

CURRENT & FUTURE TRANSPORTATION CONDITIONS

1.1 INTRODUCTION

The purpose of this chapter is to provide an overview of the current and future transportation system conditions in the Salem-Keizer Metropolitan Area, and develop an inventory of the physical infrastructure, operational characteristics, traffic safety elements, and travel characteristics of the transportation corridors in the study area. This inventory includes a summary of the following:

- ▶ Study area corridors
- ▶ Existing congestion locations
- ▶ High crash locations
- ▶ Transit operations
- ▶ Traffic signal control
- ▶ Intelligent transportation system (ITS) elements
- ▶ Communications network
- ▶ Emergency management
- ▶ Incident management
- ▶ Special events
- ▶ Freight movement
- ▶ Traveler information
- ▶ Relevant adopted documents



The main goal of the inventory is to establish the existing conditions in the study area along the study area corridors that will be used for building an intelligent transportation system based on regional transportation user needs.

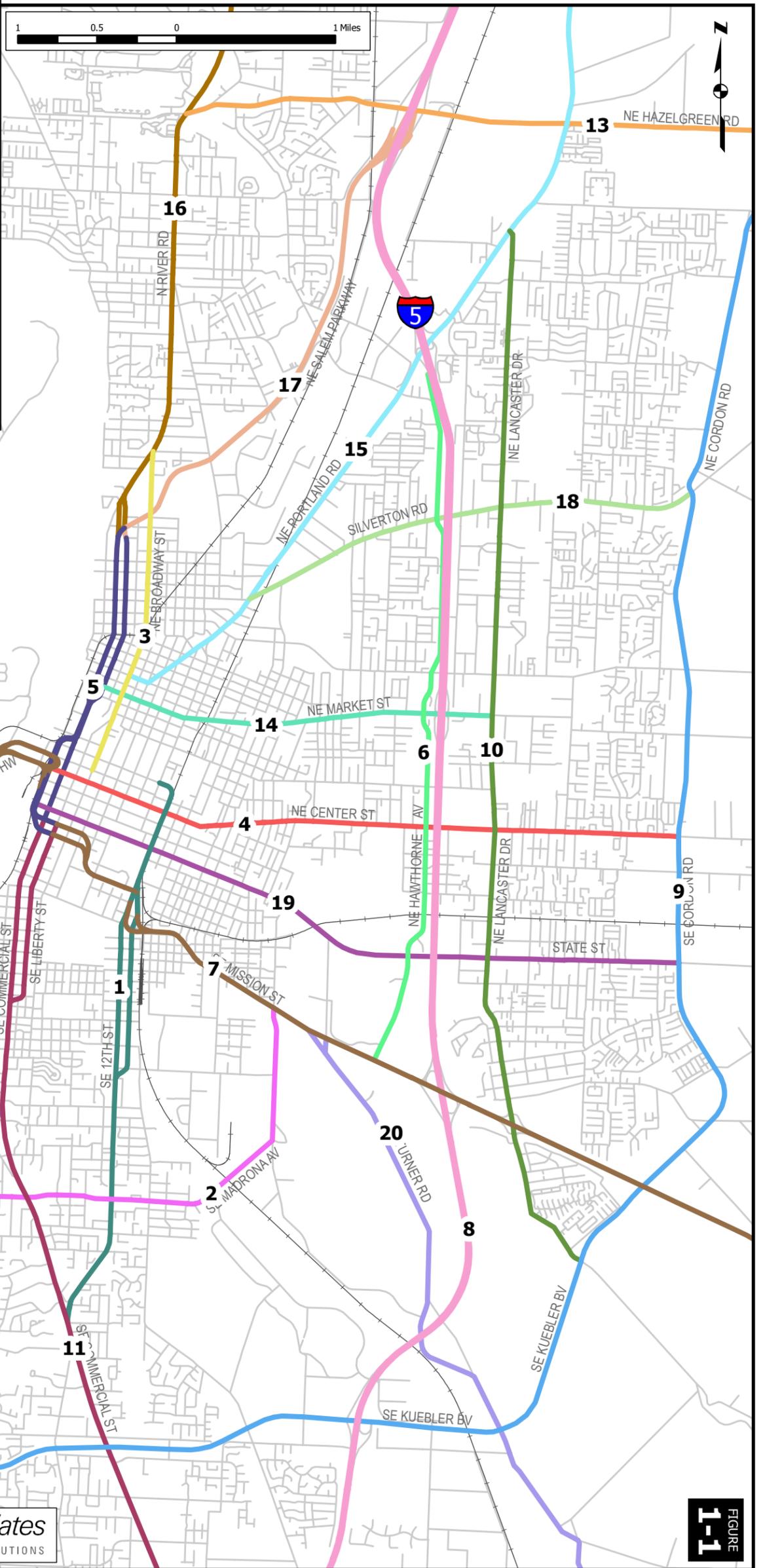
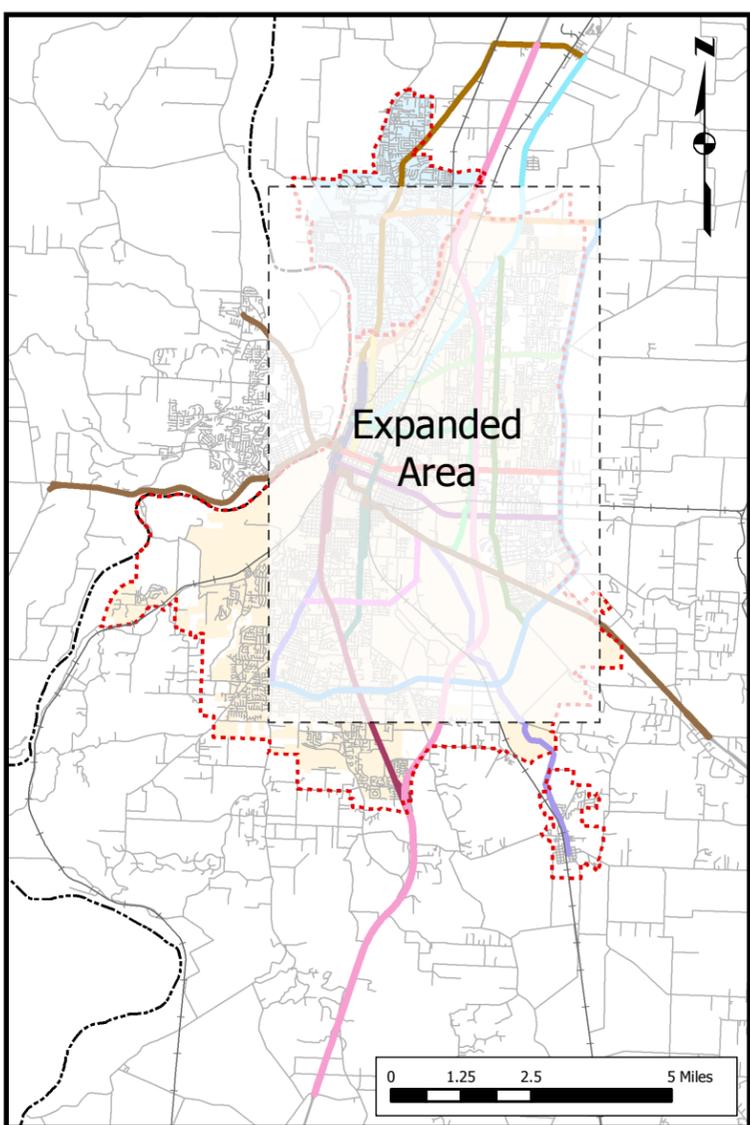
1.2 STUDY AREA

Figure 1-1 illustrates the 20 study corridors in the study area. These corridors are located within Polk and Marion Counties, and within the City of Salem and City of Keizer. A detailed list of planned projects on each of the study corridors can be found later in this chapter. The transportation operating conditions of the key study corridors are summarized in Table 1-1. Key regional facilities located within the study area are depicted in Figure 1-2. These facilities include City halls, public works departments (engineering offices and maintenance facilities), schools, and emergency management facilities (fire stations, police stations, 911 centers, shelters, hospitals, and emergency operations centers).

STUDY AREA AND STUDY CORRIDORS

August 2005

FIGURE 1-1



Legend

STUDY CORRIDORS

- 1 12TH & 13TH AVE
- 2 25TH ST & MADRONA AVE
- 3 BROADWAY ST
- 4 CENTER ST
- 5 COMMERCIAL & LIBERTY N
- 6 HAWTHORNE AVE
- 7 HWY 22 AND 221
- 8 INTERSTATE 5
- 9 KUEBLER AND CORDON
- 10 LANCASTER DRIVE
- 11 LIBERTY & COMMERCIAL
- 12 LIBERTY ROAD
- 13 LOCKHAVEN & HAZELGREEN
- 14 MARKET ST
- 15 PORTLAND RD
- 16 RIVER RD & BROOKLAKE
- 17 SALEM PARKWAY
- 18 SILVERTON RD
- 19 STATE ST
- 20 TURNER RD

CITY LIMITS

- KEIZER
- SALEM
- ROAD NETWORK
- COUNTY BOUNDARY
- RAILROAD
- URBAN GROWTH BOUNDARY

Table 1-1. Study Area Corridors

#	Corridor	Limits	Maximum Existing ADT	Maximum Future ADT
1	Interstate 5	Exit 243 Ankeny Hill to Exit 263	62,300	81,000*
2	Kuebler Boulevard/Cordon Road	Liberty Road to Hazelgreen Road	27,300	37,000*
3	Highway 22	Highway 51 (Independence Hwy) to Highway 214 (Silver Falls Hwy)	85,000	123,000*
4	Wallace Road	Highway 22 to Doaks Ferry Road	19,000	39,000
5	Salem Parkway Commercial Street Liberty Street	Interstate 5 to Highway 22	29,000	32,000
6	N. River Road Brooklake Road	Salem Parkway to Oregon 99E	26,100	41,900*
7	Lancaster Drive	Kuebler Blvd to Portland Road	35,500	37,700*
8	Commercial Street	Interstate 5 (Exit 249) to Salem Parkway	46,300	59,700*
9	Silverton Road	Portland Road to Cordon Road	24,000	25,600*
10	State Street	Front Street to Cordon Road	22,000	
11	Center Street	Hwy 22 to Cordon Road	20,500	28,500
12	Market Street	Commercial Street to Lancaster Drive	32,400	32,900
13	Chemawa Road Lockhaven Drive Hazelgreen Road	N River Road to Cordon Road	23,000	35,700
14	Broadway Street	Marion Street to N River Rd	15,900	21,200
15	Portland Road Highway 99E Fairgrounds Road	Broadway to Brooklake Road	21,300	26,900
16	12 th /13 th Street SE	Commercial Street SE to Union Street	18,200	25,400
17	Hawthorne Avenue	Hwy 22 to Portland Road	19,200	29,400*
18	Liberty Road SE	Kuebler Blvd to Commercial Street	12,800	15,500
19	25 th Street Madrona Avenue	Mission Street to Liberty Road	15,800	20,700
20	Turner Road	Mission Street to Denver Street SE	9,200	12,900

Notes:

1. Forecasted ADT from the SKATS Regional Model for 2025.
2. Asterisk "*" indicates a forecast that was modified using growth from the 2000 to 2025 model data applied to the existing 2000 count data.

