



# **General Corridor Evaluation**

## **Executive Summary**

### **Including Purpose and Need and Next Steps**

June 2002



# Overview

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The Willamette River poses a major transportation barrier for east-west travel in the central Willamette Valley. The Marion and Center Street bridges are the only vehicular and pedestrian crossings of the Willamette River within the Salem-Keizer urban area. The two nearest river crossing alternatives are a two-lane bridge at the city of Independence and the Wheatland Ferry.

The issue of providing additional transportation capacity across the Willamette River in or near the Salem-Keizer area has been ongoing for many years. Although the existing Marion and Center Street bridge structures represent a two-fold increase in transportation capacity over what existed prior to 1983, the Salem-Keizer Area Transportation Study (SKATS) Regional Transportation Systems Plan (RTSP) adopted in 1996 specifically identifies the need to develop additional transportation capacity across the Willamette River as an “outstanding issue” that requires further detailed analysis and consensus building in order to evaluate and select a preferred package of alternatives.

As documented in the General Corridor Evaluation, additional river crossing capacity convenient to the existing and anticipated travel demand will become an increasingly important part of the overall system needed to solve the urban area’s transportation problems. On the one hand, a bridge location without proximity to the core area creates considerable out-of-direction travel, which yields additional costs for energy, time, convenience, and utilization. On the other hand, a bridge location with proximity to the existing bridges may create an unmanageable traffic situation relative to the dispersal of traffic off the bridgeheads, essentially aggravating existing problems on the connecting infrastructure.

The need to examine and identify a third bridge crossing alternative in the Salem-Keizer area has been the subject of various technical studies and related planning efforts for over 30 years. Many of the same basic issues identified in these previous studies, such as continued development in West Salem and peak-hour traffic congestion on the bridges, are still relevant today. The previous efforts have resulted in the completion of several capacity improvement projects that included: 1) the construction of the Front Street bypass (1981); 2) the widening of the Marion Street Bridge from two to four lanes (1982); 3) the complete replacement of the Center Street Bridge from a two-lane structure to a four-lane structure (1983); and 4) the recently completed Bridgehead Engineering Study (BHES), which identifies short-term capacity improvements to extend the useful life of the existing bridge system.

The Willamette River Crossing Capacity Study was initiated to address the long-term capacity issues and to provide the analysis and process necessary to evaluate a wide range of potential solutions, including alternative new bridge corridors. This General Corridor Evaluation is the first step in that process, and documents the evaluation of alternative solutions that could offer some potential to solve the identified problems and recommends promising alternatives for further analysis.

The analysis conducted as part of the General Corridor Evaluation documents the following findings:

1. That congestion levels on the Willamette River Bridge approaches and connecting infrastructure are significant today (during the peak hours) and will worsen in terms of both magnitude and duration over time.
2. A new bridge in conjunction with aggressive improvements in the use of non-drive alone modes is the only alternative that will provide sufficient river crossing capacity to meet future travel demand.
3. No potential location for a new bridge is perfect; all would have some negative impacts that would need to be ameliorated.
4. The location for a new bridge that best meets the goals related to reducing traffic congestion with the least negative impacts is the Tryon/Pine corridor.
5. The Tryon/Pine corridor should be studied in greater detail to determine whether or not we should begin preserving right-of-way in the next twenty years for the longer-term eventual construction of a new bridge in the corridor.

Subsequent efforts in the planning process will include developing a regional consensus on a preferred solution, the completion of a Locational Environmental Impact Statement (LEIS) for any preferred construction alternative, a decision on the preservation of required rights-of-way (if any), and a funding strategy should a “build” option (including right-of-way preservation) be selected as the preferred alternative.

# Purpose

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The purpose of a proposed new bridge across the Willamette River within the Salem-Keizer urban area is to provide the additional transportation capacity necessary to relieve congestion on the existing Marion and Center Street bridges.

As identified by the River Crossing Task Force, the specific goals of the new river crossing capacity are to:

1. provide traffic relief to the existing bridges;
2. improve transit service across the river;
3. relieve specific bottlenecks on the connecting infrastructure on both sides of the river;  
and
4. provide a convenient alternative to the Center and Marion Street bridges should they be closed due to an accident or other emergency.

These goals are intended to be met with the least amount of impact on the community.



# Need

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## Population and Employment Growth

Two modern, four-lane bridges—the Center Street Bridge (eastbound) and the Marion Street Bridge (westbound)—have been in service since 1982, functioning as a couplet across the Willamette River in the SKATS area. The population in the SKATS area, however, has grown from 138,700 people in 1980 to 203,300 in 2000, an increase of nearly 47 percent. Furthermore, the area’s population is expected to grow by an additional 26 percent during the next two decades to 255,340 persons in 2020. Of particular note is the fact that the population of West Salem is anticipated to grow by approximately 75 percent over the same period. This represents a growth rate nearly three times as high as the SKATS area as a whole.

SKATS area employment is expected to grow by about 26 percent from the period 1997 to 2015 to a total of 110,620 employees. Over one-half of these new jobs will be located in Central Salem, easily accessible from the east bridgehead.

Two major factors influence these growth patterns:

1. A large portion of the remaining developable residential land within the Salem-Keizer UGB area is located in West Salem. Simultaneously, there is relatively less available, developable commercial and industrial acreage designated in the adopted Salem Comprehensive Plan in the West Salem area. As a result, a majority of the vacant land remaining within the UGB in West Salem is expected to be developed as residential.
2. Jobs tend to locate near already existing employment centers. Since the region’s existing major employment centers—Salem’s central business district and the Capitol Mall area—are already in established locations on the east side of the Willamette River, much of the area’s future job growth will likely remain in or near these locations.

## Growth in Travel Demand and Congestion

Since 1980, the average daily traffic (ADT) on the two bridges has increased approximately 70 percent from 45,000 to about 77,000 in 1996. By 2015, traffic volumes on the bridges are expected to increase again by almost 40 percent to 106,500 ADT. The p.m. peak-hour design capacity on the Marion Street Bridge is currently estimated at approximately 4,500 vehicles. The estimated p.m. peak-hour traffic demand on the Marion Street Bridge in 2015 will be approximately 6,700 vehicles, creating a p.m. peak-hour traffic capacity deficit of about 2,200

vehicles. Similar conditions exist during the a.m. peak hour. Without additional transportation capacity across the river, the levels of service on the bridge system and the connecting infrastructure in both the downtown Salem core area and in near-in West Salem (**Table ES-1, Figure ES-1**) will continue to deteriorate over time. Not only will the amount of congestion increase significantly, but it will also occur over a longer time frame during the day.

Local trips, i.e., trips where both origins and destinations are inside the Salem-Keizer area, are now and will continue to be the major component of the traffic demand on the bridges. Data from the 1990 U.S. Census shows that about 22 percent of workers who live in West Salem work in the central Salem area and 53 percent work at other destinations on the east side of the river inside the Salem-Keizer area. Therefore, about 75 percent of West Salem workers must use the Marion and Center Street bridges for their work trips. The remaining 25 percent work in other areas of the region, although many must use the existing bridges to access their places of employment.

