Washington Transportation Plan 2007 - 2026

Washington's transportation system should serve our citizens' safety and mobility, the state's economic productivity, our communities' livability and our ecosystem's viability.

Washington State Transportation Commission

Washington State Department of Transportation

Washington State Transportation Commission From left to right: Bob Distler*, San Juan County; Elmira Forner, Vice Chair, Chelan County; Richard Ford, Chair, King County; Reema Griffith, Executive Director; Dale Stedman*, WTP Team Leader, Spokane County; Edward Barnes, Clark County; Dan O'Neal*, Mason County; and Carol Moser*, Benton County.
* *Washington Transportation Plan Team Member*

Washington State Transportation Commission

Washington State Department of Transportation

Douglas B. MacDonald, Secretary of Transportation

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TRANSPORTATION COMMISSION
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November 14, 2006

The Honorable Christine Gregoire
Office of the Governor
PO Box 40002
Olympia, WA 98504-0002

The Honorable Members
Washington State Senate
PO Box 40482
Olympia, WA 98504-0482

The Honorable Members
Washington State House of Representatives
PO Box 40600
Olympia, WA 98504-0600

Dear Governor Gregoire, Senators, and Representatives:

The Transportation Commission is pleased to present the newly updated 2007-2026 Washington Transportation Plan (WTP). This document outlines transportation goals and objectives for the entire state, not just for the Washington State Department of Transportation (WSDOT). It is designed to:

- Offer policy guidance for all jurisdictions statewide on matters related to the transportation system over the next 20 years.
- Provide a data-driven guide to transportation priorities that reflect input gathered from many entities, organizations, and citizens across the state, as well as from deliberations by the Transportation Commission.
- Identify the top transportation investment priorities for the entire state in the areas of: (1) Preservation; (2) Safety; (3) Economic Vitality; (4) Mobility; and (5) Environmental Quality and Health.

Based in part on the Governor's Priorities of Government, this plan is the product of a collaborative effort of more than two years between the Transportation Commission and WSDOT. Together, we conducted an unprecedented level of outreach with governmental entities, organizations, and the general public across the state. The transportation budget proposal the Transportation Commission submitted to the 2005 Legislature, funded through the Transportation Partnership Act, was based on early data and stakeholder input from the initial phases of plan development.

Transportation Commission members, accompanied by WSDOT staff, personally met with each of the fourteen Regional Transportation Planning Organizations and sought public comment at fifteen public outreach events throughout the state. With the plan incorporating many comments from citizens and organizations statewide, the outreach process proved to be valuable for both the Transportation Commission, WSDOT, and the general public.

Given the recent changes in transportation governance, the Transportation Commission views this plan as a transitional effort, bridging its past role with its revised mission to formulate future plans and visions for transportation. The Transportation Commission will spend the next two years furthering the evolution of this plan; culminating in an amended version in time for the 2009 legislative session and budget deliberations, as required under statute.

As we move forward, our hope is that the current WTP update provides useful policy guidance in prioritizing the 2007 - 2009 budget and concurrent policy deliberations. We believe the data and information contained in this plan provide a guide that can be used to test specific policy and fiscal proposals brought forward for your consideration.

Please feel free to contact myself or our Executive Director, Reema Griffith, at 360-705-7070, if you have questions or comments.

Sincerely,

Richard Ford, Chairman
Washington State Transportation Commission

prepared for

Governor Christine Gregoire
and the Washington State Legislature

November 14, 2006

Washington Transportation Plan 2007-2026

by

The Washington State Transportation Commission
and the Washington State Department of Transportation

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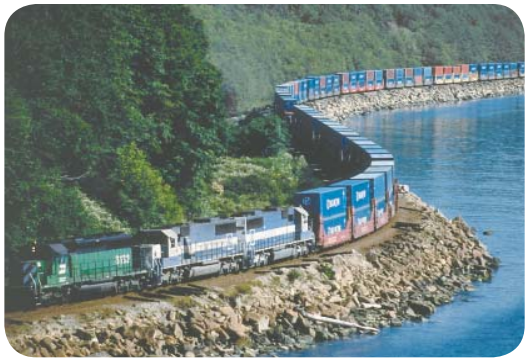


Policy:
A principle or course of action chosen to guide decision making.

Plan:
A method or scheme for achieving or doing something.

Executive Summary

Washington State's transportation system connects us to our families, friends, neighbors, jobs, and communities. Transportation is also the key to economic development, connecting businesses with customers and suppliers. Washington citizens live and work in the most trade-dependent state in the country, and our transportation system links Washington to the global economy.

This complex infrastructure network supports a variety of modes, from ferries and highways, to trains, buses, and barges. Individuals, businesses and governments—from counties and cities to ports, transit agencies, and tribal nations—all own and operate parts of our state's transportation system. Local streets, roads, and sidewalks are the starting and ending points of most trips.

20-Year Transportation Vision

Washington's transportation system should serve our citizens' safety and mobility, the state's economic productivity, our communities' livability, and our ecosystem's viability.

Moving away from the historical practice of using gas tax revenue and attempting to build our way out of congestion, this 20-year plan warns that as we grow, we must choose strategies to manage growth and strategically invest to better move people and goods.

Using current information and data, the Washington Transportation Plan identifies a combined need of $67 billion of transportation investments, both funded and unfunded. These investments over the next 20 years will build our state's economy, meet citizen's social and recreational needs, and enhance personal health and safety.

Even after the recent significant transportation infrastructure investments supported by voters, the Governor, and the Legislature, this plan projects an estimated $38 billion shortfall in meeting the identified $67 billion need (2005 dollars). Given the size of this unmet need, the WTP builds on three key findings to identify investment guidelines that set priorities for future spending and improvements statewide.

The core principle of the investment guidelines is that the existing system cannot be allowed to deteriorate. Investment in our existing transportation facilities is the cornerstone for improved safety, economic vitality, mobility, and personal and environmental health. We must build on the strong safety record we have achieved by making strategic investments on public roadways.

Washington State Transportation Commission

Washington State Department of Transportation

Funding and Investment Strategy

Current funding for the 20-year WTP period provides almost $29 billion dollars for transportation investment. The 2003 (Nickel) funding package raises $4.7 billion over 10 years and the 2005 Transportation Partnership Act raises $9 billion over 16 years. Despite this significant investment, this Plan projects nearly $38 billion (2005 dollars) in unfunded need.

Recognizing the difficulty of securing this much revenue, the Transportation Commission has taken a strategic approach to future investment by establishing guiding principles for investments in current and future facilities. These investment guidelines are meant to direct funding and resources toward programs and investments that yield the greatest benefits.

Investment Guidelines

1. Preservation—Preserve and extend prior investments in existing transportation facilities and the services they provide to people and commerce.

2. Safety—Target construction projects, enforcement, and education to save lives, reduce injuries, and protect property.

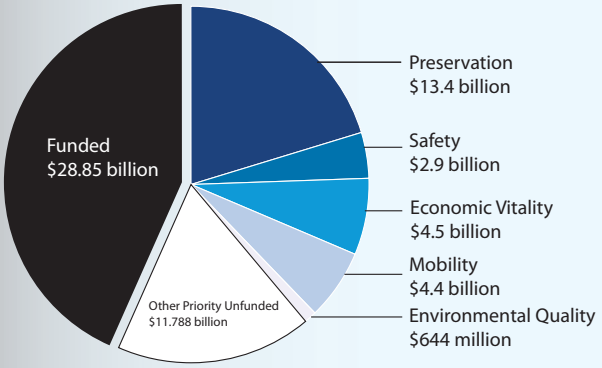
3. Economic Vitality—Improve freight movement and support economic sectors that rely on the transportation system, such as agriculture, tourism, and manufacturing.

4. Mobility—Facilitate movement of people and goods to contribute to a strong economy and a better quality of life for citizens.

5. Environmental Quality and Health—Bring benefits to the environment and our citizens' health by improving the existing transportation infrastructure.

20-Year Transportation Investment Needs
$67 Billion *(2005 dollars)*

Unfunded High Priorities
By Investment Guideline



This plan also sets the stage for incorporating more data and a more flexible, adaptive approach toward projecting and meeting future needs. Over the last year, major changes unfolding in the global economy have significantly raised construction costs and gas prices, causing changes in travel and purchasing decisions. Early reactions by individuals, businesses, and governments to the increased energy costs and global warming indicate lower gas tax revenues over time. The rapid cost escalation of construction materials and fuel, occurring simultaneously with accelerated efforts to reduce reliance on oil-based transportation fuels, serves to remind us that the assumptions underlying transportation planning and revenue sources over the next 20 years are volatile and uncertain, requiring frequent re-examination.

Key Findings

The following key findings, derived from data review and analysis were confirmed during the public outreach process.

Mobility

The mobility of people and goods is fundamental to the functioning of society. Investment must shift from moving vehicles to moving people and products. To provide acceptable mobility in a society that is increasing in population and tied closely to the global economy, transportation systems require constant and repeated attention to operations, maintenance, and investment.

Priorities

The amount of additional investment, on top of existing resources, required to meet the state's projected needs is nearly $38 billion in the next 20 years. Because that entire amount is unlikely to be available at one time, priorities must be established. First, the existing system cannot be allowed to deteriorate. Accordingly, preservation continues to be the first order of business. Second, we should build on the strong safety record we have achieved. Finally, improvements also are needed to enhance the state's economic vitality, its general mobility, the health of its citizens, and the environment in which they live, work, and play.

Innovative Solutions

There are limits to how much revenue can be raised through the gas tax. Innovative technological, operational, and planning solutions can lower costs, target revenue generation, and impact strategic planning for the future. Implementing the latest technologies has potential to yield benefits for the application of user fees, availability of optional transportation modes, and realizing efficiencies in operating the existing transportation system. Innovation should also facilitate readily available alternative transportation, including bicycles and walking, which conserve energy and contribute to personal health.

Key Policy Recommendations

In addition to the investment guidelines, the Transportation Commission makes several policy recommendations in various areas. Additional details on these and other policy recommendations can be found in the main body of the plan.

Funding

- Identify strategies and methods to provide sustainable revenue sources for transportation needs, including tolling and innovative approaches.
- Identify innovative financing approaches aimed at meeting the long-term capital investment needs of the ferry system.
- Develop a policy that defines the state's role and level of investment in public transportation.

Land Use and Transportation

- Improve concurrency between transportation and land use decisions to ensure complementary development of land with transportation infrastructure.
- Clarify the state and local responsibility and options for addressing highway congestion that are driven by local permitting decisions.

Safety

Identify cost effective ways in which the state and local agencies responsible for safety on highways, streets, and roads can coordinate their efforts to achieve statewide safety goals in a comprehensive manner.

Reduce Reliance on Fossil Fuels

- Support development and implementation of a state policy on alternative fuel development and use which could include the identification of possible regulatory and tax structures.
- Identify opportunities and strategies for addressing the growing demand for alternative fuels and their benefits to the environment.

Emergency Preparedness

Clarify the role of state and local governments in providing personal mobility and freight service in the event of a major disruption to the transportation system or in case of catastrophic events.

Transportation and the Economy

- Measure the economic impacts and benefits of making transportation investments in the different regions and economies of the state.
- Define the state's role in making these investments, considering cost and benefit trade-offs.
- Identify the transportation system elements that are critical to maintaining and improving Washington State's global competitiveness.

Rural Economic Vitality

- Improve farm-to-market access by determining strategic investments in rail.
- Define the state's role in establishing and funding a year-round, statewide, core all-weather road system in rural areas.

The Future—Where do we go from here?

The WTP recognizes that due to funding limitations, it is not possible to fund all transportation needs. This plan is a new direction and foundation for the future which prioritizes how investments in Washington's transportation system are to be made, without a project list.

Working Together

The next, most crucial step toward a better transportation future requires a shift in our state's transportation policy framework. Because we cannot build our way out of congestion given the financial cost and the land constraints, we must find alternative ways to accommodate growth. The state, cities, counties, tribes, ports, and transit agencies must coordinate and work as partners to innovatively and strategically invest in improvements that will make the system more efficient and more effective.

Corridor efficiencies, safer county roadways, connectivity between modes, improved port access, expansion of our Intelligent Transportation System network, congestion management, and high capacity transit are pieces of the solution. There is no silver bullet to the overall problem.

The Growth Management Act (GMA) of 1990 was intended to coordinate growth and public services like transportation. Although the state as a whole has begun to do this and to address congestion more effectively, there remains much to learn about whether the GMA's mix of incentives and disincentives and its concurrency requirements go far enough in affecting individual actions that impact our transportation system. Improving the mobility of people and goods will require more serious and focused efforts to create strategic partnerships between government and business to address land use and the everyday decisions people make about where to work, live, and recreate.

An example of a new partnership is the creation of a regional transportation investment district (RTID) with the specific task of developing a proposal for improving transportation in Snohomish, King, and Pierce counties. Currently, RTID and Sound Transit are working together on a joint roads-transit package that focuses on the most highly congested corridors, with a plan to submit the package at the 2007 general election. The RTID/Sound Transit effort could provide a model for other partnerships across the state, using transportation benefit district authority or other approaches.

Several major studies, including the Commission's tolling and rail studies, the Joint Transportation Committee's Ferry Finance Study, the Growth Management Act Concurrency Analysis, and the Multimodal Concurrency Study also will help guide future direction for strategic transportation investment and coordination among the transportation providers.

Current state funding for investment offers very little beyond the current Nickel Package and Transportation Partnership Act to deliver new projects. In the near future, the state must tackle how to innovatively address funding and financing opportunities and challenges. These include increased usage of congestion pricing and tolling to respond to citizens' tax concerns; public and private investment in rail and multiple transportation modes; revenue slippage due to use of alternative fuel sources; and the overall uncertainty of system demands and revenues. Stronger and more consistent partnerships among levels of government and the private sector are needed to define and deliver transportation improvements and operations.

Implementing the WTP

Planning and implementation are on-going and continuous processes. Just as the development of the WTP was a collaboration between the Transportation Commission and the Washington State Department of Transportation, implementation will require a similar cooperative effort. As the projects currently underway move forward and the investment priorities are implemented, future planning efforts will build on what we learn about system operations, the pace and challenges of global warming, and the opportunities and limitations of different travel modes such as rail, bike, and transit. The Commission expects to adjust plans, priorities, and investment strategies over time as innovative technologies and new funding and financing tools are tested and evaluated. This ongoing, data-driven, and adaptive approach to transportation should help effectively improve mobility, connectivity, and safety in the future.

For more detail, see the full Washington Transportation Plan at: **www.wstc.wa.gov**

or call: **Washington State Transportation Commission 360-705-7070.**

Part I
Introduction

Washington's transportation system should serve our citizens' safety and mobility, the state's economic productivity, our communities' livability, and our ecosystem's viability.

Washington State Transportation Commission

Washington State Department of Transportation

Introduction

Global Competitiveness

Significant structural forces are reshaping worldwide political and economic relationships. Washington State is a part of those changes and is impacted by the changes. In 2006, the price of gasoline reached unprecedented levels of more than $3 per gallon because of changes in supply and demand on an international scale. Global competitiveness is being redefined as the economic trends in China and India shift. Transportation is inextricably tied to the economic future of the United States as the consumer appetite for global goods and services continues to grow.

20-Year Transportation Vision

Washington's transportation system should serve our citizens' safety and mobility, the state's economic productivity, our communities' livability, and our ecosystem's viability.

These changes continue to impact Washington State in many ways. Washington has two of the largest international trade ports in the United States. The large volume of containers transported through these ports is projected to triple, at a minimum, over the next 20 years. Globalization, competitive industry trends, and new technologies are increasing freight volumes twice as fast as Washington's overall population and traffic growth. Competition for road and rail capacity are undermining our transportation efficiency and affecting our economic viability.

The main line (Class I) railroads, the BNSF Railway and the Union Pacific, have experienced huge increases in revenues and profits and have been investing in their systems. Nationwide, railroads are investing more in their infrastructure than ever before. In 2006, they will invest a record $8.2 billion nationwide. The increased demand for rail service is being driven by transpacific trade, demand for coal, truck driver shortages, fuel prices, highway congestion, and agricultural trade growth.

The railroads' new business model has increased rail rates for the smaller shipper and created efficiencies for certain high volume long-haulers. Not all rail shippers are benefiting from the new model. Capacity constraints and pricing strategies have created problems for many small-volume domestic shippers and affect short line performance as well.

Rail service and pricing issues, capacity-constrained and higher-cost trucking, environmental issues, and limited state resources have forced the state to examine its role with respect to railroad operations. The Transportation Commission has implemented a rail study as the instrument for that review.

How Well is Washington Coping?

Washington State has unique physical characteristics. Protecting its environment is an economic and ecological necessity. The state is a very desirable tourist destination due to its wide diversity of landscapes, recreation opportunities, culture, and habitats that support more than 650 native fish and wildlife species. As the population increases and society's footprint expands, added pressure is placed on natural systems that, in many cases, are already heavily stressed.

The population of Washington State is projected to grow from 6 million to 8 million people in the next 20 years. Most of that growth will be concentrated in the Central Puget Sound area. Uncoordinated and unplanned growth poses a threat to the environment, sustainable economic development, and the quality of life in Washington.

In the last two sessions, the legislature significantly increased the state's resources for addressing transportation needs. Yet nearly $67 billion (in 2005 dollars) is needed over the next 20 years to meet the foreseeable challenge. Currently the state has approximately $29 billion in funding available, while nearly $38 billion in needed investments remain unfunded.

It seems certain that the motor vehicle will always be an important means of transportation. However, to meet the new challenges, the state, counties, cities, tribes, and metropolitan planning organizations must foster a shift away from the traditional heavy reliance on automobile transportation. We cannot build our way out of congestion with more highways. The state needs alternatives. Improved transit systems, including fuel-efficient rapid rail, are a necessity.

The ferry system needs to be recognized as a vital part of the state's transit system. Biking and walking should be regarded as more than recreational pastimes. Bike trails and walking paths need to be designed for safe commuter use. Transportation must be viewed as, and function as, an integrated network with all modes acting as complementary parts of the whole. Integration of the system must include connections between modes that make the use of all alternatives desirable, enjoyable, and dependable.
It is clear that growth in highway capacity in this state cannot catch up to the growth in travel. Furthermore, the various modes of transportation, both public and private, must be interconnected in a system that efficiently optimizes mobility based on existing and forecasted land use patterns and decisions on residential and commercial locations.

Transportation and growth issues are inextricably linked. Indeed, one might argue that expanded travel by automobile created the need for growth management policies nationwide. Enacted in 1990, Washington's Growth Management Act (GMA) is recognized as one of the most ambitious statewide growth management laws in the country. Rather than centralize planning and decision-making at the state level, the GMA built on Washington's strong traditions of local government control and regional diversity.

The results have been disappointing in many respects. GMA's regulations have not been accompanied by enough dedicated resources to implement its principles, which has led to mixed success of the program and difficulty keeping pace with the regulations at the local level. Local officials in Washington State now rank their transportation systems as their number one infrastructure challenge. The transportation sector of government throughout the state must continue to work with the elements of government and the private sector responsible for implementing growth management strategies. Neither endeavor can achieve success independent of the other.

Measuring Progress

Getting the highest possible performance from existing transportation investments through operational strategies, from basic maintenance and operations activities to the application of sophisticated technologies, can make the system safer and more efficient for users.

The state, counties, and cities and other transportation providing agencies are measuring many aspects of transportation progress from injury rates to percentage of lane miles in good condition. The Department of Transportation uses the Gray Notebook to monitor and track key performance measures. Among the successes identified, 91% of the projects funded through recent gas tax and fee increases are being completed early or

on-time and 94% of those projects have been completed under or on budget. Governor Gregoire continues the process begun by Governor Locke to identify Priorities of Government for budget development and has built on that process to engage in GMAP (Government Management Accountability and Performance) reviews with the Governor and her agency directors. The Governor and the Washington State Department of Transportation are scrutinizing all project delivery and programs to ensure that the revenues are being well-spent on the intended projects and priorities.

As demonstrated in the above paragraph, statewide transportation performance is not uniformly measured across modes or jurisdictions. State, federal, tribal, and local entities each collect data about system conditions and performance in a manner that meets their needs. A coordinated and comprehensive transportation performance reporting process will help to improve accountability to the public, which has never been more important.

The plan recommends that Washington State adopt the following guidelines for future investment action.

The guidelines are listed in priority order:

Preservation—Preserve and extend prior investments in existing transportation facilities and the services they provide to people and commerce.

Safety—Target construction projects, enforcement and education to save lives, reduce injuries, and protect property.

Economic Vitality—Improve freight movement and support economic sectors that rely on the transportation system, such as agriculture, tourism, and manufacturing.

Mobility—Facilitate movement of people and goods to contribute to a strong economy and a better quality of life for citizens.

Environmental Quality and Health—Bring benefits to the environment and our citizens' health by improving the existing transportation infrastructure.

Key Findings

These key findings, based on data review and analysis, were confirmed during the public outreach process.

Mobility

The mobility of people and goods is fundamental to the functioning of society. Investment must shift from moving vehicles to moving people and products. To provide acceptable mobility in a society that is increasing in population and tied closely to the global economy, transportation systems require constant, and repeated attention to operations, maintenance, and investment.

Priorities

The amount of additional investment, on top of existing resources, required to meet the state's projected needs is nearly $38 billion in the next 20 years. Because that entire amount is unlikely to be available at one time, priorities must be established. First, the existing system cannot be allowed to deteriorate. Accordingly, preservation continues to be the first order of business. Second, we should build on the strong safety record we have achieved. Finally, improvements also are needed to enhance the state's economic vitality, its general mobility, the health of its citizens, and the environment in which they live, work, and play.

Innovative Solutions

There are limits to how much revenue can be raised through the gas tax. Innovative technological, operational, and planning solutions can lower costs, target revenue generation, and impact strategic planning for the future. Implementing the latest technologies has potential to yield benefits for the application of user fees, availability of optional transportation modes, and realizing efficiencies in operating the existing transportation system. Innovation should also facilitate readily available alternative transportation, including bicycles and walking, which conserve energy and contribute to personal health.

"The Washington Transportation Plan establishes the strategic direction for future transportation investments, shaped by input from people across the state who use or share the responsibility for delivering the statewide system."

Washington Transportation Commission

Part II
The Plan for the Future

Washington's transportation system should serve our citizens' safety and mobility, the state's economic productivity, our communities' livability, and our ecosystem's viability.