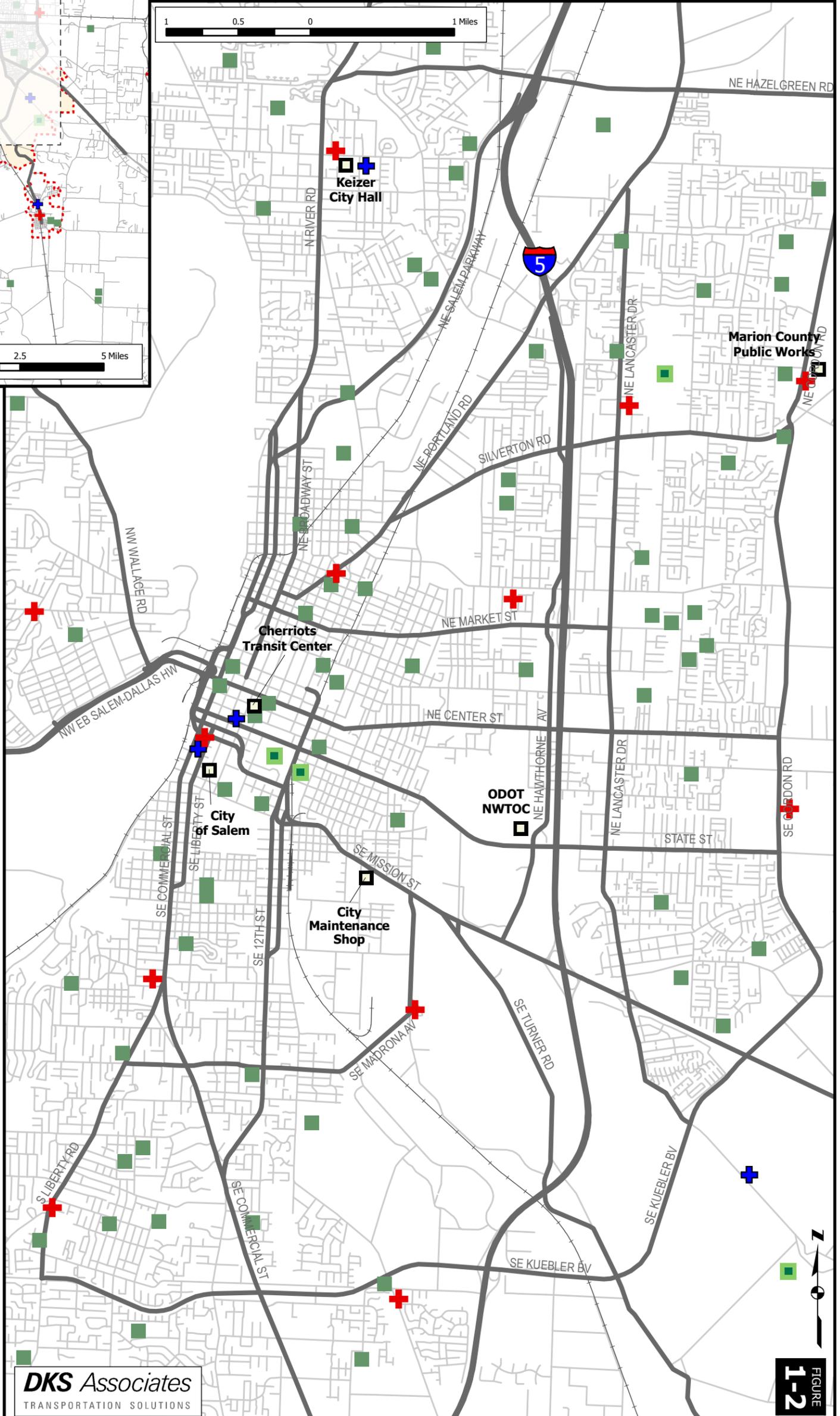
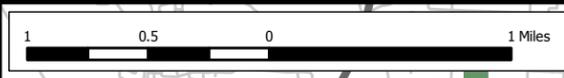
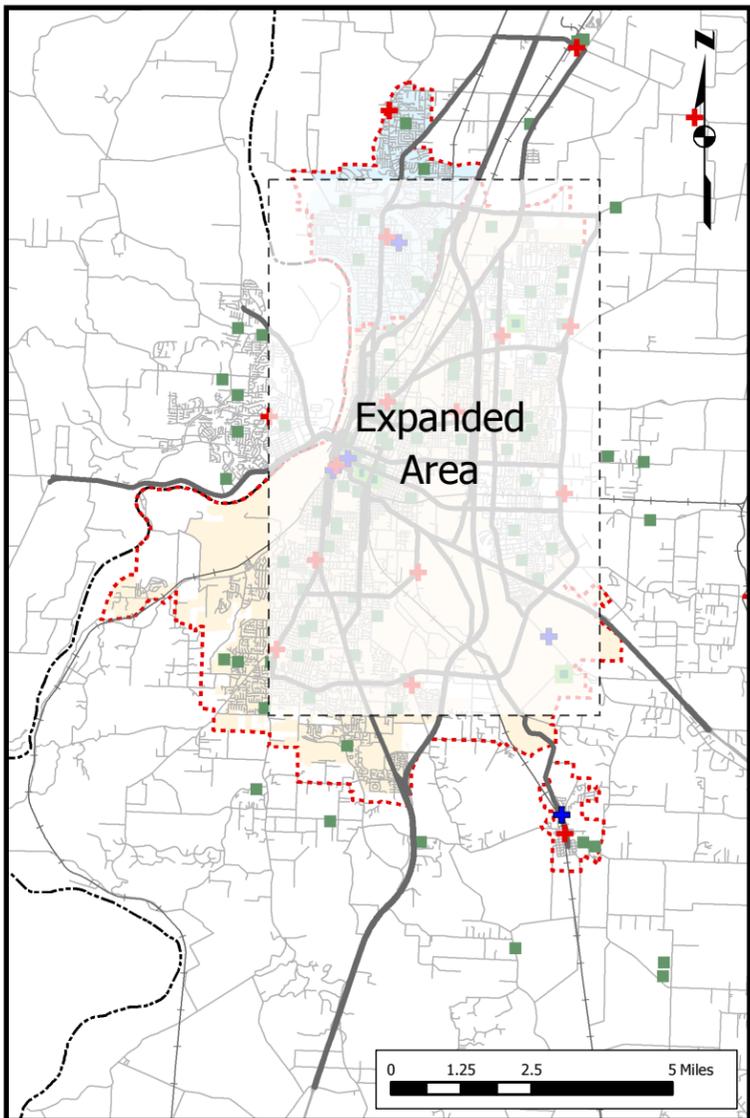
1.3 TRAFFIC CONDITIONS SUMMARY

Congested corridors and high collision locations provide the greatest opportunities to implement ITS field elements that could produce a noticeable benefit to users. Table 1-1 includes a brief summary of transportation operating conditions for each study area corridor. Further discussion of existing and future recurrent congestion locations can be found in the following subsections.

REGIONAL FACILITIES

August 2005

FIGURE 1-2



Legend

- POLICE STATION
- FIRE STATION
- SCHOOL
- COLLEGE
- CENTERS

CITY LIMITS

- KEIZER
- SALEM
- STUDY CORRIDORS
- ROAD NETWORK
- COUNTY BOUNDARY
- RAILROAD
- URBAN GROWTH BOUNDARY

1.3.1 Characters of Congestion

Congestion is typically categorized as either non-recurrent or recurrent. Non-recurrent congestion results from unexpected random events such as collisions or road debris in travel lanes. Recurrent congestion happens repeatedly at the same location, such as at key bottlenecks (like traffic signals), merge points, or weaving sections, and this recurrent condition typically occurs during peak periods. Volume-to-capacity (v/c) ratios help determine locations where traffic flows are near or at capacity on a consistent basis, indicating recurrent congestion. Travel demand forecast models provide v/c ratios by roadway link for current and future time periods. The congested levels that will be assigned for this analysis are based on v/c ratios in the Salem-Keizer Area regional model as listed in Table 1-2.

Table 1-2. Congestion Defined by Volume-to-Capacity Ratio

Congestion Level	Volume-to-Capacity Ratio
Moderate	0.80 – 0.89
High	0.90 – 0.99
Severe	≥ 1.0

1.3.2 Existing Recurrent Congestion

The existing (2000) travel demand model for the Salem-Keizer area was used to identify recurrent congestion locations along study area corridors during the PM peak hour. Multiple congestion locations were identified within the Salem-Keizer area these study corridors.

Recurrent congestion is primarily located along Liberty Street, Commercial Street, Madrona Avenue and Kuebler Boulevard. Figure 1-3 shows the existing (2000) recurrent congestion locations along study area corridors.



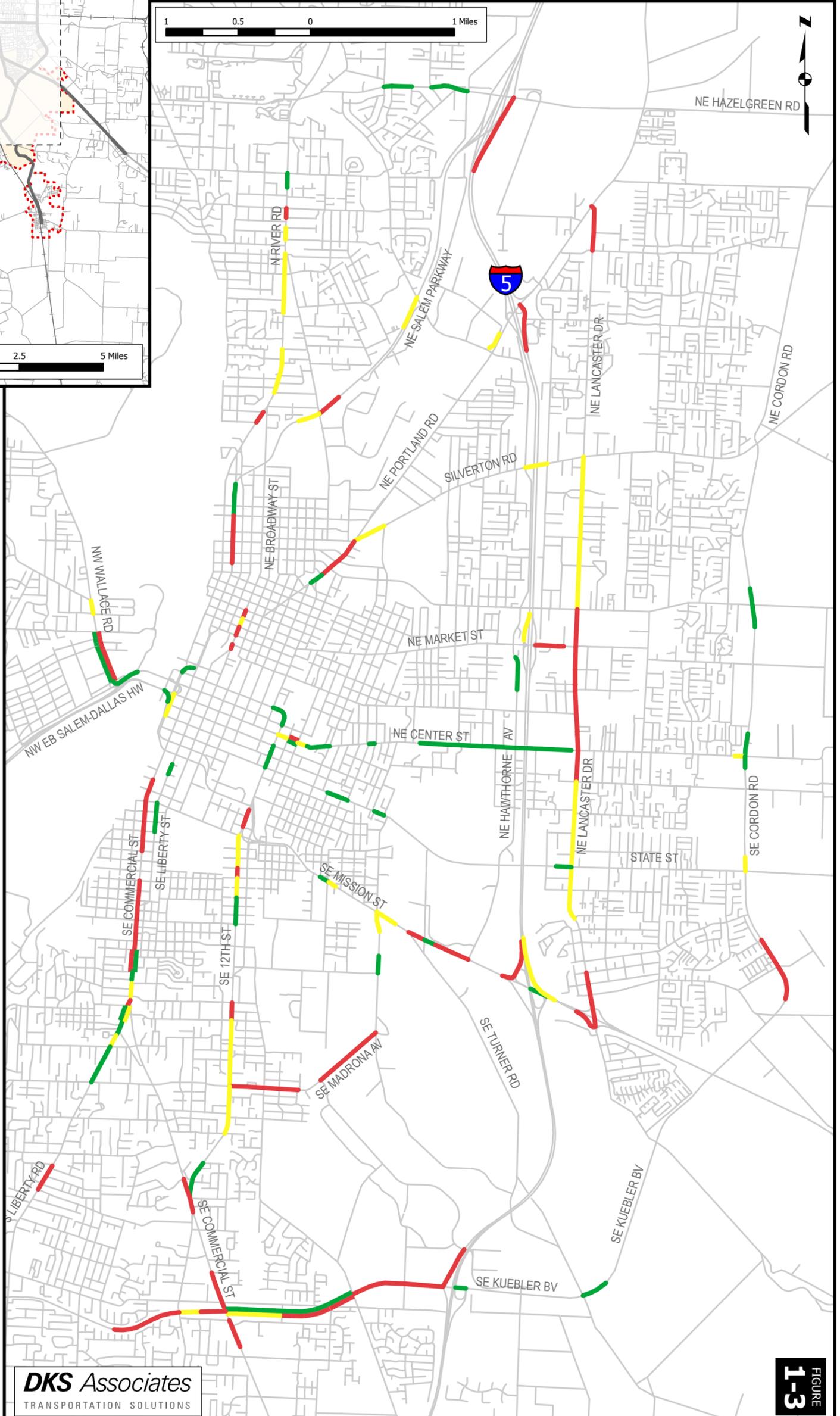
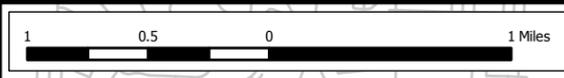
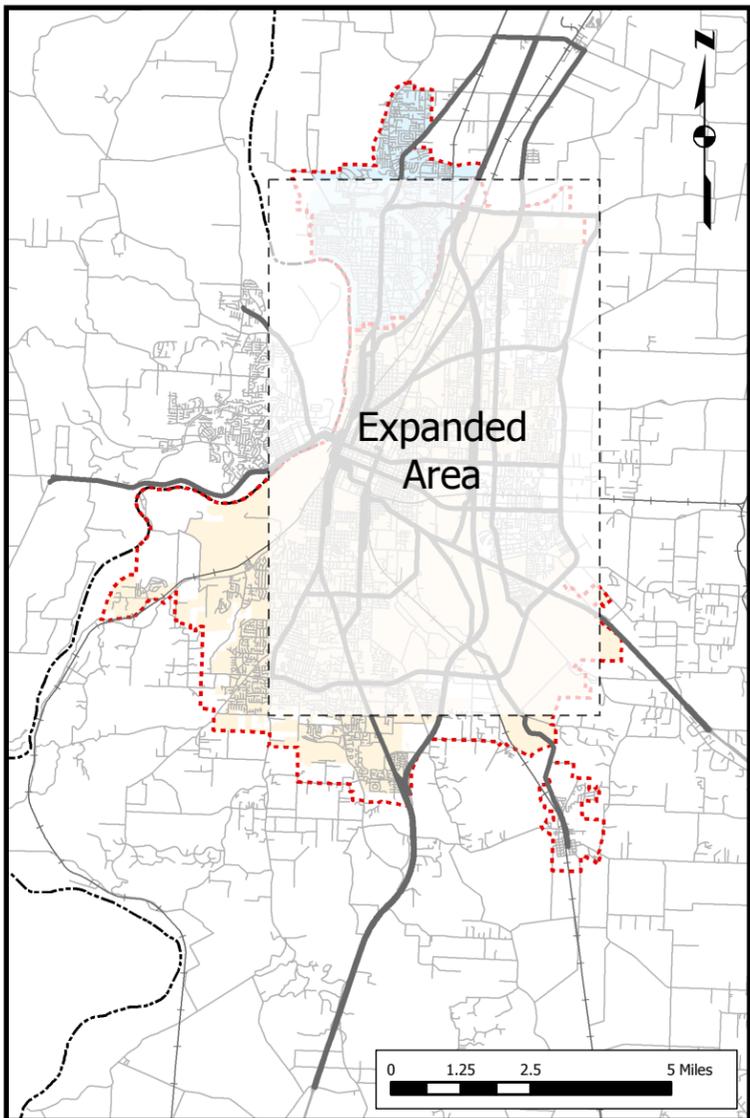
1.3.3 Future Recurrent Congestion

