of four feet (five-foot minimum if adjacent to a curb, parking, or guardrail). Bicycle lanes should be marked with an eight-inch white stripe and pavement stencils. If parking is permitted, a five-foot wide bike lane should be placed between the parking space and the travel lane.

Shoulder Bikeway: A type of bikeway where bicycle travel is provided on the paved shoulder of the roadway. Shoulder bikeways are most common on rural roads. The standard width for a shoulder bikeway is six feet. A five-foot minimum can be used if adjacent to a curb, parking, or guardrail. If there are severe physical limitations, a four-foot wide shoulder is regarded as minimally acceptable.

Wide Outside Lane (formerly called Shared Roadway): Bicyclists and motorists share the same travel lanes, which are at least 14 feet wide, but no greater than 16 feet wide. On wide outside lanes, bicyclists and motorists have equal status as vehicles occupying the travel lane. This type of facility is often the only alternative when there is inadequate right-of-way available for

bicycle lanes without creating undesirable impacts. Wide outside lanes are the minimally acceptable type of bicycle facilities on the RBS and should be considered for upgrading where feasible. Existing wide outside lane segments of the RBS will be re-examined in subsequent Plan updates to determine whether sufficient changes in limiting conditions have occurred to warrant further consideration for eventual upgrading to a higher class of facility.

Multi-Use Path: Multi-use paths are physically separated from motor vehicle traffic and are normally two-way facilities, and shared with bicycles, pedestrians, joggers, and skaters. The standard width is 10 feet for a two-way multi-use path.

Shared Roadway: There are no specific bicycle standards for shared roadways. They are simply the roads as constructed. Shared roadways function well on local streets, collectors, and rural roadways where traffic volumes and speeds are low. On urban arterials, roads should be widened to include shoulder bikeways or bicycle lanes.

***Bicycle Boulevards*:** Bicycle boulevards are the same as *Shared Roadways*, but with minor modifications made to enhance the convenience and safety of bicycle users, such as prioritizing flow along the route at intersections. These modifications are typically made to local streets, but can serve regional trips. Bike boulevards are often located on streets parallel to major roads.

Facilities for bicycle parking include bike racks, bike lockers, and bike stations or garages. Each of the facilities provides the bicyclist a means of securing their bike when they reach their destination.

Bike racks: The most common of the parking facilities for bicycles, these allow the bicyclist a convenient and temporarily safe spot for parking their bicycle while shopping or eating at an establishment. Typical bike racks include inverted U bars allowing two bikes to be locked to them. Usually these are uncovered and located on the sidewalk.

Bike lockers: These are enclosed lockable boxes, large enough to place a bicycle and a few bags. Lockers are typically located in the downtown area, or where there is a need for long-term safe parking of a bicycle. More expensive than bike racks, they provide protection from the elements and possible vandalism to the bike. Bike lockers are rented from a central authority for set periods of the year.

Bike stations/garages: For areas with high bicycle usage and storage needs, these types of facilities provide the highest degree of security and protection for the bicycle. Bike garages provide an enclosed, lockable storage area for many bikes. These are typically unattended, with the user renting a key from a central authority. The bike station takes this concept and adds amenities that make commuting by bike more attractive, such as showers, changing rooms, and on-site service for the bicycle. Occasionally, these facilities include a complete bicycle store or provide rentals.

The Regional Bicycle System envisioned in this Plan embodies a combination of existing and committed bicycle facilities and recommended system improvements, which are described in the following sections of this document.

The Existing Regional Bicycle System

Considerable progress has been made to date by affected jurisdictions in the SKATS area toward completing the bicycle facilities identified as part of the Regional Bicycle System. Several on-street bicycle lanes and other related facilities that encourage bicycle travel have been constructed in recent years. Where they exist, these bike lanes provide a designated, safe space for the bicyclist on the roadway surface and respond to the fact that bicyclists generally wish to travel in patterns similar to motorists and want to take the most direct and safest route possible.

Unfortunately, however, significant portions of the Regional Bicycle System have yet to be completed. On the whole, we still lack a seamless network of bicycle facilities with which to serve the regional trip-making needs of urban residents who choose to travel by bicycle. The existing network of bicycle facilities is still somewhat disjointed, with many important links missing. System continuity is vital if bicycling is to become a convenient, safe, and attractive transportation alternative in the region. Although a number of important segments of the Regional Bicycle System are already in place, under construction, or committed to be built in the near term, the "matter-of-course" provision of roadway bicycle facilities has not always been easy in the past, due in part to a lack of community consensus, insufficient funding, and the perceived high costs of displacing other uses. One alternative to costly right-of-way acquisition, the removal of on-street parking, can impact convenient automobile accessibility to nearby commercial businesses. Other low-impact bicycle facility alternatives, such as wide outside lane treatments, may not provide the level of safety, continuity, or directness necessary to significantly encourage bicycle use as a viable alternative to the use of the automobile.

As of the end of 2002, approximately 110 miles (63 percent of the total system) of the RBS are existing facilities, which include all roadway bicycle facilities scheduled to be constructed through that year (**Map 15-3**). As more facilities are added to the region's bicycle system, it is expected that the level of bicycle usage in the SKATS area will increase.

Despite this progress, there are still a significant number of "missing" and/or incomplete segments of the system, with few continuous linkages to regional activity centers and other major destinations. As a result, many bicyclists are often forced to share the road with automobiles without a designated space to ride safely; or they must go out of direction on the local street system in order to reach their destination.

As of 2006, bike lockers are located only in the downtown area (**Map 7-1**), with the more ubiquitous bike racks located throughout the Salem-Keizer area. Since the lockers were introduced in 1997, the number rented increased yearly until 2000, at which point a decrease has occurred until 2006, when the number increased (**Table 7-1**). Zoning codes for the city of Salem prescribe the number of bike racks necessary in combination with business development.

Currently, all Salem-Keizer Transit buses are equipped with bike racks, allowing two bicycles on each bus. Future buses will also be equipped with bike racks.

Table 7-1
Yearly Bicycle Locker Rentals, 1997 to 2004

	AVERAGE NUMBER OF LOCKERS RENTED	NUMBER OF LOCKERS	PERCENT RENTED
1997	7	26	27%
1998	11	26	42%
1999	13	26	50%
2000	17	26	65%
2001	15	26	58%
2002	15	30	50%
2003*	13*	32	41%
2004*	12	32	38%
2005*	13	32	41%
2006 - half	19	32	

* October 2003 to October 2005: 6 lockers unrentable due to construction at Chemeketa Parkade

Goals, Objectives, and Policies

The Bicycle System chapter is a blueprint for developing a safe, seamless, and efficient system of bicycle facilities in the SKATS area. Since SKATS does not actually build, maintain, or operate any portion of the facilities comprising the system, the Bicycle System chapter of the RTSP is implemented through the cooperative adoption of regional goals, objectives, and policies. The local bicycle system plans must be consistent with the adopted goals, objectives, and policies contained in the regional Plan. In turn, the regional Plan must be consistent with state and federal plans, policies, and mandates.

The goals, objectives, policies, and recommendations included in this chapter were formulated through an extensive development and review process with the SKATS Bicycle Advisory Committee (BAC) during the 1996 update, and are intended to address the major regional issues affecting bicycling needs that were identified in the public process. All of the goals, objectives, and policies contained in this chapter are geared toward promoting the increased use of bicycles as a means of meeting the transportation needs of the citizens of the region.

Goal 1: An identified system of regional bicycle facilities within the Salem-Keizer urban area.

Objective 1: *Establish a system of regional bicycle facilities within the Salem-Keizer urban area that provides an adequate level of service to meet regional bicycling mobility needs.*

Policy 1: The Bicycle System chapter of the Regional Transportation Systems Plan shall designate the bicycle system of regional significance the Regional Bicycle System (RBS) within the Salem-Keizer urban area.

Objective 2: *Develop and maintain an accurate and up-to-date inventory of the RBS in order to respond to the changing needs of the bicycling public in the region.*

Policy 1: The RBS facilities inventory shall be included in the Bicycle System Element of the RTSP and updated on a regular basis to maintain currency and accuracy.

Goal 2: A safe system of regional bicycle facilities within the Salem-Keizer urban area.

Objective 1: *Design a system of regional bicycle facilities that enhances safety by improving compatibility among bicycling and other transportation modes.*

Policy 1: All bicycle facilities on the Regional Bicycle System shall be constructed in accordance with ODOT bicycle facility standards where applicable.

Policy 2: Project designs that accommodate bicycle facilities within the roadway rights-of-way shall be implemented on the Regional Bicycle System where practicable.

Objective 2: *Provide for well maintained Regional Bicycle System facilities that afford a safe environment and reduce potential hazards to the traveler.*

Policy 1: Jurisdictions are encouraged to adopt routine maintenance standards and practices that ensure smooth, clean, and safe conditions on the RBS facilities.

Policy 2: Local jurisdictional support of volunteer community services and programs that assist in the provision of adequate maintenance service on Regional Bicycle System facilities.

Policy 3: Bicycle safety devices such as bicycle-proof drain grates, rubberized or concrete pads at railroad crossings, and appropriate signage shall be utilized on RBS facilities wherever practicable.

Objective 3: *Achieve greater public awareness of safe bicycling and motoring practices, procedures, and skills.*

Policy 1: The development and implementation of regionwide bicycle safety and education programs aimed at all ages are encouraged in order to improve bicycle skills, increase the observance of traffic laws, and enhance the overall safety of the traveling public in the region.

Policy 2: Encourage jurisdictions to monitor and analyze bicycle accident data to formulate ways to improve bicycle safety.

Goal 3: A continuous and direct system of regional bicycle facilities in the Salem-Keizer urban area that adequately responds to the transportation needs and desires of bicyclists.

Objective 1: *Establish a continuous and direct system of regional bicycle facilities that adequately responds to the regional transportation needs of bicyclists in the Salem-Keizer urban area.*

Policy 1: Designate a continuous and direct system of regional bicycle facilities in the Bicycle System chapter of the SKATS Regional Transportation Systems Plan.

Policy 2: Identify facility improvements necessary to ensure a direct and continuous network of bicycle facilities on the Regional Bicycle System.

Objective 2: *Establish a Regional Bicycle System that provides access to regional activity centers and other major destinations.*

Policy 1: Designate a continuous and direct system of regional bicycle facilities that provides access to regional activity centers and other major destinations.

Policy 2: Identify necessary facility improvements on the Regional Bicycle System to ensure adequate bicycle access to regional activity centers and other major destinations.

Goal 4: A constructed system of regional bicycle facilities within the Salem-Keizer urban area.

Objective 1: *Construct the bicycle facilities necessary to implement the established Regional Bicycle System by the year 2031.*

Policy 1: Affected jurisdictions shall include bicycle facilities on all newly constructed regional arterials.

Policy 2: Affected jurisdictions shall include bicycle facilities as part of major improvement projects on roadways identified as part of the Regional Bicycle System unless significant constraints can be demonstrated. In such cases, viable alternatives shall be provided.

Objective 2: *Adequately fund the construction of the bicycle infrastructure and supporting facilities necessary to complete the established Regional Bicycle System by the year 2031.*

Policy 1: Support continuation of current (or equivalent) federal, state, and local funding mechanisms to implement regional and local bicycle facilities and amenities within the Salem-Keizer urban area.

Policy 2: SKATS and local jurisdictions shall cooperatively seek additional revenue sources as necessary to ensure timely completion of the bicycle facilities that comprise the RBS.

Objective 3: *Ensure multimodal equity by incorporating bicycle facilities into the planning, design, construction, and maintenance activities associated with roadways identified as part of the RBS.*

Policy 1: Needed projects on the RBS shall be fully integrated into the evaluation and selection process associated with the development of the Region's Transportation Improvement Program (TIP).

Goal 5: A coordinated system of regional bicycle facilities in the SKATS area.

Objective 1: *Integrate the Regional Bicycle System facilities with other transportation modes.*

Policy 1: The Regional Bicycle System shall provide bicycle access to public transit transfer node(s), park-and-ride sites, and other major transportation centers such as regional airport terminals and passenger railroad stations.

Policy 2: Regional bicycle planning efforts shall be coordinated with other transportation service providers to assure the opportunity for intermodal connectivity.

Policy 3: Support the continuation of the "Bikes On Buses" Program for all public transit routes.

Objective 2: *Ensure a continuing, comprehensive, and cooperative planning process that provides for the efficient and timely implementation of the Regional Bicycle System Plan.*

Policy 1: Coordinate bicycle system planning and development efforts in the Salem-Keizer urban area with federal, state, and local agencies, as well as other public and private transportation providers.

Policy 2: Prepare, adopt, and update a Bicycle System chapter of the Regional Transportation Systems Plan that is consistent with federal and state guidelines and developed through a continuous, comprehensive, and cooperative transportation planning process, including thorough public review.

Policy 3: Ensure that the portions of the Local Transportation Systems Plans dealing with bicycling are consistent with the Regional Bicycle System Plan through recurring Plan review.

Policy 4: Coordinate roadway improvement projects in the region with recommended bicycle system needs to take advantage of cost sharing opportunities (i.e., resurfacing, widening, upgrading, etc.).

Objective 3: *Provide for an open and ongoing public involvement process that ensures full participation and input into the planning process associated with the development of the Bicycle System chapter of the Regional Transportation Systems Plan.*

Policy 1: Establish a regionwide public participation process that ensures timely public notice, adequate information and appropriate opportunities for public input regarding all improvement projects affecting the Regional Bicycle System.

Objective 4: *Provide a network of supporting facilities and amenities designed to enhance the Regional Bicycle System and encourage the use of bicycling as a practical transportation mode.*

Policy 1: Encourage the development and implementation of a system of supportive bicycle facilities and amenities (i.e., bicycle parking, storage, showers, system maps, etc.) within the Salem-Keizer urban area.

Policy 2: Encourage the development of adequate internal bicycle circulation systems at major regional activity centers.

Policy 3: Encourage the implementation of consistent bicycle signage throughout the SKATS area.

Recommended Improvements

Some of the needed improvements to the Regional Bicycle System are committed bicycle projects that are already scheduled for construction and have their funding obligated in the SKATS Regional Transportation Improvement Program (TIP) or other acknowledged public facilities plan. We are scheduled to add approximately three miles of bike lanes by the end of 2004. At that time, 65 percent of the system will be completed (**Map 7-1**). Many, if not all, of the bicycle lanes added in the past and to be added in the future are the result of street projects, typically to bring the street up to urban standards, rather than projects that specifically add bike lanes. A detailed list of committed RBS facilities is included in **Table 15-1.**

Even with the committed projects in the SKATS TIP, there will continue to be significant segments of the RBS missing, precluding convenient access to many regional destinations. As a result, many regional-length bicycle trips will still have to be made in circuitous or out-of-direction fashion on the local street system in order to reach their destination. Approximately 61 miles (35 percent of the total system) of additional recommended system improvements are needed beyond those already existing and committed (see above) to complete the RBS (**Map 15-3**). A detailed list of recommended improvements in addressing these needs is shown in **Table 15-2**.

The current level of utilization of existing bicycle lockers indicates that there is a meaningful demand for long-term, safe, and convenient bicycle parking in downtown Salem. Additional bicycle storage facilities are needed throughout the Salem-Keizer area to support the increasing use of bicycles as a means of commuting to work or to the store. In particular, this plan recommends adding, at a minimum, bicycle racks at all current and future transit centers and transfer stations. The provision of bicycle racks addresses the short-term parking needs of bicyclists, and provides a method to gauge demand at the individual transit transfer stations.

As demand for longer-term bicycle parking solutions grows, bicycle lockers will be provided for the extra level of security and weather protection they provide.

Outstanding Issues

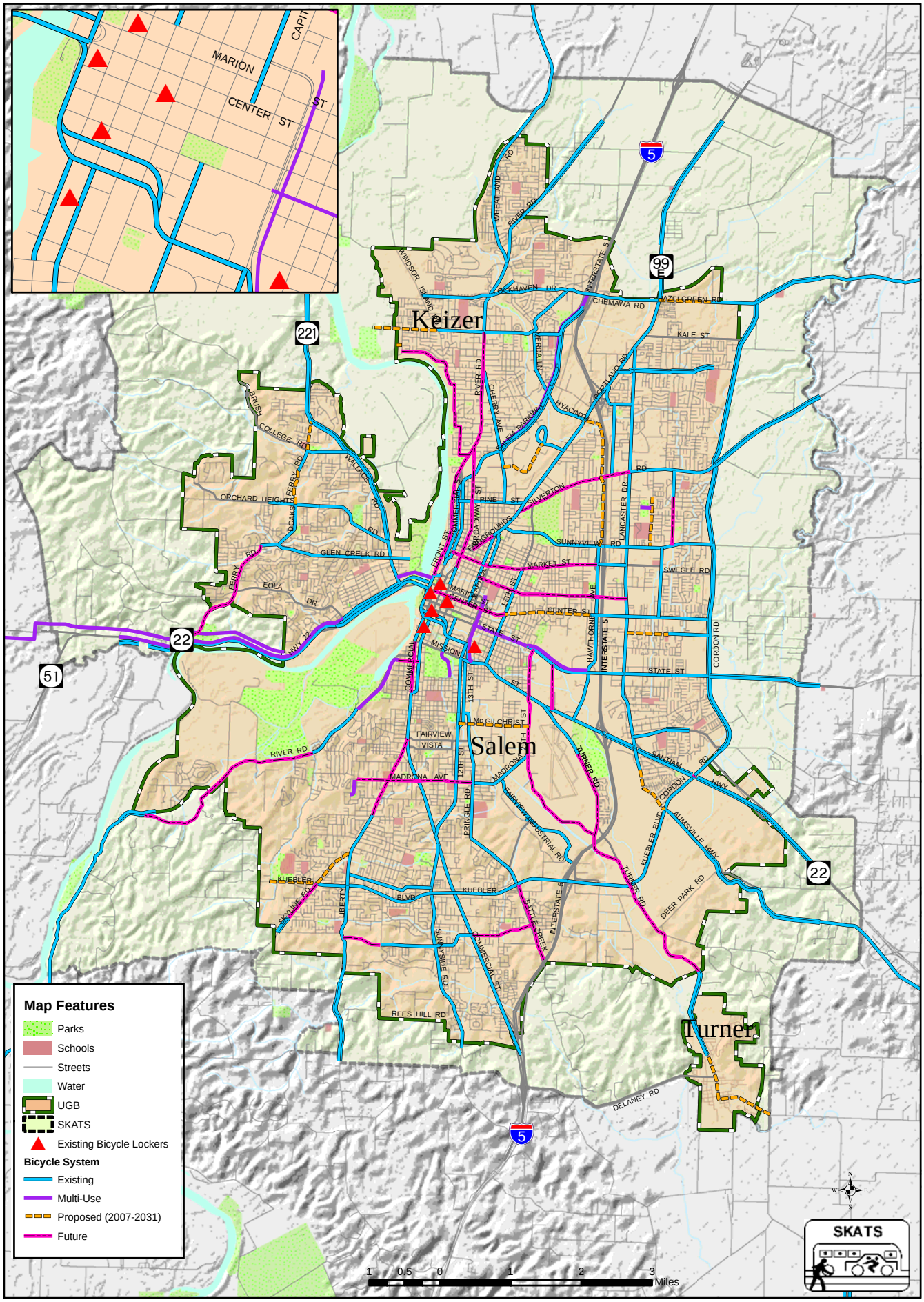
Several portions of the designated Regional Bicycle System in the SKATS area cannot accommodate the addition of dedicated bike lanes or even widened outside lanes. Two examples are North River Road from Lockhaven Road to the Salem Parkway and Liberty Road South, from Commercial Street to Browning Avenue. Impediments to the addition of bicycle facilities on these segments range from safety concerns to the financial cost of acquiring the necessary right-of-way to outright community opposition. Finding a satisfactory solution to these problem areas will require additional time and effort and remain an outstanding issue in the regional transportation planning process.

Connecting Keizer and Salem is a near-term goal for the Regional Bicycle System. Currently, Commercial and Liberty streets have bike lanes, as does Cherry Avenue. Broadway and North River Road do not have bike lanes, nor is there room in the current right-of-way of either street to expand them to include a bike lane. One option to address this situation would be the development of a bike path along the Willamette River, providing access for the residents of Keizer west of North River Road to downtown Salem. This path would be part of the larger Willamette Partnership (WP) plan to link cities along the Willamette River together via a multi-use path. Currently, this proposal is still in the conceptual stages, with no specific routes through Salem-Keizer identified. The completion of a path as envisioned by the WP is compatible with the goals of the RTSP to provide residents of Salem-Keizer with multiple mode and route options when traveling between origin and destination.

Combining the two issues above, there needs to be reexamination of the current regional bicycle and pedestrian networks to determine their suitability in facilitating the safe and easy movement of people using these modes. One area of study will be whether additional roads, classified below minor arterial, should be included in the regional bicycle network to facilitate the movement between the region's destinations while bypassing areas where the provision of bicycle lanes is problematic.

These issues will require additional study and public deliberation and input before a preferred alternative can be identified and included in the Plan.

Map 7-1
Regional Bicycle System



8 - Regional Goods Movement System

Introduction

Freight and commodities movements of all types are extremely important to the health of the SKATS area economy and, as such, they represent an essential element in maintaining our overall quality of life. The region's goods movement system is comprised of several elements. Truck routes, rail corridors, aviation facilities, pipelines, and inter- and intra-modal facilities must all function cohesively if the region's goods movement system is to operate efficiently. The linkages that allow for access between these elements are also vitally important to the commercial well being of our community. With the widespread prevalence of "just-in-time" production and inventory control techniques, America's warehouse is now "on the road" with goods from all sectors of the economy being shipped on an as, when, and where needed basis. As a result, disruptions in the flow of goods and services increasingly lead to significant negative impacts for manufacturers, distributors, retailers, and consumers.

The purpose of the SKATS Goods Movement System chapter of the Regional Transportation Systems Plan (RTSP) is to describe the problems associated with the movement of freight and commodities into, out of, within, and through the SKATS area and identify appropriate solutions for those problems. Through the implementation of the recommendations embodied in this plan, a regional goods movement system that adequately responds to the unique transportation requirements of the industries within the SKATS area can be ensured.

The Regional Goods Movement System

Efficient goods movement into and out of the SKATS area from the region's industrial and commercial areas is essential if area commerce is to continue to grow and thrive. The SKATS area's Regional Goods Movement System consists of pipeline, maritime, aviation, railroad, and highway elements (**Map 8-1**).

Pipelines

There are three regional pipeline systems located within or near the SKATS area. Kinder Morgan Energy Partners (KMEP) transports petroleum products through the Willamette Valley in their pipeline, which traverses the southeast corner of the SKATS area. The Northwest Pipeline Corporation (NWP) operates an interstate natural gas pipeline that passes just east of the SKATS area as it makes its way through the Willamette Valley. Northwest Natural Gas (NWNG) operates a system of high pressure natural gas feeder pipelines that serve the SKATS area and several communities to the west of the SKATS area. **Map 8-1** identifies the Regional Pipeline System in the SKATS area and depicts the alignments of the pipeline facilities in the

area. There are several smaller natural gas feeder pipelines serving residential and commercial users that are not shown on the Regional Pipeline System map.

Pipelines transport natural gas and petroleum products within and through the SKATS area. KMEP ships an average of 42,000 barrels of petroleum products through the SKATS area daily. NWP transports an average of 60 million cubic feet of wholesale natural gas to and through the SKATS area annually. NWNG distributes the natural gas brought to the area via the NWP pipeline. NWNG estimates that it distributes 10 million cubic feet of natural gas annually to customers throughout the SKATS planning area. The pipeline facilities operating within the SKATS area have an excellent safety record and have operated without incident.

Regional Pipeline System Inventory

Kinder Morgan Energy Partners, L.P. (KMEP) Facilities in the SKATS Area

Kinder Morgan Energy Partners, L.P. (KMEP), formerly Santa Fe Pacific Pipelines, owns and operates a petroleum products pipeline from Portland to Eugene, Oregon through the Willamette Valley.

The KMEP system collects refined petroleum products such as gasoline and diesel fuel from oil company terminals in northwest Portland. Some of the companies shipping products through the pipeline include Chevron, Exxon, Arco, Texaco, Tosco, and Tesoro. The products are pumped from various terminals in Portland to the KMEP pump station in Portland and then into the eight-inch diameter pipeline that extends 115 miles from Portland to Eugene. The amount of product carried through the pipeline averages 42,000 barrels per day (1 barrel = 42 gallons). In the SKATS area, the pipeline route is generally parallel to, and east of, Interstate 5 and is buried approximately three feet underground. The pipeline route traverses the southeast corner of the SKATS area (**Map 8-1**). One of three booster stations is located near the intersection of Kuebler Boulevard and Turner Road.

Northwest Pipeline Corporation (NWP) Facilities in the SKATS Area

The Northwest Pipeline Corporation is a wholesale natural gas supplier. It owns and operates an interstate natural gas pipeline system that begins in Colorado, Utah, and New Mexico (location of gathering basins) and extends west through Utah, Idaho, and then into Oregon along the Interstate 84 corridor. The Northwest Pipeline facility merges in Portland with another natural gas line from Canada and then continues south serving the Willamette Valley down to Grants Pass. The two 12- to 20-inch diameter pipelines are generally located parallel to Interstate 5 in a 60-foot easement, approximately three to five feet underground, one to five miles east of the SKATS area (**Map 8-1**). NWP transports an average of 60 million cubic feet of wholesale natural gas to and through the SKATS area annually. There are three gate stations (locations at which feeder gas lines tap into the interstate pipeline) located just east of the SKATS area. A boost compression station located in the Silverton area is used to increase velocity of the natural gas.

Northwest Natural Gas (NWNG) Regional Pipelines in the SKATS Area

Northwest Natural Gas is a retail natural gas distribution company that serves most of the state west of the Cascade Mountain Range. The regional NWNG facilities in the SKATS area consist of five natural gas high pressure feeder pipelines. Each of these feeder pipelines consists of a single 8- to 12-inch diameter pipe located in a 40-foot right-of-way or easement, approximately three feet underground. NWNG estimates that it distributes 10 million cubic feet of natural gas annually to customers in the SKATS planning area. Local natural gas service lines are not included in this inventory because they are not considered regional facilities.

The first feeder pipeline generally travels south along Highway 99E, Dietz Avenue, and River Road through downtown Salem, where it merges with the third feeder pipeline near the intersection of Front and Marion streets (**Map 8-1**).

The second feeder pipeline starts at the gate station in the Silverton area and generally travels west traversing the northern section of the SKATS area near Brooks and continues west to Lincoln City.

A third feeder pipeline begins at a gate station in Geer, generally traveling west along State Street and Pringle Parkway, merging with the second feeder pipeline near the intersection of Front and Marion Streets.

The fourth feeder pipeline begins at the gate station in Turner, generally traveling northwest along Turner Road, Kuebler Boulevard, and Battle Creek Road, merging with the third feeder pipeline near the Pringle Parkway.

The fifth feeder pipeline begins near the intersection of Front and Marion streets (where it merges with the first and third feeder pipelines) and travels west along Highway 22 to Dallas, Lincoln City, and Newport.

City of Salem Water Transmission Pipelines

The city of Salem owns and maintains two water transmission lines that traverse the city of Turner from the southeast to the northwest. A 54" to 46 " pipeline enters town near Marion Road and runs northwest up to and under 3rd Street. The second pipeline is a 36" pipeline that crosses Witzel Road north of Marion Road and runs northwest in a similar alignment with the first pipeline. These pipelines supply Salem and Turner with drinking water.

Maritime

Currently, there are no maritime port or navigation facilities within the SKATS area. Barging activity on the Willamette River diminished in importance as a means of transporting goods to and from the SKATS area as rail and road access improved. No commercial barge traffic currently serves the river as far south as Salem. The Wheatland and Buena Vista ferries provide vehicular and passenger services across the Willamette River just north and south of the SKATS area, respectively. Either of the ferries can carry only one tractor-trailer at a time. While commercial vehicles can, and occasionally do, use the ferries, it is uncommon for them to do so.

Between July 1, 1993 and June 30, 1995, commercial vehicle movements on area ferries amounted to approximately 479 vehicles for the Buena Vista Ferry and 8,823 vehicles for the Wheatland Ferry. Precise classification of these vehicle counts is difficult due to counting methodology, but these figures can be considered representative.

A more detailed discussion of this system is presented in the Regional Maritime System chapter.

Aviation

McNary Field is the SKATS area's only aviation facility. It is located four miles southeast of the downtown core in the city of Salem. In a broader context, the airport is located 55 miles south of the Portland International Airport and 65 miles north of Mahlon Sweet Airport in Eugene. McNary Field comprises about 749 acres and is owned and operated by the city of Salem. The airport serves as a General Aviation Transport airport at this time, meaning that the primary airport activity is neither military nor conducted by regularly scheduled air carriers. Federal Express operates a facility at the airport with airside access, and United Parcel Service (UPS) ships air cargo from Salem via Sports Air, a contract air freight carrier based out of the Troutdale airport.

McNary Field provides the facilities for one daily air freight operation (Sports Air, a UPS contract carrier) and also provides for occasional use by a second air freight operation (FEDEX).

Responses from electronic component manufacturers to the Goods Movement Survey in 1995 indicate that the majority of their finished products are currently shipped via air freight. This can be attributed to the high value and relatively light weight of their finished products and the time-sensitive nature of the electronics industry in general.

A more detailed discussion of this system is presented in the Regional Aviation System chapter.

Railroads

The SKATS region is served by one of the major (Class I) railroad companies that operate in the state of Oregon: the Union Pacific (UP). The UP operates in primarily a north-south rail corridor that traverses the length of the SKATS region. The Willamette Valley Railway (WVRY) has abandoned their line from the city line to 14th Street SE, with their track east of Cordon Road currently serving as storage for rail cars. The area's second Class III carrier, Portland & Western, began operating former BNSF track from Norris Road, north of Keizer to Portland in 1998. In 2002, they acquired the track from Keizer to Eugene from BNSF.

There are approximately 35.6 miles of trackage (not counting spurs and/or sidings) in the SKATS region associated with these three principal rail corridors. Approximately 25 miles (70%) of this infrastructure is located inside the Urban Growth Boundary (UGB); 10.6 miles (30%) are located outside the UGB.

The region's major rail spur, the P&W/UP interchange track, is currently classified as yard trackage and runs just north of Johnson Street NE through the Cherry Avenue Industrial Area. This trackage is now used as the principal interchange between the UP and P&W mainlines through the Willamette Valley. Forty-three SKATS area business addresses are also currently served by active rail sidings.

The UP operates a rail yard bordered by Cross Street SE to the north, Vista Avenue SE to the south, Pringle Road SE to the west, and 14th Street to the east.

As of 2004, up to twenty-four UP through trains and up to six P&W through trains pass through the Salem-Keizer area daily. This number does not take into consideration the locally generated "switch jobs" that occur daily. In addition, six Amtrak trains move through the Salem-Keizer area daily. The number of Amtrak passenger trains moving through the SKATS area is expected to increase as the High Speed Rail program becomes a reality. This is not expected to affect overall rail traffic, as advances in Positive Train Identification will allow for increased train traffic levels, while maintaining operational safety. A typical freight train consists of 60 to 100 rail cars and can extend up to a mile in length.

In 1999, the area was served by two Class 1 railroads that transported an estimated 30 million gross tons of cargo through the Salem-Keizer area. The region's two Class 1 railroads carried a total of 11,388 rail car loads of hazardous materials, of all hazard classes, through the SKATS area during 1994.

The UP Valley Mainline crosses twelve regionally significant roadways at grade. The projected 2000 average daily traffic (ADT) is 130,000 vehicles. The 2025 forecasted traffic level estimates that 167,000 vehicles per day will pass over these rail crossings. Conflicts between existing and projected traffic levels and the likelihood of increased passenger and freight train traffic frequencies must be considered in the future.

The P&W Oregon Electric line crosses six regionally significant roadways as it passes through the SKATS area. The total ADT passing over these crossings in 2000 amounted to 106,440 vehicles. The 2025 traffic forecasts estimate that 145,000 vehicles will pass over these six crossings. It should be noted that P&W rail traffic, both through and local, moves through the SKATS area at a far lower speed than a typical UP through train, and that P&W operates fewer through trains than UP does.

A more detailed discussion of this system is presented in the Regional Rail System chapter.

Highways

The vast majority of freight movements have a truck modal component somewhere in the process. Even when trucks are not physically used to transport a particular item, they are often used in a supporting role, as in the case of power or telephone utility repair vehicles. Given the importance that adequate truck access plays in movement of goods, the servicing of critical utilities, and the movement of public safety equipment in the SKATS area, it quickly becomes clear that a well-developed truck circulation system is extremely important to the SKATS area.

The interstate and state highways passing through, and the major arterials within, the SKATS area form the backbone of SKATS area truck movement infrastructure. Currently, no need for a defined system of truck routes has been established within the Salem-Keizer area. In addition, the city of Salem does not regulate the location of truck routes within its boundary. However, a regional freight roadway network has been identified (**Map 8-1**) that links the SKATS region's principal industrial and commercial areas regionally and nationally. The primary corridors of this system include I-5, Oregon Highway 22, Salem Parkway, Portland Road, Lancaster Drive, and Commercial Street; and portions of 25th, Hawthorne, Liberty, Market, Madrona, Pine, and State Streets. In addition, Cherry Avenue, Chemawa, Hazelgreen, and Indian School Roads and Blossom Drive; and portions of Hyacinth Street, Salem Industrial Drive, Cordon Road, and Kuebler Boulevard are also included in this regional network. In addition, ODOT has designated I-5 between Oregon Highways 22 and 214 as a Truck Safety Corridor.

Generally, while truck freight moves through the Salem-Keizer area safely and efficiently, higher traffic levels are resulting in increasing levels of delay. While truck freight constitutes a relatively small percentage (two to seven percent) of the overall traffic flows on the freight-supportive roadways, the importance of moving such vehicles through the roadway system efficiently should not be understated. Freight tonnages transported into, out of, within, and through the SKATS area continue to increase annually as the SKATS area economy grows. Private sector expansion in the food processing, semiconductor, and retail sectors of the SKATS area economy will continue to add significantly to existing levels of commercial traffic.

A Goods Movement Survey of 11 goods-producing and freight-shipping companies was conducted in October 1995 by SKATS staff. The results indicated that these firms generated approximately 825 tractor-trailer trips per day and that these trips were responsible for nearly 62 million gross pounds of freight *per day*. This amount of weight is equivalent to approximately four 90-car freight trains.

A more detailed discussion of this system is presented in the Regional Highway System chapter.

Principal Industrial Areas

Most freight shipments generated in the area come from firms located within the SKATS area's industrial areas (**Map 8-1**). Access to these industrial areas is generally good, although some improvements are needed (see Recommended Improvements).

The Northgate Industrial Area includes both the Salem and Cherry Avenue Industrial Parks. Cascade Warehouse, UPS, Morse Brothers, Siltec, Viking Freight System, Roadway Package System, Blue Diamond, Columbia Distributors, Coast Distributors, Western Beverage, Capital City Transfer, The Garten Foundation, White's Farms, the State of Oregon General Services Warehouse, and other major shippers operate facilities in this industrial area. Other firms within the general vicinity of this industrial area include Stark Trucking. The approximate boundary of this area comprises Blossom Drive to the north, Salem Parkway to the west, Portland Road to the east, and Pine Street to the south. Primary roadway access to this industrial area is provided by Blossom Drive, Portland Road, Salem Parkway, and Pine Street. Secondary roadway access from the Salem Parkway is provided via Cherry Avenue NE, Hyacinth Street, and Mainline Drive. This is the only area within SKATS served by both of the

region's railroads, and an interchange between the two railroads exists within the boundaries of the Cherry Avenue Industrial Park.

The South Salem Industrial Area includes several industrial sites surrounding Salem's McNary Field, the Fairview Industrial Park, NORPAC and Boise Cascade facilities, and several industrially zoned vacant parcels. This area is divided by I-5, with the eastern portion bordered by Highway 22 to the north and Kuebler Boulevard and Lancaster Drive to the south and east; and the western portion bordered by Highway 22 and Hines Street SE to the north, 13th Street and Strong Road SE to the west, and Marrietta Street SE to the south. Major access routes into the area from I-5 include Highway 22 to the north and Kuebler Boulevard to the south. Access to the interior of this industrial area is provided by 25th Street and Airway Drive SE (south of Highway 22), Turner Road, Lancaster Drive SE, and McGilchrist Street and Madrona Avenue SE. The western edge of this area is crossed from north to south by the UP's Valley Mainline, and the UP's Salem rail yard is located just south and east of Mission and 13th Streets, respectively.

The Front Street Industrial Area is situated primarily between Commercial Street and the Willamette River to the area's east and west, and Locust and Union Streets to the north and south. It is one of the oldest industrial areas in Salem, serving firms such as Truitt Bros., Stewart Stiles, Cascade Warehouse, Liquid Sugar, and United Transfer. Road access to the area is gained via Highway 99E (Business), which is comprised of Commercial and Liberty Streets NE in this part of Salem. Rail service is provided by the P&W trackage, which runs along Front Street through the area.

Transitional urban lands slated for eventual industrial development are dispersed along the entire length of Cordon Road. Access to the northernmost of these sites, located at the southwestern corner of the intersection of Hazelgreen and Cordon Roads, is quite good. The site can be reached from I-5 or Highway 99E via Hazelgreen Road. Recently, the majority of this site has been platted for residential development. The next transitional site identified for industrial development is located at the northwestern corner of the intersection of State Street and Cordon Roads. The third transitional site is located both east and west of Cordon Road just north of Highway 22.

Goals, Objectives, and Policies

Goal 1: **Efficient and coordinated transport of goods into, out of, within, and through the SKATS area.**

Objective: *Provide a system of efficient and coordinated transport of goods into, out of, within, and through the region.*

Policy: Support continued public and private efforts to develop and enhance the efficiency of the SKATS area's goods movement transportation systems.

Goal 2: Safe transport of goods into, out of, within, and through the SKATS area.

Objective: *Reduce the number and severity of commercial transportation-related accidents.*

Policy: Support private, ODOT, PUC, and law enforcement commercial vehicle safety programs (all modes).

Goal 3: A goods movement system that provides a competitive advantage for SKATS area shippers whenever possible.

Objective: *Maximize modal options that facilitate nonpredatory competition between SKATS area commercial transportation providers.*

Policy: Identify and support appropriate development and expansion in services offered by commercial transportation providers.

Goal 4: Maximize access to viable, economical, alternative modes for SKATS area shippers.

Objective: *Provide efficient access to a range of viable, economical, alternative modes of transportation for SKATS area commercial needs.*

Policy: Ensure adequate goods movement system carrying capacities to adequately serve current and future needs of SKATS area shippers and transportation providers.

Goal 5: Maximize SKATS area's exposure to international marketplace.

Objective: *Improve SKATS area's global goods movement capability.*

Policy: Support efforts to increase the range and breadth of transportation services offered in the SKATS area that have, or directly connect to, an international component.

Goal 6: Minimize negative impacts associated with the regional goods movement system.

Objective: *Reduce negative noise, emission, and safety impacts associated with goods movement related activities within the SKATS area.*

Policy: Encourage use of noise overlay zones in areas adjacent to air and ground transportation corridors.

Policy: Clearly identify, and enforce the use of, truck routes within the SKATS area.

Policy: Control, where appropriate, the operations of commercial activities so as to minimize disruption to residential land uses and peak hour arterial flows.

Recommended Improvements

While we experience high levels of service from the majority of our goods movement system, mobility to and from certain industrial areas is currently deficient while other areas are expected to experience deficiencies in the future. Much of the non-roadway portions of the goods movement infrastructure are privately owned, and as such, local government can only play a supportive role.

Pipelines

Currently, pipeline facilities that serve customers within the SKATS area are considered adequate for the area's foreseeable future. Pipeline facilities operating in or near the SKATS area are privately owned and improvements are privately financed. Improvements to these systems being considered may include:

- Kinder Morgan Energy Partners' system
  - Increasing the use of a drag reducing agent in the pipeline
  - Increase use and/or installation of additional horsepower at the three booster pump stations
  - Installing an additional larger diameter pipeline along the current route
- Northwest Natural Gas system
  - Increasing the operating pressure
  - Increasing the diameter of the feeder pipelines in the current system
- Within the next five to ten years, the city of Salem plans to build a water transmission pipeline through Turner. The new pipeline is planned to follow an alignment similar to the location of the city of Salem's existing water pipelines running through Turner (see **Map 8-1**).

Maritime

The Mid-Willamette Valley Council of Government's Economic Development District completed a study in 1996 to determine the feasibility of reinstating commercial traffic on the Willamette River. The study concluded that dredging the river to allow for the movement of goods on the river is no longer feasible due to economic and environmental reasons. The study did support the use of the river for recreational and commercial ventures such as the tourist-oriented Riverboat. Ferry services to the north and south of the SKATS area should continue for the foreseeable future, as long as the system can maintain or expand its base of patrons.

Aviation

The most recent Airport Master Plan (AMP) for McNary Field was completed in 1997. Short-term needs identified include concrete overlays for both runways and an extension of the parallel taxiway to the main runway. Terminal repairs are taking place as part of an ongoing city of Salem maintenance program.

Longer term improvements call for lengthening the primary runway and eventual replacement of the airport terminal. Staged expansion of the airport's general aviation facilities is also being contemplated. The city is installing a new addition to the existing passenger terminal to provide space to meet current requirements for security screening and passenger check-in as part of the resumption of commercial passenger air service.

Railroads

All rail infrastructure within the SKATS area is privately owned and maintained by the railroads. Improvements are often made at the discretion of the railroads, with the Oregon Department of Transportation (ODOT) involvement occurring whenever there are safety or capacity concerns, or potential conflicts with other modes of transportation.

Most of the publicly funded rail infrastructure improvements proposed for the SKATS area are associated with the Enhanced Passenger Rail Service (EPRS) program. Improvements to the carrying capacity of the local rail system, along with refinements to safety devices installed at area grade crossings, are the state's primary focus in funding system improvements within the SKATS area. Upgrades that would dramatically increase speed are not considered of the utmost importance along the section of the corridor that passes through the SKATS area.

According to the *2000 Pacific Northwest Rail Corridor, Oregon Segment Operating / Capital Facilities Plan*, the Oregon Department of Transportation has identified $1.1 million in improvements along an approximately four mile stretch within the Salem-Keizer urban area. These improvements include upgrading the track and crossing signals along the Union Pacific mainline to allow the passenger trains to operate at a faster speed.

Oregon Operation Lifesaver, a joint rail safety program between the railroads and the Oregon Department of Transportation, Rail Division, should be continued, its message honed, and its audience clearly targeted. It is especially important that this message reach the children of the SKATS area most directly affected by train traffic. The 12th Street Pedestrian Promenade was constructed to address safety issues that were identified in the 1996 RTSP Update. The 12th Street corridor between Marion Street and the Salem Railroad Station was the location of nineteen train-pedestrian incidents between 1993 and 2000, many resulting in the loss of life for the pedestrian. The Pedestrian Promenade provides an attractive and safe walking facility, separating the UP rail line from walkers by a four-foot handrail. However, since its construction, an additional nine people have lost their lives along the UP line between Market Street and the Salem Railroad Station. The final phase of this project was completed in 2006, crossing Mill Creek to connect to North Salem HS and Olinger Pool. Since mid-2004 there have been no fatalities along the UP rail line.

Highways

Improving commercial vehicle access to the SKATS area's primary industrial areas and commercial corridors to the local, intrastate, and interstate highway systems, as well as the area's intermodal and intramodal facilities, was considered of paramount importance to this

plan element. The regional network of freight roadways (**Map 8-1**) was used as a basis to establish a list of freight-supportive roadway projects from the projects proposed in the SKATS TIP. Two of the largest industrial areas in the SKATS region have very specific access improvement needs that are widely supported by the firms in these areas.

As a developing industrial area of regional significance, the Fairview Industrial Park would benefit from enhanced access to the south Oregon Electric route. Train operations at this location frequently result in commercial vehicles being delayed and can limit access to public safety vehicles as well.

The urban transitional sites located on Cordon Road, as well as the Mill Creek employment area (nee SREC), have the poorest access to both the regional and national freight transportation network. Access to I-5 from the sites is generally via Cordon Road or Lancaster Drive, and they do not feature direct rail service. Both of these sites would benefit from enhanced access, in the form of a highway interchange, at the location of the Cordon Road overpass of Highway 22. However, such an intersection should be considered a long-term improvement. Lack of rail service into the area precludes the development of certain industries.

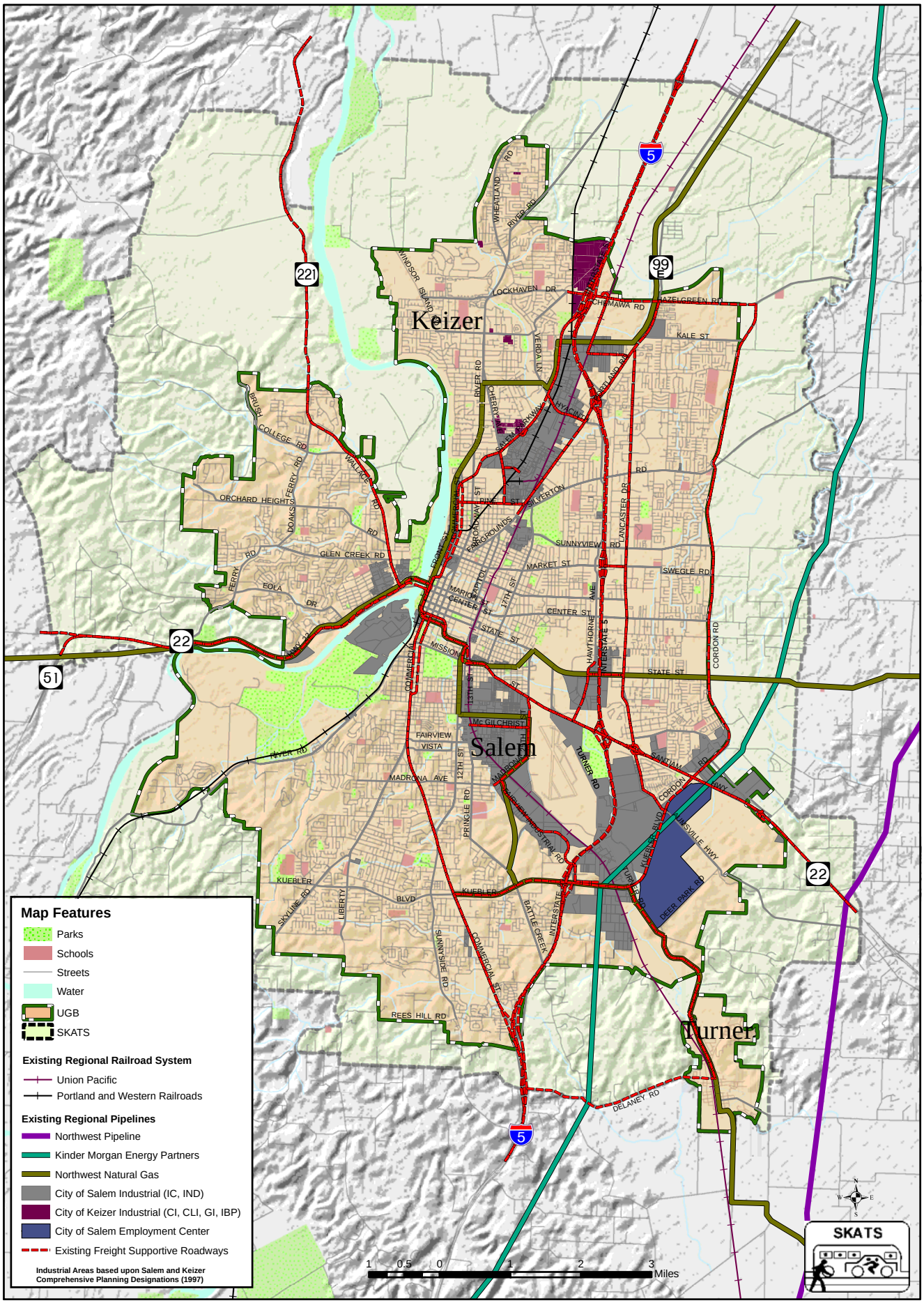
Outstanding Issues

Several issues have been identified in the process of updating the plan that have not been resolved or adequately addressed in this plan for a variety of reasons. One of these is the need for additional information regarding the quantity and type of goods being moved in and around the SKATS area, as well as a more thorough identification of particular freight-critical routes and associated problem areas.

ODOT has completed the Freight Route Analysis Project (FRAP), which included a recommendation for changes to the designation of several segments of facilities in the SKATS area. As a consequence of their designation as "Oregon Freight Routes," it is possible that these facility segments would also be subject to the provisions of as-yet-to-be-defined "management plans." Inasmuch as the ultimate effects on the responsible jurisdictions of the interaction of these designations, management plans, local land use plans, STA requirements, etc., is uncertain, the affected jurisdictions have requested a delay in the OTC adoption of the Freight Route redesignations until such time as all the associated impacts can be meaningfully evaluated.

Map 8-1

Regional Goods Movement Network



9 - Regional Aviation System

Introduction

The Regional Aviation System chapter of the Regional Transportation Systems Plan includes:

- a general inventory of the regionally significant aviation service and facilities in the SKATS area;
- an estimation of the transportation demand associated with the aviation system;
- a list of the regional goals, objectives, and policies established for the Regional Aviation System;
- recommended service and facility improvements needed on the aviation system in the area; and
- a general picture of funding sources for the potential improvements.

The Regional Aviation System Inventory

McNary Field

McNary Field is the only regional aviation facility in the SKATS area. It is located four miles south of the downtown core in the city of Salem. In a broader context, the airport is located 55 miles south of the Portland International Airport and 65 miles north of Mahlon Sweet Airport in Eugene. McNary Field comprises about 749 acres and is owned and operated by the city of Salem.

The primary function of the airport at this time is as a General Aviation Transport airport, meaning that the airport activity is neither primarily military nor conducted by regularly scheduled air carriers. The Federal Aviation Administration has classified it as an air carrier basic transport category airport. Most users of the airport come from Marion and Polk counties, with several corporate aircraft based there. However, corporate aircraft also operate at Aurora State, Independence State, Albany Municipal, and other public-use airports in the general area. The airport is currently a joint-use facility with the Oregon National Guard. In general, the airport is in very good condition and is well operated and maintained. Currently, there is no commercial air passenger service at the airport, but Hut Limousine Service provides regularly scheduled ground transportation between McNary Field and Portland International Airport (PDX). There is also a Federal Express office and package reload facility at the airport.

Airport Classification

The airport has been defined as an air carrier basic transport category airport by the Federal Aviation Administration (FAA) in the National Plan of Integrated Airport Systems (NPIAS), and by Oregon Department of Aviation in the Oregon Continuous Aviation System Plan (OCASP). This classification identifies the airport (by means of its runway length, width, and pavement bearing capacity) as a commercial aviation airport. The city of Salem, although not required to do so, has maintained the airport in accordance with federal certification standards. This status is maintained in order to facilitate air carrier service when such opportunities become available.

Airfield Description

McNary Field comprises approximately 749 acres and is located in southeast Salem. It is bordered by Mission Street to the north, Turner Road to the east, and Airway Drive SE and 25th Street to the west. The compatibility of existing and planned land uses in the vicinity of an airport is generally a function of the level of noise impacts related to the airport. Properties surrounding the McNary Field Airport have been designated as industrial, commercial, and government land uses in the Salem Area Comprehensive Plan. These designations are compatible with airport activities.

It should be noted that current zoning and land use to the southeast of the airport property is residential, which is not generally considered compatible with airport activities without mitigating measures. In the event commercial airline service returns to the SKATS area, long-term noise impacts could make these residential properties incompatible with the airport's expanded operations. In 1978, the city of Salem adopted the "Airport Clear Zones and Approach Surfaces." Additionally, an "Airport Overlay Zone" has been established to ensure that new development does not interfere with aircraft operations.

Airfield infrastructure consists of Runways 13-31 (the primary runway) and 16-34, a partial parallel taxiway, and miscellaneous taxiways providing access to both runways and apron areas. The primary runway is 5,811 feet long and 150 feet wide. Runway 16-34 is 5,145 feet long and 140 feet wide.

The primary runway is lighted with High Intensity Runway Lights and has a Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights (MALSR). This runway also has a full instrument landing system (ILS), including a localizer, guide slope, and locator markers. Additionally, it has an omnidirectional approach lighting system (ODALS). Runway 13-31 also has nonprecision approaches; Visual Approach Slope Indicators (VASI) exist on both runways. Runway 16-34 has Medium Intensity Runway Lights (MIRL).

Terminal Areas

The terminal building is located on the west side of the airport off 25th Street and is in good condition. The primary tenant of the terminal at the present time is Hut Limousine Service. The automobile parking lot is marked to hold 48 cars. The terminal building includes ticket

counter space, a baggage claim counter, waiting area, and rest rooms. Other buildings in the terminal area include the FAA Air Traffic Control Tower (which operates 14 hours a day), an Oregon Aeronautics Section office building, and the National Weather Service building. A city-owned and operated fire station is also located in the north terminal area. An airport restaurant is located approximately 1,000 feet south of the terminal.

General Aviation Area

The general aviation area of the airport includes three conventional hangars housing a variety of aircraft service companies. These businesses provide maintenance service, charter service, a flight school, and aircraft refueling operations.

Aircraft parking is separated into two distinct areas. The terminal apron includes approximately 260,000 square feet of pavement with adequate parking for 737 and MD-80 type aircraft. The southernmost area of the airline apron is reserved primarily for the larger-type aircraft and helicopter parking. The second aircraft parking area is devoted to general aviation aircraft with tie-downs for over 200 aircraft, including both transient and long-term rental spaces.

Located on airport property and directly adjacent to the airfield are several other businesses, such as II Morrow, West Coast Fastener, Microflect, and Federal Express. Some of these firms are aviation related, but do not actively participate in aviation-related operations at McNary field. The Fairview Industrial Park is located west of 25th Street and south of Madrona Avenue.

Air Trade Area

The area served by an airport is commonly designated as its "air trade area" and may have its limits fixed by the proximity of other airports offering comparable types of service. It is important to determine the approximate boundaries of an air trade area because the demand for aviation services depends, to a large extent, upon the socioeconomic characteristics of the trade area. The air trade area for an airport typically encompasses the location of 80 to 90 percent of the facility's users, airline passengers, or the owners of general aviation aircraft based at the airport. The precise shape of the air trade area is dependent on cost, type, and availability of desired services; population density; and ground transportation facilities. In the case of McNary Field, the size of the air trade area is substantially impacted by the air trade areas of the Portland and Eugene airports. In Eugene, Mahlon Sweet Airport currently provides commercial air service through United Airlines and Horizon Air, while PDX provides service via many of the major airlines.

Air trade areas are defined in two ways—commercial service air trade area and general aviation air trade area. The NPIAS defines air trade areas in terms of "reasonable access" which exists relative to scheduled air service and the community's CBD or center of user population. The NPIAS suggest that "reasonable access" (also called door-to-door travel time) to general aviation facilities is 30 minutes' surface travel time. For commercial service airports, 60 minutes' surface travel time is more appropriate. The commercial aviation air trade area for McNary Field is estimated to be bordered by Woodburn to the north, Lincoln City to the west, Corvallis to the south, and Detroit to the east. The general aviation air trade area for McNary Field is estimated

to be similar to the commercial aviation air trade area, with the exception that the southern boundary would be north of Albany, creating a horseshoe-like contour.

Other public aviation facilities within McNary Field's air trade area include Independence and Aurora State Airports and Albany Municipal Airport. These facilities, while sharing a portion of McNary's air trade area, do not seriously impinge upon its market or operations. These fields are best suited to private and commercial training operations of single engine aircraft and some helicopter activity.

Airport Access

Currently, nearly all Salem area commercial air passengers depart from Portland International Airport. Many passengers travel to Portland International Airport via the Hut Airport Limousine Service, which provides 18 regularly scheduled round trips daily between McNary Field in Salem and Portland. Style and Presidential Limousine Services also offer limousine service to Portland International Airport.

Transit service to McNary Field is provided by Cherriots, via the "State and Fairview" bus route number 7. This bus does not stop at the terminal building, but instead stops near the intersection of 25th Street and Madrona Avenue SE. Bus service is hourly during off-peak times and is provided on the half-hour before 9:00 a.m. and after 3:00 p.m. Connections to Salem's Greyhound bus or Amtrak passenger rail depots, the former located approximately five miles from the airport's terminal and the latter being approximately four miles away, require transferring at the downtown "pulse" center for "door-to-door" service if area transit services are used. The Chemeketa Area Regional Transit System (CARTS) stops at the airport four times a day on weekdays via the Canyon Connector route. Area taxicab companies offer true on-call door-to-door service to the airport's facilities.

Access from the airport to area highways via 25th Street allows direct access to Mission Street/Oregon Highway 22 and indirect access via Oregon Highway 22 to Interstate 5, Oregon Highway 213, Oregon Highway 219, Oregon Highway 221, and Oregon Highways 99E and 99W. The distance to Interstate 5 from the terminal at McNary Field via Oregon Highway 22 is approximately 2.5 miles.

Air Freight Services and Facilities

Aviation-related reload facilities are limited within the SKATS area. Most of these facilities are operated by companies that operate primarily as air freighters or that have air freight operations as part of their larger freight business. The U.S. Postal Service "Express Mail" service, United Parcel Service (UPS), Federal Express (FEDEX), and Jet Delivery Service all offer air freight services. All of these are private concerns and all operate package reload facilities in Salem. The majority are truck-to-truck reload facilities, forming collection points at which their package collection cars (parcel vans) unload and their line haul trucks reload. From the reload facility the line haul trucks generally make their way to Portland International Airport, where the cargo is trans-loaded for air shipment. With the exception of UPS' contract carrier, Sports Air, no freight aircraft currently stop in Salem, as the truck service to Portland adequately meets

the needs of most of the air freight companies. However, Federal Express also operates aircraft from McNary Field on occasion if warranted.

Transportation Demand on the Regional Aviation System

Operations

Aircraft operations (takeoffs or landings) are divided into two categories: local and itinerant operations. Local operations are primarily general aviation activities while itinerant operations are all operations other than local. Examples of itinerant operations would be business flights and personal recreational flights.

Table 9-1
Number of Operations at McNary Field, 1992 to 2006

	Itinerant	Local	Total
1992	40,081	21,673	61,754
1993	35,995	20,635	56,630
1994	36,595	20,860	57,455
1995	41,151	16,639	57,790
1996	40,227	18,329	58,556
1997	38,897	17,392	56,289
1998	35,588	16,434	52,022
1999	35,485	14,627	50,112
2000	35,379	13,862	49,241
2001	34,153	14,832	48,985
2002	34,755	15,742	50,497
2003	31,229	17,558	48,787
2004	29,631	14,289	43,920
2005	35,571	15,917	51,488
2006 – six months	17,475	10,329	27,804

As shown in **Table 9-1**, the number of operations at McNary Field has been decreasing since 1996, with some year-to-year variation. In 1998, gambling excursion charter flights to Nevada casinos ended, further reducing the flight activity. The majority of aircraft operations are civilian in nature, and itinerant.

Most of the aircraft currently flown at McNary Airfield are single-engine aircraft such as the Piper Cherokee, Piper Tri-Pacer, and Cessna 172. Other aircraft types that use the airport facilities include light twin-engine piston aircraft, turboprop aircraft, and some jet aircraft. The airport is capable of serving aircraft as large as Boeing's 757.

Goals, Objectives, and Policies

Goal 1: A regional aviation system that provides an adequate level of facilities and services to meet the needs of the residents and businesses in the SKATS area.

Objective: Encourage the provision of appropriate regional aviation system operations and facilities adequate to serve the demand associated with the residents and businesses of the SKATS area in a cost-effective manner.

Policy: Support appropriate, cost-effective improvements to the region's aviation and related facilities based on sound economic analysis.

Policy: Support efforts to renew commercial airline service for the SKATS area as demand and financial considerations warrant.

Goal 2: A regional aviation facility that can accommodate commercial operations as passenger demand increases.

Objective: *Retain the capability to support commercial airline operations as potential ridership increases.*

Policy: Support maintenance efforts that will preserve the region's general aviation facility in a manner that makes resumption of commercial aviation activities viable.

Goal 3: A regional aviation facility with adequate multimodal access.

Objective: *Ensure adequate multimodal access to the regional aviation facility.*

Policy: Support development of an appropriate multimodal transportation infrastructure that provides adequate access to the regional aviation facility.

Potential System Improvements

The responsibility for planning improvements to the Regional Aviation System lies with the City of Salem's Operations Coordinator. The existing Airport Master Plan for McNary Field Airport was completed in 1997. The major capital improvements identified as necessary in the new plan include:

Short-Term Needs

- Porous friction concrete overlay of the primary runway
- Terminal building improvements

Long-Term Needs

- Extension of the primary runway
- Demolition and replacement of the airline terminal

- Staged expansion of general aviation facilities
- Commercial/business development

Short-term needs identified in the existing Airport Master Plan terminal include building improvements and repairs. The FAA does not view extension of the primary runway as a priority at this time, given the current lack of commercial airline activity at the airport.