Washington State Transportation Commission

Washington State Department of Transportation

Plan Framework

This chapter provides background information about the Washington Transportation Plan (WTP) contents, summarizes how it was prepared, and provides an orientation on where to find key information.

This plan is the result of data analysis and stakeholder collaboration intended to address transportation challenges facing Washington's citizens and businesses. The WTP also fulfills federal and state requirements for a balanced and comprehensive transportation plan based on policy adopted by the Governor, the State Legislature, and the U.S. Congress.

> *"When I think of transportation, I think of safety, economic development, and a legacy for our children."*
>
> **Christine Gregoire,** Governor

Purpose of the Plan

The primary purpose of the WTP is to guide transportation policy and investment decisions at all levels throughout the state. The WTP is also created to fulfill federal and state planning requirements.

As required by state law, this document has been prepared by the Washington State Transportation Commission. The Washington State Department of Transportation staff collaborated with the Commission in the preparation of the WTP and related materials. This update of the Washington Transportation Plan has taken place over a two-year period through a comprehensive planning process involving public agencies, advocacy groups, citizens, and solid data and policy analysis.

Federal and State Requirements

The federal requirements for this document are codified in the United States Code of Federal Regulations, Title 23, § 135, (e)(1) states that:

> Each State shall develop a long-range transportation plan, with a minimum 20-year forecast period, for all areas of the State, that provides for the development and implementation of the intermodal transportation system of the State.

Washington State Statute, RCW 47.06.030 Transportation policy plan, provides the state requirements for this document:

> The commission shall develop a state transportation policy plan that (1) establishes a vision and goals for the development of the statewide transportation system consistent with the state's growth management goals, (2) identifies significant statewide transportation policy issues, and (3) recommends statewide transportation policies and strategies to the legislature to fulfill the requirements.

Washington State Statute, RCW 47.01.071 (4) directs the Washington State Transportation Commission to prepare:

> a comprehensive and balanced statewide transportation plan which shall be based on the transportation policy adopted by the governor and the legislature, and applicable state and federal laws. The plan must reflect the priorities of government developed by the office of financial management and address regional needs, including multimodal transportation planning.

Washington State Statute RCW 47.06.040 (2) requires that the Washington State Department of Transportation:

> develop a statewide multimodal transportation plan under RCW 47.01.071(3) and in conformance with federal requirements, to ensure the continued mobility of people and goods within regions and across the state in a safe, cost-effective manner. The statewide multimodal transportation plan shall consist of:
>
> (1) A state-owned facilities component, which shall guide state investment for state highways including bicycle and pedestrian facilities, and state ferries; and
>
> (2) A state-interest component, which shall define the state interest in aviation, marine ports and navigation, freight rail, intercity passenger rail, bicycle transportation and pedestrian walkways, and public transportation, and recommend actions in coordination with appropriate public and private transportation providers to ensure that the state interest in these transportation modes is met.
>
> A primary emphasis for the plan shall be the relief of congestion, the preservation of existing investments and downtowns, ability to attract or accommodate planned population, and employment growth, the improvement of traveler safety, the efficient movement of freight and goods, and the improvement and integration of all transportation modes to create a seamless intermodal transportation system for people and goods.

The Planning Process

Planning the statewide transportation system has been carefully undertaken, as the task is vital to the well being of the state, our citizens' quality of life, and the state's economic vitality.

> "I appreciate the efforts to have this plan driven by factual data as opposed to what we think we know about our transportation system."
>
> ***Page Scott,*** *Director*
> ***Yakima Valley Conference of Governments***

The data analysis of the WTP is structured by issues that focus on core outcomes and future benefits desired. The long-range plan recognizes the inter-connectedness of the different modes and the key issues. This approach draws attention to the multiple benefits that programs and projects deliver.

Phase 1: Analysis and Assessment of Conditions

Early on, the Commission employed a framework for the WTP using these strategic issues. Being strategic from the onset means that the Plan is not a universe of all conceivable needs, but rather a methodical approach to investing where the benefits will be the greatest. The Department of Transportation identified nine issues in order to systematically assess the state's needs. These nine key issues are:

- Preservation
- Safety
- Strong Economy and Good Jobs
- Moving Freight
- Transportation Access
- System Efficiencies
- Bottlenecks and Chokepoints
- Building Future Visions
- Health and the Environment

Phase 2: Prioritizing the Needs
The Commission addressed the needs identified during the assessment of the key issues by defining the Five Investment Guidelines. To determine the most beneficial investments, the Commission prioritized the investment targets to establish the highest priorities.

Establishing Investment Priorities
The Commission considered existing policy and issue-based data analysis, and decided to create the WTP around the Five Investment Guidelines.

Prioritized Investment Guidelines

1. Preservation
2. Safety
3. Economic Vitality
4. Mobility
5. Environmental Quality and Health

The Five Investment Guidelines are the key to the Washington Transportation Plan. The Commission used these guidelines to select investment targets, which are described and structured in terms of these guidelines. The investments considered to be the High Priorities are presented in this plan, followed by the Remaining Priorities.

The Organization of the WTP:

Executive Summary

Part I. Introduction
The first part of the Plan is provided by the Washington Transportation Commission and introduces the reader to the plan's underlying context.

Part II. The Plan for the Future
Part II of the plan analyzes, assesses, and recommends solutions to challenges for the future of transportation in Washington State.

Chapter A. Plan Framework
This section explains how the document is organized. It also provides guidance for obtaining additional and related information on-line for further in-depth research into planning process.

Chapter B. The Challenge
This chapter presents data and analysis conducted during the initial planning process. The statistics and information in this section describe current conditions and projected changes in the transportation system over the next 20 years. The result is a forecast for Washington's future transportation needs.

Chapter C. Transportation Investments Underway
This chapter provides a detailed assessment of the investments currently underway and the benefits yielded. The investment targets described in this chapter are those that are already addressing the needs identified in Chapter A. The funding and implementation of these investment targets is the result of the successful passage of the Transportation Partnership Act and the Nickel Package by the Governor and the legislature.

Chapter D. Unfunded High Priorities
This chapter provides a detailed assessment of the strategic investment targets the Commission found to be the most critical and effective. These investment targets are prioritized into High Priorities and Remaining Priorities. The process of prioritization considered the benefits yielded, the Five Investment Guidelines, and existing state law and Commission policies.

Chapter E. Remaining Unfunded Priorities
This chapter describes the WTP's approach to meeting the challenges identified in previous chapters. It highlights the multiple benefits of these proposed investments, and represents additional investments

Chapter F. Policy Recommendations
This chapter contains recommendations for policies and strategies necessary to efficiently carry out the implementation of this plan. It identifies gaps in existing state law where further definition of the state's role is needed.

Chapter G. Measuring Progress
This chapter provides a sample of the measurements in place, as well as recommendations for additional measurements that provide a mechanism for evaluating the effectiveness of the WTP.

Part III. Focus on Transportation
This part of the plan provides a discussion of important factors influencing Washington's future and describes the plan's role in the context of these issues. This part describes the variables influencing transportation planning and policy. Policy development is an ongoing process; these issues will play a role in further implementation of the WTP as they are resolved.

Chapter A. Funding and Financing
This chapter presents a detailed discussion of financial costs and funding sources and mechanisms necessary to implement the identified targeted investments and make the most of Washington's transportation system.

Chapter B. Policy Studies and Plans
This chapter presents a discussion of policy studies and plans directly related to this plan.

Chapter C. Governance and Partnerships
This chapter presents a discussion of the governmental programs and relationships that are critical to the effectiveness of the plan's implementation.

Chapter D. Transportation and Land Use
This chapter presents a detailed discussion of the relationship between land use and transportation; an ongoing and elusive puzzle that is the most complex and influential variable of transportation planning.

Part IV. Additional Information

Chapter A. Glossary

Chapter B. Maps

Chapter C. Acknowledgements

Do you want additional Information?

Additional Information on the WTP, resources, related documents, and full issue reports are on-line at the following website:

www.wsdot.wa.gov/planning/wtp

From this website you can access detailed information and data used in the planning process through a link to the Data Library.

The Challenge

This chapter includes data and analysis conducted during the WTP update process.

Whether you choose to travel by car, bus, train, bicycle, airplane, or on foot, Washington's statewide transportation system affects you both directly and indirectly. When too many people try to travel to the same locations at the same time, the transportation system becomes congested and drivers become frustrated. When congestion causes you to be late to pick up a child from daycare, it costs you money. When parts and merchandise are late to manufacturers and stores, profits are lost. When we can't walk or ride a bicycle safely, the health of our communities suffers. If you can't drive because of age, illness, or other reasons, you may not have access to a job, education, medical care, and social interaction. Transportation is an integral part of our state's social fabric.

Washington State's population continues to grow. This is driving an ever increasing demand for transportation systems necessary to support a desirable quality of life, jobs, and economic growth in all parts of the state, and to maintain Washington State's competitiveness in a global economy. Meeting this demand will require Washington State to continue building a multimodal program based upon prioritized strategic investment strategies and stable funding sources.

The information in this chapter is organized around Five Investment Guidelines:

- (P) **Preservation**
- (S) **Safety**
- (EV) **Economic Vitality**
- (M) **Mobility**
- (EQ) **Environmental Quality and Health**

For example, the estimated replacement cost for the Washington State Highway System is approximately $266 billion in 2006 dollars. This estimate includes approximate construction costs for all state-owned highways, major and minor bridges and structures, the ferry system terminals and vessels, as well as right of way and real estate costs. This does not include state owned airports, or other modes.

Many previous investments constructed system additions, such as the construction of the Interstate System, the building of a bridge where none existed before, or the construction of a rail line. Over time the demands placed upon these facilities have reached a point where routine maintenance activities and costs cannot keep pace. As a result, there are backlogs of significant transportation work that far exceed available revenues. Investments must now be prioritized to cover the many needs with the limited funds available.

However, preserving the existing statewide transportation system is extremely important. Future returns depend on fact-based investment decisions to maximize benefits to the economy, our communities, and the environment. Financial constraints limit the ability of the state to make all the needed improvements. The investment needs have been prioritized so that the most important and effective investments are made first.

The statistics and information in this section describe the current condition of the transportation system. Discussion of these conditions is integrated with projected changes and demands for the next 20 years.

The end result is a forecast for Washington State's future transportation needs. This chapter provides the foundation for the following chapters, which address how to meet the challenges presented here through targeted investments.

"The Washington State Transportation Plan is not about the politically correct recitation of modal completeness. It's about the cross-cutting themes that animate our transportation policy goals and choices."

Doug MacDonald, Secretary of Transportation
WSDOT

The Challenge: Preservation

As our transportation facilities age, a regular schedule of rehabilitation, reconstruction, and replacement is needed to keep system components usable, to reduce maintenance costs, and to address changes in design and performance standards. Lack of system preservation and rehabilitation produces a downward spiral. Short-term savings from deferred action become dramatically greater costs later. Deteriorating infrastructure is often invisible to the public, so generating support for funding rehabilitation and reconstruction is difficult.

The System is Aging

While specific transportation investment needs vary across Washington State, preserving the existing transportation systems is an important issue statewide, regardless of mode, jurisdiction, or region. In fact, there is no more fundamental transportation investment than system preservation—keeping the physical infrastructure in safe and efficient operating condition.

This point was underscored during the development of the WTP as the Transportation Commission received feedback from the Tribal Transportation Planning Organization, San Juan County Commissioners, and Washington State's fourteen Regional Transportation Planning Organizations. Transportation facilities in Washington are aging and need attention.

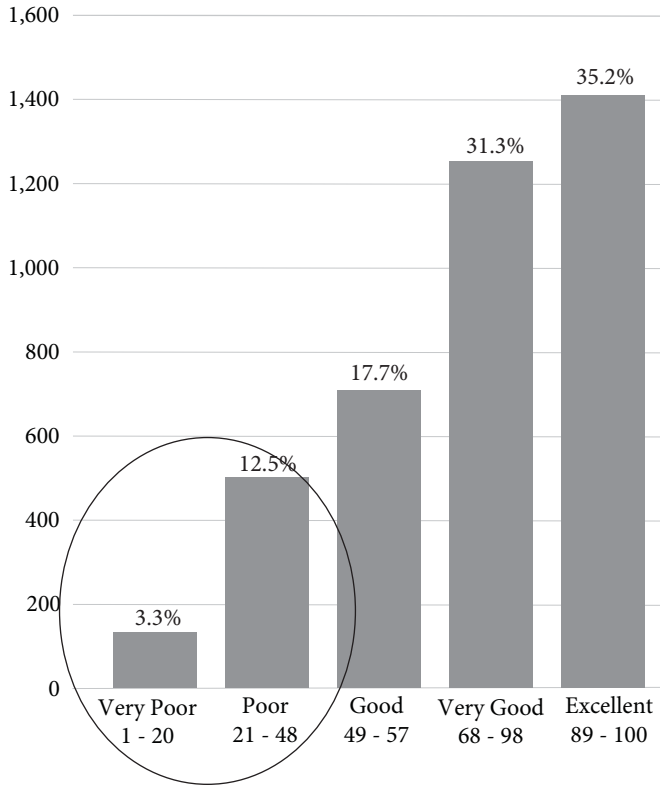
Timing of investments is important to achieve lowest life-cycle cost: the point in an asset's expected duration when it can no longer serve its function without greater costs and risks to related parts.

This is the same problem homeowners face when deciding when to replace a house's roofing. The roofing needs to be replaced before a leak causes so much deterioration that other more costly repairs are necessary, such as reconstructing damaged trusses, replacing the living room ceiling, or replacing water damaged insulation.

Keeping Roadways Serviceable

Several types of road surfaces exist and coexist on Washington State's roadways, including brick, gravel, dirt, asphalt, and concrete. Each surface type has unique functional benefits and costs. Rising costs for construction materials have required increasingly strategic approaches to selecting the most cost effective surface type. One of the challenges is that many Washington State highways are aging more quickly than they can be rehabilitated, resulting in an increase in deteriorated conditions. A new line of thinking that is becoming common practice is to apply the most cost effective surface treatment at the time of resurfacing, for example, a roadway that is concrete or hot mix asphalt, may not remain so in the future.

Figure II-1
City Roadway Conditions (Lane Miles)

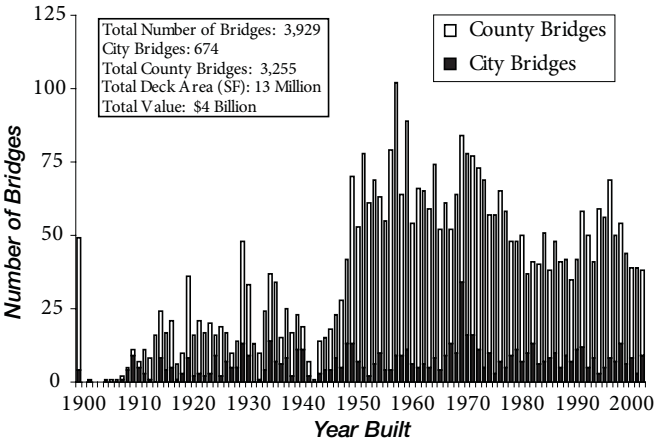


Source: WSDOT Highways & Local Programs

City, County, and Tribal Roads, and Bridges

Other jurisdictions face large shortfalls in preserving their pavements and bridges. City, county, and tribal transportation funding is being squeezed by revenue reductions, growing needs of other government services, and competing needs for transportation system expansion. Recent analysis indicates that 16 percent of city roadways have poor or very poor pavement condition. At current funding levels for repair and rehabilitation, this percentage will grow.

Figure II-2
City and County Bridges



Source: WSDOT Bridge Data

*Note: 1900 includes year built unknown

A recent survey of tribes in Washington State reported that the current conditions and needs of tribal roads statewide are not fully inventoried. As a result, the full scope of roadway preservation needs within existing reservation boundaries cannot be estimated.

Figure II-3
Washington's Roadway System
Miles of Roads and Vehicle Miles Traveled (2004)

State Highways	Centerline Lines[1]	Lane Miles[2]	Daily Vehicle Miles Traveled	Amount of Traffic Carried
Interstate Highways	764	4,751	41,763,000	27.5%
Rural Highways	5,267	11,335	18,731,000	12.3%
Urban Highways	1,015	3,917	25,728,000	16.9%
Total	7,046	20,003	86,222,000	56.7%
County Roads				
Rural Highways and Roads	35,007	70,014	11,288,000	7.4%
Urban Highways and Roads	1,656	4,043	9,335,000	6.1%
Urban Local Streets	3,170	6,339	2,821,000	1.9%
Total	39,833	80,396	23,444,000	15.4%
City Streets				
Rural Roads	2,374	4,747	536,000	0.4%
Urban Streets	3,416	9,038	31,310,000	20.6%
Urban Local Streets	10,472	20,943	9,126,000	6.0%
Total	16,262	34,728	40,972,000	26.9%
Other Public Roads				
Other State Roads[3]	10,825	21,649	876,000	0.6%
Other Federal Roads[3]	7,193	14,386	545,000	0.4%
Tribal Roads	58	116	4,000	0.0%
Port District Roads	3	5	54,000	0.0%
Total	18,079	36,156	1,479,000	1.0%
Total Statewide Miles	81,220	171,283	152,117,000	100.0%

[1] Centerline miles count total miles of road but do not take lanes into account. A one-mile length of four lanes on I-5 measures the same as one-mile length of two lanes on SR-101. Both equal one centerline mile

[2] Lane miles count lanes including ramps, special use lanes, bike lanes, HOV lanes, etc. A one-mile length of four lanes on I-5 equals four lane miles.

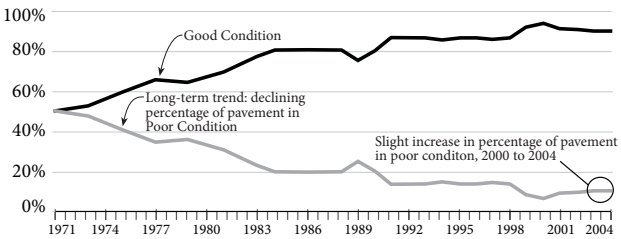
[3] Other roads include forest service and other service roads.

Source: WSDOT Transportation Data Office

State Highway Pavements

The Department of Transportation has made progress in reducing the backlog of needed resurfacing of highway pavements, and is thereby approaching lowest life-cycle cost for the entire system. However, concrete pavements pose different, more costly problems.

Figure II-4
Pavement Condition Trends
Percent of Pavements



Source: WSDOT Materials Lab

The ratio of highway miles classified in poor and good condition has steadily shifted over time. The majority of state highway pavements are currently in good condition and a minority are in poor condition. However, a significant number and percentage of lane miles are

rated as "poor" and have critical improvement needs. Most interstate highways are paved with Portland Cement Concrete Pavement (PCCP), including high-volume urban areas and those with heavy truck traffic. Many of the more than 2,400 lane miles of Washington State highways were built thirty or more years ago, and have endured many years of increasing traffic volumes. They are now disproportionately represented among pavements rated in poor condition, and will continue to deteriorate without attention in the near future.

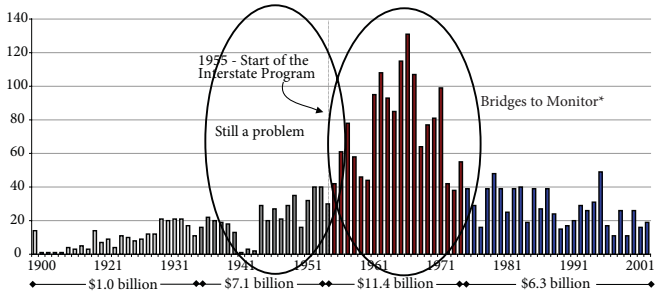
Although current funding allocations are adequate to cover asphalt and chip seal repaving needs, funding falls far short of the growing concrete pavement rehabilitation needs.

Bridges in Washington

Washington State has many state and local bridges. On state highways alone, there are 3,534 structures with a total of 44.3 million square feet of bridge deck area. All levels of government have made much progress on bridge rehabilitation, but aging bridges represent a growing problem that must be monitored closely. Many bridges in Washington State have served transportation needs for far longer that their builders anticipated—a testament to good engineering and durable materials. These same bridges, however, will not last indefinitely. Bridges that are vulnerable to scour and earthquakes are of special concern. Bridges that are structurally sound but which have different traffic patterns than the designers intended are an emerging concern. Some of these bridges are among our oldest, have narrow lanes, narrow or no shoulders, and provide poor pedestrian or bicycle access. For the Statewide Seismic Acceleration Map and the Seismic Map of Puget Sound Area, refer to Part IV. Chapter B. Maps.

Figure II-5

Bridge Inventory by Year of Construction and Replacement Costs
2004 Dollars



*May last longer than assumed life cycle of 50 years
Source: WSDOT Bridge and Structures Office

Washington State Ferries

Washington State operates the largest ferry fleet in the nation, with 24 passenger-vehicle and four passenger-only vessels. Current funding assumptions for the next 10 years show the Washington State Ferries meeting short-term targets for both vessel and terminal preservation. This includes the replacement of four vessels.

The Steel Electric Class ferries have been in service since 1927. These vessels carry 40-65 vehicles. Since 1927 these vessels have been updated; however, they are reaching the end of their useful lives. The vessels are relatively slow and small in comparison to the newer Issaquah Class ferries which carry 90-120 vehicles, that have been put in service since the 1980s; and the Jumbo Mark II Class ferries, which carry over 200 vehicles and were put in service in the 1990s.

Terminals for the ferry system have been expanded and updated over the course of the past 60 years where the newer larger vessel classes have been put into service. However, as the older, smaller Steel Electric Class ferries are replaced with newer larger class vessels, older harbor and terminal facilities throughout the Puget Sound service area will need to be modified to accommodate them.

Current funding assumptions for the next ten years show the Washington State Ferries meeting short-term targets for both vessel and terminal preservation, including the replacement of four vessels in operation since 1927. Further boat replacement beyond the ten-year period is unfunded. Refer to Part IV. Chapter B. Maps for ferry route and terminal locations.

Local Ferries

There are four county-operated ferries in Washington State that have needs for vessel and terminal asset preservation. They are located in and operated by Pierce, Skagit, Wahkiakum, and Whatcom counties.

Weigh Stations

Vehicle weight is a critical factor in determining the life expectancy of roadways and bridges. Inspection and legal weight enforcement activities at weigh stations help maximize roadway life and extend the time between rehabilitation and replacement activities. Weigh station sites also need to be rehabilitated and expanded to keep up with the growth in truck usage across the state.