Figure 1-4 illustrates the magnitude of future congestion in the Salem-Keizer Area based on the SKATS 2025 regional travel demand forecast model. There is a significant level of increase in congested corridors compared to the existing (2000) conditions. Comparison of the two models indicates a rise in “severe” congestion from 11.9 miles in 2000 to 28.4 miles in 2025. This represents a 240% increase in roadway miles with a volume-to-capacity greater than or equal to 1.0 during the PM peak hour. Similarly, “high” congestion rose from 10.2 in 2000 to 15.5 miles in 2025 representing a 150% increase in roadway miles with a volume-to-capacity between 0.9 and 0.99. “Moderate” congestion rose from 5.8 in 2000 to 7.3 in 2025 representing a 125% increase in roadway miles with a volume-to-capacity between 0.8 and 0.89. The corridors that are primarily affected by the increase in congestion include: Interstate 5, Highway 22, Commercial Street, Liberty Street, Silverton Road and Lancaster Drive.

EXISTING PROBLEM AREAS

August 2005

FIGURE
1-3



Legend

VOLUME-TO-CAPACITY RATIO
Based on 2000 Salem area regional model
(p.m. 1 hour peak)

- 0.80 - 0.89
- 0.90 - 1.0
- > 1.0

NOT SHOWN

BOTTLENECKS

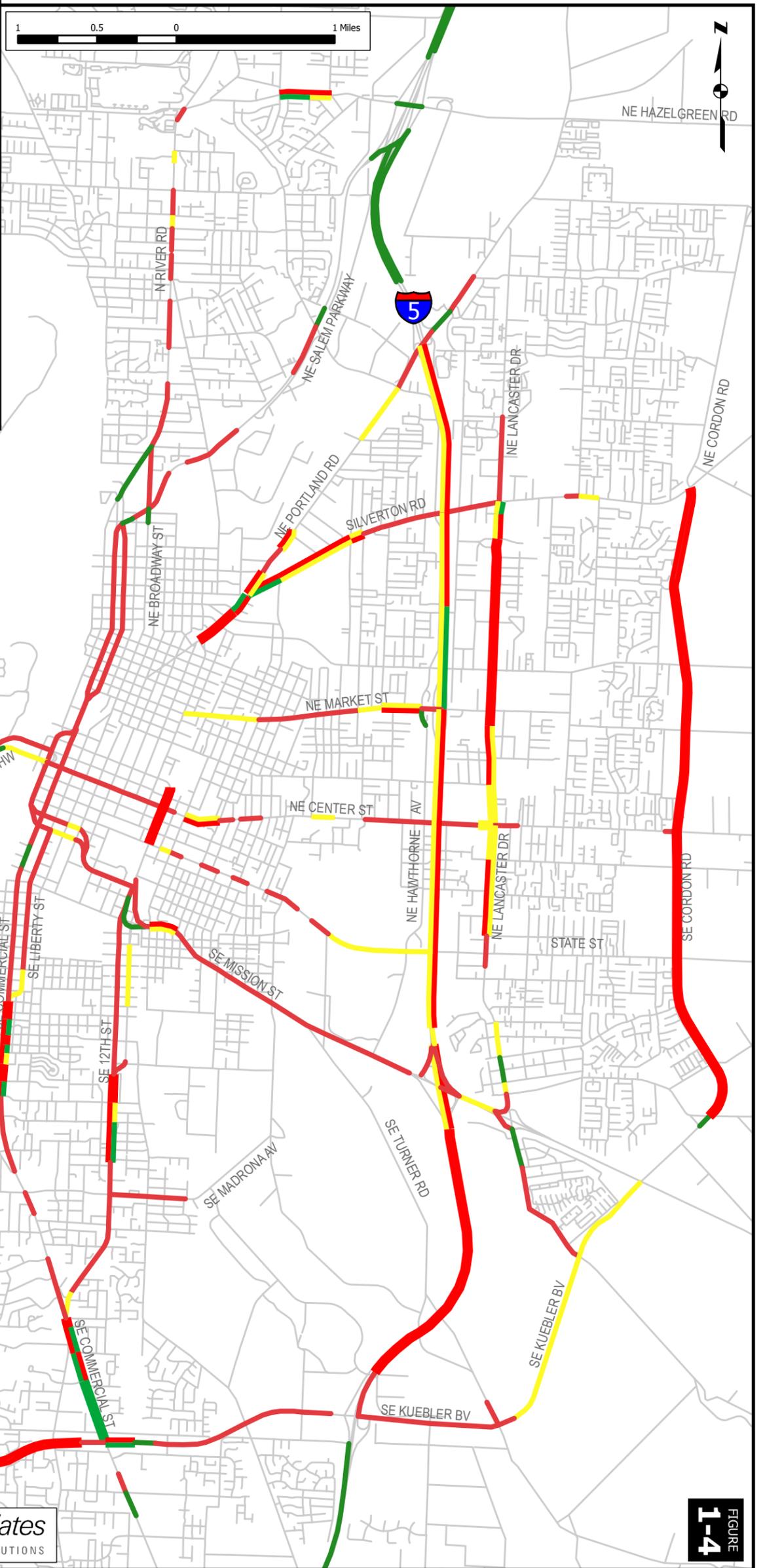
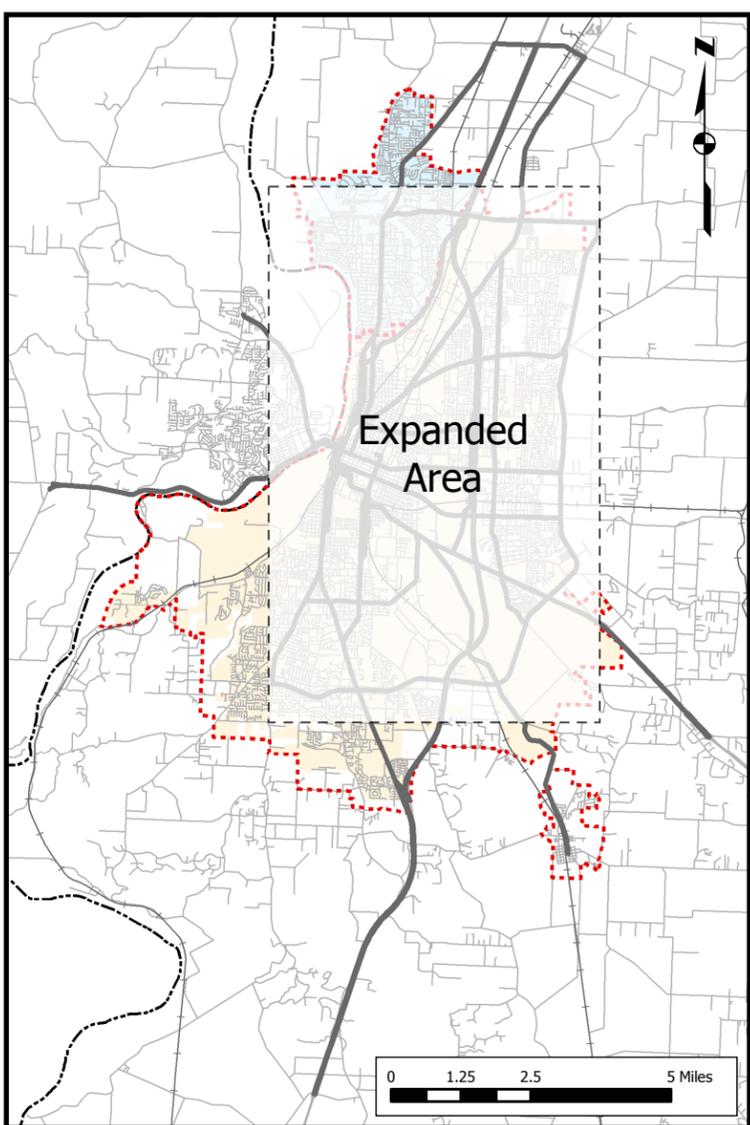
CITY LIMITS

- KEIZER
- SALEM
- STUDY CORRIDORS
- ROAD NETWORK
- COUNTY BOUNDARY
- RAILROAD
- URBAN GROWTH BOUNDARY

FUTURE PROBLEM AREAS

August 2005

FIGURE
1-4



Legend

VOLUME-TO-CAPACITY RATIO
Based on 2025 Salem area regional model
(p.m. 1 hour peak)

- 0.80 - 0.89
- 0.90 - 1.0
- > 1.0

NOT SHOWN

FUTURE BOTTLENECKS

CITY LIMITS

- KEIZER
- SALEM
- ROAD NETWORK
- ⋯ COUNTY BOUNDARY
- RAILROAD
- ⋯ URBAN GROWTH BOUNDARY

1.4 CRASH SUMMARY



Accidents contribute significantly to traffic congestion along a corridor and can have the potential to divert vehicles to other parallel roadways. ODOT has developed a Safety Priority Index System (SPIS) to identify locations with high collision rates. For every 0.10 mile section of road, a score is given based on the most recent three years of collision data with weighting for crash frequency, rate, and severity. Three or more collisions, or one or more fatal collision, must have occurred at the same location over the past three years for a location to be considered a SPIS site. Each year, ODOT identifies the top 10 percent SPIS sites and evaluates these locations for safety problems.

Additionally, ODOT uses a ranking methodology to analyze specific locations based on a three-year crash history. This process includes a designation of a “Safety Corridor” or a “Truck Safety Corridor” for any state or local highway that has a three-year average of fatal and serious injury crashes greater than the statewide average for similar kinds of roadways. Within this study area, Oregon Highway 22 between Willamette River Bridge and Highway 99 West has been designated as one of these safety corridors. Also, Interstate 5 between Highway 22 and Highway 214 has been designated as a truck safety corridor. In a safety corridor, frequent enforcement and education efforts are used to enhance the awareness of these corridors.

While a majority of collision data is collected and stored by ODOT, many times local agencies also retain their own list of accident locations that may not be based on the ODOT SPIS system. This helps to track potential corridors with safety concerns as well as statistically track increases or decreases in accident data.

The existing collision data from the City of Keizer 2001-2003 indicates an overall decrease in the total number of accidents, with peaks in collisions occurring in April, July, and December. Additionally, almost half (46%) of the accidents were designated as hit and run with no clear cause for the accident. The highest percentage (39%) of the accidents occurred on River Road, with the intersections of Chemawa, Dearborn and Lockhaven being especially problematic.