The terminal building, built in 1952, is generally considered to be in good condition, but requires repairs if it is to continue being functional. Limited repairs to the terminal were made during 1995. Long-term plans for the terminal building call for its eventual demolition and replacement with a new terminal structure. In July/August of 2006, the Salem City Council voted to spend $500,000 on a mobile structure to supplement the existing terminal. This structure would provide room for the installation of the equipment needed for the airline security to allow for the resumption of commercial flights. Beginning June 7, 2007, Delta Airlines will offer two flights a day providing service from Salem to Salt Lake City using 50-seat regional jets.

10 - Regional Maritime System

The Regional Maritime System chapter of the Regional Transportation Systems Plan (RTSP) includes:

- the location of existing or planned river navigation facilities in the SKATS area;
- an inventory of the regional ferry service and facilities in the SKATS area;
- the regional goals, objectives, and policies for the Regional Maritime System;
- an estimate of the vehicle and passenger movements associated with the ferry systems;
- committed and recommended service and infrastructure improvements needed on the ferry system in the area; and
- a general assessment of costs and revenues associated with maintaining existing services and recommended improvements.

Geographical Setting

The Willamette River lies in the Willamette Valley between the crests of the Cascade and Coast Ranges in northwest Oregon. The river forms at the confluence of its Coast and Middle Forks near Eugene-Springfield and flows north to its mouth at Portland with a total length of 187 miles. In its upper 133 miles, from Eugene to Newberg, the Willamette River flows northward in a braided, meandering channel. Through most of the remaining 54 miles, it flows between higher and more well defined banks, unhindered by falls or rapids, except for Willamette Falls at Oregon City, where the river drops 40 feet to tidewater. The average depth and flow rate of the river varies, depending on precipitation and the amount of water released at the 13 reservoirs behind dams in the Willamette River and its tributaries.

The Willamette River in the SKATS Area

The SKATS area is located in the midsection of the Willamette River and encompasses approximately 12 miles of the river, which flows from the southwest corner of the study area to the northwest corner. The river meanders through the SKATS area forming the boundary between Marion County on the east bank and Polk County (West Salem) on the west bank. The central business district of the Salem area is located at River Mile (RM) 85, which is 85 river miles upstream of the river's mouth. The average width of the Willamette River through the SKATS area is approximately 500 feet. The channel depth normally varies from 4 to 16 feet through the SKATS area depending on the time of year.

Overview of Facilities and Services

Currently, there are no commercial port or navigation facilities within the SKATS area. However, local efforts to pursue the dredging of the Willamette River for waterborne commerce through Salem resurface periodically. During 1996, a Riverine Goods Movement Study took place to measure the demand for commercial marine services on the upper Willamette River. The study concluded that currently it is more appropriate to use the river for recreational and commercial boating activities such as the River Queen. There is regular passenger and vehicle ferry service across the Willamette River at two locations near the SKATS area.

Commercial Navigation on the Willamette River in the SKATS Area

Background

During the mid-1970s, waterborne commerce on the Willamette River between Portland and the Yamhill River (RM 56) increased, particularly below Oregon City, while traffic above the Yamhill River through the SKATS region decreased significantly.[1] As a result, in 1973, the U.S. Army Corps of Engineers reduced dredging activity above the Yamhill River to minimal maintenance dredging and commercial traffic has not moved above the Yamhill River since that time. There has been no maintenance dredging above the Yamhill River since 1977.

There is currently an authorized Federal Navigation Channel in the upper Willamette River to Corvallis (RM 130). According to the Corps, the authorized channel has prescribed depths but no specified channel width. From Oregon City (RM 28) to the mouth of the Santiam River (RM 108) the prescribed depth is six feet. The location of the authorized channel is not specified.

Marine Transport System Requirements

Unique to regions with significant navigable waterways is the movement of goods via barge. However, in order for waterborne commerce to be a viable component of the overall transportation system in the region, a marine transport system must be in place that facilitates the movement of goods and is cost effective and competitive with rail and highway transport. Commercial barges need a channel depth of at least six feet and require at least 50 feet of channel width. Channel width in excess of 50 feet is preferable as most barges are 36 feet wide. Water transport is typically most competitive for long distance movements and bulky items or where other modes are not available. Some materials and products are more economically moved by barge than by truck or train. These products consist primarily of agricultural products, pulp and paper products, and sand and gravel. However, in order to be competitive economically, transfer and/or production facilities need to be in place near the river and an

[1] The terms "above" and "below" are used to describe the relative position of a place or activity on the river. "Above" is used to describe positions that are away from the mouth of the Willamette River at the Columbia River. "Below" is used to describe positions that are toward the mouth of the Willamette River. For example, Salem is "above" Portland.

adequate distribution infrastructure must exist to serve those facilities. Currently, there are no such facilities in the SKATS area.

Past Attempts to Re-initiate Dredging

In 1979, the U.S. Army Corps of Engineers prepared a Reconnaissance Report to determine the feasibility of dredging a 3.5-foot deep channel above the Yamhill River (RM 56) to Corvallis (RM 130) through the SKATS region. The annual cost of dredging this section of the river was estimated by the Corps to be $1.2 million. However, the Corps did not fund the project because it was determined that this activity would not produce a net national benefit.[2] The primary factor in determining that there is a national benefit is the level of commercial traffic. In most cases, there must be at least 25,000 tons of commercial traffic per year currently moving on the waterway before the Corps will consider funding a project.

In both 1985 and 1987, state legislation was proposed calling for channel maintenance of the upper Willamette River, but failed to pass.

Barriers to Dredging

Even if the 25,000 tons per year threshold were met, the Corps would not automatically resume dredging; a favorable benefit/cost ratio and funding priorities would remain as significant issues.

There are also environmental concerns regarding the impact that dredging might have on steelhead and salmon habitat and spawning areas in the river. Other potential environmental impacts include damage to wetlands, disturbance to other wildlife, and water turbidity. The regulatory agencies such as the Oregon Department of Fish and Wildlife, the Environmental Protection Agency, and the Corps of Engineers will require a comprehensive study of the cumulative impacts of gravel removal before any large-scale dredging operation is considered.

According to the Port of Portland and ODOT, there are no long-term or foreseeable plans to use the upper Willamette River (from the Yamhill River to Corvallis) for commercial navigation. Although the Oregon Transportation Plan (OTP) emphasizes a multimodal system, the viability of water transport is limited to the lower Willamette River below the Yamhill River, the Columbia River and Pacific coastal ports.

Potential Demand for Commercial (Freight) River Transportation

Maritime goods movement systems are typically most competitive in the transportation of bulk shipments over long distances. In 1994, the Mid-Willamette Valley Council of Governments (MWVCOG) Economic Development Section conducted a survey of 66 of the region's largest industrial and commercial firms to gauge the level of interest for utilizing the Willamette River for the transportation of goods. The firms who were surveyed were manufacturing companies that are most likely to either ship or receive cargo in bulk or very large form either to or from

[2] The term "net national benefit" means that the benefit to the federal government, as calculated in dollars, is greater than the dollar cost to the federal government.

the Portland Area. Five companies indicated a strong interest in utilizing barge transportation. They included a sand and gravel company (100,000 tons annually), a grass straw exporter (15,000 tons annually) and a fertilizer firm (2,000 tons annually).

The 100,000 tons of potential barge product from the sand and gravel company would represent an expansion of existing operations and a mode shift. The 15,000 tons of product from the grass straw exporter would not be the result of an increase in production, but a mode shift away from trucking. The fertilizer company indicates that they are currently using both trucks and rail, trucks to bring in the raw materials and rail to ship the final product out to markets. The 2,000 tons of fertilizer would be an expansion of existing operations.

It is unknown at this time if a commercial navigation channel in the Willamette River will ever be restored. Before proceeding with attempts to revive commercial navigation, more complete information needs to be developed about both the environmental impacts of such an attempt (i.e., dredging on the salmonid fish habitat), as well as the need in terms of potential usage. Should sufficient political and commercial interest in restoring commercial navigation in this portion of the Willamette River arise, studies of the outstanding issues will likely be performed by the appropriate parties.

Ferry (Passenger and Vehicle) Transportation

Facility and Service Inventory

The Wheatland Ferry and the Buena Vista Ferry are both currently providing shuttle service across the Willamette River near the SKATS area. A general description of each ferry operation is followed by a financial plan, committed and recommended improvements, and goals, objectives, and polices.

Wheatland Ferry

The Wheatland Ferry, the larger and busier of the two ferries, is mutually owned by Marion and Yamhill counties and is operated by Marion County. The ferry is located about two miles north of the SKATS area near the Willamette Mission State Park.

The ferry mechanical system consists of two on-board electric motors that drive two propellers. Electrical lines suspended across the river connect to the ferry providing the needed electricity. A separate steel cable system suspended overhead is used to keep the ferry in its appropriate travel path.

The Wheatland Ferry can carry a maximum of nine automobiles and 50 passengers at a time and operates seven days a week. The maximum wait time for the ferry is 10 to 15 minutes, depending on the number and types of vehicles to be loaded off and onto the ferry. The ferry has an annual ridership of approximately 225,000 vehicles, with some pedestrians and bicyclists. The ferry is in service all year long depending on the weather and equipment conditions.

Buena Vista Ferry

The Buena Vista Ferry is located about five miles south of the SKATS area, just north of where the Santiam River flows into the Willamette River. The ferry is owned and operated by Marion County.

The ferry mechanical system consists of an on-board diesel generator that provides the electricity needed to run the on-board electric motors. The electric motors drive the propellers, and overhead, suspended steel cables are used to keep the ferry in its appropriate travel path.

The Buena Vista Ferry can carry a maximum of four automobiles and 28 passengers per trip, and operates five days a week from April through October. The maximum wait time for the ferry is 10 to 15 minutes depending on the number and types of vehicles to be loaded off and onto the ferry. The Buena Vista ferry is utilized annually to transport approximately 8,500 vehicles, and carries a lower number of cyclists and pedestrians than the Wheatland Ferry.

Improvements to the Regional Ferry System

Additional Improvements Needed or Recommended

Wheatland Ferry

No further improvements have been identified at this time.

Buena Vista Ferry

No further improvements have been identified at this time.

Financial Analysis

Ferry Operational Costs

Major expenses identified with the operation of the two ferries include ferry operator and toll taker wages, maintenance and repair, insurance, and general administration. Total annual operational expenses for fiscal year 1999 were approximately $259,000 for the Wheatland Ferry and roughly $123,000 for the Buena Vista Ferry.

Wheatland Ferry Funding Sources

Revenue to fund the daily operation of the Wheatland Ferry consists of monies received from three different sources: Marion County, Yamhill County, and farebox revenues. An agreement between Marion County and Yamhill County splits the operating costs remaining after farebox revenues.

Marion County Funds

Marion County funds half of the operating cost remaining after farebox revenues with the county's Road Maintenance Dedicated Funds. In fiscal year 1994, it is estimated that the county allocated approximately $40,000 of its Road Maintenance Dedicated Funds for its share of the ferry's operating costs.

Revenue for the Road Maintenance Dedicated Funds is derived from timber receipts and county shares of the State Highway Fund (gas tax money). When timber on federal lands within Marion County is harvested, the county receives 25 percent of the timber sales, which are known as timber receipts. Approximately 75 percent of this revenue is allocated to the County Public Works Department's Road Maintenance Dedicated Funds. Marion County Road Maintenance Dedicated Funds are considered a relatively secure source of funding over time, although subject to variations (currently downward) based on the volume of timber harvested.

Yamhill County Funds

Yamhill County funds half of the operating costs remaining after farebox revenues with the county's road funds. In fiscal year 1994, it is estimated that the county allocated approximately $40,000 of its road funds for its share of the ferry's operating costs. The Wheatland Ferry is mutually supported by Yamhill County. In fiscal year 1999, it is estimated that the county allocated approximately $26,000 for its share of the operating costs. Like Marion County, Yamhill County derives its revenue for the road fund from timber receipts and county shares of the State Highway Fund (gas tax money).

At this time, it is unclear how long Yamhill County will be able to maintain funding for its share of the ferry's operating costs. According to Public Works staff, timber receipts have been going down over the last few years and if they continue to dwindle, continued funding of the ferry is uncertain.

Farebox Revenues

Over the last four years, farebox revenues for the Wheatland Ferry have been generating approximately 68 percent ($176,000) of the annual operating costs. The annual operating costs for the 1999-2000 fiscal year was approximately $207,000. There are five classes for the new fares for the ferry, ranging from $0.75 for a motorcycle to $6.00 for a vehicle that takes up the entire ferry (such as a farm tractor with a trailer). There is no charge to pedestrians and bicyclists using the ferry. The fares were recently increased by nearly 35 percent across the board. Staff at Marion County Public Works predicts that increased farebox revenues will generate approximately 89 percent of the actual operating cost.

Buena Vista Ferry Funding Sources

The daily operation of the Buena Vista Ferry is funded by monies received from three different sources: Marion County, ODOT, and farebox revenues. An agreement in place since 1990 between ODOT and Marion County splits the operating costs remaining after farebox revenues.

Marion County Funds

Marion County funds half of the operating costs remaining after farebox revenues with its Road Maintenance Dedicated Funds. In fiscal year 1994, it is estimated that the county allocated approximately $37,000 of Road Maintenance Dedicated Funds for its share of the ferry's operating costs. Road Maintenance Dedicated Funds are generally described above in the Wheatland Ferry funding sources.

ODOT Funds

The other half of the operating costs remaining after farebox revenues is funded by ODOT. ODOT funds their share of the Buena Vista Ferry's operating costs with Highway Fund monies. In fiscal year 1994, it is estimated that ODOT appropriated approximately $37,000 to Marion County for its share of the operating costs. In fiscal year 1999, it was estimated that ODOT appropriated approximately $61,000 to Marion County for its share of the operating costs. The operating cost sharing agreement with Marion County is open ended and has no termination date. This revenue is regarded as a relatively secure source of funding.

Farebox Revenues

Over the last four years, farebox revenues for the Buena Vista Ferry have been generating approximately 8 percent ($7,000) of the annual operating costs. The annual operating cost for the 1999 fiscal year was approximately $8,600. There are five new classes of fares for the ferry, ranging from $0.75 for a motorcycle to $6.00 for a vehicle that takes up the entire ferry (such as a farm tractor with a trailer). There is no charge to pedestrians and bicyclists using the ferry. The fares were recently increased by nearly 35 percent across the board. Staff at Marion County Public Works predicts that now farebox revenues will generate approximately 10 percent to 12 percent of the actual operating cost.

Outstanding Issues

In this Plan and the city of Salem's TSP, the Union Street Railroad Bridge is identified for conversion into to a pedestrian/bicycle facility to link Riverfront Park on the east with Wallace Marine Park on the west. Currently, the bridge is abandoned for railroad uses and the city is looking to buy the structure. At issue is the federal requirement that the bridge be functionally operable to the extent that the center section can be raised in the event that a marine vessel needs to pass under, due to the height of the vessel or the water level. Currently (2001), there are two businesses in the Salem-Keizer area that have status with the U.S. Coast Guard for commercial operation on the River.

11 - Regional Rail System

Introduction

The Regional Rail System chapter of the SKATS Regional Transportation Systems Plan (RTSP) includes:

- a list of the regional goals, objectives, and policies established for the Regional Rail System;
- a general inventory of the regionally significant rail service and facilities in the SKATS area;
- an estimation of the major freight and passenger movements associated with the rail system;
- an analysis of problems and issues identified on the regional rail system;
- recommended service and infrastructure improvements needed on the rail system in the area; and
- a general picture of costs and revenues associated with the recommended improvements.

The infrastructure of the region's rail system, unlike most of the highway, transit, bicycle, and pedestrian facilities in the region, is generally privately owned and operated. As a result, capital investment by the rail industry is much more directly driven by market forces than by policy initiatives at the state, regional, and/or local levels. Coordination and cooperative efforts between the public and private sectors, however, can be mutually beneficial and serve to increase the efficiency of both the rail and nonrail elements of the region's transportation system.

The Regional Rail System

Rail Infrastructure and Service Levels

Overview

Although subsequent mergers may affect service levels, at the present time the Salem-Keizer area is served by one major (Class I) railroad company, the Union Pacific (UP), and two

shortline (Class III) carriers, the Willamette Valley Railway (WVRY) and Portland & Western Railroad (P&W).

Both the UP and P&W operate in primarily north-south rail corridors that traverse the length of the region (**Map 8-1**). The WVRY operates the former SP Geer Branch in an east-west corridor running from Cordon Road in Salem to Geer where it connects to the WVRY West Stayton Branch. The line is currently used for the storage of railroad cars. P&W acquired the track structure of the BNSF line north of Perkins Road outside of Keizer to Beaverton in 1998, and have permanent and exclusive operational easement over this right-of-way, which is owned by ODOT. They acquired the rest of the BNSF line to Eugene in 2002. There are approximately 35.6 rail route miles (not counting spurs and/or sidings) in the SKATS region associated with the two principal rail corridors. Approximately 25 rail route miles (70% of the total) of this infrastructure are located inside the Urban Growth Boundary (UGB); 10.6 miles (30%) are located outside the UGB.

Significant rail spurs in the region include the P&W/UP connecting track running just north of Johnson Street NE in the Cherry Avenue Industrial Area.

Union Pacific (UP) Lines

The Union Pacific (UP) "Valley Mainline" route through the SKATS area consists of 14.4 rail route miles and runs in a corridor roughly parallel to I-5. In northern Marion County, the UP mainline is located east of I-5. At a point just north of the Portland Road/I-5 Interchange, the line crosses below the freeway and traverses the eastern edge of the Downtown/Capitol Mall area. Just north of the Kuebler Boulevard/I-5 Interchange, the line re-crosses to the east of the freeway and continues into the community of Turner. The UP also operates a rail yard bounded by Hines Street to the north, Vista Avenue to the south, 14th and 16th Streets to the east, and 13th Street and Pringle Road to the west.

This "Valley Mainline" is a part of the UP north-south mainline extending from Portland to Eugene. From Eugene, the "Cascade Line" continues south, providing service to California via Chemult and Klamath Falls. The UP line represents the main west coast rail line providing a link to Canada and Mexico. Through its connection with UP's east-west mainline in Portland, it offers shippers in the Salem-Keizer area access to markets throughout the U.S., Canada, and Mexico.

The UP Mainline also provides the route for rail passenger service, providing station access in Salem and direct southbound service to Albany/Corvallis; Eugene; Klamath Falls; and Los Angeles, California; as well as direct northbound service to Portland and Seattle, Washington.

An east-west connecting track through the Cherry Avenue industrial area connects the UP "Valley Mainline" to the P&W line in the region (see below).

Portland & Western Railroad (P&W) Lines

In 1998, P&W acquired from BNSF the Oregon Electric Branch line's track structure running from north of Keizer at Perkins Road to the Portland metropolitan area, parallel and to the west

of the I-5 corridor. The right-of-way for this line is owned by ODOT, and P&W has a permanent and exclusive operating easement on this line. This route is mainly outside the SKATS area. In 2002, the parent company of the P&W, the Genesee & Wyoming Inc., located in Connecticut with operations worldwide, acquired the remainder of this line, from just north of Keizer to Eugene, running along the east side of the Willamette River.

Willamette Valley Railway (WVRY) Lines

The rail lines in the SKATS area associated with the Willamette Valley Railway have either been abandoned (from 14th Street SE to Lancaster Drive), are currently embargoed (east of Lancaster Drive to Cordon Road), or are being used for storing railroad cars (east of Cordon Road).

Amtrak

Although Amtrak does not own any right-of-way, they provide passenger rail service through the Willamette Valley, connecting Salem with Portland and Seattle to the north, and Eugene, Medford, San Francisco, and Los Angeles to the south. In addition, Portland, Seattle, and Los Angeles provide links with Amtrak's transcontinental trains, providing service to cities in the Midwest and East. Service is run over UP's Valley Mainline in the Willamette Valley, with the Salem Railroad Station as the passenger station for Salem.

Intermodal Rail Facilities

Intermodal Freight Rail Facilities

Currently, the SKATS area's largest intermodal freight rail facility is a private lumber reload (break-bulk) operation. The firm, Cascade Warehouse, operates three facilities within the city of Salem: one located on Industrial Way NE, one located on Cherry Avenue, and one located on Front Street. This firm has access to both of the railways serving the Salem-Keizer area. Additional information on this system is presented in Chapter 8, Regional Goods Movement System.

Intermodal Passenger Rail Facilities

The SKATS area has one intermodal passenger rail facility. It is the Salem Railroad Station, located at the corner of Mill Street SE and 12th Street SE. The Salem Railroad Station offers travelers both intercity train and bus service. The facility's principal assets include a terminal building that was remodeled in 1999, a historic "freight shed" that is in need of structural and cosmetic repair, a concrete passenger platform that is in very good condition, and a paved parking lot that is in new condition.

The existing Salem passenger rail station site is roughly rectangular in shape, being approximately 1,220 feet in length from north to south, and ranging from approximately 85 feet to 138 feet in width from east to west. This site also has an uninterrupted platform length of more than 1,100 feet, well in excess of the 800-foot minimum required for a facility of this type.

The northern half of the site contains a paved parking lot and half of the depot's passenger platform. The parking lot currently has a capacity of up to 150 cars. At the present time, parking spaces in the lot are not clearly marked, nor are there any clearly defined areas set aside for vehicle movements, taxi queuing areas, or intercity bus staging.

The southern half of the site contains the Salem Railroad Station structure that dates from 1918, an 1880's "freight shed" that is no longer in use, the southern half of the passenger platform, a Union Pacific microwave communications tower, and a small wooded area that slopes down toward the Shelton Ditch. There is no vehicular circulation on the southern portion of the site.

The 1918 station structure is approximately 150 feet by 40 feet in size. The station has a current passenger capacity of approximately 160 people.

This facility is adjacent to State Highway 22, which offers connections to Interstate 5, Oregon Highway 221, Oregon Highway 219, Oregon Highway 213, and Pacific Highway 99E. The station is within a half-mile distance of Willamette University, Tokyo International University, and the Capitol Mall. Most of the sidewalk and bicycle lanes surrounding the existing station site were installed as part of the Oregon Highway 22 overpass project and connect to existing bicycle facilities on the Pringle Parkway. The 12th Street Pedestrian Promenade, which is described in the Pedestrian chapter of this document, will provide a safe, convenient, and attractive walking path from the station to the Capitol Mall and downtown areas.

The Salem-Keizer Transit District serves the Amtrak Station with route number 7, “State and Fairview.” This route stops on Mill Street along the north side of Amtrak’s north end parking lot on both the inbound and outbound trips. Route number 15, "Laurel Spring," goes through the area, stopping at the corner of 12th Street and Pringle Parkway as it leaves downtown. This bus stop requires potential passengers traveling from downtown to cross the intersection of 12th and 13th streets, and Oregon Highway 22, to reach the Amtrak terminal. Route number 6, the "12th & Sunnyside," and number 15, the "Laurel Spring," both pass directly in front of the Amtrak station on 13th Street when traveling towards the downtown Transit Center, but due to a very difficult street network and traffic pattern, does not have a designated stop at or near the station. Additionally, the CARTS “Canyon Connector” route travels on 12th Street near the station and will stop at the station as requested by passengers onboard, providing service from communities in the Santiam Canyon.

With the financial backing of ODOT's High Speed Rail Project, Amtrak Thruway motor coach service stops at this facility, providing connections with Portland, Eugene, Central Oregon, and the coast.

Rail System Support Facilities

Freight Rail Support Facilities

Freight rail support facilities within the SKATS area are privately owned and operated. Cascade Warehouse operates three break-bulk (lumber) reload facilities within the boundary of SKATS that also offer a warehousing function. Currently, no Trailer on Flatcar (TOFC) or Container on Flatcar (COFC) reloading facility exists within the SKATS boundary.

Approximately 45 separate addresses within the SKATS area are equipped with railroad sidings and most are associated with various industrial uses.

Passenger Rail Support Facilities

Passenger rail service support facilities within the SKATS area consist of Salem's Railroad Station, which is served by Amtrak. This facility is described in detail in the previous section.

Transportation Demand on the Regional Rail System

Freight Movements

Regional Rail Corridor Commodity Flows

There are two principal rail corridors located in the SKATS region. According to the data contained in the *2001 Oregon Rail Plan*, the total freight commodity flow associated with these corridors amounts to approximately 31 million tons per year.

The portion of the UP mainline between Eugene and Portland is the most heavily used rail line for freight in the Willamette Valley, with more than 30 million gross tons being shipped over it on an annual basis. According to 2000 data obtained from the state, about 26 through freight trains are routed over this line per day between Eugene and Portland. Three switching locomotives also use this segment of the UP mainline daily to shuttle cars and make up trains.

A survey of six SKATS area firms conducted in the mid-1990s indicated combined annual rail shipments of over 300,000 gross tons. Several firms are choosing instead to ship their products in containers via truck to Portland area rail or marine terminals for reloading.

Amtrak also offers freight delivery service to the SKATS area via its Amtrak Express service, which is accessed at the Salem Railroad Station. This service can ship packages from 1 to 2,000 pounds from the SKATS area to anywhere in the nation that Amtrak serves.

Intermodal Freight Transfers

Intermodal freight movements involve the transportation of container encapsulated or trailer encapsulated cargo, while using two or more modes of transportation to ship the cargo from its origin to its destination. The movement of bulk and break-bulk cargos, both into and out of the SKATS area, is also frequently intermodal in nature. Advantages inherent to intermodal shipment of goods include increased modal options for those shipping goods, the potential for reduced costs, and a potential increase in the size of the market the shipper can reach cost effectively. According to the *2001 Oregon Rail Freight Plan*, intermodal freight movements involving rail account for a large percentage of the total freight transported within the United States and account for nearly 17% of all rail revenue, second only to coal shipments.

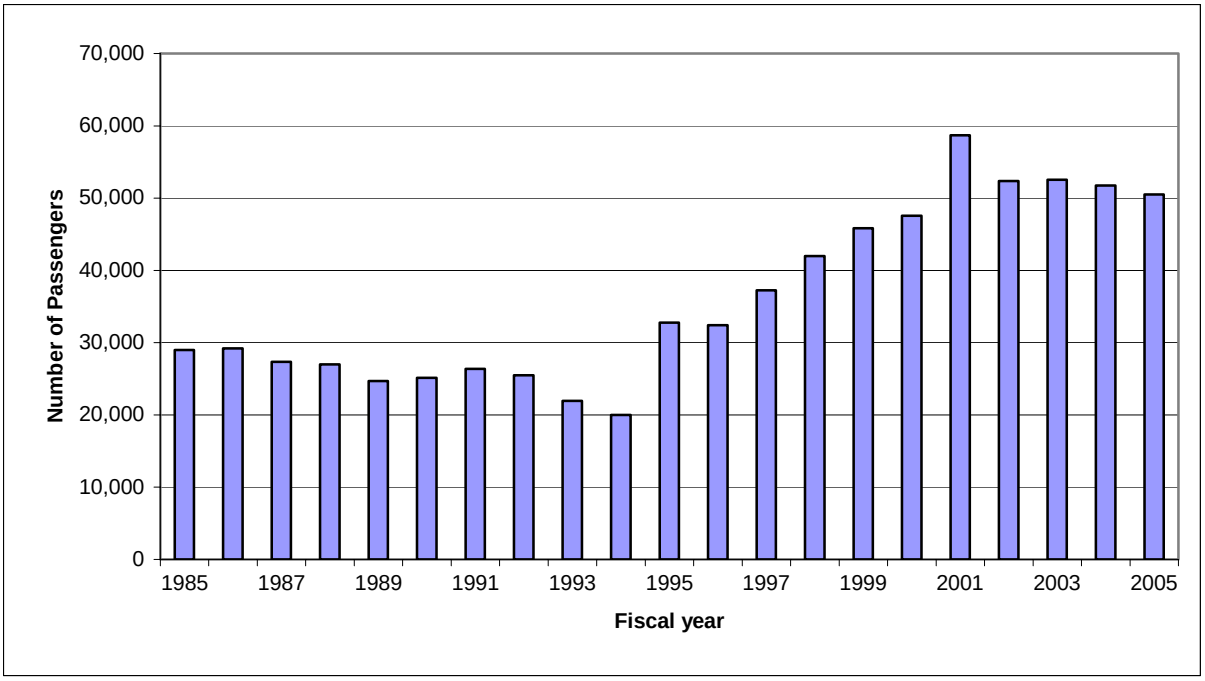
Currently, the SKATS area's largest intermodal rail activity within the city of Salem is a lumber reload (break-bulk) operation. The firm operates three facilities, one located on Industrial Way NE, one located on Cherry Avenue, and the other located on Front Street. These facilities reload approximately 200,000 tons of wood products annually. While other opportunities for increased intermodal activities appear to exist within the SKATS area, potential users would have to be identified and their needs assessed before any additional actions could be taken.

Passenger Movements

Regional Rail Corridor Passenger Demand

Amtrak provides the SKATS area with two service options for passenger rail service, the *Coast Starlight* and *Cascades* trains, with station access at the Salem Railroad Station. For fiscal year 2005, just over 50,500 passengers used the Salem station. The growth in passenger use of the Salem Railroad Station can be seen in **Figure 11-1**, where the number of passengers boarding and detraining in Salem has increased significantly since 1996. This increase can be traced to improvements that have been made in the service and equipment used in the Pacific Northwest High Speed Corridor, which is currently one of the eleven federally designated High Speed Rail (HSR) corridors. The corridor extends from Eugene through Salem to Portland, and then to Seattle and finally to Vancouver, British Columbia. Trains operating in this corridor are marketed as the *Cascades*, thus lending the corridor a second name, the Cascade Corridor. In 1994, Amtrak expanded service by extending a Cascade Corridor train to Eugene from Seattle, via Portland. The introduction of Talgo trainsets in 1995, bringing a definite European flavor to the corridor trains, provided a higher level of comfort for passenger travel. These trainsets tilt when entering curves, allowing the train to maintain a higher speed, and thus reduce the running time between stations. In 2000, Amtrak introduced a second train running between Eugene and Seattle.

Figure 11-1
Salem Railroad Station Boardings and Detraining, 1985 to 2005



The *Coast Starlight* service (serving the entire west coast corridor) provides direct southbound service to Albany, Eugene, Klamath Falls, and Los Angeles, California, and direct northbound service to Portland and Seattle, Washington. This service consists of one train per day in each direction. According to information developed for the ODOT *1994 Oregon Rail Freight Plan*, total Oregon ridership on the *Coast Starlight* route reached a peak of over 591,000 passengers in 1981. From 1985 till 1992, passenger activity through the Salem Railroad Station remained basically flat on an annual basis, with a cumulative total for the eight-year period of 1985-1992 amounting to 182,871 boarding and deboarding passengers, an average of 26,785 passengers per year.

Enhanced Passenger Rail Service (EPRS)

In 1992, ODOT completed the *Oregon Transportation Plan* and a *Rail Passenger Policy and Plan,* which called for the eventual development of High Speed Rail (HSR) services from Eugene, Oregon to Vancouver, British Columbia, Canada. That same year, the states of Oregon and Washington applied for and received "corridor status" from the U.S. Federal Railroad Administration (FRA) to be part of the Federal High Speed Rail Program, one of only five such corridor designations nationwide at that time. Trains running over this corridor are marketed as the *Cascades*.

The long-range Enhanced Passenger Rail Service (EPRS) goal is to reduce the running time between Portland and Eugene to two hours, and the travel time between Salem and Portland to 45 minutes in the corridor for intercity passenger service. This service would be provided by up to six round trips daily between Portland and Eugene, via Salem and Albany, nine round trips daily between Portland and Seattle, and four round trips per day between Seattle and Vancouver, B.C.

Interim, short-term goals for corridor rail passenger service include more frequent service between Eugene and Seattle and track improvements to allow maximum train speeds of 79 mph over longer portions of the line, which would aid in increasing train speeds in the corridor from the current average speed of 47 mph.

Feeder bus service to several communities east and west of the UP mainline, as well as Amtrak Thruway bus service along the length of the EPRS corridor, are already being offered in an effort to increase ridership on Amtrak's existing passenger rail service.

In addition to the High Speed Rail Task Force, the Mid-Willamette Area Commission on Transportation (MWACT) has been established by ODOT to oversee the coordinated efforts of valley and state jurisdictions to study, design, and recommend implementation of EPRS, as well as a comprehensive system of both passenger and freight transportation improvements (such as intercity bus service and intermodal facilities) in the corridor.

Goals, Objectives, and Policies

The Regional Rail System Element of the Regional Transportation Systems Plan (RTSP) provides a blueprint for development of an adequate, efficient, and safe system of rail facilities into and through the SKATS area. Since SKATS does not actually build, maintain, or operate any portion of the facilities comprising this system, the Regional Rail System Element is implemented through the cooperative adoption of regional goals, objectives, and policies contained in the regional Plan. In turn, the regional Plan must be consistent with the state and federal plans, policies, and mandates.

Goal 1: A regional rail system that provides an adequate level of service to passenger and freight rail consumers within the SKATS area.

Objective: *Support the provision of rail service within the SKATS area that adequately addresses service demands of both passengers and freight.*

Policy: Encourage continued and improved rail service to and from the SKATS area.

Policy: Promote the enhancement of intercity passenger rail service to provide an option to workers commuting along the I-5 corridor.

Objective: *Promote the development and maintenance of an adequate infrastructure and facility system to support continued and improved rail service in the SKATS area.*

Policy 1: Encourage the continued improvement of the region's existing rail infrastructure and facilities.

Policy 2: Encourage the development and implementation of adequate infrastructure and facilities to address the needs of both passenger and freight movements in the region.

Goal 2: A safe system of regional rail transport serving the SKATS area.

Objective: *Support efforts to maintain and improve regional rail transportation safety by complying with federal and state rail safety standards.*

Policy: Encourage improvements to the regional transportation system that enhance rail safety as well as safety between railroads and other transportation modes.

Goal 3: Efficient use of existing regional rail transportation infrastructure.

Objective: *Promote the maximization of efficient use of existing regional rail transportation infrastructure.*

Policy: Encourage actions that maximize efficient use of existing rail infrastructure and improved service levels to address SKATS area rail transportation needs.

Goal 4: Staged infrastructure upgrades as part of the High Speed Rail Corridor Project.

Objective: *Support provision of rail-related infrastructure upgrades as part of the High Speed Rail Corridor Project.*

Policy: Encourage infrastructure upgrades needed for the successful implementation of the High Speed Rail Project.

Goal 5: Preserve rail rights-of-way that may be abandoned for future transportation-related uses.

Objective: *Reserve all regional rail corridor rights-of-way for transportation-related uses where viable.*

Policy: Designate all regional rail corridor rights-of-way as "Transportation Corridor Preserves" pending results of alignment specific suitability studies.

Goal 6: Multimodal connectivity to regional passenger rail terminal.

Objective: *Support improved multimodal access to regional passenger rail terminal.*

Policy 1: Promote infrastructure upgrades to the regional passenger rail terminal.

Policy 2: Develop and promote intercity and intracity public transportation system connections to the regional passenger rail terminal.

Recommended Improvements

Rail Infrastructure Improvements

It should be noted that the rail infrastructure within the SKATS area is privately owned and maintained by the railroads. Improvements are often made at the discretion of the railroads, with Oregon Department of Transportation (ODOT) involvement occurring whenever there are safety or capacity concerns or potential conflicts with other modes of transportation.

According to the *2000 Pacific Northwest Rail Corridor, Oregon Segment Operating / Capital Facilities Plan*, the Oregon Department of Transportation has identified $1.1 million in needed improvements along an approximately four-mile stretch within the Salem-Keizer urban area. These improvements include upgrading the track and crossing signals along the Union Pacific mainline to allow the passenger trains to operate at a faster speed.

Service Improvements

Freight Rail Service Improvements

Due to mergers and a change in marketing strategies, many of the nation's largest railroads, UP and BNSF included, are choosing to reduce localized service and focus more heavily on the enhancement of their long haul and transcontinental service. The ability of a major railroad to concentrate on providing regularly scheduled long haul services has become a key to their profitability. Due to this change in emphasis, rail equipment is at a premium, as it is being increasingly deployed on longer nonstop routes between major cities. Allocating equipment to address the switching needs of local sidings users, and to make up local trains, has become less of a priority. Several SKATS area corporations who ship by rail and operate sidings have experienced this difficulty.

Passenger Rail Service Improvements

The *Cascades* service (serving the Pacific Northwest corridor) was expanded in October of 1994 to include the Willamette Valley corridor. It provides direct southbound service to Albany and Eugene and direct northbound service to Portland and Seattle, Washington. It was further expanded in 2000, adding a second daily train between Portland and Eugene in each direction. The utility of this service for local commuters is problematic because the arrival and departure hours do not coincide with normal work schedules. Amtrak, with ODOT funding and support, is operating Amtrak Thruway motor coach services north to Portland and south to Eugene in an effort to build the passenger base for future expansions of rail service, and to provide mobility options in the time periods when a train is not available for travel in the corridor.

Ultimately, with a fully upgraded trackage, the running time between Portland and Eugene would be 120 minutes, with trains expected to reach speeds of up to 110 miles per hour. This would represent reducing the current Amtrak running time between the two cities of 155 minutes by 23 percent. Up to six round trips daily would be provided between Portland and Eugene, via Salem and Albany. There would also be nine round trips daily between Portland and Seattle and four round trips per day between Seattle and Vancouver, B.C. The estimated cost for the EPRS improvements required for full system build-out in Oregon has been estimated at roughly $450 million in 1994 dollars.

Along with the High Speed Rail Task Force, the Mid-Willamette Area Commission on Transportation (MWACT) has been attempting to the coordinate the efforts of valley and state jurisdictions to study, design, and recommend implementation of EPRS.

Support Facilities

Freight Rail Support Facilities

Additional improvements needed to these facilities will be identified as they arise by the owners and users of the facilities.

Passenger Rail Support Facilities

With the recent renovation of the Salem Railroad Station, and the funding for the 12th Street Pedestrian Promenade to connect it with the downtown Capitol area, the major need is to provide adequate transit service to the station to ensure that users of the station and rail service are afforded the widest possible range of modes.

Outstanding Issues

The principal outstanding issues for the Regional Rail System involve the uncertainty of available funding for the recommended trackage improvements and the lack of identified funding for expanding the service as envisioned in the *Oregon Rail Plan* (2001).

Long-term operations and maintenance of the Salem Railroad Station is another outstanding issue, as the Salem station is the only one in the valley to be owned by ODOT and not local jurisdiction(s).

Intercity rail service can provide a viable alternative to long-haul automobile travel, be it for commuting or for shopping/recreation trips. The potential and feasibility of additional intercity rail service along the I-5 corridor between the Salem-Keizer area and the Portland Metropolitan area to the north, and Corvallis/Albany to the south, is an issue that needs further study. Two routes are available to the north. One follows the route of Amtrak's passenger trains by using the UP line to the east of I-5 to Oregon City and then to Union Station in Portland. The second option is to use the P&W line that runs to the west of I-5 from Keizer to Wilsonville, where it would connect with commuter rail service linking Wilsonville and Beaverton, which begins service in 2008.

Another continuing issue is the safety of railroad crossings. In the 1996 RTSP, a number of crossings were identified as needing improvement to reduce the possibility of serious collisions between trains and autos. These improvements have been completed and the 12th Street Pedestrian Promenade was constructed to address the safety concerns facing pedestrians in the 12th Street corridor. However, increases in the number and/or speed of trains along either of the rail corridors in the SKATS area should be tied with a reexamination of the safety of the crossings.

Other outstanding issues that cannot be fully addressed by this document include the preservation of land that is currently capable of being served by rail, and the reduction of land-use conflicts near existing rail lines.

12 - Regional Intermodal Systems (Freight and Passenger)

Intermodal Freight Movement

Intermodal freight movements involve the transfer of cargo between two or more modes of transportation. This form of transportation can serve to reduce shipping costs and increase a shipper's mobility options, while using the existing transportation infrastructure in the most efficient manner possible. Intermodal freight movements increasingly involve the transfer of container encapsulated cargo or trailer encapsulated cargo between two or more modes of transportation. Container freight movements can include truck, rail, ship, or barge. A cargo container freight movement utilizing rail during a portion of its trip is referred to as a container on flatcar (COFC) movement. Trailer cargo employing an intermodal exchange between truck and rail modes are referred to as a trailer on flatcar (TOFC) movement.

The movement of bulk and break-bulk cargoes, such as petroleum and finished wood products, are also frequently intermodal, with goods being transferred between modes for shipment both into and out of the SKATS area. Intermodal bulk and break-bulk freight movements can use a combination of pipeline, truck, ship, barge, rail, or air modes to complete. Additionally, most air freight shipments and many parcel shipments are handled intermodally, relying on an air-to-truck or truck-to-rail, interface.

Advantages associated with the intermodal shipment of freight can include: increased modal options for shippers, the potential for reduced costs, and a potential increase in the size of the market the shipper can reach cost effectively. The overall goal of the Intermodal Freight Movement System chapter of the Regional Transportation Systems Plan (RTSP) is to ensure the safe, economical, and efficient transfer of freight between modes in the region.

This plan element:

- Identifies the key facilities and locations within the SKATS area where freight is either directly transferred from one mode (such as truck, rail, pipeline, aircraft, or barge) to another or loaded for intermodal transfer somewhere else (but within 50 miles);

- Defines the scope of intermodal freight operations within the SKATS area and indicates the impact of intermodal activities on SKATS area commerce.

- Establishes regional policies related to the safe, economical, and efficient transfer of goods between modes; and

- Identifies improvements to the regional intermodal freight movement system necessary over the next 20 years to achieve the established goals.

Intermodal freight is increasingly seen as a panacea by many shippers for their freight movement needs while transportation providers also realize numerous benefits from intermodal freight movement. The efficiency with which a shipment can be transported across the continent when trans-shipped between truck and rail modes has increased dramatically. Even more dramatic results are achieved when this technology is applied to intercontinental shipments, an especially important consideration given the potential Pacific Rim trading opportunities SKATS area firms enjoy.

However, as railroads attempt to centralize operations, including the on- and off-loading of rail cars, and "making-up" of trains, some SKATS area rail shippers are experiencing a decline in the frequency of direct rail service. A number of shippers are finding it more expeditious to containerize their former rail cargo and truck it 50 miles to the nearest intermodal rail yards (located in Portland) for trans-shipment. Air freight carriers already operate in a similar manner, as they trans-ship from truck to truck in Salem and transfer the cargo again from truck to airplane in Portland, some 50 miles away. Air freight carriers, however, typically transport cargo with a considerably higher unit value than goods transported by rail shippers. As such, the overall shipment costs for an air freight shipment make up a smaller portion of the product's as-delivered per unit cost. Conversely, products typically shipped by rail are frequently sensitive to increases in per unit shipping costs, with increases in these costs potentially placing the goods producer at a competitive disadvantage.

The Regional Intermodal Freight System

The SKATS area has several facilities that generate intermodal freight movements, ranging in size from those of statewide significance to those that are primarily of local importance (**Map 12-1**). SKATS area freight movements (including intramodal freight movements) that generate intermodal freight movements originating or terminating within 50 miles of SKATS area are addressed by this plan element.

The SKATS area's largest intermodal facility is a private operation specializing in lumber reloading. As such, it is also referred to as a "break-bulk" reload facility. The firm operates three facilities in Salem, one on Industrial Way NE, another on Cherry Avenue, and the third located on Front Street. These facilities reload approximately 200,000 tons of wood products annually, valued at approximately $55 million (1995 figure). The Cherry Avenue facility is served directly by the BNSF, but the firm ships its cars out of the area over both the BNSF and UP rail systems. Access to these lumber reload facilities can be problematic for large commercial vehicles, as inadequate turning radii and at-grade railroad crossings leading to these facilities reduce safety margins and operating efficiencies.

Two unused "circus ramps" exist in the SKATS area, one located on a spur track adjacent to the Salem Fairgrounds and another located at the southern end of UP's Salem rail yard. Both have been used to load trailers onto flatcars in the past, but are now in disrepair. While neither is advantageously located from a commercial access standpoint, they do retain value due to their

rail accessibility. No facilities for the reloading of intermodal freight containers currently exist within the Salem-Keizer area.

Other area intermodal freight operations primarily offering priority parcel delivery services include Amtrak (via the Salem Railroad Station) and the Salem Greyhound Bus Depot. Both of these facilities currently have limited cargo handling capabilities, and they are not optimized for freight transfer activities. Amtrak, however, does have the ability to handle palletized cargo with unit weights of up to 2,000 pounds, but must be notified in advance if a cargo of this weight is to be shipped.

Amtrak offers very competitive freight rates, and offers several scheduled trips per day between Eugene and Seattle to potential freight customers. In 1996, the Salem Railroad Station was dispatching well over 2,000 pounds of cargo per month.

The Salem Greyhound Bus Terminal processes over 400 pounds of cargo a day (1996 figure). While no dollar value is available for this cargo, it is often freight that is shipped "next bus out," allowing for same day delivery from other west coast cities.

Air freight operations are intermodal by their very nature. Among the approximately thirteen air freight and package express providers serving the SKATS area, only a handful maintain local facilities within the region. The balance of these firms provide local services from bases in Portland. Currently, only a limited amount of air freight is shipped directly to and from Salem's McNary Field via UPS through their contractor Sports Air and occasionally FedEx. FedEx is the only SKATS area air freight provider that maintains an intermodal facility with direct airside access to McNary Field. Although the exact quantities vary from day to day, an average of over 200 pounds of cargo are transferred daily. While the market for air freight services in Salem and Keizer is expanding, the existing method of intermodal transfer from truck to plane will likely remain adequate for the foreseeable future.

Several SKATS area goods producing firms that relied heavily on direct rail service in the past have begun to load their finished products into containers for trans-shipment to rail or marine transport in the Portland area. Much of this tonnage was shipped from the Salem area via refrigerated or standard boxcar, but the increased convenience, reliability, and flexibility offered by containers is gradually shifting traffic away from using direct rail service. No modern intermodal facilities that would allow for safe and efficient transfer of containers or trailers onto flatcars currently exist in the SKATS area. The Class 1 railroads serving the SKATS area believe that existing intermodal facilities in Eugene and Portland will continue to provide sufficient intermodal trailer and container capacity for SKATS area shippers for the foreseeable future.

Area shippers, however, have raised concerns that current updates to intermodal reload facilities in the Portland area, at both the UP's Brooklyn and Albina Yards, may not be sufficient for serving the long-term Willamette Valley intermodal transfer demands. This potential problem is exacerbated by the absence of any intermodal container or trailer reload facilities in the mid-Willamette Valley between Eugene and Portland.

Goals, Objectives, and Policies

Goal 1: An integrated regional system of intermodal transportation options for SKATS area shippers.

Objective: *Ensure adequate intermodal opportunities to SKATS area shippers as part of the of the regional transportation system.*

Policy 1: Support continued improvements to provide efficient access to intermodal facilities servicing SKATS area shippers.

Policy 2: Encourage efforts to maximize intermodal goods movement routing options within the region.

Goal 2: Maximize SKATS area intermodal efficiency.

Objective: *Provide enhanced intermodal efficiency within the region.*

Policy: Support appropriate development of needed intermodal freight transfer facilities in the SKATS area.

Recommended Improvements

The intermodal concept has garnered considerable interest from area shippers, though research to assess market demand and private sector interest in the development, use, and operation of any new public/private regional intermodal facility located within the Salem-Keizer area is necessary to determine the appropriate levels of improvements needed in the areawide intermodal system. Although opportunities for increased intermodal freight activities clearly exist within the SKATS area, potential users would have to be identified, and their specific needs assessed, before any additional actions are considered. The two primary intermodal freight transfer improvements that the SKATS area could potentially consider include improved truck-to-air connections and the creation of an additional truck-to-rail intermodal transfer facility capable of loading intermodal containers and trailers onto flatcars. The concept of an intermodal container and/or trailer reload facility in the SKATS area is not endorsed at this time by the Class 1 railroad serving the area, but they would, as common carriers, be required to provide service to such a facility's rail spur.

Intermodal links between various modes of transportation serving our communities should continue to receive consideration in both short and long term planning efforts. Continued development of an efficient and accessible intermodal system is crucial to the SKATS region's future economic vitality.

Freight Roadway Connections to Regionally Significant Intermodal Freight Facilities

Several highway improvements identified in the Regional Highway System chapter would improve access to the two highest volume intermodal facilities in the SKATS area. Detailed descriptions of the individual projects can be found in Chapter 15. Benefits to the Regional Intermodal Freight System facilities and their associated roadway improvements are briefly described below.

McNary Field

McNary Field's intermodal activities occur primarily in the terminal area, which is located at the intersection of 25th Street SE and Madrona Avenue SE. Several of these projects would also improve access to the UP's rail yard, in the event that "Road Railer" service became available to SKATS area shippers. The following projects would enhance access to the airport's terminal and, in most cases, improve safety in the process:

- McGilchrist Street SE from 12th Street to 25th Street
- Madrona Avenue realignment at 25th Street
- Madrona Avenue from 25th Street to Union Pacific Rail Line
- 25th Street, Mission to McGilchrist
- 25th Street, McGilchrist Street to Madrona Avenue

Cherry Avenue Industrial Park

The Cherry Avenue Industrial Park is home to the Cascade Warehouse intermodal lumber reload operation, and is also home to the local "cross-dock" freight transfer facilities of UPS, FedEx Freight, and Roadway Express. The following projects would facilitate access to the Cherry Avenue Industrial Park area, and in so doing, would promote more efficient operations at all of the freight operations previously mentioned:

- Salem Industrial Drive

Intermodal Passenger System

Intermodal passenger facilities and services provide a convenient connection for people between various transportation modes, such as bus, carpool, vanpool, bicycle, walking, single-occupant vehicles (SOV), rail, and air. The improved interconnectivity between modes at these facilities greatly expands the universe of possible modal options and destinations readily available to the traveler. Attractive intermodal passenger facilities also improve traveler

convenience, comfort, and safety, and assist in creating a perception of seamless interconnection between modes.

Salem has a limited number of intermodal transfer facilities, yet they perform a vital function in our overall mobility. These facilities often serve as the primary passenger access points to the statewide and national intercity transportation network by providing intercity bus, train, and airport connections, while typically maintaining links with local transit and taxicab providers.

Intermodal Passenger Facilities Inventory

The SKATS area offers travelers three intercity intermodal transportation facilities. These facilities provide connectivity among airplane, intercity bus, and intercity rail transportation in the region. All are served by the local mass transit system. However, the ease of access to these facilities by modes other than the private automobile, such as walking or bicycling, varies greatly.

McNary Field

McNary Field, host to Salem's Hut Airport Shuttle Bus service, is located in southeast Salem. The airfield is roughly triangular in shape and is bordered by Mission Street to the north, Airway Drive and 25th Street to the west, and Turner Road to the east. The airport is approximately 749 acres in size. Beginning June 7, 2007, commercial passenger air service will resume operation from McNary field, providing service to Salt Lake City via Delta Airlines.

The airport's terminal building is located on the west side of the airport, just east of the 25th Street and Madrona Avenue intersection. The terminal structure, built in 1952, is in generally good condition. The terminal building includes ticket counter space, a baggage claim counter, waiting area, and rest rooms. The primary tenants of this structure at the present time are Hut Limousine and a travel agent's office. The terminal's primary parking lot incorporates 88 paved parking spaces, with a graveled reserve lot providing an additional 60 spaces, for a total of 148 spaces. These spaces are pay-to-park, with a single computerized pay point located at the terminal door. An airport restaurant is approximately 1,000 feet south of the terminal, but access is circuitous, doubling the effective distance that must be traveled to reach the restaurant.

The airport terminal is located approximately four miles southeast of the Capitol Mall. Vehicular access to both Oregon Highway 22 and Interstate 5 is very good. Pedestrian access, in the form of sidewalks, is not adequate. However, due to the remoteness of the site from core residential and employment areas, it is unlikely that many passengers would choose to walk to McNary Field. Bicycle access, at present, is also inadequate, as there are no bike lanes along the portion of 25th Street that serves the terminal. Bicycle lanes are provided on Madrona Avenue between 25th Street and Commercial Street.

Transit service to McNary Field is provided via Salem Area Mass Transit District's (SAMTD) "State and Fairview" bus route number 7. Although the bus no longer provides direct access to the terminal, it does stop near the intersection of 25th Street and Madrona Avenue, approximately 600 feet from the terminal building. Direct terminal transit service is considered to be cost prohibitive at this time, but will continue to be evaluated in relation to anticipated

demand in downtown Salem. Additionally, CARTS "Canyon Connector" route stops at the 25th and Madrona intersection, providing service from communities in the Santiam canyon.

Greyhound Station

The Greyhound Bus Station is located on Church Street, between Marion and Center Streets. It occupies approximately one quarter of a city block. The terminal itself features a large waiting area, with a "crush" capacity of over 130 people. Four retail storefronts are located in the portion of the structure facing the street.

The intercity buses serving this facility enter via an alley located midway between Church and Cottage Streets on Marion Street and exit the facility onto Center Street. There is parking space for a maximum of six intercity buses to park on the site behind the terminal. There are also four additional parking spaces behind the terminal for individuals in private vehicles picking up express freight.

There are three dedicated taxi parking spaces located directly in front of the terminal's entrance, two of which are metered. Six additional metered spaces are located directly in front of the terminal building for private vehicles.

Seven SAMTD transit bus routes serve the Greyhound Station area: number 2 "Jan Ree"; number 3 "Capitola"; number 4 "Keizer East"; number 5a "Lancaster Mall"; number 5 "Royal Oaks"; number 17 "Haysville"; and number 25 "West Salem to Downtown". There is a SAMTD bus stop at the Greyhound Station location, located at the corner of Center and Church St, served by route number 17. The Courthouse Square Transit Center is one and a half blocks south of the Greyhound Station. This station, bounded by Chemeketa Street on the north, Church Street on the east, Court Street on the south and High Street on the west, has 19 of the 26 fixed routes operating through it on a pulse system.

Salem Railroad Station

The Salem Railroad Station offers travelers both intercity train and bus service. The existing Salem passenger rail station site is roughly rectangular in shape, being approximately 1,220 feet in length from north to south, and ranging from approximately 85 feet to 138 feet in width from east to west. This site also has an uninterrupted platform length of more than 1,100 feet, well in excess of the 800-foot minimum required for a facility of this type.

The northern half of the site contains a paved parking lot and half of the depot's passenger platform. The parking lot currently has a capacity of up to 150 cars.

The southern half of the site contains the Salem Railroad Station structure that dates from 1918, an 1880's "freight shed" that is no longer in use, the southern half of the passenger platform, a Union Pacific microwave communications tower, and a small wooded area that slopes down toward the Shelton Ditch. There is no vehicular circulation on the southern portion of the site.

The 1918 station structure is approximately 150 feet by 40 feet in size. The station has a current passenger capacity of approximately 160 people.

This facility is adjacent to State Highway 22, which offers connections to Interstate 5, Oregon Highway 221, Oregon Highway 219, Oregon Highway 213, and Pacific Highway 99E. The station is within a half-mile distance of Willamette University, Tokyo International University, and the Capitol Mall. Most of the sidewalk and bicycle lanes surrounding the existing depot site were installed as part of the Oregon Highway 22 overpass project and connect to existing bicycle facilities on the Pringle Parkway. The 12th Street Pedestrian Promenade, which is described in the Pedestrian chapter of this document, will provide a safe, convenient and attractive walking path from the station to the Capitol Mall and downtown areas.

SAMTD serves the Amtrak Station with route number 7, "State and Fairview." This route stops on Mill Street along the north side of Amtrak's north end parking lot on both the inbound and outbound trips. Route number 15, "Laurel Spring," goes through the area, stopping at the corner of 12th Street and Pringle Parkway as it leaves downtown. This bus stop requires potential passengers traveling from downtown to cross the intersection of 12th and 13th streets, and Oregon Highway 22, to reach the Amtrak terminal. Route number 6, the "12th & Sunnyside," and number 15, the "Laurel Spring," both pass directly in front of the Amtrak station on 13th Street when traveling towards the downtown Transit Center, but due to a very difficult street network and traffic pattern, does not have a designated stop at or near the station. Additionally, the CARTS "Canyon Connector" route travels on 12th Street near the station and will stop at the station as requested by passengers onboard, providing service from communities in the Santiam Canyon.

Amtrak, with the financial backing of ODOT's High Speed Rail Project, is also operating Amtrak Thruway motor coach services north to Portland and south to Eugene from this facility.

Courthouse Square Transit Center

Courthouse Square is the central hub for the SAMTD transit network, acting as the downtown terminus to allow passengers to transfer among most of the bus routes in the system. Nineteen of SAMTDs 26 bus routes operate through this transit center. In addition, CARTS (Chemeketa Area Regional Transportation System) and SMART (South Metro Area Rapid Transit, based in Wilsonville) make stops at Courthouse Square, providing a connection to communities outside of the Salem-Keizer area.

This facility opened in 2000 as a replacement for the on-street transit center that was located on High Street between Court and State. Courthouse Square is located on the block bounded by Court Street to the south, Church Street to the east, Chemeketa Street to the north and High Street to the west. Providing an attractive and convenient location for transit users, the site currently houses an office building on the southern part of the block, with room on the northern section of the block for another building potentially offering space for retail establishments.

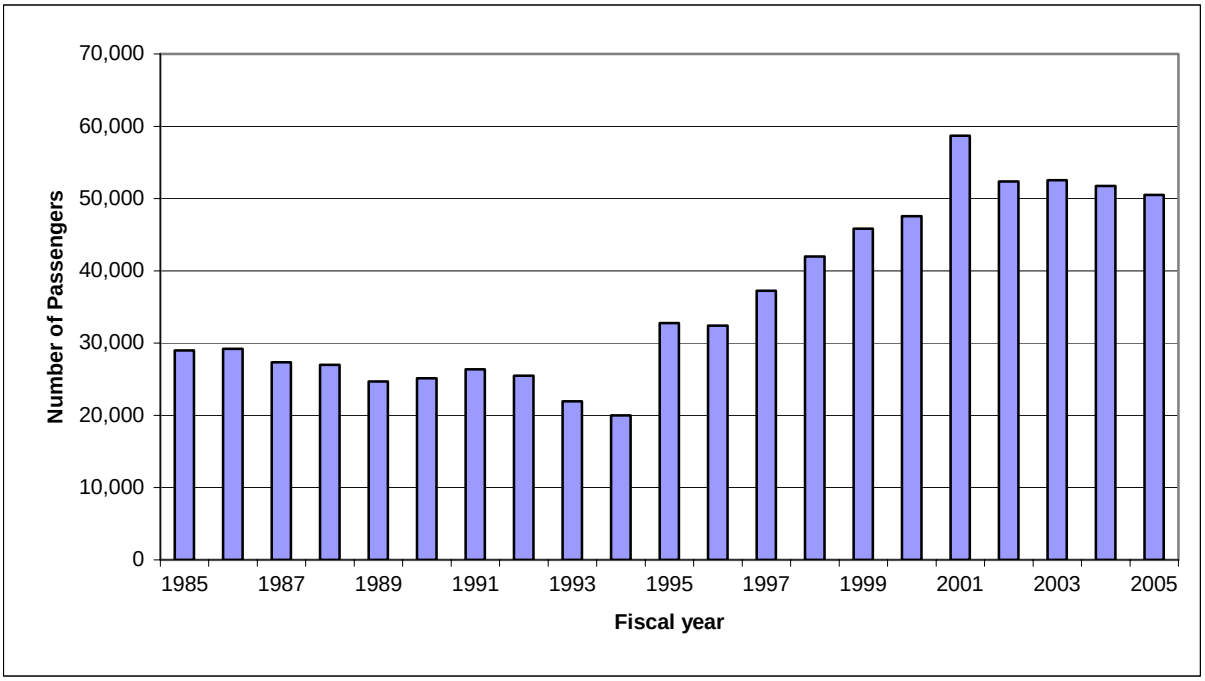
Intermodal Passenger Facility Demand

Current Demand

While many subjective observations can be used in the evaluation of an intermodal facility, the primary quantitative observation usually centers on the number of passengers served by the

facility. While numbers are available for use of the Salem Railroad Station, Greyhound and HUT Shuttle consider their ridership counts proprietary information and thus are not available for publication. **Figure 12-1** shows the growth in use of the Salem Railroad Station, which can be attributable to the increased service provided by the Cascades intercity corridor trains and the Oregon Thruway buses, funded by ODOT.

Figure 12-1
Salem Railroad Station Boardings and Detraining, 1985 to 2005



Future Demand

The ability to develop estimates for future passenger use of two of the Salem-Keizer area intermodal passenger facilities is problematic at this time. Current and future passenger use of McNary Field's Terminal will likely be limited to HUT Airport Shuttle passengers. The company considers such future passenger estimates proprietary. Additionally, the situation for regularly scheduled passenger flights using the Airport is remote. Future passenger use estimates for the Greyhound Bus Station are dependent upon ridership estimates, which are considered proprietary.