Figure II-6
Weigh Stations in Washington

Source: WSDOT Commercial Vehicle Information Systems and Networks (CVISN)

Weigh-in-Motion is one of the technological improvements being deployed across Washington State. The Commercial Vehicle Information Systems and Networks (CVISN) transponder program allows trucks to bypass weigh stations by electronically verifying a truck's legal weight and credentials as it continues along the roadway at freeway speeds. The use of this technology expedites the weighing process, reducing travel delays for freight companies, and reducing the congestion caused by merging freight vehicles on the freeway system.

> "Southwest Washington Regional Transportation Council appreciates WSDOT's leadership in building a plan that incorporates the individual regional needs while at the same time reflecting statewide transportation policies and needs."
>
> ***Dean Lookingbill,*** *Director*
> **Southwest Regional Transportation Council**

Safety Rest Areas

Safety rest areas provide travelers with a place to rest, to get tourist information about nearby communities, and to refresh themselves. In Washington State, most safety rest areas were built when the interstate highway system was constructed. These facilities continue to age and must be brought up to new standards and codes when replaced. In many cases the existing facility and the utilities must be completely rebuilt.

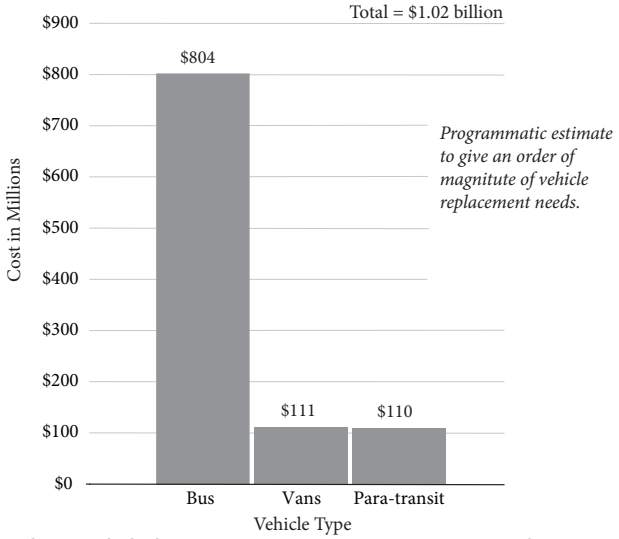
Culverts

Culverts carry water under and along roadways. Recent culvert failures due to corrosion and roadway settlement highlight the need for an inventory and condition survey to help determine the level of future investment necessary to prevent roadways from collapsing.

Public Transportation Systems

Transit asset preservation needs include funding stability for bus fleet replacement, park and ride lot preservation needs, and operating needs, including expensive demand-responsive service operations.

Figure II-7
10-Year Cycle of Fleet Replacement Cost in Millions for Current Fleets



Source: WSDOT Summary of Public Transportation - 2002 and King County Metro average estimates for vehicle cost

Aviation
Washington State's commercial and general aviation airports need additional paving, lighting, and navigation aids. An important issue is the need to preserve airport sites and their operations from encroachment by incompatible land use development.

Federal funding is available for airports within the National Plan of Integrated Airport Systems (NPIAS). The largest impact occurs at smaller community airports that do not qualify for federal grants. A reduction in pavement condition has increased safety risks and increased reconstruction and replacement pavement costs. In 2005, the WSDOT Aviation Division completed evaluating airport facility pavement conditions. Refer to Part III. Focus on Transportation, Chapter B. Transportation Policy Studies and Plans for additional details on this Long-Term Air Transportation Study. The Aviation Facilities map can be found in Part IV. Chapter B. Maps.

Railroads
Most short line railroads are owned by private operators, making information about system condition difficult to compile. Indications are that short line rail tracks are facing large rehabilitation needs that may be at least partly unfunded. Worsening track conditions could lead to further abandonment of short line railroad freight lines.

Although the main line BNSF and UP systems are well-maintained, innovation and urban development have strained parts of the system and require substantial investment to maintain capacity and mobility. As one example, innovation in multi-modal container shipping, now allows trains to carry two containers atop each other – but one of the two tunnels under the Cascades is too small for those trains. And, as more areas of the state urbanize, crossings that once were rural roads may now be busy arterials requiring grade separation.

Probably the most serious preservation issue in rail transport is the fate of under-utilized and abandoned rail lines – whether Class I or short line railroads. While some have been converted into trails, other segments that are seldom or no longer used are valuable transportation resources that should be preserved. Relative rail maps can be found in Part IV. Chapter B. Maps.

Electrical Systems
Many transportation-related electrical systems across the state that support state highway systems are more than 40 years old and will need complete replacement in the coming 20 years.

Especially critical are those information-gathering and traffic-management systems that help to operate the highway system and provide real-time information to travelers so they can make better decisions about whether, when, and by what routes to travel. These systems are primarily electrical, involving computer technology that ages quickly, and are expected to require replacement at least twice in the coming 20 years.

"One of the current strengths of the WTP is its focus on prioritizing the state's transportation needs like system preservation, among others. Transportation system preservation is the top priority for our rural Peninsula RTPO. One of the WTP's potential future strengths is its planned focus on how transportation and land use development interface."

Patrick Babineau, Director
Peninsula Regional Transportation Planning Organization

The Challenge: Safety

All types of collisions on Washington State's roadways increased 45 percent from 1980 to 2002. During this time period there was also an increase in the number of people driving and the miles they drove. In spite of the progress to improve highways, approximately 600 people die in collisions in Washington State each year—an unacceptable number (see Figure II-8).

The societal cost of motor vehicle collisions in Washington State for all roadways (state, county, city, tribal, and federal) is estimated at $5.3 billion annually. Although disabling and fatal collisions make up only 2.3 percent of the total number of collisions, they account for 56 percent of the total societal costs.

The High Priority of Safety

Safety for the traveling public is a high priority. The Washington State Patrol, the State Department of Licensing, the Washington State Traffic Safety Commission, local law enforcement agencies, and the State Department of Transportation work collaboratively to increase traveler safety on the state's transportation system through education programs and enforcement campaigns. Significant emphasis is placed on roadway design at all jurisdictional levels statewide, resulting in projects that reduce fatalities and disabling injuries caused by collisions. Emphasis is also placed on improving regulations, increasing interagency collaboration, and promoting ongoing research aimed at finding ways to make our transportation system safer. As connections to state routes increase, the collision rate also rises. By actively regulating, consolidating, relocating and eliminating connections, roadway safety increases. Access management enhances economic vitality, the movement of freight and goods, and the movement of people.

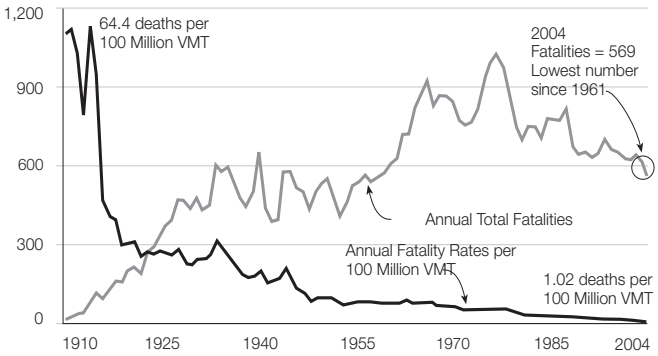
The Washington State Patrol

The Washington State Patrol put a program targeting aggressive driving into place Memorial Day weekend, 1998. The Aggressive Driving Apprehension Team targets the reduction of DUIs, incidents of aggressive driving and dangerous speeding, and the increase in seat belt compliance. The Patrol has also adopted the philosophy of Problem Oriented Public Safety, which is focused on developing working partnerships among the Patrol, citizens, and other stakeholders.

Figure II-8

Washington Motor Vehicle Total Fatalities and Fatality Rates

1910-2004



Source: WSDOT Transportation Data Office

The Department of Licensing

The Washington State Department of Licensing Motorcycle Safety Program works to improve motorcycle safety through rider training programs and public information campaigns. The program is use-funded through a fee on motorcycle permits and endorsements, and student tuition for courses.

The Washington State Traffic Safety Commission

The Washington State Traffic Safety Commission has developed safety programs to target unsafe behaviors. The programs include: Click it or Ticket, to address seat belt use; The Child Passenger Safety Program to increase compliance with Washington State child restraint laws; the Youth Traffic Safety Program to provide traffic safety advocates the ability to work with teen drivers to improve traffic safety; and the School Zone Safety Program to save lives and prevent serious injuries in and around schools in Washington State.

The Strategic Highway Safety Plan

The Washington State Department of Transportation has developed the Strategic Highway Safety Plan, Target Zero. The plan's mission is to identify Washington State's traffic safety needs and guide investment decisions to achieve significant reductions in fatalities and serious injuries on all public roads. The vision for this plan is that Washington State will achieve a transportation system that has zero traffic deaths and zero disabling injuries by the year 2030. In order to achieve Target Zero, the state must experience 24 fewer fatalities each year for the next 25 years.

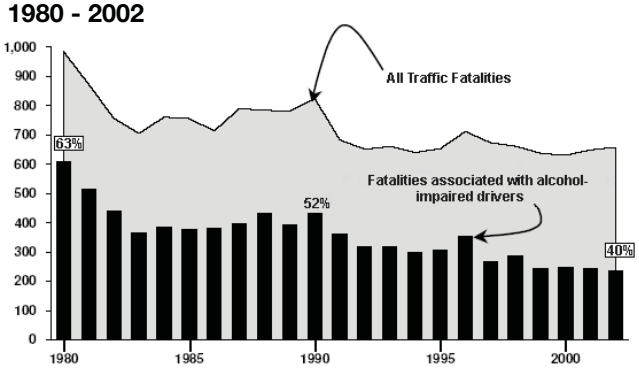
Technological advances, such as better crash-worthiness of vehicles and crash-avoidance technologies, have increased safety for motorists. Yet crashes are the leading cause of death in the United States for people from age 3 to 33. Sharply reducing fatalities and severe injuries will require more than better vehicle and road engineering.

Targeted education and law enforcement measures are necessary to reduce the human behavioral causes of severe collisions, such as speeding, reckless driving, and alcohol or drug impairment. These measures will also target the use of safety devices such as motorcycle helmets and seat belts.

Behavior is a strong factor

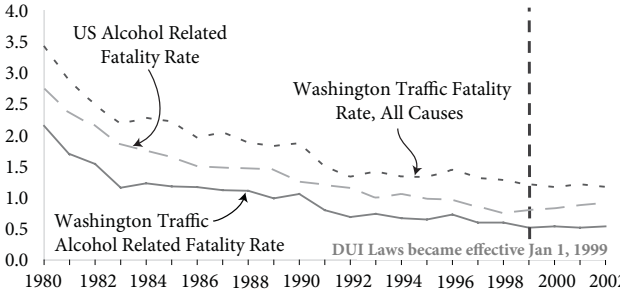
One of the largest contributors to fatal collisions is driving while intoxicated. Impaired drivers are involved in approximately 40 percent of all the fatal collisions in Washington State. Despite an increased focus on reducing numbers of impaired drivers, the rate of alcohol involvement in fatalities remains high.

Figure II-9
Trend in rate of Driver Alcohol Impairment Associated with Motor Vehicle Fatalities in Washington State 1980 - 2002



Source: Washington State Traffic Safety Commission

Figure II-10
Alcohol-Related Traffic Fatalities
Comparison of Washington's Public Roadway Fatality Rate And Alcohol-Related Fatalities Per Million VMT
1980 - 2002

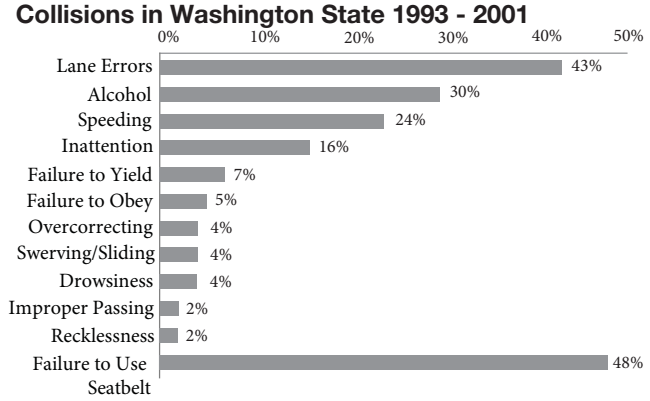


Source: WSDOT Transportation Data Office

Dangerous drivers, including aggressive and drowsy drivers, also contribute to fatalities. Included in this group are drivers that weave in and out of traffic, flash their lights, tailgate, street race, drive too fast for conditions, or fall asleep at the wheel. Young drivers (16-20 years old) have a higher fatal collision rate than any other age group. Legislation passed in July 2001 established the requirement of 50 hours of supervised behind-the-wheel driving time for drivers under the age of 18 before they can obtain a license.

Early statistics collected after the law took effect show about a 30 percent drop in the number of fatalities and disabling injuries for 16- and 17- year-old drivers. New strategies and policies will be needed to address aging driver safety needs as Washington State's population ages.

Figure II-11
Driver Errors and Behaviors Associated with Fatal Collisions in Washington State 1993 - 2001



Source: WSDOT Transportation Data Office

Roadway Factors Affect Collisions
At many locations in Washington State there are opportunities to design and construct roadway improvements that will make roads safer for travelers. Some of these opportunities are part of major road construction projects that help relieve congestion and improve safety. Sometimes safety improvements are smaller scale projects like widened or strengthened shoulders or additional roadway width that provides room for turning lanes.

Roadway safety projects may focus on the following types of improvements:
- Reducing head-on and across-median crashes
- Improving design and operation of highway intersections
- Recurring congestion related crashes
- Reducing bicycle and pedestrian crashes
- Reducing speed limits to fit changing uses and conditions impacting the roadway

Roadside Factors Affect Collision Severity
Roadside safety addresses the adjacent area outside of the roadway. It is an important component of total highway design because about one quarter of all fatal and disabling collisions involve fixed objects on the roadside. Roadside safety projects focus on reducing severe and fatal injuries associated with run-off-the-road crashes.

There are numerous reasons why vehicles leave the roadway. Regardless of reason, a forgiving roadside can reduce the seriousness of the consequences. From a safety perspective, the ideal highway has roadsides and median areas that are flat and unobstructed by hazards. Elements such as side slopes, fixed objects, and water are potential hazards that a vehicle might encounter when it leaves the roadway. These hazards present varying degrees of danger to the vehicle and its occupants. The affordable and prudent mitigative measures to be taken, therefore, depend on the identified hazard, the probability of a crash occurring, the likely severity, and the available resources.

Aviation
Air transportation is one of the safest modes of transportation. Nationwide, the number of general aviation accidents per year has been steadily decreasing. In recent years the number of accidents nationwide is 6.40 accidents per 100,000 hours flown and 1.41 fatal accidents per 100,000 miles. However, Washington State ranked 7th in the nation with the highest number of accidents. Weather is one of the leading causes of accidents for general aviation aircraft.

Washington State Ferries
Washington State Ferries has a strong safety record in both its marine and terminal operations. It operates 28 vessels on 10 routes and carries over 25 million passengers annually. The United States Coast Guard sets safety standards for vessels and crew licensing. In 2002, there were 100 reported injuries to passengers on ferries—all of them minor in nature. There were 33 reported injuries at terminals—all minor in nature.

Bicycle and Pedestrian Safety
The combination of driver actions, pedestrian actions, and the built environment continue to influence pedestrian fatality rates.
- Roughly one-third of the auto-pedestrian accident fatalities that occurred between 1999 and 2004 involved alcohol or drugs.
- In 21 percent of the cases, the pedestrian was under the influence of alcohol or drugs
- In 7 percent of the cases, the driver was under the influence of alcohol or drugs
- In 2 percent of the cases, both driver and pedestrian were under the influence of alcohol or drugs

Lack of roadway crossing opportunities places pedestrians at risk for serious injury and continues to be of concern. We can reduce this risk by implementing roadway improvements and pedestrian crossing safety programs at schools and other pedestrian access locations. For cyclists, 52 percent of fatal collisions with motor vehicles occurred while the cyclist was riding in a roadway. Causes of these collisions included situations such as a driver following too closely or exceeding safe speeds or a bicyclist being hit by an opening car door while riding next to parked cars.

The Challenge: Economic Vitality

Washington State's economy and quality of life depend on a transportation system that functions well. Transportation connects people to jobs, family, medical care, education, recreation, and goods needed for daily life. Roadways, airports, ferries, transit, water ports, and railways are all necessary for a strong economy, providing access to businesses, jobs, and world markets, as well as moving freight and commerce. As with other basic infrastructure that supports our society—such as water or electricity—society may take the transportation system for granted until problems arise that affect individuals.

Washington is among our nation's most beautiful and diverse states. From most locations, a three hour drive takes you to a large variety of different regions offering incredible commercial, recreational, and cultural opportunities and scenic vistas.

The same geographic and natural qualities that attract tourists also lure and retain the highly skilled workforce vital to our economy. The agricultural, tourism, freight movement, aerospace, and information technology industries that power our economy also depend on a safe and reliable transportation system.

Washington's Economic Structure

The structure of Washington's economy is shifting:

- Population and, therefore, travel demand will grow, but these trends will be felt unevenly around the state.
- The continued growth of information technology will bring major societal and economic changes that are likely to affect the ways people and businesses use transportation.
- The continued expansion and globalization of trade will increase the growth of the freight industry and, therefore, demands on the transportation system.

Transportation's Relationship to the Economy

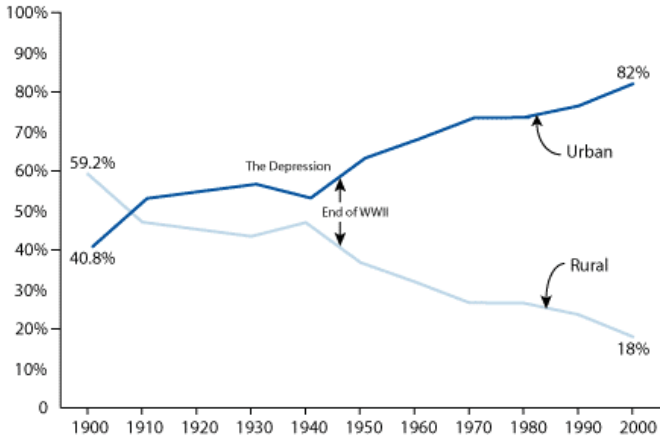
Transportation contributes to Washington's economy in three key ways.

- Moving freight and goods
- Moving people
- Reducing societal costs through safer travel

Washington State Population Trends and Forecasts Urban Growth Continues

Since the development of industrial centers near the turn of the last century (1880s to early 1900s) population has become concentrated and distributed into urban and rural areas. Figure II-12 displays the divergent trends in urban and rural population since 1900.

Figure II-12
Population Growth in Relation to the State's Metropolitan Areas

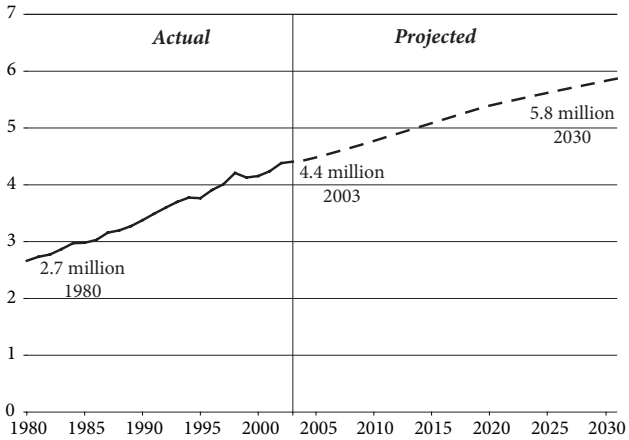


Source: U.S. Census

The history of Washington State's population distribution is fairly straightforward. From the late 1800s to very early 1900s more people lived in rural areas than urban centers in Washington State. Most people worked on farms or made a living from the natural resources of the state. This trend reversed by 1910 and the difference in population concentration has continued to widen. In 1910, the population was divided into 53 percent urban and 47 percent rural. By 2000, the population division was 82 percent urban and 18 percent rural.

It is expected that Washington State's population growth over the next twenty years will continue to follow the shift as illustrated in Figure II-14. As a result, the density of urban areas will continue to increase, creating challenges in maintaining an efficient transportation system and mitigating congestion. Alternatives to single occupant vehicle transportation are key to managing the demands placed upon the transportation system in these areas. Public transit, the Commute Trip Reduction program, and walking and biking facilities provide alternative modes of travel, relieve demand on highway systems, and reduce congestion, as well as increase sustainability of the transportation system.

Figure II-13
Growth in the Number of Licensed Drivers
in millions

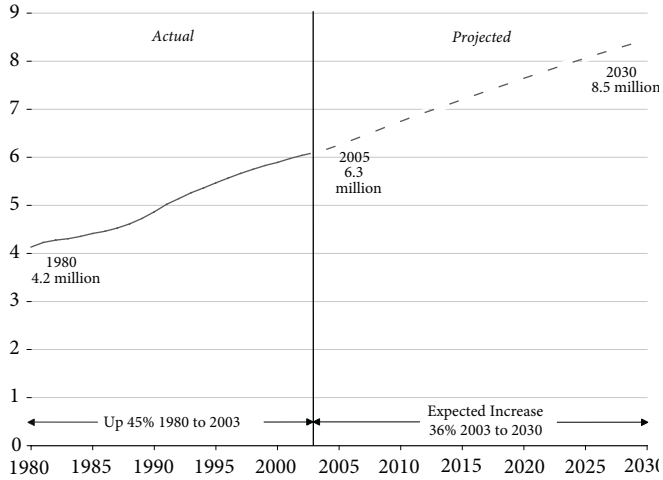


Note: Forecast assumed to be 72 percent of the population
Source: Washington State Department of Transportation, Economics Branch, WSDOT's Finance and Administration Division

The number of licensed drivers in Washington increased from 2.7 million in 1980 to 4.4 million in 2003, an overall increase of 66 percent, or an annual average increase of 2.9 percent. In 2003, 72.1 percent of the population held a valid driver's license, an increase from 65.9 percent in 1980. This upward trend is expected to continue, increasing the number of licensed drivers to nearly 6 million by 2030.