While traffic originating from areas west of the river outside of West Salem is significant (37 percent of the total traffic) not more than 3.5 percent of these trips are through trips. The overwhelming majority of trips are destined for locations within Salem and Keizer east of the river. Thus, through traffic that would most benefit from a regional bridge directly connecting Highway 99W with I-5 makes up a relatively small portion of the user market for the bridges. Consequently, accommodating the predominant travel pattern of internal trips remains the major criteria for any additional bridge solution and reinforces the need for a local service bridge near the core area. Such a location would maintain accessibility to both the commercial-employment center of Salem as well as the remainder of the Salem-Keizer area, while a bridge outside the Salem-Keizer area would not provide this accessibility.

**Table ES-1  
No Build - 2015 P.M. Peak-Hour Traffic Data at Selected Locations**

LOCATION	1995 Base			2015 No Build				
	Capacity	Volume	V/C	Capacity	Volume	Change in Volume	% Change in Volume	V/C
Marion Street Bridge	4500	4600	1.02	4500	6700	2100	46.7	1.49
Center Street Bridge	4500	3400	0.76	4500	4300	900	26.5	0.96
Wallace Road (NB) @ Glen Creek	2400	2400	1.00	2400	3100	700	29.2	1.29
Wallace Road (NB) @ Orchard Heights Road *	3300	1400	0.42	1700	2400	1000	71.4	1.41
Commercial Street SE (SB) N of Mission Street	2300	1900	0.83	2300	2500	600	31.6	1.09
Liberty Street (NB) S of Pine Street	1600	1700	1.06	1600	1800	100	5.9	1.13
Salem Parkway (SB) E of Broadway Street	1700	1300	0.76	1700	1700	400	30.8	1.00
Marion Street (WB) E of Commercial	2400	1900	0.79	2400	2800	900	47.4	1.17

\* Capacity change due to installation of a light at the intersection of Wallace Road and Orchard Heights, which improved capacity on Orchard Heights Road without much impact on Wallace Road.

**Insert Figure ES-1**



# Study Design and Process

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The Willamette River Crossing Capacity Study was initiated as part of the planning process required by the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991, and in accordance with 23 CFR (Code of Federal Regulations) Sections 450.104 and 450.318. The basic premise behind this planning process is that before a community makes a major investment in its transportation facilities, it must first consider other reasonable alternatives for solving identified transportation problems. Before the decision to proceed with the construction of a new bridge can be made, a thorough analysis must be undertaken of alternatives that include:

1. making the existing bridges and connecting transportation system work as effectively as possible; and
2. evaluating non-bridge construction approaches to solving the river crossing capacity problem.

This General Corridor Evaluation attempts to provide the first step in an integrated planning process to examine all the feasible transportation alternatives and to identify those that represent the most viable solution to the identified problems and should be carried forward for more detailed analysis in an EIS process. Significant planning, political education, and consensus-building efforts will be necessary to overcome the hurdles encountered by the previous studies.

The General Corridor Evaluation portion of the Willamette River Crossing Capacity Study is designed to accomplish the following objectives:

1. Analyze the travel demand across the river.
2. Identify and document the components and problems associated with river crossing travel demand.
3. Identify a wide range of potential “build” and “non-construction” alternatives.
4. Evaluate the feasibility of the alternatives to meet existing and projected long-term travel demand.
5. Evaluate the impacts of the alternatives on the natural and manmade environment.
6. Present the analysis to the affected public and political entities and elicit comments and concerns.
7. Identify those alternatives that demonstrate "fatal flaws" or offer no indication that they would be the most feasible or viable solutions to the identified problems.
8. Recommend those remaining alternatives for further consideration in a more detailed corridor alignment EIS, which is the next step in the overall planning process.

# Public Involvement

## Scoping Meetings

An initial step for a general corridor EIS planning process is to hold a scoping meeting that allows the affected agencies and local jurisdictions to review and comment on the proposed scope of work. The Salem-Keizer Area Transportation Study (SKATS), the designated Metropolitan Planning Organization (MPO) and project sponsor, conducted two scoping meetings on July 30, 1996 and September 16, 1997 to:

1. identify the major issues that need to be addressed;
2. establish an appropriate review committee structure; and
3. determine a process for effective citizen and agency involvement throughout the study process.

## Advisory Committees

Because the SKATS Policy Committee recognized that any plan addressing the river crossing issues would need widespread community support, it established two separate citizen advisory committees to review work products and provide a forum for developing broad-based consensus on potential river crossing alternatives and solutions. These committees were: the Bridgehead Engineering Study (BHES) Citizens Advisory Committee, and the Willamette River Crossing Capacity Study Task Force.

The BHES Citizens Advisory Committee was formed to examine relatively low cost, short- to intermediate-term capacity improvements to the existing bridges. Solutions identified by the BHES were adopted by the SKATS Policy Committee for inclusion in the SKATS RTSP and the appropriate jurisdictional plans.

The Willamette River Crossing Capacity Task Force was established in December 1997 to address longer term river crossing solutions in the Salem-Keizer area. The Task Force was composed of over 30 area citizens who represented a broad range of perspectives and interests. The SKATS Policy Committee asked the Task Force to oversee the study and planning to provide recommendations for subsequent efforts.

## Community Involvement

During October 1998, SKATS conducted three public open houses for the purpose of presenting information regarding the Willamette River Crossing Capacity Study and receiving public comment. The open houses in Keizer, West Salem, and South Salem were held in a casual setting where the public could feel comfortable, take their time to review display materials, and talk to staff members. The local newspapers and radio stations were notified of the public open houses. The local newspapers published feature articles that, according to the open house questionnaires, were responsible for much of the attendance. A Portland television station also discussed the study and provided open house information during their evening and morning news broadcasts. In addition, an e-mail advertisement was sent to Oregon Public Electronic Network

(OPEN) members, inviting people to attend the open houses or e-mail their comments to staff. The local community television station ran a notice on their community events billboard advertising the open houses for one week.

Approximately 200 people attended the three events. Each attendee was asked to complete a questionnaire and if desired, provide written and verbal comments. This public input was tabulated and used to form recommendations to the Willamette River Crossing Capacity Task Force and the Policy Committee regarding the selection of corridors and options for further study.

In addition, SKATS staff provided a speakers bureau, which responded to more than a dozen requests from the community for informational presentations. An informational brochure was also produced for the Willamette River Crossing Capacity Study. In addition to being available at the open houses, the brochure was widely distributed to neighborhood associations, planning commissions, city councils, boards of county commissioners, and service organizations.

### **Interagency Review Meeting**

On January 20, 2000, SKATS held a day-long meeting to solicit comments and suggestions from state and local agencies regarding the Willamette River Crossing Capacity Study process. Copies of the draft Phase I document, as well as summary information, were mailed along with the invitations to the meeting. Specifically, state and local agency representative were asked to identify topics or issues that needed more detailed evaluation in the draft document or that were not covered at all. The comments were used to help guide the process for completing the final version of the Phase I document.