The City of Salem keeps a list that ranks the collision locations by number of occurrences, and does not factor into account severity, type of collision or number of vehicles. This ranked list can be found in Appendix C. Additional data collected from the state DMV crash database SPIS calculations indicated problematic intersections on Lancaster at Silverton Street, State Street and Durbin Street. Figure 1-5 shows the high collision locations throughout the study area by jurisdiction.

1.5 TRANSIT

The Salem-Keizer Area is served by a combination of fixed route systems, dial-a-ride services and intercity bus and rail services. In this section, the different public and private transit services are discussed, as well as an overview of the scheduled upcoming transit improvements that will be conducted over the next five years.



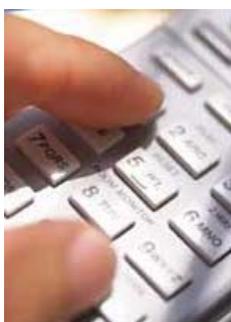
1.5.1 Cherriots

The Cherriot's fixed route system is primarily a radial route structure in which all but six of the routes meet at the central transit station located in downtown Salem. Figure 1-6 shows the current bus routes servicing the study area. Currently there are eighty-three buses servicing the City of Salem. Almost all of the buses have global positioning system (GPS) devices in place, although they are not being used at this time. Ten buses are equipped with Automatic Passenger Counts that are measured per stop; these are run on various routes throughout the system. The data collected from the counts is sent to the bus housing facility on Dell Web Avenue.

Service is offered Monday through Saturday with frequencies varying between routes, from 15 to 60 minutes. Additionally, there are four major transit centers with covered waiting areas and other amenities. Seventy five of the eighty three buses are lift-equipped and have wheelchair positions. Each of the twenty-five routes is assigned at least one lift-equipped bus so all routes are accessible to wheelchair riders at the same time. According to average weekday ridership data from the spring of 2004, approximately 20,000 passengers ride the bus each day.

Video surveillance is present on most buses and has been extremely helpful with security issues. All of the information from the cameras is then sent to the security center at the downtown transit center and can be viewed in the case of a discrepancy. Additionally, there are many cameras in various locations in and around the downtown transit center that are viewed and archived.

1.5.2 Dial-a-Ride Services

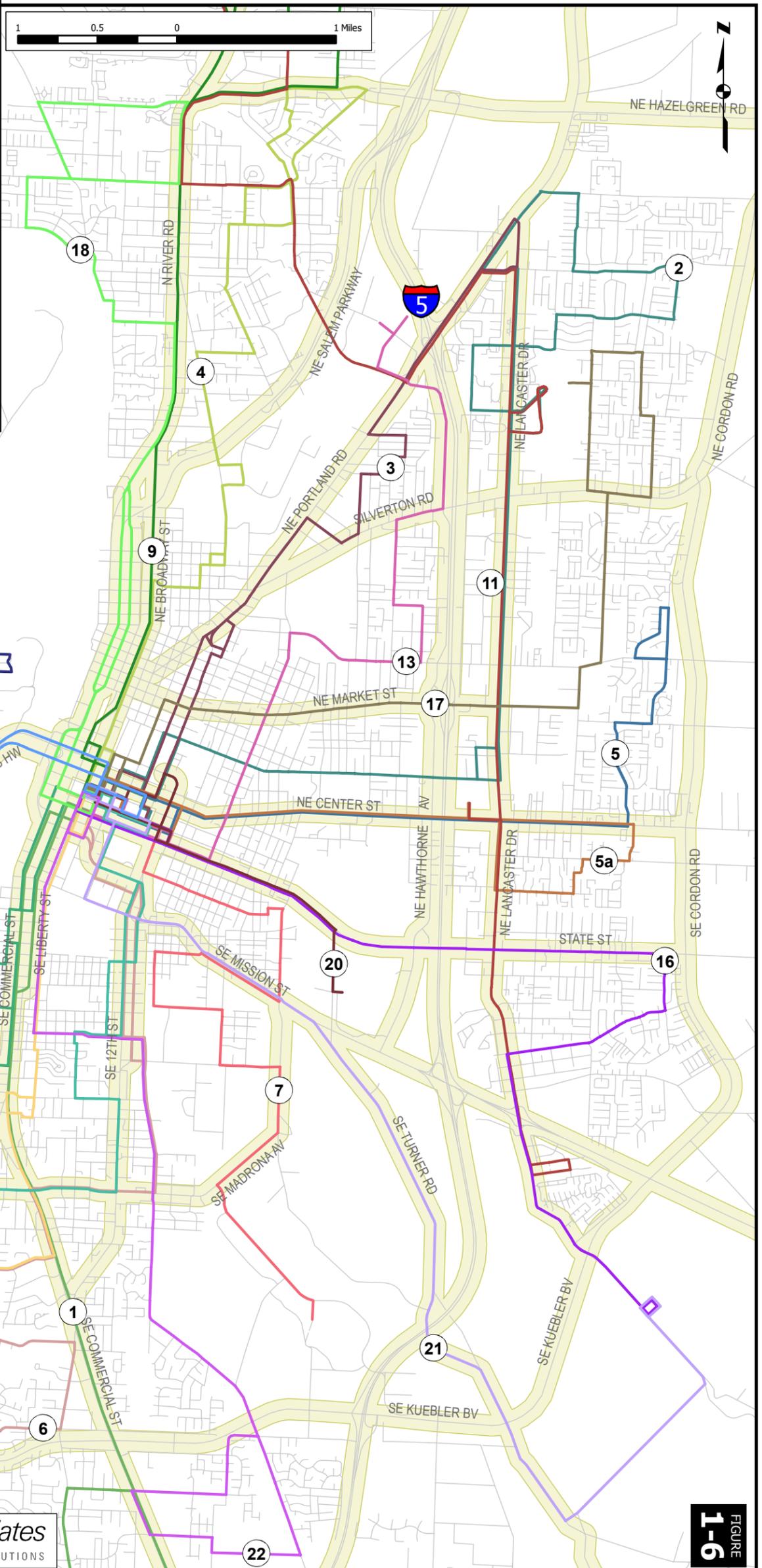
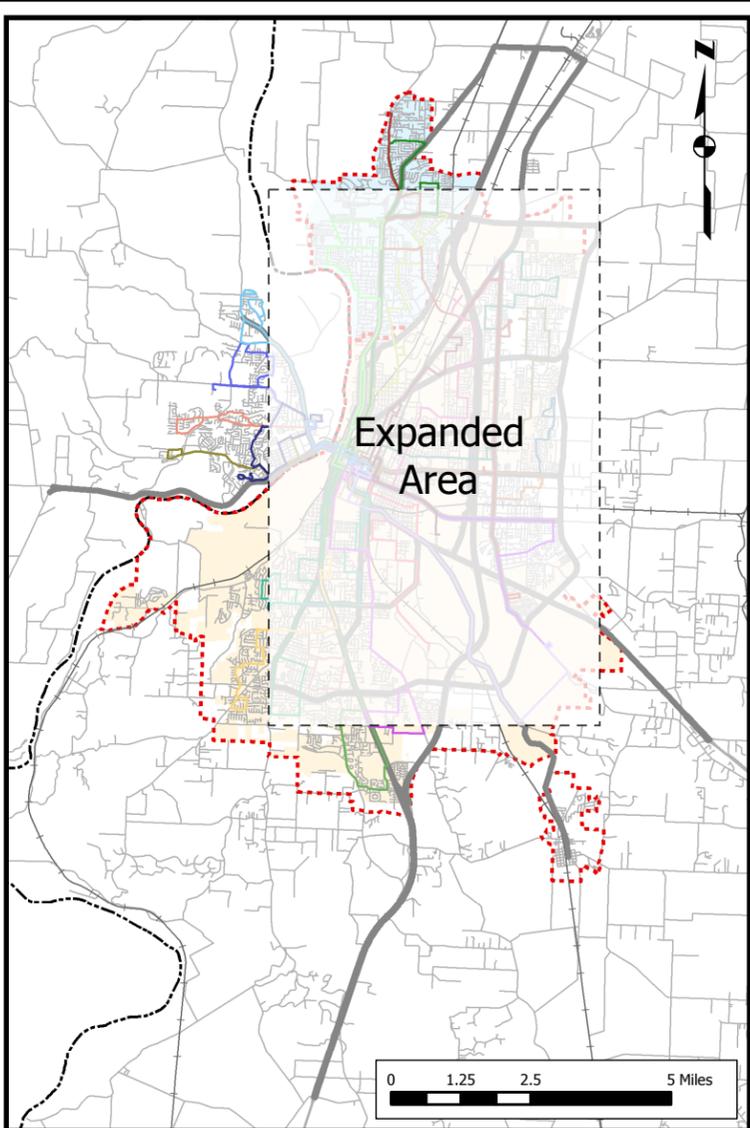


Dial-a-Ride services are provided to offer more freedom from existing fixed routes. Typically, dial-a-ride routes are determined based on current demand with no specific, set schedule. The paratransit vehicles are a separate division contracted through OHAS (Oregon Housing and Associated Service); although some of the vehicles that are used are owned by Cherriots. "Wheels" is a nonprofit program providing paratransit services in the area. The routes are continually changing based on the demand of ridership. OHAS is responsible for the dispatch. This is a free service designated for the disabled and elderly persons in the Salem-Keizer area. Trips are scheduled on a space-available basis.

TRANSIT INFRASTRUCTURE

August 2005

FIGURE 1-6



Legend

② BUS ROUTES/
ROUTE NUMBERS

CITY LIMITS

- KEIZER
- SALEM
- STUDY CORRIDORS (above)
- STUDY CORRIDORS (right)
- ROAD NETWORK
- COUNTY BOUNDARY
- RAILROAD
- URBAN GROWTH BOUNDARY

CherryLift also provides services to ADA-eligible riders in the Salem-Keizer area. The service is delivered by a contractor under terms set by Salem-Keizer Transit and averages 5,000 riders monthly.

Lastly, TripLink service is contracted by a Medicaid brokerage. A private firm (ATC) has teamed with the Salem Area Mass Transit District to provide specialized transportation services to Medicaid patients. The call center located off site handles the dispatch for services.

1.5.3 Intercity Bus Service

In addition to the fixed route and paratransit systems that operate within the City of Salem, other bus services provide connections to/from the City. Some of these services are public, while others are privately owned and operated. Greyhound Lines provides service to/from the City of Salem, although typically it is limited to larger destination cities. By utilizing agreements between Greyhound and other smaller service providers, many smaller rural destination points may be accessed and thus a larger number of users may be accommodated.



1.5.4 CARTS

The Chemeketa Area Regional Transportation System provides weekday public transit service connecting Salem with the cities of Dallas, Independence, and Monmouth in Polk County; Lyons and Mill City in Linn County; and Aumsville, Gates, Gervais, Hubbard, Silverton, Stayton, Sublimity, Turner and Woodburn in Marion County. This service provides approximately 12,000 rides per month.

1.5.5 SMART

The South Metro Area Rapid Transit (SMART) provides service to Wilsonville (in Washington County, OR) with three buses northbound in the morning and two in the evening. This service is primarily aimed at the workday commuter traveling between Wilsonville and Salem-Keizer, but it also serves the Barbur Transit Center in Portland where several Tri-Met bus routes connect.

1.5.6 Intercity Rail Service

Amtrak provides the Coast Starlight and Cascades trains that service the City of Salem and surrounding areas. The Cascade line offers two daily round-trip trains between Eugene and Seattle, while the Coast Starlight train operates through the Willamette Valley daily at various times.

1.6 TRANSIT IMPROVEMENTS

The existing system serves the Salem-Keizer Metropolitan Area and the surrounding areas well, but a new vision for the future of Cherriots will bring about many improvements to the system. The new vision, outlined in the Salem-Keizer Transit Strategic Business Plan involves the three C's; circulator, center, and corridor service delivery. To accomplish these goals outlying transit centers will be constructed that are served by neighborhood circulator routes. Further transfers may then be made into a corridor route for travel into downtown via large, frequent buses.

1.6.1 Corridor Improvements / Service Enhancement

At the present time, frequency improvements are scheduled on five routes within the five-year scope of the short-range plan. Service expansions at State Street and Fairview Avenue, South Commercial Street, and Lancaster Drive will improve the usability of the system. Additionally, most of the Saturday routes will be improved by increasing the frequency of service.