The forecasted increases in population and in the number of licensed drivers combined with the shifting concentration of this growth to urban areas will increase the strain on transportation facilities and services.

Figure II-14
Washington State Total Population



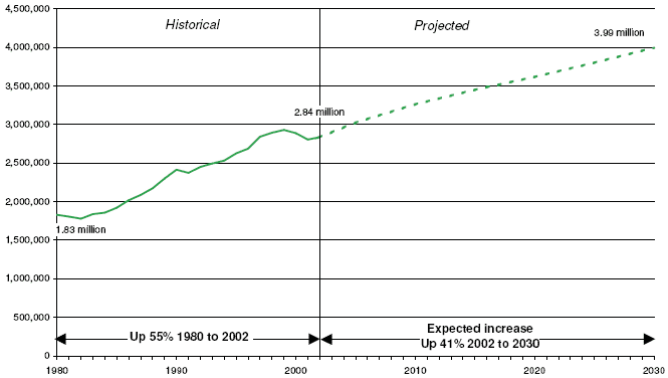
Source: Washington State Office of Financial Management

Washington State's Economic Trends and Forecasts

From 1980 to 2002, the number of jobs in Washington State grew from 1.83 million to 2.84 million, an average annual growth rate of 2 percent. Between 2002 and 2030, 1,158,214 jobs are expected to be added to the state's economy. Employment in the state is expected to increase at an average annual rate of 1.2 percent, from 2.84 million in 2002 to 3.99 million by 2030.

Figure II-15

Growth in Employment: 1980 to 2002 and 2002 to 2030

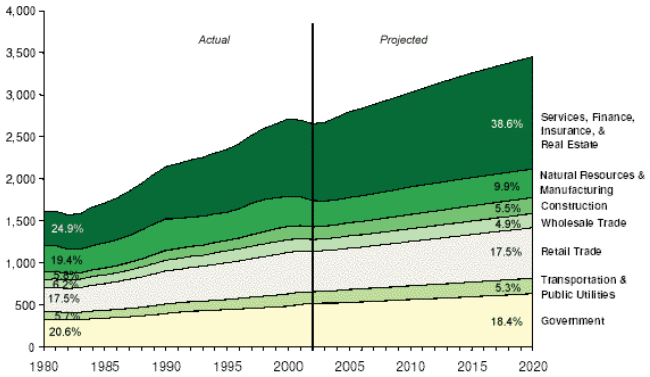


Source: Table 3-1, *2003 Long Term Economic and Labor Force Forecast for Washington,* Office of Financial Management & Employment Security Department

From 1980 to 2002, the number of jobs for Washington State (excluding agricultural employment) grew from 1.61 million to 2.65 million, an average annual growth rate of 2 percent. It is expected that 779,900 jobs will be added to Washington's economy between 2002 and 2020. This represents an average annual growth rate of 1.3 percent, bringing the state's total number of jobs from 2.65 million in 2002 to 3.45 million by 2020.

Figure II-16

Growth in Non-agricultural Employment: 1980 to 2002 and 2002 to 2020, thousands of jobs



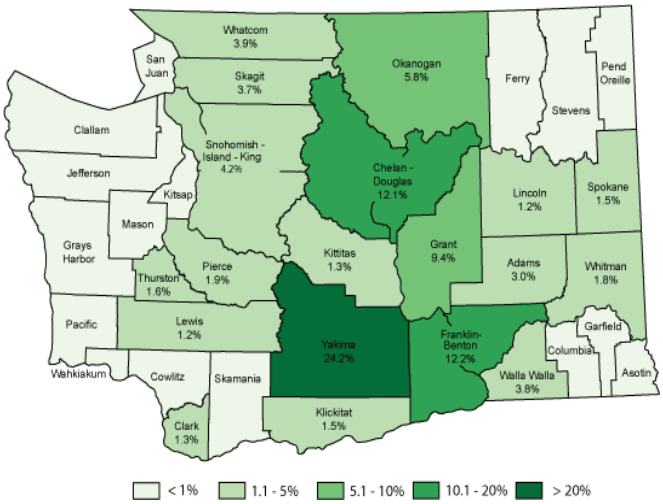
Source: Table 3-1, *2003 Long Term Economic and Labor Force Forecast for Washington,* Office of Financial Management & Employment Security Department

Agricultural Employment: 2002

Agriculture employed more than 87,000 people in Washington State in 2002, representing three percent of all state employment. Eighty percent of all agricultural employment is located in Eastern Washington. Yakima County alone accounts for 24 percent of the entire statewide agricultural employment.

Figure II-17

County Percentage of Total Agricultural Employment*: Washington State, 2002



*Percentage not shown for areas with less than 1.0 percent of state total.
Source: Washington State Employment Security Department

The combined growth in population, households, licensed drivers, and jobs compound the number of daily trips, increasing the demand and stress on the existing transportation infrastructure.

> *"Encourage the continued vitality of the Columbia River/Snake River transportation system and coastal ports which support the communities in five counties allowing access to the world markets for local and foreign products."*
>
> ***Cowlitz-Wahkiakum Council of Governments***
> Regional Transportation Plan 2003-2022

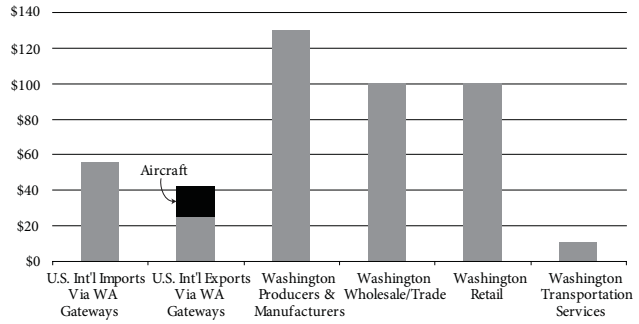
Moving Freight and Goods

Three components of Washington State's freight system:

- **Global Gateways** – International and National Trade Flows Through Washington
- **Made in Washington** – Regional Economies Rely on the Freight System
- **Delivering Goods to You** – The Retail and Wholesale Distribution System

The three components of Washington State's freight system support our national and state economies, support national defense, directly sustain hundreds of thousands of jobs, and distribute the necessities of life to every resident of the state everyday.

Figure II-18
Washington State
Value of Freight Shipments (2004: Billions of Dollars)



Source: WSDOT Freight Office

First, Washington State is a gateway state, connecting Asian trade flows to the U.S. economy, Alaska to the Lower 48, and Canada to the U.S. West Coast. About 70 percent of international goods entering Washington gateways continue on to the larger U.S. market. Thirty percent become part of Washington State's manufactured output or are distributed in our retail system.

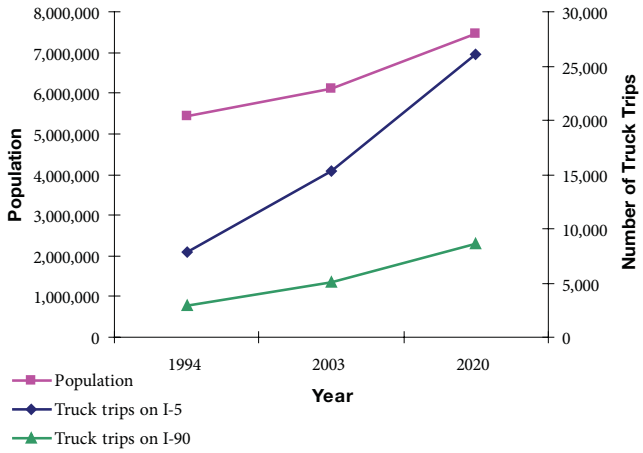
Second, our own state's manufacturers and farmers rely on the freight system to transport Washington-made products to local customers, to the big U.S. markets in California and on the east coast, and worldwide. Washington State's producers generate wealth and jobs in every region in the state.

Finally, Washington State's distribution system is a fundamental local utility, since without it our citizens would have nothing to eat, nothing to wear, nothing to read, no spare parts, no fuel for their cars and no heat for their homes. In other words, the state's economy would no longer function.

Freight Volumes are Growing

Globalization, competitive industry trends, and new technologies are pushing freight volumes up twice as fast as Washington State's overall population and traffic growth, as shown in Figure II-19. Without strategic investment by the public sector, our natural population growth, intensified by these three trends, will choke international trade flows through the state, undermine regional economies, and spill over into competition for road capacity in congested metropolitan centers. With strategic investment, Washington State will continue to compete. For the Washington State Freight Atlas, refer to Part IV. Chapter B. Maps.

Figure II-19
Washington Population vs. Truck Trips on I-5 and I-90



Source: WSDOT Freight Office

Global Gateways – International and National Trade Flows Through Washington

Globalization, in particular the emergence of China and Asia as important suppliers of consumer goods to the United States, will triple the volume of international container freight moving through the Ports of Seattle and Tacoma by 2025. Midwest and East Coast consumers, at the far end of the Asia-to-United States supply chain, purchased about 70 percent of the international goods entering Washington State ports in 2003. Most of these goods are shipped to the Midwest in containers by rail. But there isn't enough east-west rail capacity to handle a threefold increase in volume.

Figure II-20

Comparison of Main line Rail Capacity with Current and Projected Operations (Trains per day)

	Current Operations			Projected 2025 Operations		
Mainline Segment	Estimated Sustainable Cap.	Ave. Trains/Day	Peak Trains/Day	Estimated Sustainable Cap.	Ave. Trains/Day	Peak Trains/Day
Stevens Pass	28	23	25	28	46	51
Stampede Pass	20	6	7	20	16	18
Blaine to Everett	18	14	15	30	21	23
Everett to Seattle	50	45	50	100	84	92
Seattle to Tacoma	100	85	94	200	189	208
Tacoma to Kalama	60	45	50	120	80	88
Kalama to Longview	80	52	57	160	94	103

BST Associates, *2004 Marine Cargo Forecast*: Original source: MainLine Management and HDR, Inc. (Page 115). Includes passenger trains.

Washington Gateways Support National Defense

Global security needs and our national defense depends on the United States' ability to deploy armed forces rapidly when needed. Fort Lewis is the only Power Projection Platform on the West Coast. In the event of a major conflict, essential equipment and supplies will be rushed to Fort Lewis from all over the United States by rail and road, then shipped through the Ports of Tacoma, Olympia, and Seattle to support the troops. The military traffic will need to surge through two freight systems that have already reached their capacity limits: east-west rail road lines and Interstate 5 in Central Puget Sound.

Agricultural Exports Rely on Washington State's Transportation System

Washington States's largest waterborne export is food, mostly grain. Eighty-five percent of eastern Washington wheat is shipped to Asia through Columbia River ports, but farmers struggle to get products through the state's freight system. Growers cannot get produce off their farms up to two months a year due to weight-restrictions on county roads, and the Columbia-Snake River system is at risk due to federal restrictions on dredging and lock maintenance. The Freight and Goods Transportation System map can be found in IV. Additional Information—B. Maps.

The Fuel Distribution System

By far, Washington State's largest waterborne import is crude oil from Alaska, shipped to the state's refineries. Refined products, gas, diesel, and jet fuel then move by pipeline or barge to distribution centers and are trucked to gas stations. Washington State's citizens and industries consume 17.6 million gallons of petroleum per day, making the state's consumption 17th in the United States, and consumption is growing. However, the Olympic Pipe Line, currently operating at close to 100 percent capacity, has no plans to add capacity in the state.

Washington State's strategic location provides an important and growing gateway for trade access to the Pacific Rim, Canada, and U.S. states.

This map denotes volumes of freight movement.

Source: Washington State Department of Transportation, Geographic Services and Strategic Analysis and Program Development

Made in Washington – Regional Economies Rely on the Freight System

Our state's regions have built strong and distinct economies based on industry and agriculture. Over 550,000 jobs in regional manufacturing, agriculture, construction, and forestry depend on Washington State's freight system and accounted for $130.32 billion, or 28 percent of all state gross business revenues in 2004. Transportation is especially important for Washington State agriculture because the state produces about three times as much food and, for some commodities, up to twenty times as much on a tonnage basis as it consumes. Washington State is separated by long distances from the majority of the nation's consumers. More efficient freight systems will help Washington manufacturers compete in the larger West Coast market.

Industry Tends

Competitive pressure to cut inventories at every step in the manufacturing chain is reshaping industrial supply chains and causing more frequent freight shipments. The Boeing Company, employing 53,000 in Central Puget Sound, is Washington State's largest manufacturer with $22.4 billion in airplane revenues in 2003. Boeing's dependence on the state's freight system will become even greater as it sets new levels of efficiency in the manufacturing of the new 7E7 Dreamliner. Although Boeing has historically made planes from up to a million smaller pieces and shipped them by truck, train, and boat, its new strategy to gain efficiency is based on major component assembly. Fewer parts, with more frequent deliveries, will support their just-in-time inventory reduction strategy.

Cost-cutting inventory reduction strategies are also underway at thousands of other mid-market manufacturers and producers around the state. For example, a Vancouver food production plant receives up to 50 truckloads of fresh potatoes each week from growers in the Columbia Basin. The plant keeps just enough potatoes on hand for one eight-hour shift; if the potatoes do not arrive on time, the plant cannot run. A one million-square-foot semiconductor foundry in East Clark County can't function without fast and reliable air cargo; if a tool is delayed overnight in the supply chain from Taiwan, the plant will shut down and idle 1,000 employees. Farmers ship vegetable produce over 200 miles from Prosser to a major wholesale distributor chain in Central Puget Sound and are required to deliver within 15 minutes of their scheduled appointment.

> *"Of great importance to Washington and other northwest states is the continued viability and reliability of Snoqualmie Pass (I-90) as the primary freight route over the Cascade Mountains to the Ports of Seattle and Tacoma."*
>
> **Benton-Franklin-Walla Walla RTPO Regional Transportation Plan**
> 2006 Update

These competitive trends are repeated in thousands of manufacturing plants, construction sites, agricultural growers and processors, and distributor facilities in Spokane, Bellingham, and TriCities. More trucks are on the road, more frequently, with ever-shorter delivery windows because of these driving logistics practices.

Regional Industries Need Access to Customer Markets

Spokane regional manufacturers and health care system practitioners, and Eastern Washington agricultural growers and processors all cite severe winter weather closures on Interstate 90 at Snoqualmie Pass as Eastern Washington's top freight priority. They ship to customers in Central Puget Sound, so reducing delays on Interstate

5 from Everett to Olympia comes in a close second. Northwest and Southwest Washington manufacturers and trucking firms are also shipping to the Central Puget Sound region, so they put fixing the Interstate 5 corridor at the top of the list.

The Columbia Basin/North Central Washington agricultural center leads the nation in apple and potato production. Apples and potatoes must be shipped in refrigerated trucks or rail cars; 90 percent are trucked to market. Continued refrigerated truck shortages are likely due to seasonal peak demand and an ongoing pull from other U.S. regions for refrigerated capacity.

Washington State's Economy is Diverse

Aerospace and Technology

Washington State is the United States' largest exporter within the aerospace industry. This industry produces over 50 percent of the state's $35 billion in exports. There are more than 500 companies in the state with a link to the aerospace industry. They represent every segment of the industry, including engineering services, commercial and general aviation, and military and space applications.

> The three cities with the highest concentration of aerospace firms in the world are: (1) Seattle, Washington, (2) Toulouse, France, and (3) Montreal, Canada.
>
> *Source:*
> **Washington State Department of Community, Trade and Economic Development**

Since 1988, total high-tech employment has fluctuated with the economic cycles of the aerospace industry, while non-aerospace high-tech employment showed steady growth during that same period. Regionally, an interesting shift is occurring in technology job growth. Established technology-rich communities like Seattle, Vancouver, and Spokane saw a drop in technology jobs over the last two years, while Bellingham, the TriCities, and Bremerton all exhibited strong technology job growth. Technology industries account directly for more than 12 percent of Washington State's total employment. Washington State retains a highly educated workforce, critical to the technology industry, and ranking twelfth in the nation.

Manufacturing

In 2003, Washington State's manufacturers grossed $88.3 billion, 21.3 percent of the total state gross business income. This sector employed more than 285,000 workers in 2002 (11 percent of Washington's jobs). Employment in the manufacturing sector has been down since 1998 mainly due to a downturn in the aerospace industry. Washington State is expected to see an average growth rate of 0.4 percent in manufacturing employment through 2030. While remaining relatively steady in the number of jobs, manufacturing employment is expected to drop from 19.4 percent to 9.9 percent of all non-agricultural employment between 1980 and 2020. Even with this drop in share, manufacturing will grow, but more slowly than other non-agricultural jobs.

> **Forest Products in Washington State**
>
> The forest products industry is one of Washington State's key industrial clusters. In combination with a strong resource base, Washington State's historical tie to the forest products industry results in and relies upon an infrastructure of roads, rail, and ports.

Forest Products and Paper

As the nation's largest exporter of forest products, Washington State boasts a prime location on the Pacific Coast, with abundant forest resources, and key port facilities to maintain its competitive edge in the world market.

Japan is the largest importer of Washington State forest products. Pulp and paper exports in Washington statewide total $1.1 billion. Washington is the largest softwood lumber producer in the United States, exporting $495 million of softwood lumber to domestic and international markets. According to a 2004 Washington State Department of Community, Trade and Economic Development report on forest products in Washington:

- Forest products manufacturing is projected to grow by 1 percent per year through 2007 and 0.9 percent per year through 2012. In 2003, logging employed 5,497 workers and forest products and manufacturing employed 17,573 workers.
- Pulp and paper sectors employed an estimated 14,600 Washingtonians in 2002.
- An economic assessment of the global market for forest products estimated that near-term consumption is projected to increase from 328 million to 874

million cubic yards over the next 20 years.

Agriculture

Agriculture is big business in Washington and employs about 3 percent of our total workforce. In 2002, Washington produced $5.6 billion in food and agricultural products, ranking ninth nationally and is the number one producer of eleven crops. Agriculture employed more than 87,000 people in Washington in 2002, 80 percent of whom work in Eastern Washington. Yakima County alone accounts for 24 percent of statewide agricultural employment. Transportation infrastructure is critical to getting agricultural products to market.

Figure II-21

Washington's top five commodities accounted for two-thirds of the state's agricultural receipts in 2002

Commodity	Value of Receipts Thousand $	Percent of State Total Farm Reciepts	Percent of U.S. Value
1. Apples	977,508	18.8	63.6
2. Dairy Products	671,040	12.9	3.3
3. Cattle and calves	614,385	11.8	1.6
4. Potatoes	478,166	9.2	15.8
5. Wheat	475,718	9.1	8.6

Source: U.S. Department of Agriculture
Washington Agricultural Statistics Service

The total annual economic impact of Washington's wine industry is $3 billion. Washington State is focused on the premium wine market segment (wines sold for $8 per bottle and higher). Washington is considered to

be the second largest premium wine producer in the United States and is home to more than 400 wineries supplied by over 350 local growers. Together, they produce an estimated $685 million in retail value. The wine industry employs about 14,000 people, earning more than $466 million in wages in 2004.

Challenges in Rail Capacity Impact Washington's Economy

Freight demand for use of the Washington State rail system is growing. The main line rail carriers are approaching or exceeding designed capacity on many of their primary routes. Washington's small- and medium-sized businesses that ship wheat, apples, and potatoes, and industrial and wood products by rail are struggling to adapt to a new, fundamental change in the Burlington Northern Santa Fe (BNSF) Railway's and Union Pacific (UP) Railroad's business models. Rail volumes have soared across the country in the past five years so slots are at a premium.

This market change, while highly profitable to the railroads, is straining railroad capacity causing Class I (main line) railroads to employ more unit trains and shift to a "hook and haul" system whereby they haul large volumes of cars from a common origin to a common destination. That eliminates short haul collection and distribution for the main line railroads which is a time consuming and costly operation. Instead they will rely on trucks or short lines to provide those services connecting with the main line railroads through "transload facilities".

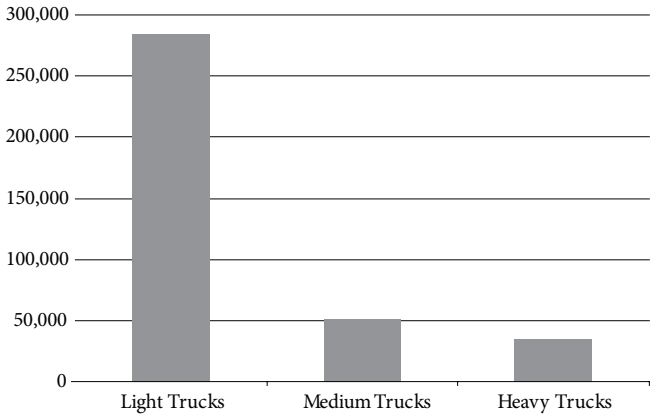
Unit trains are usually, but not always, longer trains which when they reach 8000 foot length require certain infrastructure changes so that they can be efficiently handled. Such unit trains have long been routine for the handling of international containers from ports which in effect are transload facilities. Car load agricultural or industrial shippers that cannot load large numbers of cars at their facilities are learning that they may need to gain access to transload facilities in order to remain competitive.

Short line railroads in Washington State could be used to pick up small rail car lots and aggregate them for the main line railroads. However, short line railroads that don't have an anchor high-volume customer, and have a lot of track miles to maintain (the national standard cost of track maintenance is $6,000 to $8,000 per mile per year) and high investment capital needs due to poor track condition, will require ongoing capital and possibly operational assistance. Relative rail maps can be found in IV. Additional Information—B. Maps.

Delivering Goods to You – The Retail and Wholesale Distribution System

Distribution is a critical component of the freight system, as it produces up to 80 percent of all truck trips in metropolitan areas and serves the retail, wholesale, and business services sectors. These sectors supported 1,690,000 jobs and accounted for $268 billion in 2004 gross business revenues, equal to 54 percent of total state revenues. An enormous variety of goods are handled on this system; food and groceries, fuel, pharmaceuticals and medical supplies, retail stock; office supplies and documents; garbage, construction materials, and equipment.

Figure II-22
Most Commercial Trucks Licensed in Washington State Are Light Weight



Source: Washington State Department of Licensing, Agency Computer Services

Local Distribution Relies on Fast and Reliable Service

Distribution companies must provide fast and ubiquitous service that is reliable under all conditions. FedEx and UPS drivers do not go home until every package is delivered. Hospital patients cannot wait for drug deliveries. Washington's modern service economy depends on speed of delivery through the freight system.