# Alternatives Evaluation

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Three general “classes” of alternatives were evaluated: No-Build, Non-New-Bridge Construction, and New Bridge Corridors.

## No-Build

The performance of the no-build alternative is described in the “Need” portion of this report.

## Non-New-Bridge Construction Alternatives

As currently configured, the Center Street Bridge provides an a.m. eastbound peak-hour capacity of about 4,500 vehicles; similarly, the p.m. westbound peak-hour capacity of the Marion Street Bridge is about 4,500 vehicles.

According to the 1994 Origin and Destination Study, ninety-five percent of the existing bridge capacity was utilized by autos, and over sixty percent of those cars were single occupancy vehicles (SOV). Since the major capacity problems on the existing bridges occur mainly during the peak rush hours, certain “non-construction” alternatives, such as shifting some of the demand to times when the bridges are not crowded and/or increasing the overall vehicle occupancy of the vehicles (including buses) using the bridges, could provide some interim congestion relief and prolong the useful life of the existing structures. Non-construction alternatives that can provide an increase in usable transportation capacity include:

1. Increased transit use.
2. Transportation demand management (TDM).
3. Bicycle and pedestrian use.
4. Pricing strategies.
5. Conversion of Union Street railroad bridge.
6. Land use changes.

Non-construction alternatives were evaluated to ensure that the most effective use of the existing investment in bridges is made before any recommendation for significant new construction.

In 2015, the p.m. peak-hour traffic demand on the Marion Street Bridge is projected to be about 6,700 vehicles. The peak-hour capacity of the bridge will still be 4,500 vehicles resulting in a capacity deficiency of 2,200 vehicles. It is highly unlikely that any single strategy, by itself, will be successful in removing the excess 2,200 vehicles from the peak-hour demand. For instance, it would require about 44 buses (each with 50 sitting and standing passengers) during the peak hour to carry the 2,200 persons. To expect such a dramatic shift in transportation mode choice is neither reasonable nor useful.

An aggressive but more realistic approach would be to assume achievement of the city of Salem’s adopted transportation goals. These goals include an objective to have at least 25 percent of all work trips make use of transit, carpools, vanpools, bicycles, or walking. According to the 1994 Household Survey, 11.2 percent of the workers living in West Salem used an alternative mode (something other than driving alone) to travel to work. Therefore, the adopted city goal represents more than a doubling of the current alternate mode usage in the West Salem area. Achieving an alternative mode usage rate of 25 percent for West Salem work trips would reduce the future peak-hour demand on the Marion Street Bridge by over 700 cars. Therefore, even the achievement of the aggressive 25 percent alternative mode goal leaves us 1,500 vehicles over capacity during the peak hour.

Additional increases in the use of alternative modes might also be achieved through the use of pricing strategies that charge for driving alone on the bridges during the peak hour. The amount of modal shift achieved would depend on the amount of the charge. Such a strategy would be difficult to implement, both legally and socially. Therefore, the concept of using pricing disincentives should only be considered after every other alternative has been offered to encourage changes in mode choice.

Other types of actions, such as encouraging workers to telecommute one day a week, could also help reduce the peak-hour demand. Shifting commute hours to avoid the worst congestion would also be a benefit, as would continued growth in home based businesses. The measurement of these activities is difficult, but if it were optimistically assumed that they provided the means to reach the 25 percent goal discussed above and removed an additional 700 cars from the peak-hour demand, there remains still an over-capacity demand of 800 vehicles in the peak hour.

It should be noted that although some of the new bridge construction alternatives meet the full target goal of reducing the Marion Street Bridge peak-hour volume by 2,200 vehicles, aggressive expansion of alternative modes is both desirable and necessary to meet the future travel demand and sustain quality of life characteristics. A more detailed discussion of the non-construction alternatives follows.

## **Transit Service**

The Salem Area Mass Transit District (SAMTD or Cherriots) provides public transit service for the Salem-Keizer area. The Transit District’s operating charter was established by the 1979 Oregon Legislature, which set the service area to within the 1979 Salem area Urban Growth Boundary (UGB). The current transit system consists of 22 bus routes that operate under a fixed-route system through a radial “pulse” route structure which converges in a timed fashion at the central transit station located in downtown Salem. An additional route serving the Lancaster Drive area does not travel downtown. Passengers traveling between any two points in the service area can reach their destination by a transfer at the downtown transit station. There are also three park-and-ride routes—one from Market and Hawthorne in East Salem; one from Wal-Mart and Rite Aid on South Commercial; and one from a State of Oregon lot on Airport Road.

There are approximately 55 buses in the fleet with an estimated capacity of 50 passengers per bus (35 seated and 15 standing) and 10 Compressed Natural Gas (CNG) buses with an estimated capacity of 35 passengers per bus (25 seated and 10 standing). The buses currently operate from 6:15 a.m. to 9:45 p.m. weekdays and 7:15 a.m. to 9:45 p.m. on Saturdays. The system operates on frequencies ranging from 15 to 60 minutes. Most of the 22 routes accessing downtown are timed to arrive or depart the transit center at either 15 or 45 minutes after the hour. The majority of the routes are on half-hour frequency in the peak hour and allow for transfers. During the midday, eight routes drop to hourly frequency. Eight routes serving the major radial corridors remain on half-hour service throughout the day and serve a major radial corridor every 15 minutes from 6:15 a.m. to 6:15 p.m. Current bus fares are \$0.75 for adults, \$0.50 for children, and \$0.35 for seniors.

West Salem is currently served by three transit routes: Route 10 (Orchard Heights), Route 12 (Salem town), and Route 19 (Glen Creek). The average weekday ridership for the three West Salem routes is about 920 passengers along an estimated 735 average daily transit miles. The average weekday ridership for Routes 10, 12, and 19 is 475, 265, and 180, respectively.

### ***Transit Ridership and System Capacity***

According to the SAMTD, the existing transit system serves approximately 15,000 average daily riders on a system comprising an estimated 6,900 average daily transit miles in the Salem-Keizer urban area. Approximately 50 percent of the riders are commuters, the largest segment being state employees, and about 25 percent are students, ranging from grade school through college. The majority of the remaining 25 percent consists of senior citizens and disabled riders.

In West Salem, transit currently accounts for about two percent of the total journey-to-work trips, while SOVs account for about 84 percent. The remaining 14 percent of work trips are composed primarily of carpools, biking, and walking.

The existing peak-hour, peak-direction transit capacity available across the Marion and Center Street bridges is approximately 250 passengers (50 passengers x 5 peak direction trips). This level of service provides 175 seats and room for 75 standees in each direction during the peak hour. According to a 1999 ridership count, the average number of transit riders currently crossing the Center Street Bridge between 7:00 a.m. and 8:00 a.m. is 55 passengers (just over 18 percent of the total peak-hour/peak-direction transit capacity and about 26 percent of the total peak-hour/peak-direction transit seating capacity). The average number of transit riders crossing the Marion Street Bridge between 4:00 p.m. and 6:00 p.m. is 137 passengers, or approximately 70 passengers during the peak hour (about 23 percent of the total peak-hour/peak-direction transit capacity and 33 percent of the total peak-hour/peak-direction transit seating capacity).