1.6.2 High Priority Transportation Corridor

The Broadway/River Road North corridor was selected as the most appropriate location to begin to implement changes to the transportation infrastructure to improve the movement of buses. Bus stops will be located along the middle section of the corridor. Buses designated for this lane will be equipped with emitters to utilize queue jumping, early green and/or green extension. Currently, there is funding available for this project and the next steps involve public involvement and buy-in from the cities of Salem and Keizer.

Other general transit improvements include:

- ▶ Smart Card Development;
- ▶ Streetcar feasibility studies;
- ▶ Maintenance upgrades;
- ▶ Implementation of Sunday bus service;
- ▶ Expanded Commuter Services;
- ▶ Evaluation of replacement buses (small transit buses for neighborhoods, large buses for corridor route);
- ▶ New transit centers (South Salem and Keizer); and
- ▶ Utilization of existing Automatic Vehicle Location technology.

1.7 TRAFFIC SIGNALS

This section describes the traffic signal equipment used at the signalized intersections in the Salem-Keizer Metropolitan Area. Figure 1-7 shows the existing and planned traffic signals in the study area with the signals color-coded by ownership for each jurisdiction. Existing signal interconnect locations are depicted on Figure 1-9.

The following subsections include details pertaining to controller and controller cabinet type, video detection, existing central signal system, and emergency vehicle preemption capabilities at traffic signals in the study area.



1.7.1 Traffic Signal Operations

Traffic signals in the Salem-Keizer Metropolitan Area are currently operated and maintained by the City of Salem and ODOT. The City of Salem is responsible for the operations and maintenance of the majority of the traffic signals in the Salem-Keizer Metropolitan Area through existing agreements with other agencies¹.

1.7.2 Oregon Department of Transportation

ODOT operates and maintains 13 traffic signals in the Salem-Keizer Metropolitan Area. Another 36 ODOT owned traffic signals in the region are operated and maintained by the City of Salem. The 13 ODOT owned and maintained traffic signals use Type 170 controllers and Wapiti W4IKS software. The 36 ODOT owned/Salem operated and maintained traffic signals use Type 170 controllers and BI Tran software.

1.7.3 City of Salem

The City of Salem operates and maintains approximately 230 traffic signals in the Salem-Keizer Metropolitan Area, including 16 Marion County signals, 14 City of Keizer signals, and 36 ODOT signals. Another 42 traffic signals are under design or planned for installation. All of the traffic signals operated and maintained by the City of Salem have Type 170 controllers and BI Tran software.

For remote access to the traffic signal controller data, the City of Salem uses the QuicNet/4 central signal system software. Of the 230 existing traffic signals, approximately 190 are direct connected to the QuicNet/4 central signal system server at the City of Salem offices via twisted wire pair. QuicNet is a central/distributed signal system that provides the City with full upload and download capabilities and a visual display of local intersection status. The QuicNet central computer does not directly control the local traffic signals, but it does allow remote access to the local traffic signal controllers. The City is planning to upgrade the traffic signal communications infrastructure to fiber optic cable as new development occurs and traffic signals are installed.

The City of Salem operates time-based coordination at many of the intersections during the AM, Midday and PM peak periods. Arterial roadways with the City of Salem use a combination of AM, Midday, and PM peak coordinated timing plans while many others operate in the free mode.

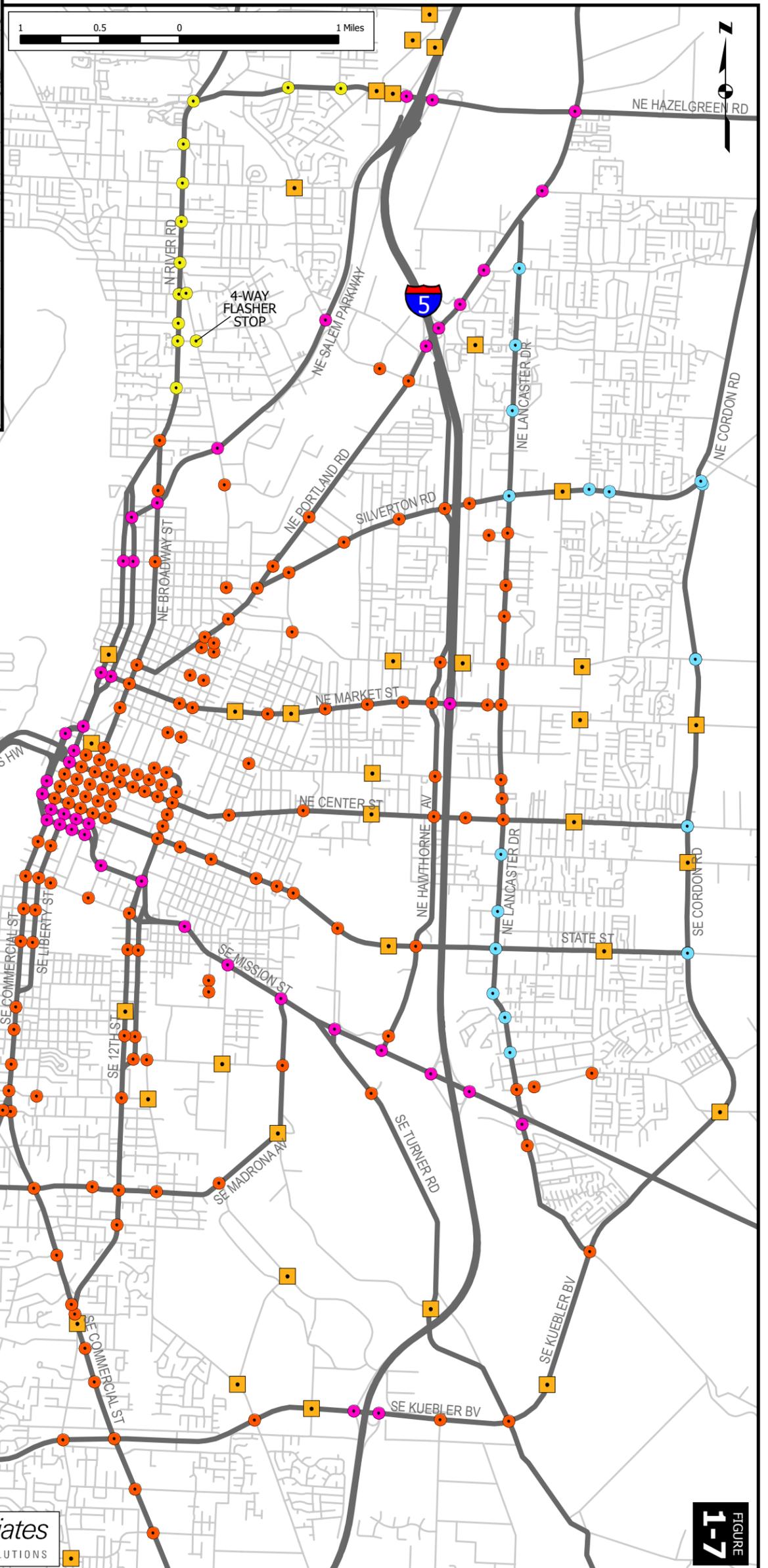
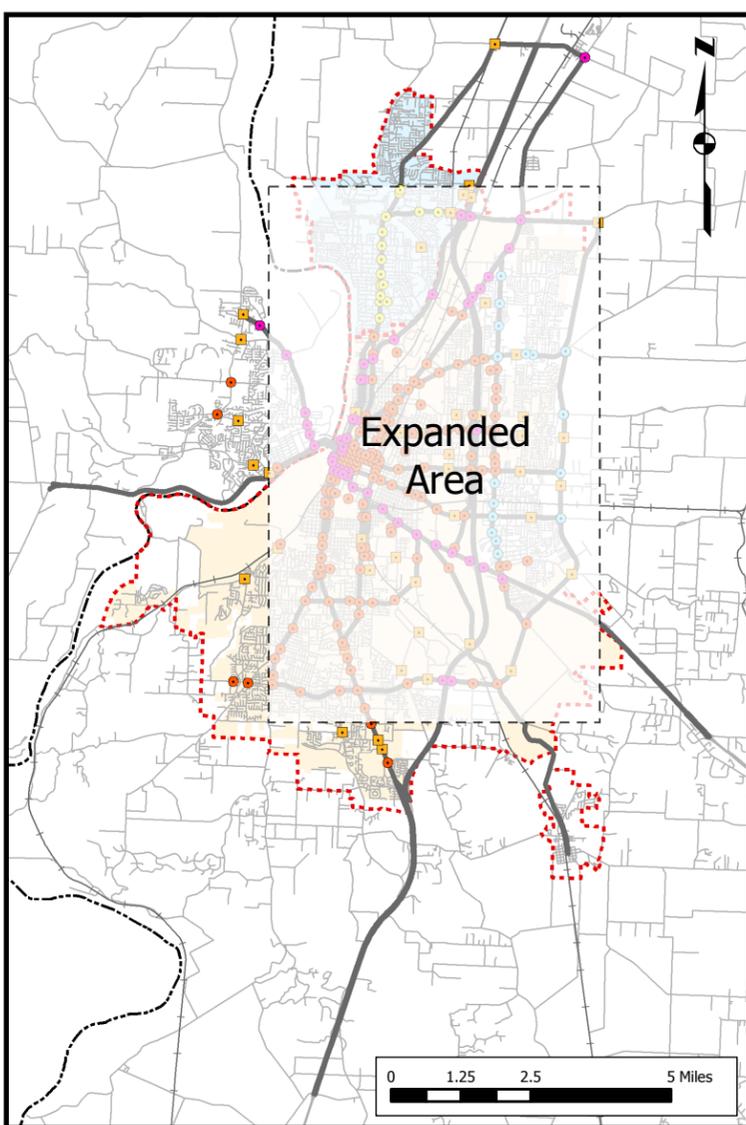


¹ The City of Salem traffic signal operations contact is Terry Hockett (503) 588-6211.

EXISTING AND PLANNED TRAFFIC SIGNAL by OWNERSHIP

FIGURE 1-7

August 2005



Legend

TRAFFIC SIGNALS BY OWNERSHIP

- PLANNED
- CITY OF SALEM
- ODOT
- MARION COUNTY
- CITY OF KEIZER

CITY LIMITS

- KEIZER
- SALEM
- STUDY CORRIDORS
- ROAD NETWORK
- COUNTY BOUNDARY
- RAILROAD
- URBAN GROWTH BOUNDARY

1.7.4 Video Detection

The City of Salem uses the TrafiCon video detection system for the majority of traffic signals within the City. Video cameras detect vehicles entering zones configured within the camera view and provide inputs to the traffic signal controllers for local intersection timing functions. An intersection video detection system normally consists of four to six fixed cameras mounted on traffic signal mast arms or luminaire arms. City of Salem traffic engineers are able to view images from the video detection cameras from their desktop, using communication technology and the proprietary software provided by the vendor.

In addition, the City of Salem has a current project to install video detection cameras viewing the departure side of an intersection for traffic volume counts. With these cameras, the City is expecting to be able to collect traffic volume, speed and classification information.

1.7.5 Emergency Vehicle Preemption

The majority of the traffic signals in the Salem-Keizer Metropolitan Area have full emergency vehicle preemption capability using Opticom™. Fire vehicles have the capability to preempt traffic signals, but police vehicles do not. All of the new detectors and discriminators being installed have the ability to recognize vehicle identification codes and different levels of priority requests (e.g. bus priority). Many of the existing detectors and discriminators were installed prior to this functionality being offered. The City is actively pursuing opportunities to upgrade the existing detectors and discriminators to provide vehicle identification and low priority functionality.

City of Salem traffic engineers, using the 3M priority control software, have the ability to remotely upload the preemption logs to check for valid preempts. This allows for a back-check system in the case that preemption has disrupted traffic flow during peak times of the day.

1.8 ITS SYSTEMS AND EQUIPMENT

The Salem-Keizer Metropolitan Area has several existing intelligent transportation systems and ITS devices. The following sections describe existing and planned ITS systems and equipment including the Northwest Traffic Operations Center (NWTOC), existing closed-circuit television (CCTV) cameras, dynamic message signs (DMS), traffic count stations (ATR), and weather stations (RWIS). Figure 1-8 shows the locations of the existing field devices.