The most common method of distributing goods is by truck from large distribution centers to stores and businesses. When those trucks run into congestion, companies compensate for delays by sending more trucks out on the road, causing even more congestion.

Final Distribution of Goods is by Truck

Land use costs are also causing higher truck volumes. For example, in response to increased consumer demand for a wider variety of food products, grocers are increasing overall store size and shelf space. But back-storage space doesn't generate sales, so modern grocery stores are reducing expensive, non-productive storage space. This requires more frequent deliveries in smaller quantities; one Seattle specialty grocery store, for example, receives 375 truck deliveries per week.

New technologies enable companies to track more and more trucks, balance their inventories and capital usage, while managing very tight delivery windows. For example, high-tech logistics services of leading delivery companies allow them to track inventory on the Internet no matter which warehouse, truck, or other location holds their products. By implication, the greatest increase in overall truck volumes will be seen in many more, smaller trucks on the roads.

> *"If we make the right investments in transportation, we will create millions of jobs here at home, we'll make our businesses and workers more productive and we'll lay the foundation for our future economic growth."*
>
> ***Honorable Patty Murray,*** *United States Senator*
> *Speech to Former US Transportation Secretary Norm Mineta*
> *March 9, 2004*

Moving People

Aviation

Washington State's system of 139 airports generated 171,311 jobs, over $4 billion in wages, and over $18.5 billion in annual sales output according to the 2001 Aviation Forecast and Economic Analysis Study. Aviation plays a major role in the state's economy and, while airports facilitate commerce, they also serve as economic engines and their direct, indirect, and induced benefits accrue throughout the rest of the community as well.

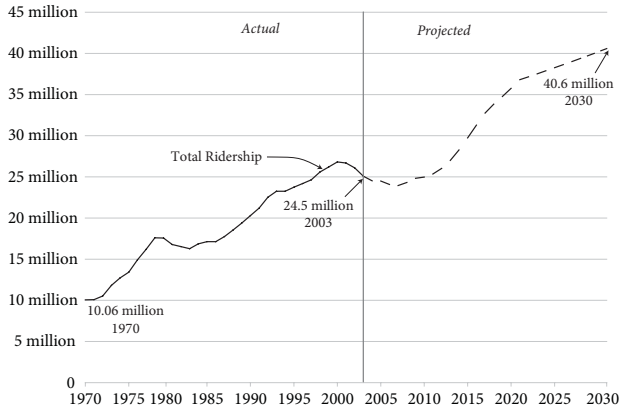
Bicycling Touring Routes

Bicycle touring is growing in popularity and is becoming an important component of the state's economy, especially for smaller coastal communities. WSDOT estimates that bicycle touring generates about $4 million each year in revenue for businesses in Washington including lodging, meals, and related activities.

The Ferry System

Washington State Ferries link Central Puget Sound with the Olympic Peninsula and Vancouver Island. The ferry system itself is a tourist attraction. In 1980 total ferry ridership was 16.7 million; by 2002 it increased by 50 percent to 25.1 million. These volumes are projected to continue to increase to 43.4 million riders by 2020. The Ferry Route map can be found in IV. Additional Information—B. Maps.

Figure II-23
Ferry Ridership Will Continue to Grow



Source: WSDOT Ferries and Berk and Associates Policy and Management Consultants

Tourism and Recreation

Transportation has a clear, obvious link to the tourism industry. Several statewide services and programs that support tourism and recreation include infrastructure such as highways, airports, ferries, passenger rail, safety rest areas, and viewpoints. Traveler information services include highway signing of destinations and businesses, roadside interpretation, maps and other traveler information including traffic cameras, interactive communications, and publications.

Some important components of the transportation system specifically serving tourism and recreation are bicycle touring routes, the state ferry system, aviation, and more than 3,500 miles of scenic byways.

Scenic Byways

Washington State's scenic byways are tourist destinations. Fifty-six percent of Americans drive for pleasure in rural or natural areas. In 2002, travelers in Washington State spent $11.2 billion, supporting 139,000 jobs. (*Source: USDA Forest Service. 2002 National Survey on Recreation and Environment).* The Scenic Byways map can be found in IV. Additional Information—B. Maps.

The Challenge: Mobility

In Washington State, the growth in travel demand has outpaced expansion of transportation system capacity. This imbalance of demand and capacity occurs in virtually every mode of transportation: at our airports, on our rail lines, and especially on our roadways.

Getting the highest possible performance from our existing transportation investments, from basic maintenance and operations activities to the application of sophisticated technologies means people and goods move more reliably and predictably on the system.

As travel demand grows, the imbalance between roadway demand and capacity will also grow. The roadway capacity in major urban areas has been consumed. The primary effects are increased congestion and longer travel times leading to reduced productivity, higher costs for goods and services, and the significant burden of time lost due to congestion in people's lives. Congestion in the form of vehicle delay reduces the capacity of roadways by up to 50 percent.

Implementing the vision of the WTP is founded on the principle that long-range planning is an essential on-going process that relies upon data and periodic analysis over many years. Given that Washington State's population and demand for transportation of all kinds is still growing, it is important to think today about shaping the future of transportation systems, even beyond the 20-year time span of this WTP.

Access to transportation is the passport to independent living. For residents and visitors in Washington State, and for people with special transportation needs in particular, accessible transportation presents many challenges. Transportation should not be a barrier to full participation in the community and the economy.

The Washington Transportation Plan strives to deliver a seamless transportation system by improving the connections between modes to increase mobility.

By 2025, without substantial new capacity or significant changes that affect how and when we travel, users of Washington State's transportation system will experience:

- Increased delay
- Longer travel times
- Reduced system efficiency
- Reduced economic productivity
- Higher consumer costs
- Time lost

Moving away from the historical practice of taxing to build our way out of congestion or to satisfy the demands of growth, this 20-year plan warns that as we grow, we must grow smarter and be more innovative; there is not enough state or local money and land to build our way out of congestion.

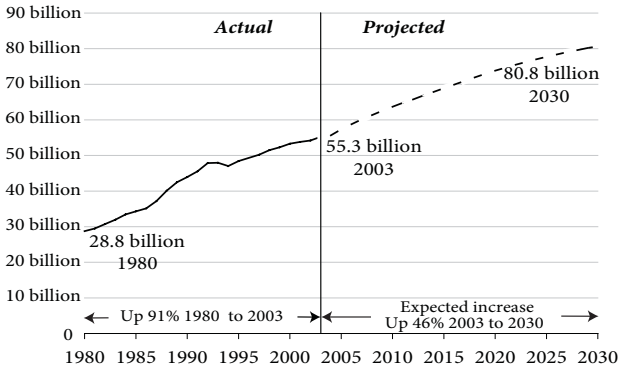
Strengthened regional partnerships and collaboration will be required to provide regional investments to fund, build, operate, and maintain additional transportation services and facilities. Such investments will be tailored to promote regional economies and improve quality of life, promote goods movement to and through ports and border crossings, and support programs aimed at developing the state's economic clusters.

The Demand-Capacity Imbalance—Mobility Challenges in Washington State

A key issue for this plan is that transportation demand is growing, and the imbalance between demand and capacity of the system will continue to grow, leading to more congestion. Achieving a better balance between demand for the system and capacity of the system will require methods to:

- Maintain flow of traffic
- Maximize throughput
- Improve productivity

Figure II-24
Vehicle Miles Traveled Will Continue to Grow



Source: WSDOT Transportation Data Office

Congestion occurs mostly in the urban areas, especially in Central Puget Sound, Vancouver, and Spokane. (Ninety-two percent of all delay on highways occurs in these areas.) Congestion causes lost productivity. Maximum freeway throughput of about 2,000 vehicles per lane per hour occurs at speeds of 45-50 mph. Throughput drops dramatically when traffic volumes force speeds to drop below 50 mph. The capacity of the roadway decreases as much as 50 percent with congestion.

How did we get in this situation?

There are several reasons:

- More people are driving.
- People are driving more.
- Capacity expansion has not kept up with the pace of population and travel demand growth, resulting in an imbalance between demand and capacity.
- Most travelers are auto dependent due to the lack of population and employment density, which is essential to make alternative travel options more viable.

The Future of Transportation in Washington State

Washington State has grown and is projected to continue to grow, adding approximately 2,000,000 people and 900,000 jobs by the year 2025. The three major urban areas will experience 69 percent of the population growth and 79 percent of the employment growth.

Projected population and employment growth will translate into substantial increases in travel and demand for transportation systems and services. Computer models project that a total of 45 million more vehicle miles of travel (VMT) per day will occur in the state's three major urban areas. Within Central Puget Sound, daily VMT is forecast to increase by nearly 60 percent by 2025. In Vancouver daily VMT is forecast to increase by 62 percent, and in Spokane by 30 percent.

Unless substantial new capacity is created through various methods, projected population and job growth will add even more pressure to the already strained system.

Creating more usable capacity on our transportation system will include:

- Ramp metering, incident response, and high occupancy vehicle lanes to improve flow on the system
- Commute trip reduction programs, better local networks, and transit oriented development provide alternatives to travelling on congested highways
- Basic maintenance and operations are the cornerstones of keeping the system moving
- Increasing access management programs, which can increase roadway capacity by 23 percent to 45 percent

> *"Essential to the success of the Spokane area, is the ability to develop a transportation system that can sustain growth and development in a manner that is financially affordable, environmentally friendly and provide the quality of life that Spokane residents expect."*
>
> **Spokane Regional Transportation Council**
> *2025 Regional Transportation Plan*

Transportation Access

People who can't or don't drive face difficulties getting to work, school, and medical care. Personal mobility means having transportation services available that can take you where you need to travel, when you want to travel, being informed about the services, knowing how to use them, being able to use them, and having the means to pay for them.

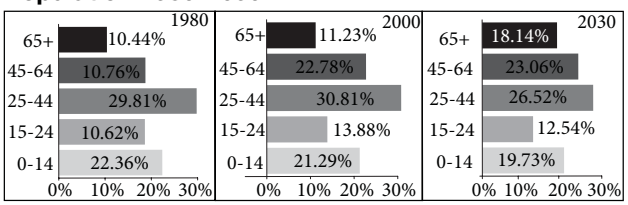
"Persons with special transportation needs" are defined in RCW 81.66.010(4) as: "those persons, including their personal attendants, who because of physical or mental disability, income status, or age are unable to transport themselves or to purchase appropriate transportation." Persons with special transportation needs fall into four broad groups.

According to the 2000 U.S. Census in Washington State: Elderly people make up 11.2 percent of the population; 17.5 percent of the population report some type of disability; 25.7 percent of the population is under 18; and 10.6 percent of the population have incomes below the poverty level.

Washington's Elderly Population is Growing

The elderly are a growing share of the population. As people age, many give up driving. Seventeen percent of Washington States's population over 65 does not drive. Of those who still drive, many are driving more and at an older age than previous generations. Many people are choosing to continue living in areas where driving is essential and public transit service is not available or is difficult to use. However, despite the fact that many elderly people will continue to drive, the growing population of elderly people, especially those over 85 years of age, will increase the demand for demand-responsive public transportation. The growing number of older drivers also requires special roadway safety features such as signs that are easier to read and clearer striping.

Figure II-25
Changing Age Mix in Total Washington State Population 1980-2030



Source: WA State Office of Financial Management; U.S. Census

Persons with Disabilities in Washington State

It is difficult to know how many people in Washington State with disabilities also have special transportation needs. We do know that the 2000 U.S. Census identified 1 million people with disabilities in Washington State. Not all people with disabilities also need special transportation services.

In Washington State, more than 60,000 people with disabilities receive assistance from the Department of Health and Human Services. According to the National Health Information Statistical Database, in Washington State, people with sensory limitations severe enough to affect everyday life make up about 5 percent of the adult population. In addition, about 228,000 people have physical disabilities that affect their ability to walk and get around outside the home.

Washington State's Children

From 1990 to 2000, the number of people age 19 and under increased 20.5 percent and now account for nearly 28 percent of the total state population. More than 1 million children attend schools in Washington State. State funding covers only 65 percent of the school districts' transportation costs. Transportation for child care and after school programs is often limited, particularly for children living in rural communities. Homeless children have a number of transportation difficulties, particularly when transitioning from temporary housing locations.

Washington State's Low Income Population
In 2002, 1.16 million people with low incomes were assisted by the Department of Social and Health Services, totaling $2.45 billion in assistance. The cost of transportation is growing, and low-income residents spend a higher percentage of their income on transportation than others. The sharp rise in fuel prices beginning in 2005 has increased the burden on people with low-incomes. Low-income people in most rural areas typically do not have access to public transportation services. Low income groups are a significant and growing part of our population. Addressing the transportation needs of these people affects all of us, either directly or indirectly.

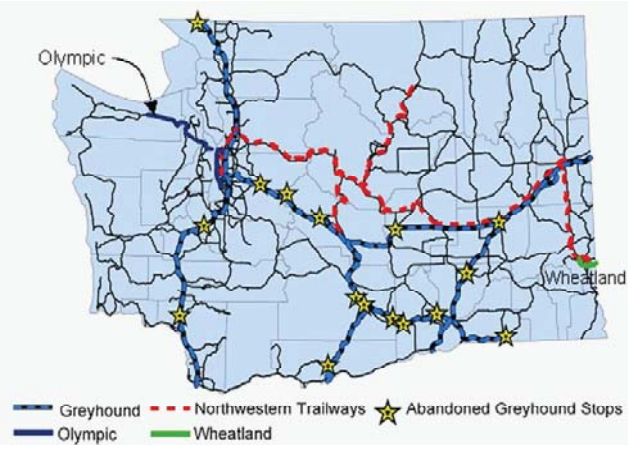
Transportation Challenges in Rural Areas
The economic viability of rural communities often revolves around the ability of people in these communities to maintain access to urban centers for shopping, banking, social activities, medical appointments, and other services. In rural areas, access is normally provided by car. With limited options and long distances, providing transportation access to people who cannot drive is a challenge.

Intercity Services
A network of public and private services provides intercity connections. As private providers change services, smaller rural communities often lose access to national intercity connections. Gaps in programs and funding leave many of Washington State's citizens without access to transportation for basic necessities, personal business, education, and recreation. This is particularly true in rural and suburban areas outside of areas served by public transportation.

Private intercity bus companies are abandoning service to small communities throughout Washington. In summer 2004, Greyhound cancelled service in 21 mostly rural communities. Intercity bus routes and abandoned service stops are shown in the following map. Without access to transportation, many residents will not be able to leave their communities.

As the population ages and more individuals with transportation disabilities remain active members of the community and workforce, the costs associated with providing accessible transportation is expected to increase. In 2003, spending by transit agencies comprised more than two-thirds of public funds spent on transportation access.

Intercity Bus Service



Source: WSDOT Public Transportation & Rail Division

Agency Council on Coordinated Transportation
The Washington State Legislature created the Agency Council on Coordinated Transportation (ACCT) in 1998. ACCT's purpose is to increase transportation access through coordinated transportation services statewide. Significant local, state, federal, and private money is spent on providing a variety of transportation services. Coordination is critically important as it leverages all public and private funds together to improve effectiveness of all these services, reduces duplication and unnecessary service trips, and makes it easier for users to access essential services.

> "Transportation to basic service providers is essential for our region's disabled, low income and senior citizens."
>
> ***Kelly Scalf,*** *Transportation Director, Rural Resources Northeast Washington Regional Transportation Plan*

System Efficiencies

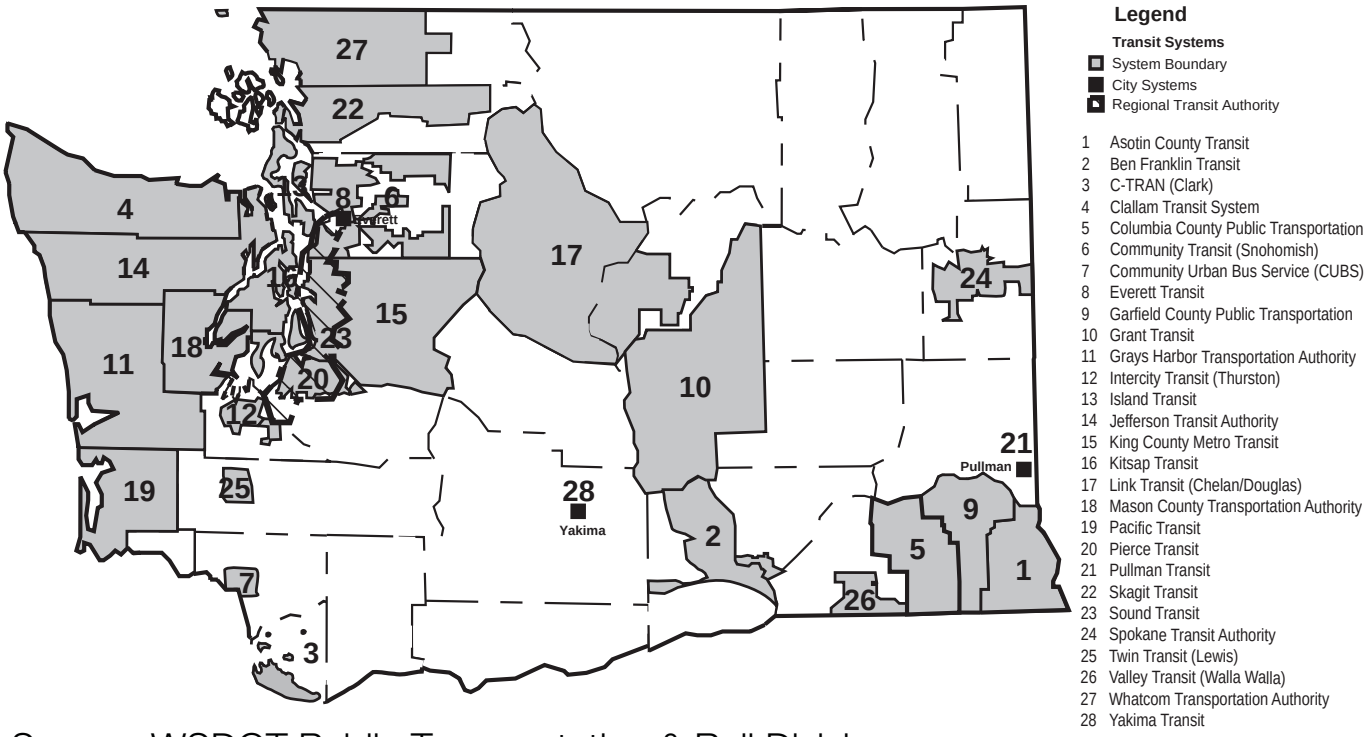
Operating our roadways for maximum throughput is the key to getting the most out of the system. For most roadways, basic day-to-day and seasonal maintenance activities such as snow plowing, picking up debris, controlling vegetation, and pothole patching are the activities needed to keep the road available for optimal use. When more people use the roadway, congestion occurs and more sophisticated operating activities are needed to optimize use.

Travelers expect reliability, efficiency, and predictability in the transportation system. Uncoordinated patterns of development also create more daily trips at greater distances, making transportation systems less efficient. Several factors contribute to system inefficiency, including congestion caused by too much traffic, collisions reducing available lanes, roadway design, weather conditions, uncoordinated bus or ferry schedules, unsynchronized traffic signals, and driver behavior itself.

Efficiencies of Public Transportation

Public transportation plays a critical role in supporting the efficient movement of people, particularly on regional corridors throughout the state. In 2004, Washington State residents took over 170 million total trips on public transportation. Transit agencies are increasing the level of service to target the diverse needs of their riders by investing in high capacity transit options, bus rapid transit, and improved travel options to keep people moving during WSDOT's many construction projects. Other transit systems are offering more options for commuting by expanding their vanpool programs, online travel information, multiple mode schedule information, and coordinated ITS projects.

Washington State Public Transportation
Transit Authorities



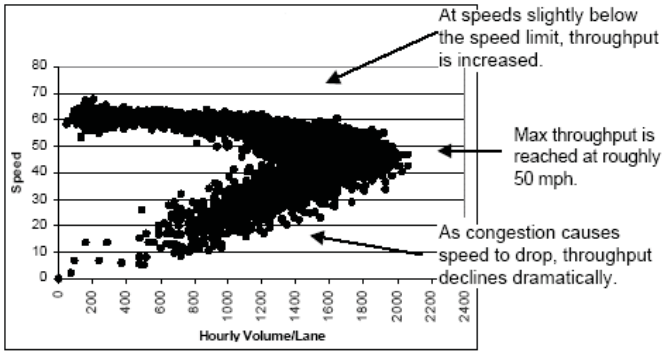
Source: WSDOT Public Transportation & Rail Division

Making Choices About How to Get There

In addition, major projects underway are improving commuter and intercity rail, developing light rail, and extending the High Occupancy Vehicle (HOV) system. Each of these areas will enhance the efficiency and capacity of the public transportation network.

Every roadway has an optimal capacity where throughput (number of vehicles per hour) is at its highest. Traffic volume at given speeds influences vehicle throughput. In this example, the maximum throughput is about 2,000 vehicles per lane per hour and, at this rate, traffic is flowing at about 45 to 50 miles per hour. If demand increases further, speeds slow and throughput actually drops to less than one-half the maximum throughput. This means that under unmanaged congested conditions, the capacity of a roadway is actually less than if flow were maintained at a steady 45 to 50 miles per hour. Knowing how roadways operate can lead to strategies aimed at managing flow and trying to prevent traffic from dropping "below the curve."

Figure II-26
I-405 NB@24th NE, Weekdays in May, 2001



Source: WSDOT Loop detector data

Figure II-25 shows how maximum throughput (an accounting of people or vehicles passing a certain point in a given amount of time) is achieved at speeds between 45 to 50 miles per hour. As more vehicles are gathered together and congestion occurs, speeds drop dramatically and throughput decreases significantly.

As roadway congestion increases, Intelligent Transportation Systems (ITS) can be used to maintain vehicle throughput. We now use technology to maintain throughput such as ramp metering, traveler information, incident response, border crossing technology, weather responsiveness based on prediction tools, commercial vehicle information systems and networks, and coordinated signals.

Additionally, an access management program that is supported at the highest levels of government will help Washington State deal with the increased demands the future will place on the transportation system. Access management enhances system efficiencies, helps reduce bottlenecks and chokepoints, and is part of building our state's future vision.

In current and future construction areas, surveillance cameras and driver information will be used to monitor corridor traffic and potentially reroute trips to non-congested corridors.