Estimates of future passenger levels at the Salem Railroad Station have been developed, based upon several key assumptions. These assumptions include the 2015 service level called for in the Plan of four round trip trains per day operating at 79 mph for the majority of their routes and a "natural" growth in ridership due to SKATS area population growth. Given these factors, passenger volumes through the Salem multimodal rail passenger facility in 2015 were estimated to be approximately 205,600.

Goals, Objectives, and Policies

Goal 1: An integrated regional system of intermodal transportation options for SKATS area passengers.

Objective: *Ensure adequate intermodal opportunities to SKATS area travelers as part of the regional transportation system.*

Policy 1: Promote efficient and convenient access to intermodal facilities servicing SKATS area passengers.

Policy 2: Maximize connectivity of intermodal travel options within the region.

Goal 2: Maximization of SKATS area intermodal efficiency.

Objective: *Provide enhanced intermodal efficiency within the region.*

Policy: Encourage development of consolidated intermodal passenger facilities in the SKATS area.

Recommended Improvements

All of the SKATS area's intermodal facilities are over 30 years old, with structural conditions varying greatly. Access to these facilities could also be improved. Convenience and ease of use are paramount to the success of intermodal facilities, and efforts to improve these qualities in our local facilities should also be considered.

McNary Field

McNary Field needs access improvements for modes other than single-occupant vehicles. Current transit access is reasonable given the demand, however, it could be improved to facilitate access to the site. At the very least, an "on demand" SAMTD transit stop on airport grounds nearer the terminal should be reinstated. The proposed addition of bicycle lanes on 25th Street SE between Madrona Avenue and Mission Street would also improve nonvehicular access to this site.

The terminal at McNary Field has sufficient capacity to operate effectively for the foreseeable future, and ongoing scheduled maintenance on the structure should be conducted. However, the costs of these maintenance efforts can be expected to rise over time as the existing structure ages.

Greyhound Station

A privately owned building, the Greyhound Bus Station generally appears to be in good condition structurally. The interior of the facility is well kept, as is the exterior. Other than

continued maintenance of the existing structure, there are no recommended improvements to the station.

Salem Railroad Station

Work on rehabilitating the Salem Railroad Station was completed in 1999 based on the recommendations presented in the 1995 *Salem Passenger Rail Station Study*. Funding was obtained by ODOT from ISTEA sources to complete the work including seismic upgrades, restoring the building of many of its original design features, and improving the circulation of the building and outdoor areas to facilitate an increase in ridership as forecast in *the Pacific Northwest Rail Corridor, Oregon Segment (2000)*. Recommended improvements are to increase the service to the station by SAMTD and CARTS, with the preferred option of locating a bus stop next to the Station itself. Further, coordinating the buses with the scheduled arrival times of the passenger trains will make transit a more attractive option for travel to the Railroad Station.

Courthouse Square Transit Center

This facility opened in 2000 and provides a convenient and attractive location for transferring to, or catching a bus. The southern part of the block includes a five-story building housing the offices of SAMTD in addition to several Marion County departmental offices. Future development of the northern part of the block to provide retail at the pedestrian level is encouraged.

Financial Analysis

A principal goal of any intermodal passenger facility, public or private, has to be that it is as self-supporting an operation as possible. Methods of generating revenues to support individual facilities may vary, but certain revenue streams, such as rent, concessions, and parking revenues, are common to all such facilities.

McNary Field

The terminal at McNary Field is supported by lease revenues from Hut Limousine and a resident travel agent, and limited concessions revenue. Fees collected by occasional terminal users also help support terminal operations. Parking revenues are applied toward general terminal area maintenance. Monies from the City of Salem's General Fund are also used to help pay for terminal maintenance.

The Federal Aviation Administration (FAA) sponsors the Airport Improvement Program (AIP). These funds could also be used for terminal improvements if local match funds can be located. One possibility for raising these local matching funds could be the implementation of a nominal facilities user charge, to be paid by passengers arriving from, or departing on, a journey from the terminal.

Greyhound Station

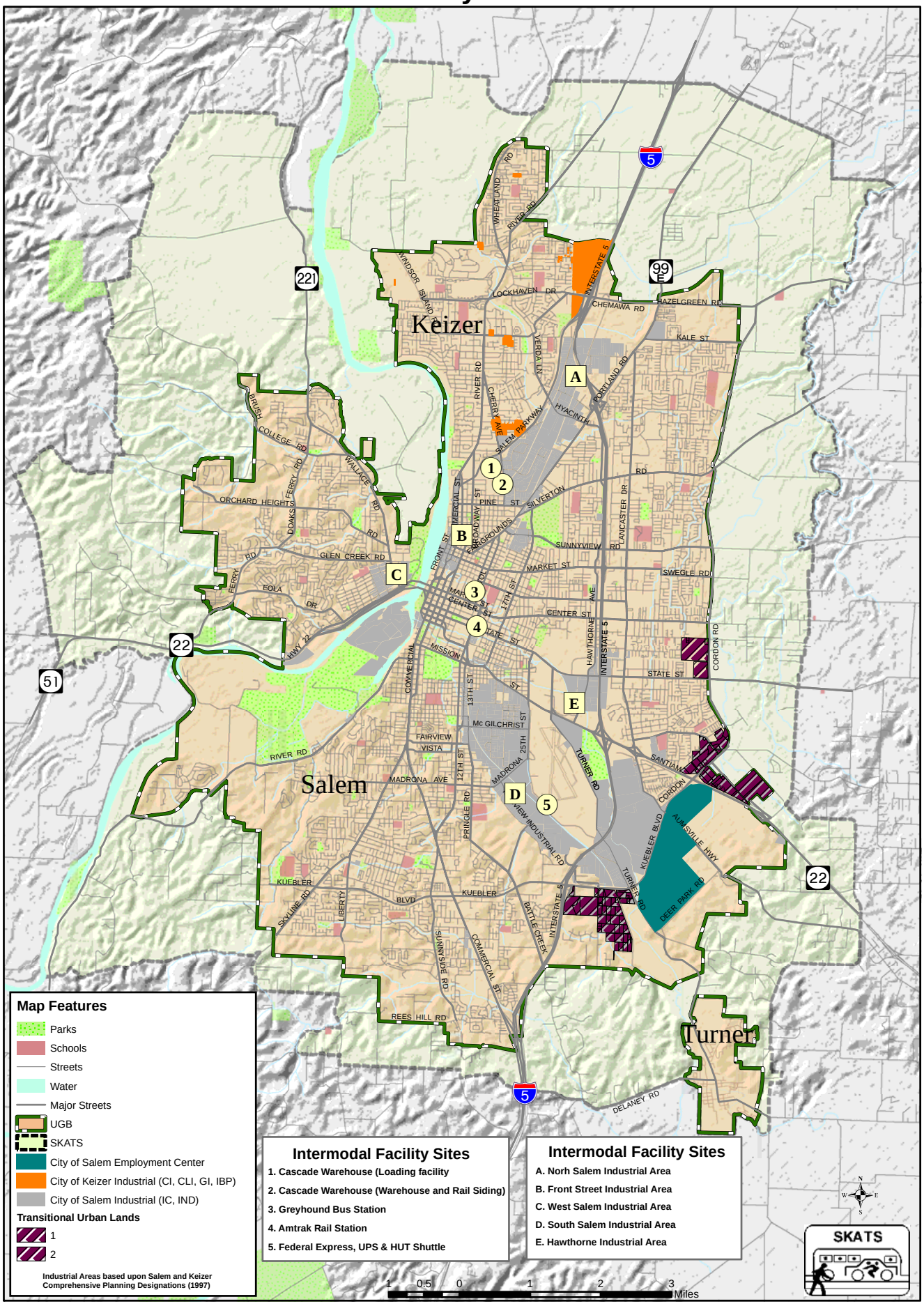
As a privately held facility, the Greyhound bus station does not receive any public funding for either construction/rehabilitation or maintenance.

Salem Railroad Station

Operational and maintenance funds for staffing the Salem Railroad Station come from ODOT. Long-term funding is not guaranteed, and a funding source will likely be necessary within the time frame of this plan to ensure that the Station is maintained adequately.

Map 12-1

Intermodal Facility and Industrial Areas



13 - Transportation System Efficiency Management

Introduction

Over the years, our reliance on the private automobile as our primary mode of transportation has grown substantially. Our dependence on the automobile in the region is evidenced by continual increases in automobile ownership, the number of drivers, the length and number of auto trips, and, as a result, a rise in vehicle miles of travel (VMT) per person (see Chapter 3 and Appendix B). This trend of increased automobile use has led to mounting traffic congestion, spiraling transportation costs, potentially worsened air quality, and increasing numbers of traffic accidents. In addition, future projections indicate an ever-widening gap between vehicular travel demand and the physical capability of our existing transportation system to provide adequate levels of mobility (see Chapter 3). If we continue to rely almost totally on the automobile for our daily transportation needs, we will reduce our ability to get where we want to go, as well as degrade the overall quality of life in our community.

Adding auto travel lanes and constructing new roads has been the traditional approach to addressing increased transportation demand by attempting to "pave our way" out of congestion. However, at this point in time there are several reasons why merely adding additional highway capacity may not be the most efficient way of meeting our increasing mobility needs. First, highway construction is very expensive, and there are limited and dwindling sources of funding to finance those costs. Second, there are significant constraints associated with constructing new and widened highways, as well as growing citizen resistance to converting more and more of our urban land resource to pavement. Third, the negative impacts on our neighborhoods and communities associated with the disruption, fragmentation, air pollution, and danger that new and expanded highway facilities entail are often unacceptable. Finally, merely increasing the ability of the system to serve single-occupant vehicle (SOV) trips is not the most efficient use of our existing transportation infrastructure.

This Plan, therefore, seeks to provide more creative solutions than "business as usual" approaches in order to meet our future transportation needs. Steps need to be taken now to make more efficient use of our existing facilities and increase their overall capacity to move people and goods, and not merely vehicles.

There are several effective options besides highway construction for relieving traffic congestion and meeting increased travel demand. These include a wide variety of Transportation Systems Efficiency Management (TSEM) activities and programs designed to increase the efficiency of existing facilities and promote alternatives to the use of the single-occupant vehicle (SOV) without large-scale roadway construction. Congestion Management Process (CMP), Transportation Demand Management (TDM), Transportation Systems Management (TSM), and

Intelligent Transportation Systems (ITS) are components of strategies designed to improve system efficiency, modify travel demand, and expand our options for travel behavior choices.

CMP is a systematic process to monitor and analyze congestion in major travel corridors and develop and implement strategies (e.g., TDM/TSM) that alleviate congestion and enhance system performance. CMP also includes actions such as parking management and spreading demand away from the peak periods.

TDM actions increase system efficiency by managing and reducing automobile trip demand and maximizing the movement of people and goods, not just vehicles. Typical TDM strategies include ridesharing programs, vanpooling, buspooling, promoting alternative work schedules, travel-time shifting (out of the peak period), telecommuting, and increasing bicycle, pedestrian, and transit use.

TSM actions increase system efficiency by improving flows and removing bottlenecks on existing transportation facilities. Typical TSM strategies include improving traffic signalization, adding turn lane and intersection improvements, removing on-street parking (sometimes only during peak hours), adding transit turnouts and signal pre-emption, and constructing bicycle and pedestrian facilities.

ITS actions increase system efficiency by providing the infrastructure to support several of the TDM and TSM strategies mentioned above, such as improving traffic signalization, signal pre-emption, facilitating the dispersal of information to the traveler for better route selection, and informing agencies and travelers of incidents occurring on the regional transportation system.

Vehicle Hours of Travel (VHT) and Vehicle Miles of Travel (VMT) Reduction Measures are typically modifications to SOV travel demand and trip length and can involve changes in land use patterns coupled with TDM and CMP programs and strategies that serve to reduce daily VMT. These measures can employ both "carrots," such as incentives and subsidies for using a mode other than the automobile, and "sticks," such as disincentives to automobile use, such as parking surcharges or congestion pricing.

Purpose of the Regional Transportation Systems Efficiency Management Chapter

One of the goals of the Plan is to ensure a balanced transportation system that provides viable alternatives to the single-occupant vehicle and makes more efficient use of our existing infrastructure. To that end, the Regional Transportation Systems Efficiency Management chapter of the RTSP includes:

- a regional policy framework to ensure a balanced transportation system and to make the most efficient use of our existing transportation facilities;

- an inventory of regionally significant Transportation Systems Efficiency Management (TSEM) activities and programs that are currently in place and identification of opportunities for expanding, improving, and/or creating effective regional efficiency management programs and activities;

- a "tool box" of TSEM alternatives and strategies to provide information to providers, business and community leaders, citizens, and other interested parties on specific strategies and programs to reduce VMT and increase the efficiency of our regional transportation system; and

- an appropriate package of recommended TSEM actions to ensure a balanced and efficient regional transportation system.

Implementing Transportation Systems Efficiency Management Strategies and Programs

The 1992 Oregon Department of Transportation interagency working group developed a listing of key findings and necessary, supportive actions to ensure the successful application and implementation of Transportation Systems Efficiency Management (TSEM) strategies. The SKATS/City of Salem TDM/Transit Subcommittee evaluated these findings for suitability and appropriateness in relation to the Salem-Keizer urban area and identified a series of general characteristics and supportive conditions for successful applications of TSEM improvements and actions.

General Characteristics for Successful TSEM Applications

- Moderate to heavily congested commute corridors

- Well defined, concentrated residence-to-work-site travel patterns with identifiable trip origin and destination points

- Major employment destination sites or defined clusters of smaller employment sites

Supportive Conditions for Successful TSEM Applications

- Constrained parking at the work site

- Employee residences and personal activity opportunities (retail, service, professional office, etc.) within five miles of work site (potential bicycle trips)

- Employee residences and personal activity opportunities within 1/4 mile of work site (potential walk trips)

- Residences, employment sites, and personal activity opportunities clustered at nodes or located along corridors with transit and pedestrian-supportive urban designs (potential transit trips)

Scenarios for the Successful Implementation of TSEM Strategies

- Strategies are more effective if coupled with complementary strategies (e.g., park-and-ride facilities are more likely to be successful if linked to express or limited stop transit service).

- An efficient Demand Management/Rideshare program should offer the potential user some combination of the following:

    - improved transportation alternatives (e.g., increased bus service);
    - incentives to use alternative modes (e.g., discount transit fares);
    - disincentives to single-occupant vehicle travel (e.g., parking fees);
    - removal of impediments to using alternative transportation modes (e.g., guaranteed ride home programs); and
    - employer support for Demand Management/Rideshare options identified as useful by employees (e.g., creation of a company TDM program).

- Demand management/rideshare programs are most likely to be successful where there are financial incentives to encourage commuter participation (e.g., transportation allowances).

- Congestion, parking costs, etc., often need to be perceived as unacceptable before voluntary demand management/rideshare options become widely attractive to commuters.

- Marketing efforts should target those commuters who are interested in or open to altering their commute pattern (e.g., market segmentation). Time and resources may not be best used in trying to change the minds of those who are committed drive-alone commuters.

- The target area for a TDM program should be clearly defined (e.g., the Downtown/Capitol Mall area). The largest scale demand management/rideshare experiments have been at the subarea level and have been characterized by significant reductions in certain types of vehicle trip rates.

- The larger the scope of the program, the more important it is that there is cooperation among jurisdictions, private employers, and the public. Coordinated efforts among agencies and transportation providers are more likely to succeed than overlapping efforts.

- Demand management/rideshare programs should have strong local financial support to ensure that jurisdictions and private employers support the program (e.g., local matching funds and employer subsidies to supplement state and federal funds).

Regional Transportation Systems Efficiency Management (TSEM) Programs and Activities

This section presents a detailed description of the existing "regionally significant" TSEM programs and activities in the region, such as TDM and TSM activities, including the regionally significant park-and-ride/pool facilities that serve the residents of the SKATS area. It should be noted, however, that the status of the programs and activities described in this section are subject to change. Consequently, any relevant changes will be reflected in periodic updates to this Plan.

TDM Programs

Transportation Demand Management programs increase the efficiency of the existing and future transportation system by managing and reducing the number of automobile trips and maximizing the movement of people and goods. Of the many strategies that are associated with TDM programs in general, discussion of the Regional TDM Program and the Regional Rideshare Program are presented below.

Regional TDM Program

The Regional TDM Program is designed to complement and enhance the efforts that began with the Regional Rideshare Program in 1975 (described in detail below). The TDM program started in 1994 and is funded through the federal Surface Transportation Program as well as local funding sources. The program currently includes four components, listed below, which are described in the following paragraphs.

- Employer/Employee and Community Outreach
- TDM Program Development and Evaluation
- TDM Program Coordination with Other Agencies
- Regional Rideshare Program

<u>Employee/Employer and Community Outreach</u>

An essential part of the TDM program is informing employers and employees that there are options available for the commute to work. The overall goal of this service is to coordinate the development and implementation of transportation alternative programs, activities, and incentives in the Salem-Keizer area. Currently, 109 worksites work with Cherriots Rideshare to offer Employee Transportation Programs. These programs usually have multiple elements to them, to allow the employer the opportunity to tailor the choices to meet the needs of the employees. Possible components of an Employee Transportation Program include:

- New employee introduction package: Includes two free bus passes and a form to enroll in the ride matching program.
- Reduced price bus passes: Monthly passes on Cherriots at a discount.
- Preferential/Reduced Carpool Parking: For those employees joining or starting a carpool, the city of Salem has designated parking spaces for carpools. In addition, some area businesses and agencies offer a similar service in their private parking lots.

- Bicycle and Pedestrian Incentives: Designed to encourage employees to walk or bike to work. Several companies in the area offer on-site bicycle lockers for their workers. In addition, the city of Salem has a number of lockers for rent in downtown.
- Flexible work hours.
- Teleworking.
- Emergency Ride Home program: For employees enrolled in the program who have an emergency that requires the employee to leave immediately, this program would pay for the taxi fare.

In addition, another part of the TDM program's outreach is to inform employers, employees, and the public of the benefits and possibilities that are part of Employee Transportation Programs specifically and TDM strategies in general. These tasks include:

- Assist major employers to develop and establish a comprehensive employee transportation program.
- Explore the feasibility of developing a Transportation Management Association.
- Promote incentives and disincentives for the use of rideshare, transit, bicycling, and walking by employees and the community.
- Assist in the development and establishment of telecommuting programs.
- Promote alternative work hours.
- Participate in community activities to promote TDM strategies where appropriate.

In addition, on a regular basis, the TDM staff meets with public and private sector employers and employees to develop transportation programs and provide information on transportation alternatives.

TDM Program Development and Evaluation

TDM Program Development and Evaluation includes:

- Research TDM strategy related incentives/disincentives and programs elsewhere in the nation for potential applicability for the region. Determine implementation process for these incentives/disincentives to employers and employees.
- Develop marketing promotions.
- Produce newsletter to promote carpool/vanpool use and other transportation alternatives to the single-occupant vehicle, energy conservation, and air quality for distribution to policy makers, local communities, businesses, and the public.
- Retain existing "public" carpool parking and locate additional "on-street" carpool parking spaces in the Downtown/Capitol Mall area, as the demand warrants.
- Develop and implement a park-and-ride plan in coordination with Salem-Keizer Transit District for the Salem-Keizer urban area.
- Identify and develop potential park-and-ride sites within Marion and Polk counties and coordinate the designation and/or construction of these sites with the appropriate jurisdictions.
- Continue to improve the current computer matching program in order to meet the needs of prospective clients and cost effectiveness of the program.

- Improve program monitoring and evaluation procedures to assess the overall effectiveness of the program and the special marketing promotions.
- Develop ordinances to require TDM strategies in lieu of other mitigation measures in Traffic Impact Analysis.

TDM Program Coordination with Other Agencies

The Regional TDM Program coordinates transportation related activities with various other state, regional, and local transportation agencies and committees. The intent of this program is not to duplicate efforts of other agencies or committees. The activities include:

- Coordinate with TDM programs throughout Oregon and Washington to share information and coordinate programs and promotional activities.
- Assist Salem-Keizer Transit District with improvements in transit services and park-and-ride facilities.
- Participate with other TDM professionals throughout the state to educate and promote transportation alternatives to the business community, the pubic and state and local policy makers.

Regional Rideshare Program

The main program offered under the Regional TDM umbrella is the Regional Rideshare Program. The Regional Rideshare Program originated in 1975 as a cooperative effort between the city of Salem, the Mid-Willamette Valley Council of Governments (MWVCOG), and the State of Oregon Department of General Services. The program objective was to alleviate parking demand in the Central Business District (CBD) and Capitol Mall area by providing transportation alternatives to driving alone to work. By the end of 1977, the program had expanded to include a regionwide carpool matching service, preferential parking and reduced parking fees for carpools, park-and-ride facilities connecting to Cherriots bus service, the Cherriots Commuter Bus club (a "no charge" express transit service for CBD/Capitol Mall area commuters), the use of flex hours, and a referral service for vanpools. The program was administrated by the MWVCOG until July 1979. In July 1979, the city of Salem Public Works Department assumed responsibility for administration of the program. In July 2005 the Salem-Keiser Transit District assumed responsibility for the administration of the program and markets the program under the name of "Cherriots Rideshare". The Regional Rideshare Program is funded through the federal Surface Transportation Program of the Safe Accountable Fair Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU) and local funding sources.

Currently, the Regional Rideshare Program's major components are the Carpool Matching Services,Vanpool Referral Services and administering the Emergency Ride Home Program, described in detail below.

Carpool Matching Service and Participation. Carpooling involves the use of an employees' private vehicle to carry fellow employees or other commuters to

work, either using one car and sharing expenses, or rotating vehicle use so that no money changes hands. The Cherriots Rideshare program provides a computerized carpool matching service and offers a 24-hour Rideshare Hotline for potential carpool participants within an 80-mile radius of the Salem-Keizer-Turner urban area. Applicants are matched with those individuals commuting in the same direction and receive a computer printout or e-mail containing contact information of other participants. The average daily round trip commute for carpool participants was approximately 45 miles in 2005-2006.

Cherriots Rideshare processes approximately 62 potential carpool applications a month. As of June 2006, there were 2,778 applicants in the rideshare database.

Vanpool Referral Service. Vanpools can be company sponsored, third-party, or owner operated. A vanpool involves between 7 and 15 riders that is driven by a volunteer driver/coordinator who is commuting to the same location as the riders. Riders usually meet at a designated pick-up location, and have a designated drop-off point at the destination. Each rider pays a monthly fee that is determined by the lease cost, plus gas, divided by the number of riders.

When a carpool application is processed, applicants are also matched with vans that may serve their commuting needs. The applicant receives information about how to contact the driver, pick up and drop off locations, times and fares. Currently, there are 25 vanpools in the Cherriots Rideshare database.

Cherriots Rideshare, in collaboration with Cascades West Rideshare, and Lane Transit District's Commuter Solutions Program have established a vanpool program called Valley VanPool. This joint effort has significantly streamline service, promotion, and recruitment for commuter vanpools in the Willamette Valley. The program has given all vanpools a recognizable, common logo that has greatly enhanced marketing efforts, set up a vanpool hotline number, and created a Web site that is a one-stop vanpool information center.

Valley Vanpool has now been involved in the creation or coordination of eleven vanpools that serve over 125 commuters in the Willamette Valley. These vanpools reduce Vehicle Miles Traveled (VMT) by over 100,000 miles every month.

In 2006, Valley VanPool received a grant from ODOT to assist in vanpool growth in the Willamette Valley by way of offering partial subsidies to vans

Preferential Parking for Carpools and Vanpools. Complementary to the carpool/vanpool referral service, the city of Salem currently gives carpools priority for use of over 300 on-street parking spaces for carpools and reserves ten parking spaces for vanpools. The preferential on-street parking spaces are indicated by signs and are located in the Downtown/Capitol Mall area (see **Map 13-1**).

Participants of the carpool/vanpool referral service can also apply for reserved parking spaces located in one of the city's three downtown parking structures (Pringle, Marion Parkade and Liberty Square). Currently, carpool and vanpool

participants can obtain reduced parking fees for reserved carpool/vanpool parking spaces in the Pringle Parking Structure.

Regional TSM Programs

Transportation System Management strategies aim to increase the efficiency of the transportation system by addressing bottlenecks and flow problems inherent in the built facilities. Three current and continuing strategies pursued in the Salem-Keizer area are the Regional Parking Management System, the Regional Park-and-Ride/Pool System, and the Regional Traffic Signal Coordination and Control System. Additional TSM methods are used on a case-by-case basis to address issues that arise along a given corridor, or that impact a certain intersection. These strategies are discussed in detail in the following sections, with the Regional Traffic Signal Coordination and Control System discussed in the ITS section of this chapter.

Regional Parking Management System

Introduction

The appropriate management of the region's parking supply can be a useful tool in the effort to effectively balance the regional transportation system among the various modes of travel. Too abundant a supply of free parking can contribute to creating a demand for automobile trips that both exceeds the ability of the region to provide adequate roadway capacity and causes degradation in our air quality and overall livability. Too limited a supply of parking can cause perceptions of inconvenience and lack of accessibility to homes and businesses. The challenge is to manage the overall parking supply and demand in such a way that adequate levels of parking are available to prevent detrimental impacts on the economic health of the community, while at the same time not "over building" the supply of parking such that it fosters an increased demand for automobile trips and consumes too much valuable urban land that could be put to other uses.

As the MPO for the Salem-Keizer urban area, SKATS does not directly construct, plan for, or control the parking supply in the region. Those activities are the responsibility of the individual local jurisdictions. The Regional Transportation Systems Plan can, however, promote a regionwide strategy for the management of the regional parking supply and establish policies that support the overall parking management strategy.

Current Parking Supply

The last survey of the parking supply in the Salem-Keizer area was completed in 2005. This survey is an update to the initial survey in 1995, and focused on the increase in that time frame. The estimate for 1995 was 153,393 parking spaces available in the region associated with the Salem CBD, commercial, industrial, educational, government, and health-related land uses (**Table 13-1**). This parking supply translates into approximately 0.84 parking spaces per capita for 1995. The 2005 estimate is for 171,923 parking spaces, or approximately 0.79 parking spaces per capita.

Table 13-1
Parking Supply, 1995 to 2015

	Est. Parking Spaces 1995	Est Parking Spaces 2005	Est. Parking Spaces 2015
Total	**153,393**	**171,293**	**185,141**
Population	182,000	217,400	242,700
Parking per Capita	0.84	0.79	0.76

Source: Kimley-Horn and Associates, Inc., Parking Management and Conversion Plan, June 1995, City of Salem Parking Plan 2005

Regional Parking Management Strategy and Policies

The overall parking management strategy for the SKATS area is to ensure an appropriate supply of parking opportunities in the region that:

- maintains and promotes economic vitality and neighborhood livability within the region; and

- contributes to the balancing of travel demand within the region among the various modes of transportation available.

Changes in the Regional Parking Supply

As a result of the implementation by the local jurisdictions within the region of parking management policies consistent with those contained in this Plan, as well as specific code reductions related to the level of parking required for new development, the regional parking supply can be successfully managed so that an adequate, but not overstocked, supply of parking would exist in the region. It is estimated that 185,141 parking spaces associated with the Salem CBD, commercial, industrial, educational, government, and health-related land uses will be available in 2015 (**Table 13-1**). This parking supply translates into approximately 0.76 parking spaces per capita reduction in the overall regional parking supply that complies with the Oregon Transportation Planning Rule (TPR) requirement of a 5 percent reduction in certain types of parking per capita over the next twenty years. The survey of 2005 shows that the area is on-track to meeting the goal of a 10 percent reduction in 20 years.

Regional Park-and-Ride/Pool System

Overview

Park-and-ride/pool facilities serve as collection points where individuals can park their vehicle or be dropped off and then transfer to a multi-occupant vehicle or another mode of transportation (usually transit) in order to reach their trip destination. These facilities typically provide access to public transportation, such as bus or rail, and may also serve as staging areas for carpools, vanpools, or other ridesharing services (park and pools). Park-and-ride/pool facilities can either be designated or informal sites on public property or joint-use portions of lots on privately owned property, such as shopping centers and churches. Designated sites are signed, indicating the location of the site and, in the case of joint-use facilities, the portion of the site set aside for parking use. Some designated sites operate under a cooperative agreement between the owner of the site (e.g., Fred Meyer Store) and an administrative agency (e.g., Salem Area Transit District). Informal sites are not signed and operate under an informal agreement with the property owner who allows use of a portion of the site for parking, as long as it does not interfere with the daily function of the site. The size of a park-and-ride/pool facility may vary from only a few spaces in sparsely populated or less heavily traveled corridors to hundreds of spaces in lots served by major transit routes.

Park-and-ride/pool facilities serve various functions depending on their location and the type of connection provided. Lots located outside of the central business district (CBD) are often referred to as "fringe" or "peripheral" facilities. These lots typically serve downtown commuters and are usually served by public transportation. Fringe parking can help reduce parking and SOV travel demand within the CBD or other areas where demand for parking and roadway space is generally high. Other types of park-and-ride/pool facilities collect long distance commuters near the origin of the trip and, by eliminating much of the SOV trip length, are more effective at reducing the number of vehicle miles of travel (VMT). These facilities are typically located near the intersections of freeways or other major roads and provide a convenient transfer point for carpools, vanpools, and buspools.

A variety of supporting facilities and services, such as signing and marketing, promote park-and-ride/pool lot use. Sites can be developed to facilitate access by walking and bicycling by providing connecting sidewalks, access paths and bicycle lanes, and bicycle parking and storage facilities. A variety of personal services can also be provided at major lot locations (e.g., convenience stores, day care, banks, dry cleaning services).

Regional Park-and-Ride/Pool System Facility Inventory

During August 1994, SKATS staff conducted a field survey of regionally significant park-and-ride/pool facilities. This inventory is depicted in **Table 13-2**. The regional park-and-ride/pool system consists of 17 sites (designated and informal) that are located in and around the SKATS area. Twelve sites are located within the SKATS boundary and five are located outside the SKATS boundary (three of those five are not shown on the map) (**Map 13-1**). The park-and-pool facilities that are located outside of the SKATS area generally serve as staging areas for carpool and vanpool commuters who live outside and are employed within the SKATS area.

Table 13-2
Park and Ride Locations in the Salem-Keizer Area

Site Name	Address/Location	Spaces	# Parked Vehicles	Signed	Striped	Paved	Lighting	Classification
West Salem								
Wallace Road/Brush College Road	Northwest corner of Wallace Road @ Brush College Road.	50	23	yes	yes	yes	yes	Designated
Rickreall	9 miles west of Salem on Rickreall Road, 0.2 miles west of Hwy. 99W	20	5	no	no	no	no	Designated
Kings Valley Hwy./Hwy. 22	13 miles west of Salem, southeast corner of Hwy. 22 @ Hwy. 223	15	7	no	no	no	no	Informal
East Salem								
Christ Lutheran Church	4440 State Street @ 44th Place intersection.	15	2	no	yes	yes	no	Informal
Grace Baptist Church	4197 State Street @ Elma Street intersection.	20	2	no	no	no	yes	Informal
State Motor Pool Express bus service	1100 Airport Road @ Ryan Drive intersection	110	93	yes	yes	yes	yes	Designated
Market Street Express bus service	Northwest corner of Market Street @ Hawthorne Avenue	180	75	no	yes	yes	yes	Designated
Stayton Road/Hwy. 22	12 miles east of Salem, southeast corner of Hwy. 22 @ Cascade Hwy.	94	18	yes	yes	yes	yes	Designated
Silver Falls Hwy./Hwy. 22	5 miles east of Salem, northeast corner of Hwy. 22 @ Hwy. 214	15	0	no	no	yes	no	Informal
North Salem								
Fred Meyer North	2855 Broadway Street NE @ Salem Parkway intersection	20	15	yes	yes	yes	yes	Designated
People's Church	4500 Lancaster Drive NE @ Jade Road intersection	20	1	no	yes	yes	yes	Informal
North Salem Baptist Church	4290 Portland Road NE, north of Hyacinth Street intersection	approx. 25	5	no	yes	yes	no	Informal
Safeway	4990 North River Road @ Chemawa Road intersection	25	3	no	yes	yes	yes	Informal
South Salem								
Sunnyside/Turner Road Interchange	Southeast corner of Delaney Road @ Squirrel Hill Road.	60	18	yes	yes	yes	nearby	Designated
Fred Meyer South	3450 Commercial Street SE @ Madrona Avenue intersection	approx. 30	9	no	yes	yes	yes	Informal
Walmart Express bus service	5250 Commercial Street SE @ Baxter Road intersection	approx. 70	30	no	yes	yes	yes	Designated
Rite Aid/Albertson's Express bus service	4450 Commercial Street SE @ Hilfiker Road intersection	approx. 50	28	yes	yes	yes	yes	Designated

Goals, Objectives, and Policies

The Regional Transportation Systems Efficiency Management chapter (RTSEM) of the Regional Transportation Systems Plan (RTSP) provides a framework for developing an efficient and balanced regional transportation system for the SKATS area. Since SKATS does not actually build, maintain, or operate any portion of the facilities and services comprising this system, the RTSEM of the RTSP is implemented through the cooperative adoption of regional goals, objectives, and policies contained in the regional Plan. In turn, the regional Plan must be consistent with state and federal plans, policies, and mandates. The goals, objectives, and policies contained in the RTSEM of the RTSP are geared toward meeting the long-term mobility needs of the citizens and businesses in the SKATS area by promoting an increased variety of viable travel choice options in the region and making the most efficient use of existing transportation capacity and infrastructure.

Goal 1: A program of transportation systems efficiency management strategies and actions implemented on the regional transportation system in the Salem-Keizer urban area.

Objective 1: *Establish a program of transportation systems efficiency management strategies and actions to be implemented on the regional transportation system.*

Policy 1: The Regional Transportation Systems Efficiency Management chapter (RTSEM) of the Regional Transportation Systems Plan (RTSP) shall establish a program of transportation systems efficiency management strategies and actions to be implemented incrementally on the regional transportation system over the 20-year planning horizon.

Policy 2: The strategies and actions contained in the RTSEM shall be evaluated and updated on a recurring basis in order to respond to the changing mobility needs of residents and businesses in the Salem-Keizer area.

Objective 2: *Support Transportation Systems Efficiency Management (TSEM) strategies and actions on the regional transportation system that provide the greatest level of mobility for residents and businesses in the Salem-Keizer area.*

Policy 1: Support the continued allocation of regional funds to successfully implement the Regional Rideshare Program.

Policy 2: Cooperatively seek additional revenue sources to ensure the development and implementation of TSEM strategies and actions that provide cost-effective transportation alternatives to the single-occupant vehicle and peak period travel demand.

Goal 2: A regional transportation system that maximizes the safe and efficient utilization of existing and planned transportation capacity and infrastructure.

Objective 1: *Maximize the efficient use of existing and planned regional transportation capacity and infrastructure.*

Policy 1: Promote the implementation of Transportation Demand Management (TDM) strategies and programs in the Salem-Keizer area to reduce both reliance on the single-occupant vehicle as well as peak period vehicle demand on the regional transportation system.

Policy 2: Promote the implementation of Transportation Systems Management (TSM) and Congestion Management Process (CMP) strategies and actions to improve the operating efficiency of the existing regional transportation infrastructure in the Salem-Keizer area.

Policy 3: Implement TSEM strategies and actions in lieu of major widening projects on roadways identified as part of the regional transportation system unless significant constraints or insufficient improvements in service levels can be demonstrated.

Policy 4: Support the efforts of implementing jurisdictions to adequately maintain and maximize the useful service life of the existing regional transportation infrastructure.

Goal 3: A balanced regional transportation system that affords the residents and businesses in the Salem-Keizer area a range of viable modal options for the movement of people and goods.

Objective 1: ***Provide a regional transportation system that employs a variety of viable modes to facilitate options in personal and commercial travel choices.***

Policy 1: Promote the design and development of a regional transportation system infrastructure that incorporates vehicle, transit, walking, bicycling, and rideshare modes.

Policy 2: Promote the development of land use patterns and architectural designs that facilitate multimodal travel options.

Policy 3: Identify transportation system improvements that effectively accommodate and enhance the use of a variety of modal options.

Goal 4: A public well informed about the availability, cost, and tradeoffs of transportation and travel behavior choices in the Salem-Keizer area.

Objective 1: *Encourage public education and information programs and activities that increase public awareness of the available transportation and travel choice options in the Salem-Keizer area.*

Policy 1: Support the development and provision of public educational opportunities and informational materials in order to increase public awareness of transportation efficiency and travel choice options available in the SKATS region

Policies for the Regional Parking Supply

Policy 1: Where practicable, existing on-street parking will be removed from the regional system in preference to acquiring new rights-of-way for the addition of travel lanes. Efforts shall be made to mitigate the impacts of such removals in those areas where abutting properties have no ability to provide their own supply of adequate off-street parking or where on-street parking is needed to support an existing business district.

Policy 2: An adequate supply of carpool and vanpool parking spaces should be provided in the region to accommodate the demand for such parking. The provision of these spaces shall have preference over those intended for general purpose uses.

Policy 3: Jurisdictions within the region should provide for the restriction of overflow parking impacts in residential areas through the use of residential parking permit programs and other means as appropriate.

Policy 4: New development in the region should provide sufficient access to an appropriate supply of off-street parking subject to the standards established by the local jurisdictions within the region. Those jurisdictions are encouraged to develop parking maximums that clearly reflect an intent to effectively manage the overall parking supply.

Policy 5: Major regional activity centers should be effectively accessible by transit, bicycles, and pedestrians; should provide priority spaces for carpools when practicable; and should meet their parking requirements through a combination of shared, leased and new off-street parking opportunities, as well as automobile demand reduction strategies.

Policy 6: Local jurisdictions within the region are encouraged to allow owners and lessees of nonresidential properties to satisfy off-street parking requirements by implementing plans that provide for and promote the increased use of modes of travel other than the automobile by both employees and customers.

Recommended Improvements

Specific TSEM improvement projects and activities associated with the regional transportation systems called for in this Plan address all four of the system efficiency methodologies identified in this chapter, including Congestion Management Process (CMP), Transportation Demand Management Systems (TDM), Transportation Supply Management Systems (TSM) and Intelligent Transportation System (ITS) facilities. Several of these methodologies are new additions to the toolbox of strategies that the region will use now and in the future to ensure

that the existing and future regional transportation system operates in an efficient manner; both from a user's perspective and from a financial one. In particular, the strategies proposed for the CMP and ITS programs are presented in greater detail, encompassing not only the basics of the programs, but the rationale for each as well.

Regional CMP Program

Introduction

This Plan continues the Regional Congestion Management Process (CMP) for the SKATS area defined in the 2030 RTSP. The CMP was developed in order to facilitate the monitoring, analysis and reduction of congestion in the major regional travel corridors. Elements of the overall Regional CMP will be phased in over the next several years as the infrastructure for data collection and the organizational structure to analyze and disseminate the data is designed and implemented.

Why a CMP?

For metropolitan areas with a population over 200,000, a Congestion Management Process is required by federal regulations to be part of the planning process for the transportation system. Further, for carbon monoxide nonattainment TMAs, such as SKATS, successful completion of the CMP process is necessary before federal funds may be programmed to any project in the TIP

> "...that will result in a significant increase in carrying capacity for single occupant vehicles (a new general purpose highway on a new location or adding general purpose lanes, with the exception of safety improvements or the elimination of bottlenecks) ..." [23 CFR Section 1410.302 (a)]

Many of the steps required of a CMP are already performed by SKATS when projects are considered for inclusion in the RTSP and TIP. The CMP merely codifies the procedure and allows for a more systematic analysis of the alternatives available to address congestion. The Regional CMP established in this Plan addresses three issues:

- First, it meets the federal requirements that the area implement a CMP that includes all federally-funded capacity increasing projects;
- Second, it lays the foundation for the evolving systematic data collection, analysis, and interpretation activities that comprise the backbone of the Regional CMP; and
- Third, it establishes an evaluation process that ensures that proposed improvements are designed and located in such a way as to solve congestion problems and be cost-effective over time.

As the Regional CMP is refined in future Plan Updates, it will provide ever more detailed pictures of the operational characteristics of the major travel corridors in the region and serve as a basis for the selection of improvements designed to effectively address the identified problems.

The SKATS Regional Congestion Management Process (CMP) is a three-layered process designed to ensure that federally funded SOV capacity is added to the transportation system appropriately, and, once added, that it is managed and protected effectively.

Regional CMP Consistency

System level components of the Regional CMP occur with the development and adoption of the RTSP; project specific elements of the Regional CMP occur during project selection for the TIP.

The adopted SKATS RTSP identifies the facilities that are considered part of the regional CMP system (**Map 13-2**) as well as the congestion problems on the regional system. Note that these congested segments are expected to occur even with the aggressive program of reasonable and affordable alternative modal strategies and actions embodied in the adopted RTSP, such as:

- major transit service and equipment improvements;
- continual expansion of the regional rideshare, TDM and vanpool programs;
- major additions to the regional bicycle system;
- completion of the regional traffic interconnect system and other operational and TSM improvements;
- significant expansion of the regional signal ITS system, including development of an automated traffic reporting system, improved real-time transit utilization reporting;
- ongoing support for the integration of transportation and land use and the development of a less auto-reliant urban form.

After the determination that a given proposed improvement will result in the *addition or subtraction of at least ½ mile of general purpose travel lane capacity* to the transportation system, the first layer of the SKATS CMP process is used to determine the *eligibility* of the proposed improvement for inclusion into the SKATS MTIP (and subsequently, into the ODOT STIP).

If the proposed improvement is deemed to constitute the addition or subtraction of *significant SOV capacity* to the region's transportation system, to be *eligible* for inclusion into the SKATS TIP the project must *either* address a congestion problem identified in the adopted SKATS CMP *or* be developed as the result of a planning effort called for in the adopted RTSP to resolve an Outstanding Issue specifically identified in the Plan.

Project Specific CMP Consistency

When a general purpose capacity adding project has been demonstrated to be consistent with the SKATS CMP system on a regional level, the second tier of the SKATS CMP process (**Figure 13-1**) ensures that specific other, non-SOV capacity adding solutions to the identified problem have been considered and evaluated. When a capacity adding project has been demonstrated to be consistent with the regional CMP system, it must also show that a wide range of alternative, non-SOV capacity solutions have been examined to solve the identified problem and that none of these was found to be effective, feasible, or neither. A checklist must be completed by the sponsoring agency and included with the request to program funds for the project in the SKATS TIP or AQCD that specifically documents the evaluation of each non-SOV alternative. Only when it can be demonstrated that no effective and feasible non-SOV capacity adding solutions

can be implemented will the project be considered for funding in the SKATS TIP.

Capacity Maintenance and Protection

Finally, if general-purpose SOV capacity has been shown to be the most effective solution to a problem identified in the SKATS CMP, then the design and implementation of that project must consider, and include where appropriate, specific actions or design features to *maintain* the capacity/operation of the segment and to *protect* it from returning to a congested state. Such protection could take the form of access control or other similar strategy.

Components of a CMP

The facets of the initial SKATS Regional CMP are outlined below and are presented in more specific detail in the following sections. **Figure 13-1** illustrates the project evaluation process. It should be noted that the items presented below will evolve over time as experience is gained in actually implementing the CMP system and analyzing the resultant data.

- Develop a set of congestion identification measures for the region.
- Establish a framework for gathering and analyzing the data necessary to determine how the transportation system is functioning, what might be causing congestion on the system, what actions might be appropriate to address the congestion, and how effective given solutions might be in solving the problem.
- Ensure the evaluation of alternatives to address the problem, both for the present and the future transportation system.
- Plan how and who will implement the preferred solution, and how it would be funded.
- Provide for a mechanism to monitor the performance of the system to ascertain the continued effectiveness of the implemented solution.

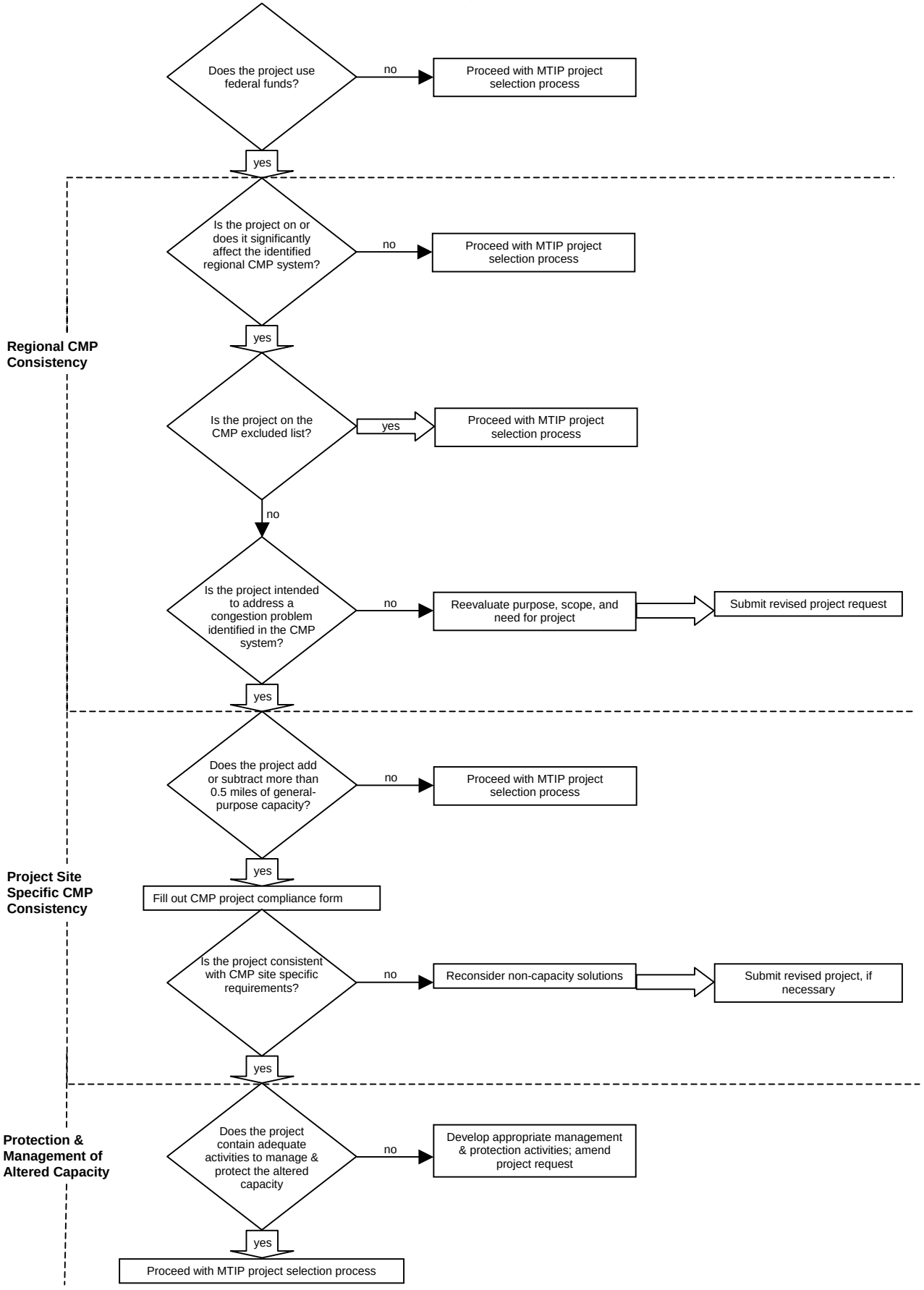
Congestion Identification Measures

The development of performance measures to identify congestions is the first step in defining a CMP. For many applications, the traditional measure has been the volume-to-capacity ratio (v/c). However, part of the focus of a CMP is to expand the consideration of solutions to include alternative modes and innovative solutions. As such, while the use of v/c as a congestions identification measure is appropriate in the short term while the CMP is being developed and refined, more sophisticated measures that address the multi-modal aspect of the transportation system will be required in the future.

The Regional CMP will initially employ measures that track auto and transit usage within a specific corridor. Existing traffic counts and transit ridership reports will form the basis of the congestion identification measures. These initial measures will be v/c for automobiles and peak period transit v/c. Peak period transit v/c is defined as the number of riders during the peak period on a route divided by the total capacity of the buses running on that route. One variation would be to also use seated capacity in addition to total capacity to reflect the desire of transit riders to have their own seat on the bus.

Figure 13-1

SKATS CMP Project Flow Chart



Additional measures can be added after the basic data collection and analysis process is in place. The regional traffic count program and the implementation of some ITS infrastructure is already in place. Projects to increase these data sources and to develop additional ones will be proposed as part of future TIPs.

Data Framework

Currently, the framework for gathering the data needed by the CMP is not fully developed. While individual jurisdictions do perform traffic counts on the region's arterials and the transit district does have ridership reports, there is no current process for the automated gathering of this data as it is produced, nor are the tools in place to automatically perform the analysis of the data.

These tools and processes will need to be developed over the next year through a cooperative procedure between the MPO, the cities, state and transit district, to ensure that the data gathered will not only meet the needs of the CMP requirements, but will satisfy the needs of the individual agencies.

While in the short-term, these data collection techniques will suffice; as additional performance measures are introduced new methods to collect the requisite data will be required. It is anticipated that several of the solutions will be implemented using the techniques and methodologies discussed in the ITS section that follows.

Analysis of Alternatives

Before any additional federally funded general-capacity –increasing or -decreasing travel lanes can be programmed in the SKATS TIP the sponsor must show that every other alternative has been seriously considered and found ineffective to sufficiently reduce congestion sufficiently. The alternatives should be considered individually and in concert with others. The alternatives to be considered include:

- Transportation Demand Management strategies
- Traffic System Management Improvements
- Transit Improvements
- Intelligent Transportation Systems
- Addition of general purpose lanes

Additionally, when SOV lanes are the only recourse for a project, they must include measures to ensure that the facility performance does not degrade after completion of the project. These measures would address operational management and/or travel demand reduction strategies.

Periodic Review

The final requirement for a CMP is that it provide an ongoing review of the regional system as the alternatives are brought online, to determine how effective the solution is working. This review forms a type of feedback to the planning process, to inform and direct the decision makers as to the potential effectiveness of future projects. It is anticipated that this review would be conducted during the RTSP update process.

CMP Corridors

The corridors selected for the initial regional CMP will be the Regional Road System (**Map 13-2**). This definition provides a reasonable coverage of the regional roads in the SKATS area, captures the majority of the transit routes and ridership, and represents the main trucking routes through the area. The corridors are listed below. As can be seen from the list, the corridors do not necessarily include the entire facility, rather the road is typically split into several sections, representing places where the operational characteristics of the route change. One example is Commercial Street South. Instead of including this street from Mission to Kuebler as one congested corridor, it is rather split into two segments: Commercial from Downtown to where the Commercial/Liberty couplet starts, and from the couplet past Kuebler to the interchange with I-5 near the southern limits of Salem's boundary.

CMP Corridors

- 12th/13th: Downtown to Commercial St S
- 17th: Silverton to Highway 22 E
- 25th: Madrona to State St.
- Broadway: Downtown to River Rd.
- Center: 12th to Cordon
- Chemawa: River Road to Portland Rd
- Cherry: River Road to Pine St.
- Commercial S: Couplet Split to I-5
- Commercial/Liberty N: Division to Salem Parkway
- Commercial/Liberty S: Downtown to the Couplet Split
- Cordon: Kuebler to Chemawa
- Doaks Ferry: Highway 22 to Wallace Rd
- Fairgrounds: Portland Rd to Hood St.
- Glen Creek: Wallace Rd to Doaks Ferry
- Hawthorne: Hyacinth to Highway 22 E
- Hazelgreen: Portland Rd to Cordon
- Highway 22 W: Bridges to UGB
- Hyacinth: Hawthorne to Salem Parkway
- I-5: Brooks Lake Road to Delaney
- Kuebler: Skyline to Cordon
- Lancaster: Kuebler to Portland Rd
- Liberty Rd S: Fairview to Davis Rd/Mildred Ln
- Lockhaven: Windsor Island Rd to Chemawa
- Madrona: 25th to Liberty
- Market: Capital/Summer to 45th

- Mission St: Commercial/Liberty to East UGB
- Orchard Hts: Wallace Rd to Doaks Ferry
- Portland Rd: Fairgrounds to Hazelgreen
- Pringle/Battle Creek: McGilchrist to Kuebler
- River Rd N: Commercial/Liberty N to Wheatland
- River Rd S: Commercial/Liberty to Viewcrest
- Salem Parkway: Commercial/Liberty N to I-5
- Silverton Rd: Fairgrounds/Portland Rd to Cordon
- Sunnyside: Commercial to Mildred Lane
- Sunnyview: Fairgrounds to Cordon
- State: 12th to Lancaster
- Turner Road: Highway 22 to South UGB
- Verda: Salem Parkway to Lockhaven
- Wallace Rd: Highway 22 to UGB

Regional TDM Program

Improvements and programs called for related to the Regional TDM program include the following:

- Continued regional and local support of the TDM program and its components, including the Regional Rideshare Program.
- Provision of bicycle racks and lockers as necessary at all existing and proposed Cherriots transit centers and transfer centers.
- Other TSEM projects recommended for implementation on the Regional Public Transportation System as identified in Chapter 14, the Regional Public Transportation System.
- Continued provision of bicycle racks on all Cherriots buses.
- Continued regional support for the development of Regional Bicycle System facilities as identified in Chapter 7, the Regional Bicycle System.

Regional TSM Program

Improvements and continuation of current work called for related to the Regional TSM program include the following projects:

- Continued regional support for the development and maintenance of existing facilities related to the Regional Park-and-Ride/Pool System.
- Continuation of cooperative agreements for designated, joint-use park-and-ride/pool facilities located in the Salem-Keizer urban area.
- Identify and encourage the development of potential joint-use park-and-ride/pool facilities in the SKATS area in cooperation with the Salem-Keizer Transit District.
- Development and continued support of a coordinated system of peak hour express bus service serving park-and-ride/pool facilities located near the major corridor entry points to the region.

- Specific TSEM roadway projects recommended for implementation affecting the Regional Goods Movement System as identified in Chapter 8, Regional Goods Movement System.
- Specific TSEM roadway projects recommended for implementation affecting the Regional Highway System as identified in Chapter 15, Regional Highway System.

Regional ITS Program

Intelligent Transportation Systems (ITS) refers to a myriad of technological activities that involve the collection, storage, processing and distribution of information related to the movement of people and goods in ways that serve to improve both the overall operation of the transportation system and the experience of the traveler.

Central concepts related to the ITS are:

- there is information that, when gathered and distributed in a timely way, can positively effect the operation and safety of the transportation system; and

- this information can be a benefit to one or all of the managers and users of the transportation infrastructure.

General examples of ITS activities include technologies to: help smooth out traffic flows, manage the operation of buses along transit routes, expedite emergency response times, provide useful system conditions information to the traveler, and improve railroad grade crossing safety.

Specific examples of ITS technologies include the following systems: traffic signal coordination and control; multi-modal traveler information; transit management; freeway management; electronic toll collection; railroad grade crossing safety/warning; emergency response management; electronic fare payment; and incident management.

Although many of these technologies are already in everyday use, it is highly likely that as time goes on, more increasingly useful technologies will emerge in the transportation arena. As these technologies become standardized and affordable, they will be incorporated into the evolving ITS network.

Current and Planned ITS Improvements

Traffic Signal Coordination and Control System

For the past several years, the SKATS area has been investing in upgrading the traffic signal control and coordination apparatus in the urban area. Currently, the SKATS adopted Transportation Improvement Program (TIP) annually allocates the funding necessary to operate the Regional Traffic Signal Control Operations Center (RTCOC) housed at the city of Salem.

In conjunction with activities described in the Congestion Management Process portion of the Plan, the RTSP calls for the eventual interconnection of the traffic signals associated with specific corridors of the Regional Highway System. To date, signal system interconnects in the following regional corridor segments have been completed:

- 12th/13th (Mission to Hoyt)
- Broadway (Liberty to Hood)
- Commercial Street (Madrona to Hilfiker)
- Commercial Street S (Fabry to Robins Lane/Fairway Dr)
- Liberty Road (Salem Heights to Kuebler)
- Market Street (Capitol to Hawthorne)
- Portland Road (Erixon to Lana)
- Silverton Road (Lana to Hawthorne)

Committed regional corridor signal system interconnect projects include:

- 12th/13th (Mission to Hoyt) (interconnect completed; project consists of an operational upgrade to actuate all pedestrian movements and side street approaches)
- 17th Street (State to D Street)
- 25th Street (Mission to McGilchrist)
- Broadway (Fred Meyer to Shangri La)
- Center Street (12th to Hawthorne)
- Cordon Road (State to Silverton)
- Edgewater (Wallace to Rosemont)
- Kuebler Blvd (Commercial to Stroh)
- Lancaster (Hagers Grove Rd to Cordon Rd)
- Lockhaven Drive (North River Road to I-5)
- Madrona (Pringle to Fairview Industrial Drive)
- Silverton Road (Fairgrounds to Lana, Lancaster to 45th, Brown to Cordon)
- State Street (12th to 24th)

Longer term regional corridor signal interconnect improvements called for in the Plan include:

- 12th/13th (Hoyt to Madrona)
- Center Street (17th to 24th Street)
- Chemawa / Hazelgreen at Portland Rd
- Liberty Road (Browning to Madrona)
- North River Road (Lockhaven to Manzanita)
- Wallace Road (Edgewater to Glen Creek)

The following ITS investment (both near- and long -term) is also called for in this RTSP:

- continued operation and improvement of the RTCOC component of the urban area ITS.

Longer term, as funds become available, the Plan calls for the incorporation of some sensing technology (i.e., loops or cameras) into the regional corridor traffic control system to provide real-time information on traffic flows for use in by the RTCOC and for traffic counting purposes.

Multi-modal Traveler Information System

At this time, the only application of this technology in the SKATS area is the ODOT website, www.TripCheck.com, which is intended to offer the traveler information regarding the conditions on the facilities of the state highway system in and around the Salem-Keizer area. Two CCTV cameras are located in the area of the I-5 @ Hayesville Interchange.

Variable message signs, either permanent or mobile, could also be considered a form of ITS technology. Generally, these signs are used to warn motorists of a significant delay and to indicate alternative routes. For these signs to be effective and practical, there must be an alternative available for the traveler to use. In the SKATS area, the installation of a permanent variable message sign is planned along Highway 22 east of Cordon Road in the next two to four years. Additional locations, such as along Highway 22 west of Doaks Ferry, are identified in the Regional ITS Plan, but are currently in the illustrative section until funding can be identified.

Transit

Transit ITS applications, e.g., transit managements systems and electronic fare payment systems, may have some promise in terms of increasing the efficiency of transit operations and customer confidence in the transit system. Improving mobility in regional transportation corridors where the physical and political impediments to adding right-of-way are high is identified as an "outstanding issue" in this RTSP Update. As part of the implementation of the recommendations adopted as a result of the High Priority Transportation Corridor study, transit ITS applications will be examined as part of an overall recommended strategy to improve mobility in the Broadway/ River Road North corridor. It is expected that ITS applications employed in the HPTC Corridor will also be used in other appropriate locations. Currently, the Transit District is outfitting their buses with Automated Vehicle Location (AVL) and Automated Passenger Counter (APC) technology. This will allow future bus stations to provide real-time information for bus arrival.

Freeway Management System

The I-5 freeway running north/south is the only freeway in the SKATS area. At the present time and in the foreseeable future, it is not believed that ramp metering will be required to manage the freeway flows through the area. If and when such improvements should be deemed necessary and the funds become available, they would be incorporated into the regional ITS.

Electronic Toll Collection System

The only imaginable application of this ITS technology in the SKATS area would be in conjunction with the construction of a new bridge across the Willamette River in the SKATS area. As part of the planning process associated with that new bridge, the issue of tolls and the means to collect them will be examined.

Railroad Grade Crossing Safety/Warning System

The Federal Rail Administration (FRA) has developed a strategic plan for Highway-Rail Intersections (HRI). Among the issues considered in this plan are the establishment of design standards for HRIs and the potential uses of AVL and GPS ITS systems in the control of the safety devices at the crossing. The Regional ITS Architecture Plan for the SKATS area identifies many of the railroad crossings to implement this technology.

Emergency Response Management System

The emergency response providers in the Salem-Keizer area meet periodically to ensure the coordination and effective integration of their operations and technologies. At this point in time, no specific additional application has been identified as a priority need for regionwide implementation.

Incident Management System

The jurisdictions in the Salem-Keizer area responsible for incident management meet periodically to ensure the coordination and effective integration of their operations and technologies. In addition, plans have been developed to reroute traffic in the event of a partial or full closure of I-5 or the Willamette River bridges.