Decreasing headways on each of the three West Salem transit routes from 30 minutes to 15 minutes would effectively double the existing transit capacity to approximately 500 passengers (50 passengers x 10 peak direction trips), representing 350 seats and 150 standees.

### ***Transit System Improvements***

Peak-hour traffic congestion on the Marion and Center Street bridges could be reduced by shifting SOV trips to transit. The following important factors influence the overall level of transit ridership:

1. Availability of direct and rapid transit routes that require few, if any, transfers.
2. Frequency of transit service (measured in headways).
3. Accessibility and convenience, including transit stop location.
4. Perceived cost of using transit (measured in transit fares and time costs) compared to the automobile.

Consequently, to effectively compete with the automobile, transit service must provide a significant advantage in terms of time and convenience between trip origins and destinations, as well as provide a cost-effective transportation alternative.

Any increase in transit mode split of the magnitude necessary to meaningfully reduce congestion on the existing bridges will require transit service to be more accessible, attractive, competitive, and responsive to identified travel demands and potential transit riders. Transit system alternatives are designed around strategies employed to encourage greater use of transit services, and could include:

1. More frequent transit service on existing routes (shorter headways).
2. Express bus service coordinated with designated park-and-ride lots.
3. Restructure transit service.
4. Additional transit routes.
5. Dedicated "transit only" facilities.
6. Transit fare adjustments/reductions.
7. Expanded transit pass programs.

The following descriptions provide details for various transit strategies and their potential application to reduce peak-hour bridge congestion in the study area:

### **1. More frequent service on existing routes (shorter headways)**

One example of more frequent service would be to provide 15-minute service on the three existing routes in West Salem. If more frequent service were coupled with other service improvements throughout the system, then the system could be more convenient to potential riders.

### **2. Express bus service coordinated with designated park-and-ride lots**

Park-and-ride lots coupled with express bus service, both designed to serve a specific segment of the travel market (such as time-sensitive downtown commuters), can reduce the time for transit trips during peak commuting periods. The estimated travel time from Wallace/Brush College Road to downtown Salem is approximately 10 minutes by private automobile during the a.m. peak period. The same trip using the current transit system takes about 20 minutes. To effectively compete with the private automobile, express bus

service along Wallace Road (or along other designated park-and-ride corridors) will need to provide a reasonable time advantage between trip destinations.

A 50-space park-and-ride lot, recently completed at the Wallace/Brush College Road intersection, could serve as a staging area for express bus service. Even at full capacity (50 vehicles), this site provides a limited amount of potential express bus transit riders. Converting some of the parking spaces to carpools, vanpools, and adding bicycle storage spaces can add some additional transit rider capacity to this site.

Other potential park-and-ride sites that could serve as express bus staging areas into downtown Salem include the cities of Dallas, Monmouth, and Independence and/or along Highway 22 in Polk County. Transit service to these areas, which represents about 30 percent of the bridge traffic, could be provided by the SAMTD on a “contract basis” through intergovernmental agreements. Another method of serving these park-and-ride sites would be through the use of vanpools.

### **3. Restructure Transit Service**

One example of restructured transit service has been the establishment of a timed-transfer station in West Salem near the intersection of Wallace and Glen Creek Roads. All West Salem transit routes could run on 15-minute headways during the peak demand periods then connect to a 15-minute service between a West Salem transit station and the existing downtown transit station. An alternate would be to link the downtown transit station with a circulative route that connects downtown Salem, Willamette University, and the Capitol Mall area with 15-minute transit service. Additional transit routes from Keizer, Chemeketa Community College, South Commercial Street, and Lancaster Mall could also connect with 15-minute service to provide more timely transit connections system wide.

### **4. Additional transit routes**

Additional routes serving West Salem could make transit more convenient by providing improved access to potential new transit riders. While the three, existing West Salem routes provide good coverage, additional routes could make transit more appealing in West Salem where the hilly terrain may discourage some people from walking even a short distance to a bus stop.

### **5. Dedicated “transit only” facilities**

To make transit more desirable than driving, one method to consider would be to remove the buses from the congested stop-and-go traffic on the existing streets. This effort could be accomplished through the use of transit-only lanes on new or existing facilities.

Since it becomes increasingly unlikely that general travel lanes on existing facilities would be “taken away” as congestion worsens over time, and the Union Street Bridge is being converted to pedestrian and bicycle uses only, the only feasible use of this

technique in the river crossing environment would be to construct a reversible HOV or “bus only” lane as part of a new bridge. In fact, this option would appear to be the only realistic option in the long term for providing West Salem transit service as a “leg up” relative to the automobile.

A variation on this concept would be to use technology to give preference to transit at signalized intersections and provide selected improvements to allow buses to bypass some of the more congested areas. Unfortunately, due to the highly developed nature of the area and the degree of congestion anticipated, these techniques are both difficult to implement physically, and problematic as to their ability to provide meaningful reduction in vehicle transit times.

## **6. Transit fare adjustments/reductions**

Studies have shown a close correlation between increases in transit fares and a subsequent reduction in transit ridership. Conversely, fare decreases can increase the level of transit ridership if they are coupled with service improvements (i.e., time savings, access to trip destination, convenience, etc.). In October 1998, the Transit District and the Oregon Department of Administrative Services (DAS) initiated a state employee transit pass program to provide free transit service for all state employees working in the Capitol Mall area. In the early 1980s, a “no-fare” express park-and-ride service enjoyed a high level of ridership. Fare structures designed to encourage peak-hour use of transit could reduce demand on the bridges, but reduced fares need a subsidized source of revenue. Such a fare structure also needs to be combined with convenient service.

## **7. Expanded transit pass programs**

The State Employee Transit Pass Program started in October 1998 to encourage increased bus ridership by state employees and to improve the existing levels of transit services. From that date, employees in the Capitol Mall area have unlimited use of the transit system at no cost to them. The state subsidizes the full cost of transit passes for all employees working in the Capitol Mall area during the next three years. The fees collected by the Transit District are used toward improving transit frequency on designated routes and will implement express park-and-ride transit service. In addition, the DAS will also increase parking fees in the Capitol Mall area to help encourage increased transit use.

The transit pass program is flexible and should be available to other employers.

### ***Transit Recommendations***

While it is recognized that transit, *in and of itself*, cannot solve existing or anticipated traffic congestion crossing the river, increased transit usage, when focused on peak-hour congestion, can, in combination with other actions, delay the need for an additional bridge and allow better use of the facilities already in place.