1.8.1 ITS Systems

The Salem-Keizer Metropolitan Area currently uses a variety of software systems to access and control field devices, and to dispatch vehicles. Table 1-3 provides a summary of the existing software systems and their primary function. Many of the software systems used today are redundant because they are proprietary to the specific vendor for the field device. Additional information about each system is provided under the field device or Northwest Transportation Operations Center description in this Chapter.



1.8.2 Northwest Transportation Operations Center (NWTOC)



ODOT currently operates a Transportation Operations Center (TOC) in the City of Salem that is a shared facility with Oregon Emergency Management (OEM) and the Oregon State Police (OSP). The Northwest Transportation Operation Center in Salem operates 24/7 and provides dispatch services, incident management support and traveler information for all of Region 2. In addition, the NWTOC provides these same services after normal business hours for all of users in Region 4 and 5.

The TOC primarily serves a support role for incident management/emergency management activities and coordinates the posting of pre-approved messages as requested by field personnel. The TOC currently has no authority to post new and unique electronic messages, activate detour routes, and implement incident signal timing plans or other management activities without prior approval from the Region Traffic Engineer. A summary of the primary functions performed by the operators is provided in the following list.

- ▶ *Incident Management* – Incident detection, response planning, resource tracking and coordination and output to the traveler information systems.
- ▶ *Emergency Management* – Includes incident management functions and the implementation of Emergency Operations Plans.
- ▶ *Traffic Management* – Control dynamic message signs, highway advisory radio, and dispatch incident responders.
- ▶ *Traveler Information* – Place and update incident alerts and road restriction messages on dynamic message signs and highway advisory radio and output to media and TripCheck.
- ▶ *Winter Operations* – Monitor the roadway conditions with CCTV and environmental sensors. Coordinate crew assignments and notifications. Place outputs to traveler information systems (HAR and DMS).
- ▶ *Maintenance Operations* – Assist maintenance manager with crew availability and location information and place call-outs.

Table 1-3. Existing Systems in the Salem-Keizer Metropolitan Area

#	System	Vendor/ Software	Operating Agency	Purpose
1	Signal System	QuicNet	City of Salem	Traffic Signal Control Traffic Engineers at the City of Salem have access to the traffic signal data using this system TOC operators do not have access to this system.
2	Video Detection	TrafiCon	City of Salem	Intersection Detection Video images can be viewed at the City of Salem.
3	Dynamic Message Signs	Skyline/	ODOT	Message Sign Control Intent is to use the Skyline software for access to all signs
4	Portable Variable Message Signs	Skyline Others DOS programs	ODOT	Message Sign Control New PVMS are NTCIP. Intent is to use the Skyline software to control the PVMS signs.
5	Highway Advisory Radio	Highway Information Systems	ODOT	Radio Messaging Grant money to put in HAR (11) on the coast to transmit NOAA weather or special event info. Server in Salem.
6	OSP Computer Aided Dispatch	Public Safety Systems Inc. (PSSI) CAD	OSP/ODOT	Manage Incidents Provides link to OSP dispatch in Salem
7	Highway Traffic Conditions Reporting System	ODOT Visual Basic Application	ODOT	Feeds Info to TripCheck
8	Road Weather Information System	SSI ScanWeb Software	ODOT	Weather Info Server in Salem
9	Emergency Computer Aided Dispatch	HiTech Systems	Salem 911	Computer Aided Dispatch Salem has a 911 center and separate police and fire dispatch
10	Transit Computer Aided Dispatch	Trapeze	Salem-Keizer Transit District	Transit Dispatch Additional DOS software FleetMate for maintenance
11	Trip Link	Mobility Master and Mobilitat	ATC, private service	Paratransit service Separate system from fixed route Cherriot Service

More detailed information on the functions of the Operations Center is documented in the *Transportation Operations Center System Concept of Operations*², by ODOT.

Operators in the center currently manage field devices using a variety of software packages. For variable message signs alone, the operators have multiple software packages to post messages because each manufacturer has a separate proprietary software package. However, ODOT has upgraded many of the fixed signs to be NTCIP compliant and is migrating to one software package for sign control. In addition, ODOT is currently conducting a Transportation Operations Center System (TOCS) project, which intends to integrate the functions of the advanced transportation management systems (ATMS), and the computer aided dispatch (CAD) system. The ultimate intent is to provide an integrated system interface for management of ODOT assets.

1.8.3 Closed-Circuit Television (CCTV) Cameras

Today, ODOT uses closed-circuit television (CCTV) cameras to monitor traffic at the Hayesville Interchange on Interstate 5. Two fixed mount camera are provided at this site to provide images north and south of the interchange. From the NWTOC, operators also monitor the pan-tilt-zoom camera on the radio tower at the operations center, the security cameras in the building, and the mountain pass cameras (Government Camp, Highway 22, Willamette Pass and other Statewide Pass cameras). Two additional cameras on Interstate 5 are currently under design at the Kuebler Boulevard and Mission Street Interchanges. ODOT posts images from the existing cameras on the TripCheck website, which is described later in this chapter.



The City of Salem has video images at approximately one-third of the signalized intersections (approximately 60 intersections), which are supplied from the video detection cameras. These are all fixed mount cameras, but images are generally provided on the approach section of all four legs of an intersection. All new traffic signals in the City of Salem are installed with video detection.

1.8.4 Dynamic Message Signs (DMS)

Currently, there are no existing dynamic message signs in the Salem-Keizer Metropolitan Area. However, ODOT operates and maintains fixed dynamic message signs on Interstate 5 north of Salem. All new dynamic message signs installed by ODOT are compliant with the National Transportation Communications for ITS Protocol (NTCIP). Additional signs are controlled from the NWTOC, but are outside of this project study area. Dynamic Message Signs are planned on Interstate 5 southbound near the Brooks interchange and northbound north of Albany.

² *Transportation Operation Center System – Concept of Operations*, Galen McGill, Patrick Hoke, Larry McKinley, ODOT, 2002.

1.8.5 Portable Variable Message Signs (PVMS)



ODOT Region 2 owns and operates several portable variable message signs. All new PVMS are being procured as NTCIP compliant, but several existing PVMS are not NTCIP compliant. Therefore, several software packages must be used to program the signs; but ODOT is migrating to one software package for PVMS sign control as the existing signs come to the end of their useful life.

1.8.6 Automatic Traffic Recorders

ODOT currently operates four automatic traffic recorders (ATR), within the Salem-Keizer study area to collect hourly volume data by lane. Three of the four ATR stations have the ability to collect speed and length data. Speed data is typically provided in 13 “Speed Bins” and length data is typically provided in two “Length Bins”. ATR stations do not collect occupancy data. The four ATR stations in the study area include: North Santiam Station, Aumsville Station, Salem Bridges Station and Oak Knoll Station. Two ATRs are located on Highway 22 between Interstate 5 and Stayton and two ATRs are located on Highway 22 west of Salem between the Willamette River and 99W.

The City of Salem has a current project to install video on the downstream side of intersections to collect volume and vehicle classification information at approximately 75 locations.

1.8.7 Road Weather Information Systems (RWIS)

Marion County currently operates and maintains three weather stations in Marion County at Drakes, Prospect Hill and Elkhorn. The weather information is accessible online at <http://publicworks.co.marion.or.us/operations/weather/index.asp>. ODOT has a weather station alongside River Road at the Traffic Signal Services Unit facility. The City of Keizer has a weather station at their City maintenance facility behind the Keizer Fire Station. Weather and road condition information collected from these sites generally includes air temperature, pavement temperature, wind speed, wind direction, barometric pressure, and humidity.

1.9 COMMUNICATION EQUIPMENT

The communications system is one of the most critical components in the deployment of ITS infrastructure since local agencies must be able to monitor, control, and operate traffic management devices from remote locations and share information in real-time between operations centers to effectively manage the movement of passengers and goods and respond to incidents. The existing transportation related communications network in the Salem-Keizer area consists of a variety of media such as fiber optic cable, twisted-pair copper, radio, and cellular telephone. The existing agency-owned communications infrastructure is illustrated in Figure 1-9, where data is available.



Additional communications infrastructure exists, either as part of the private telecommunications infrastructure or wireless infrastructure on towers that have not been mapped to maintain security.

1.9.1 Fiber Optic Infrastructure

There is limited public agency installed fiber optic infrastructure in the Salem-Keizer area, but there are existing projects and plans that intend to install a significant amount of new fiber optic cable in the near future. ODOT is currently designing fiber optic infrastructure from the radio tower on the east side of Interstate 5 north of State Street south to Kuebler Boulevard. In addition, ODOT has plans to install fiber optic infrastructure from this radio tower site west to the Northwest TOC providing a direct connection to field devices on Interstate 5. The City of Salem is also installing fiber optic cable with all of their new traffic signal construction projects.

Local telecommunications providers in the Salem-Keizer area include ComCast and Qwest.

1.9.2 Copper Twisted-Pair Infrastructure

The City of Salem currently has copper twisted-pair (12 pair) infrastructure interconnecting approximately 190 traffic signals with the central signal system server (shown in Figure 1-9). Today, the copper twisted-pair infrastructure is used for communications between traffic signals.