Consistency with Established Architecture

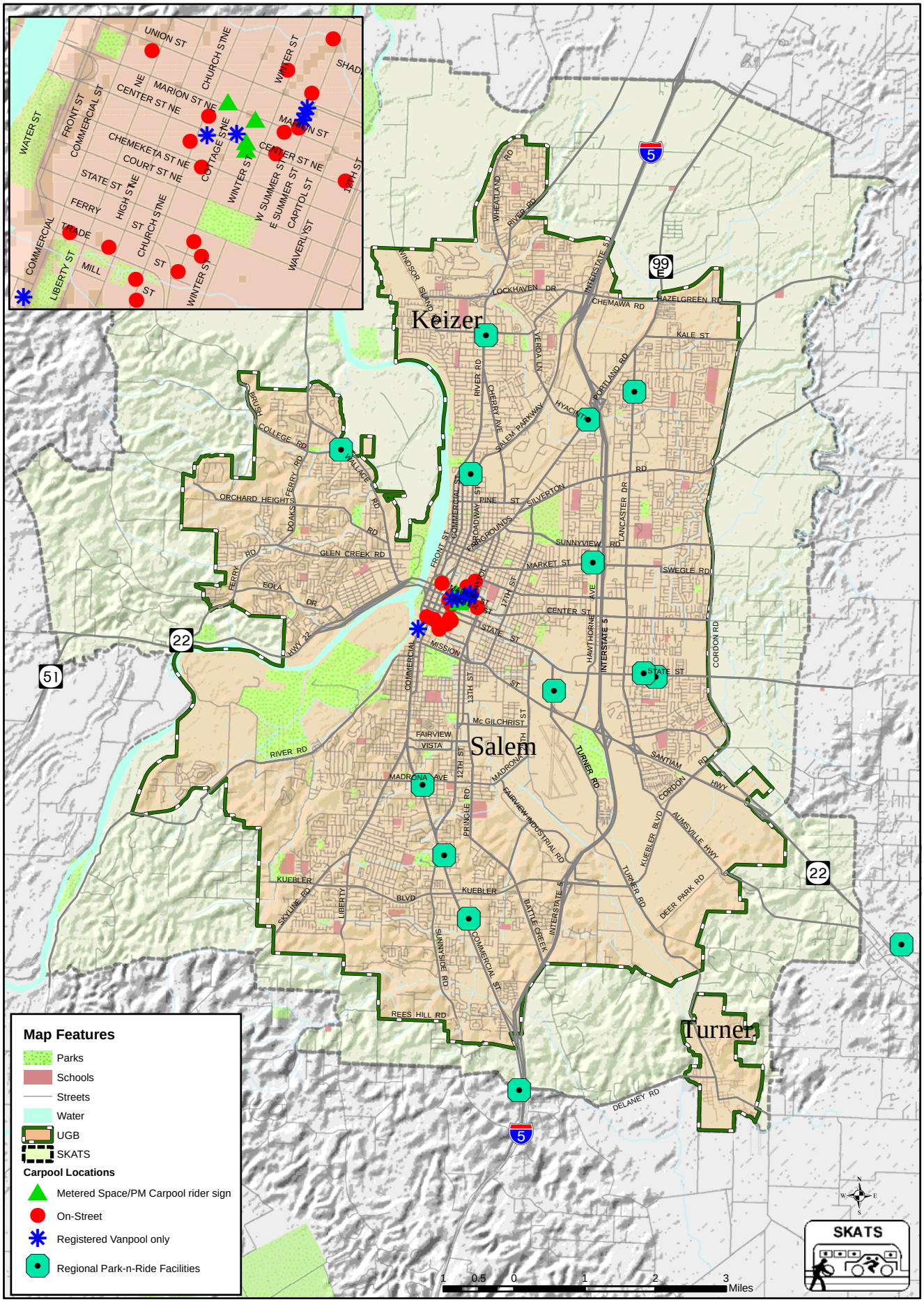
All of the existing and planned ITS improvements contained in this Plan are consistent with the established Regional ITS architecture presented in the Regional ITS Architecture Plan for the Salem-Keizer area. Completion of the ITS plan was in August 2005. A number of the recommendations from the Regional ITS plan are included in the financially constrained portion of this Plan, with other projects in the illustrative list due to lack of funding. A list of the ITS-related projects, not including signal interconnect projects, is included in **Table 13-3**.

Table 13-3
ITS Projects

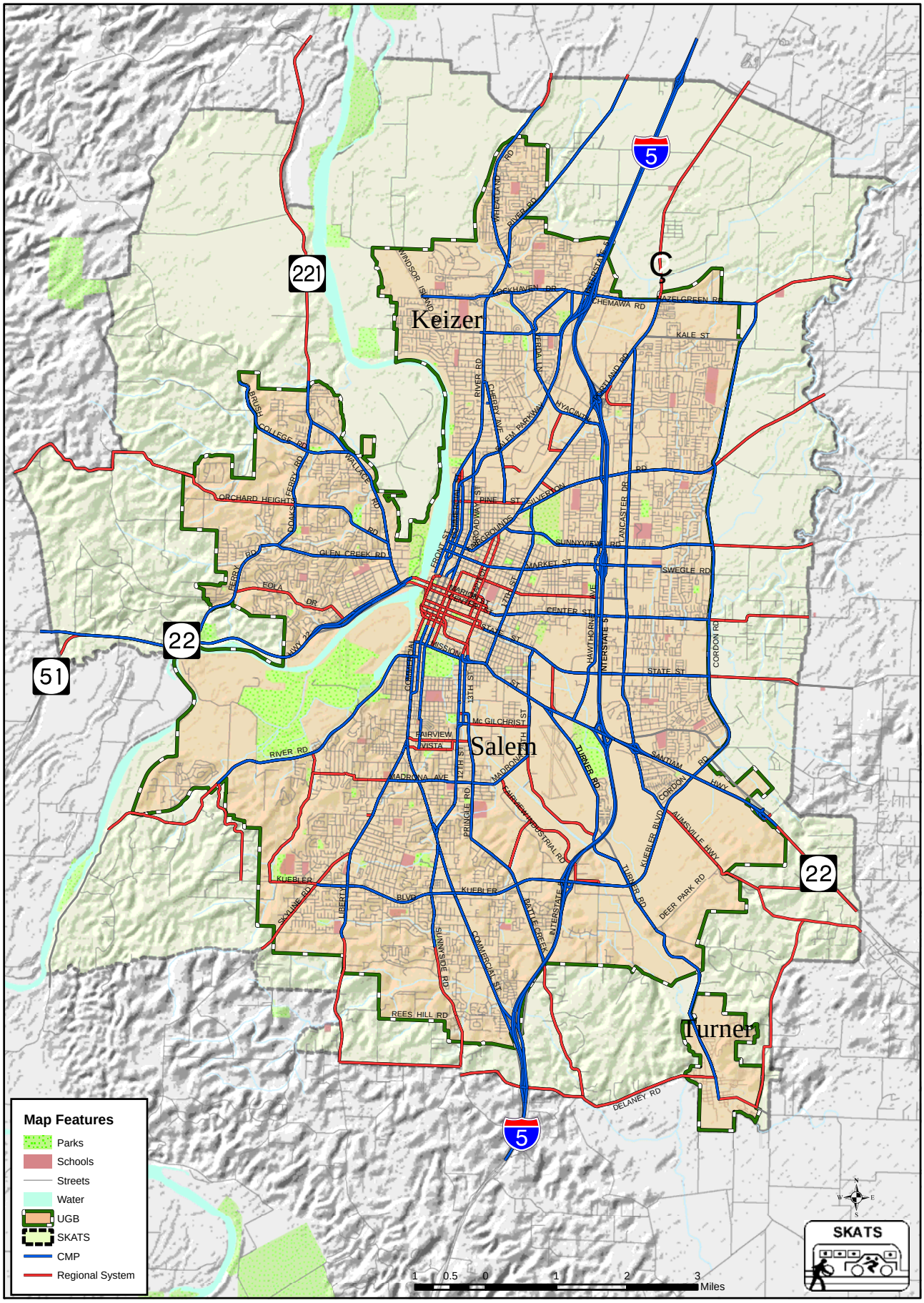
Name	Description	Cost ($1000s)
Committed		
ITS - Traffic Data Collection	Adapt video cameras to collect traffic data, including counts, speed and classification	$252
ITS - Transit Signal Priority	Implement signal priority along HPTC and other corridors	$175
ITS - Paratransit Mobile Data Devices	Deploy mobile data devices on paratransit vehicles	$364
Included		
ITS - En-Route Traveler Information System - Phase I: Hwy 22 at Cordon Rd	Deploy Highway Advisory Radio, Dynamic Message Signs at Hwy 22 and Cordon Rd. Multiple phase project.	$200
ITS - Automated Vehicle Location System	Install automated vehicle location devices on buses and integrate into bus dispatch system	$655
ITS - Real-time Transit Arrival Information	Provide real-time arrival and departure info to transit users. Data at selected bus stops and electronically	$275
Illustrative		
ITS - RTSCC System Upgrade	Upgrade the central computer for traffic signal control	$600
ITS - Adaptive Signal Timing Project	Deploy adaptive signal timing on selected corridors with the highest levels of congestion and the most fluctuation in volumes.	$1,400
ITS - Metropolitan Area Communications #1	Install fiber optic cable to connect traffic management centers and field devices	$462
ITS - Metropolitan Area Communications #2	Install fiber optic cable to connect traffic management centers and field devices	$385
ITS - Metropolitan Area Communications #3	Install fiber optic cable to connect traffic management centers and field devices	$539
ITS - Isolated Signal Interconnect	Connect remaining isolated signals to the Regional Traffic Signal Control Center	$445
ITS - Metropolitan Video Deployment - Phase III	Add video cameras at intersections and other critical locations	$0
ITS - Advanced Rail Warning System	Deploy RR crossing detection equipment. Info to be sent to 911 and NWTOC	$190
ITS - RTSCC Upgrade	Upgrade the Regional Traffic Signal Control Center	$111
ITS - Center to Center Integration	Implement communication links among the Regional Traffic Signal Control Center, ODOT's Northwest Traffic Operations Center and other operation centers in the area.	$205
ITS - Downtown Salem Parking Management	Provide real-time parking information in Salem's downtown. Message signs and radio will be used to inform motorists.	$448
ITS - Metropolitan Video Deployment - Phase I	Add video cameras at intersections and other critical locations	$1,960
ITS - Metropolitan Video Deployment - Phase II	Add video cameras at intersections and other critical locations	$1,008
ITS - Slide Monitoring System	Deploy a system to monitor frequent slide locations and alert motorists	$273
ITS - Isolated Intersection Safety Warning System	Deploy devices to warn motorists of high crash intersections	$600
ITS - Flood Warning System	Deploy monitoring system on roadways subject to high water and alert motorists	$400
ITS - En-Route Traveler Information System - Phase II-III	Deploy Highway Advisory Radio, Dynamic Message Signs and city/county/state websites to notify motorists of incidents and other traveler information. Multiple phase project.	$2,083

Map 13-1

CBD Carpool and Park-n-Ride Locations



Congestion Management Process Corridors



14 - Regional Public Transportation System

Introduction

The Regional Public Transportation System chapter provides an important means to enhance our mobility and reduce reliance on the single-occupant vehicle (SOV) through improvements to the region's public transportation system. Implementation of the recommendations contained in the Plan will help to create a system of public transportation services that provide expanded transportation options for all urban area residents, not only those whose lack of convenient access to a private automobile severely restricts their mobility.

Investments in the region's public transportation system ensure diversified mobility options within and through the SKATS area and add needed people and goods movement capacity to the regional transportation system without additional costly expansions of the highway infrastructure. Increasing the use of the public transportation system to meet our travel needs helps to maintain and improve our quality of life by reducing the volume of automobile travel and lessening the impact of transportation on air and water quality, the natural environment, and energy consumption. As a result, public transportation services in the SKATS area constitute an important alternative to the single-occupant vehicle and contribute significantly to improving our overall mobility and maintaining our quality of life.

The Regional Public Transportation System

The regional public transportation system consists of all transportation services in the SKATS area generally available to the public. Although rideshare matching and transportation demand management programs could also be considered part of the public transportation system, these two activities are discussed in the Regional Transportation Systems Efficiency Management Element (Chapter 13).

The six major types of transportation systems/services available to the public in the SKATS area addressed in this element involve ground transportation consisting of:

- Mass transit service (Cherriots);
- ADA/elderly-related transportation services;
- intercity bus service;
- intercity rail service;
- regular/shared taxi and limo services; and
- charter bus service.

Mass Transit Service

Overview

The Salem Area Mass Transit District (Cherriots) was established under Oregon Revised Statute 267 by vote on November 6, 1979. The service area for the district is the Salem-Keizer Urban Growth Boundary. The district is governed by a seven-member board of directors, which is elected by residents in each of the seven subdistricts.

The Fleet

For the year 2006, the mass transit system employed approximately 188 employees and utilized a fleet of over 79 buses that log roughly 2,900,000 miles and approximately 166,000 total vehicle revenue hours per year. Each bus has a seating capacity of 25 to 45 riders with standing room for up to 30 more passengers. All buses are equipped with front mounted bicycle racks that can carry up to two bicycles. Since 1998, the district has added over 44 low-floor, natural gas powered buses to its fleet. The advantages of these buses are two-fold: they allow easy boarding and alighting for all passengers, including those with physical disabilities, and they reduce the amount of pollution that is typically emitted by traditional diesel powered buses.

Route System and Ridership

The Cherriots fixed route system is primarily a radial "pulse" route structure in which all but six of the twenty-five routes converge in a timed fashion at the central transit station located in downtown Salem. Five of the six routes that do not come into downtown operate in West Salem as “neighborhood circulators” or “feeder” routes connecting to a “corridor” or “trunk” route that is set up to work with the downtown “pulse.” Passengers traveling between any two points in the service area can reach their destinations by making a timed transfer at the downtown transit station or the West Salem station. The sixth route, a nonradial route, provides "crosstown" service between the city of Keizer and the East Salem and Lancaster Drive area. Lancaster Drive is heavily strip-developed and contains much of the retail and employment activity located outside of the Salem downtown/mall core area. There are also three park-and-ride routes, one through South Salem with park-and-ride lots on South Commercial and one in East Salem with a park-and-ride lot on Hawthorne at Market Street. These two routes operate Monday through Friday from approximately 7:00 a.m. to 8:00 a.m. and from 4:45 p.m. to 5:30 p.m. The third park-and-ride route is on Airport Road south of State Street and operates Monday through Friday from approximately 6:15 a.m. to 6:06 p.m.

Cherriots buses operate from 6:15 a.m. to 10:15 p.m. weekdays and from around 7:00 a.m. to 10:15 p.m. on Saturdays. The system operates on frequencies ranging from 15 to 60 minutes. Most of the nineteen “pulse” routes are timed to arrive/depart the downtown transit station at either 15 or 45 after the hour. The five West Salem “feeder” routes arrive/depart the West Salem station around the hour and half-hour. The majority of routes are on half-hour frequency in the peak periods and hit both pulses. In the midday, seven routes drop to hourly frequency, with most of these hitting the :45 pulse. Twelve routes serving the major radial corridors remain on half-hour service throughout the day. Bus fares as of November 1, 2006 are $1.00 for adults, $0.75 for children and $0.50 for seniors.

As of 2006, the transit system provides approximately 90 transit miles per trip, serving 19,000 average daily riders along 7,600 average daily transit miles. Ridership has been increasing steadily since 1985. Approximately 50 percent of the riders are commuters, the largest segment being state employees, and 25 percent are students ranging from grade school through Chemeteka Community College students. The majority of the remaining 25 percent consists of senior citizens and disabled riders. According to Census data from 2000 for the Salem Urbanized Area, approximately 1.9 percent of the total work trips used public transportation. See **Table B-3** in Appendix B for ridership information.

The Regional Mass Transit Route System

The Regional Mass Transit System consists of a radial system of regionally significant transit (trunk) routes that provide the backbone of the overall public transit system (**Map 14-1**). All of the streets used by the Regional Transit System routes are also designated as Regional Major Arterials on the Regional Highway Functional Classification System (see Chapter 15). Specific routes have been included as part of the identified Regional Mass Transit System for the following reasons:

- They provide service in the major commercial corridors in the region and carry the highest passenger volumes. These routes generally form a radial system providing a direct path between the downtown transit station and the outlying neighborhoods. Much of the projected employment growth in the SKATS area will occur as infill in downtown Salem and along the existing commercial corridors. In addition to employment activities, these commercial corridors also generate most of the shopping, errand, and service trips in the region. The nonradial portion of the regional system provides service along Lancaster Drive, the major commercial corridor in the region.

- They provide service to major regional activity centers. These activity centers, such as the Lancaster Mall, are focused concentrations of activities that create substantial transportation demand on the regional transportation system.

- The region's park-and-ride facilities are served by the regional routes, in addition to express buses running in the peak hours that make a minimum number of stops. Park-and-ride facilities need to be located on routes that provide frequent transit service during peak hours and connect to the Downtown/Capitol Mall employment core.

  The Regional Mass Transit System is intended to provide high quality service (i.e., speed, frequency) and carry the highest passenger volumes. Thirteen other, more "local" routes extend from the major trunk route system and serve neighborhood areas. The regional mass transit route system is depicted in **Map 14-1** along with the regional activity centers and park-and-ride lots.

Major Transit Stops

Major transit stops are locations that serve as either an origin or destination for a sizable fraction of a route's riders, or that represent the confluence of several bus routes with the ability

to transfer between the routes. These are locations where the amenities, such as covered waiting areas, for riders either already exist or should be provided. The current regional major transit stops are:

Courthouse Square
Glen Creek Transit Station
Chemeketa Community College
Lancaster Mall

Several future regional major transit stops have been identified during the update to the RTSP process by the transit district. These proposed stops are meant to be representational of the location where a future major stop would be located, and should not be construed as representing a final location. Final location of mini-transit centers will be determined through a process carried out by the transit district.

South Salem: Madrona at Commercial St S.
Keizer: Chemawa at N. River Rd

Weekday Transit Service

Almost all of the routes in the Regional Transit System have 30-minute headways during the peak hours (6:15 a.m. to 10:15 a.m. and 2:15 p.m. to 6:15 p.m.). Lancaster Drive south of D Street to State Street has 60-minute headways during the peak hours. During the midday (10:15 a.m. to 2:15 p.m.), approximately two-thirds of the regional routes provide 30-minute headways and the other one-third provides 60-minute headways. D Street east of Summer Street and Lancaster Drive north of D Street has 15-minute service all day connecting Chemeketa Community Collage to downtown Salem. Center Street has 15-minute headways all day because it is served by two routes with offsetting 30-minute headways. Three other routes provide 15-minute headways to the peak hours (6:15 a.m. to 10:15 a.m. and 2:15 p.m. to 6:15 p.m.): Route #1 along South Commercial Street from the Battle Creek area to downtown, Route #9 along Broadway and River Road North connecting Keizer to Salem's downtown, and Route #16 along State Street between downtown and Lancaster Drive and along Lancaster Drive south of State Street.

Weekend Transit Service

Saturday service for most of the Regional Transit System provides 60-minute headways. There is currently no Sunday transit service.

ADA/Elderly-Related Transportation Services

ADA/elderly-related transportation services in the Salem-Keizer area consist of Cherriots fixed route accessible (lift-equipped) service, dial-a-ride service, and other social/health related special transportation services. These services are organized and/or operated by public agencies, social agencies, and private companies. Transportation services like these complement conventional transit service by meeting the needs of special groups of travelers, and helping to make more efficient use of existing transportation resources.

Provision of transportation services for elderly and disabled persons in the Salem-Keizer area is a significant component of the transit district's planning and operating efforts. The District has been operating its ADA paratransit program—CherryLift—since January 1997. Ridership has grown from the 160 trips made in the first month, to an average of 9,500 trips per month today (2006). This program has an operating cost of approximately $1,800,000 annually, and is supported by Salem Transit District general funds.

Cherriots Fixed Route Accessible Service

All of the transit buses are lift-equipped and have wheelchair positions and securement systems. As mentioned earlier, the district has begun to purchase new CNG buses with the low floor design, which eliminates the need for wheelchair lifts. A hydraulic lift can lower the floor to curb level or lower. The fixed-route services carry approximately 60,000 elderly (over 60 years old) or disabled riders annually. No fare is charged for this service, but donations on a per-ride basis are accepted. There is not set minimum response time. Trips are scheduled on a space-available basis, right up to real-time if possible.

Dial-a-Ride Services

Dial-a-ride services are considered demand-responsive public transportation and offer more freedom from fixed route and schedule constraints. Routes are determined dynamically by current demand with no specific schedule followed. Dial-a-ride services in the Salem-Keizer area are provided for the disabled and elderly. A person or group of people can summon an on-call taxi or van to take them to their destinations with certain hours of the day.

"Wheels" is a nonprofit dial-a-ride program offered by Oregon Housing and Associated Services, Inc. providing paratransit services in the urban portion of the SKATS area. In 2003-04, Wheels operated with fourteen 18-passenger vans, Monday through Friday, from 8:00 a.m. to 5:00 p.m. The service provided 60,185 rides for elderly and disabled people during 2003-04, and is primarily funded through State Special Transportation Funds (STF) from cigarette taxes. Wheels also has a contract with Marion County to provide transportation to work sites and group homes for 140 clients.

In January 1997, the Salem Area Mass Transit District added its ADA "Cherrylift" program. This program provides dial-a-ride services to disabled persons who are unable to use regular Cherriots bus service. Cherrylift gives disabled residents equal access to public transportation. In 2005-06, the service provided 111,321 trips.

Regional Brokerage System (TripLink)

A tri-county Medicaid brokerage was developed and implemented during the summer of 2003. TripLink provides transportation services for Medicaid eligible clients for medical related transportation needs. Approximately 35 private providers, both profit and non-profit offer transportation services using 150 vehicles and 350 drivers. The brokerage currently provides approximately 13,000 trips per month. A regional transportation software program is supplied to the providers, enabling them to capture their daily trip manifests and to bill their trips electronically. Clients from Marion, Polk, and Yamhill counties access the brokerage through

the use of a 1-800 phone line. Of the 13,000 trips provided each month, about 2,000 are given fixed route bus passes and an additional 2,000 are provided grouped trips.

Specialized Transportation Service Provision

In 2007, the transit district will adopt a locally developed, coordinated public transit-human services transportation plan ("*SAMTD Specialized Transportation Plan*") that contains recommendations for enhancing regional mobility, for both the general public but especially for the transportation disadvantaged population in the region. The plan includes recommendations to modify and improve CARTS services to and between the urban and rural areas of Marion and Polk counties; improve information, education, marketing and outreach about the range of transportation providers and services; and enhance coordination between existing transit service providers and limited participation by human service providers.

Other Social/Health Related Special Transportation Services

Throughout the Salem-Keizer area there are many small, client-oriented nonprofit organizations providing transportation primarily for the disabled and seniors. Some of these organizations and businesses also provide housing and vocational opportunities for their clients such as Catholic Community Services and Shangri-La. Transportation destinations include work sites, home, activities, and errands.

Catholic Community Services provides transportation services for 25 physically and/or mentally disabled clients at six group homes. Currently, they have five vans that can carry four to six passengers. They also provide services in 15 supported living sites, which are housing situations in leased homes or apartments with one or two people. Another five vehicles provide service for these clients. There are four employment sites that use five vehicles for business-related transportation.

Shangri-La provides transportation services for 150 to 200 physically and/or mentally disabled clients at 16 group homes. They have 16 vans each with a capacity of four to six passengers. Shangri-La clients also utilize "Wheels", taxis, and the Cherriots bus.

There are about 20 other nonprofit transportation providers in the Salem-Keizer area that are associated with retirement centers, Boys & Girls Clubs, and hospitals.

Intercity Bus Service

Intercity bus service is an important component of the region's public transportation system and is the principal alternative to the single-occupancy vehicle for regional travel. Many residents unable to drive rely on intercity bus service for travel to destinations outside the SKATS area. Providers of intercity bus travel include both private companies and public agencies. The private companies focus on longer travel, providing either service across state lines, as in the case of Greyhound Lines; or connecting smaller cities with Portland; or linking central Oregon or the Coast with the communities in the Willamette Valley. The intercity bus service providers target people making non-commuting trips between areas or cities. The public agencies usually tailor their service to address the work commuter trip.

Greyhound Lines, the major intercity interstate bus carrier, is the only carrier currently providing this service in the region. Greyhound Lines operates a bus station on Church Street in downtown Salem. As of 2001, there are seven southbound buses departing the station on a daily basis. Some of these buses stop in Albany, Corvallis, Eugene, and other cities along the I-5 corridor. There are seven northbound buses all of which terminate in Portland. At the Portland bus station, patrons can transfer to buses going further north or east. In 2004, Greyhound cut service to many of the smaller communities it served as a cost-cutting measure.

Smaller bus companies are now the exclusive providers of service to some of the smaller cities. Through the use of interline agreements, Greyhound Lines coordinates its service with smaller bus companies. For example, Valley Retriever provides connecting service in Albany for patrons traveling east to Bend. In Corvallis, patrons can transfer to a connecting Valley Retriever bus in order to go west to Newport. As part of the interline agreement, patrons purchase one ticket even though two different bus companies are involved in the journey.

As of 2006, there are several public agencies providing regularly scheduled intercity transit service serving the Salem-Keizer area. The combination of these three providers services enables the majority of communities within Marion and Polk counties, as well as those along the I-5 corridor to the north and south to be connected with the Salem-Keizer area.

CARTS

The Chemeketa Area Regional Transportation System (CARTS) provides the regional planning and support of transportation services for the communities outside the Salem-Keizer urbanized area in Marion and Polk counties. The Board is comprised of commissioners from Marion and Polk counties, and the Salem-Keizer Transit District. CARTS provides weekday public transit for elderly/disabled persons as well as the general public, linking the two counties and their communities with Salem and Keizer. CARTS serves Dallas, Monmouth, Independence, Rickreall, and Falls City in Polk County. In Marion County, service is divided into a north county area and a south county area, also referred to as the Santiam Canyon. The north county route serves Brooks, Gervais, Woodburn, Hubbard, Mt. Angel, Silverton, Central Howell, and Chemeketa Community College in Salem. The Santiam Canyon route serves Turner, Aumsville, Stayton, Sublimity, Lyons, Mehama, Mill City, and Gates. This route also serves the airport and Amtrak station in Salem. CARTS provided some 12,000 trips per month in 2004.

Two types of services are offered: point-deviated fixed routes and a dial-a-ride service. Point-deviated fixed routes operate on a regular schedule with some additional time added to deviate ¾-mile to pick up clients who are unable to access the regular route stops. The ¾-mile deviations meet the Americans with Disabilities Act requirements. CARTS provides the Dial-A-Ride service throughout rural areas in Marion and Polk counties. Clients can call from one day to two weeks in advance to schedule individual rides and receive curb-to-curb transportation service.

CARTS receives a variety of state and federal transportation funds that support both the capital needs (e.g., purchasing and maintaining vehicles) and the operation of the program. Included are funding sources such as the Special Transportation Fund (STF) and Special Transportation Grant (STG) administered by the state of Oregon, and the Job Access and Reverse Commute

(JARC) and FTA programs 5310 and 5311 administered by the federal government. In addition to these and the fares paid by the riders, CARTS is seeking funding from foundations to support the continued running and expansion of this program.

SMART

Service between Wilsonville and Salem is provided by SMART (South Metro Area Rapid Transit) and the transit district. SMART runs two northbound and two southbound buses during the morning peak periods and three southbound and three northbound buses during the afternoon peak period. The transit district operates two buses, both southbound and northbound, in both the morning and afternoon peak periods. Service is available between the Wilsonville city hall and the Courthouse Square transit center. While this service is mainly targeted at workers commuting between Wilsonville and Salem-Keizer, SMART does provide a link to the rest of the Portland Metropolitan area with its service to the Barbur Transit Center in Portland, where it meets several Tri-Met bus routes. The Salem-Keizer transit district trips, which started in fiscal year 2002-03, target work trips in the opposite direction of the previously existing SMART service and is funded by JARC (Jobs Access Reverse Commute) formula funds.

Oregon Thruway Bus

The Oregon Department of Transportation contracts with private companies to provide Amtrak Thruway bus service to connect areas of the State with the Willamette Valley. While the service termination station is in Portland, at Union Station where guaranteed connections to Amtrak trains are provided, many of the buses stop in Salem. The I-5 corridor between Ashland and Portland, stopping in Salem at the Salem Railroad Station, provides service while it is not financially feasible to operate trains. Buses in this corridor are used to supplement the existing *Cascade* passenger train service that is offered. Currently, daily Thruway service is provided for travel on the I-5 corridor by two northbound and two southbound buses. Additional Thruway service connects Bend and Central and Eastern Oregon with Salem and the I-5 corridor. Several communities on the Coast, including Newport, are also linked with the Salem-Keizer area.

Intercity Rail Service

The Salem Railroad Station is located on 12th Street just north of Mission Street on the downtown fringe. Amtrak provides the SKATS area with two train service options, the *Coast Starlight* and *Cascades* trains. The *Cascades* line offers two daily round-trip trains between Eugene and Seattle. The *Coast Starlight* train operates through the Willamette Valley on a daily basis as part of its Los Angeles-to-Seattle service.

A more detailed report on passenger rail service, including rail and station infrastructure, ridership, planned improvements, and funding can be found in the Regional Rail System Chapter (Chapter 11).

Regular and Shared Taxi/Limo Services

Other passenger transportation services available in the Salem-Keizer area include four taxi companies, an airport shuttle service (shared taxi) and numerous limousine services. The

Regional Rideshare Program (and other transportation demand management services) are discussed in the Regional Transportation Systems Efficiency Management Element, Chapter 13.

Regular Taxi

Taxis provide a high degree of passenger flexibility and convenience but at a far higher cost per passenger than traditional transit service. There are four regular taxi services operating in the Salem-Keizer area on a 24-hour basis. Salem-Keizer Yellow Cab Company has a fleet of 20 taxicabs. A-Cab Taxi Transportation Services has a fleet of seven taxicabs and in 2002 served approximately 200 people per day. The Blue Jay Cab Company has a fleet of eight taxicabs and Cherry City Taxi has a fleet of four vehicles.

Shared Taxi and Limo Services

Shuttles and shared taxis are often found at airports, train stations, and other points of major passenger concentration. The Hut Airport Shuttle, located within the terminal at McNary Field (Salem Airport), provides ground transportation to and from Portland International Airport. Home/business pick up is also available in the Salem-Keizer area via one of the five 24-passenger buses. As of 2002, the passenger vans are operating 18 trips per day between the two airports.

Within the Salem-Keizer area there are approximately 17 limousine services, most of which operate 24 hours per day, seven days a week. Many of the limousine services offer service to Portland International Airport.

Charter Bus Service

Two charter bus services operating in the region provide commuter transportation service between cities along the I-5 corridor.

Betty's To and Fro provides round-trip service for commuters between Salem and Eugene, and between Salem, Corvallis, and Albany. In Salem, the 46-passenger bus stops at the Capitol Mall, downtown Salem and State Street near the State Forestry Department. In Eugene, the bus stops at the Gateway Mall. The bus services two park-and-ride lots in Corvallis and an additional park-and-ride lot in Albany.

Evergreen Stage Lines leases a 47-passenger bus and two 14-passenger vans to a commuter club for service between Portland and Salem. The bus makes many stops in Salem and Portland.

Goals, Objectives, and Policies

Public Mass Transit (Cherriots)

Goal 1: **Develop and maintain a public transit system that is conveniently accessible to all Salem-Keizer urban area residents.**

Objective 1: *Provide transit service throughout the urbanized portions of the Salem-Keizer area.*

Policy 1: Ensure, as practicable, that all residents and major employers in the Salem-Keizer area have transit service within 1/4 mile walking distance.

Goal 2: **Develop and maintain a public transportation system that provides convenient access for a variety of trip destinations and purposes.**

Objective 1: Provide a mix of service types that serve a full range of trip needs.

Objective 2: Provide a diverse system of transit routes that ensures convenient accessibility to destinations throughout the urban area with a minimum of transfers.

Objective 3: Provide a convenient system of transfer opportunities within the urban area to facilitate timely and convenient access to a wide variety of destinations.

Policy: Support the development and implementation of a public transit route system and support facilities that effectively combine appropriate elements of circulator routes, corridor routes, transit centers, and circumferential service.

Goal 3: **Develop and maintain a public transportation system that serves travel needs over a variety of times of day and days of the week.**

Objective 1: Provide transit service for area residents that operates over an appropriately diverse time frame.

Policy 1: Support prudent, incremental extensions in the hours and days of operation of the transit system.

Goal 4: **Facilitate increasing levels of ridership on the public transit system.**

Objective 1: Increase overall daily ridership of the transit system.

Policy 1: Support effective marketing and responsiveness to consumer needs of transit services in the region.

Policy 2: Include transit operations in the design of street infrastructure and land use developments wherever practicable.

Objective 2: Increase the percentage of journey to work trips made by transit in the Salem-Keizer area.

Policy: Support the implementation of regionwide transportation system efficiency management strategies and activities (such as employer subsidized bus pass programs) that encourage the diversion of commute trips away from the single-occupant vehicle onto the public transportation system.

Goal 5: Develop and maintain a system of public transit routes that provides efficient, competitive service in the regional transit corridors.

Objective 1: Provide an efficient and convenient system of public transit services in the regional travel corridors.

Policy 1: Encourage preferential transit treatments, transit-related facility improvements, and appropriate transit-supportive land uses and development along the regional transit corridors.

Policy 2: Support incremental increases in the frequency and capacity of service in the regional transit corridors as warranted by demand.

Goal 6: Develop and maintain affordable transit service throughout the urban area.

Objective 1: Develop and implement funding strategies that provide adequate, long-term, stable revenue source(s) for the public transportation system.

Policy 1: Support regional efforts to identify and implement transit funding strategies and programs that will provide adequate, long-term, stable revenue source(s) for the public transportation system.

Objective 2: To maintain a system of transit fares that balance the need for passenger revenues with the goal of maximizing ridership.

Policy 1: Support ongoing review and analysis of farebox revenues, ridership levels, and service costs to optimize the transit fare structure.

ADA/Elderly-Related Services

Goal 1: Convenient, economical, and safe transportation services for the disabled and elderly residents of the Salem-Keizer area.

Objective 1: Consistent with the adopted Salem Area Transit District (SATD) Americans With Disabilities Act (ADA) Transit Plan Update, provide transportation services which adequately meet the needs of the elderly and disabled populations in the region.

Policy 1: Support the continued development and implementation of accessible fixed-route and appropriate complementary paratransit services which are identified in the adopted SATD ADA Transit Plan as updated.

Intercity Bus and Rail Service

Goal 1: An integrated transportation system that provides convenient service in the interregional and interstate corridors.

Policy 1: Support public and private efforts to develop and implement appropriate expansions of bus and rail service, including commuter rail, between the Salem-Keizer area and locations outside the region.

Recommended Improvements to the Regional Public Transportation System

Some of the public transportation services in the Salem-Keizer area, such as intercity bus service, charter bus service, regular and shared taxi service, and most of the social/health related special transportation services, are privately owned and operated. As a result, improvements to these services will likely occur as a result of market forces rather than by government policy initiatives at the regional and/or local levels. Most of the recommended improvements listed below pertain to transportation services owned and operated by public or quasi-public agencies such as the public transit system and intercity rail service.

Mass transit is a critical component of the region's strategy for meeting mobility needs. The transit system cannot accommodate everyone's travel needs, but it is essential to provide service that comprises a viable and effective alternative to single-occupant vehicle travel. Increased use of transit serves to reduce traffic volume, which in turn lessens energy consumption, eases congestion, mitigates the need for roadway expansion projects, and decreases vehicle emissions. Furthermore, transit equalizes travel opportunity by providing an option to those for whom auto use is restricted.

Transit service has long been available in the Salem-Keizer region, but transit use has not been supported by resources comparable to those used to accommodate automobile demand. To

develop its potential, we must make additional investments in improved transit service and facilities. In addition, there must be changes in the institutional arrangements that affect transit operation, more incentives to encourage people to travel by transit, and policies that foster "transit-friendly" land use patterns.

The transit improvements called for in the RTSP cannot all be implemented at once. Marketing, education, and incentive programs must also precede and accompany major investments in transit expansion and improvements in order to effectively encourage a shift from the automobile, and expenditures should be predicated on the likelihood of successful operations.

Recommended Improvements to the Regional Mass Transit System

Emerging public policy and increasing demand for transit services support expansion of the mass transit system as the required resources become available. Some of these improvements are aimed at addressing anticipated future demand. As a result, many of these recommendations will not be considered until demand warrants and funding becomes available. These recommendations fall into two basic tiers: continuation of existing services, and service improvements/expansions. The Plan recommendations are as follows:

Continuation of Existing Mass Transit Service Levels

Given the relative importance of *reliability* in transit services when travelers are considering riding a bus to work or school, for example, it is important that current services be continued where demand exists and that equipment be replaced when needed. The following recommendations are aimed at addressing such concerns.

- Maintain existing transit service levels as demand warrants and funding allows.
- Adequately maintain all existing transit vehicles, equipment, and facilities to ensure reliability, convenience, and safety.
- Replace older transit vehicles in a timely manner with clean fuel vehicles.

Transit Service Improvements/Expansions

The following recommendations are aimed at making transit services a realistic alternative to the automobile and attracting additional ridership. Where possible, general estimates of the costs of these improvements are provided.

- Convert the current radial pulse system into a system of neighborhood circulators that feed into outlying transit centers connected by high-frequency corridor routes. This new system, called the "3C" system, allows for greater flexibility and efficiency in matching the mobility needs of the community over the next 20 years.
- Develop transit centers in east and south Salem and in Keizer following the model implemented in west Salem.

- Increase the frequency of service in the regional transit corridors to 15 minutes throughout the day and 30 minutes during the evening and weekend periods as warranted by demand. It is estimated that this improvement will cost approximately $4 million per year above existing operational costs. In addition, approximately 15 more buses will be needed at a cost of almost $5 million. The District has increased headways on four routes and hopes to improve headways on five more by 2010.

- Extend service by providing transit service on Sundays. This improvement will cost approximately $1.1 million per year above current operational costs if provided at the same level as the existing Saturday service.

- Develop express bus service as demand warrants and funding allows. One example could be half-hour arterial park-and-ride express service on five routes during peak hours (6:30 to 8:30 a.m. and 4:00 to 6:00 p.m.) and hourly express service to 9:15 p.m. It is estimated that this improvement will cost approximately $800,000 per year above existing operational costs. In addition, approximately five more buses will be needed at a cost of roughly $1,600,000.

- Develop timed-transfer opportunities, such as mini-hubs, where appropriate to make service more convenient and increase ridership.

- Develop a circulator service in the downtown Salem core area.

- Develop cross-town service, as feasible, to support trips not going through downtown.

- Encourage the placement of passenger amenities at regular intervals, and particularly at regional activity centers. Comfortable waiting areas at transit stops, appropriate for year-round weather conditions, greatly improve the experience of the transit rider. Basic passenger amenities at bus stops include bus stop signs, benches, and lighting. Major transit stops usually are located at higher ridership activity points and additionally should include sheltered areas, bike racks, passenger information displays, telephones, drinking fountains, landscaping, and refuse containers.

- Pursue the full implementation of transit and paratransit services called for in the transit district's ADA plan.

- Continue to support the development and marketing of TDM and public transit services to the community.

- Develop special transit programs and incentives where appropriate to make service more convenient and increase ridership.

- Development of a “High Priority Transportation Corridor” should be considered on segments of the regional route system where practicable.

In addition, transit ITS applications may have some promise in terms of increasing the efficiency of transit operations and customer confidence in the transit system. Improving mobility in regional transportation corridors where the physical and political impediments to adding right-of-way are high is identified as an "outstanding issue" in this RTSP Update. As part of the High Priority Transportation Corridor study, transit ITS applications will be examined as part of an overall recommended strategy to improve mobility in the selected corridor. The results from this study will serve as a template to guide transit ITS and other mobility improvements in other congested and constrained regional transportation corridors.

Recommended Improvements to Other Public Transportation Services

- Support continued funding of the *Cascades* Intercity Amtrak Rail Service and Thruway Bus Service.
- Support the continued funding and operation of CARTS in linking Salem-Keizer with the communities of Marion and Polk counties.
- Support efforts to fund rail improvements outlined in the 1994 Oregon High Speed Rail Capacity Analysis.
- Support efforts to investigate clean air modifications to the Salem-Keizer School District's bus fleet.
- Support efforts to fund acquisition of modern passenger trainsets by ODOT for operation in the Willamette Valley portion of the Eugene to Vancouver, B.C. "Cascadia" corridor.
- Support the continuation of and enhancement of intercity bus service in the region, especially in the east-west corridors, including interline agreements with the smaller bus companies.

Outstanding Issues

The major difficulty involved in expanding the Public Transportation System is a lack of ongoing, stable funding for significant increases in the level and type of transit services provided in the region. The mass transit system, the passenger rail system, and the ADA/Elderly and Handicapped systems all require additional levels of funding to be maximally effective.

The Union Street Railroad Bridge is currently (2006) a funded and scheduled project to convert the existing structure into a pedestrian and bicycle facility. It will provide a safe and convenient link between Wallace Marine Park and west Salem to the Riverfront Park, the central business district, and the rest of Salem. Possible further conversion of the bridge into one being usable by transit and/or emergency vehicles will require further study and outreach to both the public and the nearby businesses. Such a conversion would likely be made in the long-term, while the bridge would function as a bicycle and pedestrian facility in the near-term.

Mass Transit System Funding Shortfall

The transit district can be expected to be able to afford necessary capital improvements (new buses and equipment) over the next 24 years but cannot afford to provide significant expansions of transit levels of service beyond those called for in this Plan without renewed or additional sources of funding (see Chapter 5, Finance). Securing stable and continuing sources of adequate operations funding for the mass transit system is critical to the ability of the overall regional transportation system to function effectively, and is a high regional priority. In the near term, in cooperation with the transit district, SKATS and the other jurisdictions in the region will cooperatively seek to identify, evaluate, and recommend appropriate new funding sources for transit operations to the region's citizenry and businesses.

Regional Passenger Rail Facility and Service Funding

The region will continue to work with ODOT to secure the necessary funding to maintain and improve the Regional Passenger Rail System. Stable, long-term funding for operating and maintaining the Salem Railroad station has not been identified. This is crucial to allow this vital piece of the transportation system infrastructure to function as ridership increases as a result of increased service.

Intercity Bus Service

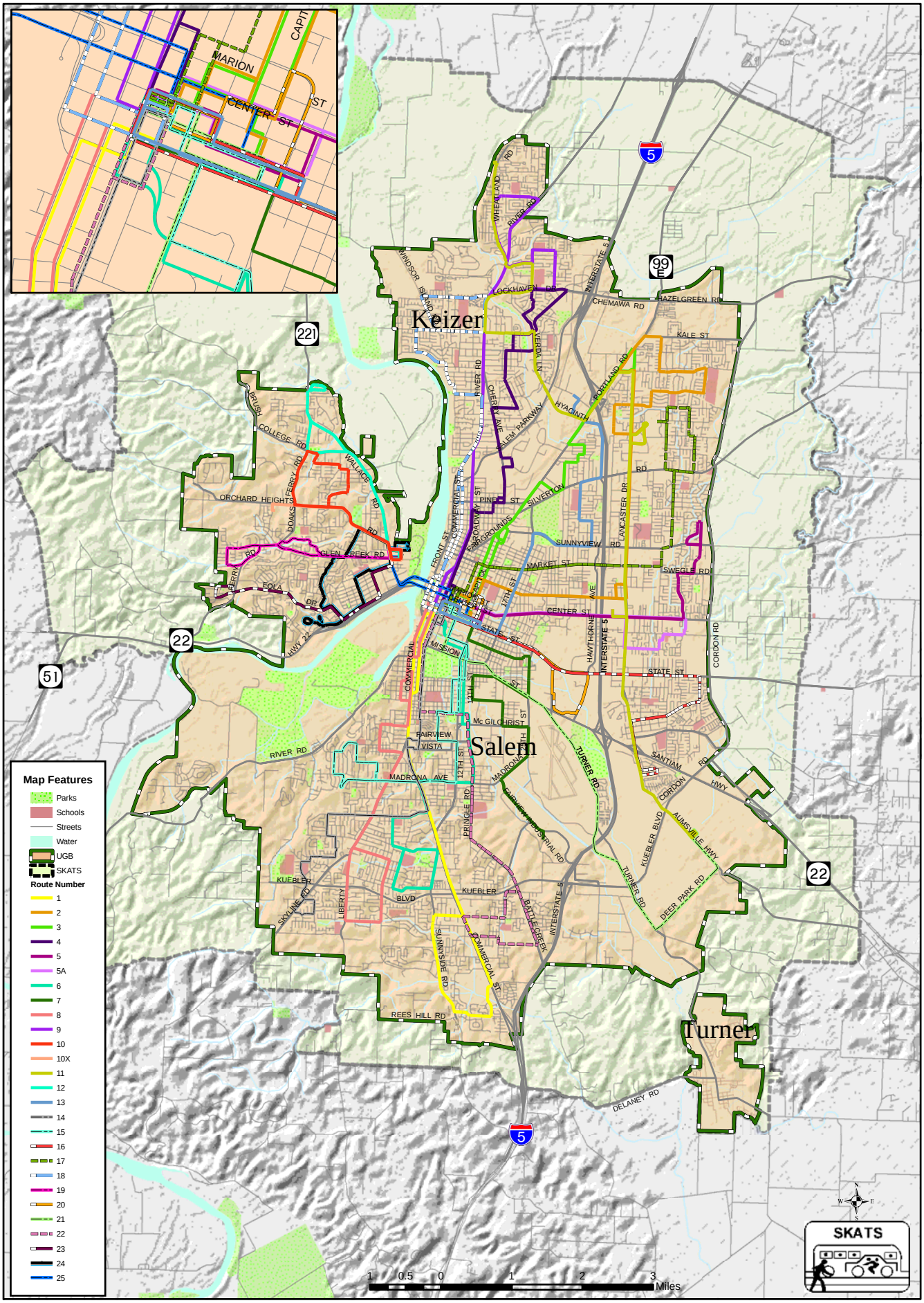
The feasibility of, and an operating and financial plan for, an ongoing intercity bus service, particularly to the west and east, connecting the Salem-Keizer urban area with cities in Polk and Marion counties, needs to be evaluated. The region will work with county staff to develop and conduct such a feasibility study as funds are available.

ADA/Elderly and Handicapped-Related Services Funding Shortfall

The District is meeting the demand currently. But in the foreseeable future the level of service will grow faster than available funding. As a result of this fact the District will have to pursue additional funding.

Map 14-1

2007 Transit Routes



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.

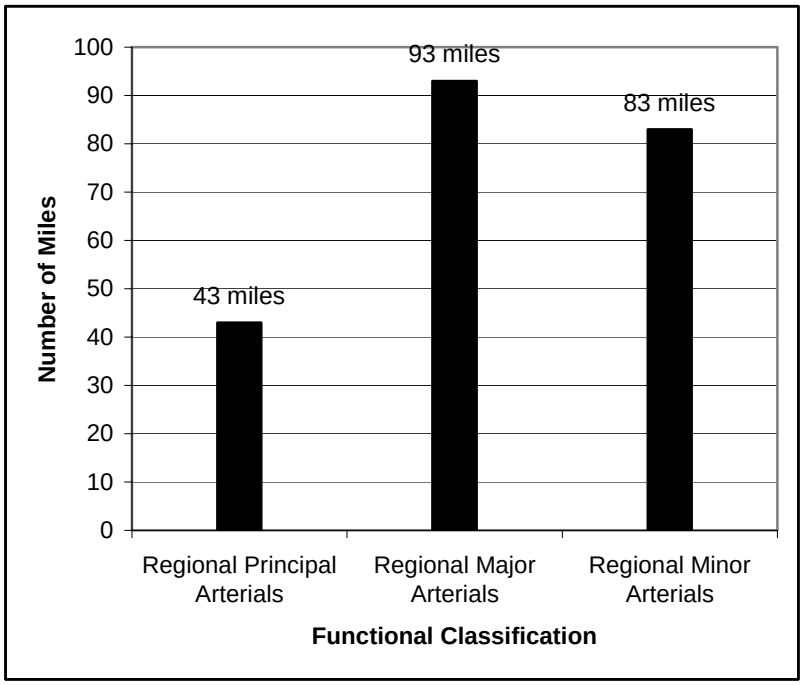
The Road System of Regional Significance

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 with 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.

2007 Financially Constrained Project List

Committed

Project Priority: 0-10 yrs

City of Keizer		Description	Project Location	Cost ($1000s)
Bridge				
K003	Chemawa Rd NE: River Rd to Verda Ln NE	Claggett Creek Bridge replacement, urban standards, bike lanes, curbs	Chemawa Rd NE from River Rd N to Verda Ln NE	$2,000
Capacity Increasing				
K007	Lockhaven Dr NE: McLeod Ln NE to Ridge Dr NE	Widen to 4 lanes, add bike lanes and sidewalks	Lockhaven Dr NE from McLeod NE to Ridge Dr NE	$560
Efficiency				
K002	Chemawa Interchange	Improve intersections w/ additional turn lanes	Chemawa Interchange with I-5	
Signals & Interconnects				
K008	Lockhaven Dr NE: River Road N to McLeod Ln NE	Traffic signal interconnect	Lockhaven Dr NE from North River Rd to McLeod	$111
Urban Standards				
K017	Chemawa Rd Upgrade (Keizer Rapids) *	Upgrade to urban standards, including sidewalks and bike lanes. * In the Draft 08-11 MTIP.	Chemawa Rd from River Rd N to Keizer Rapids Park	$1,020

City of Salem		Description	Project Location	Cost ($1000s)
Bicycle				
S244	Union St RR Bridge Conversion	Convert Union St RR bridge to bike/ped facility	Union St RR bridge	$2,000
Bridge				
S028	25th St SE Bridge & Shelton Ditch	Bridge rehabilitation or replacement using state funds	25th St SE at Shelton Ditch	$1,237
S035	Cottage St: Mill Creek Bridge (HBRRL)	Repair or reconstruct bridge. HBRRL funds	Cottage St @ Mill Creek	$213
S073	Capitol St NE at Mill Creek	Bridge replacement	Capitol St NE at Mill Creek	$2,197
S049	Liberty St NE Bridge & Mill Creek	Bridge rehabilitation or replacement using state funds	Liberty St NE @ Mill Creek	$300
S055	State St Bridge & Mill Creek	Design and implement scour protection measures.	State St at Mill Creek	$650
Capacity Increasing				
S045	Kuebler Bv SE: I-5 to Commercial St SE (WB Only)	Widen to parkway standards WB, EB to be built later.	Widen to parkway standards WB only, Kuebler Blvd. from I-5 to Commercial St SE	$2,748
Efficiency				

S086	Cordon Rd SE at Macleay Rd SE & Gaffin	Signalize and provide NB & SB left turn lanes at Macleay Road SE intersection and provide SB left turn lane at Gaffin Road SE.	Cordon Rd SE at Macleay Rd SE	$950
S041	Front St Bypass: Phase II	Ramp widening Center St Bridge to southbound Front St Bypass.	Front St NE: Chemeketa St NE to State St NE	$265
S051	Market St NE & Lancaster Dr NE	Construct right turn lanes on westbound Market St NE and southbound Lancaster Dr NE	Market St NE & Lancaster Dr NE	$786
S139	Stark St Queue Bypass - HPTC	Queue bypass at the intersection of Broadway Rd and Stark St	Stark St N at Broadway Rd NE	$763
S057	Sunnyview Av NE & Lancaster Dr NE	Construct both eastbound and westbound right turn lanes at the intersection with Lancaster Dr NE.	Sunnyview Av NE & Lancaster Dr NE	$452
S161	Wallace Rd NW & Glen Creek Rd NW *	Widen intersection to add turn lanes. On northbound Wallace Rd add dedicated right turn lane and a second dedicated left turn lane. On eastbound Glen Creek Rd add a dedicated right turn lane. * In the Draft 08-11 MTIP.	Wallace Rd NW & Glen Creek Rd NW	$8,000
ITS				
S267	ITS - Traffic Data Collection	Adapt video cameras to collect traffic data, including counts, speed and classification	Various locations in the Salem-Keizer area	$252
Pedestrian				
S037	Doaks Ferry Rd NW: Orchard Hts Rd NW to Chapman Elem	Construct 1600 feet of missing sidewalk	Doaks Ferry Rd NW from Orchard Hts to Chapman Elementary School	$38
S052	Orchard Heights Rd NW: Mousebird Av NW to West Salem HS	Construct 1500 feet of missing sidewalk	Orchard Hts Rd NW from Mousebird Ave NW to West Salem High School	$35
Signals & Interconnects				
S026	17th St NE: State St to Market St NE	Traffic Signal Interconnect	17th St NE from State St to Market St NE	$52
S025	12th/13th St SE (Mission and Hoyt)	Traffic signal upgrade and interconnect (Mission and Hoyt)	12th and 13th St SE between Mission St SE and Hoyt St SE	$167
S027	25th Av SE: Mission St SE to McGilchrist St SE	Traffic Signal Interconnect	25th Ave SE from Mission St SE to McGilchrist Ave SE	$137
S040	Center Street Bridge off-ramp (BHES)	Replace stop sign on the northbound Center St Bridge off-ramp with a signal to allow more bridge traffic to exit northbound onto Front St Bypass	Front St Bypass at Center St NE	$280
S031	Center St NE: 17th St NE to 24th Av NE	Traffic signal interconnect	Center St NE from 17th St NE to 24th Ave NE	$286
S038	Edgewater St NE: Wallace Rd NW to Eola Dr NW	Traffic signal interconnect	Edgewater Rd NW from Wallace Rd NW to Eola Dr NW	$326
S042	Hyacinth St NE & Salem Industrial Dr NE	Signalize	Hyacinth Rd NE at Salem Industrial Dr NE	$270
S044	Kuebler Bv SE: Stroh St SE to I-5	Traffic signal interconnect	Kuebler Blvd SE from Stroh St SE to I-5	$239
S272	Marion St Bridge Signal Interconnect	Install fiber optic cable between downtown and west Salem for signal interconnects.	From downtown to west Salem via the Marion St bridge	$100
S050	Madrona Av SE: Pringle Rd Se to Fairview Industrial Dr SE	Traffic signal interconnect	Madrona Ave SE from Pringle Rd SE to Fairview Industrial Dr SE	$100
S273	Portland Rd Interconnect	Signal interconnect on Portland Rd from Lana Av to Hyacinth St	Portland Rd NE from Lana Av NE to Hyacinth St NE	$375
S054	River Road S & Croisan Creek Rd S	Signalize the intersection and provide various improvements along River Rd S in the area of this intersection.	River Road S & Croisan Creek Rd S	$800
S058	Sunnyview Rd NE & 45th Av NE	Signalize at 45th and interconnect along Sunnyview Rd NE	Sunnyview Rd NE & 45th Ave NE	$290
S032	Wiltsey Rd SE & Commercial St SE	Add left turn lanes eastbound and westbound on Wiltsey and signalize	Commercial St SE @ Wiltsey	$558

Urban Standards

S029	Aumsville Hwy SE: Kuebler Bv SE to Marion County Jail entrance	Construct to a minor arterial turnpike standard, with 2 travel lanes, a center turn lane, paved shoulders, bio-swales on both sides, sidewalks, and a 12 foot multi-use path. Widen approaches to the intersection of Kuebler/Cordon Lancaster/Aumsville Hwy	Aumsville Hwy SE: Kuebler Bv SE to Marion County Jail entrance	$3,090
S036	Doaks Ferry Rd NW: Brush College Rd NW to Orchard Heights Rd NW	Widen to 3 lanes where appropriate with curbs, bikelanes and sidewalks. Developer pays half. Improves intersection at Orchard Hts.	Doaks Ferry Rd NW from Brush College Rd NW to Orchard Hts Rd NW	$5,883
S126	McGilchrist St SE: 12th St SE to 25th St SE	Reconstruct to a 3-lane standard from 12th to 22nd, and to a 4-lane standard (with eastbound lanes) from 22nd the 25th. Add or revise signals at 5 intersections, realign 22nd and widen both 22nd and 25th in the vicinity of McGilchrist.	McGilchrist St SE: 12th St SE to 25th St SE	$16,760
S053	Portland Rd NE: Beach Av NE to Claxter Rd NE	Improve the streetscape by undergrounding utilities, installing a landscaped median, consolidating accesses among others.	Portland Rd NE from Fairgrounds Rd NE to I-5	$18,000
S274	Salem Industrial Dr Improvement	Improve half the street to collector standards, with sidewalks, curbs, gutters and bike lanes where designated.	Salem Industrial Dr NE from Cherry Av NE to Bill Frey Dr NE	$3,000
S203	Turner Rd SE: Cascade Gateway Park extending south 2100 feet	Widen to provide two travel lanes, a center turn lane, bike lanes, curbs, and gutters. The drainage ditch on the west side of the road will be relocated.	Turner Rd SE: Cascade Gateway Park extending south 2100 feet	$725

City of Turner

		Description	Project Location	Cost ($1000s)
Efficiency				
T001	3rd St & Denver St : Turner	Project will straighten and rebuild downtown "S" curve into one 90 degree corner; install underground storm drainage, curb, gutter, sidewalks and bike lanes; create bulb-outs and parking areas downtown; install historic street lighting.	3rd St to Denver St in Turner	$2,370

Marion County

		Description	Project Location	Cost ($1000s)
Efficiency				
M002	Cordon Rd NE & Pennsylvania Ave SE	Add northbound left turn refuge on Cordon Rd. Significant widening will allow the installation of the turn refuge and sections of guardrail as needed.	Cordon Rd NE at Pennsylvania Ave SE	$522
Pedestrian				
M030	Sidewalk construction: various locations (set 1)	Construct sidewalks at various locations	TBD	$250
Signals & Interconnects				
M003	Cordon Rd NE: State St to Silverton Rd NE	Complete the interconnection of signals beteen State St and Silverton Rd on Cordon Rd, and install equipment to allow the transfer of video images to Marion Co shops and Salem Signal Operations Center.	Cordon Rd NE from State St to Silverton Rd NE	$89
M005	Lancaster: State to Rickey; Hayesville to Silverton	Traffic signal interconnect	Lancaster Dr SE from State St to Rickey Ave SE and from Hayesville Rd NE to Silverton Rd NE	$195
M009	Silverton Rd: Lancaster to 45th; Brown to Cordon	Complete the interconnection of signals between Cordon Rd and Lancaster Dr on Silverton Rd, and install equipment to allow the transfer of video images to Marion Co shops and Salem Signal Operations Center.	Silverton Rd NE from Lancaster Dr NE to 45th St NE, and Brown NE to Cordon Rd NE	$100
Urban Standards				

M010	Ward Dr NE: Ward Ct NE to Lancaster Dr NE	Add traffic signal and turn refuges at intersection of Ward Dr and Fisher Rd and complete urban upgrade of Ward Dr between Ward Ct and Lancaster Dr. Includes installation of drainage facilities, curbs, sidewalks, and bike lanes. Add EB RT+sig @ Lancaster	Ward Dr: Ward Ct NE to Lancaster Dr NE	$2,000

ODOT		Description	Project Location	Cost ($1000s)
Bridge				
O012	Highway 22E and Cordon Rd Overcrossing	Raise or lower the Cordon Rd overcrossing bridge at Highway 22E to facilitate truck movement.	Highway 22E & Cordon Rd	$3,782
Capacity Increasing				
O002	I-5 & Kuebler Bv SE Interchange	Construct a new westbound to northbound ramp at the Kuebler Boulevard Interchange.	I-5 & Kuebler Bv SE	$5,400
Environmental				
O013	I-5: Mill Creek - Mill Creek Overflow Fish Passage	Revise culverts to allow fish passage underneath I-5 from Mill Creek to Mill Creek Overflow	I-5 & Mill Creek	$1,232
Safety				
O011	Salem Parkway Intersection Improvements	Upgrade the intersections of Salem Parkway at Cherry Av and at Hyacinth to address safety issues	Salem Parkway at Cherry Av NE and Salem Parkway at Hyacinth St NE	$1,238

Polk County		Description	Project Location	Cost ($1000s)
Safety				
P001	Highway 22W Improvements	Highway improvements along this corridor. SAFETEA-LU earmark.		$3,560

SAMTD		Description	Project Location	Cost ($1000s)
ITS				
B003	ITS - Transit Signal Priority	Implement signal priority along HPTC and other corridors	Intersections along High Priority Transportation Corridor	$175
B002	ITS - Paratransit Mobile Data Devices	Deploy mobile data devices on paratransit vehicles		$364
Safety				
B006	Transit Center Security	Provide security cameras at the transit centers	Keizer and South Salem transit centers	$420

Project Priority: 10-20 yrs

City of Salem		Description	Project Location	Cost ($1000s)
Efficiency				
S125	Market St NE & Broadway St NE - HPTC	Construct eastbound and westbound left turn lanes on Market St NE at Broadway St NE	Market St NE & Broadway St NE - HPTC	$625

Included

Project Priority: 0-10 yrs

City of Keizer		Description	Project Location	Cost ($1000s)
Bicycle				
K016	Keizer Rapids Park Connector	Local connector from 15th Av N to southeast entrance of Keizer Rapids Park.	Local connector from 15th Av N to southeast entrance of Keizer Rapids Park.	$223
Capacity Increasing				
K006	Lockhaven Dr NE & River Rd N	Add additional lane eastbound Lockhaven West of River Rd at intersection	Lockhaven Dr NE & Chemawa Rd NE	$0
Efficiency				
K005	Chemawa Rd, Lockhaven Dr, Ridge Dr, Radiant Dr.	Reconfigure streets and intersections and provide access control	Chemawa Rd NE, Lockhaven Dr NE, Ridge Dr NE and Radiant Dr NE	$2,265
Transit				
K004	Chemawa Queue Jump - HPTC	Queue jump on Chemawa WB at River Road N as recommended by the HPTC project	Chemawa Rd at River Rd N	$450