The following recommendations are for the SKATS Policy Committee and the Salem Area Transit District to consider as they continue to develop operational and financial plans for transit service in the Salem-Keizer area:

1. Consider actions that will encourage increased ridership in the West Salem area. These could include, but are not limited to:
  - a. providing more frequent service, as funding allows;
  - b. restructuring or adding routes to make them more convenient; and
  - c. identifying and correcting physical barriers to the use of transit, such as locations where people may not feel safe walking to and waiting for the bus due to a lack of sidewalks.
2. Continue to work with potential partners to provide reduced or no-fare transit passes, particularly during the peak hours.
3. Explore technology that may make transit more competitive with the car, such as signal pre-emption systems.
4. Explore the possibility of cooperating with outlying cities to provide express bus service into the Salem area.
5. Ensure that transit-enhancing strategies are considered as part of the operation and physical design alternatives of any new bridge.

## **Transportation Demand Management**

Efficient use of the existing transportation capacity on the Marion and Center Street bridges can also be increased by:

1. encouraging alternative travel choices;
2. reducing single occupancy vehicle (SOV) use during peak-demand periods; and
3. providing viable non-SOV transportation options.

Transportation Demand Management (TDM) alternatives are designed to encourage travel behaviors that reduce single occupant automobile trip demand. Such alternatives focus on both short-term actions as a means to mitigate existing congestion problems and long-term solutions to avoid future congestion. TDM strategies include:

1. ridesharing programs (carpool matching, vanpool/buspool referral services);
2. telecommuting options;
3. alternative work schedules (flex time, compressed work weeks, staggered work hours);
4. transit use incentive programs (group transit pass discounts, employer-based transportation allowances); and
5. vanpool formation assistance.

In short, a large amount of relatively inexpensive bridge capacity can be created by simply shifting the time that people travel during the peak demand period by 30 or 45 minutes.

Regional methods to accomplish the shift from peak travel periods include:

### **1. Regional Rideshare Program**

The Regional Rideshare program, currently administered by the city of Salem, furnishes services to the Salem-Keizer urban area as well as Marion, Polk, and Yamhill counties. The program provides a computerized matching service for carpools and van/buspools that focuses on encouraging the use of transportation modes other than the single-occupant vehicle (SOV). The program also provides for web-based rideshare participation. Other outreach efforts include transportation fairs and booths at employment sites and public events. The Rideshare program also conducts media advertising, and produces and distributes outreach materials throughout Marion, Polk, and Yamhill Counties. Finally, the Rideshare program serves as a clearinghouse for transportation information, including information on walking, bicycling, telecommuting, park & ride lots, and special transportation services.

Complementary to the carpool and van/buspool referral service, the city of Salem currently gives priority and discounted parking rates to carpools at over 300 on-street parking spaces. Carpoolers can also apply for carpool parking spaces located in the Pringle Parkade in downtown Salem.

### **2. Regional TDM Program**

The regional TDM program began in 1994 as a complement and enhancement to the Rideshare Program. It is designed to work with employers and groups of employers to coordinate home-to-work and work-to-home transportation programs that encourage employees to use alternative modes of transportation, including transit, bicycle, walking, and alternative work schedules (flex time, compressed work weeks, etc.). This program covers Marion, Polk, and Yamhill counties and is operated by the city of Salem. TDM staff work with individual employers to identify commuting patterns, design TDM plans, and assist in TDM plan implementation. The program creates customized welcome letters for employers to distribute to new employees. These letters provide carpool, vanpool, and parking information, as well as a coupon for two free bus rides.

The TDM program has also created a network of transportation coordinators from state agencies. The TDM programs hold quarterly training meetings for transportation coordinators and provide them with comprehensive training manuals and outreach materials. The program uses this network of transportation coordinators to distribute information on changes in bus service, park-and-ride lots, road closures, new vanpools, etc. to all state employees.

As part of a public/private partnership, the TDM program works with area businesses to produce a “Smart Commuting” coupon book. These coupon books are distributed through employers, including the State of Oregon and the city of Salem, who participate in the smart commuting programs for their employees.

### ***TDM Program Participation***

The vehicles used in vanpools and buspools can be company-sponsored, third-party, or owner operated. In early 2000, there were 17 vanpools and five buspools registered with the Rideshare Program and available for public use. Vanpools typically carry 8 to 15 passengers and buspools carry 45 to 55 passengers. There are approximately 450 commuters who participated in vanpools and buspools. Successful rideshare matches currently have an average life span of two years, and the city of Salem processes approximately 100 carpool applications a month.

Most ridesharing and other TDM programs are strictly voluntary in nature. Participation in these programs is not likely to be mandated by area employers, public sector agencies, or local political bodies. West Salem residents receive rideshare information through new resident mailings targeted to people who have just moved to the area. These personalized letters welcome them to their new neighborhood and provide them with a rideshare brochure and a coupon for two free bus rides. The idea is that they will consider these options before they become set in a commuting pattern. In addition, current West Salem residents are more likely to receive information on alternative modes through their employment sites, particularly those who work in Downtown Salem or the Capitol Mall. In 2000, the TDM program worked with 18 private employers and over 30 state agencies in Salem.

### ***TDM Program Improvements***

There are two distinct travel markets that potential TDM program improvements should address for traffic using the Marion and Center Street bridges during peak traffic hours. TDM strategies designed to capture either segment of the peak-hour travel market will need to provide an advantage that can effectively compete with the SOV in terms of convenience and cost.

The first and largest travel market is for peak-hour commuting trips where one of the trip origins is in the West Salem area. These short-distance trips have relatively short travel times between origins and destinations. Consequently, an appropriate TDM program needs to provide an attractive alternative to driving during the peak commuting hours. Work schedule revisions can provide an appropriate peak-hour travel substitute by permitting the employee to adjust their work schedules to better fit their needs and avoid peak-hour congestion. Telecommuting provides a similar benefit to peak-hour commuting for short travel times.

The second travel market is the peak-hour intercity commuter who has one trip origin outside the Salem-Keizer area (e.g., Dallas to Salem). Intercity commutes are longer distance trips that involve relatively longer travel times compared to those originating in West Salem. Effective strategies for trips that have longer distance lengths include carpools, vanpools, and buspools.

One of the overall goals of the adopted Salem Transportation System Plan is to have at least 25 percent of all journey-to-work trips in the Salem area to be non-SOV travel modes—transit, bike, pedestrian, vehicle pools, etc. The following strategies and their potential application in the study area are discussed as techniques to achieve the goal of reducing SOV work trips:

## **1. Alternative Work Schedules**

One strategy for reducing the number of short-distance commute trips from West Salem to the downtown/Capitol Mall area is alternative work schedules. Work schedule adjustments might occur through one of the following:

1. compressed work weeks (working an equal number of hours per day for less than a five-day work week)
2. telecommuting
3. staggered work hours

Recent work site surveys conducted through the Regional TDM Program indicate that employees are most interested in both compressing work weeks and telecommuting options. Over 40 percent of the surveyed SOV employees indicated that if they had the option, they would work at home at least one day a week. Just over 20 percent of those persons surveyed stated they would try compressed work weeks.