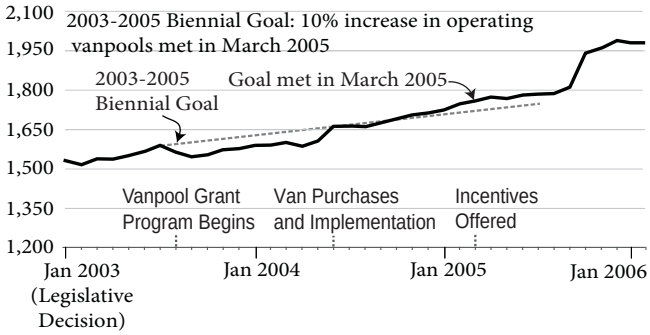
The viability of corridor rail service is driven by several key factors. Based on research recently conducted by the American Association of State Highway and Transportation Officials (AASHTO), approximately 81 percent of all intercity trips greater than 100 miles do not extend beyond 500 miles. Corridor rail service of 500 miles or less, with frequent daily departures and travel times of several hours or less between major population centers, can eliminate the need to travel on congested highways, as well as to and from airports located in suburban areas. Corridor rail service can also provide transportation to communities not served by regional air carriers, help relieve aircraft congestion at major airports, and can become an attractive mode of transport for business travelers and those taking single-day round trips.

> *"Transportation improvements and programs must be focused on establishing a more balanced transportation system, shifting emphasis from movement of vehicles to movement of people and goods. A balanced system provides travel options that include choices for private vehicles, public transit, ride sharing, walking, biking and various freight modes."*
>
> **Destination 2030**
> Puget Sound Regional Council

Managed Lanes

Special use lanes, such as High Occupancy Vehicle (HOV) lanes for carpools, vanpools, and buses have been used successfully to maintain throughput over all lanes. HOV lanes improve the efficiency of the system by carrying up to three times as many people than adjacent lanes during peak traffic periods. HOV lanes move approximately 32 percent of the people on all freeways in only 18 percent of the vehicles during the rush hours. They have been so successful that they are now becoming congested. In the future, other types of managed lanes, perhaps toll lanes with variable pricing which still prioritize HOV's, will improve the efficiency of travel.

Figure II-27
Public Vanpools Operating in Washington
January 2003 to February 2006



Source: WSDOT Vanpool Database

The increasing utilization of vanpools in Washington is facilitated by the increase in HOV lanes. These programs concurrently benefit one another, maximizing the efficiency of both.

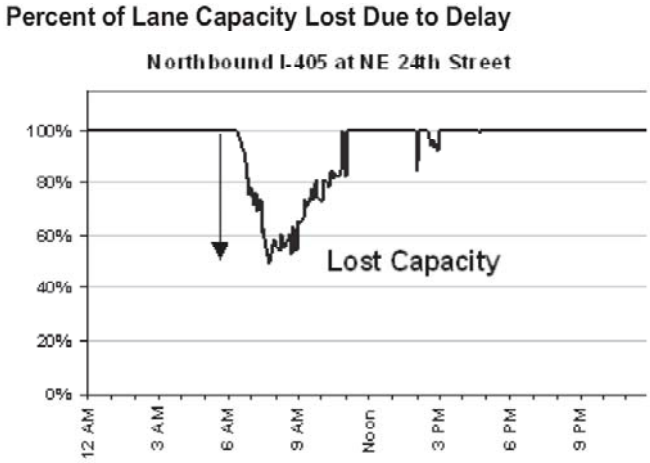
Truck Operations

Trucks must be weighed, inspected, and registered for travel in Washington State. Stopping at truck scales and ports of entry can inconvenience and delay truck shipments. Advanced technology such as commercial vehicle information systems and networks and weigh-in-motion technologies can improve efficiency and reduce the time spent at the scales in most cases.

Bottlenecks and Chokepoints

The growing demand-capacity imbalance affects citizens' daily lives and almost every sector of economic activity. Commutes to work on congested roadways are time-consuming and often aggravating. Non-work trips, too, must be planned to avoid congestion or with extra time allowed when the system is not reliable. Freight delivery becomes slower and less reliable. Air pollution is exacerbated by cars and trucks stuck in traffic. Even rural areas that never see traffic jams are penalized when highway congestion associated with urban areas delays agricultural products reaching ports and customers.

Figure II-28



Source: WSDOT Urban Corridors Office

Delay Occurs Mostly in Urban Areas

Projected growth in travel will be concentrated in Puget Sound, Spokane, and Vancouver. Ninety-two percent of all delay on Washington State highways occurs in these areas. Without methods to supply more capacity, either by operating more efficiently or by building more lanes, the gap between demand and capacity will grow wider.

Delay is more prevalent in urban areas with the greatest delay found in the Central Puget Sound area. The total delay across the state is estimated to be more than 365,000 hours per weekday and represents about $1.6 billion annually in lost time.

Congestion Actually Reduces Capacity

There are locations on the system where system geometry and traffic patterns contribute to congestion and reduce throughput capacity. These are called bottlenecks and chokepoints. Targeted capital investments at these locations would be less expensive than full corridor build-outs, but could deliver significant delay savings and restored productivity. Corridor completion and expansion in certain locations are higher cost ways to address the demand-capacity imbalance.

- New or major corridor expansion will need to be considered in the future
- The entire system is interconnected and all parts play a role in improving the demand-capacity imbalance

Efficiency loss can be seen more clearly in Figure II-28. On a section of I-405 during the morning commute, the throughput lost due to congestion was equal to nearly half the highway's capacity. In other words, at the very time when the capacity was most needed, the equivalent of one whole lane (out of two general-purpose lanes) was lost to congestion. These efficiency losses often occur at bottleneck and chokepoint locations, which can severely hinder the entire system's performance. For maps of Current State Highway Congestion and 2030 State Highway Congestion, refer to Part IV. Chapter B. Maps

Causes of Delay

Bottlenecks and chokepoints are typically locations on the system where design of the highway or traffic patterns contribute to congestion. Examples of these include:

- Locations on the highway where three lanes in one direction drop to two lanes
- Where the distance from the freeway exit to the local road is not very long and cannot accommodate queues longer than several vehicles
- Where multiple lanes merge and changing lanes is not restricted. This creates unpredictable lane change movements. Roadway examples include the Kirkland crawl on I-405, the Southcenter Hill climb on I-5, SR 18 between I-5 at Federal Way and SR 167 at Auburn, the Renton S-curves on I-405, US 2 near Monroe, and interchanges such as I-5/I-90 in Seattle, I-405/I-90 in Bellevue, and I-5/SR 16 in Tacoma
- In addition, weather can cause congestion or affect the passability of a roadway creating a bottleneck or chokepoint. Avalanche control on I-90 at Snoqualmie Pass and county roadways closed due to spring thaw restrictions are examples of weather-related bottlenecks and chokepoints

Building Future Visions

Long-range transportation planning is essential to lay the groundwork to meet the forecasted needs for the future. The construction of the interstate system took decades to plan and construct. Today, environmental regulations, and the need for partnerships and innovative financing lengthen the time necessary to build projects as compared to 50 years ago. Implementing the vision of the WTP is founded on the principle that long-range planning is an essential ongoing process, that relies upon data and periodic analysis over many years.

The Interstate—A Long Term Project

The planning for Interstate 82 began in the late 50s after the signing of the Federal-Aid Highway Act of 1956. The planning process for this highway extended over a period of 12 years. Construction, which began in October, 1968, took only 2 years and 9 months.
The Fred G. Redmon Memorial Bridges over Selah Creek on Interstate 82 were the longest single span concrete arch bridges in North America at the time of their completion in June 1971. The total length of each of the dual bridges is 1,336 feet and the central spans are 549 feet. The bridges were the focus of several magazine and newspaper articles while they were under construction due to the significance of this engineering accomplishment. The Fred G. Redmon Memorial Bridges over Selah Creek have now been in use for over 35 years. The duration of time between conception and utilization of the bridges required a combined 15-year period of time, just one example of the need for a future vision when planning.

Fred G. Redmon Memorial Bridges over Selah Creek on I-82 Connecting Ellensburg to Yakima, in Eastern Washington

Major Roadway Capacity Expansions

With the population and job growth experienced in the past 20 years, Washington State's roadway capacity is inadequate to meet the growing demand, and future growth is likely to match or even outpace this historical pattern. WSDOT's highway system plan has identified over $30 billion of unfunded capacity expansion needs on state highways, and regional plans have identified large additional expansion needs on city and county arterials.

Not all increases in demand can be served solely by expanding this highway system. Other methods must be developed and may include some of the following targets.

Adding New Systems

New technologies that are only now being refined or invented will expand system capacity, increase system efficiency, and provide alternatives to driving. These new systems must not only support growth in our population, they must also contribute to our economy by making transportation more efficient.
Examples of new systems include:

High Capacity Transit

Nationally and statewide, high capacity transit is being looked to as part of the solution for reducing delay in large urban areas. In Washington, electric light rail, bus rapid transit, commuter rail, regional express bus service and the use of HOV lanes will also be part of the solution. In addition, transit-oriented developments—land uses that provide densities, mixed uses, and pedestrian facilities to build a walk-to-market for transit have been built in Bellevue, Issaquah, DuPont, Vancouver, and throughout the city of Seattle, and are being planned along light rail and other transit corridors.

Figure II-29
2006 HOV Lanes

HOV Lane Miles	Lane Miles
HOV Lane Miles Funded for Construction	58
HOV Lane Miles Planned	44
HOV Lane Miles Open to Traffic	205
Total	307

Source: WSDOT System Analysis & Program Development

Significant progress has been made to construct the planned 300-mile HOV lane system in the Puget Sound region, as the chart above shows. This HOV system includes a broad network of park and ride lots, is used by an extensive vanpool fleet, and is important for demand management programs aimed at encouraging transit alternatives. Refer to Part IV. Chapter B. Maps for the Puget Sound Freeway HOV System map and the 2005 Sound Transit Long Range Plan map.

Intelligent Transportation Systems—Smart Vehicles and Smart Roads

Intelligent Transportation Systems (ITS) technology is rapidly evolving and includes such things as smart vehicles and smart roadways. Newer vehicles entering the marketplace are "smart" in that they can sense the location of other vehicles on the road and activate variable cruise control and collision avoidance systems. Vehicles such as these, all communicating directly with each other, will safely travel at close distances and high speeds, improving current highway system efficiency. Vehicles outfitted with smart technologies are starting to enter the marketplace.

There are also ITS technologies designed to meet the special needs of truckers. Roadside weigh stations have traditionally performed a number of inspection and enforcement functions, but waiting in line for these services adds time (and therefore expense) to the trucker's trip. The Commercial Vehicle Information Systems and Networks (CVISN) and Weigh-In-Motion (WIM) systems weigh each truck as it passes a sensor. At the same time, trucks equipped with an Automatic Vehicle Identification (AVI) transponder electronically transmit essential safety rating credentials, weight, size, and other information to the weigh stations. If no problems appear to monitoring staff, the truck can bypass the station and continue down the highway.

Technologies that integrate vehicles with the roadway on which they are traveling take system management to the next level. Electronic signals exchanged between vehicles and the roadway mean real-time traffic information can be used to manage the flow of traffic, helping to maximize throughput and minimize potential for collisions. Why is this so important? The Congestion Relief Analysis for the Central Puget Sound estimates current delay at 285,500 hours daily, with future delay more than doubling even with an emphasis on using transit. For example, technology that optimizes signal coordination and transit priority access can reduce delay. Other applications of technology also hold promise for reducing travelers' delay.

Tolling for System Management

New tolling strategies show promise as a means to both affect the level of system use and increase financial support for transportation projects, especially in congested corridors. Four primary concepts include:

- System-wide tolling, where fees are based on actual road use throughout the entire system. "Dynamic Pricing" (or variable pricing based on demand) is an example. When many cars try to use the same road at the same time, the ability to drive in a free-flowing lane at a reasonable speed increases in value. Variable tolling, or value pricing, can serve to allow only enough cars to use a lane to optimize capacity and speed. Drive during peak demand, pay a peak price. Pricing of theatre tickets and utility rates operate on this principle. Value pricing can spread the demand to allow more vehicles to flow at higher speeds overall.
- Segment tolling, such as traditional, limited-access toll roads, toll bridges, or toll express lanes. Advances in electronic toll collection now provide for "at speed" collection of tolls, without tollbooths.
- Cordon tolling, where all drivers are charged a toll when entering an area such as a downtown central business district.
- High Occupancy/Toll (HOT) lanes, where drivers of single-occupant vehicles can choose to pay to use HOV lanes when and where there is available capacity. Twenty-one different projects using or studying HOT lane applications are currently underway in the United States, including a pilot project on SR167 here in Washington State.

Future Technologies

Much discussion occurs on how technologies will continue to shape our transportation system now and over the next 20 years. Exploring innovative ideas is critical to creating solutions for future demands on the system

The Challenge: Environmental Quality and Health

Transportation systems touch many complex health and environmental issues: citizen and community health, land use, natural ecosystems, species protection, and climate change.

Transportation systems not only facilitate how we move from place to place, but play an important role in the health of communities. Research shows that automobile-oriented land uses, such as those that created automobile dependency, can limit transportation options, discourage physical activity, and adversely affect air quality, water quality, and safety. Increasingly, Washington State communities are developing transportation infrastructure that improves health and, at the same time, provides benefits such as improved economic vitality and protected and enhanced natural resources.

The creation and operation of transportation systems can affect public health and the natural environment in many direct and indirect ways that are interrelated. The WTP recognizes that environmental compliance—and in many cases environmental enhancement above and beyond compliance—is part of the way new transportation construction projects are designed.

Today, these projects carefully consider ways to:

- Treat stormwater by removing sediments and metals
- Protect the quality of groundwater
- Control erosion of banks and reduce surface run-off
- Provide fish passage and enhance habitat connections
- Replace and improve wetland and roadside functions
- Protect cultural and historic resources
- Minimize air pollution

The WTP addresses further improvements as well as broader initiatives to improve the transportation system's environmental interaction and performance. It also recognizes the state's effort to invest in projects along the existing highway system that are not connected to areas undergoing new highway construction. These stand-alone projects are funded to:

- Remove culverts that keep fish from reaching upstream habitat
- Reduce highway noise in areas not addressed by past construction projects
- Repair stormwater facilities
- Strengthen stretches of highway that suffer repeated flooding or streambank erosion

This section highlights emerging trends and opportunities for improving environmental quality and community health when investing in transportation infrastructure.

Washington Provides Grant Funding for Pedestrian and Bicycle Projects

The Washington State Legislature included $74 million over the next 16 years to support pedestrian and bicycle safety projects, such as pedestrian and bicycle paths, sidewalks, safe routes to school, and transit. The Pedestrian & Bicycle Safety program will address the nearly 400 statewide fatalities and injury collisions involving pedestrians and bicyclists each year.

The purpose of the Pedestrian and Bicycle Safety program is to aid public agencies in funding cost-effective projects that improve pedestrian and bicycle safety through engineering, education, and enforcement. Eligible projects may address the following:

A. Engineering improvements—Projects may include items such as:

- Improving intersections by providing: curb extensions, lighting, raised median, crosswalk enhancements, signs, signals, and mid-block crossing treatments
- Completing bicycle lanes and sidewalks
- Constructing bicycle and pedestrian paths
- Providing safe routes to transit
- Providing pedestrian and bicycle safety improvements for at-risk groups (children, the elderly, and people with disabilities)

B. Education efforts—Projects may include items such as:

- Implementation of educational curricula
- Distribution of educational materials
- Development of promotional programs for walking and biking

C. Enforcement efforts—Projects may include items such as:

- Additional law enforcement or necessary equipment for enforcement activities
- Vehicle speed feedback signs
- Neighborhood watch programs
- Photo enforcement

The most obvious and often the most significant environmental impacts are associated with roadway construction. These include habitat loss and fragmentation, habitat disturbance, erosion and sedimentation. Operation and maintenance activities can also have impacts caused by continued disturbance, pollutants, and the spread of invasive plant and animal species. Though an individual transportation project may have little or no impact, or may provide for mitigation, over time the cumulative impacts of numerous transportation projects and increased development can impact human health by stressing water quality and air quality with emissions, roadway runoff, and the increase in impervious surfaces. Over the past decade, transportation agencies at all levels have come a long way toward aligning with community goals for a clean and healthy environment while meeting their transportation needs.

For example, today's highway and ferry terminal construction projects integrate environmental components into project design, budget, construction and operation. Major investments are made to avoid or replace wetlands, control erosion, protect cultural resources and stormwater in response to specific permit requirements as well as best practices that demonstrate our environmental commitment.

In addition, investments are made to upgrade structures and facilities that were built before the standards we use today were developed. These retrofit projects remove barriers to fish and repair failing stormwater systems.

Public discussion of emerging issues, advances in scientific knowledge, and evolving practices provide information on additional needs and priorities. The public health profession has a renewed interest and concern related to transportation. Public health research in recent years has shown that:

- Children's walking trips to school have declined by 40 percent since 1977, and children between the ages of 5 and 15 make only 10-12 percent of their school trips by walking or riding bicycles.
- Nearly one-third of our nation's children and adolescents are overweight or at risk of becoming overweight. This proportion has more than doubled over the past 20 years.
- One-half of all trips are less than three miles in length, most of them are made by car
- People walking and biking on the road face disproportionately high risks, accounting for thirteen percent of all traffic deaths.

The rapid increase in obesity, diabetes, and asthma among children and adults in Washington State is a growing concern. Statistics from the Centers for Disease Control show that obesity trends among adults in Washington State have increased from less than 10 percent in 1991 to over 20 percent today. Personal transportation choices, the perceived limitations on personal mobility, and in some cases the lack of transportation alternatives have been implicated as contributing factors to these disturbing trends.

Of course, many factors contribute to improving the health of a community. The WTP focuses on how transportation in general and integrated project delivery specifically can contribute to community health. The WTP does not speak to public health programs in the traditional sense, but focuses on collaborative design solutions for improving transportation connections within communities.

In response to these trends and research, several Washington communities have identified and benchmarked community health indicators that often include transportation measures such as the number of people walking and bicycling. Pedestrian and bicycling activity is a common measure of community health because this measure reflects many different aspects including safety, security, economic vitality, public health, and the quality of the natural environment. Other indicators of healthy communities include:

- available and affordable housing;
- mixture of land use;
- strong community leadership;
- innovative neighborhood design;
- interconnected pedestrian and bicycle facilities;
- economic development initiatives;
- creative stormwater management;
- healthy wetland areas; and
- improved air quality.

Collaborative partnerships to develop and implement transportation systems are improving the way people live and work together by increasing access to transportation services and the way we share information about travel. A comprehensive approach to designing transportation systems considers the compatibility of each project with community character and values, the environment, and the unique needs and desires of the community.

The ability to plan, participate in planning efforts, or develop a community's transportation future depends on having trained planning staff. This is a key issue for many of Washington State's tribes, small cities, and counties that lack funding for such planning capacity. Refer to Part IV. Chapter B. Maps for the map of Federally Recognized Tribes in Washington

Stormwater Runoff

Stormwater management is an important opportunity for improved transportation planning and project design to meet community needs. Many areas of the state are struggling with stormwater management costs due to additional impervious surface, flooding, and water quality violations.

Figure II-30
Typical Sources of Pollutants in Urban Runoff

	Highways	Residential	Commercial/ Industrial
Phosphorus	4%	39%	53%
Hydrocarbons	16%	28%	54%
Copper	9%	10%	79%
Suspended Sediments	7%	44%	44%

Source: NPDES Municipal Stormwater Permit Application, Volume I, Portland OR Metropolitan Area, May 1993

To improve safety, roadways are designed to carry stormwater off the pavement. However, when stormwater flows off roads and through roadway drainage systems, it carries pollutants originating from motor vehicles, the atmosphere, and other sources into bodies of surface water. Sediments and pollutants (nutrients, oil, grease, and metals) are carried into rivers and streams, affecting water quality.

> *"The quality and condition of the transportation system have an impact on the quality of life, which impacts a business's or individual's choice to locate in the region."*
>
> **Wenatchee Valley Transportation Council**
> Confluence 2025 A Strategic Transportation Plan for the Wenatchee Valley.

Research conducted at both the national and state level suggests opportunities to reduce the negative impacts of stormwater using a combination of regional- and site-level techniques to prevent, treat, and store runoff and associated pollutants. Many of these practices use low-impact development methods such as rain gardens, bio-retention areas, and grass swales. Others go further by changing design practices to maximize existing infrastructure by focusing development, reducing parking, and narrowing streets.

Controlling the amount of runoff flow is also important, as high flood flows can damage habitat, property, and transportation infrastructure. Managing stormwater flow from new transportation facilities is achieved through the use of runoff treatment and retention, and flow control technologies and methods. However, most of the existing highway stormwater outfalls were built prior to the 1995 stormwater regulations and have no treatment facilities. To date, only 4,000 of these outfall locations have been inventoried, and an estimated 14,000-20,000 additional locations on the state system alone need to be inventoried in order to prioritize outfalls for retrofit projects. Data for stormwater outfalls on most city streets and county roads is inadequate to prioritize them for retrofit projects.

Urban vegetation, landscaped stormwater infiltration areas, and green riparian corridors can form a network of hydraulic controls and maximize roadside function. If both regional- and site-level stormwater management techniques are used, they can not only restore natural hydrologic functioning, but also provide air purification, improve traffic safety, enhance the road's aesthetic character, instill civic pride, and improve the visual quality of the corridor. Today's focus is on inventorying outfalls and investigating the performance of stormwater treatment solutions using Best Management Practices (BMPs).

The ability of the various solutions to remove pollutants from stormwater and control runoff varies. Transportation agencies are learning a lot about the performance of various practices in use statewide. Stormwater monitoring helps transportation agencies and regulators evaluate the effectiveness of treatment facilities and helps match the right design approach to each unique situation. For example, WSDOT's research has shown that grass-lined swales are very economical and can reduce most pollutants from the runoff. Working with the Department of Ecology and other agencies will result in acceptable approaches to managing stormwater and flow control more broadly within a watershed. Expanding the menu of available stormwater management techniques helps build connections between transportation investments and other community goals such as landscape design, tree canopy replacement, and watershed initiatives.

Protecting Habitat and Wetlands

Washington State has a wide diversity of habitats that support more than 650 native fish and wildlife species. As the human population increases and our human footprint expands, added pressure is placed on natural systems that, in many cases, are already heavily stressed.