City of Salem		Description	Project Location	Cost ($1000s)
Bridge				
S080	Commercial St & Pringle Creek	Bridge rehabilitation	Commercial St SE at Pringle Creek	$1,997
S115	Liberty St & Pringle Creek	Bridge rehabilitation - scour and footing work	Liberty St SE at Pringle Creek	$1,300
S145	Summer St & Mill Creek Bridge	Design and implement scour protection measures.	Summer St NE at Mill Creek	$215
Capacity Increasing				
S165	12th St SE: McGilchrist St SE to Fairview Av SE	Widen the roadway to add a southbound lane. The additional lane becomes a right turn only lane at Fairview Av SE.	12th St SE from McGilchrist St SE to Vista St SE	$1,100
S084	Commercial St SE & Kuebler Bv SE	Widen Commercial Street from north of Boone Road to easterly Barnes Road to provide dual left turn lanes on both approaches to Kuebler Boulevard.	Commercial Street SE & Kuebler Bv SE	$1,540
S081	Commercial St NE & Marion St Bridge	Restripe the through/right lane to a right-turn only lane giving 2 right-turn only lanes onto the bridge. Add curb extensions on the south side of the intersection and improve the northwest corner to facilitate truck turning movements.	Commercial St at Marion St NE	$165
S094	Fabry Rd SE: Reed Ln SE to Battle Creek Rd SE	Extend Fabry Rd SE eastward from Reed Ln SE to Battle Creek Rd SE. This along with the westward extension of Mildred Ln SE will provide an east/west minor arterial connection south of Kuebler Bv SE from Battle Creek Rd SE to Skyline Rd	Fabry Rd SE: Reed Ln SE to Battle Creek Rd SE	$3,930
S103	Hilfiker Ln SE: Commercial St SE to Pringle Rd SE	Construct extention of Hilfiker Lane SE to Hillrose Street SE and reconstruct both Hilfiker and Hillrose to minor arterial standards, with two travel lanes, center turn lane or turn pockets, curbs, gutters, sidewalks, and bike lanes.	Hilfiker Ln SE from Commercial St SE to Pringle Rd Se	$3,866

S111	Kuebler Bv SE: Sunnyside Rd NE to I-5	Improve to parkway standards (5 lanes), including intersection improvements. Excludes westbound lanes from Commercial St SE to I-5 completed in project S045.	Kuebler Blvd SE from Sunnyside SE to I-5	$4,093
S194	Market St NE & Swegle Rd NE: Lancaster Dr NE to Royalty Dr NE	Realign Market St NE and Swegle Rd NE to eliminate double intersections at 45th Av NE and bring both streets up to urban standards. Install traffic signal at 45th St if warranted.	Market St NE & Swegle Rd NE: Lancaster Dr NE to Royalty Dr NE	$4,987
S160	Wallace Rd NW & Edgewater St NW (BHES)	Increase radius of westbound bridge ramp to Wallace Road NW, provide an additional westbound bridge entrance lane on Edgewater Road NW, and bridge ramp lanes, and close Musgrave Lane NW. Alternative access would be provided to impacted businesses.	Wallace Rd NW at Edgewater Rd NW	$1,681
Efficiency				
S076	Center St NE & 17th St NE	Widen Center St NE approaches to the intersection to add turn lanes	Center St NE at 17th St NE	$2,732
S112	Lancaster Dr NE & Market St NE	Widen southbound Lancaster Dr to provide dual left turn lanes. Widen northbound approach as well.	Lancaster Dr NE & Market St NE	$5,569
S123	Madrona Av SE & Commercial St SE	Add a westbound to northbound right turn lane and signal improvements.	Madrona Ave at Commercial St SE	$372
Signals & Interconnects				
S046	Lancaster Dr SE: Hagers Grove Rd SE to Cordon Rd SE	Traffic signal interconnect	Lancaster Dr SE from Hagers Grove St SE to Cordon Rd SE	$200
S121	Madrona Av SE: UP RR to 25th St SE	Realign and signalize the Madrona Avenue SE/Aviation Loop SE intersection with 25th Street SE 150-200 feet to the south. Rebuild Madorna to major arterial standards west to the railroad and relocate Aviation Loop SE.	Madrona Ave SE from UP RR to 25th St SE	$3,748
S153	Ten traffic signals at unspecified locations	10 signals in years 0 to 10	Unspecified	$3,000
Transit				
S104	Hood to Market Busway - HPTC	Improvements to the road based on to-be-completed study	Broadway between Hood St and Market St	$750
Urban Standards				
S197	Battle Creek Rd SE: Kuebler Bv SE to Hillrose St SE	Improve to minor arterial standards with 2 travel lanes, center turn lane or turn pockets, bike lanes, curbs, gutters, and sidewalks. Additional lanes may be required in the vicinity of the Kuebler Bv intersection.	Battle Creek Rd SE: Kuebler Bv SE to Hillrose St SE	$6,163
S093	Eola Drive NW: Kingwood Dr NW to Sunwood Dr NW	Improve to minor arterial standards with 2 travel lanes, center turn lane, bike lanes, curbs, gutters, and sidewalks	Eola Dr NW from Sunwood Dr NW to Kingwood Rd NW	$3,307
S101	Hawthorne Ave NE & Hyacinth Rd NE: Portland Rd NE to Sunnyview Rd NE	Widen to 2 travel lanes with center turn lane where needed. Add curbs, gutters, sidewalks, bicycle lanes, and improve intersection approach to Portland Rd NE, Silverton Rd NE and Sunnyview Rd NE.	Hawthorne Ave NE & Hyacinth Rd NE: Portland Rd NE to Sunnyview Rd NE	$14,546
S113	Lancaster Dr SE: Cranston St SE to Kuebler Bv SE	Realign curves and widen to 2 travel lanes plus a center turn lane with curbs, gutters, sidewalks, and bike lanes.	Lancaster Dr SE: Cranston St SE to Kuebler Bv SE	$3,146
S134	Pringle Rd SE: Copper Glen Dr SE to Hillrose St SE	Improve to minor arterial standards with 2 travel lanes, center turn lane or turn pockets, bike lanes, curbs, gutters and sidewalks.	Pringle Rd SE: Copper Glen Dr SE to Hillrose St SE	$2,055
S141	Skyline Rd S: Liberty Rd S to Kuebler Bv S	Widen to 3-lane configuration with 2 travel lanes, center turn lane, curbs, gutters, sidewalks and bike lanes.	Skyline Rd S from Liberty Rd S to Kuebler Blvd S	$2,784

Efficiency

M021	Cordon Rd NE: Carolina Av NE and Indiana Ave	Add northbound left turn lane or close side roads	Cordon Rd @ Carolina Ave and Indiana Ave	$750
M070	Cordon Road SE & State St	Construct turn pockets.	Cordon Road SE & State St	$304
M015	Cordon Rd NE & Auburn Rd NE	Add traffic signal and turn refuges on Auburn Rd	Cordon Rd at Auburn Rd	$446

Pedestrian

M031	Sidewalk construction: various locations (set 2)	Construct sidewalks at various locations	TBD	$250

Safety

M012	Brooklake Rd & Wheatland Rd	Safety Improvement	Brooklake Rd at Wheatland Rd	$100

Signals & Interconnects

M026	Lancaster Dr NE & Winema Pl NE	Add traffic signal	Lancaster Dr @ Winema Pl	$350

ODOT	Description	Project Location	Cost ($1000s)

ITS

O009	ITS - En-Route Traveler Information System - Phase I: Hwy 22 at Cordon Rd	Deploy Highway Advisory Radio, Dynamic Message Signs at Hwy 22 and Cordon Rd. Multiple phase project.	DMS: Highway 22 E @ Cordon Rd HAR: NWTOC	$200

SAMTD	Description	Project Location	Cost ($1000s)

ITS

B005	ITS - Real-time Transit Arrival Information	Provide real-time arrival and departure info to transit users. Data at selected bus stops and electronically	Transit centers and select bus stops	$275
B004	ITS - Automated Vehicle Location System	Install automated vehicle location devices on buses and integrate into bus dispatch system		$655

Transit

B001	HPTC Corridor Improvements	Miscellaneous improvements in the HPTC corridor, Salem to Keizer, related to transit.	Various locations on the HPTC corridor	$1,900

Project Priority: 10-20 yrs

City of Salem	Description	Project Location	Cost ($1000s)

Capacity Increasing

S085	Cordon Rd SE & Hwy 22	Construct interchange	Cordon Rd SE at OR 22E	$20,000
S286	Cordon Rd: Highway 22 E to Caplinger Rd SE	Widen to 4 lanes, plus center turn lane or left turn lanes at selected locations, curbs, gutters, sidewalks and bike lanes.	Cordon Rd SE from Highway 22 E to Caplinger Rd SE	$3,390
S100	Hawthorne Av NE: Midway St NE to Center St NE	Add a north-bound right turn lane extending from Midway Street NE to the Center Street NE intersection.	Hawthorne Av NE: Midway St NE to Center St NE	$710
S287	Kuebler Blvd SE: I-5 to Turner Rd SE	Widen to 4 travel lanes, paved or raised median, bike lanes, curbs, gutters and sidewalks. This project includes turn lanes at Turner Rd SE and bridge improvements over the railroad.c	Kuebler Blvd SE: I-5 to Turner Rd SE	$13,400

S110	Kuebler Bv SE: Turner Rd SE to Hwy 22 Overpass - SREC	Widen to four travel lanes, paved or raised median, bike lanes, curbs, gutters and sidewalks, improvments to the bridge over Mill Creek. Developer funds the NB portion.	Kuebler Blvd from Turner Rd SE to Hwy 22 overpass	$4,920
S129	Mildred Ln SE: Lone Oak Rd S to Skyline Rd S	Extend Mildred Ln SE westward to connect to Skyline Rd S creating an east-west minor arterial roadway south of Kuebler Bv.	Mildred Ln SE: Lone Oak Rd S to Skyline Rd S	$9,728
Urban Standards				
S180	Eola Drive NW: Sunwood Dr NW to Gehler Rd NW	Widen to 3 lanes w/ curbs, bike lanes and sidewalks. Intersection improvements as needed	Eola Dr NW from Sunwood Dr NW to Doaks Ferry Rd NW	$333

Marion County		**Description**	**Project Location**	**Cost ($1000s)**
Efficiency				
M019	Cordon Rd NE & Herrin Rd NE	Add left turn refuge	Cordon Rd at Herrin	$450
M016	Cordon Rd NE & Hayesville Dr NE	Add northbound left turn lane	Cordon Rd @ Hayesville Dr	$450
M017	Cordon Rd NE & Swegle Rd NE	Add traffic signal and turn lanes on Swegle	Cordon Rd @ Swegle	$600
M018	Cordon Rd NE & Ward Dr NE	Add northbound left turn lanes	Cordon Rd at Ward Dr	$450
M020	Hazelgreen Rd at Cordon Rd NE / 55th Ave	Realign, add turn lanes and signal	Cordon Rd at Hazelgreen Rd and 55th Ave	$1,000
M032	Silverton Rd NE & Hollywood Dr NE	Add traffic signals and turn lanes	Silverton Rd at Hollywood Dr	$500
Pedestrian				
M058	Sidewalk construction: various locations (set 3)	Construct sidewalks at various locations	TBD	$250
Signals & Interconnects				
M051	Lancaster Dr NE & Monroe Av NE	Add traffic signal, line up Monroe Av approaches	Lancaster Dr @ Monroe Ave	$750
M028	Lancaster: Upgrade Signals	Upgrade signals at the intersections of Lancaster with Durbin, Macleay, Cooley, and Hayesville	Lancaster Dr at Durbin Rd, MacCleay, Cooley and Hayvesville Rds	$1,500

ODOT		**Description**	**Project Location**	**Cost ($1000s)**
Capacity Increasing				
O006	I-5 Phase IV: Kuebler Interchange to Delaney Rd.	Widen to 6 lanes	I-5 from Kuebler Interchange to Delaney Rd Interchange	$120,000

Project Priority: 15-20 yrs

City of Keizer		**Description**	**Project Location**	**Cost ($1000s)**
Capacity Increasing				
K012	Verda Ln NE: Dearborn Av NE to Southern City Limits	Widen to 5 lanes, add bike lanes and sidewalks	Verda Ln NE from Dearborn Dr NE to Keizer's southern city limits	$1,500
K011	Verda Ln NE: Chemawa Rd NE to Dearborn Av NE	Widen to 5 lanes, add bike lanes and sidewalks	Verda Ln NE from Dearborn Dr NE to Chemawa Rd NE	$500
Signals & Interconnects				

K009	River Road N: Lockhaven Dr NE to Manzanita St NE	Traffic signal interconnect	North River Rd from Lockhaven Dr NE to Mazanita NE	$80
Transit				
K010	River Rd N: Shangri-La Av NE to Lockhaven Dr NE	Bus pullouts	North River Rd	$100

Marion County		**Description**	**Project Location**	**Cost ($1000s)**
Capacity Increasing				
M052	Lancaster Dr NE & State St	Capacity improvements	Lancaster Dr @ State St	$1,500
Pedestrian				
M059	Sidewalk construction: various locations (set 4)	Construct sidewalks at various locations	TBD	$250
Signals & Interconnects				
M029	River Rd NE & Brooklake Rd NE	Signalize and realign intersection	River Rd NE at Brooklake Rd	$1,400
Urban Standards				
M036	45th Av NE: Ward Dr NE to Silverton Rd NE	Widen to collector standards	45th from Ward Dr to Silverton Rd	$2,000
M011	Auburn Rd NE: Lancaster Dr NE to Cordon Rd NE	Widen to collector standards	Auburn Rd: Lancaster Dr to Cordon Rd	$1,000
M014	Center St NE: Greencrest Dr NE to Cordon Rd NE	Improve to urban standards, including 4 travel lanes and a center turn lane with curbs, gutters, sidewalks, and bike lanes.	Center St NE from Lancaster Dr to Cordon Rd	$2,000
M034	State St: Lancaster Dr NE to Cordon Rd NE	Improve to 4 travel lanes plus a center turn lane with curbs, gutters, sidewalks, and bike lanes.	State St from Lancaster Dr to Cordon Rd	$2,000

ODOT		**Description**	**Project Location**	**Cost ($1000s)**
Signals & Interconnects				
O004	Chemawa/Hazelgreen & Portland Rd NE	Upgrade signal and interconnect	Chemawa Rd NE / Hazelgreen Rd NE at Portland Rd NE	$180
O005	Hayesville Dr NE & Portland Rd NE	Upgrade signal	Hayesville Dr NE at Portland Rd NE	$170
O007	Mission St SE & 25th St SE	Upgrade signal	Mission St SE at 25th St SE	$180

SKATS		**Description**	**Project Location**	**Cost ($1000s)**
Capacity Increasing				
R001	Willamette River Crossing Corridor	Right-of-way for river crossing. Corridor to be determined by the Salem Bridge EIS project.	Corridor to be determined by the Salem Bridge EIS project.	$20,000

2007 Illustrative Project List

Illustrative

Project Priority: Unfunded

City of Keizer		Description	Project Location	Cost ($1000s)
Bicycle				
K014	Chemawa Rd NE: Verda Ln NE to Lockhaven Dr NE	Add bike lanes	Chemawa Rd NE from Verda Ln NE to Lockhaven Dr NE	$0
K013	River Rd N: South City Limits to North City Limits (or alternative route)	Bike lanes on River Rd N, or alternative corridor the length of Keizer	River Rd N: South City Limits to North City Limits (or alternative corridor)	$0
K015	Wheatland Rd N: River Rd N to north City Limits	Add bike lanes	Wheatland Rd N from River Rd N to north City Limits	$0

City of Salem		Description	Project Location	Cost ($1000s)
Bicycle				
S220	17th St NE: Market St NE to Norway Rd NE	Add bike lanes	17th St NE: Market St NE to Norway Rd NE	$0
S219	17th St NE: Sunnyview Rd NE to Silverton Rd NE	Add bike lanes	17th St NE from Sunnyview Rd NE to Silverton Rd NE	$0
S236	25th St SE/Airway Dr SE: Madrona Av SE to Turner Rd SE	Add bike lanes	25th St SE/Airway Dr SE: Madrona Av SE to Turner Rd SE	$0
S221	25th St SE: McGilchrist St SE to Madrona Av SE	Add bike lanes	25th St SE: McGilchrist St SE to Madrona Av SE	$0
S204	Broadway St NE: Liberty St NE to Salem Parkway NE	Add bike lanes	Broadway St NE: Liberty St NE to Salem Parkway NE	$0
S224	Broadway St NE: Salem Parkway NE to River Rd N	Add bike lanes	Broadway St NE: Salem Parkway NE to River Rd N	$0
S205	Center St NE: Commercial St NE to 17th St NE	Add bike lanes	Center St NE: Commercial St NE to 17th St NE	$0
S208	Commercial St SE: Mission St SE to Superior St SE	Add bike lanes	Commercial St SE: Mission St SE to Superior St SE	$0

S237	Croisan Creek Rd S: River Rd S to Kuebler Bv S	Add bike lanes	Croisan Creek Rd S: River Rd S to Kuebler Bv S	$0
S207	Commercial St SE: Ferry St SE to Trade St SE	Add bike lanes	Commercial St SE & Ferry St SE to Trade St SE	$0
S225	D St NE: Lancaster Dr NE to Summer St NE	Add bike lanes	D St NE: Lancaster Dr NE to Summer St NE	$0
S228	Fairview Av SE: Pringle Rd SE to Commercial St SE	Add bike lanes	Fairview Av SE: Pringle Rd SE to Commercial St SE	$0
S226	Fairgrounds Rd NE/Hood St NE: Summer St NE to Commercial St NE	Add bike lanes	Fairgrounds Rd NE/Hood St NE: Summer St NE to Commercial St NE	$0
S210	Liberty St SE: Trade St SE to Ferry St SE	Add bike lanes	Liberty St SE: Trade St SE to Ferry St SE	$0
S229	Lana Av NE: Portland Rd NE to Silverton Rd NE	Add bike lanes	Lana Av NE: Portland Rd NE to Chemeketa Community College	$0
S214	Mission St SE: 12th St SE to Commercial St SE	Add bike lanes	Mission St SE: 12th St SE to Commercial St SE	
S212	Market St NE: Commercial St NE to Hawthorne Av NE	Add bike lanes	Market St NE: Commercial St NE to Hawthorne Av NE	$0
S213	Madrona Av SE: Liberty Rd S to Commercial St SE	Add bike lanes	Madrona Av SE: Liberty Rd S to Commercial St SE	$0
S241	Minto-Brown Island Connection (multi-use)	Add bike lanes		$0
S211	Marion St NE: 13th St NE to Commercial St NE	Add bike lanes	Marion St NE: 13th St NE to Commercial St NE	$0
S231	Madrona Av SE: Pringle Rd SE to Commercial St SE	Add bike lanes	Madrona Av SE: Pringle Rd SE to Commercial St SE	$0
S233	River Rd S: Croisan Creek Rd S to UGB	Add bike lanes	River Rd S: Croisan Creek Rd S to UGB	$9,800
S234	Skyline Rd S: Kuebler Bv S to Maplewood Dr S	Add bike lanes	Skyline Rd S: Liberty Rd S to Maplewood Rd S	$0
S238	Sunnyview Rd NE: 17th St NE to Fairgrounds Rd NE	Add bike lanes	Sunnyview Rd NE: 17th St NE to Fairgrounds Rd NE	$0
S217	State St: 12th St SE to 25th St SE	Add bike lanes	State St: 12th St SE to 25th St SE	$0
S216	Silverton Rd NE: Fairgrounds Rd NE to Lancaster Dr NE	Add bike lanes	Silverton Rd NE: Fairgrounds Rd NE to Lancaster Dr NE	$0

Capacity Increasing

S060	12th St SE: Fairview Av SE to Vista Av SE	Widen the roadway to add a southbound lane. The additional lane becomes a right turn only lane at Vista Av SE.	12th St SE: Fairview Av SE to Vista Av SE	$1,000
S176	Croisan Scenic Wy S: Joplin Rd S to Croisan Creek Rd S	Extend Croisan Scenic Way S southward connecting with a section already built near Madrona Avenue S, then continuing southward and westward intersecting with Croisan Creek Road S just south of River Rd S.	Croisan Scenic Way S from Joplin Rd S to Croisan Creek Rd S	$5,806
S173	Cherry Av NE: BNRR to Salem Parkway NE	Widen to 5 lanes with 4 travel lanes, a center turn lane, curbs, gutters, sidewalks, and bike lanes	Cherry St NE from RR to Salem Parkway NE	$5,523
S174	Cherry Av NE: Johnson St NE to Pine St NE	Widen to an interim 3-lane configuration, with 2 travel lanes, a center turn lane, curbs, gutters, sidewalks, and bike lanes	Cherry St NE from Johnson St NE to Pine St NE	$1,604
S074	Capitol St NE: Market St NE to Fairgrounds Rd NE	Add a third travel lane and bike lane by removing parking or by prohibiting parking during peak hours.	Capitol St NE: Market St NE to Fairgrounds Rd NE	$40
S172	Chemawa Rd NE: I-5 to Portland Rd NE	Widen to 4 lanes plus center turn lane, bike lanes, curbs, gutters and sidewalks.	Chemawa Rd NE from I-5 to Portland Rd NE	$2,511
S179	Doaks Ferry Rd NW: Hwy 22 to Brush College Rd NW	Upgrade to major arterial standards, including bikelanes, sidewalks, curbs and gutters as necessary	Doaks Ferry Rd NW from OR 22W to Brush College Rd NW	$21,036
S184	Hyacinth St NE: Salem Parkway NE to Portland Rd NE	Improve to major arterial standards, including 4 travel lanes and a center turn lane with curbs, gutters, sidewalks, bike lanes and intersection improvements.	Hyacinth from Salem Parkway to Portland Road	$3,448
S183	Hawthorne Av NE: Market St NE to Hwy 22	Improve to major arterial standards, including 4 travel lanes and a center turn lane (or raised median) with curbs, gutters, sidewalks and bike lanes.	Hawthorne Ave from Market St to OR 22E	$15,791
S282	Hazelgreen Road Improvements	Widen to interim 2 travel lanes with center turn lane where needed. Add curbs, gutters, sidewalks and bikelanes. Improve the intersection approach to Portland Rd.	Hazelgreen Rd NE from Portland Rd NE to Cordon Rd NE	$5,984
S187	Kuebler Bv SE: Skyline Rd S to Liberty Rd SE	Widen to 4 lanes, curbs, sidewalks, bikelanes, center turn lane or median	Kuebler Blvd S from Skyline Rd S to Liberty Rd SE	$1,127
S195	Mission St SE: Liberty Rd S and Commercial St SE	Improve capacity of both intersections with additional turn lanes	Mission St SE: Liberty Rd S and Commercial St SE	$2,680
S130	New Minor Arterial Street: Deer Run Av to River Rd S	Construct a new minor arterial street connection in the vicinity of Homestead Rd NW extending from Deer Run Av NW to River Rd NW.	New Minor Arterial Street: Deer Run Av to River Rd S	$3,271
S137	Robins Lane, east of Commercial St. SE	Connect Robins Lane to Battlecreek Rd by improving Brentwood Dr	Robins Ln SE, east of Commercial St SE	$2,517
S146	Summer St NE: Fairgrounds Rd NE to Marion St NE	Add a third travel lane and bike lane by removing parking or by prohibiting parking during peak hours.	Summer St NE: Fairgrounds Rd NE to Marion St NE	$56

Efficiency

S069	Broadway & Salem Parkway - HPTC	Add additional turn lanes to three approaches on the intersection to ensure future mobility	Broadway @ Salem Parkway	$600
S068	Broadway & Hood - HPTC	Add turn lanes on Hood St both EB and WB onto Broadway St	Broadway @ Hood EB and WB approaches on Hood	$1,200
S079	Commercial SE & Ratcliff Drive SE	Add left-turn lane at Ratcliff Dr and install traffic signal, improving Ratcliff/Salem Hts to collector standards	Commercial St SE at Ratcliff Dr SE	$1,725
S092	Eola Dr NW: Edgewater St NW to Kingwood Dr NW	Improve to minor arterial standards adding turn lanes where needed, bike lanes, curbs, gutters, and sidewalks	Eola Dr NW from Edgewater St NW to Kingwood Dr NW	$2,138
S283	Kuebler & Lone Oak Intersection Project	Contruct eastbound and westbound right turn lanes on Kuebler Bv at Lone Oak Rd.	Kuebler Bv SE at Lone Oak Rd SE	$710
S189	Liberty Rd S & Salem Heights Av S	Add northbound and southbound left turn lanes, bike lanes	Liberty Rd S at Salem Heights Ave S	$1,705
S114	Lancaster Drive Access Management	Provide major access management improvements along this corridor.	Lancaster Dr from State St. to Silverton Rd.	$4,058
S188	Liberty Rd S & Madrona Av S	Improve intersection by adding northbound and southbound pockets on Liberty.	Liberty Rd S at Madrona Ave S	$2,728
S033	Macleay Rd SE & Cordon Rd SE	Add left turn pockets on both eastbound and westbound approaches to Cordon Rd SE	Cordon Rd SE @ Macleay Rd SE	$411
S196	Owens St SE: Liberty Rd S & Commercial St SE	Improve intersections to increase turning movement capacity to and from Commercial Street SE and Liberty Street SE.	Owens St SE from Libery Rd SE to Commercial St SE	$4,306
S138	Salem Parkway Queue Jump - HPTC	Queue jump on Broadway NB at Salem Parkway	Broadway at Salem Parkway	$500
S163	Wallace Rd NW: Edgewater St NW to Orchard Heights Rd MW	Improve safety through construction of a raised median with turn pockets to serve businesses. Pedestrian and bicycle facilities will be included.	Wallace Rd NW from Edgewater Rd NW to Orchard Hts Rd NW	$1,196
ITS				
S268	ITS - Advanced Rail Warning System	Deploy RR crossing detection equipment. Info to be sent to 911 and NWTOC	Along UP and P&W rail lines in downtown Salem	$190
S281	ITS - Isolated Signal Interconnect	Connect remaining isolated signals to the Regional Traffic Signal Control Center		$445
S270	ITS - Downtown Salem Parking Management	Provide real-time parking information in Salem's downtown. Message signs and radio will be used to inform motorists.	Downtown Salem	$448
S280	ITS - Metropolitan Area Communications #3	Install fiber optic cable to connect traffic management centers and field devices		$539
S279	ITS - Metropolitan Area Communications #2	Install fiber optic cable to connect traffic management centers and field devices		$385

S265	ITS - Metropolitan Video Deployment - Phase II	Add video cameras at intersections and other critical locations	River Rd N, Hawthorne Ave, Center St, Portland Rd	$1,008
S264	ITS - Metropolitan Video Deployment - Phase I	Add video cameras at intersections and other critical locations	Hwy 22, Lancaster Dr, Commercial St, Kuebler Blvd/Cordon Rd, Salem Pkwy, I-5	$1,960
S278	ITS - Metropolitan Area Communications #1	Install fiber optic cable to connect traffic management centers and field devices		$462
S266	ITS - Metropolitan Video Deployment - Phase III	Add video cameras at intersections and other critical locations	Wallace Rd, Chemawa Rd, Silverton Rd, Market St, Broadway St, 25th St, State St, 12th/13th St, Turner Rd, Liberty Rd SE	$0
S269	ITS - RTSCC Upgrade	Upgrade the Regional Traffic Signal Control Center		$111
S276	ITS - Center to Center Integration	Implement communication links among the Regional Traffic Signal Control Center, ODOT's Northwest Traffic Operations Center and other operation centers in the area.		$205
S271	ITS - RTSCC System Upgrade	Upgrade the central computer for traffic signal control	Regional Traffic Signal Control Center	$600
S277	ITS - Adaptive Signal Timing Project	Deploy adaptive signal timing on selected corridors with the highest levels of congestion and the most fluctuation in volumes.	TBD	$1,400
Pedestrian				
S245	12th St SE: Ibsen St SE to Commercial St SE	Add sidewalks	12th St SE: Ibsen St SE to Commercial St SE	$0
S247	Center St NE: Concord St NE to Cordon St NE	Add sidewalks	Center St NE: Concord St NE to Cordon St NE	$0
S243	Core Area Pedestrian Improvements	Add bulbouts in downtown and capitol mall area	Downtown Salem and capitol mall area	$0
S249	Connecticut Ave SE overpass of Hwy 22	Construct a pedestrian overpass of Highway 22 connecting a residential area to the south to a shopping center and two schools to the north.	Connecticut Ave SE overpass of Hwy 22	$3,495
S248	Commerical St SE: Winding Way SE to Lansford Dr SE	Add sidewalks	Commerical St SE: Winding Way to Landsford	$0
S251	Edgewater District Pedestrian Improvements	Add sidewalks and other pedestrian improvements	Edgewater Rd NW	$0
S257	Madrona Av SE: Edward Av SE to 25th St SE	Add sidewalks	Madrona Av SE: Edward Av SE to 25th St SE	$0
S120	Madrona Av S: Croisan Creek Rd S to Elderberry Dr S	Improve to an interim 2 travel lanes with curbs, gutters, sidewalks and bike lanes.	Madrona Av S: Croisan Creek Rd S to Elderberry Dr S	$2,203
S258	Market St NE: Lancaster Dr NE to 45th Av NE	Add sidewalks	Market St NE: Lancaster Dr NE to 45th Av NE	$0

S259	North Downtown Plan Pedestrian Improvements	Add sidewalks and other pedestrian improvements	North Downtown Salem	$0
S261	State St: 40th Pl. NE to Cordon Rd NE	Add sidewalks	State St: 40th Pl. NE to Cordon Rd NE	$0
Signals & Interconnects				
S149	Sunnyview Rd NE: Evergreen Av NE to Fisher Rd NE	Install roundabout at Park Av NE, traffic signal at Lansing Av NE, and curbs, gutters, and sidewalks from Evergreen Avenue NE to Bryam Street NE.	Sunnyview Rd NE: Evergreen Av NE to Fisher Rd NE	$2,466
S154	Ten traffic signals at unspecified locations	10 signals in years 10 to 20	Unspecified	$3,000
Urban Standards				
S061	17th St NE: Norway St NE to Sunnyview Rd NE	Improve to minor arterial standards, including 2 travel lanes with curbs, gutters, sidewalks and bike lanes, plus left turn lanes at intersections.	17th St NE: Norway St NE to Sunnyview Rd NE	$1,791
S064	25th St SE: State St to Helm St SE	Improve to minor arterial standards with 2 travel lanes, center turn lane or turn pockets, bike lanes, curbs, gutters and sidewalks.	25th St SE: State St to Helm St SE	$2,654
S063	25th St SE: Mission St SE to McGilchrist St SE	Widen the existing 4-lane street to add a center turn lane, bike lanes, curbs, gutters, and sidewalks, bringing it up to full standards for a major arterial.	25th St SE from Mission St SE to McGilchrist St SE	$3,069
S065	36th Av SE: Kuebler Bv SE to Langley St SE	Improve to minor arterial standards with 2 travel lanes, center turn lane or turn pockets, bike lanes, curbs, gutters and sidewalks.	36th Av SE: Kuebler Bv SE to Langley St SE	$889
S124	32nd Av SE & Trelstad Ave SE: I-5 to 36th Av SE signal at Kuebler Bv SE	Improve to minor arterial standards, including 2 travel lanes, left turn pockets where needed, curbs, gutters, sidewalks, and bike lanes.	32nd Av SE & Trelstad Ave SE: I-5 to 36th Av SE signal at Kuebler Bv SE	$2,600
S168	Airport Rd SE: State St. to Mission St.	Improve to minor arterial standards with 2 travel lanes, center turn lane or turn pockets, bike lanes, curbs, gutters, and sidewalks	Airport Rd SE from State St to Mission St SE	$2,242
S071	Brush College Rd NW: Doaks Ferry Rd to BPA Power Lines	Improve to minor arterial standards with 2 travel lanes, left turn lanes, bike lanes, curbs, gutters and sidewalks.	Brush College Rd NW: Doaks Ferry Rd to BPA Power Lines	$0
S072	Byers St S to Deer Run S: Viewcrest Rd S to end of roadway	Improve to minor arterial standards including 2 travel lanes, turn lanes where appropriate, curbs, gutters, sidewalks and bike lanes.	Byers St S to Deer Run S: Viewcrest Rd S to end of Rdway	$1,977
S070	Brown Rd NE: Sunnyview Rd NE to Silverton Rd NE	Improve to urban collector standards, including 2 travel lanes with curbs, gutters, sidewalks, and bike lanes where designated.	Brown Rd NE: Sunnyview Rd NE to Silverton Rd NE	$1,621

S067	Battle Creek Rd SE: Kuebler Bv SE to Wiltsey Rd SE	Improve to minor arterial standards with 2 travel lanes, center turn lane or turn pockets, bike lanes, curbs, gutters and sidewalks.	Battle Creek Rd SE: Kuebler Bv SE to Wiltsey Rd SE	$3,520
S082	Commercial St SE: Ratcliff Dr SE to Vista Av SE	Add curbs, gutters and sidewalks where missing along this segment of Commercial Street SE.	Commercial St SE: Ratcliff Dr SE to Vista Av SE	$1,803
S171	Center St NE: Greencrest Dr NE to Lancaster Rd NE	Upgrade to major arterial standards, including bikelanes, sidewalks, curbs and gutters as necessary	Center St NE from Greencrest St NE to Cordon Rd NE	$5,051
S087	Croisan Creek Rd S: River Rd S to Heath St S	Improve to collector standards by adding curbs, bikelanes & sidewalks	Croisan Creek Rd S from River Rd S to Heath St S	$2,770
S083	Commercial St: Baxter Rd SE to I-5 Interchange	Improve to major arterial standards, including 4 travel lanes, left turn lanes at selected locations, curbs, gutters, sidewalks, and bike lanes.	Commercial St: Baxter Rd SE to I-5 Interchange	$7,329
S177	Doaks Ferry Rd NW: Eola Dr NW to UGB	Improve to an interim 3-lane, minor arterial standard, with 2 travel lanes, center turn lane, bike lanes, curbs, gutters and sidewalks. Include all necessary realignments and intersection improvements.	Doaks Ferry Rd NW from Eola Dr NW to UGB	$5,759
S178	Doaks Ferry Rd NW: Glen Creek Rd NW to Eola Dr NW	Improve to an interim 3-lane, minor arterial standard, with 2 travel lanes, center turn lane, bike lanes, curbs, gutters and sidewalks. Include all necessary realignments and intersection improvements.	Doaks Ferry Rd NW from Glen Creek Rd NW to Eola Dr NW	$3,423
S095	Front St N: Norway St NE to Division St NE	Rebuild Front Street to a modified minor arterial standard and aligning the railroad tracks down the center. Construct wide travel lanes as well as curbs, gutters, and sidewalks. The project includes the reconstruction of Mill Creek Bridge.	Front St N: Norway St NE to Division St NE	$4,000
S096	Front St N: River Rd N to Pine St N	Improve to minor arterial standards, including 2 travel lanes with curbs, gutters, sidewalks and bike lanes, plus left turn lanes at intersections.	Front St N: River Rd N to Pine St N	$3,650
S098	Glen Creek Rd NW: Crescent Dr NW to Westfarthing Way NW	Improve to minor arterial standards with 2 travel lanes, left turn lanes, bike lanes, curbs, gutters and sidewalks.	Glen Creek Rd NW: Crescent Dr NW to Westfarthing Way NW	$2,617
S185	Kale St NE: Portland Rd NE to Cordon Rd NE	Add a center turn lane, bike lanes, curbs and sidewalks	Kale St NE: Portland Rd NE to Cordon Rd NE	$3,894
S190	Liberty Rd S: Commercial St SE to Browning Av SE	Widen to 4 travel lanes, center turn lanes or raised medians, curbs, gutters, sidewalks, and bike lanes.	Liberty Rd S: Commercial St SE to Browning Av SE	$10,347
S191	Liberty Rd S: Holder Ln SE to South UGB	Improve to an interim 3-lane urban standard, with 2 travel lanes, a center turn lane, curbs, gutters, sidewalks, and bike lanes.	Liberty Rd S: Holder Ln SE to South UGB	$1,822
S119	Madrona Av S: Biegler Lane S to Liberty Rd S	Improve to minor arterial standards, including 2 travel lanes with curbs, gutters, sidewalks and bike lanes, plus left turn lanes at intersections.	Madrona Av S: Biegler Lane S to Liberty Rd S	$650

S128	Mildred Ln SE: Lone Oak Rd SE to Sunnyside Rd SE	Improve to minor arterial standards with 2 travel lanes, center turn lane or turn pockets, bike lanes, curbs, gutters and sidewalks.	Mildred Ln SE: Lone Oak Rd SE to Sunnyside Rd SE	$3,356
S117	Macleay Rd SE: Pennsylvania Av SE to Cordon Rd SE	Improve to collector standards, including 2 travel lanes, curbs, gutters, sidewalks, and bike lanes where designated.	Macleay Rd SE: Pennsylvania Av SE to Cordon Rd SE	$4,059
S132	Orchard Heights Rd NW: Titan Dr NW to UGB	Improve to minor arterial standards with 2 travel lanes, left turn lanes, bike lanes, curbs, gutters and sidewalks.	Orchard Heights Rd NW: Titan Dr NW to UGB	$2,779
S131	Orchard Heights Rd NW: Parkway Dr NW to Snowbird Dr NW	Improve to minor arterial standards with 2 travel lanes, left turn lanes, bike lanes, curbs, gutters and sidewalks.	Orchard Heights Rd NW: Parkway Dr NW to Snowbird Dr NW	$2,860
S135	Pringle Rd SE: Hoyt St SE to Georgia Av SE	Improve to minor arterial standards with 2 travel lanes, center turn lane or turn pockets, bike lanes, curbs, gutters, and sidewalks.	Pringle Rd SE: Hoyt St SE to Georgia Av SE	$6,000
S199	River Rd S: Croisan Creek Rd S to UGB	Improve to minor arterial standards where topography allows, including 2 travel lanes with curbs, gutters, sidewalks and bike lanes, plus left turn lanes at various intersections.	S. River Rd.: Croisan Creek to Owens	
S198	Reed Rd SE: Battle Creek Rd SE to Fairview Industrial Dr SE	Improve to minor arterial standards with 2 travel lanes, center turn lane or turn pockets, bike lanes, curbs, gutters, and sidewalks.	Reed Rd SE from Battle Creek Rd SE from Fairview Industrial Rd SE	$1,778
S148	Sunnyside Rd S: Pawnee Circle SE to the UGB	Improve to minor arterial standards with 2 travel lanes, left turn pockets, bike lanes, curbs, gutters and sidewalks.	Sunnyside Rd S: Pawnee Circle SE to the UGB	$3,784
S147	Sunnyside Rd S: Kuebler Bv SE to Mildred Lane SE	Improve to minor arterial standards with 2 travel lanes, left turn pockets, bike lanes, curbs, gutters and sidewalks.	Sunnyside Rd S: Kuebler Bv SE to Mildred Lane SE	$4,520
S143	Skyline Rd S: Maplewood Dr S to Mildred Lane S	Improve to minor arterial standards including 2 travel lanes, a center turn lane, curbs, gutters, sidewalks and bike lanes.	Skyline Rd S: Maplewood Dr S to Mildred Lane S	$2,535
S158	Turner Rd SE: Gath Rd SE to UGB	Improve to minor arterial standards with 2 travel lanes, left turn pockets, bike lanes, curbs, gutters and sidewalks.	Turner Rd SE: Gath Rd SE to UGB	$3,502
S156	Turner Rd SE: Airway Dr SE to Gath Rd SE	Improve to minor arterial standards with 2 travel lanes, center turn lane or turn pockets, bike lanes, curbs, gutters and sidewalks.	Turner Rd SE: Airway Dr SE to Gath Rd SE	$5,131
S155	Turner Rd SE: 2100 feet south of Cascade Gateway Park to Airway Dr SE	Improvements to include bike lanes, drainage, paved shoulder on one side, and curb, gutter and sidewalk on the other.	Turner Rd SE: 2100 feet south of Cascade Gateway Park to Airway Dr SE	$3,984
S159	Viewcrest Rd S: Kuebler Bv S to Byers St S	Improve to minor arterial standards including 2 travel lanes, a center turn lane, curbs, gutters, sidewalks and bike lanes.	Viewcrest Rd S: Kuebler Bv S to Byers St S	$1,893

City of Turner	Description	Project Location	Cost ($1000s)

Capacity Increasing

T006	Delaney Rd SE: N 3rd St to Witzel Rd SE	Extend road to Witzel Rd as a minor arterial with sidewalks, bikelanes and storm drains	Delaney Rd SE: N 3rd St to Witzel Rd SE	$0
Urban Standards				
T005	Delaney Rd: From UP RR crossing 500' west	Add sidewalks, bike lanes, curbs & storm drains	Delaney Rd: From UP RR crossing 500' west	$350

Marion County	**Description**	**Project Location**	**Cost ($1000s)**
Bicycle			
M041	Center/Hampden/Fruitland: Cordon Rd NE to 63rd Av NE	Add bike lanes	Center/Hampden/Fruitland from Cordon Rd to 63rd Ave	$625
M044	Cordon Rd NE: Silverton Rd NE to Kale St NE	Separated multi-use path	Cordon Rd from Silverton Rd to Kale St	$800
Bridge			
M038	BNSF RR Bridge over River Rd S	Replace bridge and realign road	P&W (nee BNRR) bridge over River Rd S, SW of Halls Ferry Rd	$3,000
M023	Delaney Rd: Bridge over Battle Creek	Replace bridge, realign intersection	Delaney Rd bridge over Battle Creek	$1,200
M064	Wipper Rd Bridge	Replace bridge	Wipper Rd bridge (#4715)	$500
Capacity Increasing			
M043	Cordon Rd NE: Center St NE to Silverton Rd NE	Construct to Parkway standards with multi-use path	Cordon Rd from Center St to Silverton Rd	$5,000
M046	Cordon Rd SE: Caplinger Rd SE to Center St NE	Construct to Parkway standards with multi-use path	Cordon Rd from Caplinger Rd to Center St	$5,000
M063	Vitae Springs Rd S: River Rd S to Orville Rd S	Realign, widen and pave road	Vitae Springs Rd from River Rd S to Orville Rd	$2,000
Efficiency			
M042	Cordon Rd NE & Kale St NE	Add northbound left turn lane	Cordon Rd at Kale St	$250
M060	Skyline Rd S & Vitae Springs Rd S	Realign intersection	Skyline Rd at Vitae Springs Rd	$500
ITS			
M068	ITS - Isolated Intersection Safety Warning System	Deploy devices to warn motorists of high crash intersections		$600
M066	ITS - Flood Warning System	Deploy monitoring system on roadways subject to high water and alert motorists		$400

M067	ITS - Slide Monitoring System	Deploy a system to monitor frequent slide locations and alert motorists		$273
Safety				
M053	Lancaster Dr NE & Portland Rd NE	Safety improvements and/or signal	Lancaster Dr @ Portland Rd	$500
Signals & Interconnects				
M039	Brooklake Rd N & Huff Ave	Add traffic signal and turn lanes	Brooklake Rd at Huff Ave	$500
M045	Cordon Rd SE & Pennsylvania Av SE	Install traffic signal	Cordon Ave at Pennsylvania Ave	$250
M040	Center St NE & 45th Av NE	Install traffic signal	Center St at 45th Ave	$250
Urban Standards				
M037	Blossom Dr NE: City Limits to Portland Rd NE	Widen to collector standards	Blossom Dr from Salem City Limits to Portland Rd	$1,000
M013	Brown Rd: City Limits to Silverton Rd NE	Widen to collector standards	Brown Rd from Salem City Limits to Silverton Rd	$750
M022	Delaney Rd: Battle Creek SE to Turner	Widen road to county arterial standards	Delaney Road from Battle Creek to Turner	$1,400
M047	Fisher Rd NE: Ward Dr NE to City Limits	Widen to collector standards (add sidewalks)	Fisher Rd from Ward Dr to Salem City limits	$500
M048	Hayesville Dr NE: Lancaster Dr NE to Cordon Rd NE	Widen to collector standards	Hayesville Dr from Lancaster Dr to Cordon Rd	$1,000
M024	Hollywood Dr: Salem City Limits to Silverton Rd NE	Widen to collector standards	Hollywood Dr from Salem City Limits to Silverton Rd	$750
M049	Herrin Rd NE: Middle Grove Dr NE to Cordon Rd NE	Widen to collector standards, replace bridge	Herrin Rd from Middle Grove to Cordon Rd	$800
M069	Kuebler Bv S: Croisan Creek Rd S to Viewcrest Dr S	Improve to minor arterial standards, including 2 travel lanes, left turn lanes where necessary, curbs, gutters, sidewalks and bike lanes where designated.	Kuebler Bv S: Croisan Creek Rd S to Viewcrest Dr S	$938
M054	Lancaster Dr NE: State St to Center St NE	Transportation and bike/ped enhancement	Lancaster Dr from State St to Center St	$1,000
M055	MacLeay Rd SE: Arabian Av SE to Cordon Rd SE	Widen to minor arterial standards	MacLeay Rd from Arabian Ave to Cordon Rd	$1,000
M061	Swegle Rd NE: City limits to Cordon Rd NE	Improve to minor arterial standards, including 2 travel lanes plus a center turn lane with curbs, gutters, sidewalks and bike lanes.	Swegle Rd from Salem City Limits to Cordon Rd	$500

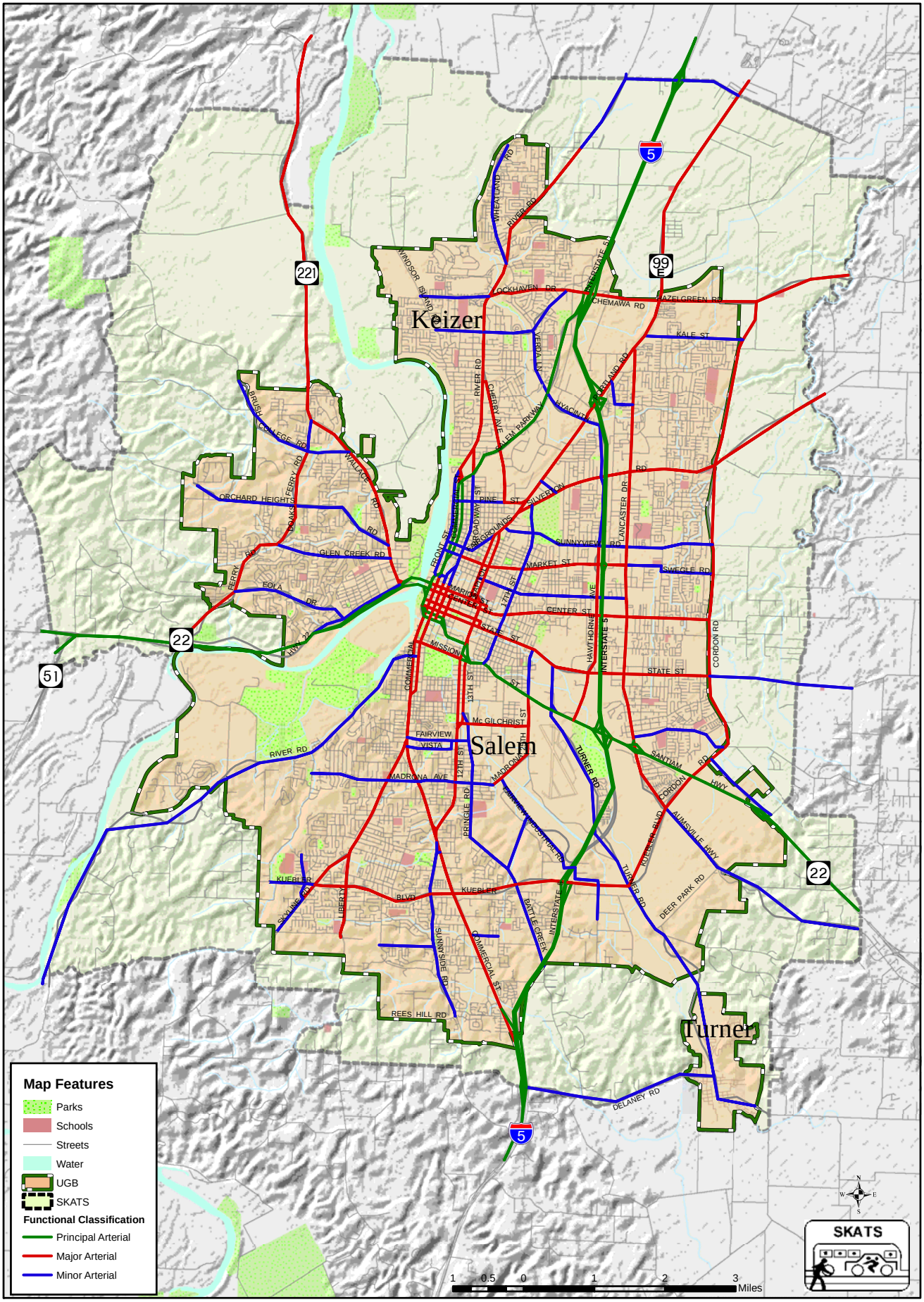
S202	Sunnyview Rd NE: Walker Rd NE to Cordon Rd NE	Improve to minor arterial standards, including 2 travel lanes with curbs, gutters, sidewalks and bike lanes, plus left turn lanes at intersections.	Sunnyview Rd NE from Walker Rd NE to Cordon Rd NE	$765
M062	Turner Rd SE: Val View Dr SE to Turner UGB	Improve to minor arterial standards adding turn lanes where needed, bike lanes, curbs, gutters, and sidewalks	Turner Rd from Val View Rd to the northern boundary of the Turner UGB	$1,000

ODOT		Description	Project Location	Cost ($1000s)
Capacity Increasing				
O008	Hwy 22 and 51 interchange	Construct an interchange at the OR22W and OR51 intersection	OR 22 W and OR 51	$25,000
ITS				
O010	ITS - En-Route Traveler Information System - Phase II-III	Deploy Highway Advisory Radio, Dynamic Message Signs and city/county/state websites to notify motorists of incidents and other traveler information. Multiple phase project.		$2,083

SKATS		Description	Project Location	Cost ($1000s)
Capacity Increasing				
R002	Third Willamette Bridge	Third bridge over the Willamette River. Corridor to be determined by the Salem Bridge EIS project.	Corridor to be determined by Salem Bridge EIS project	$200,000

Map 15-1

Functional Classification System

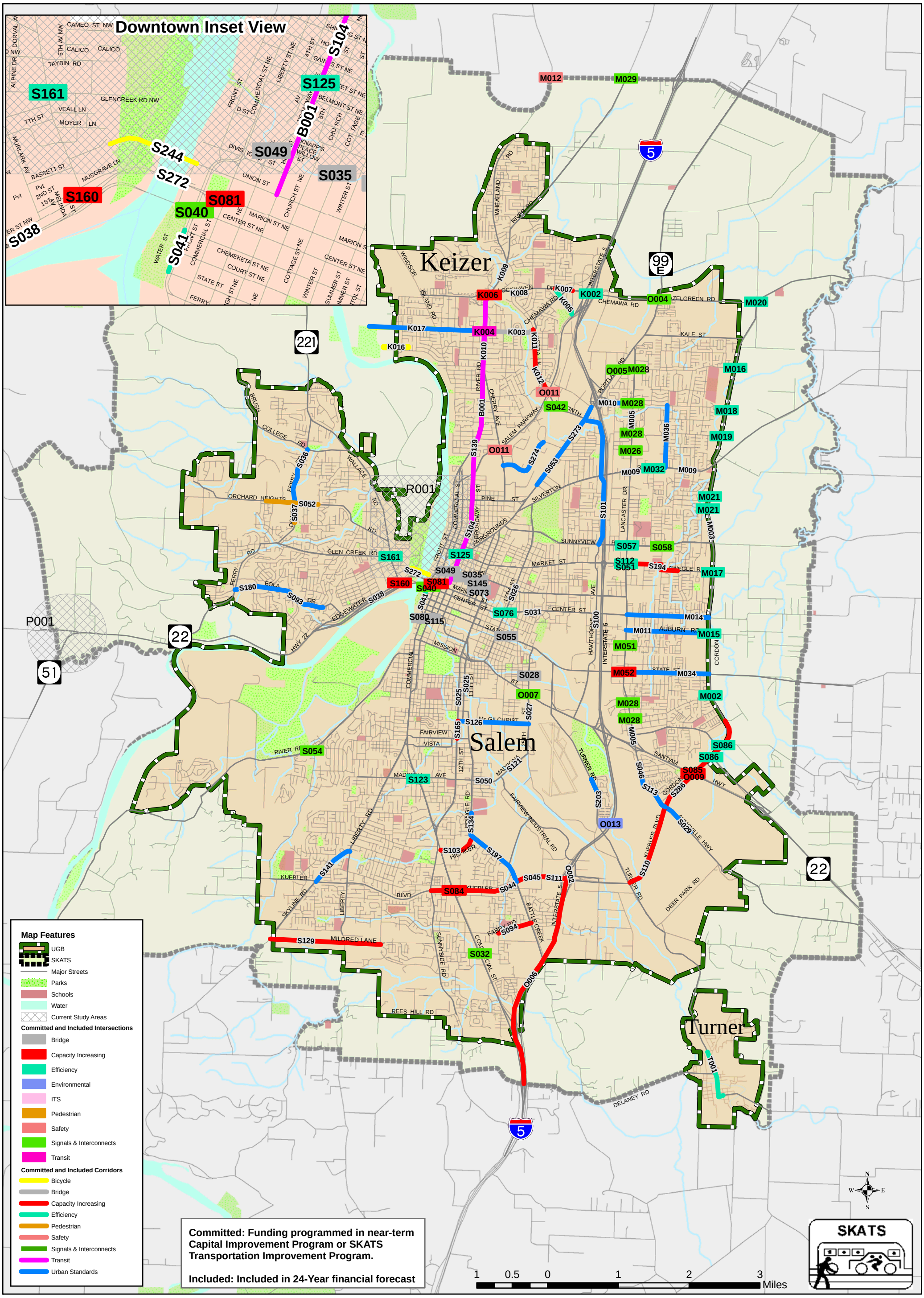


January 17, 2007

SKATS 2031 RTSP Update

Map 15-2

2031 Committed and Included Projects

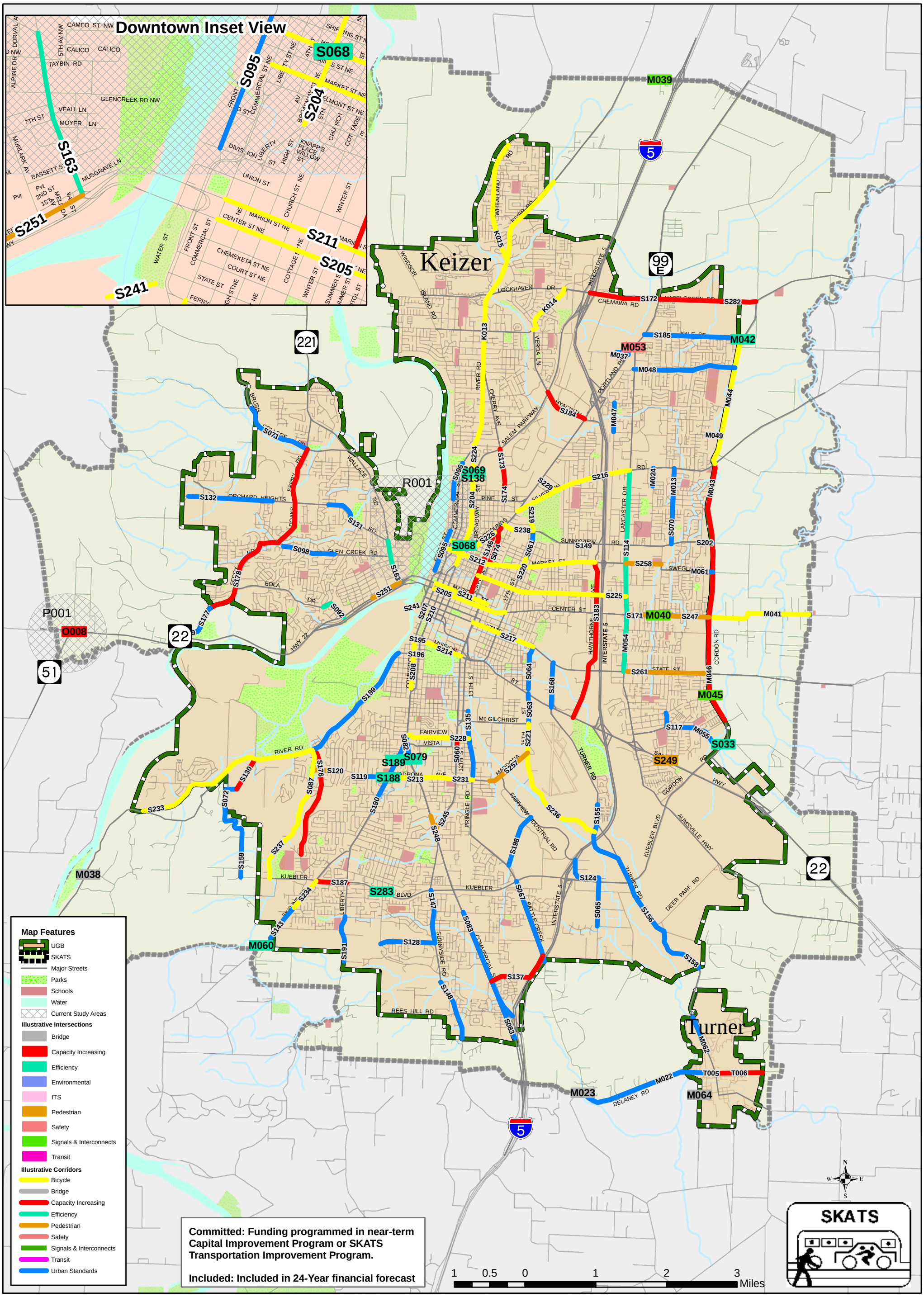


January 16, 2007

SKATS 2031 RTSP Update

Map 15-3

2031 Illustrative Projects



January 16, 2007

SKATS 2031 RTSP Update

16 - Environmental and Cultural Review

As part of the SAFETEA-LU (Safe Accountable Fair Efficient Transportation Equity Act – A Legacy for Users) legislation passed in 2005, metropolitan planning organizations are required for the first time to consult with federal, state and tribal wildlife, land management, and regulatory agencies during the development of the long-range transportation plan. The purpose of these discussions is to identify opportunities to reduce the potential negative impacts of the regional transportation system on natural resources within the planning area. In particular, SAFETEA-LU specifies that the Plan needs to contain a discussion of the

> "…types of potential environmental mitigation activities and potential areas to carry out these activities, including activities that may have the greatest potential to restore and maintain the environmental functions affected by the plan."[1]

The purpose of this analysis is not to focus on the impact of individual projects or the cumulative impact of all of the projects, but to raise awareness and understanding of the natural, cultural, and historical systems located within the SKATS urban area and their relationship to the transportation projects proposed in this Plan. Unlike the modeling of air quality that SKATS has been performing for over ten years, this assessment does not attempt to calculate with precision the transportation system's impacts on specific resources.

This chapter contains a summary of the natural and cultural resources that are within the SKATS urban area, focusing on those features most likely to be affected by transportation projects, and a description of the general effects of transportation systems on ecological systems. This chapter also includes a summary of federal, state, and local laws, regulations, and policy that govern natural, historic and cultural resource management as well as local private and public conservation activities. In the analysis section, the mapping capability of a Geographic Information System (GIS) was used to determine areas where proposed regional projects intersected with the natural and historic resources in the area. The result of this assessment and opportunities to avoid, reduce, and mitigate anticipated effects are described. The chapter concludes with possible next steps for the region to follow. This includes a discussion of mitigation options that might be appropriate for the region and that need to be discussed with all local jurisdictional partners and regulatory agencies at a regional level. This chapter was developed with the assistance of local, state and federal resource agencies and was reviewed by members of the Collaborative Environmental and Transportation Agreement for Streamlining (CETAS), which includes representatives from many environmental, cultural and historical agencies.

[1] SAFETEA-LU 23 CFR 134 (i) (2) (B)

Natural Resources

The Salem-Keizer Metropolitan Area lies in the central Willamette Valley of western Oregon, straddling the middle reach of the Willamette River. As a consequence of its position in this rain-soaked landscape, the Willamette is the 13th largest river by volume and carries the most runoff for its land area of any river in the Continental United States[2]. This Oregon icon flows south to north, carving a meandering path between the Salem Hills, which force it to jog from west to east as it enters Salem and greatly narrow its floodplain on either shore in downtown Salem. Rickreall Creek joins the Willamette just southwest of the intersection of Highway 22W and Doaks Ferry Road, and Glenn Gibson Creek flows in through West Salem. Other tributaries flow through the city of Salem from the east, including Mill, Pringle, and Claggett creeks.