Based on the 1990 U.S. Census data for journey-to-work, about 1,600 (22 percent) of workers who lived in West Salem worked in the “central city” area bound by Market Street to the north, Mission Street to the south, 12<sup>th</sup> Street to the east, and the Willamette River on the west. Also, about five percent of West Salem workers worked at home, which accounts for about 400 person trips.

## **2. Ridesharing Programs**

Based on the 1994 Origin and Destination Survey, the automobile occupancy rate on the Marion and Center Street bridges is 61 percent - 1 person, 26 percent - 2 person, and 12 percent - 3+ persons. Consequently, ridesharing strategies directed to increasing carpools and vanpools could be effective to increase travel capacity on the bridges.

The 1994 Origin and Destination Survey also showed that about 41 percent of total bridge traffic could be classified as longer distance commute trips. For the Salem-Keizer area, the longer distance commute trips and their percent of the trips are:

1. western external area - Dallas, Monmouth, Polk County, etc. - 28 percent;
2. northwest external area - McMinnville, Dayton, Amity, Yamhill County, etc. - 6 percent; and
3. through trips - 7 percent.

Vanpools are generally more effective for longer distance commute trips that have defined origin and destination points. Carpooling also has its place for the shorter

commutes. Currently, twice as many West Salem residents carpool than take the bus. Strategies to encourage carpooling by making it more convenient and cost-effective should be pursued both within West Salem and in outlying communities.

### **3. Other Supporting Strategies**

For alternative work schedules and rideshare programs to be successful, the alternatives to driving alone must be convenient and supported by other policies. Pick-up and drop-off locations for van and bus pools must be convenient to passengers' home and work locations. Ideally, the vanpools and buspools would have a minimum number of stops in order to provide a travel time competitive with the SOV. Also, preferential parking and reduced parking cost for carpools and vanpools could be provided at trip destinations to encourage participation in these programs.

#### ***Recommended TDM Program Improvements***

The following TDM program improvements are suggested to encourage greater participation from West Salem, Polk County, and Yamhill County residents who work in Salem-Keizer on the east side of the Willamette River.

1. Expand the level of support for the Regional Rideshare.
2. Expand the level of support for TDM Programs.
3. Increase the participation among state agencies and other employers in the existing Rideshare and TDM Programs.
4. Consider a TDM demonstration project (e.g., two to three years) to provide vanpool and/or express bus service between targeted Polk County communities and the downtown/Capitol Mall area, or other destinations.
5. Identify new commuter travel markets that could benefit from vanpool/buspool service.

### **Bicycle and Pedestrian**

Bicycle and pedestrian alternatives include improvements that help facilitate increased bicycling and walking by providing a continuous, direct, and interconnected network of supporting facilities, including bike lanes, multi-use paths, sidewalks, and other related facilities. Peak-hour traffic congestion on the Marion and Center Street bridges could be reduced by providing safe and direct access to local and regional activity centers, which would encourage a shift from SOVs to bicycling and walking.

#### ***Levels of Bicycle and Pedestrian Use***

Based on the 1990 U.S. Census, bicycle and walking accounted for about one percent and two percent, respectively, of the journey-to-work trips in the West Salem area. These averages are low compared to the rest of the urban area, which is probably a reflection of both the available facilities and the hills in West Salem. A goal of the Salem Transportation System Plan is to

triple the percentage of bicyclists and double the number of walkers for journey-to-work trips during the next 20 years.

As part of this study, a bicycle and pedestrian survey was conducted on July 21-23, 1997 (Tuesday, Wednesday, and Thursday) during the morning and afternoon peak hours. The average number of bicyclists crossing the river was 23 in the morning and 25 in the afternoon. Pedestrian crossings of the river averaged nine in the morning and 12 in the afternoon.

### ***Bicycle and Pedestrian System***

The level of bicycle and pedestrian use in West Salem is a direct reflection of the available facilities. In the Salem-Keizer area, the existing bicycle and pedestrian system is composed of a variety of facilities that include bike lanes, shoulder bikeways, multi-use paths, and sidewalks. These facilities are located along both the local and regional street network and are owned and maintained by the cities of Salem and Keizer, Marion and Polk counties, and the state of Oregon. The Regional Bicycle System (RBS) contains approximately 142 miles of bicycle facilities that are, for the most part, associated with the arterial street system. Currently, approximately 80 miles (56 percent of the total regional system) of the RBS is complete. The remaining 62 miles should be complete by the year 2015. The local bicycle systems include those facilities located along the arterial streets system, as well as identified collector and local streets.

Currently, the bicycle system in West Salem is not complete. Approximately 11 miles of the 33-mile West Salem bicycle system is completed. Bike lanes are located along most of the arterial streets in West Salem including Edgewater Street, Highway 22, Glen Creek Road, Orchard Heights Road (between Wallace Road and Mousebird Avenue), and Wallace Road (between Edgewater Street and Michigan City Lane). The adopted 1996 Regional Transportation Systems Plan suggests that revenues will likely be available by 2015 to fund the completion of the regional bicycle system, including the remaining segments of Wallace, Orchard Heights, and Doaks Ferry roads. Bike lanes and/or bicycle routes are also proposed for most of the collector streets in West Salem. The completion of the bicycle system should encourage greater use of these transportation modes. A separated bicycle and pedestrian path on the Marion and Center Street bridges already provides access to downtown Salem and to bike lanes on the Front Street Bypass.

The sidewalk system in West Salem is approximately 60 percent complete. Sidewalks are lacking in the hilly areas north of Edgewater Street just outside the older developed residential and commercial areas. The existing sidewalk system could also connect to a transit/shuttle stop located in West Salem. In 2000, the Transit District opened the West Salem Transit Hub on Calapooia Street between Glen Creek Road and Taybin Road east of Roth's West Salem grocery. While not directly a pedestrian amenity, transit shuttle service to downtown Salem is now available. The shuttle service to downtown Salem during peak commute times could encourage more people to at least walk to a transit stop in West Salem. Also, the conversion of the Union Street Railroad Bridge into a bicycle/pedestrian commuter recreational facility provides another alternative transportation mode to downtown Salem.

Another planned system improvement is the conversion of the existing Union Street Railroad Bridge to a bicycle and pedestrian facility. A new at-grade crossing over the Willamette River will enhance the bicycling and walking environment. Such a bike/pedestrian path connection between the Marion and Center Street bridges, a Union Street Bridge bike/pedestrian corridor, and the new collector street - Marine Drive NW - will also provide an important link to Wallace Marine Park.

### ***Recommended Bicycle and Pedestrian System Improvements***

The following recommendations should be considered by the appropriate jurisdictions. Some of these recommendations will require further study and evaluation:

1. Complete the bicycle and pedestrian systems in West Salem.
2. Provide more frequent bus service to downtown Salem during peak commute times.
3. Provide a bike/pedestrian path connection between the Marion and Center Street bridges, a Union Street Bridge corridor, and the proposed new collector street - Marine Drive NW.
4. Proceed with the conversion of the existing Union Street Railroad Bridge to a bicycle and pedestrian facility.