Roads can fragment fish and wildlife habitat for fish and wildlife and restrict the movement of wildlife along waterways and across landscapes. Salmon and other fish species need access to freshwater habitat for spawning and juvenile rearing. Undersized road culverts act as barriers, blocking fish from habitat.

Correcting fish passage barriers like roadway culverts is one of the most effective ways to improve streams and fish habitat conditions. Well-designed roads can provide safe wildlife connections and, at the same time, help reduce vehicle collisions wtih wildlife. On average, our state reports 1,200 wildlife related collisions resulting in 134 human injuries per year. In 2004, five people died from vehicle collisions with wildlife.

BEFORE
SR 20 near Mazama, Little Boulder Creek: A ten-foot culvert with a six foot drop created a fish passage barrier.

AFTER
A new 26-foot wide culvert replacement on Little Boulder Creek contains no drop and restores fish passage.

With the right information, tools, and policies, these issues can be addressed early in corridor planning and project design. As a result, we can sustain healthy habitats and biological diversity, build safer roads, and reduce collisions.

Fish Passage Barrier Removal Projects 2006

Project Location (milepost)	Project Actions to Improve Fish Passage
U.S. 2 near Stevens Pass (70.21)	Replace an existing 11-foot metal culvert at Mill Creek with a 38-foot, bottomless plate arch culvert
SR 20 at Methow Valley near Twisp (205.82)	Replace two four-foot round pipes and a six-foot box culvert with a new 26-foot box culvert at Beaver Creek
SR 20 at Methow Valley near Twisp (206.87)	Replace two three-foot culverts at Frazer Creek with a 15-foot, three-sided structure
SR 112 at Bear Creek near Joyce (54.35)	Replace a six-foot-wide box culvert with an 18-foot-wide, three-sided concrete structure
SR 112 near Clallam Bay (24.91)	Replace two three-foot round culverts on a Physt River tributary with a 14-foot-wide concrete box
SR 142 at Snyder Canyon Creek (13.4)	Remove the existing concrete apron on the box culvert, and replace with a well-graded stream-bed to simulate natural stream conditions
SR 142 at Bowman Creek (20.2)	Remove a 12-foot box culvert and replace with a 60-foot bridge

Source: WSDOT Environmental Services Office

WSDOT works with the Department of Fish and Wildlife (WDFW) to inventory, identify, and prioritize fish passage barriers that should be removed along the state highway system. WSDOT and WDFW have identified 1,500 fish passage barriers among more than 6,000 stream crossings on state-owned highways. To date, WSDOT has removed 180 of these barriers and gained more than 411 miles of stream habitat for fish use. The effort to fix barriers continues and is a high priority. In addition, a strategy to address fish passage barriers on tribal, county, and city roads is needed.

Habitat Connectivity and State Highways

As we plan for the next 20 years, careful analysis is needed to determine the highest priority investments. Connectivity, habitat data, and inventories and plans, (where available) need to be better integrated into transportation planning and design. At the same time, existing retrofit programs for fish passage and recurring streambank washout need more dedicated funding.

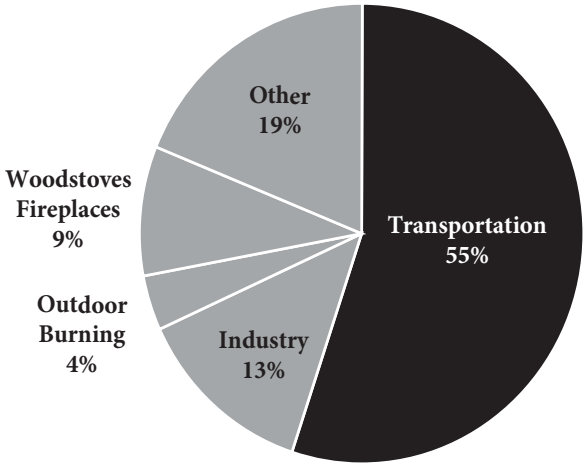
Watershed based mitigation provides excellent opportunities for wetland protection and replacement, and connecting habitat areas and corridors. This will require collaboration and coordination to address barriers and plan for long-term system improvements. A watershed approach involves assessing the needs and improvement opportunities for an entire watershed beyond the immediate area of the construction project. In some watersheds, water quality protection and habitat conservation and enhancement will benefit more from investments in stormwater and wetland needs away from the highway than spot mitigation along the highway.

Air Quality

Air pollution comes from many different sources including industry, transportation, and agriculture. It is estimated that transportation-related sources (mostly privately-owned vehicles) are responsible for more than half of the emissions of the six regulated air pollutants in Washington State. These pollutants include carbon monoxide, ground level ozone, inhalable particulate matter, lead, nitrogen dioxide, and sulfur oxides. The concentration of these six air pollutants is measured against national standards.

Figure 31

Sources of Six Regulated Air Pollutants



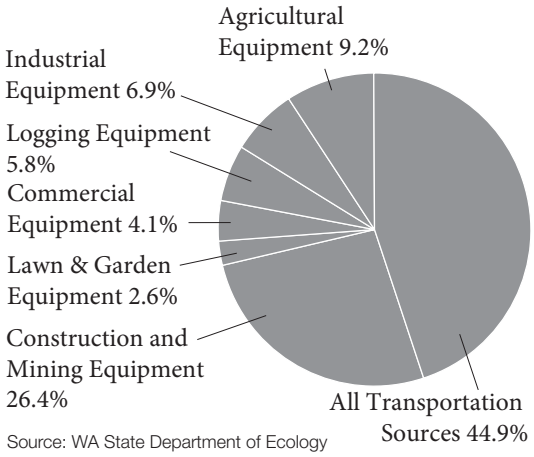
Source: WA State Department of Ecology 2001
2nd Edition Revised 8/19/2004

Other hazardous pollutants, generally referred to as air toxics, are not regulated. Some air toxics are related to transportation and are known or suspected to cause cancer or have other serious health effects. Health effects from diesel exhaust and inhalable soot are of great concern to the public health community.

There are seven categories for measuring diesel soot. According to the Western Regional Air Partnership Regional Haze 2003 Emission Inventory and the Washington State Department of Ecology, transportation-related emissions make up 44.9 percent of the total diesel soot-related emissions in Washington State. Heavy-duty trucks and buses make up almost half of the transportation-related emissions, though the single largest contributor to diesel soot is construction and mining equipment, which releases 26.4 percent of all diesel soot emissions in the state.

Figure II-32

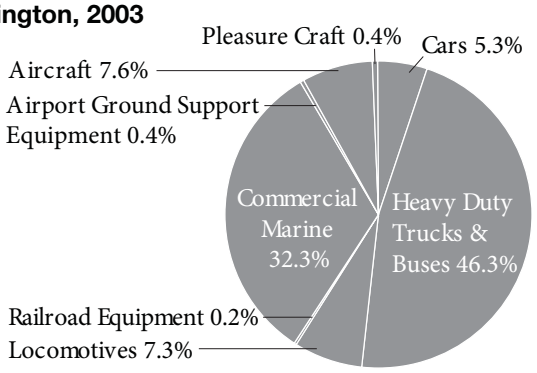
Sources of Diesel Soot in Washington, 2003



Source: WA State Department of Ecology

Figure II-33

Transportation Related Soot Emissions in Washington, 2003



Source: WA State Department of Ecology

Many federal and state regulations govern air quality. Similarly, Metropolitan Planning Organizations adopt transportation policies that support air pollution control efforts at the regional and local levels. As required by federal law, Metropolitan Planning Organizations track how transportation improvements will impact air quality as they develop and implement their Regional Transportation Plans.

Climate Change and Reducing Greenhouse Gas Emissions

Burning of fossil fuels, largely from transportation and energy production, produces greenhouse gases. While greenhouse gases occur in nature, those produced by transportation and other human activities trap heat and enhance the greenhouse effect that is regulated by the atmosphere. Empirical scientific evidence shows that human activities contribute to global climate change from the increase in greenhouse gases.

Many scientists cite evidence that the average global surface temperature has increased by approximately one degree Fahrenheit over the past century, with accelerated warming during the last two decades. This change is important to consider since it is based on glacial cycles, the rate and intensity of human activities that exacerbate global warming, and the length of time greenhouse gases remain in the atmosphere.

Since 2002, Washington State leadership has focused on environmental issues related to climate change. Governor Gregoire continues to support executive orders addressing sustainability that were issued during former-governor Locke's administration, including the Phase-Out of Persistent Toxic Chemicals in Washington, and establish Sustainability Goals for State Operations and Measure Sustainable Practices.

In 2006, the Washington State Legislature, with Governor Gregoire's endorsement, passed legislation that recognizes the importance of more stringent emission standards for new vehicles. The legislature acknowledged that:

- Motor vehicles contribute approximately 55 percent of total greenhouse gas emissions in Washington State.
- Reducing greenhouse gas emissions from transportation sources is a necessity.

In 2005 and 2006, the legislature passed bills aimed at reducing greenhouse gas emissions, including requirements for the use and production of renewable fuels. These include:

- A tax break for hybrid vehicle purchases in 2009 and 2010.
- Requirements for energy savings from consumer products not covered under national programs.
- Tax reductions for manufacturers of solar energy systems and components.
- A requirement that buildings belonging to Washington State and all buildings receiving state construction funding receive "green building" certification.
- A tax rebate for individuals and businesses that generate energy from wind, solar power, or biodigesters.
- A requirement that most diesel fuel sold in Washington State contain at least two percent biodiesel. Also, gasoline must contain at least two percent ethanol.
- A requirement that state agencies, including the Washington State Department of Transportation, increase biodiesel usage to 20 percent by June 1, 2009. This will create a better market for agricultural production of fuel oils while reducing diesel toxics and greenhouse gas emissions.
- The Energy Freedom Program will provide low interest loans for biodiesel processing and infrastructure development in order to produce sufficient quantities of biofuels in Washington State to meet the requirements and the growing demand.

Transportation Investments Underway

Phase I of the WTP Spurs Investments

In 2004 when the update of the WTP began, the Transportation Commission believed that the long-range plan should provide bold direction for future investments. At a major WTP public outreach event in October 2004 the late Ruth Fisher, former Chair of the House Transportation Committee and then Transportation Commission member, proclaimed that in 2005 the Commission would do just that.

In 2005. the Transportation Commission submitted a budget proposal to the legislature that was based on early findings from the WTP data analyses and stakeholder input collected in Phase I of the WTP update process. This chapter describes where existing transportation funds are targeted for projects and programs identified by the WTP and how recent funding decisions by the legislature and the Governor clearly define priorities for the WTP and currently available revenues. In the past several years, the Governor and the legislature have

> *"When I think of transportation, I think of safety, economic development, and a legacy for our children."*
>
> **Christine Gregoire,** Governor

provided critical investments that will move us far down the path to achieving our vision. State leadership added to programs and projects already funded from prior sources and the 2003 "Nickel" funding package with the 2005 Transportation Partnership Act (TPA). The TPA provides bold direction for future transportation investments in Washington State. These actions were affirmed by the defeat of I-912, an initiative that would have repealed key investments of the 2005 Transportation Partnership Act.

2005 Transportation Tax Package Overview

The 16-year expenditure plan in the TPA, will solve some of Washington State's most critical transportation needs. More than 270 projects will be funded that will make roads and bridges safer and ease choke points in the system.

Taken altogether, these programs make significant steps toward achieving the vision within the 20-year period of the Statewide Long-Range Transportation Plan, 2007-2026. The package includes:

- Gas tax increase of 9.5 cents phased in over four years - $5.5 billion
- Vehicle weight fee on passenger cars - $908 million
- Light truck weight fee increase - $436 million
- Annual motor home fee of $75 - $130 million

Preservation of At-Risk Structures - 30 projects

Thirty existing bridges will be rehabilitated or replaced. The work will extend the lifetime of the bridges to ensure they continue to meet daily needs, withstand stream erosion, and stand up to severe earthquakes.

Safety Investments - 106 projects

Safety investments will fund projects statewide focusing on locations with frequent collisions including run off-the-road or median crossover dangers. Strategies include:

- Remove fixed objects on the roadside
- Install new or upgrade obsolete guardrail
- Replace at grade intersections with interchanges to reduce broadside collisions
- Build passing lanes to reduce risks of head on collisions
- Illuminate county road intersections to minimize the number of night time accidents
- Widen roads to allow for correction of driver error or inattention
- Construct sidewalks and pedestrian bridges and install pedestrian signals to reduce traffic risks to children and adults.

These projects will provide the following performance outcomes:

- Fix problems at 52 specific high collision locations and corridors
- Install 73 miles of cable median barrier to protect motorists from crossover accidents on multi-lane highways
- Add approximately 25 lane miles of new roadway
- Reduce the number of injury collisions in the affected areas by approximately 25 percent—approximately 1,100 injuries per year

Choke Points and Congestion - 69 projects

The funding package addresses bottlenecks and chokepoints on the statewide highway system statewide to improve the flow of traffic by adding lanes, improving interchanges, and constructing High Occupancy Vehicle (HOV) lanes. These projects will also reduce the number of accidents now, and the potential for future increases in the number of accidents. This list of projects includes work on I-5 that needs to be completed before starting construction on the Alaskan Way Viaduct and the SR 520 Corridor in order to minimize traffic disruptions during construction.

These projects will provide the following performance outcomes:

- Fix problems at 48 high collision locations and corridors
- Add approximately 125 new lane miles of roadway
- Reduce the number of injury collisions by approximately 2000 per year
- Replace 27 older bridges

Multi Modal Improvements - 8 projects

Eight projects will improve Amtrak *Cascades* passenger rail service to:

- Support better on-time performance
- Reduce travel times between cities
- Provide greater track capacity at King Street Station
- Overhaul state-owned train equipment

Environmental - 21 projects, plus funding for future fish passage barrier removal

Twenty-one projects will target environmental issues created by historic roadway construction. These include:

- Fix old, badly-designed culverts that prevent fish from migrating to and from their spawning areas
- Fix slide and erosion areas that require repeated, stream-changing repairs
- Build new stormwater runoff controls to improve the water quality of roadway runoff as it enters our state's wetlands, streams, and water bodies
- Build walls to reduce freeway noise in neighborhoods

Freight Mobility and Economic - 35 projects

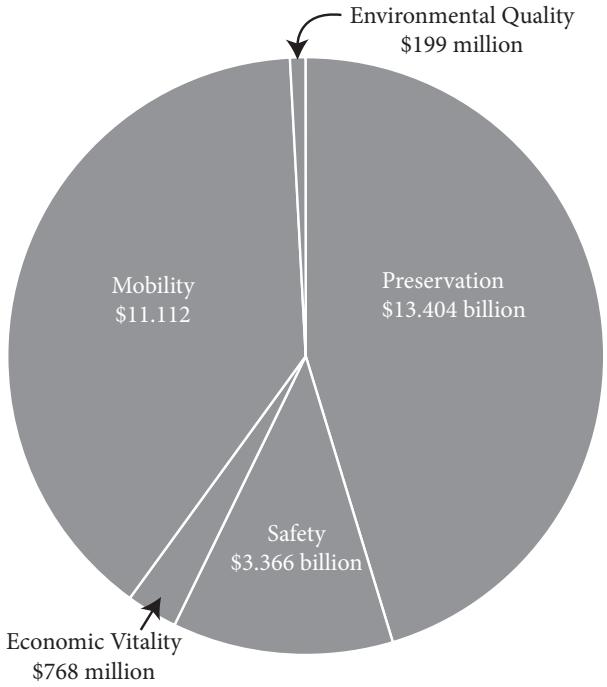
These projects replace six bridges and make other improvements to assist freight transportation on our state highways, local roadways, and rail systems.

Statewide Strategic Transportation Targets

The sources of funds for the investments identified in the WTP are illustrated in Figure II-34 Over the next 16 years, existing sources will provide $30.5 billion for investments in a variety of transportation services and facilities. The appropriation of these funds to each of the five investment guidelines is illustrated in Figure II-35. Also included in this section are featured projects that are examples of the types of investments that are occurring statewide. Refer to Part IV. Chapter B. for a map of the State Nickel and Transportation Partnership Act Projects.

Figure II-35

Funded Amounts aligned to WTP Investment Guideline

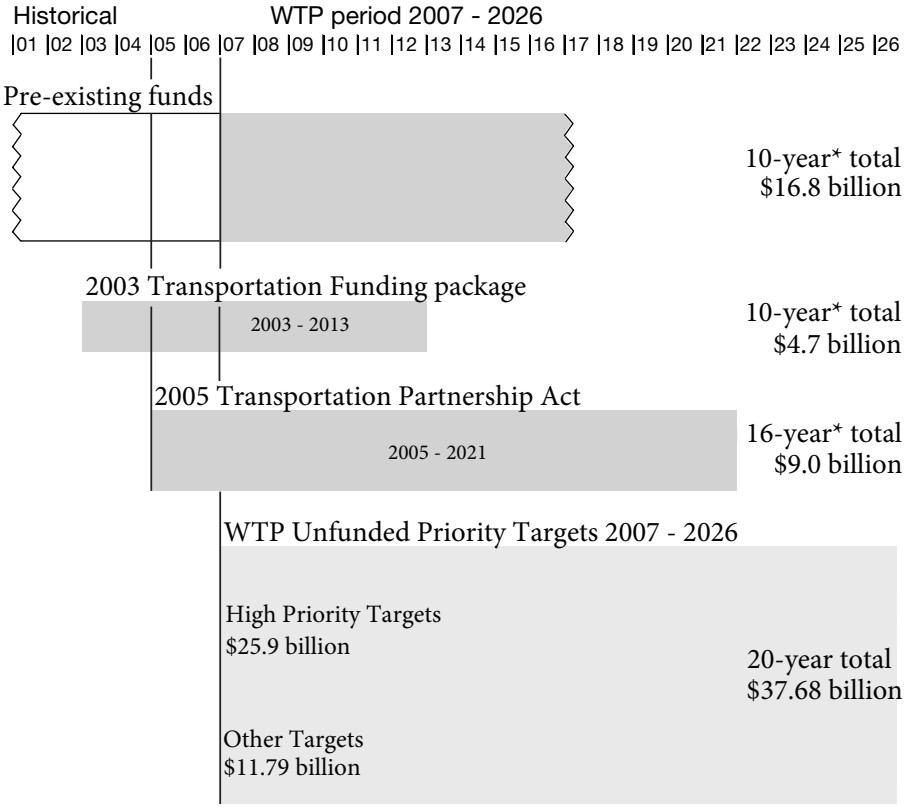


Source: WSDOT; compiled by the Transportation Planning Office

Figure II-34

WTP Priority Investments and Current Funding

20-Year Outlook—2005 dollars



Source: WSDOT Gray Notebook and Transportation Planning Office

* A 10-year total is shown for pre-existing funds because the Transportation Commission proposes and the Legislature typically enacts a 10-year investment program. The 2003 and 2005 funding packages were enacted for the periods specified.

Preservation—$13.4 billion

Highway Preservation

- Eliminate the backlog of past-due asphalt pavement projects and maintain a lowest life-cycle cost schedule for these pavements—$1.9 billion
- Maintain chip seal paving at the lowest life-cycle cost—$165 million
- Strengthen pavement structure where warranted due to heavy truck loads, including intersections—$70 million
- Rehabilitate high priority interstate concrete pavements—$590 million
- Rehabilitate high priority non-interstate highway concrete pavements—$18 million

Bridge Preservation

Replace seismically vulnerable and/or aging structures

- Strengthen 172 seismically-vulnerable bridges in the highest risk zones and interstate bridges in moderate risk zones—$187 million
- Preserve the Alaskan Way Viaduct ($2 billion) and the SR 520 Floating Bridge ($500 million). The state's share of preserving these structures is funded; a regional contribution is pending
- Preserve the I-5 Columbia River Crossing—preliminary engineering and environmental impact statement (EIS) are funded ($55 million); construction is not funded
- Modernize narrow and aging bridges (timber, restricted, and bridges less than 22 feet wide)—$1.07 billion
- Prevent catastrophic failure of highway bridges due to scour—$30 million
- Preserve general bridges, including painting, deck protection, movable systems, and other repairs—$360 million

Other Highway Facility Preservation

- Preserve safety rest areas, primarily sewer, water systems, and building rehabilitation or replacement—$35 million
- Preserve highway electrical and drainage systems—$324 million
- Preserve weigh stations—$60 million
- Replace aging maintenance facilities—$104 million
- Stabilize slopes adjacent to highways in high and moderate risk areas—$200 million

SR 99 Aurora Bridge Seismic Retrofit

Total Project Cost: $9.7 million

Start Date: July 2003

Open to Public: July 2005

Sources of Funding:
State $9.7 Million

Project Partners:
Washington State Department of Transportation (WSDOT)

Preservation- Replace seismically vulnerable bridges

The Aurora Bridge in Seattle is located in a seismic high risk zone, where it could experience serious horizontal movement during an earthquake. (Refer to the Seismic Zone Map in the Appendix.) The Aurora Bridge stretches just over 6,000 feet, and is heavily used by over 100,000 cars a day. As part of WSDOT's statewide Seismic Retrofit Project, this preservation effort brings the Aurora Bridge to current earthquake standards, which will allow the Aurora Bridge to resist a magnitude 7.5 (Richter scale) earthquake.

The base isolation retrofit uses spherical steel surfaces called friction pendulum isolation bearings to separate the span supports from the bridge structure. The bearings allow the foundation and the bridge structure to move independently, resulting in less earthquake damage to the overall bridge.

Preservation Investments Underway—Continued

Transit Preservation
- Preserve transit system capital—$30 million
- Preserve public transportation transit system operations—$21 million

Local Roadway Preservation
- Preserve county roads and ferries—$850 million
- Preserve, maintain, and operate city streets—$2.6 billion
- Preserve city and county bridges—$32 million

Ferry Preservation
- Preserve state ferry vessels and terminals—$2.171 billion

Airport Preservation
- Maintain public-use general-aviation airport pavements (runways, taxiways, and aprons) at lowest lifecycle cost (excluding SeaTac International Airport)—$32 million

Outcome and Benefits

Collectively, all the currently funded investments will:

- Yield reductions in travel times
- Increase safety and efficiency
- Reduce operating and maintenance costs
- Preserve the sound operation, safety, and efficiency of the existing transportation system

Monroe Street Bridge Rehabilitation

Total Project Cost: $18.2 Million

Start Date: March 2002
Open to Public: September 2005

Sources of Funding:
Federal $12.5 Million
State $2.0 Million
Local $3.7 Million

Participating Agencies and Organizations:
Federal funds administered by Washington State Department of Transportation

Transportation Improvement Board

City of Spokane

Spokane Transit

Preservation- Replace aging bridges

The concrete arch Monroe Street Bridge has linked north and south Spokane since 1910. When constructed, it was the largest concrete arch bridge in the U.S. and third largest in the world.
After nearly a century of use, the bridge was showing signs of wear. A major structural restoration and replacement project was undertaken. Community input was incorporated into the project.