Historically, the area that is within the SKATS urban area was covered by a matrix of Oregon White Oak savanna and upland prairie. Savannas covered central, south, and west Salem. Areas of lower elevation—including what is now Keizer, the I-5 corridor, and lands to the east—were mostly prairie, kept free of brush and trees by seasonal burning by the indigenous Kalapuya people. Wetlands and wet prairie were located in the floodplains surrounding the numerous waterways in the area.

Over the past 150 years of Euro-American settlement, significant alterations of the landscape have taken place. These include loss of wetlands, wet and upland prairies, oak savannas, and oak woodlands through agricultural conversion, urban development, and fire suppression. The prairies and oak savannas are today among the most endangered ecosystems in North America and occupy less than one percent of their historic range[3].

One consequence of this development is that grassland-dependant species have declined in numbers and many rivers and streams that once teemed with fish are now too warm, too polluted, or their channels too altered to provide adequate habitat. Federally listed threatened and endangered species for Marion and Polk counties are presented in **Table 16-1**, along with information on whether critical habitat has been identified for the species and whether that habitat is within the SKATS boundary. It should be noted that the plants and animals in the list might be present within the SKATS boundary, even if there is no designated critical habitat. There could be known populations of a species in the area, but critical habitat has not been designated. For example, there are known populations of Nelson's checker-mallow near the southern end of McNary Field and in the area of the Salem Parkway / I-5 interchange.

The majority of listed species with critical habitat identified in the SKATS area are fish. Chinook salmon and steelhead trout are listed as threatened, and thus the waterways that are essential or critical to their survival need to be protected. In addition, a number of the waterways in the SKATS area, including the Willamette River and Mill Creek, do not meet federal Clean Water Act regulations for several indicators, such as temperature, toxins, and bacteria. The waterways that are included in Oregon DEQ's 2004/2006 303(d) list for not meeting the Clean Water Act

[2] Willamette River Basin Planning Atlas
[3] Mark V. Wilson, Oregon State University.

regulations are summarized in **Table 16-2**. The table also includes a designation of those waterways that provide habitat for the chinook salmon and steelhead trout.

These changes to the landscape and their consequences have progressed gradually and incrementally over time. Many went unnoticed until their cumulative effects could no longer be ignored. The human scale view of the landscape, where change is measured project by project, does not provide the perspective necessary to recognize landscape scale deterioration of ecological systems. Regional planning on the other hand does provide that 10,000-foot vantage point and a 20-year trajectory, offering an opportunity to avoid impacts caused by new facilities and improve the function of the existing elements of an evolving transportation system.

Table 16-1
Listed Species and Critical Habitat

Species	Critical Habitat Identified?	Critical Habitat in SKATS
Bald Eagle	Y	N
Northern Spotted Owl	Y	N
Steelhead (Upper Willamette River)	Y	Y
Chinook salmon (Upper Willamette River)	Y	Y
Oregon chub	N	N
Coho salmon (Lower Columbia River)	Y	?
Steelhead (Lower Columbia River)	Y	?
Chinook salmon (Lower Columbia River)	Y	?
Fender's blue butterfly	Y	N
Golden Indian paintbrush	Y	N
Willamette Daisy	Y	N
Howellia	N	N
Bradshaw's lomatium	N	N
Kincaid's lupine	Y	N
Nelson's checker-mallow	N	N

Table 16-2
Clean Water Act and Fish Habitat Waterways

		Chinook Salmon & Steelhead Trout	
Waterbody	**Clean Water Act Indicator**	**Critical Habitat**	**Essential Habitat**
Battle Creek	Dissolved Oxygen		X
Battle Creek	Bacteria		X
Claggett Creek	Dissolved Oxygen		
Claggett Creek	Bacteria		
Clark Creek	Bacteria		
Croisan Creek	Dissolved Oxygen		
Croisan Creek	Bacteria		
Gibson Gulch	Dissolved Oxygen		
Glenn Creek	Bacteria		
Glenn Creek	Dissolved Oxygen		
Mill Creek	Bacteria	X	X
Mill Creek	Fecal Coliform	X	X
Pringle Creek	Dissolved Oxygen		X
Pringle Creek	Bacteria		X
Pringle Creek	Toxins		X
Pringle Creek	Temperature		X
Pringle Creek Tributary	Bacteria		
Pringle Creek Tributary	Toxins		
Rickreall Creek	Temperature		
Shelton Ditch	Dissolved Oxygen		X
Shelton Ditch	Bacteria		X
Willamette River	Temperature	X	X
Willamette River	Fecal Coliform	X	X
Willamette River	Biological Criteria	X	X
Willamette River	Toxins	X	X
Willamette River	Dissolved Oxygen	X	X
Winslow Gulch	Dissolved Oxygen		

Historical and Cultural Resources

People have resided in the SKATS region for thousands of years, long before there were places named Salem, Keizer and Turner. Anthropologists are finding artifacts in the Woodburn area, north of the SKATS area, that indicate a community of people occupied these lands as far back as s 12,000 years ago, a civilization that predated any known indigenous people.

When European trappers and traders arrived in the region in the late eighteenth century, the Kalapooya Indian people were using seasonal fires to actively manage the area's vast prairies and savannas for game, bulbs, nuts, seeds and other foods.

The Chemeketa band lived in the Salem area. The Chemawa band lived about ten miles downstream and circulated throughout the area between the Willamette and the Cascades, south of the Molalla River. Their path to the mountains was later used by European-American settlers and eventually became State Street. Both bands, part of the Kalapooya Indian people

and perhaps part of the Santiam tribe, shared winter camp on the Chemeketa prairie where Salem now stands.[4]

Seasonal encampments were located near springs and the sites of historic springs in Salem have yielded the expected detritus remaining from generations of winter camps, including hunting equipment, tools, and cooking equipment. Currently, many cultural resources are intact within the Salem-Keizer area. The location of these is protected by state law.

The city of Salem began as Jason Lee's Methodist mission, founded in 1834. When its initial location flooded, Lee moved north in 1841 to the confluence of Mill Creek and the Willamette River where the missionaries established a school for Indian children. Finding little success educating and converting the few remaining Indians, they disbanded the mission and in 1844 platted a town at a location called Chemeketa by the native people and Salem by the settlers, both meaning "place of peace." They moved the Indian school building to a new location and in 1844 opened a school for their own children called the Oregon Institute, the beginning of Willamette University.

Salem has been the home of the state government since 1851. Development in the city and area has been ongoing since the late 1840s, and there are still a number of buildings and areas that pre-date the 20th century. In addition to the 62 houses on the National Register of Historic Places, three historic districts are designated within the Salem city limits: Gaiety Hill/Bush's Pasture Park, Salem Downtown State Street - Commercial Street, and Court Street – Chemeketa Street.

Cultural resources in the area include schools of higher learning, such as Willamette University, founded in 1842, Chemeketa Community College, and Corban College; the State Capitol; and historical areas that have been adapted to provide information on early American settlement in the area, such as Mission Mill and Deepwood Estate.

General Effects of Transportation Systems

As important as our transportation systems are to moving people and goods through the landscape, they do have a number of direct negative affects on natural systems and their functions. Primarily:

1. Roads contribute to stream pollution
As stormwater moves across the paved surfaces of roads and parking lots two things happen: the temperature of the water increases, and it collects the sediment, oils, and other pollutants that were on the surface. This water is then directed through ditches, pipes, and culverts into the area streams and rivers. Some may be filtered, but much remains untreated. This warm polluted water degrades aquatic systems in which organisms depend upon cold clean water.

[4] Pringle Glenn-Gibson,Claggett, and Mill Creeks Watershed Assessment, January 2002.

2. Roads change the hydrology of their site and areas downstream
Built of impervious materials, road surfaces prevent rainwater from percolating into the soil and groundwater beneath them. Instead, water hitting the roadway runs off, directed by ditches to underground pipes that lead the water into nearby creeks and rivers at a higher volume and speed than naturally occurs, causing erosion of the stream channel and stirring up silt. In the dry season, with less water having entered the groundwater system, the cool springs that historically fed streams during hot summer days dry up. Streams become "flashy" with more extreme highs and lows.

3. Roads fragment wildlife habitat
Construction of roads can divide a habitat and create challenging barriers to wildlife movement. As a result, animals and birds are killed by collisions with motor vehicles. Where a road crosses a creek or stream, inappropriately designed culverts will act as barriers to fish migration, isolating entire populations either above or below the structure. Building roads across wetlands and other moist sites can disrupt important nesting habitat for turtles, amphibians, and birds.

4. Roads contribute to invasive species distribution
Invasive species are considered the second greatest threat to native fish and wildlife, right behind habitat destruction. Aggressive nonnative plant species can quickly out complete native plant communities, taking over and altering habitat in a very short time, much to the detriment of the wildlife that evolved in concert with them.
Roadways are notorious channels for invasive weed species. Seeds hitchhike on tires, bumpers, or within cargo of trucks and cars, sometimes traveling great distances. As new roads are built, newly disturbed soil provides an open invitation to these species. Appropriate planting and maintenance of road embankments is a critical tool in fighting the progression of these species along road corridors and into our native habitats. Invasive species pose one of the greatest challenges to establishment of effective mitigation projects.

There are other impacts from transportation systems. The most obvious is global climate change. Use of automobiles is widely considered the greatest contributor of greenhouse gases, primarily CO_2, that are warming the Earth's atmosphere and changing climate worldwide. Use of transportation systems also contributes to air pollution and noise pollution. Depending on how they are lit, roadways can contribute to light pollution, which has diminished the ability of most urban dwellers to view stars and planets in the night sky. Roads and parking lots add to urban heat island effects, raising air temperatures and exacerbating effects of air pollution.

Federal, State, and Local Laws and Regulations

Management of water quality, water quantity, fish and wildlife habitat, invasive species and historical-cultural areas is directed by federal, state, and local regulations and the enforcement of these regulations is carried out at all three levels of government. The following section highlights the primary regulations that govern activities of local transportation agencies.

Water quality

The Federal Water Pollution Control Act, popularly called the Clean Water Act, is the primary United States law protecting water quality and the health of the nation's waterways with the objective of restoring and maintaining the chemical, physical, and biological integrity of the nation's waters. As such, it is intended to secure clean water for human consumption and use, as well as prevent deterioration of aquatic habitat in streams, rivers, and wetlands. Administered by the U.S. Environmental Protection Agency, it requires states to establish approved water quality standards that designate the waters within each state for particular uses. Waters that become degraded by point and non-point sources to the extent that they do not support their designated use are listed as "impaired" at which point the state must establish total maximum daily loads (TMDLs) of pollutants that the water body can receive. These TMDL limitations can significantly restrict those uses of waterways that require permits.

In Oregon, the Department of Environmental Quality administers the Clean Water Act. In September, DEQ published and EPA approved the Willamette River TMDL standards for temperature, bacteria, and mercury. These standards, the first issued for an entire basin, are intended to aid in improving the condition of many water bodies listed as impaired by the agency in 1998 and 2002. This places responsibility on a variety of permit holders including cities and counties to develop plans for complying with the new TMDLs.

Cities and counties in the Willamette Valley received notification in early November 2006 of their status as Designated Management Agencies and were given 18 months to demonstrate compliance with the TMDL standards. Cities with populations of 50,000 and larger (Salem) are required to have stormwater permits to minimize bacteria and other pollutant runoff. These permits will be updated to reflect new information from this TMDL and may require the implementation of more stringent controls for bacteria as necessary. Although Keizer and Turner have populations smaller than 50,000, as part of a metropolitan area they too will need to develop stormwater strategies to minimize the amount of bacteria that will enter streams and rivers, and their plans will be reviewed and approved by DEQ.

Nonpoint pollution sources (urban areas, working farms, and forests) will be required to restore native streamside vegetation to provide localized cool water refuge for fish.
Restoration and protection will be managed through implementation plans that already exist (for example SB 1010 administered by the Department of Agriculture) or through those developed by other designated management agencies. DEQ developed the TMDLs with the recognition that future urban growth will increase stream temperatures. Therefore, half of the heat load is in reserve, to be used when the Corps of Engineers completes analysis of effects of hydroelectric dams on temperature in the Willamette River.

Waterways and Wetlands

In addition to federal and state protection of water quality, Section 10 of the Rivers and Harbors Act of 1899 makes it unlawful to modify the course of navigable waterways and Section 404(a) of the Clean Water Act directs the Army Corps of Engineers to regulate the release of fill material into rivers, streams, and wetlands. "Wetlands" are defined as those areas that are subject to regular inundation and therefore support the growth of certain kinds of vegetation.

Wetlands serve a variety of functions including water detention that provides aquifer recharge, water purification, flood control, open space and wildlife habitat. Filling, dredging, or otherwise discharging dirt or other materials into wetlands requires a permit. Particularly for larger developments, the permitting process can be complex and can involve participation by EPA, other federal and state agencies, and the public.

Since the early 1990s, broad categories of construction activities that disturb five acres or more, and "medium" and "large" municipal separate stormwater systems, have been required to possess a National Pollutant Discharge Elimination System (NPDES) permit regulating their stormwater runoff. Construction sites of between one and five acres and smaller municipal separate stormwater systems are now subject to such regulation as well. Closely related to, and often overlapping with, stormwater issues are requirements relating to control of erosion and sedimentation. Permitting obligations may include preparation of detailed erosion and sedimentation prevention plans, restoration of stream buffers, and other requirements.

Oregon's wetlands and waterways are also regulated by the Oregon Department of State Lands (DSL) under the state Removal-Fill Law; the Oregon Department of Forestry under the Forest Practices Act; the U.S. Natural Resources Conservation Service under the federal Farm Bill; the Oregon Department of Agriculture, Natural Resources Division; and city and county land use ordinances.

Water quantity

While it is well documented that transportation infrastructure such as highways, roads, and parking lots alter site hydrology, it is challenging to identify regulations that directly address this issue. The Clean Water Act addresses pollutants more than pulses. The Federal Emergency Management Agency maps floodplains and regulates levels of development in floodplains from the standpoint of hazard management. The Oregon Water Resources Department manages ground water withdrawals and surface water rights, but not alterations to site hydrology. Oregon DEQ provides stormwater management direction under the Clean Water Act to control sediment and toxic materials in runoff, not to address the other issues created by impervious surfaces. There does not seem to be a set of regulations that specifically addresses degradation to site and downstream hydrology including steepened stream banks, increased erosion, depletion of springs and groundwater, and reduced summer stream flows. Instead, these issues are being addressed more frequently at a grassroots level, with efforts by local communities to gain the knowledge needed to build programs that effectively retain and restore watershed functions and livability.

Habitat

The Endangered Species Act is the primary federal law dealing with the nation's fish and wildlife populations. Administration of the act is shared by the U.S. Fish and Wildlife Service and the National Oceanic and Atmospheric Administration Fisheries Service. The act provides a process for protecting threatened and endangered species and the habitats on which they depend. Species include birds, insects, fish, reptiles, mammals, crustaceans, flowers, grasses, and trees. The act prohibits any activity that results in a "taking" (killing) of a listed species or adversely affects its habitat. Any action that is expected to result in a taking or habitat

destruction requires a permit and mitigation. Oregon also has an Endangered Species Act that works in concert with the federal law and relegates protection of native plants to the Oregon Department of Agriculture.

Invasive Species

Management of aggressive nonnative plants is regulated under a variety of laws and executive orders and enforced by many agencies. In 1999, President Clinton signed Executive Order 13112 establishing the National Invasive Species Council and a Council of federal departments. Currently, the 13 departments and agencies on the council are developing a national invasive species plan. The lead agency for invasive plant management is the U.S. Department of Agriculture, which maintains a noxious weed list and is responsible for preventative measures and recovery of endangered wild plants. The Oregon State Department of Agriculture is the primary state agency charged with management of invasive plants. Their strategy for management describes invasive species as a "biological emergency," while noting that funding for invasive species management has dropped at the state and county level over the past decade. ODA maintains a list of noxious weeds and supports a wide variety of activities for early detection of new infestations, eradication, collaboration, education and funding. Many local jurisdictions participate on local weed boards and jointly develop management strategies. Salem's noxious weed ordinance focuses on yard maintenance rather than specific invasive species. Marion County created a weed control district and ordinance in March 2006.

SAFETEA-LU includes a provision that makes activities for the control of noxious weeds and the establishment of native species eligible for federal funds. The control of terrestrial noxious weeds and aquatic weeds is commonly done by maintenance districts or contracted crews of each state department of transportation. Historically, maintenance activities have been the responsibility of the state and therefore have not been eligible for federal assistance.

Historical and Cultural

Protection of historical resources stems from Section 106 of the National Historic Preservation Act of 1966. The management of historic resources is carried out by the State Historic Preservation Office (SHPO) that resides within the Oregon State Parks Department. The SHPO maintains data on historic resources and provides assistance and consultation to agencies and individuals as to the potential for projects to affect cultural or historic resources.

The Oregon Land Use System Goal 5 includes a requirement that cities and counties develop inventories of historical and cultural resources. In addition, the state has enacted a number of laws aimed at protecting historical and cultural resources, the gravesites of indigenous tribes, archaeological sites and objects, scenic waterways, and conservation easements. A complete description of these laws, as well as the federal laws governing cultural and historical resources, is available at SHPO's website.[5]

The city of Salem zoning ordinance **120A.140. PRESERVATION OF ARCHEOLOGICAL RESOURCES** requires that, **"**Archeological resources shall be protected and preserved in place

[5] http://www.oregonheritage.org/OPRD/HCD/ARCH/arch_laws.shtml

if at all possible according to the requirements of federal, state, and local regulations, including the guidelines administered by the Oregon State Historic Preservation Office."

Additional Direction and Resources

These laws and regulations provide the primary baseline standards for addressing environmental impacts from road construction and maintenance activities. There are many other federal and state laws that affect the management of these resources and are intended to prevent or minimize resource damage or destruction. Among these is the National Environmental Policy Act, which defines a procedure for assessing potential environmental impacts on projects involving federal land, federal funds, and/or federal agency permits.

There are currently no federal, state or local regulations that deal specifically with global warming. However, Oregon Governor Kulongowski assembled an advisory committee to provide recommendations and is developing a number of state initiatives to curb greenhouse gas emissions in alliance with the other west coast governors.

Because the SKATS urban area is within one of the most studied basins in the world, several excellent sources of information and recommendations that represent the collective thinking of experts and citizen advisors that have been funded through public as well as private investment are available. The Oregon Department of Fish and Wildlife released the Oregon Comprehensive Conservation Strategy in 2005, a compendium of information and resources on how to take meaningful voluntary action to conserve the state's biodiversity. The Greater Salem-Keizer Area Watershed Councils developed an excellent comprehensive assessment for the four watersheds of the metro area. The Willamette River Basin Planning Atlas developed by the Pacific Northwest Ecosystem Research Consortium, and published by OSU Press in 2002, assesses the changes within the basin over the past 150 years and projects three alternative futures and their likely effects on basin resources. A complete listing of the resources gathered are presented in **Appendix C**.

Current Activities and Practices

The regional transportation plan is comprised of transportation projects submitted from the jurisdictions within the planning area. The regional system and surrounding landscape and waterways of the SKATS metropolitan area are not planned or managed uniformly but instead vary by jurisdiction based on the priorities, emphasis, and capacity of each community. All of the jurisdictions must meet the basic requirements of federal and state environmental regulations. However, they do this in different ways. The city of Salem and Marion County have natural resource specialists on staff. Keizer is much more limited on staffing. The small community of Turner, considered part of the metropolitan area only by its proximity to Salem, contracts for most of its services. Each jurisdiction also has its own local ordinances and codes. The Oregon Department of Transportation manages four primary thoroughfares through the region—Interstate 5, Highway 22, Highway 221and the Salem Parkway—drawing upon the resources of a statewide agency.

Stormwater

Salem, Keizer, and Marion County Public Works staffs include specialists who help them manage water quality and quantity during planning and implementation. This work is currently handled project by project. Salem staff is interested in improving their efforts by identifying a standardized environmental review process. Salem and Keizer staff do not currently collaborate on stormwater management. Historically, public works departments focused on moving stormwater as swiftly as possible off site. Today these jurisdictions recognize the challenges to ecological health posed by impervious surfaces and culverts that disrupt natural hydrological processes. What's more, as newly appointed Designated Management Agencies by DEQ, they are required to meet TMDL standards for bacteria, mercury, and temperature within 18 months.

To do this, Salem is retrofitting existing stormwater drainage systems with mechanical filtration systems that help purify stormwater before it reaches creeks and rivers. Additionally, new requirements call for piping stormwater off of bridges to treatment facilities before releasing it into the river or stream. Keizer is challenged to comply with these same treatment requirements but without the necessary maintenance equipment and with limited staff. Neither Salem nor Keizer currently collects stormwater fees from citizens. However, both cities have recently completed stormwater plans and are anticipating establishing a fee program to pay for the measures that will be necessary to meet TMDL standards including stormwater filtering and monitoring. The cities are open to but have not yet discussed a collaborative approach to meeting TMDL standards.

Keizer has developed stormwater infiltration road projects. These model street projects feature bioswales and pervious surfaces between the roadway and bike path. They are planning another that drains into an improved wetland. Additionally, Keizer seeks opportunities to enhance ecological function on projects developed for other goals. For example, they are creating a wetland on Labish Creek adjacent to a park. In the winter and spring, the three-foot-deep creek that supports beaver and cutthroat trout flows through a ditch with steep banks creating a safety issue for children using the park. The project will widen the creek floodplain, providing a broad shallow area for water to infiltrate and will be planted with native vegetation.

Marion County's Stormwater Management Plan Best Management Practices have been endorsed by the Oregon Watershed Enhancement Board as salmon and habitat friendly. The plan can be viewed on the Marion County Public Works website.

Mitigation

Local communities all mitigate for damage to streams and wetlands. Salem and Marion County purchase wetland credits from one of three private banks serving the Salem area. Keizer has not used banks so far. Marion County has developed its own wetland bank in Parkdale Park next to Stevens Middle School that provided mitigation for a road widening project and when restored will produce more credits than were needed. The middle school students have adopted the wetland and use it to enhance their curriculum. The county environmental staff see potential for expanding private wetland banking, as there are interested local landowners. The

Department of State Lands limits their approvals of banks to maintain the demand for those banks already approved and operating so as to not flood the market with credits. Currently three banks serve the SKATS area: Marion, Weathers and Rickreall. According to DSL, Marion is not selling credits as of this writing because of an invasive weed issue that they are working to resolve. Two credits are available at the Weathers bank, while Rickreall has 20. Banks are often the preferred method of mitigation ecologically because they focus investment on larger higher value sites providing better habitat and other ecological services. Project managers often prefer purchasing credits from a bank as well because it is faster than creating a mitigation site, and the banker holds the liability for success of the site's restoration.

Salem is developing a proposal for stream banking that would open opportunities for restoring larger stretches of the city's riparian corridors. The proposal is welcomed by DSL and still must meet U.S. Army Corps of Engineers approval.

Oregon Department of Transportation has developed a conservation banking program that trades endangered species habitat. This program measures the debits (habitat damage at the project site) and credits (restoration success at the bank site) in terms of habitat value rather than feet of stream bank or acres of wetland, and thus a credit can address multiple resources and regulations. This approach is expected to conserve habitat much more effectively. ODOT is developing two bank sites in the mid Willamette Valley as mitigation exclusively for ODOT projects.

Marion County also mitigates for endangered species habitat.

Invasive species

In March 2006, Marion County Commissioners approved funding and authority to form a weed board. They passed an ordinance that defines the county's approach to managing aggress nonnative plants.

The city of Salem has a noxious weed code that deals with aesthetics such as vegetation height, but not species. There appears to be no overall policy regarding invasive species management.

Historical and Cultural

The city of Salem has a Historic Landmarks and Design Review Commission that oversees the city's historic preservation activities including nominations of historic resources and review of city codes and ordinances pertaining to historic resources.

Planners from each of the jurisdictions confer with the SHPO on a project-by-project basis to identify and implement appropriate measures to avoid, minimize, and mitigate for disturbance of historic resources.

All projects that are federally funded, or have permits issued by a federal agency, are required to undergo a section 106 review by the SHPO office.

Comparing the Projects to the Resources

SAFETEA-LU requires SKATS to compare the projects identified in the RTSP to maps and other data sources that describe the natural and cultural resources that are within the Plan's study boundary. This comparison will help inform regional and local staff regarding which of the proposed projects could have potential effects on the nearby natural and cultural features.

In most cases, early identification of natural, historical, and cultural resources located in or near proposed project right-of-ways will allow for the modification of the project's scope to avoid potential impacts. In cases where this is not possible, activities will be developed to minimize any possible impact. If these are insufficient, mitigation processes will need to be implemented that offset the loss caused by the project.

Data describing the natural, historical, and cultural resources in the SKATS area were collected from a variety of sources, including city, county, state, and federal resource agencies. A complete list of the data gathered is presented in **Appendix C**. The data were in the form of maps, plans, assessments, and GIS layers covering one or more of the resources of interest. This data is not uniformly distributed, rather there is more information regarding the natural resources, and in particular fish and water that are subject to national laws such as the Endangered Species Act or the Clean Water Act. Information on the historical and cultural resources present in the SKATS area is more limited.

The cities and counties are required to maintain inventories of historic sites and districts under Goal 5 of Oregon's land use laws. In addition, the State Historical Preservation Office (SHPO) manages official data on the location and condition of cultural and historic resources. Archeological and other sites dealing with the inhabitants before European settlement are considered by the State Historical Preservation Office as confidential data, in order to prevent the sites from being disturbed or vandalized. Currently, the only information that is publicly and readily accessible in a format ready for comparison with the location of transportation projects describes where the historic districts are located in the city of Salem, and the location of buildings listed on the National Register of Historic Places. Because of the confidentiality of archaeological records, it is the recommendation of SHPO that transportation managers and planners continue to address conservation of these resources project by project. SHPO plans to make the Oregon Historic Inventory available on their website in the near future, which should allow for a more complete comparison of historic resources with the projects in the long-range plan.

Data on the natural resources in the SKATS area provides a rather well defined look at the waterways, as well as some of their inhabitants, namely the threatened fish. This level of specificity is not matched for the terrestrial plants and animals in the area, nor for many of the other species occupying the waterways. While historic documents provide information on the make-up, and to a degree, extent of the land cover at the start of Euro-American settlement, similar information reflecting the existing conditions is not as detailed. Satellite imagery and aerial photography provide a coarse delineation of the land between pervious and impervious surfaces, but do little to assist in determining the on-ground nuances. Many of the plans and assessments that were gathered do little to ameliorate this situation, and will require the effort of numerous organizations and jurisdictions over many years to develop the data describing the

terrestrial and non-listed aquatic species to the same level of detail as that of the aquatic species protected by the Endangered Species Act.

Also available in several of these plans, and specifically in the Conservation Strategy produced by Oregon Department of Fish and Wildlife, are recommendations of areas where work should be focused to restore and maintain the environmental conditions to provide a foundation for future work. These areas, such as the floodplain of the Willamette River and the along the tributaries that feed into it, are areas where development of transportation projects should take special care to ensure that as little as possible is disturbed.

The RTSP includes many types of projects identified as being necessary to maintain the multi-modal mobility needs of the region's residents and businesses. For a complete discussion of the project categories included in the RTSP, see chapter 15. A complete list of the projects included as part of the financially constrained RTSP is available in **Table 15-1**. These projects have different impacts on the natural environment, ranging from slight or none to habitat destruction. The potential for impacting the environment by category of the modification to the facility is shown in **Table 16-3**. Obviously, the potential is location dependent; in an area with sensitive habitats even the most benign project may have more of an impact than in an area with no habitats.

Table 16-3
Project Types and Impact Potential

Project Type	Potential Impact
Bridge – new or replacing	●
New road	●
Widen existing road (add travel lanes)	◑
Widen intersection	◑
Add turn lanes/center lane	◑
Adding bicycle lanes	◑
Adding sidewalks	◑
Signals & signal interconnects	○
Purchasing buses	○

Analysis of Data

A critical part of the analysis is determining which features to examine in relation to the transportation projects. This was influenced by the availability of data and the significance of the resource. Natural resources such as steelhead trout and chinook salmon that are listed as endangered by NOAA Fisheries meet both criteria, as the data on their habitats is readily available and the need is great. Data was obtained from NOAA Fisheries describing the critical habitat for steelhead trout and chinook salmon. The Endangered Species Act defines critical habitats as:

> "(1) specific areas within the geographical area occupied by the species at the time of listing, if they contain physical or biological features essential to conservation, and those

features may require special management considerations or protection; and (2) specific areas outside the geographical area occupied by the species if the agency determines that the area itself is essential for conservation."[6]

In addition, data from the Oregon Department of State Lands (ODSL) on essential salmonid habitat was gathered. ODSL has defined essential salomnid habitat as "… as the habitat necessary to prevent the depletion of native salmon species (chum, sockeye, chinook and coho salmon, and steelhead and cutthroat trout) during their life history stages of spawning and rearing."[7]

For the initial analysis comparing natural and historic resources with the projects contained in this Plan, information on the critical and essential habitat was used, as well as information on the location of historic districts and the buildings listed on the National Register of Historic Places, wetlands identified from the Local Wetland Inventory, and waterways that do not comply with the Clean Water Act as defined by Oregon DEQ in 2002 in their 303(d) list.

The data collected from the local jurisdictions, as well as state and federal resource agencies, was entered into a geographical information system (GIS), which also contained information on the location and type of projects included in the Plan (see chapter 15). The GIS was used to perform a spatial analysis that displays where a project intersects or is within a given distance of a particular natural or historical feature, such as a waterway. For projects where the work is performed in one location, such as modifying an intersection or reconstructing a bridge, a distance of .05 mile was used for the analysis. For "corridor" projects, or where the modification is longer than an intersection or bridge span, such as reconstructing a road to include a center turn lane, a GIS *intersection* was performed, which shows where the projects cross the resources being considered. When comparing the corridors with the wetlands coverage, an *intersection* was not performed; instead the GIS was used to determine whether the project was within .005 mile of a wetland. This procedure was used due to an artifact in the wetlands coverage; it did not show the wetland going under the road.

Based on this analysis, it was determined that 26 of the 133 projects have a potential direct or indirect impact on one or more of the natural or historical resources of interest. (See **Table 16-4**). There are a number of projects that have potential impacts on more than one resource. Typically, waterways that are listed as critical habitat for steelhead trout and chinook salmon are also listed as essential habitat as well. In particular, Mill Creek has nine eleven projects that cross it in some manner, mainly bridge projects. Nine projects included in the financially constrained plan potentially cross, or are within .005 mile of a wetland identified in the Local Wetland Inventory (see **Map 16-1**). There are no known direct impacts to historic buildings on the National Register of Historic Places, and one project crosses through a historic district (see **Map 16-2**).

[6] http://www.nwr.noaa.gov/Salmon-Habitat/Critical-Habitat/Index.cfm
[7] http://www.oregon.gov/DSL/PERMITS/esshabitat.shtml

Strategies for Minimizing Impacts

The population of the SKATS area is expected to increase by 39 percent by 2031, placing pressure on land uses and transportation systems throughout the region. The region needs to develop strategies and activities to minimize the impact of transportation projects on the environment. Given that budgets for transportation planning, construction, and maintenance are pinched already and concerns for global warming are on the rise, it would benefit the jurisdictions of the region to continue to support and enhance existing policies or strategies and develop new ones that reduce use of automobiles and encourage use of mass transit, carpooling, walking, bicycling, and telecommuting. Many of these strategies are discussed in Chapter 13 and are promoted in the SKATS area, as well as the surrounding area, by the Mid-Valley Rideshare, which is administered by the Transit District.

Avoid, Reduce, Mitigate

One of the most effective ways to reduce costs, benefit the environment, and manage complex regulatory issues is to consider options at the outset that can reduce or eliminate environmental impacts and thus regulatory requirements. The Clean Water Act requires that those proposing projects focus first on avoiding impacts to water resources that may impact wetlands, streams, or rivers. Considering location and landscape features early in project placement and design can reduce the negative effects of construction activities and ultimately the use of a given

Table 16-4
Projects with Potential Impacts

RTSP ID	Name	Type	Category	Location	Intersection or Corridor	Critical Salmon	Essential Salmon	303d	Historic	Wetlands	Resource
K003	Chemawa Rd NE: River Rd to Verda Ln NE	Bridge	Committed	Chemawa Rd NE from River Rd N to Verda Ln NE	Corridor					X	Wetland
K017	Chemawa Rd Upgrade (Keizer Rapids)	Urban Standards	Committed	Chemawa Rd from River Rd N to Keizer Rapids Park	Corridor					X	Wetland
M003	Cordon Rd NE: State St to Silverton Rd NE	Signals & Interconnects	Committed	Cordon Rd NE from State St to Silverton Rd NE	Corridor					X	Wetland
O013	I-5: Mill Creek - Mill Creek Overflow Fish Passage	Environmental	Committed	I-5 & Mill Creek	Intersection	X	X	X			Mill Creek
S025	12th/13th St SE (Mission and Hoyt)	Signals & Interconnects	Committed	12th and 13th St SE between Mission St SE and Hoyt St SE	Corridor		X	X			Pringle Creek
S026	17th St NE: State St to Market St NE	Signals & Interconnects	Committed	17th St NE from State St to Market St NE	Corridor	X	X	X	X	X	Mill Creek, Court St-Chemeketa St Historic District
S028	25th St SE Bridge & Shelton Ditch	Bridge	Committed	25th St SE at Shelton Ditch	Intersection		X				Shelton Ditch
S035	Cottage St: Mill Creek Bridge (HBRRL)	Bridge	Committed	Cottage St @ Mill Creek	Intersection	X	X	X			Mill Creek
S049	Liberty St NE Bridge & Mill Creek	Bridge	Committed	Liberty St NE @ Mill Creek	Intersection	X	X	X			Mill Creek
S050	Madrona Av SE: Pringle Rd Se to Fairview Industrial Dr SE	Signals & Interconnects	Committed	Madrona Ave SE from Pringle Rd SE to Fairview Industrial Dr SE	Corridor			X			Pringle Creek
S055	State St Bridge & Mill Creek	Bridge	Committed	State St at Mill Creek	Intersection	X	X	X			Mill Creek
S073	Capitol St NE at Mill Creek	Bridge	Committed	Capitol St NE at Mill Creek	Intersection	X	X	X			Mill Creek
S126	McGilchrist St SE: 12th St SE to 25th St SE	Urban Standards	Committed	McGilchrist St SE: 12th St SE to 25th St SE	Corridor			X			Pringle Creek
S272	Marion St Bridge Signal Interconnect	Signals & Interconnects	Committed	From downtown to west Salem via the Marion St bridge	Corridor	X	X	X		X	Willamette River
S274	Salem Industrial Dr Improvement	Urban Standards	Committed	Salem Industrial Dr NE from Cherry Av NE to Bill Frey Dr NE	Corridor					X	Wetland
T001	3rd St & Denver St : Turner	Efficiency	Committed	3rd St to Denver St in Turner	Corridor	X	X	X			Mill Creek
S244	Union St RR Bridge Conversion	Bicycle	Committed	Union St RR Bridge	Corridor	X	X	X			Willamette River
B001	HPTC Corridor Improvements	Transit	Included	Various locations on the HPTC corridor	Corridor	X	X	X			Mill Creek
M011	Auburn Rd NE: Lancaster Dr NE to Cordon Rd NE	Urban Standards	Included	Auburn Rd: Lancaster Dr to Cordon Rd	Corridor					X	Wetland
M014	Center St NE: Greencrest Dr NE to Cordon Rd NE	Urban Standards	Included	Center St NE from Lancaster Dr to Cordon Rd	Corridor					X	Wetland
S080	Commercial St & Pringle Creek	Bridge	Included	Commercial St SE at Pringle Creek	Intersection		X	X			Mill Creek
S101	Hawthorne Ave NE & Hyacinth Rd NE: Portland Rd NE to Sunnyview Rd NE	Urban Standards	Included	Hawthorne Ave NE & Hyacinth Rd NE: Portland Rd NE to Sunnyview Rd NE	Corridor					X	Pringle Creek
S110	Kuebler Bv SE: Turner Rd SE to Hwy 22 Overpass - SREC	Capacity Increasing	Included	Kuebler Blvd from Turner Rd SE to Hwy 22 overpass	Corridor	X	XX	X			Mill Creek
S115	Liberty St & Pringle Creek	Bridge	Included	Liberty St SE at Pringle Creek	Intersection			X			Pringle Creek
S145	Summer St & Mill Creek Bridge	Bridge	Included	Summer St NE at Mill Creek	Intersection	X	X	X			Mill Creek
S165	12th St SE: McGilchrist St SE to Fairview Av SE	Capacity Increasing	Included	12th St SE from McGilchrist St SE to Vista St SE	Corridor			X			Clark Creek

facility, whether street, road, or bridge. Thoughtful planning to reduce erosion and sedimentation, impervious surface and other infiltration impediments, and wetland and stream impacts can eliminate the need for permits, saving time, money, and environmental degradation.

Strategy 1: Enhance Wetland Banking

When impacts are unavoidable, there are a number of ways to improve the value of project mitigation. Traditionally, mitigation has been on a project-by-project basis to replace the same type of resource that was impacted by the development. Two resources that have been mitigated in the past in the SKATS area are wetlands and streams. Currently, three private wetland mitigation banks serve the Salem area. It may be beneficial for the SKATS region to develop wetland or conservation banks to be used for public and or private development mitigation as the area develops. The first step in determining the desirability of banking is to calculate the scale and type of development and the commensurate need for mitigation over the next several decades. Then, a determination of the number of credits that are likely to be coming online during that period and their anticipated costs will be made. If the number of credits required is equal to or greater than the number of credits available at the existing banks, it may be in the region's interest to develop a regional mitigation bank for all future projects.

Strategy 2: Establish stream bank mitigation banking

Currently, the Department of State Lands and US Army Corps of Engineers require that when a project impacts a stream, the project owner (either the city or a private developer) must restore the adjacent 150-foot section of stream. The city or developer is then required to maintain that section for five years. One possible downfall of this policy is that it can create 150' pockets of restored but isolated habitat that are adjacent to weed patches. Salem instead wants to take a new approach wherein a broader range of mitigation needs can be met by restoring the city's streams at key sites. Salem staff has stated that most city stream impacts cannot be mitigated elsewhere.

Traditional wetland banks, run by the private sector under the direction of DSL, offer credits that can be purchased from a landowner who has restored a wetland on his/her private property. The purchase of these credits offsets or compensates for wetlands destroyed within the project area. The Salem stream banking proposal is similar, but instead of the restoration activities taking place outside the city, the mitigation credits would be purchased from the city and the restoration investment would be made on the city's own riparian areas.

It may be challenging to get natural resource agency buyoff because the mitigation would likely be made for damage to a variety of resources, not just streams. So far, the regulatory agencies have generally frowned on this because they want to trade resource for like resource. In other words if you damage a wetland you replace or buy comparable wetland. In this case, there may be some trading of wetland impact for stream habitat. Nonetheless, DSL is eager to receive the city's proposal. The first stream banking project was in Missouri. Today, there are perhaps as many as two dozen operating in the U.S.[8]

[8] Katoomba Group Ecosystem Marketplace Website,
http://ecosystemmarketplace.com/pages/article.news.php?component_id=699&component_version_id

Strategy 3: Consider Conservation Banking

Thus far, there are few opportunities for conservation banking in Oregon. ODOT has developed a program in which they hope to mitigate for a variety of resources on several high value sites they have purchased throughout the state. At present, they are developing methods for valuing credits and creating the "currency" for these banks, a challenging endeavor. It would be wise for the SKATS region to explore possible collaboration with ODOT, and certainly to explore the model that ODOT is developing. Once again, the jurisdictions within the region need to collectively assess their anticipated growth and mitigation need and make a cost/benefit analysis.

Strategy 4: Wildlife connectivity

Over the past decade there have been many innovative approaches taken in constructing transportation systems to prevent negative effects on wildlife. Transportation planners have teamed with wildlife researchers to develop structures that help terrestrial wildlife cross roads, ranging from overpasses and underpasses to open-bottom culverts that function much like natural streambeds. In the SKATS area as in much of Oregon, transportation agencies are systematically removing barriers to fish migration. However, according to the Oregon Department of Fish and Wildlife, the Salem-Keizer area will be hampered in providing wildlife habitat connectivity so long as there is no detailed species and habitat inventory for the metropolitan area. Such an inventory can help the region prioritize key habitats and natural areas and identify linkages and corridors to wildlife migration for both large and small species. State and federal wildlife management agencies encourage transportation planners to consult with them early and throughout project planning to identify need for accommodating wildlife movement and avoid other impacts to habitat.

Outstanding Issues and Proposed Actions

The process of comparing the regional transportation plan with the natural resources of the SKATS area provided an opportunity to assess the current approaches and practices of member jurisdictions as well as the effects of the plan. While discovering the many positive and innovative actions taken by members, several issues became apparent that present obstacles to better resource management. The following is a brief listing and recommended voluntary actions.

Issue: Land Use Planning and Public Works departments tend to operate separately, in part because there is the perception that Planning manages private development and Public Works (including Transportation) manages public development. This structure can serve as an impediment to creating a citywide, countywide, or regionwide approach to strategic investment in the region's ecological infrastructure. Although most land development takes place on private property, the public has an interest in the form that development takes and how it affects community livability. These departments ideally should work together to direct

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protection of ecological systems, high priority natural areas and landscape features, and help focus investments in high priority mitigation efforts.

Issue: Transportation and land management planning staff face challenges in applying research results and broad scale conservation strategies to local issues and projects. They are encouraged to tap a vast quantity of data and research results but often lack the knowledge, time, or staff to make effective use of this information. Instead, they rely on current regulations to direct conservation efforts.

Issue: There are limited protections for some of the most threatened natural systems in the SKATS area. Oregon White Oak savannas and western Oregon native prairies are among the most threatened ecosystems in North America. Most of the metropolitan area was covered by these systems before Euro-American settlement. Yet, unless they contain species listed under the Endangered Species Act, there is limited federal or state protection for these vegetation communities. Salem's tree ordinance specifically addresses conservation of white oaks. In Salem, tree protection is found in three different sections of the city code, making enforcement challenging.

Issue: Due to the confidentiality of archaeological records, projects currently have to address conservation of these resources on a project-by-project basis, typically late in the process. While this process works for individual projects, it would likely breakdown when considering the number of projects in either the RTSP or TIP.

Action: Identify key natural features, systems, and functions. Prioritize these places and functions so that land use and transportation planners can avoid impacts and invest mitigation dollars and other funding in highest value areas.

Action: Establish a process for greater collaboration between land use and transportation planners and managers from various jurisdictions within the midsection of the Willamette Basin. Currently, information about creative and progressive projects and approaches does not seem to be widely shared between jurisdictions. Partnerships would likely result in cost savings, opening opportunities for improved projects and conservation efforts.

Action: Develop educational programs that help planners and managers gain greater understanding of ecological systems and impacts of land use and transportation. Build a bridge between large-scale strategies for protecting biodiversity and local land management issues and projects. Explore partnerships with the Mid Willamette Valley Council of Governments, League of Oregon Cities, Association of Oregon Counties, OSU Extension Service, Soil and Water Conservation Service, and Oregon Chapter of the American Planning Association to develop and deliver training and assistance.

Action: Consider partnering with state agencies, non-governmental organizations such as the Nature Conservancy, and others to develop a process that local planners can step through to evaluate the effects of a given project or whole program on ecological systems.

Action: Oregon Department of Transportation archaeologist Carolyn McAleer offered an approach to addressing historic and cultural resources at the regional scale. The cities of Salem,

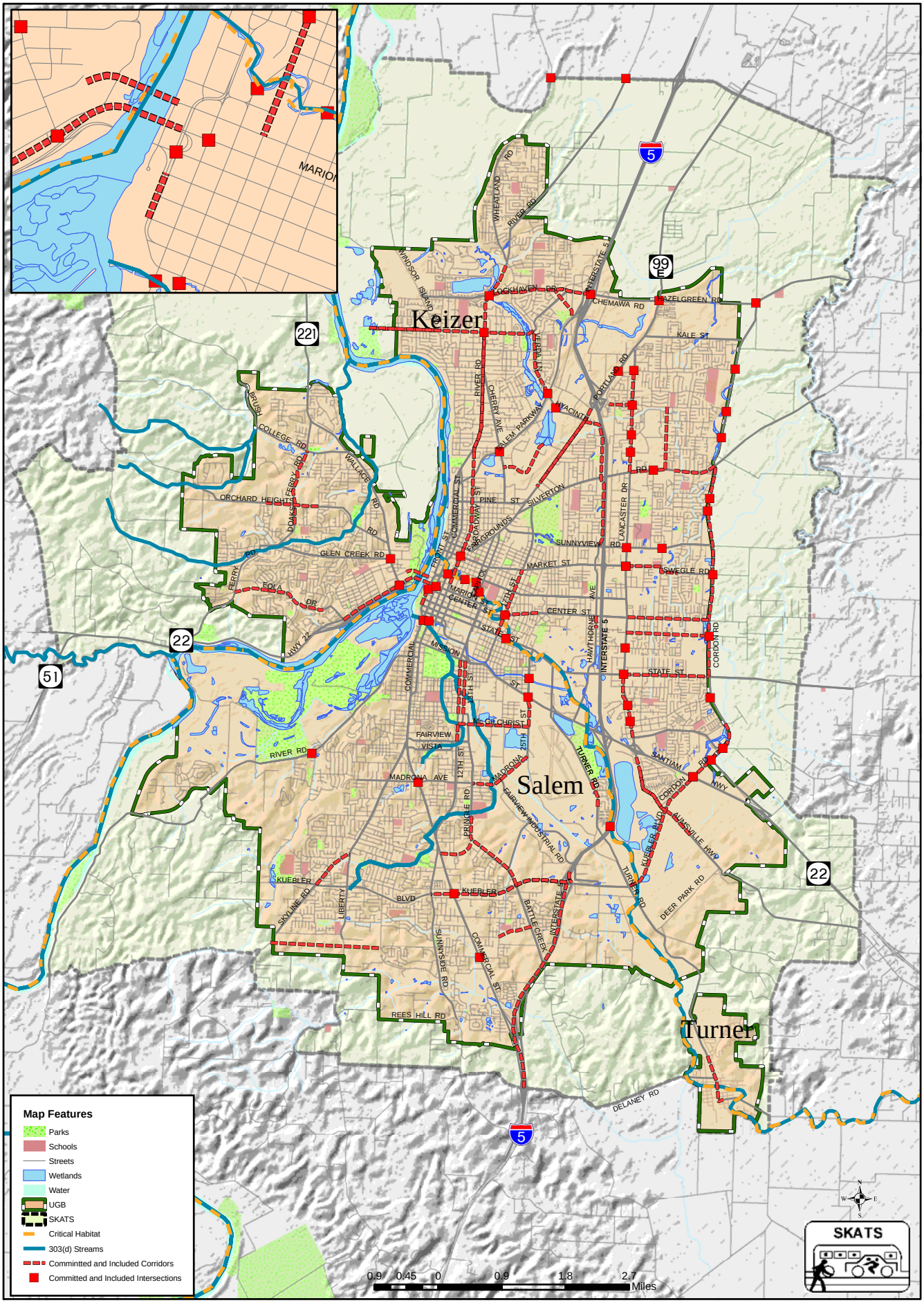
Keizer, and Turner along with Marion and Polk counties and perhaps ODOT could invest in a cultural resources assessment. This would entail hiring a consulting licensed archaeologist who would have access to SHPO data and other historic and prehistoric records for the SKATS region. He or she would provide an assessment of the cultural resources within the metropolitan area and strategies for avoiding key sites and resources. This would provide SKATS, member jurisdictions, and other regional planning entities with advance knowledge of key resource sites well ahead of project planning, enhancing opportunities for avoiding disturbance of sites and costly plan changes or mitigation.

The data gathered and the procedures developed represent the region's first attempt to compare the regional transportation plan to the region's natural resources. As such, this process is envisioned as being iterative, with data on the natural, historical, and cultural resources being updated as appropriate, and the project data changing to reflect the projects that are being added, deleted, or modified in the Plan. Results from the strategies put in place should be tracked to determine their effectiveness. As the Plan is updated every four years, data and strategies will be revisited at least on that time frame.

Further discussion with local jurisdictions and resource agencies is necessary to determine which strategies for mitigation are most appropriate for the SKATS area and where they should be carried out for the maximum positive result to the environment. Areas including the Willamette River basin and along the waterways listed as critical habitat for chinook salmon and steelhead trout will likely be among the forefront.

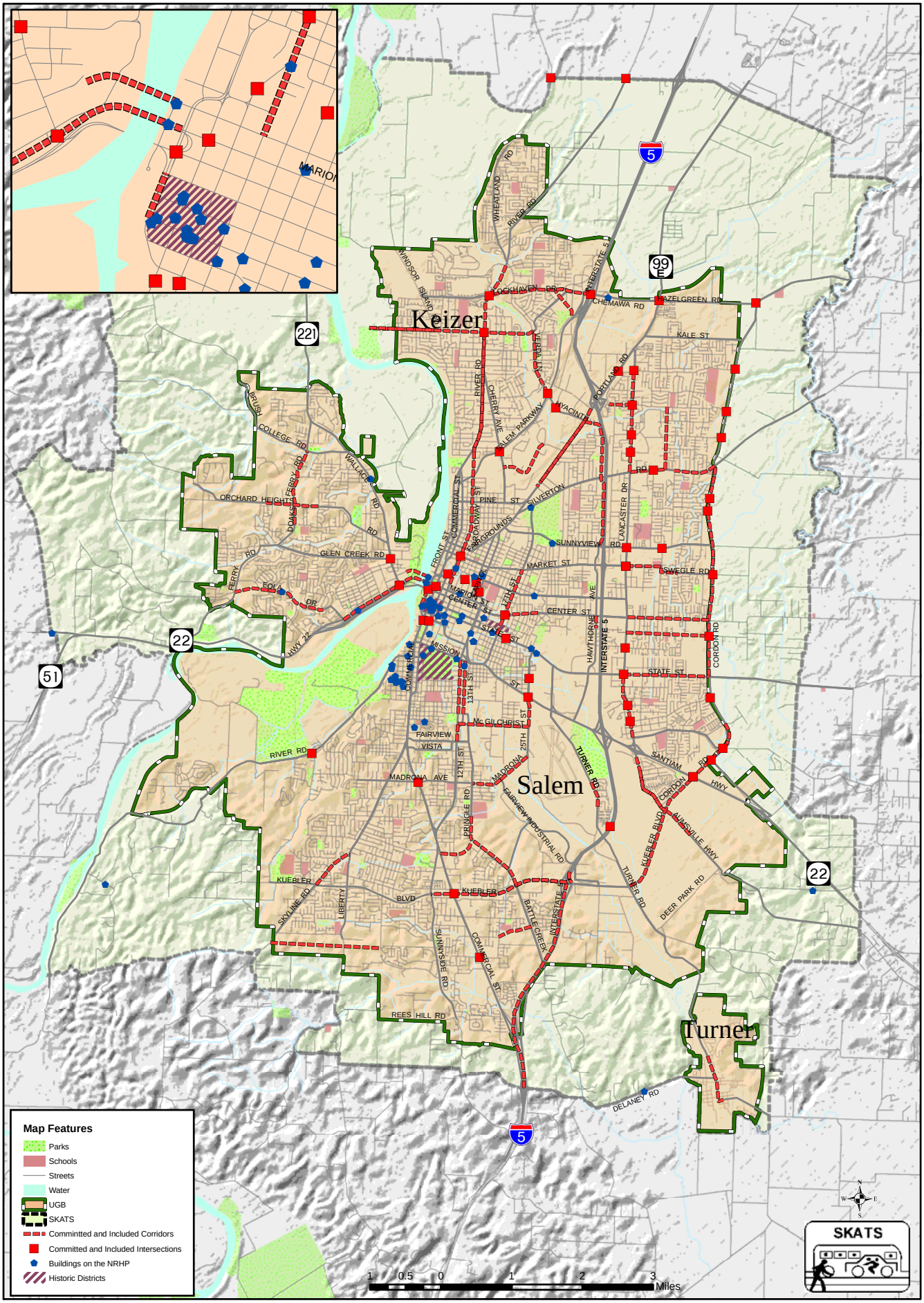
Map 16-1

Critical Habitat, Wetlands and 303(d) Streams



Map 16-2

Historic Districts and Buildings on the National Register of Historic Places



17 - Outstanding Issues

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

1) The nature of these issues is very complex and further analysis is required to adequately understand the underlying travel demand contributing to the issues;
2) Several potential approaches might be useful, either alone or in combination, to address these issues;
3) There is a lack of funding available to implement the solutions, or restrictions on the funds available preclude their use in being applied toward a particular issue;
4) No consensus solutions are currently identified to address these issues, and additional public deliberation and input is required before a preferred alternative can be selected and included in the Plan; and
5) Several of these issues are the subjects of current ongoing planning studies and as such do not have any recommended solutions at this time.

This chapter summarizes the outstanding issues that were identified in the preceding chapters, along with some broader issues facing the region. In addition to those outstanding issues discussed below, other problem areas will likely be subject to 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 issues will likely be identified as a result of the ongoing planning studies, 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.

Funding Issues

As can be seen in the preceding chapters and especially in Chapter 5, Finance, the region is facing a shortfall in revenues when compared with the projects that have been identified as being needed and in regards to operating and maintaining the existing system. This shortfall impacts all aspects of the Regional Transportation System, from the roads and highways, to the operation of bus service, to operating the rail station. With no solution to the dilemma of decreasing resources, the area will need to make do with reduced levels of maintenance of roads and bridges, increasing congestion, and constrained transit services.

While the funding situation impacts all the jurisdictions and agencies in the area, it is especially true for the Salem-Keizer Transit District (SKTD). With the area being designated a TMA in 2002, SKTD lost the ability to use a considerable amount of federal funds to support the operation of their buses. That money can now only be spent on capital expenses, such as purchasing new buses or constructing bus stops. SKTD has limited funding sources available to pay for operations and must rely on tax levies and fare box income. SKTD faces the possibility of being in the untenable position of being able to buy new buses but not being able to pay for the operators to drive them.

As shown in the financial chapter of this Plan, there is a considerable difference between the amount of revenues that will be available to the region during the horizon of this Plan and the costs of the improvements necessary to address all the issues that face the Regional Transportation System. The financially constrained selection of projects presented in the previous chapters addresses the federal planning requirements related to financial constraint.

Pedestrian

Providing safe and convenient pedestrian links along and across the regional road system is one of the policies of this Plan. Currently, there are several areas in the Salem-Keizer area where this is not being met. One such area is along Highway 22 between Lancaster and Cordon Road. On the south side of the highway is located a housing development with few to no stores or other amenities. On the north side is located a new elementary school and numerous retail and food stores. Due to the poor pedestrian linkages, and the circuitous route that walkers face, many people walk to the stores by crossing Highway 22, cutting through the fences that were erected along the right-of-way. Due to the high traffic volume and lack of any pedestrian accommodations along the highway, this current situation has the potential for pedestrian fatalities and injuries. This area needs attention in the near term to engage the public, and determine a solution that meets the needs of the residents of the area, those of ODOT, and the people using Highway 22.

Ensuring connectivity between Keizer and Salem for all modes is a continuing aim for the Regional Transportation Systems Plan. One option to address this situation would be the development of a multi-use path either along the Willamette River or in a block or two along existing streets, providing access for the residents of Keizer west of River Road North to downtown Salem. This path would be part of the larger Willamette Partnership (WP) plan to link cities along the Willamette River together via a multi-use path stretching from Eugene to Portland. Currently, this proposal is still in the conceptual stages, with no specific routes through Salem-Keizer identified. The completion of a path as envisioned by the WP is compatible with the goals of the RTSP to provide residents of Salem-Keizer with multiple mode and route options when traveling between origin and destination.

Bicycle

Several portions of the designated Regional Bicycle System in the SKATS area cannot accommodate the addition of dedicated bike lanes or even widened outside travel lanes. Two examples are River Road North from Chemawa Road to Shangri-La Street and Liberty Road South, from Commercial Street to Browning Avenue. Impediments to the addition of bicycle

facilities on these segments range from safety concerns to the financial cost of acquiring the necessary right-of-way to outright community opposition. Finding a satisfactory solution to these problem areas will require additional time and effort and remain an outstanding issue in the regional transportation planning process.

Connecting Keizer and Salem is a near-term goal for the Regional Bicycle System. Currently, Commercial and Liberty streets have bike lanes, as does Cherry Avenue. Broadway and North River Road do not have bike lanes, nor is there room in the current right-of-way of either street to expand them to include a bike lane. One option to address this situation would be the development of a multi-use path along the Willamette River, providing access for the residents of Keizer west of River Road North to downtown Salem. This is described above in the Pedestrian section of this chapter.

Combining the two issues above, there needs to be reexamination of the current regional bicycle and pedestrian networks to determine their suitability in facilitating the safe and easy movement of people using these modes. One area of study will be whether additional roads, classified below minor arterial, should be included in the regional bicycle network to facilitate the movement between the region's destinations while bypassing areas where the provision of bicycle lanes is problematic.

Goods Movement

More than any other topic discussed in this Plan, the movement of goods is typically regarded as confidential business information, such that the businesses involved do not share the data with each other or the public agencies. The need for additional information regarding the quantity and type of goods being moved in and around the SKATS area, as well as a more thorough identification of particular freight-critical routes and associated problem areas, is an issue that needs to be addressed in the future to better design solutions to ensure future mobility.

ODOT has completed the Freight Route Analysis Project (FRAP) (winter 2004), which included a recommendation for changes to the designation of several segments of facilities in the SKATS area. As a consequence of their designation as "Oregon Freight Routes," it is possible that these facility segments would also be subject to the provisions of as-yet-to-be-defined "management plans." Inasmuch as the ultimate effects on the responsible jurisdictions of the interaction of these designations, management plans, local land use plans, STA (Special Transportation Area) requirements, etc., is uncertain, the affected jurisdictions have requested a delay in the Oregon Transportation Council (OTC) adoption of the Freight Route redesignations until such time as all the associated impacts can be meaningfully evaluated.

Rail

The principal outstanding issues for the Regional Rail System involve the uncertainty of available funding for the recommended trackage improvements and the lack of identified funding for expanding the service as envisioned in the *Oregon Rail Plan* (2001).

Long-term operations and maintenance of the Salem Railroad Station is another outstanding issue, as the Salem station is the only one in the valley to be owned by ODOT and not the local jurisdiction(s).

Intercity rail service can provide a viable alternative to long-haul automobile travel, be it for commuting or for shopping/recreation trips. The potential and feasibility of additional intercity rail service along the I-5 corridor between the Salem-Keizer area and the Portland Metropolitan area to the north, and Corvallis/Albany to the south, is an issue that needs further study. Two routes are available to the north. One follows the route of Amtrak's passenger trains by using the UP line to the east of I-5 to Oregon City and then to Union Station in Portland. The second option is to use the P&W (ex-BNSF) line that runs to the west of I-5 from Keizer to Wilsonville, where it would connect with Washington County's soon to be implemented commuter rail service linking Wilsonville and Beaverton.

Another continuing issue is the safety of railroad crossings. In the 1996 RTSP, a number of crossings were identified as needing improvement to reduce the possibility of serious collisions between trains and autos. These improvements have been completed and the 12th Street Pedestrian Promenade was constructed in 2001 and 2002 to address the safety concerns facing pedestrians in the 12th Street corridor, with Phase III of the project completed in 2006. However, increases in the number and/or speed of trains along either of the rail corridors in the SKATS area should be tied with a reexamination of the safety of the crossings.

Other outstanding issues that cannot be fully addressed by this document include the preservation of land that is currently capable of being served by rail, and the reduction of land-use conflicts near existing rail lines.

Transportation System Efficiency Management

Transit ITS applications, e.g., transit managements systems and electronic fare payment systems, may have some promise in terms of increasing the efficiency of transit operations and customer confidence in the transit system. Improving mobility in regional transportation corridors where the physical and political impediments to adding right-of-way are high is identified as an "outstanding issue" in this RTSP Update. As part of the implementation of the recommendations adopted as a result of the High Priority Transportation Corridor study, transit ITS applications will be examined as part of an overall recommended strategy to improve mobility in the Broadway/River Road North corridor. It is expected that ITS applications employed in the HPTC Corridor will also be used in other appropriate locations.

Public Transportation

The major difficulty involved in expanding the Public Transportation System is a lack of ongoing, stable funding for significant increases in the level and type of transit services provided in the region. The mass transit system, the passenger rail system, and the ADA/Elderly and Handicapped systems all require additional levels of funding to be maximally effective.

A project is currently (2007) funded and scheduled to convert the existing Union Street Railroad Bridge structure into a pedestrian and bicycle facility. This facility would provide a safe and convenient link between Wallace Marine Park and west Salem to the Riverfront Park, the central business district, and the rest of Salem. Possible further conversion of the bridge into one being usable by transit and/or emergency vehicles will require further study and outreach to both the public and the nearby businesses.