1.9.3 Wireless Communications

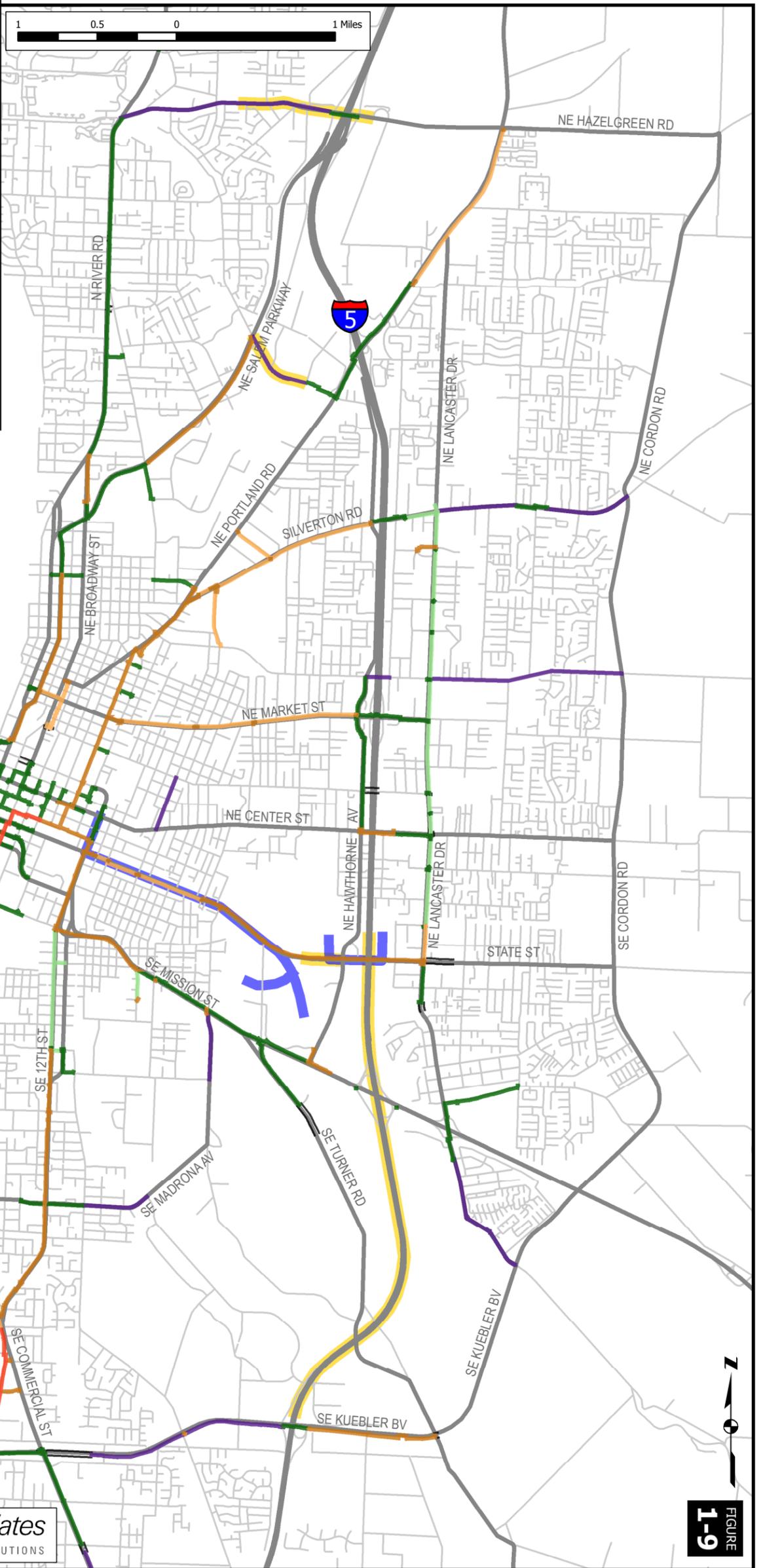
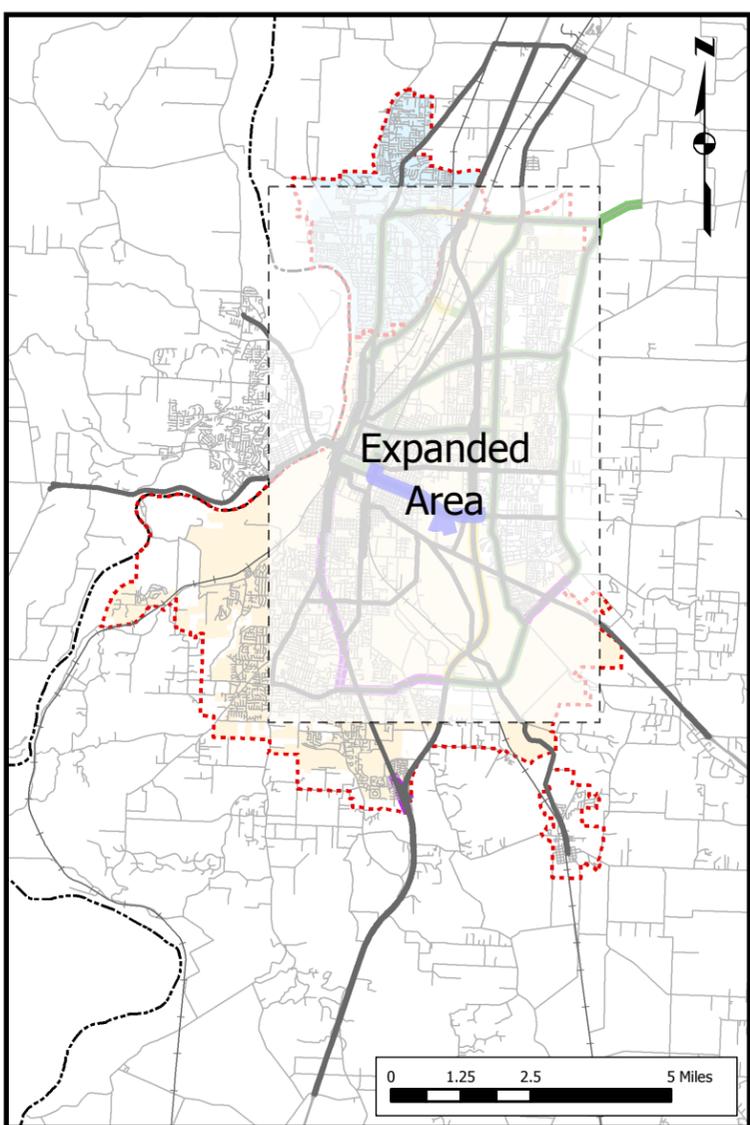
The City of Salem and ODOT currently use wireless communications for some individual field devices. ODOT uses Code Division Multiple Access (CDMA) cell modems to communicate to variable message signs and the City of Salem uses some wireless Ethernet (unlicensed frequency) to transmit video from some traffic signals.

The City of Keizer is exploring the possibility of building a public agency wireless network with complete coverage of the City.

EXISTING COMMUNICATIONS INFRASTRUCTURE

AUGUST 2005

FIGURE 1-9



Legend

FIBER OPTIC CABLE

- █ EXISTING
- █ IN DESIGN PROCESS

SALEM INTERCONNECTS

- █ 25 PAIR CONDUIT
- █ 12 PAIR CONDUIT
- █ 12 PAIR OVERHEAD
- █ 6 PAIR CONDUIT
- █ 6 PAIR OVERHEAD
- █ CONDUIT WITH PULL WIRE
- █ FUTURE FUNDED I.C.

CITY LIMITS

- █ KEIZER
- █ SALEM
- █ STUDY CORRIDORS
- █ ROAD NETWORK
- █ COUNTY BOUNDARY
- █ RAILROAD
- █ URBAN GROWTH BOUNDARY

1.10 EMERGENCY MANAGEMENT



This section describes the emergency management agencies in the Salem-Keizer area, as well as the strategies used for routine services typically handled by 911, police, fire, and medical agencies, and strategies for major emergencies and disasters. Roles and responsibilities and interagency relationships (for emergency management and transportation management agencies) will be discussed in Chapter 4: Operational Concept.

1.10.1 911 Center

The Willamette Valley Communication Center (WVCC) is the primary 911 Center that services the Salem-Keizer Metropolitan Area. This center is located in downtown Salem and coordinates/communicates with 18 different agencies. In the surrounding area there are two additional 911 Centers; one located in Woodburn (Norcom) and another located in Stayton (Santiam Canyon).

The 911 Center is equipped with a central CAD system to monitor police, fire and emergency vehicle dispatch. The CAD system is Geo 911, and there is also communication via VHF/UHF and an 800 Mhz mobile data network. The center takes approximately 450 calls a day and typically has anywhere from 2 to 5 call takers depending on the time of day.

1.10.2 Police/Fire/Emergency Vehicles

The City of Salem, City of Keizer, Polk County and Marion County all have various law enforcement agencies. The City of Salem and City of Keizer have police departments and Polk County and Marion County have sheriff's departments. The various police department locations can be found on Figure 1-2 earlier in this chapter.



The police departments work with a mobile data network and mobile data terminals and can monitor what other units are doing at any time. Outside communication to/from officers is currently handled through the 911 Center. Communication between officers can be accomplished through the mobile data network as a messaging system.

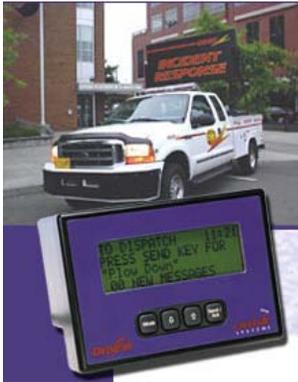
The City of Salem police department uses a UHF frequency system for communication, while Polk County utilizes a radio system and Marion County utilizes a VHF frequency system.

The Fire department currently does not have global positioning system (GPS) units, but would like to implement GPS. When emergency fire calls are processed the closest unit to the incident/call is typically dispatched unless other information is available through the 911 Center that would indicate a faster response from another unit.

1.10.3 Emergency Management Communications Agencies

As previously stated, a system of radio, VHF, UHF and 800 Mhz communication equipment is utilized by various agencies. The City of Salem currently utilizes an 800 Mhz communication network, while the Salem Police Department uses a UHF system. Polk County uses a radio network system and Marion County uses a VHF communication system.

1.11 INCIDENT MANAGEMENT



ODOT currently staffs eleven incident responders in Region 2 that serve as the first responders to an incident. A special program funds the wages and equipment for the dedicated responders. These responders typically work from 9:00 a.m. to 6:00 p.m. and are on-call 24 hours a day, seven days a week. Each responder has designated uniforms and an incident response vehicle that they take home at night. These vehicles are equipped with a 2-line/8 character changeable message sign and will be updated with GPS and mobile data collection capabilities in the near future. Each responder also takes part in extensive on-going training.

The success of the program relies heavily on interagency coordination, training and developing an understanding about each agency's roles and responsibilities regarding response, dispatch and other communication. When an incident occurs in Salem, the incident responders coordinate with fire and police. The comprehensive incident management plan also includes information such as sign placement, flagger location, and interchange closures during and after an incident.

In the event of a major emergency, lasting eight or more hours, alternative routes have been mapped from Portland to Cottage Grove on I-5. These detours provide accessible parallel routes. Many of the coastal route detours do not have the same accessibility to detours and may have more significant impacts in an emergency event. Variable message signs play a critical role in the use of the alternate routes. Proposed locations for the next variable message signs will be northbound I-5 at North Albany and southbound I-5, north of the Brooks interchange.

Of particular importance is the expected increase in construction projects on Interstate 5 that are programmed for the next 3-6 years. The lack of communication and coordination between construction zones is especially problematic with respect to the information dissemination to the traveling public. An additional security issue includes the state capitol building in downtown Salem in the event of a terrorist emergency.



1.12 SPECIAL EVENTS

The Salem-Keizer area has many recurring special events throughout the year that attract additional trips. These events provide significant revenues to the city of Salem and the surrounding economies, but have negative impacts on the existing transportation system. The city of Salem has an event coordinator that plans many of these events that include baseball games, events at Riverfront Park and the State Fair. Specialized local event timing plans have been established to accommodate the increased traffic demand at these locations. Some annual events that impact the transportation system in the area are discussed below.

Keizer Volcanos

The Keizer Volcanos are a minor-league baseball team that attracts many fans. The stadium is located off of I-5 on Radiant Drive. The season runs from the middle of June through Labor Day with about 35 scheduled home games and the possibility of playoffs.



Riverfront Park

Salem's downtown Riverfront Park and outdoor amphitheatre hosts a variety of events. It also houses the Riverfront Carousel with hand carved wooden horses and the A.C. Gilbert Discovery Children's Museum. Additionally, numerous other local festivals and events such as the Bite of Salem and the World Beat Festival take place at this location.

Bush's Pasture Park

This 24-acre park located on 880 Mission Street SE, just south of the central business district, hosts many different events, perhaps most notably, the Salem Art Fair and Festival that typically attracts over 100,000 participants in July of every year. It also is home to the Cascade Surge Soccer team at McCulloch Stadium.

Enchanted Forest/Thrill Ville Theme Parks

The amusement parks located just south of Salem off of I-5 have water slides, roller coasters and offer fun for all ages. During the summer months between Memorial Day and Labor Day, these parks attracts over 200,000 visitors.



Fairgrounds

The fairgrounds are located off of I-5 near the intersection of Lana Avenue and 17th Street. The fairgrounds and Expo Center host many different events throughout the year, including the Oregon State Fair. The state fair is held for two weeks before Labor Day and attracts about 450,000 people over the 12-day period.

1.13 FREIGHT

Freight movements in the Salem-Keizer Metropolitan Area include movements on the State Highway Freight System and the railroad tracks through the city. Existing designated freight routes in the Salem area include Interstate 5 and Highway 22 east of Interstate 5. Freight routes are designated to facilitate efficient and reliable interstate and intrastate truck movements. These are primarily state highways that carry a significant tonnage of freight by truck and/or serve as the primary interstate and intrastate highway freight connections to ports, intermodal terminals, urban areas and other states. Benefits include slightly increased mobility standards, measured by maximum volume to capacity ratios, and pavement conditions that are maintained at higher conditions. ODOT has recently drafted a Freight Route Analysis Project (FRAP)³ that includes recommendations for revisions to the freight system. Based on the FRAP, Salem Parkway, Highway 22 west of Salem and Highway 99W are recommended additional freight routes.

³ DRAFT Freight Route Analysis Project (FRAP) Staff Report, September 1, 2004.

1.14 FERRIES

Marion County Public Works maintains and operates two shuttle ferry services across the Willamette River that provides an alternative way to travel between Newberg and Salem. The Wheatland service operates a mile north of the SKATS region near Willamette Mission Park. This service is the largest and busier of the two ferry services available, with about 225,000 trips annually. This ferryboat can carry 9 vehicles and 42 passengers per trip. The maximum wait time is typically 10 to 15 minutes. The ferry is operational all year long, depending on weather and equipment conditions.



The second ferry is the Buena Vista and it operates five miles downstream from the SKATS area, and carries about 9,000 trips per year. This ferryboat can transport 4 autos and 29 passengers per trip. It operates 5 days a week from April through October. The maximum wait time for this service is also 10 to 15 minutes depending on the types of vehicles onboard.

