

3 – Growth and Travel Demand

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

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

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

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

Population and Employment for 2000 and 2031

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

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

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

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

Employment

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

Demand for Travel

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

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

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

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

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

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

**Table 3-2
Congestion by Functional Class [miles]**

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

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

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

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

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

Transit Usage

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

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

**Table 3-4
Transit Ridership, 1991 to 2005**

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

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

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

Actual growth from 1990 to 2005	
Population	44 %
Employment	21 %
Vehicles over river	42 %
Transit ridership	87 % (1991-2005)
Forecasted growth for 2005 to 2031	
Population	30 %
Employment	32 %
Demand over river	64 %
Transit ridership	40 %

Conclusion

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