Mass Transit System Funding Shortfall

The transit district can be expected to be able to afford necessary capital improvements (new buses and equipment) over the next 24 years but cannot afford to provide significant expansions of transit levels of service beyond those called for in this Plan without renewed or additional sources of funding (see Chapter 5, Finance). Securing stable and continuing sources of adequate operations funding for the mass transit system is critical to the ability of the overall regional transportation system to function effectively, and is a high regional priority. In the near term, in cooperation with the transit district, SKATS and the other jurisdictions in the region will cooperatively seek to identify, evaluate, and recommend appropriate new funding sources for transit operations to the region's citizenry and businesses.

Regional Passenger Rail Facility and Service Funding

The region will continue to work with ODOT to secure the necessary funding to maintain and improve the Regional Passenger Rail System. Stable, long-term funding for operating and maintaining the Salem railroad station has not been identified. This is crucial to allow this vital piece of the transportation system infrastructure to function as ridership increases as a result of increased service.

Intercity Bus Service

The feasibility of, and an operating and financial plan for, an ongoing intercity bus service, particularly to the west and east, connecting the Salem-Keizer urban area with cities in Polk and Marion counties, needs to be evaluated. The region will work with county staff to develop and conduct such a feasibility study as funds are available.

ADA/Elderly and Handicapped-Related Services Funding Shortfall

The district is currently meeting the demand. But in the foreseeable future the level of service will grow faster than available funding. As a result of this fact the district will have to pursue additional funding.

Roads

Willamette 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 select the preferred alternative in this corridor. The Salem River Crossing EIS began in 2006, and is expected to reach a Record of Decision in 2009 at the earliest. The EIS will also seek to identify a viable consensus combination of funding sources to construct the preferred alternative. To protect the right-of-way that is identified, $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 also recommended further study of 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 @ Brooklake Road, Chemawa Road and Kuebler Boulevard

These facilities are congested and recent developments in the area 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.

I-5/Kuebler

An IAMP is currently (2007) being conducted on the interchange connecting I-5 and Kuebler Boulevard. The project is one phase, with the second phase examining the OR 22 E corridor between 25th and Gaffin Road and the operational characteristics of the current interchanges and a possible future interchange linking OR 22 E with Cordon Road. Results from these studies are expected later in 2007.

I-5/Chemawa

The interchange connecting Chemawa Road and I-5 was designated 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.

I-5/Brooklake

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.

OR 22 East (25th - 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.

OR 22 West (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. The area will need to use techniques, other than road widening, to provide for the area's mobility.

The High Priority Transportation Corridor Study was completed in 2003. The study's objective was to investigate, identify, and implement 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. The study identified projects costing $6.5 million in the Broadway / River Road North corridor linking downtown Salem with Keizer. Solutions identified in this study will likely be implemented in other transit corridors in the Salem-Keizer-Turner area.

Increasing Reliance on Non-Automobile Modes

The Oregon Transportation Planning Rule (TPR) requires that the MPO and the local jurisdictions in the urban area develop measures and benchmarks that will demonstrate that the Salem-Keizer area is increasing its reliance on non-automobile modes. Efforts to date indicate

that significant and potentially controversial land use changes will be required in order to facilitate this change from the status quo. Studies are underway to examine the use of mixed land use centers, corridors, and high transit service levels as methods for reducing automobile reliance. These studies are also designed as the basis for meeting the TPR requirement for the area jurisdictions to develop an "integrated land use/transportation plan." The types of measures being considered to demonstrate increased non-auto reliance include: the number of people who live within a ¼-mile walk to a transit stop; non-auto mode share; number of dwellings close to retail services and employment. The need to work with the local jurisdictions to develop a common "future vision" on which to base an Integrated Land Use/Transportation Plan and measures to demonstrate reduced automobile reliance is ongoing. In terms of the development of the RTSP, recent guidance has reinforced the federal mandate that the MPO plan be based upon *currently adopted Local Comprehensive Land Use Plans,* including only those land uses and developments that can be considered likely to occur over the planning horizon. The MPO *can*, however, provide modeling outputs useful in the evaluation of alternative future land use scenarios, *if such outputs are requested and defined by a member jurisdiction, and those LCLUP changes are in the pipeline for adoption by the affected local jurisdiction.*

Appendix A - SKATS Population and Employment Forecasts

Special Note: The 2030 RTSP, adopted in June 2005, had a horizon year of 2030. A comprehensive process was followed (as described in this appendix) to determine 2030 targets for population and employment within the SKATS boundary. With the requirement to update the SKATS plan to comply with the federal SAFETEA-LU Act of 2005, it was necessary to update the RTSP and consequently extend the horizon year to 2031. This extension provides a rolling 20-year planning horizon, which can be used until the plan is next updated in 2011.

Through discussion with the SKATS Technical Advisory and Policy Committees , it was decided that rather than re-allocating the housing and employment growth developed for the 2030 RTSP, a one-year forecast of population and employment would be added to the existing 2030 forecast. Therefore, the process and totals described in this appendix for 2030 values have not changed. Furthermore, because of the uncertainty inherent in any long-range forecast, by consent the Policy Committee agreed that for Keizer, Turner, and the remaining areas outside the UGBs but inside SKATS, the former 2030 population and employment totals would be regarded as the new 2031 totals. Therefore, only the Salem UGB area would show a change between the 2030 and 2031 values.

As for the Salem UGB area, a simplified process was conducted to arrive at the 2031 forecast. Using the 0.8% growth rate for the UGB area between 2025 and 2030, the Salem urban area is forecast to increase by 2,253 persons from 2030 to 2031. Employment between 2025 and 2030 is forecast to increase 1.0%, resulting in an increase of 1,248 jobs from 2030 to 2031. These increases were allocated to transportation analysis zones for 2031 and used in the 2031 transportation model. The new population and employment totals for 2031 can be found in Chapter 3, Table 3-1.

As this document will be posted on the MWVCOG website, users of this appendix should check for updates.

Introduction

The purpose of a population and employment forecast is to assist in planning for land use, transportation, infrastructure, and other needs of the metropolitan area. Forecasts are as good as the data and assumptions they are based on and require updates as new information becomes available.

Population and employment in the SKATS area has shown cycles of slow and fast growth over the decades. During the 1970s, the population grew by almost 50 percent, while growth slowed considerably in the 1980s. However, the 1990s saw another population surge of over 40,000 persons. Two-thirds of the area's population growth is due to migration to the area and is intertwined with the region's economic health. Trends show an eventual slowing of this growth as the region develops more of the remaining land within the existing urban growth boundary.

This appendix begins with a description of population growth during the last decade for Oregon, Marion and Polk counties, and the cities in the two counties. State population and employment forecasts for Marion and Polk counties, as prepared by Oregon's Office of Economic Analysis (**OEA**) and the Oregon Employment Department (**OED**), are reported. This is followed by a focus on historical population change in the Salem-Keizer Urban Growth Boundary (UGB) and the population and employment forecasts for the UGB and SKATS area, based on the OEA and OED forecasts and coordination between the local jurisdictions of SKATS. These population and employment forecasts will be used as the control totals to be allocated within the Salem-Keizer UGB and SKATS area. The process used to allocate housing and employment forecasts to taxlots within Salem, Keizer, Turner and the remaining areas of SKATS is also summarized in this chapter.

State and County Population Growth, 1990 to 2000

The 1990 and 2000 Census data for Marion and Polk counties and the state of Oregon is shown in **Table A-1**. The two-county population increased about 25 percent from 1990 to 2000, compared to the state's growth of about 20 percent. Net migration accounted for 69 percent of the two counties' population growth compared to 73 percent for the state.

Table A-1
1990 to 2000 Census Population Growth

	July 1, 2003 Population Estimate (PSU)	April 1, 2000 Census Population	April 1, 1990 Census Population	Population Change 1990-2000	Percentage Change 1990-2000	Births 1990-2000	Deaths 1990-2000	Natural Increase 1990-2000	Net Migration 1990-2000
Marion	295,900	284,834	228,483	56,351	**24.7%**	41,955	22,777	19,178	37,173
Polk	64,000	62,380	49,541	12,839	**25.9%**	6,653	4,706	1,947	10,892
Total	359,900	347,214	278,024	69,190	**24.9%**	48,608	27,483	21,125	48,065
State	3,541,500	3,421,399	2,842,321	579,078	**20.4%**	430,949	273,323	157,626	421,452

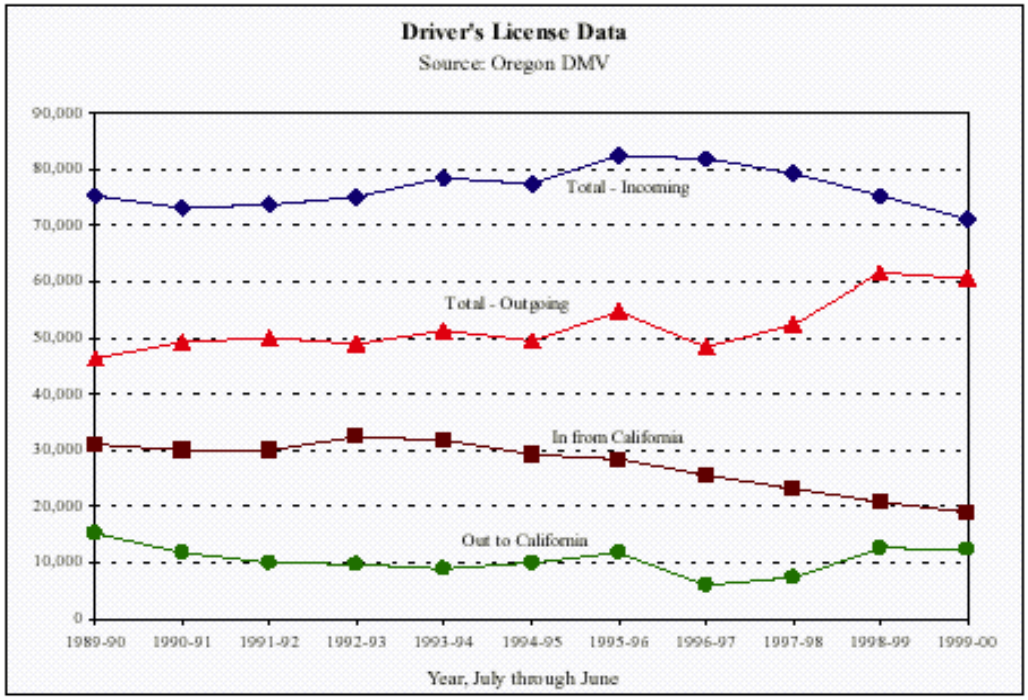
	Percent Increase by Natural Increase	Percent Increase by Net Migration
Marion	34%	66%
Polk	15%	85%
Total	31%	69%
State	27%	73%

Source: Office of Economic Analysis, 2000; Portland State University Population Center

Historical information about migration into and out of Oregon is illustrated in **Figure A-1** based on DMV data of new and surrendered driver's licenses. During the 1990s, total in-migration to Oregon surpassed out-migration, although the gap has narrowed since 1998. The graph also shows that California migration was around 35 percent of total migration, and the difference between in-migration and out-migration with California has narrowed since 1994.

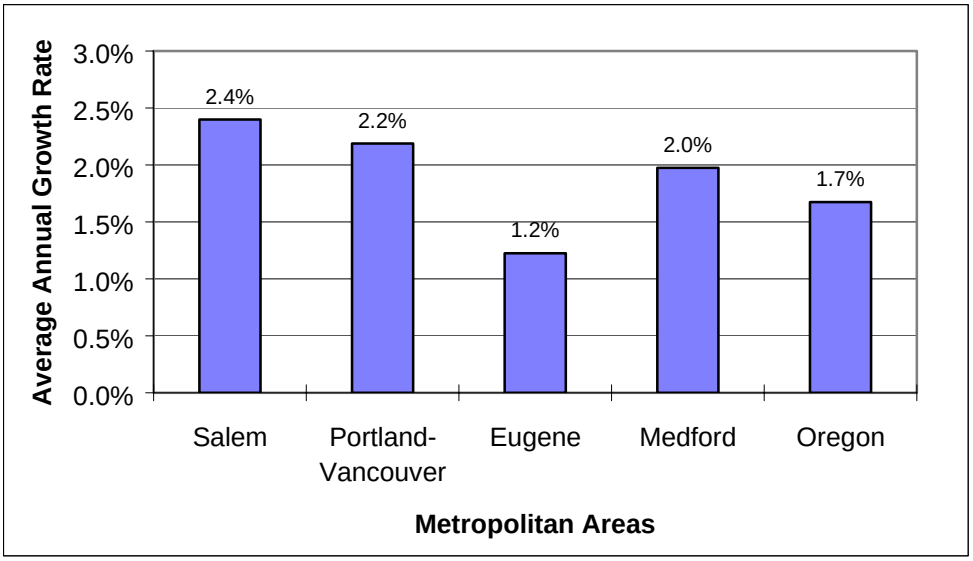
Over the last ten years, the population of the Salem-Keizer metropolitan area has consistently grown as fast or faster than the other metropolitan areas in the Willamette Valley. Comparison of population growth rates during the 1990s for the Salem metropolitan statistical areas (Marion and Polk counties) with those of the Portland-Vancouver, Eugene, and Medford metropolitan statistical areas is illustrated in **Figure A-2**.

Figure A-1
Population Migration in Oregon



Office of Economic Analysis, DAS, State of Oregon

Figure A-2
Comparison of Population Average Annual Growth Rate of Oregon Metropolitan Areas, 1990 to 1999



Salem MSA consists of Marion and Polk counties
Eugene MSA consists of Lane County
Medford MSA consists of Jackson County

Comparison of the 1990 to 2000 population growth of the major cities and census designated places (CDPs) in Marion and Polk counties is illustrated in **Figure A-3** and **Table A-3**. The Hayesville and Four Corners CDPs are located in the Salem Urban Growth Boundary (UGB) east of Interstate 5.

The Salem-Keizer UGB area grew 27 percent from 1990 to 2000, which was a little more than the Marion and Polk County growth of 25 percent. Most of the other cities in the two counties had a higher percentage population than the Salem-Keizer UGB, as illustrated in the chart in **Figure A-3** and **Table A-3**.

Figure A-3
Percent Population Increase in Selected Marion County and Polk County Cities, 1990 to 2000

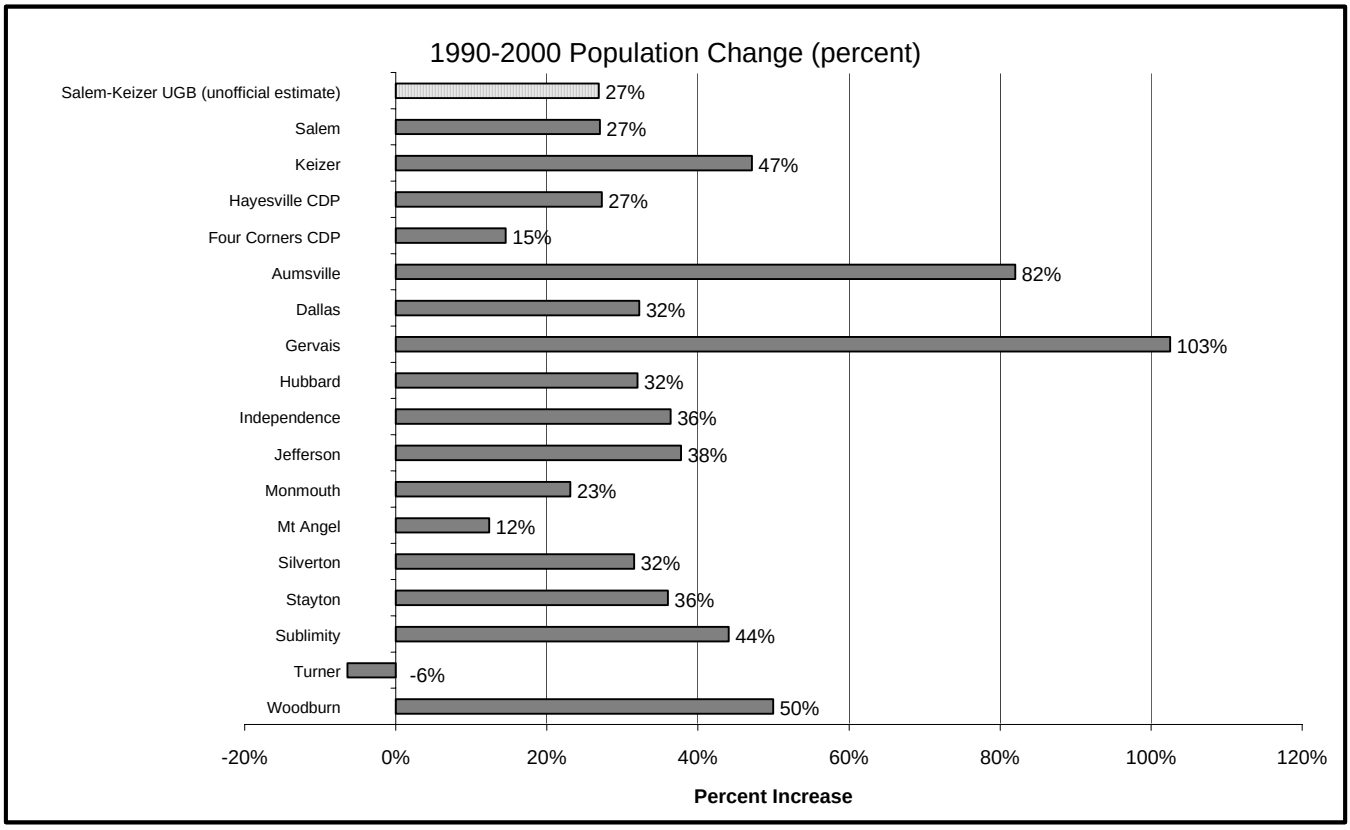


Table A-3
Population Increase in Selected Marion County and Polk County Cities

City	1990 Population	2000 Population	Increase	Percent Increase, 1990-2000	AAGR
Aumsville	1,650	3,003	1,353	82%	6.17%
Dallas	9,422	12,459	3,037	32%	2.83%
Gervais	992	2,009	1,017	103%	7.31%
Hubbard	1,881	2,483	602	32%	2.82%
Independence	4,425	6,035	1,610	36%	3.15%
Jefferson	1,805	2,487	682	38%	3.26%
Monmouth	6,288	7,741	1,453	23%	2.10%
Mt Angel	2,778	3,121	343	12%	1.17%
Silverton	5,635	7,414	1,779	32%	2.78%
Stayton	5,011	6,816	1,805	36%	3.12%
Sublimity	1,491	2,148	657	44%	3.72%
Turner	1,281	1,199	(82)	-6%	-0.66%
Woodburn	13,404	20,100	6,696	50%	4.13%
Total	**56,063**	**77,015**	**20,952**	**37%**	**3.23%**
Salem	107,786	136,924	29,138	27%	2.42%
Keizer	21,884	32,203	10,319	47%	3.94%
Four Corners CDP	12,156	13,922	1,766	15%	1.37%
Hayesville CDP	14,318	18,222	3,904	27%	2.44%
Total	**156,144**	**201,271**	**45,127**	**29%**	**2.57%**
Salem-Keizer UGB (unofficial estimate)	160,230	203,275	43,045	27%	2.41%
Marion & Polk Counties	278,024	347,214	69,190	25%	2.25%

Source: 1990 and 2000 Census data

County Population Forecasts to 2040

In 1997, the Office of Economic Analysis (**OEA**) of Oregon's Department of Administrative Services released their long-term population and non-agricultural payroll employment forecasts. The statewide population forecasts are linked to the national projections of population growth, but with a slightly higher rate for Oregon than the nation as a whole. The 1997 county-level population forecasts were calculated using weighted average historical growth rates for the counties and the statewide forecasts. The initial population forecasts were reviewed with city and county input, with OEA being the final arbiter in the process.

In May 2003, OEA distributed preliminary updates to the long-term county population forecasts. Polk and Marion county staff reviewed these forecasts, and in April 2003 recommended keeping the two-county population totals, but adjusting the distribution between the two counties. OEA revised their projections based on these recommendations and in May 2004, OEA distributed the revised long-term forecasts (see **Table A-4**.)

Table A-4
Population Forecast for Marion and Polk Counties, OEA 2004

Year	Source	Marion Co.	Polk Co.	Total	Percent Increase	AAGR
1990	Census	228,483	49,541	278,024		
2000	Census	284,834	62,380	347,214		
2005	OEA	302,913	65,434	368,347	6.1%	1.2%
2010	OEA	323,128	72,845	395,973	7.5%	1.5%
2015	OEA	344,443	83,338	427,781	8.0%	1.6%
2020	OEA	367,018	95,594	462,611	8.1%	1.6%
2025	OEA	388,898	107,118	496,017	7.2%	1.4%
2030	OEA	410,022	117,557	527,579	6.4%	1.2%
2035	OEA	429,824	127,019	556,843	5.5%	1.1%
2040	OEA	448,671	135,937	584,607	5.0%	1.0%

Source: Office of Economic Analysis, Dept. of Administrative Services, 2004

The 1997 OEA statewide forecasts included population by age and sex (**Table A-5**). The median age of the population is forecast to increase from 37.1 years to 41.1 years in 2030. An update of this information was not provided in 2004.

Table A-5
Median Age Population Forecast for Oregon

Year	Male	Female	Total
1980	29.5	31.0	30.3
1985	31.6	33.4	32.5
1990	33.5	35.5	34.5
1995	34.9	37.0	35.9
2000	35.9	38.3	37.1
2005	36.7	39.2	37.9
2010	37.6	39.8	38.7
2015	38.2	40.3	39.2
2020	39.0	40.9	39.9
2025	39.7	41.6	40.6
2030	40.1	42.1	41.1
2035	40.3	42.3	41.3
2040	40.1	42.1	41.1

Source: Office of Economic Analysis, Oregon D.A.S., Jan. 1997

Salem–Keizer - Turner UGB Population Growth

Historical population growth in the Salem-Keizer Urban Growth Boundary (UGB) from 1950 to 2000 is illustrated in **Table A-6**. Prior to the creation of SKATS and the UGBs in the 1970s, planning studies discussed the population of the Salem urbanized area, which included the city of Salem plus the surrounding closely settled unincorporated areas that meet certain criteria of population size and density. Planning documents from the 1970s and 1980s were reviewed for historical population values. The Salem urbanized area population numbers illustrated in **Table A-6** are a reasonable equivalent to the current Salem-Keizer UGB. The 2000 population estimate for the Salem-Keizer UGB was calculated in May 2001 using data from 2000 Census block data.

During the economic recession in the 1980s, Salem's annual average population growth rate dropped to 1.5 percent, mirroring a similar drop in the population growth rate for Marion County, Polk County, and Oregon (**Table A-6**). During the 1990s, however, the Salem-Keizer population average growth rate increased to 2.4 percent per year, which was higher than the state's rate of growth.

Table A-6
Salem-Keizer UGB Population Growth

Historical Population Growth - UGB						
Year	**1950**	**1960**	**1970**	**1980**	**1990**	**2000**
Geography[1]	Salem UA	Salem UA	Salem UA	UGB	UGB	UGB
Population	45,800	70,600	93,000	138,700	160,230	203,275
Decade	**1940-50**	**1950-1960**	**1960-70**	**1970-80**	**1980-90**	**1990-2000**
Growth	48%	54%	32%	49%	16%	27%
Salem UGB AAGR[2]	4.0%	4.4%	2.8%	4.1%	1.5%	2.4%
M&P AAGR[3]	--	--	--	3.0%	1.1%	2.2%
Oregon AAGR	3.4%	1.5%	1.7%	2.3%	0.8%	1.9%
Historical Population Growth - Cities						
Year	**1950**	**1960**	**1970**	**1980**	**1990**	**2000**
City of Salem	43,140	49,142	68,296	89,233	107,786	136,924
City of Keizer[4]		5,288	11,405	18,592	21,884	32,203
City of Turner	610	770	846	1,116	1,281	1,199

[1] Salem UA = Salem Urbanized Area, UGB = Salem-Keizer Urban Growth Boundary
[2] AAGR = Average Annual Growth Rate
[3] Marion and Polk counties Average Annual Growth Rate
[4] Keizer incorporated in 1982. Earlier years are Keizer CDP.

The city of Turner was added to the SKATS planning area as part of the TMA boundary expansion adopted by the SKATS Policy Committee in 2002. Turner's population from 1950 to 2000 is show in **Table A-6**. Turner experienced a decrease in population from 1990 to 2000. However, since the construction of the city's sanitary sewage system in June 2000, Turner has

experienced an increase in population, with several recent subdivisions completed and others on the horizon. The Portland State University July 2003 population estimate for Turner is 1,480 persons, a 280-person (23%) increase since the year 2000.

Building permit activity in the Salem-Keizer UGB from 1980 to 2003 is illustrated in **Table A-7**. From a low of 129 building permits in 1985, construction peaked in the mid-1990s. Development plateaued to about 1,000 new housing units per year during the last five years. In particular, multi-family development has decreased substantially since the early 1990s.

Table A-7
Building Permit Data, Salem-Keizer UGB

Year	Single Family	Duplex	Multi Family	Total
1980	1,006	100	207	1,313
1981	450	68	173	691
1982	213	2	0	215
1983	194	4	2	200
1984	193	14	13	220
1985	111	10	8	129
1986	267	-2	189	454
1987	511	22	138	671
1988	759	14	803	1,576
1989	743	30	769	1,542
1990	760	38	930	1,728
1991	744	68	482	1,294
1992	962	54	748	1,764
1993	862	96	876	1,834
1994	910	68	243	1,221
1995	874	138	508	1,520
1996	1,082	122	735	1,939
1997	957	50	479	1,486
1998	1,030	70	247	1,347
1999	794	58	131	983
2000	765	28	211	1,004
2001	755	22	307	1,084
2002	840	18	166	1,024
2003	864	34	102	1,000
Total	**16,646**	**1,126**	**8,467**	**26,239**
Percents	63.4%	4.3%	32.3%	

Salem - Keizer Group Quarters Population

The Salem-Keizer area has a relatively large share of its population in group quarters (4.7%), compared to the two counties (3.6%) or the state (2.3%). The primary reason is the presence of several state and county correctional facilities. The 1990 and 2000 Census group quarters population by type of quarters is illustrated in **Tables A-8** and **A-9**, and group quarters as a percent of total population are illustrated in **Table A-9**. While the total number of people in group quarters stayed relatively constant between 1990 and 2000, the number of institutionalized persons decreased (mostly due to the closing of Fairview Hospital), while persons in non-institutional group quarters increased.

Table A-8
1990 Census, Persons in Group Quarters

Institutionalized persons (00I-99I):	Salem	Keizer	Four Corners	Hayesville	Total
Correctional institutions	4,612	0	0	0	**4,612**
Nursing homes	998	277	0	0	**1,275**
Mental (Psychiatric) hospitals	753	0	0	0	**753**
Juvenile institutions	165	0	0	0	**165**
Other institutions	713	0	0	0	**713**
Subtotal	**7,241**	**277**	**0**	**0**	**7,518**
Other persons in group quarters (00N-99N):					
College dormitories	1,329	0	0	0	**1,329**
Military quarters	0	0	0	0	**0**
Emergency shelters for homeless persons	178	0	0	0	**178**
Visible in street locations	19	2	0	0	**21**
Other noninstitutional group quarters	442	33	20	12	**507**
Subtotal	**1,968**	**35**	**20**	**12**	**2,035**
Total	**9,209**	**312**	**20**	**12**	**9,553**

1990 GROUP QUARTERS P028 STF1A
Universe: Persons in group quarters

Table A-9
2000 Census, Persons in Group Quarters

		Group Quarters Population			
	Total Population	**Institutional**	**Non-institutional**	**Total**	**% of Total Population**
Salem	136,924	6,360	2,524	8,884	6.5%
Keizer	32,203	233	47	280	0.9%
Four Corners	13,922	0	39	39	0.3%
Hayesville	18,222	0	180	180	1.0%
Total	**201,271**	**6,593**	**2,790**	**9,383**	**4.7%**

Source: 2000 Census

Salem - Keizer UGB Population Forecast Methodology and Control Total

In 1998, representatives from the Mid-Willamette Valley Council of Governments, Marion and Polk counties, the city of Salem, the city of Keizer, and the Department of Land Conservation and Development (DLCD) met to coordinate the 2020 population forecast for the combined Salem and Keizer UGB area. This coordination was initiated by Marion and Polk counties following the passage of House Bill 2709, which updated the Oregon Revised Statutes to require counties to establish and maintain population forecasts for the entire area within their boundaries for use in maintaining and updating their comprehensive plans. The 2020 coordinated population forecast was extended to the year 2025 for the 2002 RTSP update.

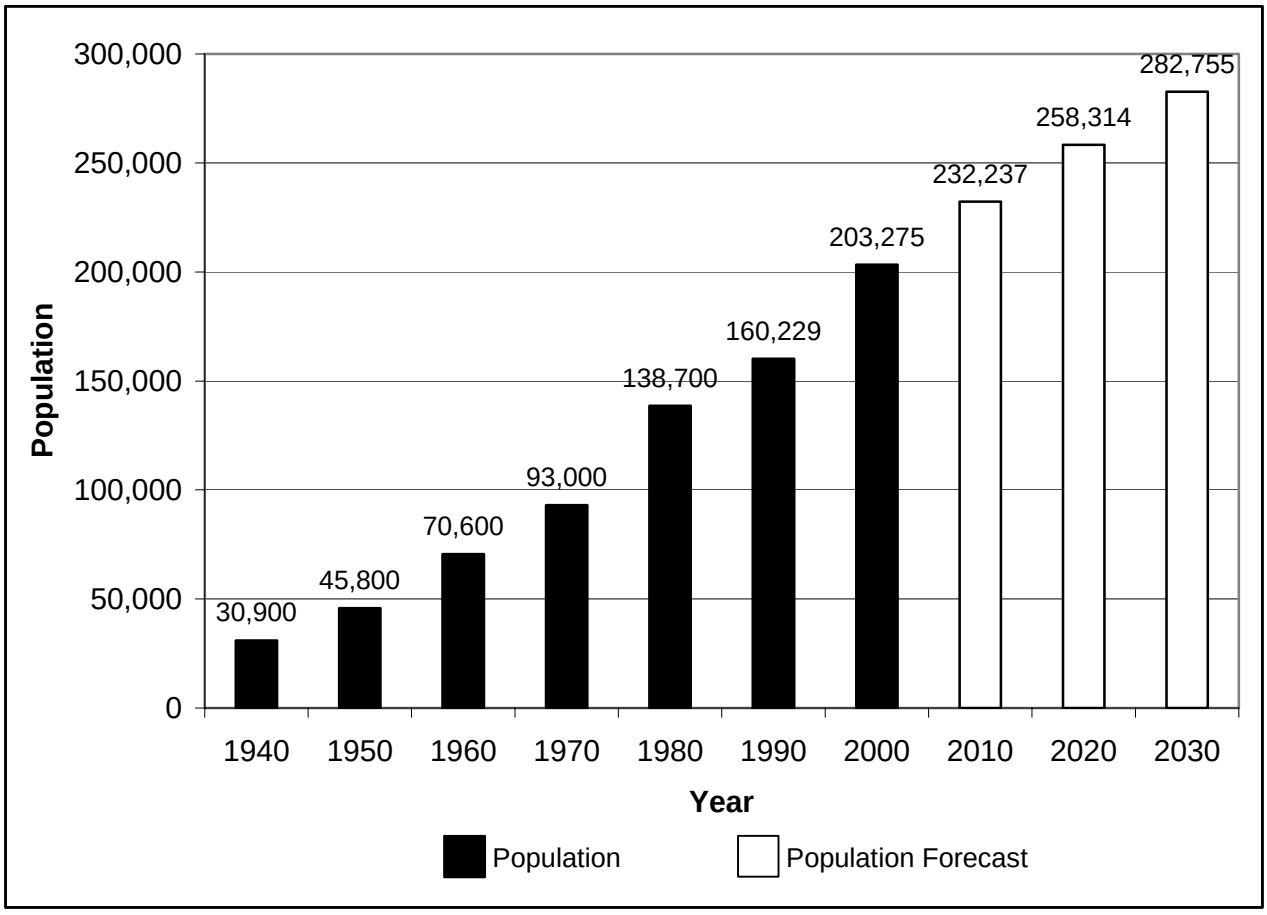
In 2003, a SKATS Land Use Subcommittee was formed to help coordinate and update the 2030 population and employment forecasts and allocations. Using the long-range forecasts from OEA, the subcommittee began a process of developing a Salem-Keizer UGB population forecast. Starting with the 2025 Salem-Keizer UGB population forecast of 270,458 (from the 2002 RTSP Interim Update), the subcommittee agreed to an initial population target of 282,000 for the year 2030. With this initial target, work began on allocating the population within Salem and Keizer.

Using 2000 Census data, the total population within SKATS is estimated to be 203,275. Based on the land use, housing, and persons per unit data described later in this chapter, the new forecasts for SKATS and the jurisdictions within SKATS are shown in **Table A-10.** The last column of **Table A-10** shows that the population within SKATS, as a percentage of the two-county population forecast, is predicted to decrease over time from 62 percent to 56 percent. The increase in the Salem-Keizer UGB population is shown in **Figure A-4**.

Table A-10
UGB and SKATS Population Forecast, 2000 to 2030

Year	Total Salem UGB	Total Keizer UGB	Total Salem-Keizer UGB	Total Turner UGB	Remaining SKATS areas	Total SKATS Population	Combined Marion and Polk County Population Forecast	SKATS Population as a Percent of Marion and Polk Population
2000	171,072	32,203	203,275	1,199	10,109	214,583	347,214	62%
2005	183,497	35,364	218,861	1,480	10,530	230,871	368,347	63%
2010	194,929	37,308	232,237	1,665	10,926	244,828	395,973	62%
2015	205,863	38,404	244,268	2,087	11,203	257,558	427,781	60%
2020	218,976	39,338	258,314	2,363	11,480	272,157	462,611	59%
2025	231,985	39,767	271,752	2,661	11,736	286,149	496,017	58%
2030	242,761	39,994	282,755	2,933	11,920	297,608	527,579	56%

Figure A-4
Salem-Keizer UGB Population Growth and Forecast, 1940-2030



Housing and Population Forecast for the City of Keizer

The city of Keizer's population grew from 21,884 persons in 1990 to 32,203 in 2000, according to Census data. However, by the end of the year 2001, the amount of all vacant residential land (single-family, multi-family, and mixed use) had been reduced to only about 140 acres. The majority of future residential development in Keizer will occur on underutilized lots. Recognizing this, the city of Keizer initiated an Infill Master Plan Study, which identified the location and amount of buildable vacant and underutilized lots in Keizer, as well as design recommendations for infill development.

Before beginning Keizer's forecast, the land use and housing data in SKATS' Geographic Information System (GIS) was updated and compared to the 2000 Census data for Keizer. Both the Census and the GIS counted approximately 12,800 housing units in Keizer for the year 2000, and the population for both was about 32,200.

Establishing the year 2000 as a base in the Keizer GIS, taxlots in the GIS were identified and categorized as either fully developed, vacant as of 2000, vacant as of 2000 but the number of

housing units known from building permits or recent subdivision maps, underutilized, or underutilized but known number of housing units from permits or subdivision maps.[1] Taxlots that allowed mixed use (housing and/or employment) were individually selected for the forecast for either future housing or future employment.

The process in Keizer was to develop a full build-out projection of the vacant, underutilized, and mixed-used taxlots, then to coordinate with city of Keizer staff to determine a rate of development to the year 2030. **Table A-11** shows the number of "potential" housing units based on build-out, and the number of units forecast to develop by the year 2030.

Table A-11
City of Keizer Housing Forecast, 2000 to 2030

2000 Land Use Category	Total Potential Units	Units Developed by 2030
Vacant	1,084	1,066
Underutilized	2,701	1,703
Mixed Use	601	468
Total	**4,386**	**3,236**

Details of the housing forecast include the following:

1. The category of "vacant as of 2000 but the number of housing units known from building permits or recent subdivision maps" contains 145 taxlots. Based on recorded information, **the forecast is for 610 new housing units on these lots**.

2. The category of "vacant taxlots with no building permits or subdivision information" contains 103 taxlots. Most of these taxlots are small: 85 are less than one acre, and of those 46 are less than 0.3 acres. The lots under 0.3 acres with a Comprehensive Plan designation of Low Density Residential (LDR) were assigned a forecast of one new single-family unit. For larger lots, densities of 5.0 units per acre for LDR and 21 units per acre for Medium High Density Residential (MHDR) were used. Some adjustments were made for lots near the floodplain or for the smaller lot MHDR. **The forecast is for 474 new housing units on these lots.**

3. Underutilized lots are those that had a residential development as of the year 2000, but because of their size have the potential for additional single-family or multi-family dwelling units if the lot is partitioned or subdivided sometime in the future. Larger underutilized lots occur on the north, west, and east edges of the city. In the central part of Keizer (surrounding River Road and south of Lockhaven), most of the homes were built in the 1930s to the 1970s, and these lots are often deep but narrow. Homes on these lots are often at the street-side or at the back of the lot, and partitioning the lot is not difficult if they meet the infill standards of the city. There are also many instances

[1] Details are available in a separate document "Keizer Residential Forecast Methodology"

throughout Keizer where adjacent underutilized lots are assembled and either re-partitioned or, if large enough, are developed into new subdivisions (e.g., the new subdivision on Lucinda Ave.)

Information on all the recent partitions and subdivisions on underutilized lots (2000 to 2003) were taken into account and it was assumed that most of the large underutilized lots (i.e., over one acre) would eventually be partitioned or subdivided by the year 2030. For underutilized lots less than one acre, city of Keizer staff recommended that 0.3 acres (13,000 square feet) was a reasonable minimum size lot to be considered "underutilized" with the potential for a partition. This size allows suitable vehicle access to partitioned properties. However, other considerations were taken into account to identify or reduced the pool of potential underutilized lots, which are detailed in the Keizer Residential Forecast methodology report.

The methodology resulted in a potential of 2,700 housing units (1,550 on small lots, 1,150 on large lots). In developing the 2030 forecast, it was assumed that most of the large underutilized lots (i.e., over one acre) will eventually be partitioned by the year 2030, but far fewer of the smaller underutilized lots will be partitioned by 2030. **The total number of new housing units built on underutilized lots is forecast to be 1,703 between the years 2000 and 2030**.

4. There are six general areas in Keizer that have Mixed Use Comprehensive Plan designations. The allocation for each was developed with the direction of Keizer staff. Some were developed as a mixture of residential and commercial, and others treated as only one or the other development type. Details are described in the Keizer Residential Forecast Methodology report. **A total of 610 housing units were assumed as the potential buildout, with 468 occurring by 2030**.

After calculating the potential units, the next task was to assign development years to the taxlots with potential new housing. Using building permit data (**Table A-12**) from the city of Keizer as a guide, and noting the general decline in single-family homes, assumptions were made for the rate of future development of single-family homes. Based on these rates, it is forecast for Keizer that **a target of around 1,900 single-family homes would be built between 2000 and 2030.**

Multi-family dwellings (apartments) do not show a clear trend in **Table A-12**, although the average from 1996 to 2002 is 55 new apartments per year. For the 2030 forecast, it was assumed that 50 apartment units and duplex units per year will be constructed between the years 2000 and 2020, and 40 per year for the next five years, and 25 per year for the final five years. This drop over the years is based on the decreasing amount of MDR and MHDR land that would remain after the year 2020, plus the uncertainty of how the mixed-use land will be actually developed. Using these assumptions, it is predicted that **a target of around 1,325 multi-family apartment and duplex units homes would be built between 2000 and 2030.**

Table A-12
Keizer Building Permit and Land Use Data, 1996 through 2003

	SINGLE-FAMILY	DUPLEXES		OTHER PLEXES		APT BLDGS		SUBDIVISIONS		PARTITIONS	
	Number & Units	Number	New Units	Number	New Units	Number	New Units	Number	Lots	Number	Lots
2003	154	6	12	2	8	7	72	3	56	12	27
2002	198	3	6	0	0	8	64	4	38	13	33
2001	100	3	6	0	0	1	8	3	30	9	22
2000	240	7	14	0	0	7	52	10	183	11	22
1999	241	9	18	0	0	0	0	6	199	11	27
1998	296	11	22	12	48	18	148	4	35	18	42
1997	259	12	24			6	44	10	306	22	52
1996	277	22	44			12	Unit data not available	4	157	16	42
Average	**221**	**9**	**18**	**2**	**9**	**7**	**55**	**6**	**126**	**14**	**33**

The final step for the Keizer housing forecast was to assign development years to individual taxlots in the GIS and try to match the single-family and duplex/multi-family targets described above. **Table A-13** shows the final allocation to taxlots, summarized by type of structure and year of assumed development. **A total of 3,236 dwelling units are forecast for Keizer between 2000 and 2030. This 30-year allocation includes 1,919 single-family homes, 164 duplex units, and 1,153 apartment units.** The split between single-family, duplex, and apartments is 59%, 5%, and 36% respectively, with the latter years having a higher multi-family percentage of new housing.

Using the persons per housing unit rates[2] shown in **Table A-13**, Keizer's 2030 population forecast is 39,994. That is a 7,791-person increase (24%) from the year 2000 population of 32,203.

[2] Rates from 2000 Census Salem Urbanized Area (which includes both Salem, Keizer, and the urbanized areas inside the Salem/Keizer UGB)

Table A-13
2000-2030 Keizer Housing & Population Forecast by Type and Year

Housing Growth 2000 - 2030

	Total	2005	2010	2015	2020	2025	2030
SF	1919	867	490	260	156	93	53
Duplex	164	138	26	0	0	0	0
Apartments	1153	276	289	200	256	89	43
Total	**3236**	**1281**	**805**	**460**	**412**	**182**	**96**
SF	59%	68%	61%	57%	38%	51%	55%
Duplex	5%	11%	3%	0%	0%	0%	0%
Apartments	36%	22%	36%	43%	62%	49%	45%

Population Growth 2000 - 2030

	New Dwellings	Persons/hh	Population Increase
SF	1,919	2.663	5,110
Duplex	164	2.129	349
Apartments	1,153	2.022	2,331
	3,236		7,791

Keizer Population Forecast		
2000 Census	32,203	
2030 Forecast	39,994	
	7,791	24% increase

Housing and Population Forecast for the City of Salem

The official 2000 Census population for the Salem city limits was 136,924. The Salem UGB includes the Salem city limits plus adjacent urban areas of Marion and Polk counties. Using Census data, the estimated 2000 population within the Salem UGB was 171,072 persons. The interagency population coordination initially estimated that the Salem UGB's population should be approximately 242,000 by the year 2030. With that initial target, city of Salem and SKATS staff worked on allocating the housing and population within the Salem UGB.

The first task was for city of Salem staff to update their base-year GIS to better match the 2000 Census housing totals for the Salem UGB planning area. Next, taxlots with a residential comprehensive plan were classified as developed, vacant, underutilized, or redevelopable as of the year 2000. Information about development after the year 2000 (building permits and recorded subdivisions) was included in the forecast of total residential growth. Assumptions were made for currently developed lots that might partition in the future. Reductions to potential residential development were made to account for future parks and schools. Some special categories were added to account for planned residential development at Sustainable Fairview, the Illahee area, and the North Downtown area. The PictSweet property west of Cordon Road is assumed to have housing in the future. In addition, 130 acres of additional multi-family housing (required in West Salem as part of Salem's Periodic Review) were included in the forecast.

Once the taxlots and parameters for future residential growth were identified, the potential number of housing units was calculated using the densities in **Table A-14**. For special areas such as Sustainable Fairview and others noted above, city of Salem staff estimated the number of potential housing units. The total potential housing units and those allocated for the 2030 forecast are shown in **Table A-15**.

Table A-14
Housing Densities (Units per acre) Used for Salem Forecast

Category ("Devcode_cp")	Comprehensive Plan	Assumed Density	Note
Vacant or underutilized	Single Family or Developing Residential	4.64 units/acre	Underutilized land subtracts the acres used by the existing housing before calculating new units on the remaining acres
Vacant	Multi-family	21 units/acre	
Redeveloped	Multi-family	21 units/acre	Calculation will use 21 units/acre and subtract existing units to avoid double counting when growth is added to existing housing

Table A-15
Forecast of Potential and Allocated Housing Units for Salem UGB Forecast, by Development Category

Development Category "Devcode_cp"	Potential Number of Housing Units	Housing Units Allocated between 2000 and 2030
Known Development after year 2000 ("lots & committed")	5,710	5,710
Vacant Residential	15,629	11,558
Underutilized Residential	11,696	7,129
Redevelopment	12,866	1,736
Partitions	915	915
Sustainable Fairview Forecast	1,781	1,781
Illahee Forecast	167	167
Pictsweet Special Forecast	369	369
N Downtown Forecast	302	302
Total	**49,433**	**29,666**

The final housing forecast for the Salem UGB is shown in **Table A-16**. The table contains the forecast of new single-family and multi-family housing units for the Salem UGB east and west of the Willamette River. Using the same persons per housing unit rates used in Keizer, the population increases for each five-year period are forecast. **For the 2000 to 2030 period, increases of 18,261 single-family homes (61.6% of total), 11,405 multi-family units (38.4% of total), 29,666 housing units total, and a total population increase of 71,689 persons are forecast to occur.**

Table A-16
Forecast of New Housing Units and Population Increase in Salem UGB, in 5-year increments

	Salem UGB (East of River)			Salem UGB (West of River)			Total		
Year	SF units	MF Units	Population Increase	SF units	MF Units	Population Increase	SF Units	MF Units	Population Increase
2005	2,285	1,303	8,720	1,161	303	3,705	3,447	1,606	12,425
2010	1,712	1,560	7,714	888	669	3,718	2,600	2,229	11,432
2015	1,963	1,511	8,282	700	390	2,652	2,662	1,901	10,934
2020	2,454	845	8,244	738	1,435	4,868	3,193	2,280	13,112
2025	2,359	808	7,916	245	2,197	5,094	2,604	3,005	13,010
2030	3,214	55	8,671	541	329	2,105	3,755	384	10,776
Total	**13,988**	**6,082**	**49,548**	**4,273**	**5,323**	**22,142**	**18,261**	**11,405**	**71,689**
							61.6%	38.4%	

Note: Rounded to nearest integer

Based on the above forecast and the forecast for the city of Keizer, the Salem-Keizer UGB population would increase as shown in **Table A-17**.

Table A-17
Forecast of Salem-Keizer UGB Population Growth, in 5-year Increments

	Keizer	West Salem	East Salem	Total Salem UGB	Total Salem-Keizer UGB
2000	32,203	19,883	151,189	171,072	203,275
2005	35,364	23,588	159,909	183,497	218,861
2010	37,308	27,306	167,623	194,929	232,237
2015	38,404	29,958	175,906	205,863	244,268
2020	39,338	34,826	184,149	218,976	258,314
2025	39,767	39,920	192,066	231,985	271,752
2030	39,994	42,025	200,737	242,761	282,755

Housing and Population Forecast for the City of Turner

Turner updated its Comprehensive Plan in June 2001, projecting a 2020 population of 2,363 persons (Source: Chapter 3, Table 9.3 C, of the Turner Comprehensive Plan). This forecast is based on an annual population growth of 2.4%. Using this growth rate, and making small adjustments to account for available residential land, results in a 2025 population forecast of 2,661, and a 2030 population forecast of 2,933. The population forecast for Turner is shown in **Table A-10**.

According to the Growth Management section of the 2001 Turner Comprehensive Plan (page 9.800-8):

> The City's 1980 Turner Comprehensive Plan previously committed itself to revise the City's Urban Growth Boundary (UGB) to accommodate the needs of 3,500 people should a commitment to a sewer system be made by the time of the next Plan update. In the summer of the year 2000, a sanitary sewage collection system was completed. With the introduction of municipal sanitary sewers, the city's growth potential has increased substantially over the rural capacity that was dependent upon septic system feasibility and may exceed the adopted [2020] population projection of 2,363 approved by the County and State.

As described in Chapter 4 of Turner's Plan (Housing and Buildable Lands Analysis), 99 acres of buildable land were needed to accommodate the city's 2020 population. It is estimated that there is approximately 157 acres of buildable residential land (Table 9.500 I in Plan). The Plan's land use goals and policies encourage compact residential development, infill development of oversized lots, and higher density multi-family development in the downtown core area.

Not included in the inventory of 99 acres of currently zoned and buildable residential land is the residential redevelopment potential within the city's 169 acres of MAR (Mineral and Aggregate Resource District) land. The MAR district is an aggregate extraction site established in 1995. It is located at the north end of the city and is owned by River Bend Sand and Gravel. Upon completion of the extraction process and city approval of a final redevelopment plan, this land will become available for development, most likely between 2010 and 2020. Presently, the preliminary redevelopment plan anticipates a 90-acre lake, 47 acres of residential redevelopment, 24 acres for commercial or public use, and 8 acres of protective landscape buffers.

Outside the Turner UGB, the city has an agreement with Marion County regarding the 439 acres removed from the original Turner UGB. This area, known as the Urban Growth Notification Area (UGNA), was established in 1982 between the city and county to accommodate future urban growth of the city when needed. Further information can be found in Chapter 9 of the Turner Plan.

Population Forecast for the Area Outside the UGB

The relationship between the Salem-Keizer Urban Growth Boundary (UGB) and the SKATS boundary is illustrated in **Map A-1**. Except for a section in the southeast, the SKATS boundary is about one to four miles larger than the UGB.

In 1990, approximately 6,430 people were living in the area between the UGB and SKATS boundary. The 2000 Census estimates the population of this area (i.e., before the SKATS boundary was expanded in 2002) was 8,230 people: a 28% increase, similar to the UGB population increase. With the expansion of the SKATS boundary, the population was re-calculated to be 10,109 persons in the year 2000.

A forecast for the SKATS area outside the UGB was prepared with the assistance of Marion and Polk counties' planning staff. Zoning data was used for the forecast, which included staff's suggestions on where to limit development due to slope and water restrictions. Between 2000 and 2030, the forecast is for **168 new units on 120 parcels in Polk County** and **512 new units on 399 parcels in Marion County**, for a combined total of 680 new units. Assuming 2.7 persons per household, this is an increase of 1,836 persons. Most of the new housing will be single-family dwelling units on residential lots currently vacant. Only about a quarter of the housing would result from new partitions or subdivisions.

Using this allocation, the total population outside the UGBs would increase from 10,109 in the year 2000 to 11,920 by 2030, an 18% increase for the thirty-year period. Adding this population to the 2030 population forecasts for the Salem-Keizer UGB (282,755) and Turner UGB (2,933) **results in a total of 297,608 for the SKATS boundary** (**Table A-10**).

Marion and Polk County Employment

County employment data is available from the Oregon Employment Department's (**OED**) Oregon Labor Market Information System (OLMIS) website. The year 2000 employment in each county, categorized by their major SIC groups and government sectors, is shown in **Table A-18**.

Table A-18
2000 Marion and Polk County Employment

SIC Group	Industry Group	Marion Co.	Polk Co	Total
01-09	Agriculture, Forestry and Fishing	8,829	1,163	9,992
10-14	Mining	220	56	276
15-17	Construction	6,678	791	7,469
20-39	Manufacturing	14,606	3,192	17,798
40-49	Trans., Comm., and Utilities	4,159	289	4,448
50-51	Wholesale Trade	3,981	422	4,403
52-59	Retail Trade	22,513	2,393	24,906
60-69	Finance, Insurance and Real Estate	5,598	284	5,882
70-89	Services	28,942	4,624	33,566
99	Nonclassifiable/all others	48	13	61
federal	Total Federal Government	1,578	137	1,715
state	Total State Government	16,965	990	17,955
local	Total Local Government	13,420	1,649	15,069
	Total	**127,537**	**16,003**	**143,540**

Source: OLMIS, 2004

The OLMIS website contains the ES-202 data of "covered" employment (workers covered by unemployment insurance) by industry for all counties in the state[3]. The employment data comes from the unemployment insurance tax reports submitted quarterly by employers subject to Employment Department Law. Since 1980, the ratio of covered employment to total employment, expressed as a percentage, has varied between a low of 78.6 % (in 1983) and a high of 95% (in 1999). In 2000, the ratio dropped to 93.7%, in 2001 it was 93.6%, in 2002 it was 92.5% and in 2003 it was 91.6% [4]

The OLMIS Covered Employment and Wages tool allows searches and summaries of industry employment, wages, and number of business establishments. Historical data are available back to 1976; but beginning in 2001, data is reported using the North American Industry Classification System (NAICS)[5]. Prior data are organized by Standard Industrial Classification (SIC), which is used in this analysis in order to compared changes from 1990 to 2000.

Employment for 1990 and 2000 in the Salem MSA (Marion and Polk counties) are shown in **Table A-19**. Between 1990 and 2000, employment in the MSA increased 28 percent, coinciding with the growing overall economy in Oregon. The service sector had the largest increase in jobs (almost 12,000 new jobs), but there were other significant increases in agriculture/forestry/fishing, construction, transportation/communication/utilities, retail, and government.

Table A-19
Salem MSA (Marion and Polk Counties) Employment (1990 to 2000) by SIC Categories

	Year →	1990	2000		
SIC Group	Industry Group	MSA	MSA	MSA 1990-2000 Change	MSA 1990-2000 % increase
01-09	Agriculture, Forestry and Fishing	7,520	9,992	2,472	33%
10-14	Mining	73	276	203	278%
15-17	Construction	4,714	7,469	2,755	58%
20-39	Manufacturing	16,000	17,798	1,798	11%
40-49	Trans., Comm., and Utilities	2,896	4,448	1,552	54%
50-51	Wholesale Trade	4,086	4,403	317	8%
52-59	Retail Trade	19,730	24,906	5,176	26%
60-69	Finance, Insurance and Real Estate	5,029	5,882	853	17%
70-89	Services (& Miscellaneous SIC=99)	21,780	33,627	11,847	54%
fed	Total Federal Government	1,826	1,715	(111)	-6%
state	Total State Government	16,950	17,955	1,005	6%
local	Total Local Government (includes schools)	11,250	15,069	3,819	34%
	Total Government	30,026	34,739	4,713	16%
	Total	**111,854**	**143,540**	**31,686**	**28%**

[3] Non-covered employment includes the self-employed; services performed by a person in the employ of a son, daughter, or spouse; realtors and insurance sales employment that are based solely on commission; service performed by certain part-time, irregular, and emergency employees of state or local government; service performed by elected officials; certain categories of agricultural workers; and other specialized employment. See OLMIS for more info.

[4] Source: 10/25/04 e-mail from Ken Lux, Covered Employment and Wages program, OED

5 Beginning with January 2003 data, the Oregon Employment Department will be reporting industry data in North American Industry Classification System (NAICS) format in order to be comparable to industry data for the U.S. and both Mexico and Canada.

The 25-year growth in employment in Marion and Polk counties is shown in **Figure A-5**. The variation in employment during a typical year in the manufacturing sector is shown in **Figure A-6**. This variation is due to the fact that a large percentage of the manufacturing employment in the SKATS area is in the food processing sector. Employment in food processing is highly seasonal, as large canneries (Truitt, Norpac, etc.) almost double their employment during August to October.

Figure A-5
Marion and Polk County Historic Employment

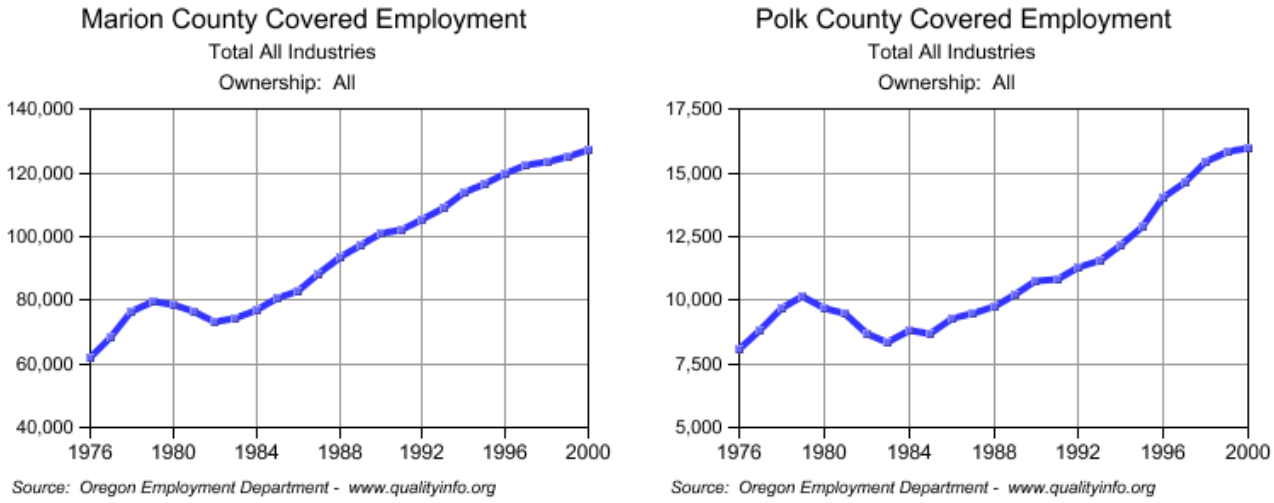
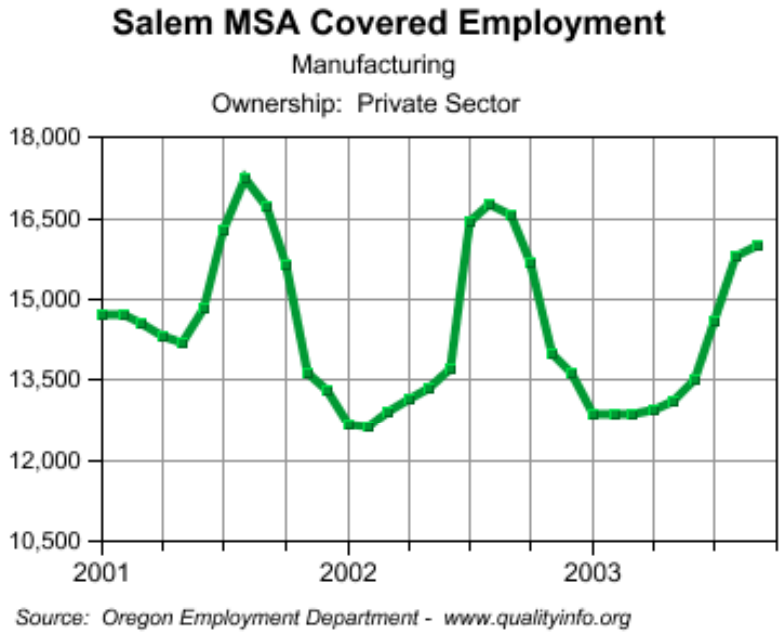


Figure A-6
Salem MSA Seasonal Manufacturing Employment



Employment Forecasts - 2012 Forecast for Marion and Polk Counties

In July 2003, the Oregon Employment Department (**OED**) released a report titled, "Employment Projections By Industry, 2002-2012." This document reports that between 1992 and 2002, employment increased 24 percent for the entire state (over 300,000 jobs). For the years 2002 to 2012, OED forecasts a 13.7 percent employment increase statewide (215,000 jobs). For Region 3 (Marion, Polk, and Yamhill) this report forecasts a 13.5 percent increase (22,000 more jobs). OED was able to provide the 2002-2012 forecasts for just Marion and Polk counties, which are shown in **Table A-20.**

Highlights of the statewide forecast include the following:

1. The state has added jobs in *every* 10-year increment since the state began tracking non-farm employment in 1947.
2. Population growth (13 percent between 2000 and 2010) will increase demand for goods and services.
3. Service industries are likely to account for nearly half of the state's job growth, in particular the health, business, social, and professional (i.e., engineering and management) services.
4. Trade industries (retail and wholesale together) will account for more than one in four new jobs. Retail trade historically tracks closely with population growth. Wholesale trade is affected by broader industry and economic trends.
5. Finance, insurance, and real estate industries (FIRE) are also likely to grow with the state's population.
6. Construction is likely to see considerably slower growth over the forecast period compared to the 1990s.
7. Manufacturing employment in the state is forecast for slow job growth. Some manufacturing industries are currently thought to be at a cyclical low point (high tech, transportation equipment, fabricated metals, printing and publishing); each of these industries is expected to rebound with the overall economy. Several others are expected to continue a long-run decline (lumber and wood products, food products, paper products)
8. Although government employment is currently declining, it is expected to resume its long-term trend, growing more slowly than the overall economy.

