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## Transportation's Role in the State Economy

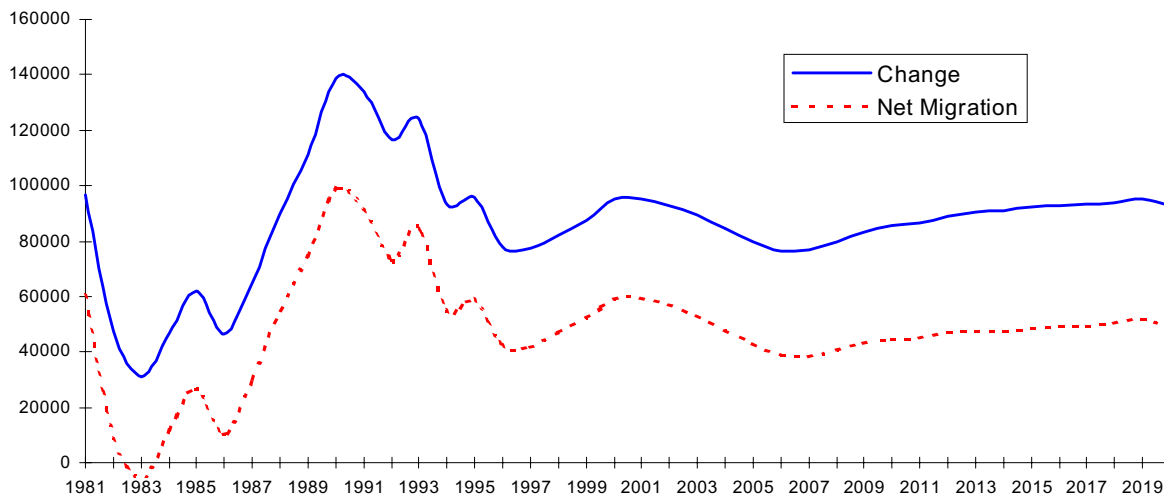
Concerns about transportation infrastructure and its ability to meet the ever-greater needs of the Puget Sound region are growing. Most of the goods and services produced in state and delivered out of state travel through this region. Population and employment projections indicate that the state's congestion problem will worsen considerably in the future.

*The Washington Research Council recently completed a report for the Washington Transportation Policy Institute on forecasted growth in the state economy and the transportation infrastructure's ability to cope with that growth. The following Policy Brief represents the highlights of that report.*

### Growth

The state economy grows for one of two reasons. Either businesses already located in the state expand or new businesses are attracted to the state. The cost of producing goods and services is of primary importance. Other factors being comparable, a business will choose to operate where its costs of operating are the lowest. Increasingly, transportation infrastructure is impacting business costs. Whether a business produces its own transportation or pays someone else to do it, infrastructure investment will potentially lessen costs to that business. For many businesses, the greatest impact of transportation is employees' commute to and from work. As the commute worsens, a greater wage will be required to attract employees. An improved infrastructure serves to decrease the cost of production and delivery. In this way, economic growth depends on the transportation infrastructure.

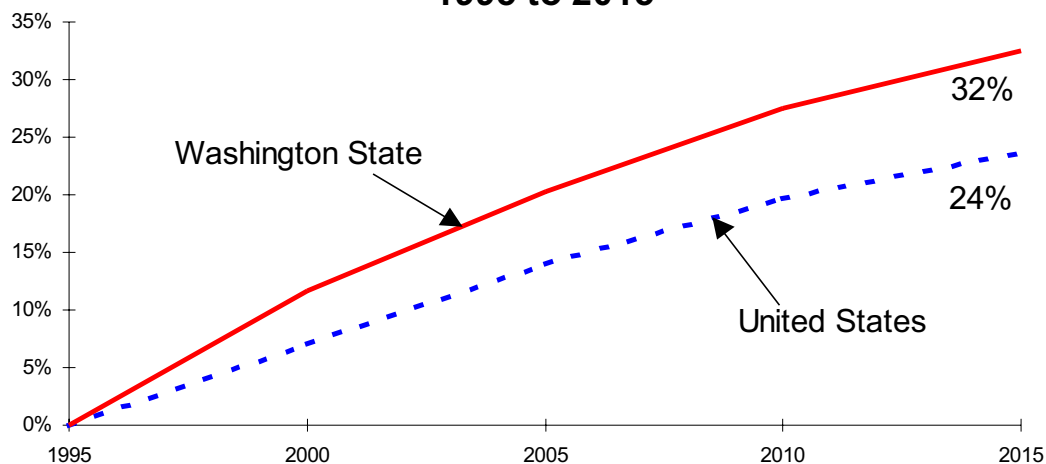
**Net Migration and Population Change for Washington State  
1980-2020**



Washington's population and total employment are expected to grow by 32 percent in the next 20 years. While nearly half of this increase will be centered in King, Snohomish and Pierce counties, others (like Spokane, Thurston, Clark and Kitsap) will also experience significant growth. The population growth is driven by net migration into the state. Washington is considered a relatively good place to live, work, and raise a family, but increases in congestion could alter this view in the future.