1.15 TRAVELER INFORMATION

The Oregon Department of Transportation (ODOT) provides most of the traveler information for the Salem-Keizer area. ODOT provides real-time traveler information through the TripCheck website, and 511. ODOT's TripCheck website (www.tripcheck.com) includes two camera images, road conditions, weather information, incident maps, and construction activity for the Salem-Keizer area. ODOT continues to add information to TripCheck as new equipment is deployed.



In late 2003, ODOT implemented 511, the new national traveler information number, throughout the state to provide various types of real-time traveler information. The 511 system is accessible to travelers over the phone through touch-tone dialing or voice activation.

Traveler information is also provided to the public on the Marion County public works website. <http://publicworks.co.marion.or.us/operations/roadclosures/closures.asp>. The Marion County road closure website includes Marion County, Salem and ODOT road closures in addition to current emergencies and conditions, and the operating status of the ferries.

1.16 SUMMARY OF RELEVANT DOCUMENTS

A number of regional studies and plans have been compiled in the Salem-Keizer Metropolitan Area that relate to ITS applications. A review of these documents was conducted to identify potential connections to other agencies and/or planned projects in the study area. This section provides a summary of the key points from the documents reviewed.

1.16.1 1999 Oregon Highway Plan

The 1999 Oregon Highway plan developed by ODOT provides refined goals and policies of the Oregon Transportation Plan as well as a vision for the future of the state highway system and a system analysis of state highway needs and implementation strategies. The highway plan breaks ODOT's highway responsibility into 11 major categories, including modernization, preservation,

bridge, maintenance, operations, safety, special programs, construction support, planning, administration and central services. Intelligent Transportation Systems is one of the five goals included in the Oregon Highway Plan. This policy states that a broad range of ITS services will be considered to cost-effectively improve safety and efficiency and will reflect the user service priorities developed in the Oregon ITS Strategic Plan. This policy highlights the following ITS services for consideration throughout Oregon:

- ▶ Incident Management
- ▶ Pre-Trip Traveler Information
- ▶ En-Route Driver Information
- ▶ Public Transportation Management
- ▶ Traffic Control (Arterials and Freeways)
- ▶ Emergency Notification and Personal Security
- ▶ Route Guidance
- ▶ Emergency Vehicle Management
- ▶ Commercial Vehicle Electronic Clearance
- ▶ Commercial Fleet Management

1.16.2 Oregon Transportation Plan Update

This plan is a 20 year multi-modal plan for the state of Oregon that serves many functions, including addressing the state and local transportation systems, system needs, system priorities, and investment strategies. Oregon's population continues to grow; this paired with changing demographical and geographical trends, has significant impacts on the transportation system. Trends show a more ethnically diverse, geographically centered and older population. Based on these trends and other transportation challenges such as economy, environment, safety, and funding the following draft goals have been developed:

- ▶ Mobility and accessibility
- ▶ Economic vitality
- ▶ Sustainability
- ▶ Management of the system
- ▶ Safety and Security
- ▶ Funding of the system
- ▶ Coordination and cooperation

This plan is currently a work in progress with a public review of the draft scheduled for the summer of 2005.

1.16.3 I-5 State of the Interstate Report

In the *I-5 State of the Interstate Report – 2000*, ODOT provides comprehensive data regarding the existing physical and operating conditions on I-5, a general future travel demand forecast, and an assessment of freeway performance if no improvements are made through 2020. Early action improvements are projects that have been identified through deficiency analysis to improve the operation and or safety of the corridor. These projects for improvements in the study area are listed below:

- ▶ *Interstate 5 at Kuebler Interchange:* Replace the loop ramp with added superelevation and modify the exit ramp intersection approach to a lesser skew (less than 15 degrees) and tighten curb radius.
- ▶ *Interstate 5 at Chemawa Interchange:* Move guardrail and widen shoulder on northbound entrance ramp
- ▶ *Interstate 5 at Brooklake Interchange:* Lengthen southbound entrance acceleration lane by 33 meters and address capacity problems at ramp terminals.

1.16.4 Planned Projects in Salem-Keizer Metropolitan Area

Table 1-4 shows funded and unfunded infrastructure and signal projects for the study corridors, as well as some general transit improvements that may have a potential connection to the implementation of ITS deployments in the future. More detailed descriptions of these projects can be found in the following plans or reports. Additionally, many of the reports outline project recommendations for low, medium, and high priorities. For the purpose of this review, only high priority project recommendations were listed.

Statewide Transportation Improvement Program (STIP), 2004-2007: This program is the Oregon Department of Transportation's short term capital improvement program that provides funding and scheduling information for transportation improvements.

City of Salem Transportation System Plan (TSP), 2001: This plan contains policy information and descriptions of transportation investments that will take place over the next 20 years.

SKATS Regional Transportation System Plan (TSP), 2002: This regional plan is a cooperative effort between SKATS, ODOT, the Cities of Salem and Keizer, Marion and Polk County and the Salem Area Mass Transit District and outlines the priority transportation improvements necessary for the region.

SKATS Transportation Improvement Program (TIP), 2004-2007: The SKATS TIP identifies the transportation projects within the region that are expected to use federal and state funds during the next four years. These projects may overlap many of the improvements outlined in the STIP.

Marion County Transportation System Plan (TSP), Draft 2005 Update: This plan provides a comprehensive list of 20-year transportation improvements in Marion County to maintain the safety and efficiency of the transportation system to an acceptable level.

Table 1-4. Planned Projects on Study Area Corridors

Study Corridor	Project	Report/Plan
Interstate 5	Install traffic signals and turn lanes at Brooklake ramp intersections	Marion County Draft TSP
	Replace Marietta Street Bridge (I-5 interchange and Kuebler Ramp)	SKATS TSP
	I-5 Phase IIIb: Hwy 22 to Kuebler Interchange widen to 6 lanes I-5 Phase IV: Kuebler Interchange to Delaney road widen to 6 lanes	
	I-5 N. Santiam-Kuebler Blvd, widen to 6 lanes replace 6 bridges I-5 Kuebler-Illahee Crossing widen to 6 lanes	STIP (2004-2007)
Kuebler Blvd/Cordon Road	Construct a left turn lane on Cordon Rd at Pennsylvania Ave Construct a left turn lane on Cordon Rd at Herrin Rd Construct a left turn lane on Cordon Rd at Hayesville St Construct a left turn lane on Cordon Rd at Carolina St New interchange at ORE 22 and Cordon Road	Marion County Draft TSP
	Traffic signal interconnect at Turner and I-5 Widen to 4 lanes Commercial St to I-5	SKATS TSP
	Traffic signal interconnect: Silverton to State Street Install new actuated and interconnected traffic signals at Kuebler and 36 th Minor realignment of the intersections of Gaffin and McCleay	STIP (2004-2007)
	Highway 22	Pedestrian Improvements path at Lancaster Street
Wallace Road	Traffic signal interconnect Edgewater to Glen Creek Increase the radius of WB offramp from Highway 22 to Wallace Road (more lanes)	SKATS TSP City of Salem TSP
	Expand intersection at Glen Creek Road NW	Salem CIP
Salem Parkways & Liberty Street	Traffic signal interconnect from Salem Parkway to 25th Street along Hyacinth Street	City of Salem TSP
N River Road/Brooklake Road	Structural overlay from Chemawa Road to North Santian Interchange Widen travel lanes and add paved shoulder from River Rd to Interstate 5	STIP (2004-2007) Marion County Draft TSP

Table 1-4. Planned Projects on Study Area Corridors (continued)

Study Corridor	Project	Report/Plan
Lancaster Drive	Traffic signal interconnect on Sunnyview Road from Lancaster Drive to Cordon Road	City of Salem TSP
	Traffic signal interconnect Hagers Grove Rd to Cordon Rd	STIP (2004-2007)
	Lancaster/Market Street NE, additional turn lanes for NB and WB movement	City of Salem TSP
	New signal at Lancaster and Carson Road	STIP (2004-2007)
	Realign curves and widen to 3 lanes (Highway 22 to Kuebler Blvd)	Salem CIP
Commercial Street Silverton Road	North and southbound left turn lanes @ Wiltsey Street	SKATS TSP
	Traffic signal interconnect Brown to Cordon	STIP (2004-2007)
	Traffic signal interconnect Lancaster to 45 th	
	Traffic signal interconnect Lockhaven (River Rd N to I-5)	
Center Street	Traffic signal interconnect 12 th to Hawthorne	STIP (2004-2007)
Market Street	N River Road to Rickman Rd pedestrian improvements	SKATS TSP
Chemawa Rd/Lockhaven Dr	Bridge replacement over Claggett Creek	STIP (2004-2007)
	Traffic signal interconnect from Fred Meyer to Shangri La	SKATS TSP
Broadway Street Portland Rd/Hwy 99E/Fairgrounds Rd	Left turn lanes from SB Oregon 99E to Howell Prairie Rd	Marion County Draft TSP
	Left turn lane from northbound 99E to Boones Ferry road	STIP (2004-2007)
	Traffic signal interconnect Erixon to Lana	SKATS TSP
	Traffic signal interconnect with Hayesville and Chemawa	
	Install new actuated and interconnected traffic signals at Kale Street	STIP (2004-2007)
12th/13th St SE	12th Street Pedestrian Promenade	SKATS TSP
	Traffic signal interconnect Hines and Hoyt	
	Traffic signal interconnect Mission to Hoyt	STIP (2004-2007)
Hawthorne Avenue	Widen to 2 travel lanes with center turn lane Portland Road to Sunnyview Road	Salem CIP
Liberty Road SE	Widen to add left-turn lanes on all approaches at Madrona Avenue SE	STIP (2004-2007)
25th Street/Madrona Avenue	Madrona and Liberty Road left turn refuges and signal upgrade	STIP (2004-2007)
Turner Road	No improvements at this time	
Transit Improvements	Transit garage retrofit Preventative maintenance Transit station construction (South Salem and Keizer) Streetcar feasibility study High Priority Transportation Corridor Implementation N River Road/Broadway	STIP (2004-2007)

Table 1-4. Planned Projects on Study Area Corridors (continued)

Study Corridor	Project	Report/Plan
Bridge Improvements	Bridge Replacement Capitol Street Bridge at Mill Creek	Salem CIP
	Bridge Replacement Center Street Bridge at Mill Creek	
	Bridge Replacement Summer Street Bridge at Mill Creek	
	Bridge Replacement Commercial Street Bridge at Pringle Creek	
	Bridge Replacement Liberty Street Bridge at Pringle Creek	
	Bridge Replacement 14th Street Bridge at Shelton Ditch	

City of Salem Capital Improvement Program: This plan consists of a variety of projects to improve the City of Salem’s multi-modal transportation system. The community has not approved a transportation general obligation bond since 1995. Given the lack of bond funding, the majority of street improvement projects proposed for funding in this issue are to be constructed using Transportation System Development Charges.

1.16.5 Oregon ITS Strategic Plan (1997-2017)

ODOT developed the Oregon ITS Strategic Plan to set a vision and goal for ITS in Oregon. The plan includes a summary of existing ITS infrastructure, high priority user services, and ITS implementation strategy, timeframe and associated costs. Both regional and statewide projects are included for implementation in the short (1997-2002), mid (2002-2007) and long term (2007-2017). Some of the projects that have been identified for Region 2 over the next 15-year are outlined below.

- ▶ Install Photo Violation Detection (Short-term)
- ▶ Regional Traffic Management Center (TMC) (Short-term)
- ▶ Incident Dispatch and Response (short-term)
- ▶ Automatic Incident Detection System (Medium Term)
- ▶ Variable Message Signs (Medium-term)
- ▶ Installation of CCTV Surveillance Cameras (Long-term)

The list of statewide projects is quite lengthy and encompasses many aspects of ITS, such as transportation operations, traffic and incident management, traveler information, emergency response, and traveler safety.

1.16.6 Salem-Keizer Transit Strategic Business Plan

The Salem-Keizer Transit District developed the strategic plan in an effort to define what their mission means in practice and how can best be accomplished. The main component of the service program over the next five-year period is the conversion of the current radial pulse pattern of service to what has been coined the “3C” system of neighborhood circulators, outlying transit centers, and high-frequency corridor routes. This shift will potentially provide greater capacity, flexibility and efficiency by enabling the system to attract more riders, adapt to the changing communities and improve mobility to more neighborhoods. Additionally, Intelligent Transportation Systems (ITS) technology is programmed to improve service speed, quality of the transit experience and improved information for riders.