Table A-20
OED Employment Forecasts

OED Region 3 Forecast - Marion and Polk and Counties from Employment Projections by Industry (July 2003)					
Broad Industry	**2002**	**2012**	**Projected Change**	**Percent Change**	**Percent Increase Adjusted for a 15-year Growth Period**
Total Nonfarm Payroll Employment	137,837	156,035	18,198	13.2%	20.4%
Mining	268	281	13	4.9%	7.4%
Construction	6,463	7,245	782	12.1%	18.7%
Manufacturing	15,911	16,338	427	2.7%	4.1%
Transportation and Public Utilities	4,883	5,343	460	9.4%	14.5%
Wholesale Trade	4,113	4,810	697	16.9%	26.5%
Retail Trade	25,542	29,453	3,911	15.3%	23.8%
Finance, Insurance, and Real Estate	6,906	7,933	1,027	14.9%	23.1%
Services	34,771	43,078	8,307	23.9%	37.9%
Government	38,980	41,554	2,574	6.6%	10.1%

SKATS Employment Forecast to 2015 and 2030

"Covered" employment data for the SKATS area for 2000 was obtained from the Oregon Employment Department, which tracks the employment of workers who are covered by the state's unemployment insurance program.

Employment totals in Salem are seasonal, due to increased employment at the local canneries during the late summer and fall, and at retailers during the Christmas holidays. For that reason, employment for each employer in SKATS was averaged over the twelve months to report the annual average employment. **Table A-21** shows 1991 and 2000 covered employment by major employment sectors inside SKATS. Between 1991 and 2000, employment in SKATS increased by over 11,000 jobs, a 14 percent increase. The table shows how each segment of employment changed between 1991 and 2000. **Table A-21** also shows the amount of covered employment in Keizer UGB, Salem UGB, and the remainder of SKATS. The last column of **Table A-21** shows the employment inside SKATS as a percentage of the Marion/Polk MSA 2000 employment. Finally, the 91,888 jobs in SKATS represents 64 percent of all covered employment within Marion and Polk counties in the year 2000.

Table A-21
SKATS Employment 1991 and 2000, by SIC Categories

	Year →	1991	2000			2000	2000	2000	
SIC Group	Industry Group	SKATS Total	SKATS Total	SKATS 1991-2000 Change	SKATS 1991-2000 % Increase	Keizer UGB	Salem UGB	Remainder of SKATS TMA area	SKATS Employment as % of MSA Employment
01-09	Agriculture, Forestry and Fishing	3,557	1,993	(1,564)	-44%	101	1,109	783	20%
10-14	Mining	65	160	95	146%	-	121	39	58%
15-17	Construction	3,484	4,173	689	20%	351	3,465	357	56%
20-39	Manufacturing	8,269	8,746	477	6%	40	8,487	219	49%
40-49	Trans., Comm., and Utilities	1,985	2,775	790	40%	46	2,639	90	62%
50-51	Wholesale Trade	3,254	2,638	(617)	-19%	69	2,288	281	60%
52-59	Retail Trade	14,373	17,505	3,132	22%	1,152	16,188	165	70%
60-69	Finance, Insurance and Real Estate	5,241	4,712	(529)	-10%	245	4,433	35	80%
70-89	Services (& Miscellaneous SIC=99)	17,807	23,100	5,293	30%	1,369	21,486	245	69%
fed	Total Federal Government		999			6	958	35	58%
local	Total State Government		15,676			-	15,676	0	87%
state	Total Local Government **(includes schools)**		9,413			594	8,460	359	62%
	Total Government	22,531	26,087	3,556	16%	600	25,093	394	75%
Total		**80,566**	**91,888**	**11,322**	**14%**	**3,972**	**85,309**	**2,608**	**64%**

The SKATS Land Use Subcommittee looked at several methods for forecasting future employment for 2015 and 2030. This included using the OEA growth rates for the Salem MSA, combined with several variations of shift-share analysis between local growth and MSA growth.

The subcommittee first focused on a 2015 forecast. This recommended forecast used a combination of growth rates from the OEA plus adjustments to account for planned growth in retail, manufacturing, and transportation due, in part, to two projects: Keizer Station and the Salem Regional Employment Center (SREC). Keizer Station is estimated to add 2,195 jobs (mostly retail and service) by 2015. SREC is estimated to add 5,400 jobs (mostly manufacturing and distribution), and it is forecast that 2,760 of these jobs will occur by 2015. Employment decreases due to recent business closures and announced reductions (e.g., SUMCO and State Farm) are also factored in the 2015 forecast.

Table A-22 shows the recommended 2015 forecast for SKATS, showing a 16,000-job increase (17%) from the year 2000. Retail and service jobs will be the leading sectors of new jobs, similar to the forecast developed at the state and Salem MSA level. In the government sector, it was estimated that state government would grow by 1,800 jobs, federal government by 115 jobs, local government by 230 jobs, and school employment by 850 jobs.[6] Increases in manufacturing and TCU (transportation, communications, utilities) will be due in large part to the SREC development, as well as recent and expected employment increases by businesses in the communication sector (i.e., T-Mobile and Wachovia).

As shown in **Table A-22,** the ratio of population to employment for 2015 (2.35) stays about the same as the ratio in 2000 (2.34)

[6] Since the base year is 2000, some of this school employment has occurred with the opening of a new West Salem high school, and several middle and elementary schools since 2000.

Table A-22
SKATS 2015 Employment Targets

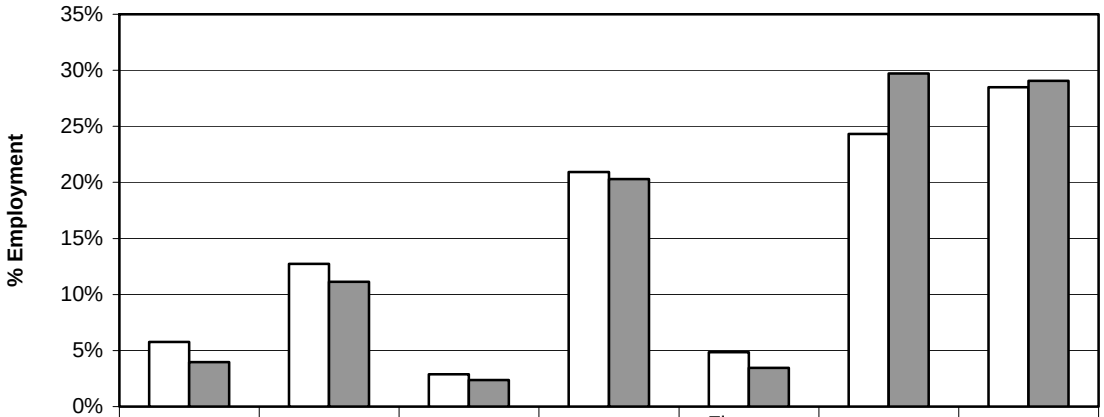
	Employment Sector	SKATS 1991 Employment	SKATS 1997 Employment	SKATS 2000 Employment	SKATS 2015 Employment Target	Increase/ Decrease from Year 2000	Percent Change
1	Agriculture, Forestry and Fishing	3,557	1,844	1,993	1,600	-393	-20%
2	Mining	65	165	160	160	0	0%
3	Construction	3,484	4,375	4,173	4,954	781	19%
4	Manufacturing	8,269	8,553	8,746	10,000	1,254	14%
5	Trans., Comm., and Utilities	1,985	1,964	2,775	4,352	1,577	57%
6	Wholesale Trade	3,254	2,454	2,638	2,813	176	7%
7	Retail Trade	14,373	17,573	17,505	21,676	4,171	24%
8	Finance, Insurance and Real Estate	5,241	4,510	4,712	4,891	179	4%
9	Services	17,807	20,662	23,100	28,377	5,277	23%
10	Total Government	22,531	25,788	26,087	29,104	3,017	12%
	Total Employment	80,566	87,888	91,888	107,927	16,039	17%
	SKATS Population Estimate	170,800	197,200	214,583	257,588		
	Population: Employment Ratio	2.12	2.24	2.34	2.35		

Developing a 2030 employment forecast is more challenging than the 2015 forecast, due to the increased uncertainty with longer term forecasts. The only local source of information that might be used is Portland Metro's Regional Economic Model, which includes a 2025 employment forecast for the Salem MSA.

Metro's model is made up of a series of simultaneous equations relating the various sectors of the economy to one another, including consumption, investment, production, and wage and price determination. Metro's econometric model also includes an input/output model. Metro uses their econometric model with their land allocation software (Metroscope) to create future year land scenarios.

The chart below shows the 2025 employment sector forecast for the Salem MSA based on Metro's econometric model. As shown in the chart, service and government employment increase as a percentage of the total employment, while the other sectors decrease as a percentage of total employment.

Salem MSA by Industry Sector, 2000 and 2025
(Source: Metro)



	Constr. and Mining	Manuf.	Transp. Com. & Utilities	Whsle. & Retail Trade	Finance, Insur., & Real E.	Service	Fed. Civ., State & Local
2000	6%	13%	3%	21%	5%	24%	29%
2025	4%	11%	2%	20%	3%	30%	29%

One reason that Metro's 2025 forecast of total employment in the Salem MSA might be too high is its forecast of government employment. The Portland MSA and Salem MSA 2000-2025 forecast in three broad employment sectors are shown in **Table A-23**. The growth rates for Construction, Mining, Manufacturing, and Transportation/Communications/Utilities sectors differ by eight percent. The growth rates for the Wholesale, Retail, FIRE, and Service sectors are very similar.

However, the government sector's growth rate for Salem is much higher than Portland's. While Salem does have a large percentage of its 2000 employment in government, it's hard to imagine that government jobs will increase by 64% in 25 years. There are about 26,000 government jobs in SKATS in the year 2000 (**Table A-22**). If that number increased by 64%, there would be about 43,000 government workers in the year 2025, an increase of 17,000 workers. In contrast, the recommended 2015 forecast for SKATS (**Table A-22**) shows an increase of only 3,000 government jobs between 2000 and 2015. In summary, the government job increase from the Metro model appears very overestimated.

Table A-23
Comparison of Metro Forecast for Salem MSA and Portland MSA

	Portland MSA			Salem MSA		
	2000	2025	**Increase**	2000	2025	**Increase**
Construction, Mining, Manf, TCU	254,040	304,050	**20%**	29,356	37,528	**28%**
Wholesale, Retail, FIRE, Services	579,040	998,040	**72%**	68,804	120,380	**75%**
Government	126,640	166,220	**31%**	39,132	64,332	**64%**
Total	959,720	1,468,310	**53%**	137,291	222,240	**62%**

Table A-24 shows three methods for estimating a 2030 forecast and the recommended forecast.

- In Option 1, the increase or decrease in employment for each sector is simply doubled, based on the 2000 to 2015 forecast. For example, the Manufacturing sector is forecast to increase by 1,254 jobs between 2000 and 2015. Using this method, 1,254 more manufacturing jobs would be added between 2015 and 2030.

- In Option 2, percentage change between 2000 and 2015 for each sector would be applied to the 2015 forecast. For example, the Manufacturing sector is forecast to increase by 14% between 2000 and 2015. Using this option, jobs in the Manufacturing sector would increase by 14%(1,434 jobs) between 2015 and 2030. Using this option results in higher forecast results compared to Option 1.

- In Option 3, a growth rate of the Salem MSA as calculated by Portland's econometric model would be used. For some sectors, the results are not too different from the Option 1 and Option 2 results. There are bigger differences occurring in the Services, Transportation/Communication/Utilities, and the Government sectors

- Option 2 is used for the recommended forecast for most of the employment sectors. The two exceptions are the 2030 forecasts for the Manufacturing and TCU sectors. Due to the large initial increase in employment due to the SREC development at Mill Creek, it would seem unlikely to have a similar large expansion of manufacturing and TCU after

2015. Therefore, Option 1 is used for the manufacturing sector, and a forecast between Options 1 and 2 is used for TCU.

- Total SKATS employment growth from 2015 to 2030 for the recommended forecast is 18 percent, which is slightly higher than the 17 percent in the 2000 to 2015 forecast.

Table A-24
2015 to 2030 SKATS Employment Forecast Options and Recommended Targets

Sector	2000	2015	Option 1 Double Employment Growth/ Decline	Option 2 Use the 2000-2015 Growth Rate	Option 3 Use Metro's 2015-2025 Rate	Recommended Forecast	2015-2030 Change	Percent change
Agriculture	1,993	1,600	1,207	1,284	1,200	1,284	(316)	-20%
Mining	160	160	160	160	193	160	-	0%
Construction	4,173	4,954	5,735	5,882	5,975	5,882	928	19%
Manufacturing	8,746	10,000	11,254	11,434	11,978	11,254	1,254	13%
Trans., Comm., and Utilities	2,775	4,352	5,929	6,824	4,960	6,626	2,274	52%
Wholesale Trade	2,638	2,813	2,989	3,000	3,534	3,000	187	7%
Retail Trade	17,505	21,676	25,847	26,841	27,229	26,841	5,165	24%
Finance, Insurance and Real Estate	4,712	4,891	5,070	5,077	5,530	5,077	186	4%
Services	23,100	28,377	33,654	34,859	42,976	34,859	6,482	23%
Total Government	26,087	29,104	32,121	32,470	38,430	32,470	3,366	12%
Total SKATS	91,888	107,927	123,966	127,832	142,005	127,454	19,527	18%

Allocation of Employment in Keizer

A detailed analysis was performed to allocate employment in Keizer. Details of the forecast include:

1. Preliminary estimates of Keizer's employment growth were first estimated based on vacant and underutilized commercial land and special employment areas. The initial employment growth target was 4,150 new jobs by the year 2015 (including 2,195 jobs at Keizer Station and 300 jobs at Chemawa Station). Between the years 2015 and 2030, another 761 jobs are forecast to be added throughout the city.

2. An inventory of existing land uses, including digital photos, was completed and the Keizer GIS was updated.

3. Based on the data and photo survey, commercial taxlots were categorized for potential development. For example, "VAC-HI" means that the parcel is vacant with a high probability of being developed in the near future.

4. For most taxlots, the estimate of future employment is based on the taxlot size and the assumed density of employment. However, in Keizer there are special forecasts for a significant number of taxlots, as described below.

    a. Forecasts for Keizer Station (2,195 jobs) and Chemawa Station (300 jobs) are estimated based on Master Plan maps that identify building square footage and use, with concurrence of Keizer staff.
    b. Other special areas, including:
        i. Sports area north of Keizer Station. Keizer staff recommends that the forecast include a future co-generation plant, aquatic center, movie theatre, and limited retail. One hundred twenty jobs are forecasted for these developments.
        ii. Keizer Station Area B. A special area because new road to access Keizer Village will bisect some these properties. Keizer staff recommends adding 261 employees to the forecast.
        iii. Keizer Village (site of Gold's Gym, Goodwill, and others). The redevelopment of this shopping center made it a special area. A total of 149 jobs are forecasted for once the redevelopment is completed.
        iv. The site on north end of Wheatland, including the Marion Rural fire district.
    c. Employment in residential areas.
        i. In the year 2000, there were approximately 650 jobs in the residential areas of Keizer, excluding the schools and their employment. Services make up about half of these jobs, followed by construction jobs, some retail, and some small manufacturing. One hundred twenty six residential jobs are forecasted to be added to a random selection of residential taxlots.
    d. Employment in Mixed Use areas (including Staats Lake, River Road north of Lockhaven, Area C of Keizer Station Plan, and along Cherry Avenue). About 600 of the estimated 800 potential jobs were allocated by 2030.

5. The last step of the Keizer employment forecast was adding the expected year the employment increases would occur. Projects completed since the year 2000 or currently under construction (e.g., Keizer Village) were assumed completed by 2005. Taxlots that Keizer staff had expectations for development in the next few years, plus some other taxlots with a high probability to develop, were assumed completed by 2010.[7] Development beyond 2010 was based on consultation with Keizer staff, and with the attempt to "smooth-out" the employment between the years 2015 and 2030. The employment forecast by year is shown in **Table A-25**. In summary, employment in Keizer is forecast to grow from 3,972 to 8,864 by 2030, with most of that increase occurring by 2015.

1. [7] Keizer Station and Chemawa Station were assigned year 2010, even though both projects may start construction in 2005 or 2006. In the case of Keizer Station, it's reasonable to assume it may take several years –up to the year 2010 – to be fully developed.

Table A-25
Keizer Employment Forecast, 2000 to 2030

Year	Total Employment	Increase
2000	3,972	
2005	4,802	830
2010	7,318	2,517
2015	8,155	837
2020	8,428	273
2025	8,670	242
2030	8,864	194

Allocation of Employment in Salem

In the Salem UGB, Salem staff updated their non-residential land use inventory for a year 2000 base. Using this inventory, taxlots were classified as vacant, underutilized, or available for redevelopment. Special forecasts were prepared for Sustainable Fairview and the Mill Creek area (Salem Regional Employment Center (SREC)). Information about recent changes (new firms, closures, job increases and decreases) -- such as SUMCO and Wachovia -- were factored into the employment forecast.

After classifying the land uses, Salem and SKATS staff developed employment densities to use for the forecast. These densities were applied to vacant and underutilized taxlots based on the Comprehensive Plan of the taxlot. The employment types and densities for vacant and underutilized lots are listed in **Table A-26**. Employment for taxlots using one of the "mix" categories are later broken down into employment sectors (retail, services, etc.). For example, vacant taxlots in the downtown central business district are assumed to develop at a higher density (72.8 jobs per acre) than other commercial areas. This "central area business mix" of new jobs is split into 52 percent retail jobs, 40 percent service jobs, and eight percent finance, insurance, and real estate (F.I.R.E.) jobs, which was based on year 2000 employment in the central business area. Each mix has a unique distribution of employment sectors.

Table A-26
Employment Densities Used for Salem Forecast

ASSUMED EMPLOYMENT DENSITIES		
Employment Types	Density for vacant lots	Density of underutilized lots
Central Business Area Mix	72.8	48.5
Commercial Mix	27.1	18.1
Government Mix	35	23
Industrial Mix	12.8	8.5
Ind-Comm. Mix	15.4	10.3
Office	35	23
Retail	27	18
Service	31	21
F.I.R.E.	35	23
Residential Mix	0.5	n/a

Using the land inventory, employment densities, and employment targets for the Salem-Keizer UGB shown in **Tables A-22 and A-24,** Salem staff developed an employment forecast for the Salem UGB area. The five-year increases in employment for the Salem UGB are shown in **Table A-27**.

Table A-27
Salem UGB Employment Forecast

Year	Total Employment	Increase
2000	85,309	
2005	89,895	4,586
2010	94,199	4,304
2015	99,404	5,205
2020	105,324	5,920
2025	110,297	4,973
2030	115,932	5,635

Employment Allocation for Turner and Remainder of SKATS

Year 2000 Oregon ES-202 employment data was examined for the city of Turner, showing a total of 321 employees. The 2000 Census indicates a total of 489 employed residents living in Turner, but does not give the number of jobs within Turner.

Turner city staff notes the difficulty the city has with generating job growth. Job growth is limited primarily due to Turner's close proximity to Salem, as well as limited commercial land (only 7.5 acres of the city's 34 acres are vacant; 16 acres are in residential use) and development restrictions on industrial land (flooding, wetlands, riparian corridors).

The City Manager of Turner and Turner's Downtown Development Advisory Committee recommended an increase of 50 employees by 2010, another 25 by 2020 and 30 more by 2030. Most of it would be services and retail.

The SKATS area outside the Salem-Keizer UGB has recently seen some declines in employment, notably among the businesses along Highway 22 in Polk County. The assumption for the forecast is that employment will eventually return to the year 2000 levels plus a small increase of 100 jobs, although many of those will be home-based businesses.

Summary of SKATS Employment Forecast and Allocation

The final employment allocations, in five-year increments, for all the jurisdictions in SKATS are shown in **Table A-28**. The final 2030 employment allocations by jurisdiction and employment sector are shown in **Table A-29**. This allocation was a little higher than the year 2030 target employment forecast of **Table A-24,** and the final forecast differed by only a few hundred at most for any sector.

Table A-28
Summary of Employment Forecast by Year and Jurisdiction

	2000	2005	2010	2015	2020	2025	2030
Salem UGB	85,309	89,894	94,199	99,403	105,323	110,296	115,932
Keizer UGB	3,972	4,801	7,318	8,155	8,428	8,670	8,864
Turner UGB	321	346	371	384	396	411	426
Remainder of SKATS in Marion & Polk Counties	2,286	2,301	2,316	2,331	2,351	2,366	2,386
Total SKATS	**91,888**	**97,342**	**104,204**	**110,273**	**116,498**	**121,743**	**127,608**

Table A-29
Summary of 2030 Employment Forecast by Sector

Sector	Salem UGB	Keizer UGB	Turner & Counties	2030 Final Employment Total	SKATS 2030 employment targets (from Table A-24)	Difference
Agriculture, Forestry and Fishing	735	101	818	**1,654**	1,284	(370)
Mining	121	-	39	**160**	160	-
Construction	4,994	480	357	**5,830**	5,882	52
Manufacturing	10,989	130	266	**11,385**	11,254	(131)
Trans., Comm., and Utilities	6,532	92	115	**6,739**	6,626	(113)
Wholesale Trade	2,612	89	281	**2,983**	3,000	17
Retail Trade	22,588	3,818	196	**26,602**	26,841	239
Finance, Insurance and Real Estate	4,657	378	35	**5,070**	5,077	7
Services	31,391	3,018	312	**34,721**	34,859	138
Total Government (includes schools)	31,312	759	394	**32,465**	32,470	5
Total	**115,932**	**8,864**	**2,813**	**127,608**	**127,454**	**(154)**

Appendix B - Travel Characteristics of the Salem-Keizer Region

Current travel characteristics of the residents of the Salem-Keizer area are presented in this appendix. Sources for this information include the 2000 U.S. Census, the 1994-95 Salem-Keizer Household Survey, the 1994 SKATS Origin-Destination Study, outputs from the SKATS travel demand model for the base year of 2000, and data from other agencies such as Salem Area Mass Transit District and Amtrak. The data presented will allow the reader to gain an understanding of the recent patterns that have characterized travel in the Salem-Keizer area. All modes are represented. A reminder to the reader: the data used in this document represents, in some cases, conditions that existed five or ten years ago. In those cases, although some households and businesses have relocated and there have been some changes to the street and transit system over the last ten years, many of the overall trends are likely to be similar.

Aviation

Table B-1
Flights Using McNary Field

Year	Total	Growth
1992	61,754	
1993	56,630	-8.3%
1994	57,455	1.5%
1995	57,790	0.6%
1996	58,556	1.3%
1997	56,289	-3.9%
1998	52,022	-7.6%
1999	50,112	-3.7%
2000	49,241	-1.7%
2001	48,985	-0.5%
2002	50,497	3.1%
2003	48,857	-3.2%
2004	43,920	-10.1%
2005	51,488	17.2%
2006 – first six months	27,804	

As shown in **Table B-1**, the total number of flights out of McNary Field has been decreasing steadily over the past five years with a downward trend extending back eight years. This can be attributed to two events. First, regularly scheduled commercial passenger flights ended in 1994. Second, 1998 was the last year of operation for the gambling excursion charter flights that had been flying to the Nevada casinos. There are no known plans by any commercial airline to resume service to Salem within the planning horizon of the RTSP (2031). Currently, airport

operations are dominated by flights by private business jets, personal aircraft, and military airplanes.

Rail

Table B-2
Amtrak Station Boardings

Year	Passengers	Growth
FY 1985	28,996	
FY 1986	29,201	0.7%
FY 1987	27,360	-6.3%
FY 1988	26,986	-1.4%
FY 1989	24,714	-8.4%
FY 1990	25,155	1.8%
FY 1991	26,391	4.9%
FY 1992	25,480	-3.5%
FY 1993	21,959	-13.8%
FY 1994	20,005	-8.9%
FY 1995	32,779	63.9%
FY 1996	32,409	-1.1%
FY 1997	37,249	14.9%
FY 1998	41,963	12.7%
FY 1999	45,839	9.2%
FY 2000	47,576	3.8%
FY 2001	58,860	23.70%
FY 2002	52,375	-11.0%
FY 2003	52,512	0.3 %
FY 2004	51,737	-1.5%
FY 2005	50,505	-2.4%

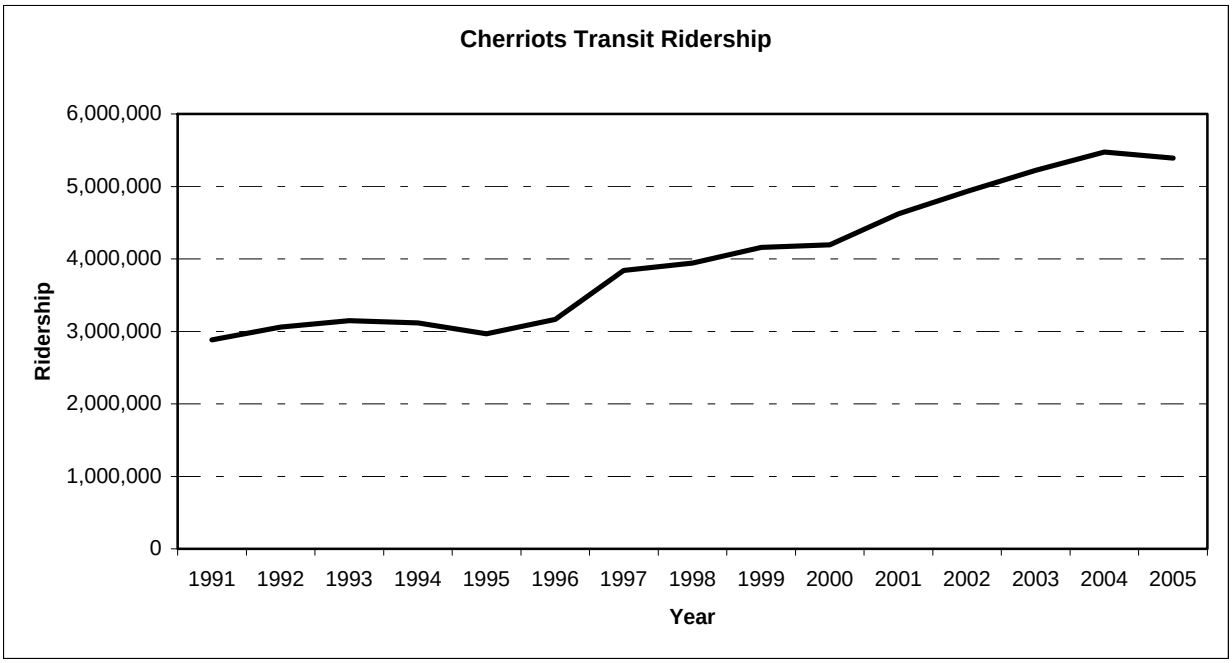
Salem is located in the Cascadia Corridor, a federally recognized high-speed rail corridor that extends from Eugene, Oregon to Vancouver, British Columbia. As illustrated in **Table B-2**, passenger boardings at the Salem Amtrak Station steadily decreased between 1984 and 1994 due to funding issues and lack of equipment. Since 1994, passenger boardings at the Salem Amtrak Station have more than doubled. Since 1985, the average annual growth rate seen at the station has been four percent, while in the last decade it has been six percent. Since 2002, the trend has been downward, most likely due to delays on the corridor caused by increased freight demand, as well as issues related to lack of equipment and personnel that affect the ability of the Union Pacific to meet the demand. Previously, the driving force for the increase in ridership had been the addition of new equipment and revised service on the corridor beginning in 1994. As one of the nation's high-speed rail corridors, it is anticipated that travel will further increase as service improvements are made and the tracks are built to allow faster service along the corridor. The numbers also account for travel on Amtrak's long distance train, the Coast Starlight, which travels from Seattle to Los Angeles, and for boardings on the Thruway buses, which also travel in the I-5 corridor between Portland and Eugene. The Amtrak station is currently accessible to people via bike lanes, taxis, and automobile, with a Cherriots stop nearby.

Transit

Table B-3
Cherriots Transit Ridership

Year	Yearly	Average Daily
1991	2,882,512	N/A
1992	3,059,723	N/A
1993	3,148,726	N/A
1994	3,115,611	N/A
1995	2,965,656	N/A
1996	3,166,305	11,058
1997	3,839,972	13,325
1998	3,941,948	13,800
1999	4,157,421	13,725
2000	4,194,574	14,412
2001	4,622,046	N/A
2002	4,933,000	N/A
2003	5,225,000	N/A
2004	5,474,886	18,776
2005	5,392,202	17,125

Figure B-1
Cherriots Transit Ridership



Yearly ridership on Cherriots has been increasing since 1995, with an overall upward trend since 1991, as shown in **Table B-3** and **Figure B-1**. In the decade since 1991, the average annual growth rate is 3.8 percent, although it has slowed as of late. Numerous expansions in service have occurred

during this decade, from extending bus routes into new areas of the urbanized area to running the buses more frequently. Additionally, the inception of service on weekends and in the evening hours allowed more people the option of using transit as its availability and convenience increased. Programs designed to encourage people to take transit to work, such as employers providing reduced or free bus passes, have also contributed to the increasing ridership. Finally, increases in the price of gasoline since 2003 have likely assisted in the increase.

Table B-4
CARTS Ridership

	Number of Riders				
Route	**2001-2002**	**2002-2003**	**2003-2004**	**2004-2005**	**2005-2006**
North County	19,558	17,898	16,082	14,041	15,926
North County Dial A Ride	9,694	6,969	6,029	5,629	4,894
Polk County	53,060	51,093	43,196	39,919	40,110
Polk County Dial A Ride	8,163	4,314	4,230	5,685	9,943
South Canyon Connector	6,655	6,486	7,738	10,685	12,747
South Dial A Ride	9,105	4,844	3,865	3,694	3,391
Silverton Trolley	9,054	8,622	9,252	8,689	8,749
City of Woodburn	37,493	38,337	44,810	35,935	30,707
Salem/Keizer Urban Dial A Ride	68,913	68,221	60,185	65,577	90,485
Cherrylift (ADA)	62,059	73,573	89,124	105,836	111,321
Totals	**283,754**	**280,357**	**284,511**	**295,865**	**328,273**

The Chemeketa Area Regional Transportation System (CARTS) is a recently formed ORS 190 agency. It provides regional planning and support for transportation services for elderly and disabled persons as well as the general public in a three-county area (**Table B-4**). The North County route connects Salem, Brooks, Gervais, Woodburn, and Hubbard. The Canyon Connector links Salem with Turner, Aumsville, Stayton, Sublimity, Mehama, Lyons, Mill City, and Gates. Polk County communities are served by one route, with buses starting in Dallas and following either Highway 22 to Rickreall and Salem or traveling through Monmouth and Independence to Salem.

Carpool / Vanpool / Commuter Bus

Table B-5
Rideshare Database

Fiscal Year	Applications	Updates	Totals	No. in DB at end of Year
1998-9	520	359	879	NA
1999-0	603	428	1031	NA
2000-1	602	372	974	NA
2001-2	308	460	768	NA
2002-3	916	632	1548	1193
2003-4	670	649	1319	1549
2004-5	987	425	1412	2215
2005-2006*	690	190	880	2760

*July 1 2005 to June 1 2006.

Beginning in 1997, the Regional Rideshare Program was initiated to provide a central repository of information for commuters in and coming to the Salem-Keizer area. Services provided by the program include matching prospective carpool riders with drivers, listing the vanpools and commuter buses that service the area, and signing on businesses to provide transit passes and other incentives to their employees for commuting via a mode other than driving alone. The numbers in **Table B-5** represent carpool applicants that used the program to find a ride or rider, and do not represent actual formed carpools. It likely understates the number of people carpooling, as it is not necessary to register a carpool. As an incentive to encourage carpools, the city of Salem provides 328 on-street parking spaces for carpools and six spaces for vanpools. The Regional Rideshare Program tracks twenty-six vanpools and two commuter buses. These carry an average of 450 passengers per day. For those that commute via a van or bus pool, the average daily round trip distance is 82 miles. For those that commute via a shared ride or carpool, the average daily round trip distance is 42 miles

In the Salem-Keizer urban area, twelve park-and-ride lots provide approximately 675 parking spaces. Salem–Keizer Transit District express buses serve three of the park-and-ride sites (Wallace Road, Market Street, and South Commercial), linking them with the employment areas in the downtown and Capitol Mall area. Four additional park-and-ride lots are located outside of the metropolitan area, with one of the lots served by a CARTS route. These lots can hold approximately 144 vehicles. During a recent count, the park-and-ride lots in the urbanized area had 304 cars, while 30 vehicles were parked at the rural lots. The location of these park-and-ride lots is listed in **Table 13-2** and shown on **Map 13-1.**

Bicycle

Table B-6
Bike Locker Rentals

Year	Rented	Total
1997	7	26
1998	11	26
1999	13	26
2000	17	26
2001	15	26
2002	15	30
2003*	13	32
2004*	12	32
2005*	13	32
2006 half	19	32

*October 2003 till October 2005: Six lockers unrentable due to construction at Chemeketa Parkade.
Note: Four lockers located at the Olinger Pool are available for staff use only.

Since the adoption of the 1996 RTSP, 26 bicycle lockers and at least 109 bike racks have been installed in downtown Salem. Bike lockers provide commuting cyclists with a secure location to park their bikes and other equipment while they are downtown (**Table B-6**). These lockers are rented for a nominal fee through the Regional Rideshare Program. Bike lockers and racks

are one part of a system to encourage people to bicycle to work or the store. Safe and convenient routes are also necessary. When built out, the regional bicycle system will be composed of 174 miles of bike lanes, bike routes, and off-road bike paths linking the regional employment and shopping areas with the residential areas. Progress on completing the bike system is being steadily made as roads are built or modified to include bike lanes on arterials and collectors that are part of the regional road network. Currently, SKATS has no means of ascertaining the usage of the existing bike lanes and bike racks, nor to track the installation of bike racks outside of downtown Salem. The travel demand model provides the only estimates and forecasts of bicycle usage in the area.

Table B-7
Bikes on Buses

Year / Season	Average Bikes
1994 Summer	18
1995 Winter	11
1995 Summer	25
1996 Winter	19
1996 Summer	32
1997 Winter	46
1997 Summer	66
1998 Winter	49
1998 Summer	79

In 1994, Salem-Keizer Transit District (Cherriots) began installing bike racks on their buses. Racks on buses allow travelers to bicycle to a bus stop, travel a longer distance via bus, and then be able to bike to their destination, or have the bike available during the day. Use of this feature has increased over the years as more people became aware of the program and more of bus fleet has been outfitted with the racks (**Table B-7**). Data for years after 1998 is not available due to limitations in the fare boxes used on the buses.

Automobile

Table B-8
Traffic on Willamette River Bridges

Year	Average Daily Traffic	Growth Rate
1981	44,898	
1982	45,250	0.8%
1983	46,500	2.8%
1984	47,250	1.6%
1985	47,658	0.9%
1986	51,486	8.0%
1987	54,790	6.4%
1988	57,375	4.7%
1989	58,003	1.1%
1990	61,280	5.6%
1991	62,634	2.2%
1992	65,976	5.3%
1993	68,179	3.3%
1994	70,590	3.5%
1995	73,509	4.1%
1996	75,605	2.9%
1997	78,016	3.2%
1998	79,677	2.1%
1999	81,402	2.2%
2000	80,956	-0.5%
2001	82,600	2.0%
2002	84,900	2.8%
2003	85,000	0.1%
2004	84,212	-0.7%
2005	86,727	3.0%

Growth Rate	
1981-1985	
1985-1990	4.1%
1990-1995	3.8%
1995-2000	3.0%
2000-2005	1.4%

One of the measures of automobile usage in the Salem-Keizer area is the travel over the Willamette River bridges. The bridges link not only the two parts of Salem but also provide a route between the coast and Polk and Yamhill county communities with the eastern side of the valley and the Cascades. Travel on the bridges had been increasing until 2000, when the automatic traffic counters recorded a slight decrease. As can be seen in **Table B-8** above, the average annual growth rate for travel over bridges peaked in 1986 and has ranged from two percent to five percent since 1990.

Table B-9
Survey Results: 1994-1995 Daily Trip Percent by Mode and Purpose

	Home-Work	Home-Other	Home-Rec.	Home-Shop	NonHomeWork	NonHomeOther
Drive Alone	72.3	35.4	31.0	43.6	68.8	32.9
Drive w/ Rider	11.4	25.8	15.8	21.2	6.8	28.6
Passenger in Car	7.1	30.7	37.7	27.2	9.2	30.7
Bus	4.6	0.7	1.0	2.2	0.6	0.04
Bike	1.6	1.1	2.1	0.7	0.4	0.2
Walk	3.0	6.3	12.4	5.1	14.2	7.6
Total	100.0	100.0	100.0	100.0	100.0	100.0

The results from the 1994-1995 Household Activity Survey are shown in **Table B-9**. During a two-day period, 1,520 households were asked to record any activity performed by any member of the household that lasted more than 30 minutes. The results show that the majority of trips taken by the survey respondents, regardless of purpose, were via private vehicles and usually were drive-alone trips.

Table B-10
2000 Mode Choice by Time of Day

	AM Peak		PM Peak		Daily	
Drive Alone	39,226	58.8%	41,843	50.4%	381,747	47.2%
Drive w/ Passenger	12,382	18.6%	15,518	18.7%	159,920	19.8%
Passenger in Car	8,058	12.1%	17,516	21.1%	186,047	23.0%
Transit	3,912	5.9%	1,680	2.0%	15,028	1.9%
Bike	457	0.7%	698	0.8%	6,534	0.8%
Walk	2,635	4.0%	5,698	6.9%	59,528	7.4%

The A.M. peak hour (7-8:00 A.M.) represents the classic home-to-work trip. The majority of these trips are carried out via the automobile, with drive alone as the dominant mode. The P.M. peak has a wider variety of trip purposes, from work to home, shopping, and recreational trips. The SKATS travel demand model is derived from the household survey. This tool, along with assumptions on anticipated land use, as well population and employment figures, provides SKATS with a method to estimate travel patterns in the future. Results from this model are presented in **Table B-10**. For weekdays, the percent of trips by purpose for the peak periods and daily is shown in **Table B-11** below. This shows that work trips make up 16.5 percent of the total trips in the A.M. peak period. This data is derived from the 1994-1995 Household Activity Survey. Note that while the percentage of school and university trips is high in the A.M. period, the total number of trips for these two purposes is still less than the number of work trips.

Table B-11
Percent of Home Based Trips by Time Period

	AM	PM	Daily
Work	16.48	14.3	17.7
Shop	0.69	10.4	12.6
Recreation	2.59	9.35	16.9
Other	3.76	9.79	17.7
School	19.49	2.71	11.8
University	11.05	7.18	1
Percent of Daily	6.77	9.51	

The journey to work, and the congestion usually associated with the morning and evening commute hours, has typically been one of the leading factors driving the expansion of the road network and the provision of transit service. In **Table B-12** below, you can see that the percentage of home-to-work trips that are made by the private vehicle has increased since 1980.

Table B-12
Travel to Work

	Census Results				Model
	1970	1980	1990	2000	2000
Drive Alone	75	65.9	73.3	73.8	75.4
Carpool	10	19.5	15.2	14.6	18
Motorcycle	N/A	0.9	0.3	0.1	n.a.
Bus	2	3	1.4	1.9	3.7
Bike	N/A	1.1	0.8	0.7	1.1
Walk	9	5.8	4	3.3	1.8
Work at home	N/A	3.1	4.2	4.9	n.a.
Other	4	0.7	0.8	0.6	n.a.

Also presented in the table are SKATS travel demand model results for the year 2000. This model is calibrated to the 1994-1995 Salem-Keizer Household Activity Survey data. There is a caveat to keep in mind when comparing data from the Census with survey and model results. First, the data for the survey and the model represent internal trips only; that is, trips that begin and end within the Salem-Keizer urban area. Extensive analysis of data from the survey revealed that the majority of carpools are composed of family members going to two employment locations. Nationwide trends based on the 2000 U.S. Census show that carpool use decreased from 13 percent in 1990 to 11.4 percent in 2000.

Appendix C – Data Sources for Cultural, Environmental, and Historical Resources

Data	Category	Agency	Format	Contact	Notes / websites
Natural Resource information	All	EPA	Website		http://oaspub.epa.gov/enviro/ef_home2.maps
Goal 5 Inventory	All	Keizer	Database	Nate Brown	
Natural Resource information	All	NRCS	Website		http://datagateway.nrcs.usda.gov/
Goal 5 Inventory	All	Salem	Database		
Salem Area Watersheds Assessment	All	Salem Area Watershed Councils	Documents	Marion SWCD	Mill Creek just approved as watershed council
Goal 5 Inventory	All	Turner	Database	David Sawyer	
Wildlife Conservation Strategy	Conservation Opportunity Areas	ODFW	Maps/Lists	Matt Lawhead	GIS layer not helpful, plan shows only Willamette floodplain for SKATS area
Heritage Trees	Cultural Resources	Salem	Map digital		
Key views and scenic areas	Cultural Resources	Salem	Map digital		
Goals 3&4 inventories	Farm and Forest	Keizer	Map	Nate Brown	
Goals 3&4 inventories	Farm and Forest	Marion	Map		
Goals 3&4 inventories	Farm and Forest	Polk	Map	Austin McGuigan	
Goals 3&4 inventories	Farm and Forest	Turner	Map		
Fish Passage Barriers-Conservation Strategy	Fish	ODFW	Map	Matthew Lawhead	
Fish Passage Barriers-District bio	Fish	ODFW	Map	Tom Stall	
Restoration Projects	Fish and Wildlife	OWEB	Map/Database	Bobbi Riggers	Completed and grant funding in-progress projects
Fish bearing streams	Fish and Wildlife	Salem	Map digital		
100 year floodplain	Floodplains	FEMA	Maps		
Protecting Floodplain Resources	Floodplains	FEMA	Book		
Goal 15	Floodplains	Keizer	Plan	Nate Brown	
Goal 15	Floodplains	Marion	Plan		
Goal 15	Floodplains	Polk	Plan	Austin McGuigan	
Willamette Greenway	Floodplains	Salem	Map digital		
Goal 15	Floodplains	Turner	see Marion County		
Restoration Projects	Habitat	OWEB	Map/database	Bobbi Riggers	Completed and grant funding in-progress projects
Earthquake zones	Hazards	DOGAMI	Map digital		
Goal 7 inventories	Hazards	Keizer	Map	Nate Brown	
Goal 7 inventories	Hazards	Marion	Map		
Goal 7 inventories	Hazards	Polk	Map	Austin McGuigan	
Earthquake hazard	Hazards	Salem	Map digital		
Landslides	Hazards	Salem	Map digital		
Slopes	Hazards	Salem	Map digital		
Unstable slopes	Hazards	Salem	Map digital		
Goal 7 inventories	Hazards	Turner	see Marion County		
Restricted Activity Zones	High Priority Sites	ODOT	Map/Document		This is one part of the RAZ/RES entry
Restoration Opportunity Areas	High Priority Sites	PNWERC	Map	Allan Branscomb	Grid format challenging for COG GIS

Data	Category	Agency	Format	Contact	Notes / websites
					use
Ecoregional Assessment	High Priority Sites	The Nature Conservancy	Map	Cathy MacDonald	
Cultural Resources Inventory	Historic Sites	Keizer		Nate Brown	
Cultural Resources Inventory	Historic Sites	Marion			
Sites on Historic Register	Historic Sites	Park Service, State Historic Preservation	List/map		
Cultural Resources Inventory	Historic Sites	Polk		Austin McGuigan	
Cultural Resources Inventory	Historic Sites	Salem		Judith Moore	
Historic Buildings	Historic Sites	Salem	List / Map digital	SHPO	
Historic sites	Historic Sites	Salem	List		http://www.cityofsalem.net/export/departments/scdev/cityplan/historic/Historic_Properties_List.pdf
Prehistoric inventory	Historic Sites	Salem	Document		
Pre-historic Sites	Historic Sites	SHPO			
Cultural Resources Inventory	Historic Sites	Turner			
Cultural Resources Inventory	Historic/prehistoric sites	ODOT	Map digital	Carolyn McAleer	Recommends hiring contractor to develop inventory and planning strategy
Facilities requiring land use exceptions	Land use	COG	Map		
Restricted Activity Zones / Resource maps	Maintenance	ODOT	Map	Region 2 PC member	These maps break down each ODOT highway into small sections to inform the maintenance workers of areas they need to be careful based on various criteria.
Wetland Mitigation Banking Guidance	Mitigation	DSL	Document	Dana Field	http://www.oregon.gov/DSL/PERMITS/docs/mitbank_guidebk.pdf
Ecosystem Marketplace-US Conservation Banking	Mitigation	Katoomba Group	Status summary		http://ecosystemmarketplace.com/pages/marketwatch.backgrounder.php?market_id=1&is_aggregate=0
Ecosystem Marketplace-US Wetland Banking	Mitigation	Katoomba Group	Status summary		http://ecosystemmarketplace.com/pages/marketwatch.backgrounder.php?market_id=4&is_aggregate=0
Ecosystem Marketplace-Stream banking	Mitigation	Katoomba Group Summary	Status summary		
Summary of mitigation by agency	Mitigation	Salem/Keizer/Marion/ODOT	Interviews		
Habitat mitigation policy	Mitigation Policy	ODFW	Text	Nancy Taylor	Need thorough habit/species inventory for SKATS area
Wetland Mitigation Banks	Mitigation, Wetlands	DSL	Map	Dana Field	http://www.oregon.gov/DSL/PERMITS/mitbank_status.shtml
Prior wetland mitigation sites	Mitigation, Wetlands	DSL/McCabe	paragraph	Mike McCabe	
Conservation Banks	Mitigation/Endangered Species	ODOT	Description	Bill Warnke	
Roadcut Planting Plans/Policy	Native Plants	ODOT	Plan/Policy		
Willamette Subbasin Plan	Priority Actions/Habitat	BPA	Document	David Primozich	
Sites receiving 6(f) (3)Conservation funds	Recreation	Parks	List	Marilyn Lippencott	http://waso-lwcf.ncrc.nps.gov/public/index.cfm
National recreation areas	Recreation		Map/list		
Potential 4 (f) resources	Recreation		Map/list		Need to check with state and local parks departments
Scenic roads/byways	Scenic Resources	FHWA	N/A		
Scenic roads/byways	Scenic Resources	Interior	Maps		
Scenic roads/byways	Scenic Resources	ODOT	List		
Published County Soils maps	Soil	NRCS	Maps		http://soils.usda.gov/survey/

Data	Category	Agency	Format	Contact	Notes / websites
Soil Surveys	Soil	NRCS	Maps		http://websoilsurvey.nrcsusda.gov/app/
Bird habitats	Specific Habitats	American Bird Conservancy	Strategy document	Bob Altman	http://community.gorge.net/natres/pif/con_plans/west_low/west_low_plan.html Recommends retaining all large oak trees living or dead and using road right of way as grassland bird habitat.
Oak Habitats	Specific Habitats	OSU Extension	Map/list		
Important birding areas	Specific Habitats	Salem Audubon	List/Map	Sue	
Category I Resources	Specific Habitats	ODFW	Map	Nancy Taylor	Irreplaceable resources such as bogs and old growth
Stormwater Management Plan	Stormwater	Keizer	Document		Approved by DEQ, reassembling task force for TMDL and fee request
Green Streets Guide	Stormwater	Metro	Book	Portland Metro	Available via their website.
Stormwater Management Plan	Stormwater	Salem	Document		
Stormwater Management Plan	Stormwater	Turner	Document		
Tree canopy study	Stormwater and habitat	Salem	Aerial map/document		
TMDL	Water Quality	DEQ	Document		
Water Quality Limited bodies (303d)	Water Quality	DEQ			
Removal Fill Law and Navigable waters	Water Quality	DSL/McCabe	Paragraph	Mike McCabe	
TMDL Plan	Water Quality	Keizer	Document		
Stormwater Best Management Practices	Water Quality	Marion	Plan		
TMDL Plan	Water Quality	Marion	Plan		
TMDL	Water Quality	Polk			
Creeks	Water Quality	Salem	Map digital		
Stormwater Permit sample	Water Quality	Salem	Document	Sam Kidd	
TMDL Plan	Water Quality	Salem	Plan	Nitin Joshi and Sam Kidd	
Stormwater Phase2	Water Quality	Turner			
TMDL Plan	Water Quality	Turner	Document		
Routine Road Maintenance	Water Quality and Habitat	ODOT	Document		
Local Wetland Maps	Wetlands	COG	Map digital		http://www.oregon.gov/DSL/WETLAND/lwi.shtml
Federal Wetland Maps	Wetlands	DSL,USFWS	Map		http://www.oregon.gov/DSL/WETLAND//nwi.shtml or http://wetlandsfws.er.usgs.gov/NWI/download.html
Wetland and Riparian Plan	Wetlands	Turner	Plan		
Historic Vegetation	Wildife	Salem	Map digital		
Parks/Golf courses	Wildife	Salem	Map digital	Willamette Explorer	Have parks, not golf courses
Wildlife hot spot incident locations	Wildlife				
COA Transportation strategies by MPO	Wildlife	ODFW	Document	Nancy Taylor	Need thorough habit/species inventory for SKATS area
Sensitive species	Wildlife	Oregon Natural Heritage Information Center		Eric Scheuering, Zoologist/Data Manager	
Wildlife refuges local	wildlife	Salem	Map digital		Brown's and Minto managed by Marion and Salem
Wildlife refuges national	Wildlife	USFWS	Maps		
Road Kill Addresses	Wildlife	Keizer	List		
Road Kill Addresses	Wildlife	Marion	List		

Data	Category	Agency	Format	Contact	Notes / websites
Road Kill Addresses	Wildlife	ODOT	List/map	Jeff Sorenson	Discussion w/ ODOT reveals that the data is not collected
Road Kill Addresses	Wildlife	Polk	List		
Road Kill Addresses	Wildlife	Salem	List		
Road Kill Addresses	Wildlife	Turner	List		
Species list	Wildlife	USFWS	List		
Wildlife Friendly Transportation Plans	Wildlife crossing guides	Defenders of Wildlife	Book	Sara Vickerman	http://www.transact.org/library/reports_pdfs/Biodiversity/recommendations.pdf
Oregon Comprehensive Wildlife Strategy	Wildlife crossing guides	ODFW	Strategy CD	Holly Michael	
Category 1 resources	Wildlife/fish	ODFW	Map digital	Nancy Taylor	Need thorough habit/species inventory for SKATS area
GAP data	Wildlife/Fish	ORNHIC	Map digital	Eric Scheuering, Zoologist/Data Manager	
Recovery Plans/Conservation Plans	Wildlife/Fish	USFWS			http//ecos.fws.gov/tess_public/SpeciesRecovery.do?sort=1
Designated Critical Habitat	Wildlife/fish	USFWS/NOAA Fisheries	Map		
Endangered Species Recovery Plans	Wildlife/fish/plants	NOAA	Plan	Tom Loynes	http://ecos.fws.gov/tess_public/speciesrecovery.do?sort=1
Endangered/Threatened Species	Wildlife/fish/plants	USFWS/NOAA Fisheries	List		

Appendix D - Acronyms and Terms Used in this Document

This appendix includes many of the acronyms that are related to transportation planning. An attempt has been made to spell out all acronyms as they are used in the document. In addition, for many of the terms used, additional detail is provided.

Transportation Planning Acronyms & Terms

ADA: Americans with Disabilities Act. The legislation defining the responsibilities of and requirements for transportation providers to make transportation accessible to individuals with disabilities.

ADT: Average Daily Traffic.

AQCD: Air Quality Conformity Determination. The process to assess the compliance of any transportation plan, program, or project with air quality implementation plans. The conformity process is defined by the Clean Air Act.

Attainment Area: An area considered to have air quality that meets or exceeds the U.S. Environmental Protection Agency (EPA) health standards used in the Clean Air Act. Nonattainment areas are areas considered not to have met these standards for designated pollutants. An area may be an attainment area for one pollutant and a nonattainment area for others.

AVL: Automatic Vehicle Location. Typically used in transit buses, provides a mechanism to determine the location of each equipped bus. This information can be used to implement real-time transit arrival information at stations and on the web.

Bikeway: A facility designed to accommodate bicycle travel for recreational or commuting purposes. Bikeways are not necessarily separated facilities; they may be designed and operated to be shared with other travel modes.

CAAA: Clean Air Act Amendments. The original Clean Air Act was passed in 1963, but the national air pollution control program is actually based on the 1970 version of the law. The 1990 Clean Air Act Amendments are the most far-reaching revisions of the 1970 law. The 1990 Clean Air Act is the most recent version of the 1970 version of the law. The 1990 amendments made major changes in the Clean Air Act.

CAC: Citizen's Advisory Committee.

CBD: Central Business District.

CMAQ: Congestion Mitigation & Air Quality Improvement Program.

CMP: Congestion Management Program. Systematic process for managing congestion. Provides information on transportation system performance and finds alternative ways to alleviate congestion and enhance the mobility of people and goods, to levels that meet state and local needs. Formally known as the Congestion Management System, the term was changed in the SAFETEA-LU legislation.

CNG: Compressed Natural Gas.

CO: Carbon Monoxide.

CTPP: Census Transportation Planning Package.

DEQ: Department of Environmental Quality.

DLCD: Department of Land Conservation & Development (State of Oregon).

EIS: Environmental Impact Statement. Report developed as part of the National Environmental Policy Act requirements, which details any adverse economic, social, and environmental effects of a proposed transportation project for which federal funding is being sought. Adverse effects could include air, water, or noise pollution; destruction or disruption of natural resources; adverse employment effects; injurious displacement of people or businesses; or disruption of desirable community or regional growth.

EMME/2: Software that is used for planning the urban and regional transportation of people through transportation demand modeling and network analysis and evaluation.

EMP: Expressway Management Plan.

EPA: Environmental Protection Agency.

EPRS: Enhanced Passenger Rail Service.

FHWA: Federal Highway Administration.

FRA: Federal Railroad Administration.

FTA: Federal Transit Administration.

GIS: Geographic Information System.

HOV: High-Occupancy Vehicle (carpool, train, bus, etc.).

IGA: Intergovernmental Agreement.

ISTEA: Intermodal Surface Transportation Efficiency Act. Signed into law in 1991, valid 1991 to 1997. Federal legislation that provides funding and regulations for transportation planning using federal funds in metropolitan areas. Legislative initiative by the U.S. Congress that restructured funding for transportation programs. ISTEA authorized increased levels of highway and transportation funding from FY 92-97 and increased the role of regional planning commissions/MPOs in funding decisions. The Act also required comprehensive regional and

statewide long-term transportation plans and places an increased emphasis on public participation and transportation alternatives.

ITS: Intelligent Transportation System. The application of advanced technologies to improve the efficiency and safety of transportation systems.

Land Use: Refers to the manner in which portions of land or the structures on them are used, i.e., commercial, residential, retail, industrial, etc.

Land Use Plan: A plan that establishes strategies for the use of land to meet identified community needs.

LOAC: Local Officials Advisory Committee.

LOS: Level of Service. A qualitative assessment of a road's operating conditions used by transportation officials which reflects the relative ease of traffic flow on a scale of A to F, with free-flow being rated LOS-A and congested conditions rated as LOS-F.

Metropolitan Planning Area: The geographic area in which the metropolitan transportation planning process required by 23 U.S.C. 134 and section 8 of the Federal Transit Act (49 U.S.C. app. 1607) must be carried out.

MPO: Metropolitan Planning Organization (such as SKATS). 1) Regional policy body, required in urbanized areas with populations over 50,000, and designated by local officials and the governor of the state. Responsible in cooperation with the state and other transportation providers for carrying out the metropolitan transportation planning requirements of federal highway and transit legislation. 2) Formed in cooperation with the state, develops transportation plans and programs for the metropolitan area. For each urbanized area, a Metropolitan Planning Organization (MPO) must be designated by agreement between the Governor and local units of government representing 75% of the affected population (in the metropolitan area), including the central cities or cities as defined by the Bureau of the Census, or in accordance with procedures established by applicable State or local law (23 U.S.C. 134(b)(1)/Federal Transit Act of 1991 Sec. 8(b)(1)). (FHWA2).

MWACT: Mid-Willamette Valley Area Commission on Transportation.

MWVCOG: Mid-Willamette Valley Council of Governments.

NAAQS: National Ambient Air Quality Standards.

NEPA: National Environmental Policy Act of 1969.

NHS: National Highway System.

NO_2: Nitrogen Dioxide.

O & D: Origin and Destination.

ODOT: Oregon Department of Transportation.

OMAP: Oregon Medical Assistance Program.

OTP: Oregon Transportation Plan. Long-range transportation plan produced by ODOT.

Paratransit: Comparable transportation service required by the American Disabilities Act for individuals with disabilities who are unable to use fixed route transportation systems.

PC: Policy Committee. Committee that represents the legal embodiment of the SKATS MPO. Determines policy direction and allocation of federal funds received by the MPO. Comprised of representatives from the local jurisdictions and organizations.

P & E: Population and Employment.

PIP: Public Involvement Plan. Superseded by the Public Participation Plan (PPP).

PL: Metropolitan Planning Funds (federal money provided to the MPO). Primary source of funding for metropolitan planning designated by the FHWA.

PEA: Planning Emphasis Area.

PM-10: Particulate Matter (less than 10 micrometers).

PPP: Public Participation Plan. Document that details the public involvement process in regards to the plans developed by SKATS. Replaces the PIP and is required by federal legislation, SAFETEA-LU.

RBS: Regional Bicycle System. One component of the regional transportation network.

RTSP: Regional Transportation Systems Plan. Long-range (20+ year) plan identifying all transportation modes in an urban area. Required by federal transportation legislation.

SAFETEA-LU: Safe Accountable Fair Efficient Transportation Equity Act – A Legacy Act for Users. Signed into law in August 2005, valid 2005 to 2009. Federal legislation that provides funding and regulations for transportation planning using federal funds in metropolitan areas.

SIP: State Implementation Plan for Air Quality.

SKATS: Salem-Keizer Area Transportation Study. The metropolitan planning organization for the Salem-Keizer-Turner urban area.

SKTD: Salem Keizer Transit District. Also uses the acronym SKT. Provides public transportation services in the Salem-Keizer urban area.

SOV: Single-Occupant Vehicle.

SPR: State Planning & Research.

STIP: State Transportation Improvement Program. A staged, multi-year, statewide, intermodal program of transportation projects, consistent with the statewide transportation plan and planning processes as well as metropolitan plans, **TIP**s, and processes.

STP: Surface Transportation Program. Federal-aid highway funding program that funds a broad range of surface transportation capital needs, including many roads, transit, sea and airport access, vanpool, bike, and pedestrian facilities.

STP-U: Surface Transportation Program – Urban. Federal funding program. See **STP**.

TAC: Technical Advisory Committee. Committee composed of staff members from the member jurisdictions and agencies of SKATS. Provides oversight on technical matters to SKATS staff.

TAZ: Transportation Analysis Zone. Used to partition an area into smaller, more manageable geographic areas to facilitate determining the traffic demand when modeling.

TCM: Transportation Control Measure.

TDM: Transportation Demand Management. Programs designed to reduce demand for transportation through various means, such as the use of transit and of alternative work hours.

TDP: Transit Development Program.

TEA-21: Transportation Equity Act for the 21st Century. Signed into law in June 1998, valid 1998 to 2003. Authorized in 1998, TEA-21 authorized federal funding for transportation investment for fiscal years 1998-2003. Approximately $217 billion in funding was authorized, which was used for highway, transit, and other surface transportation programs.

TGM: Transportation & Growth Management (joint **ODOT/DLCD** grant program).

TIP: Transportation Improvement Program. A document prepared by a metropolitan planning organization that lists projects to be funded with **FHWA/FTA** funds for the next one- to three-year period.

TMA: Transportation Management Area. 1) All urbanized areas over 200,000 in population, and any other area that requests such designation. 2) An urbanized area with a population over 200,000 (as determined by the latest decennial census) or other area when TMA designation is requested by the Governor and the **MPO** (or affect local officials), and officially designated by the Administrators of the **FHWA** and the **FTA**. The TMA designation applies to the entire metropolitan planning area(s). (23 CFR 500)

TMA: Transportation Management Association.

TOD: Transit Oriented Development.

TPR: Transportation Planning Rule (implementing State Land Use Goal 12).

TSM: Transportation Systems Management. Programs to optimize the use of the existing transportation infrastructure.

TSP: Transportation Systems Plan. Long-range transportation plan identifying and guiding transportation projects in an area. Each city, county, and MPO produces a TSP. Update frequencies depend on the individual jurisdiction or organization.

UGB: Urban Growth Boundary. A UGB is a legal boundary that separates rural areas from urban areas. UGBs are designed to encourage development in existing urban areas and preservation of land outside the boundary. Each city or metropolitan area in Oregon has an UGB defined.

UPWP: Unified Planning Work Program.

Urbanized Area: Area that contains a city of 50,000 or more population plus incorporated surrounding areas meeting size or density criteria as defined by the U.S. Census.

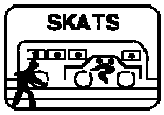
USDOT: United States Department of Transportation.

V/C: Volume/Capacity Ratio. Common output from travel demand modeling software, this provides the ratio of the demand, or volume, on a roadway segment to the defined carrying capacity of that segment. This ratio provides another means of determining how the regional road network is operating. Ratios above 1.0 are considered to represent gridlock.

VISUM: Computerized Transportation Modeling Software.

VMT: Vehicle Miles of Travel.

WTW: Welfare to Work.



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