Employment growth is primarily driven by employment gains in sectors selling goods and services out-of-state. Currently, nearly one fifth of the aggregate output of Washington's businesses is sold out-of-state (to both foreign and domestic markets). Foreign exports are twice as important to Washington's economy as they are to the national economy. Slightly more than one in six Washington jobs was related to foreign trade in 1985. This will increase as the global marketplace and trade along the Pacific rim expand. Exports are important for virtually every community in the state. For example, 46 percent of our fruit and vegetable crop is sold out-of-state. Further, exports represent 46 percent of our lumber output, 63 percent of plywood, and 77 percent of paper. In the next twenty-five years, air cargo activity for Sea-Tac will more than double (from 381,000 annual metric tons to 880,000). Similarly, cargo activity from Boeing field will increase from 22,000 to 78,000.

### Projected Employment Growth 1995 to 2015



Nearly half (43 percent) of the state's exports leave by water. To meet demands projected for central Puget Sound ports, improved port access and rail transportation capacity will be required. Trade and business leaders in the Puget Sound Region concerned with freight mobility cite the need for the development of grade separations at railroad crossings in the South Kingdome and Tacoma Dome areas as well as in the Kent Valley. Without these investments, potential exporters, including agricultural producers in eastern Washington, will experience costly delays in reaching export markets.



## Just-In-Time Delivery

A recent trend toward “just-in-time” delivery has led to a greater emphasis being placed on decreasing congestion on the states’ highways. Just-in-time delivery is a low inventory, transportation intensive production system, used to attempt to enhance workforce productivity. Just-in-time strategies seek to eliminate disruptions in the production process, increase flexibility in the mix and level of output produced, reduce set-up and lead times, minimize inventories and eliminate waste. It often requires manufacturing and shipping in relatively small lot sizes, increasing the use of transportation resources.

As large blocks of vacant industrial land become scarce in the central Puget Sound region, the need for manufacturers to ship goods between facilities will increase. Similarly, increasing land values will extend the advantages of low inventory production methods. As a result, more truck traffic will be forced onto the region’s freeways, where it will face ever increasing automobile traffic. The problem will be particularly acute in suburban areas, where freeways often already carry a disproportionate share of local traffic. The morning commute is beginning earlier and ending later. Likewise, the afternoon commute is expanding. Savvy commuters who believe that they can avoid traffic problems are spreading the congestion to arterials. The windows available for the transport of oversize products or the relative congestion free transport of any product is dwindling, in both time span and uncongested roadway.

	Average Annual Rate of Return Over Period:				
	<u>1950-1959</u>	<u>1960-1969</u>	<u>1970-1979</u>	<u>1980-1989</u>	<u>1950-1989</u>
Investment in Regional and National Roadways	47.9%	47.4%	23.8%	16.1%	33.8%
Business Investment	13.4%	14.0%	12.0%	11.0%	13.3%

Source: M. Ishaq Nadiri and Theofanis P. Mamuneas

## Rates-Of-Return

There have been many studies produced which have attempted to quantify the returns to infrastructure investment. While their methods have differed widely, their results have been quite stable. They overwhelmingly show that the return on infrastructure investment has been greater than business investments. Nadiri and Mamuneas have done the most recent (and widely accepted) study. Their study attempted to value the cost savings to private sector industries that have resulted from Highway investment. From these cost savings, they calculate the rates-of-return on the Highway investments. (A similar approach is used to calculate rates-of-return on business private investment.) The rates-of-return calculated for Highway investment represents an underestimate of the actual benefits of any project, as there are direct benefits to consumers that would augment these results. The rates-of-return were greatest during the construction of the Interstate System and have tapered recently. However, the returns are still much greater than the return on business investment.

## Discussion

The pressure on Washington’s transportation system will continue to build in the future. Increased capacity is needed if the infrastructure is to keep pace with anticipated growth. Funding this capacity will require either new revenue or more effective use of the existing revenue. In order to earn the highest rates-of-return from these resources, it is critical that we use them efficiently.