### **Pricing Strategies**

Pricing strategies are designed to change travel behaviors by charging a fee (or toll) to regulate or meter the use of transportation facilities. Charging a fee during peak demand periods is a strategy known as congestion pricing. Without a pricing strategy, drivers typically ignore the added cost they impose on others in terms of traffic congestion, time delays, and air pollution. The economic rationale behind congestion pricing is to assign the "social cost" of driving during peak demand periods to those who use roadway capacity during these periods. Charging to drive during the peak provides a cost incentive for some to drive during off-peak hours or use alternative transportation modes (i.e., transit, bicycle, walk, carpools, etc.).

### ***Potential Impacts***

Few examples of congestion pricing programs exist in the U.S., and there are currently no roadway pricing strategies implemented in Oregon. METRO, the Portland Metropolitan Planning Organization, is currently investigating the possibility of implementing peak-period pricing in the Portland metropolitan area through its Traffic Relief Option Study. Although this study has identified various pricing possibilities, public and political support for implementing peak-period pricing in the Portland area has yet to be determined.

Most models of ongoing congestion pricing programs are in Singapore and Europe. Singapore is the most widely cited example of a long-term congestion pricing system that has been successfully implemented using innovative pricing strategies (e.g., area licensing and automatic

vehicle identification systems). In 1976, one year after congestion pricing was first implemented, traffic volumes in downtown Singapore were reduced by almost 50 percent.

### ***Other Implementation Issues***

1. The Oregon Constitution restricts the use of fees levied on motor vehicles to roadway-related expenditures only. Revenues collected from congestion pricing or other vehicle-use pricing strategies may be restricted to highway-related improvements and not be available to finance transit activities or employer-based commuter assistance programs.
2. Developing support from all sectors of the driving public, the business community, and elected officials is the key factor for implementing pricing strategies. Support basically involves convincing the public that pricing is an equitable means of reducing traffic congestion on the bridges. A large segment of the driving public, however, may likely view any form of pricing as "just another tax" and could be reluctant to support it.
3. Peak-period commuter trips tend to be "inelastic"; that is, they are not flexible regarding when they need to take place. Without the existence of viable transportation alternatives (i.e., public transit, bicycle and pedestrian facilities, ridesharing and telecommuting options, etc.) most drivers will either pay the "fee" or forego the trip altogether. Although these trips would generate additional revenue, they would produce little impact on reducing peak-period congestion on the bridges.
4. Charging commuters during peak-demand periods would be regressive to lower-income drivers who are least able to pay the added costs of commuting to work. As a mitigating measure, programs can be designed to compensate drivers adversely impacted by pricing strategies. Such measures may reduce the overall effectiveness of the strategy in reducing congestion.

### ***Applications***

One of the objectives to implementing pricing strategies is to reduce peak-period traffic congestion on the Marion and Center Street bridges by encouraging single-occupancy vehicle drivers to switch to other modes of transportation or travel during non-peak periods. The following describes several potential applications for implementing pricing strategies in the Salem-Keizer area:

1. In general, federal law prohibits tolls on existing federally aided highways, i.e., the Marion and Center Street bridges (Highway 22) and Wallace Road (Highway 221). The Federal Highway Administration, however, does allow some exemptions to promote congestion pricing programs. The state (ODOT) may have the authority to construct new toll bridges on federally aided highways or implement tolls as part of a major reconstruction project for existing federally aided highways and bridges. One strategy would be to apply to the FHWA to allow tolls on the existing Marion and

Center Street bridges and/or the Highway 22 and Wallace Road corridors. Tolls could be collected electronically by Automatic Vehicle Identification (AVI) systems and implemented through an Area Licensing Scheme (ALS). Roads can be equipped with electronic detectors and vehicles must carry electronic transponders to use the toll facility.

2. A second strategy would be to construct a new Willamette River toll bridge that provides faster and more convenient access between West Salem and the major employment centers in the downtown/Capitol Mall area. Tolls can be collected as described above and prices can be adjusted by time of day and vehicle type. Buses, carpools, bicyclists, etc. can be given a discount or allowed to cross for free.

### ***Pricing Strategies Recommendation***

Although pricing strategies might have the potential to reduce peak-period traffic congestion on the Marion and Center Street bridges, it is recognized that the inherent problems with implementing these strategies on the existing bridge system make them infeasible at this time. Pricing strategies should be examined, however, as part of the operational concept for any new bridge facility.

### **Land Use Alternatives**

The city of Salem is currently engaged in the Salem Futures Project, which is a comprehensive study of how to manage future growth and maintain the quality of life over the next 50 years. Phase 1 of the project, completed in 1999, includes the development of a vision statement and alternative land use scenarios. Phase 2 is an in-depth analysis of the alternatives that will provide the information needed to craft a preferred alternative. Phase 3 is the formal adoption of changes to the comprehensive plan and zoning ordinances to implement the preferred alternative.

To date, three alternatives have been presented for growth over the next 50 years. The alternatives include:

1. Corridors
2. Centers
3. Dispersed growth

In all cases, the intent of the growth alternatives is to encourage viable options to the automobile under a number of different strategies. One step is to provide a greater mix of uses within easy walking distance of where people live. A mix of uses means shopping and services are closer to neighborhoods, within the quarter-mile radius or the five minutes most people are willing to walk. In a walkable environment, streets are a reasonable size and have sidewalks.

Accordingly, newly developing or redeveloping areas could have a mix of shops, services, housing, and offices. Most importantly, good urban design and architecture could make them attractive and interesting places. Even for those who would still choose to drive to these mixed-

use areas, they should be able to park their cars and walk to accomplish a number of different tasks. The result should produce an overall decrease in the number of vehicle trips.

In addition, a better transit system that offers more frequent service and direct routes is important. The alternatives seek compact development that creates more destinations with a greater concentration of development that is both more attractive to transit riders and more efficient to serve with transit. Increased density along transit routes provides a greater pool of potential riders to support more frequent service.

All the alternatives retain the Salem downtown as the government, commerce, and cultural center for the region. More housing for the downtown area is also anticipated. Each alternative also supports retaining existing industrial areas as exclusive areas for industrial activity. Infill of vacant land and redevelopment of existing properties will be important to better utilize underdeveloped properties as land values increase.

### ***Corridors***

The Corridors alternative builds on the concept that transportation corridors are areas where commercial activities have historically been located. Accordingly, this alternative directs a significant amount of growth in mixed use and compact development primarily along arterials and other major roadways. Under this concept, West Salem would have a node of activity along Wallace Road between Edgewater Street and Glenn Creek Road and minor activity nodes along both Edgewater from Wallace Road to Eola Drive and Brush College Road to the west of Wallace Road.

The Corridors Alternative creates more options for moving about Salem than just the automobile. Shops, services, parks, and schools are closer to home, thereby making walking, bicycling, or riding transit more attractive. The activity nodes would be even more conducive to walking or riding transit than similar shopping areas are today. Better pedestrian connections should result in fewer miles driven and more trips by means other than the automobile. The higher density corridors support more transit riders, allowing more frequent service, thereby attracting more riders from surrounding neighborhoods. The through-transportation corridors would provide mobility around the region.

### ***Centers***

The Centers alternative expands the center of town as a gathering place for shopping and socializing and adds “new” centers that are a focus for compact development and transportation improvements. For West Salem, this concept includes a major center in the Wallace Road/Glen Creek area, a community center at the intersection of Wallace Road and Brush College Road, and neighborhood centers at the intersections of Doaks Ferry Road with both Orchard Heights and Eola Drive.

The Centers have wider sidewalks and on-street parking wherever possible. The mix of retail and commercial services in the centers provides for the day-to-day needs of local residents, and the centers provide better pedestrian connections, resulting in fewer miles driven and more trips

by means other than the automobile. More people live closer to shops, services, parks, and schools, making walking, bicycling, or riding transit more attractive. Most people still drive to get around, and traffic congestion will continue to increase, but not as much as would be the case with “business as usual” development patterns, because more viable options to the automobile would exist. Locating higher density housing in closer proximity to a mix of commercial uses and transit service results in higher transit ridership and allows for more cost effective service. Transit service in the centers includes more frequent service and a major transit stop or transfer point that provides express service to downtown and to other centers.

### ***Dispersed Growth***

The Dispersed Growth alternative seeks to accommodate future growth with infill and redevelopment within existing neighborhoods and new higher density neighborhoods on the urban fringe.

In the Dispersed Growth alternative, Salem’s roadways would likely become increasingly congested as people continue to rely on the automobile as the primary means to get around. The automobile is the best means of transportation in this alternative because the overall low-density pattern of development continues. Transit services would improve somewhat, but not as much as with other concept alternatives due to the dispersion of residential density.

### ***Land Use Alternative Impacts***

For West Salem, all the land use plan alternatives support:

1. infill, which increases the resident density and commercial intensity;
2. a population increase, which adds to the number of people needing to cross the river; and
3. concentrating commercial development in either centers or corridors sited in West Salem, thereby decreasing the overall need to cross the river into downtown.

### ***Land Use Alternative Recommendations***

In all of the future alternatives there will be more density, diversity, and better design associated with land uses in West Salem. Some of these will provide an employment or shopping alternative that does not require a resident to cross the river during the peak hour. Others may contribute to reducing reliance on the SOV and an increase in the attractiveness of alternative modes of transportation. Nevertheless, although a reduction in the *absolute* need to cross the river might be achievable through land use actions, it is anticipated that most West Salem residents will continue to depend upon a bridge crossing to provide access to a majority of their *actual* employment, shopping, cultural, and other activities. Over time, the implementation of any of the land use alternatives proposed in the Salem Futures project may provide an opportunity for deferral, but not elimination, of the need for a third bridge.

# New Bridge Corridor Alternatives

## Overview

The General Corridor Evaluation is designed to provide an "order of magnitude" evaluation of a broad range of considerations to determine if any of the potential solutions are clearly inferior to others and can be reasonably eliminated from further analysis. Only those alternatives that demonstrate a meaningful possibility for solving the identified long-term river crossing capacity problems with minimal community and environmental impact would be recommended for further consideration and detailed analysis during subsequent phases of the study process.

This report summarizes the General Corridor Evaluation segment of the planning process, which documents a systems-level evaluation of the no-build condition, fifteen general new bridge corridors, plus a "beltway" alternative (**Figure ES-2**). The evaluation included a definition and analysis of traffic-related criteria and a "sensitive site" inventory with a broad indication of possible community, environmental, and Urban Growth Boundary-related impacts associated with the alternative new bridge corridors. For analysis purposes, each corridor assessment identifies a general bridge centerline alignment and a corridor width of 500 feet on both sides of the alignment. This evaluation identified the existence of potential impacts associated with each corridor and evaluated their likely degree of impact. Precise analysis of impacts and specific design options will be produced during the Environmental Impacts Statement (EIS) process for those corridors selected for further analysis.

Most of the bridge corridors identified in this study have been previously proposed in earlier bridge studies and other Salem-Keizer area planning studies. The River Crossing Capacity Task Force added four general bridge corridors (Northern Exurban, Tryon Street, Kuebler Road, and Southern Exurban) for inclusion in the systems-level analysis process.

## Evaluation Summary

The General Corridor Evaluation examined the sixteen potential new bridge corridors relative to their performance against nineteen criteria that were determined by the River Crossing Task Force to be important considerations in the selection of a new bridge location. A summarized description of the criteria information related to each corridor is presented in **Table ES-2**.

For overall ranking purposes, the individual criteria were grouped into four major impact categories: Traffic, Community, Environment, and Non-Urban. Rankings from the four major impact categories were then condensed into the overall corridor rankings. The results of the corridor evaluation and rankings are illustrated in **Figure ES-3**.

While each potential new bridge corridor demonstrated performance and impact characteristics that served to differentiate it from the others, none of the potential corridors achieved a "perfect" score, i.e., completely solving the problem without engendering any potential negative impacts.

As a consequence, the comparative corridor evaluations resulted in the conclusions that the Tryon and Pine Street Corridors demonstrated the most promise in terms of solving the identified problems balanced against the likelihood of negative impacts.

**Figure ES-2**













## Next Steps

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The General Corridor Evaluation of the Willamette River Crossing Capacity Study analyzed the travel demand across the river and identified the components and problems associated with river crossing travel and system capacity in the Salem-Keizer area. It also identified a wide range of potential river crossing transportation capacity alternatives and evaluated their feasibility for meeting existing and projected travel demand, as well as their potential impacts on the natural and manmade environment. Two alternative corridors have been recommended for further study: Tryon/Pine and Kuebler. The Tryon/Pine corridor has been recommended to proceed into additional refinement analyses first. The Kuebler corridor had been included in the draft SKATS Regional Transportation Systems Plan update for public review and comment and is now identified as an outstanding issue in the adopted RTSP.

The next step in the planning refinement process for the Tryon/Pine corridor is to prepare a Locational Environmental Impact Study to gather and analyze appropriate information related to the environmental inventory and potential impacts related to the proposed project in order to proceed to a decision on whether or not to build the improvement (long-term) and to preserve the necessary right-of-way (short-term). The Locational EIS would take approximately two years and cost \$750,000.

A key component of preparing an EIS should be public involvement. In order for an effort to identify a bridge location and to eventually build a bridge to be successful, a significant public involvement effort will be required.

If the preparation of the Locational EIS results in a decision to obtain right-of-way for a future bridge, the adopted Regional Transportation Systems Plan anticipates the expenditure of \$20 million to purchase and preserve property.

Prior to actual construction of a bridge, the design would need to be prepared and the construction funding secured. A recent estimate by ODOT placed the construction cost at approximately \$180,000,000.