Nearly the entire structure, except for the three main support pillars and large arches, were removed and replaced. The three main support pillars were cleaned and sealed. New support arches, road deck, and sidewalks, restored historic street lighting, traffic barriers, and a stormwater collection and treatment system were installed. A promenade along Spokane Falls was also constructed.

As a result of the bridge's historic preservation and environmental, pedestrian, and bicycle improvements, the project received the 2006 Historic Restoration and Preservation Award from the Washington State Chapter of the American Public Works Association.

Tommy Thompson Trail

Total Project Cost: $1.77 Million
Start Date: June 1994
Open to Public: August 2005

Sources of Funding:
Washington Wildlife and Recreation Program: $406,950
Skagit County Real Estate Excise Tax: $35,000
Surface Transportation Program: $370,847

Project Partners:
City of Anacortes
Interagency Committee for Outdoor Recreation
Skagit County
FHWA funds administered by WSDOT

Preservation Recreation

The Tommy Thompson Trail is a 3.3-mile long, twelve-foot wide paved pathway from downtown Anacortes to Marches Point. The trail is built along the waterfront and includes a causeway and trestle crossing of Fidalgo Bay. The trail was built on a former railroad right of way.

The project was undertaken to provide a scenic recreational opportunity for the citizens of Anacortes. The twelve year, phased project gained widespread community support and enjoys a broad-based popularity.

The project team included community leaders, city staff, the Mayor's office, and the City Council.

Alderwood Manor Heritage Park

Total Project Cost: $1.85 Million
Start Date: November 2002
Open to Public: April 2004

Sources of Funding:
Federal $0.5 Million
State $50,000
Local $1.3 Million

Project Partners:
Federal Highway Administration
Washington State Department of Transportation (WSDOT)
Washington State Historical Society
Alderwood Manor Heritage Association
Sno-Isle Genealogical Society
Snohomish County Tourist Bureau
Snohomish County Master Gardeners

Preservation-Historic/Tourism

Before

After

Heritage Park is a historic preservation project that provided a place for the community and tourists to experience the history of the Alderwood Manor area.

The $1.5 million project began November 2002. Project benefits included fulfilling the local need for historic preservation, providing educational programs to raise heritage awareness, and promoting tourism.

The park features a visitor information center, Heritage Resource Center, Genealogy Research Library, and interurban trolley tours. The community has donated hundreds of volunteer hours, personalized bricks, bronze sculptures, and trolley accessories.

Safety—$3.36 billion

Highway Safety

- Improve safety at locations identified by collision history—$450 million
- Improve safety based on risk factors similar to locations with high collision history—$774 million
  Examples include: crossover protection on multi-lane roads, centerline rumble strips on rural two-lane roads, passing lanes, and intersection improvements in urban and rural areas
- Implement interstate standards—$140 million
  Bring interstate up to current federal safety standards in targeted locations
- Implement behavioral programs such as educational campaigns to reduce drunk driving and enforcement efforts to stop aggressive drivers—$260 million
- Make low-cost enhancements—$44 million
- Assess vulnerability of highway infrastructure security and implement strategies—$1.4 million
- Assess highway security vulnerability—$39 million

Pedestrian and Bicycle Safety

- Improve state highways, city streets, and county roads—$75 million

Safety Rest Areas

- Construct three new safety rest areas to get tired drivers off the road—$5.3 million

County Road Safety

- Reduce collisions on rural two-lane roadways—$20 million

City Street Safety

- Improve known collision locations on state routes in larger cities—$200 million
- Improve known collision locations on city streets—$10 million
- Improve pedestrian and bicycle safety and mobility—$75 million
- Improve railroad trespassing prevention—$120,000

General Aviation Safety

- Provide better weather information systems to pilots—$4.5 million
- Remove air space obstructions—$8.6 million

State Ferry System Safety

- Address security infrastructure, emergency management communications, environmental protection management, hazard abatement, and toxic waste disposal for the State Ferry System—$39 million

Maplewild Avenue SW Earthquake Repair

Before

After

Total Project Cost:	$5.86 Million
Start Date:	May 2004
Open to Public:	May 2005
Sources of Funding:	
Federal	4.55 Million
State	$302,300
City of Burien	$698,000

Participating Agencies and Organizations:

Federal funds administered by Washington State Department of Transportation

Transportation Improvement Board

City of Burien

Safety-City Streets

The February 2001 Nisqually Earthquake heavily damaged Maplewild Avenue SW in Burien. The quake compacted and shifted the loose fill under the roadbed causing a 1-foot deep, 6-8 foot-wide 600 foot long void under the downhill lane.

An extensive community communication plan involving the immediate residents and commuters who used Maplewild Avenue SW led the effort to support this project. The enhanced project design and successful construction resulted in a satisfied community.

As a result of the project team's community efforts, as well as effective project management, the project finished under budget, on time, and received the 2006 National Award from the American Public Works Association.

Other State Programs Improving Safety

The following three strategies are discussed under System Efficiencies but also have safety benefits. Refer to that section of the plan for funding levels.

- Address Intelligent Transportation Systems initiatives
- Implement the Incident Response Program
- Re-program traffic signal timing and invest in other traffic operations

Outcome and Benefits

When completed, these investments will yield the following benefits to the state transportation system:

- Reduce the incidence and risk of fatal and disabling collisions caused by behaviors such as: Driving Under the Influence (DUI) of alcohol or drugs, failure to use seat belts, and aggressive driving
- Separate cross traffic, provide safe passing zones, and improve intersections
- Reduce congestion related collisions
- Reduce $8.3 billion each biennium in societal costs due to collisions on state highways, county roads, and city streets.
- Address safety at the ends of airport runways and establish a program to address encroachment within the runway protection zone.

US-97A Entiat Park Entrance Turn Lanes

Before

After

Total Project Cost: $124,000

Start Date: April 2004
Open to Public: May 2004

Open to Public: May 2004

Sources of Funding:
State $124,000

Project Partners:
Washington State Department of Transportation (WSDOT)

Safety- Rural Roadways

US 97A was selected as a Washington Traffic Safety Commission Safety Corridor Project from 1999 through 2001 due to the high number of fatal and disabling collisions on the route, particularly at the intersection of Entiat Park entrance/Shearson St. and US 97A.

Construction of new northbound and southbound left-turn lanes on US 97A at the Entiat Park/Shearson St. intersection in the City of Entiat provides a safer intersection that results in reduced rear-end and side-impact collisions. The new left-turn lanes provide storage for traffic waiting to turn into Entiat Park or onto Shearson St. An illumination system was added to improve nighttime visibility. Congestion should decrease by channeling vehicles out of the through lanes while they wait to turn.

Sleater-Kinney Bicycle Tunnel

Total Project Cost: $1.9 million

Start Date: June 2001
Open to Public: December 2001

Sources of Funding:
State $1.9 Million

Project Partners:
City of Lacey

Washington State Department of Transportation (WSDOT)

Safety-Pedestrian and Bicycle

The Sleater-Kinney Bicycle/Pedestrian tunnel connects the City of Lacey with a bicycle/pedestrian trail that parallels I-5 to the state capital campus area in Olympia. This project was a collaborative effort between the City of Lacey and WSDOT. The tunnel eliminated a dangerous at-grade crossing of Sleater-Kinney Road, and was integrated into the local and regional trail system.

Landscaping was blended with surrounding native vegetation. Interior tunnel walls have decorative tiles depicting local area trees and water features. State of the art tunnel lighting was also installed.

The Sleater-Kinney Bicycle Tunnel is maintained by the City of Lacey. It recieved the Ron Rowe Community Improvement Award, given by the Lacey Rotary Club, in 2002.

Olympic Discovery Trail

Total Project Cost: $1.1 Million

Start Date: May 2002
Open to Public: October 2002

Sources of Funding:
State $967,000
Local $133,000

Project Partners:

City of Sequim

Federal funds administered by Washington State Department of Transportation (WSDOT)

Safety-Pedestrian and Bicycle

The Olympic Discovery Trail is a walking/biking trail that connects the cities of Sequim and Port Angeles. The project was funded through the 1998 TEA-21 High Priority Projects Fund and administered by WSDOT Highways and Local Programs.

The asphalt-paved trail is eight feet wide, with two-foot wide gravel shoulders and is mostly separated from street traffic. The trail goes through the entire city limits of Sequim and connects schools and parks, and will connect the downtowns of Sequim and Port Angeles.

The project includes landscaping, artwork. and information kiosks along the trail. The trail project preserved the historic Johnson Creek Train Trestle and utilized it as part of the trail. The Peninsula Trails Coalition members provided many volunteer hours on the trestle restoration.

Economic Vitality—$768 million

Strong Economy Investments—$3.3 million

- Address response planning and preparation underway for the 2010 Vancouver, BC, Olympics. This will assist travelers going to the Olympics and facilitate commerce in the region during and after the events—$3.3 million

A variety of agencies and people, under the Governor's 2010 Task Force, are collaborating with British Columbia to show support for and assist in preparations for the upcoming 2010 Winter Olympic Games in Vancouver, BC. Washington State's transportation system is expected to carry many additional travelers during the Olympic Games.

Moving Freight Investments—$765.15 million

- Address freight constraints on the most heavily used north-south corridor (I-5 Corridor)—$200 million
- Address freight constraints on main line rail through a study of rail capacity and system needs—$1.15 million
- Provide ongoing funding for regional economic development freight projects and mitigation of impacts to the freight system—$114 million
- Continue build-out of commercial vehicle information systems and networks (CVISN) weigh-in-motion (WIM) technologies—$63 million
- Reduce severe weather closures on the major east-west freight corridor: I-90 from Hyak to Keechelus Dam—$387 million
- Fully implement existing Incident Response Program (This target also appears in the System Efficiencies section; it is shown here to emphasize its importance to freight movement.)

SR 18 Weyerhaeuser Way - SR 167 Truck Climbing Lanes

During construction

Nearing completion

Total Project Cost:	$ 20.6 Million
Start Date:	September 2003
Open to Public:	October 2005
Sources of Funding:	
State	$20.6 Million
Local	$37,000

Project Partners:
Washington State Department of Transportation (WSDOT)

Economic Vitality- Freight Movement

Commercial uphill traffic on westbound SR 18 between I-5 and SR 167 caused slowdowns along this heavily traveled corridor. Large trucks were having difficulty maintaining highway speeds, which caused back ups.

A new westbound lane was added to reduce congestion and allow faster-moving traffic to pass large trucks and maintain highway speeds. The project also widened the existing Peasley Canyon overcrossing to accommodate the new lane and shoulder.

Additional project features included news signs to improve safety and new cameras and traffic data counters that provide additional information to the traveling public.

Users of the statewide system benefit from minimizing delay to commercial vehicles, reducing safety hazards, reducing congestion for all vehicles, improving air quality by reducing vehicle idling (especially large trucks), and protecting state highways from overweight and illegal vehicles. Investing in freight movement contributes to economic growth, employment, and the state and local tax base, while reducing the cost of international export of Washington State goods.

Outcome and Benefits

When completed, these investments will yield benefits to the statewide transportation system that will improve the movement of manufactured, retail, and agricultural goods and support Washington's role as a global gateway. Implementation of these investments will:

- Strengthen regional economies and growth in freight industries
- Improve all-weather accessibility over Snoqualmie Pass
- Address main line rail freight constraints through a strategic plan and direction
- Provide a more reliable and efficient statewide transportation system so businesses can meet customer delivery requirements.

SR-240 TriCities Additional Lanes

Before

After

Total Project Cost: $59.5 million

Start Date: December 2003

Open to Public:
Stevens Blvd.-Yakima Bridge Dec. 2005
I-182 Richland Wye Interchange Oct. 2007

Sources of Funding:
State $59.5 Million

Participating Agencies and Organizations:
Washington State Department of Transportation (WSDOT)

Economic Vitality- Congestion Relief

This project constructs additional lanes on SR 240 between Richland and Kennewick, linking I-182 with the US Department of Energy's Hanford site, and local commercial and industrial areas.

SR 240 is a vital commuting route for the TriCities area, which is experiencing increasingly heavy traffic volumes. The roadway currently carries 54,000 commuters every day and is projected to reach 110,000 by 2025. Further development of the Hanford Facility is adding over 6,000 daily commuters.

The additional lanes will increase capacity, decrease congestion, create better connections to existing roads, and encourage the use of alternate modes of transportation by improving pedestrian/bicycle connections.

This project will lengthen the existing pedestrian/bicycle corridor. This will complete another link in the Columbia River Trail system.

Scenic Byways Program

Total Project Cost: $1,500,938

Sources of Funding:
Federal FFY 05 Grants $815,256
Federal FFY 06 Grants $685,682

Project Partners:

Federal funds administered by Washington State Department of Transportation (WSDOT)

Statewide Scenic Byway Grassroots Organizers

Economic Vitality- Strengthening Regional Economies

In 1967, Washington was one of the first states to establish a system of scenic byways. Presently, there are 61 routes in the system. Scenic byways pass through the varied terrain of our state reflecting the natural, cultural, and historic landscapes of Washington. Using federal, state, and local matching funds, improvements such as safety rest areas, interpretive signs, visitor centers, trails and historic preservation projects assist communities along these byways to expand tourist and recreational opportunities.

Two of Washington State's byways have been designated as All American Roads. These are SR 410 Chinook Pass Scenic Byway and SR 20 and SR 31 The International Selkirk Loop.

Four of Washington State's byways are designated as National Scenic Byways: I-90 Mountains to the Sound Greenway, SR 112 Strait of Juan de Fuca Highway; SR 17 and SR 155 Coulee Corridor, and US 2 The Stevens Pass Greenway.

Badger Mountain Road

Before

After

Total Project Cost: $6.5 Million

Start Date: Summer 2003
Open to Public: Fall 2004

Sources of Funding:
Federal $1.5 Million
State $4.5 Million
Douglas County $0.5 Million

Project Partners:
Federal funds administered by Washington State Department of Transportation (WSDOT)
Douglas County
Country Road Administration Board

Economic Vitality- Farm to Market Roads

Badger Mountain Road is a county road largely used to transport Waterville Plateau agricultural products to markets and shipping centers in the Wenatchee Valley area.

The project reconstructed a five-mile section of roadway between the Wenatchee Valley urban center and the plateau. Roadway geometrics, safety enhancements, and a reduction of ongoing maintenance costs led to improved roadway design. The project was a model of efficiency, effort, collaboration, and innovation during planning, design, and construction. The success of the project was a function of shared objectives by, and collaborative efforts between, Douglas County and the contractor.

The project's benefits to the community were recognized by the major stakeholders. In addition, the Washington State Department of Transportation and the Federal Highways Administration selected the Douglas County Badger Mountain Road Project to receive the Award of Excellence for Best County Project.

Port of Walla Walla Railex Project

Total Project Cost: $8 Million

Start Date: January 2006
Open to Use: Fall 2006

Sources of Funding:

Federal	$1.5 Million
State	$3.5 Million
Grants	$0.9 Million
Port of Walla Walla	$1.7 Million
Walla Walla County	$0.4 Million

Project Partners:

Railex

Union Pacific Railroad

Washington State Department of Transportation (WSDOT)

Port of Walla Walla

Walla Walla County

Mobility- Farm to Market Freight Rail

Railex under construction

Rail loop under construction

The project involves construction of a loop track to provide rail access to the Railex company's new distribution center on Port of Walla Walla property near Wallula. This project is a cooperative venture with Union Pacific and Railex that will provide timely rail service.

Washington State produce is loaded onto a weekly train with 55 refrigerated rail cars for direct shipment to a facility in New York for distribution to East Coast markets. This offers lower shipping costs for Washington State growers and also preserves state highways by removing 10,000 truck loads from the roadways each year.

The Port of Walla Walla will use the new facility to attract new businesses, which can use the loop track for their shipping needs.

Donald-Wapato Road

Total Project Cost: $9.1 Million

Start Date: July 2003
Open to Public: December 2004

Sources of Funding:

Federal	$6.7 Million
State	$1.1 Million
Tribal	$3.0 Million

Project Partners:

Federal Highway Administration (FHWA)
Washington State Department of Transportation (WSDOT)

Yakima County

Yakama Nation

Mobility- Farm to Market Roads

Before

After

The Donald–Wapato Road contained three 50-year-old bridges that were structurally deficient and functionally obsolete. Due to load restrictions on these bridges, heavy vehicles serving markets, schools, and warehouses in the City of Wapato had to use alternate routes to access I-82.

The best economic solution to re-establish the link was to build a new bridge. This required the development of several strong partnerships, consisting of local, tribal, and federal agencies, in order to address substantial environmental challenges and project funding. It also required extensive coordination with National Oceanic and Atmospheric Administration (NOAA) fisheries to comply with the Endangered Species Act.

The finished project re-established a key farm-to-market route, a city-to-city connection, and vital transportation links from the City of Wapato to I-82.

The project received the Director's Award of Excellence.

Mobility—$11.112 billion

Transportation Access Investments—$696.3 million

Public Transportation Access

- Support the Agency Council on Coordinated Transportation to foster coalitions of transportation providers—$3.8 million. This represents only part of the funding needed. Additional needs are shown in Unfunded High Priorities.
- Assist non-profit providers in areas with limited transit service with rural mobility grants—$140 million. Additional needs are in shown in Unfunded High Priorities.
- Assist transit agencies in providing intercity connecting service—$16 million. These funds also support intercity bus service planning to identify deficiencies in the system.
- Assist transit agencies in providing on-demand (Dial-a-Ride) service—$490 million.
- Assist transit agencies in providing service on their fixed routes to those with special needs—$47 million. Additional needs are shown in Unfunded Targets.

Outcome and Benefits

When completed, these investments will yield the following benefits to the state transportation system:

- Improve people's access to jobs, medical care, education, and communities throughout the state.

System Efficiencies Investments—$7.81 billion

- Maintain and operate existing highway—$2.9 billion
- Operate current network of Intelligent Transportation Systems (ITS) including variable message signs and weather information—$427 million
- Implement ITS capital projects such as transportation management centers, including commercial vehicle information systems and networks—$54 million
- Implement traffic management center operations, freeway operations, tunnel operations, radio operations, and traffic signal operations—$170 million
- Implement Incident Response and service patrols on state highways—$85 million
- Continue construction of high occupancy vehicle (HOV) lanes in the Puget Sound area—$30 million
- Maintain and operate existing facilities such as safety rest areas—$316 million
- Maintain ferry system operations at base level of service—$3.39 billion
- Construct 16 passenger rail projects to improve on-time performance, create additional rail line capacity, improve stations, and extend the life of state-owned train sets—$302.2 million
- Fund (partially) commute trip reduction (CTR) including performance grants—$7.2 million
- Fund (partially) the trip reduction performance program—$15 million

Colville Confederated Tribes Elders Van Project

Total Project Cost: $118,000

Start Date: June 2004
Open to Public: September 2004

Sources of Funding:
State $118,000

Project Partners:

Colville Confederated Tribes

Washington State Department of Transportation (WSDOT)

Mobility-Rural Access

WSDOT awarded $118,800 in grant funds to the Colville Confederated Tribes for their Omak, Keller, and Inchelium Elders Van Project. After receiving this rural mobility grant from WSDOT in 2003-2005 for a new elders van in Nespelem, the tribes applied for grant funding for three new vehicles to use in other districts of the Colville Indian Reservation. Omak received a 12-passenger wheelchair-accessible minibus. Keller and Inchelium will receive heavy duty 10- to 15-passenger wheelchair accessible vans that will withstand the rough roads in their area.

The new vans will allow members with limited mobility to become more active in their communities, providing transportation to meals, cultural activities, appointments, and other basic services. The vans are replacing older high-mileage vehicles and improve the safety and reliability of public transportation on the reservation.

- Implement park and ride policy development and construction grants—$30 million
- Improve current Commute Trip Reduction tax credits program—$45 million
- Implement Commute Trip Reduction public education and marketing—$2 million
- Implement commute options vanpool expansion grant program—$15 million
- Fund (partially) transit service expansion—$25 million

Outcome and Benefits

When completed, these funded investments will yield the following benefits to the statewide transportation system:

- Improve use of technologies such as Intelligent Transportation Systems and Traffic Management Centers, which can yield improvements by targeting specific areas where there is delay. Having access to this type of information helps travelers make key decisions about which route to travel to avoid a delay.
- Improve the ferry system to make better use of the facilities we have, while expanding on the frequency of service and increasing vessel capacity. This will allow shorter waiting times at the ferry dock and more predictable sailings.
- Improving passenger rail can not only improve the reliability and timeliness of rail travel, but can help to entice people off the highways, making the roadway system more efficient.
- Improve basic access for people who can not or do not drive, and invest in public transportation.
- Help provide incentives for reducing the number of trips and the overall number of single occupant vehicles on the highway system through Commute Trip Reduction and Commute Options programs. This means that throughput will increase, allowing travelers to get to their destinations sooner.

Anacortes Multi-Modal Terminal

Total Project Cost: $64.4 million

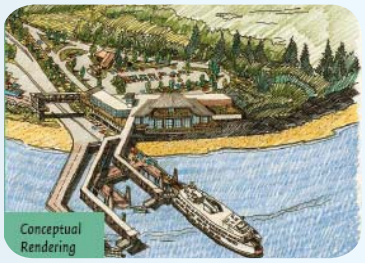
Start Date: Terminal construction expected to begin in 2007

Open to Public: Parking lot open. Site design concepts available by late Spring 2006.

Sources of Funding:
State 2003 Legislative Funding $64.4 million

Project Partners:
Washington State Department of Transportation (WSDOT)

Mobility- Ferry Service Improvements



The Anacortes Multi-modal Terminal will provide expanded ferry service facilities, replacing the existing facility that was constructed in 1960. The new facility will include improved safety and access for passengers and vehicles from SR 20, as well as provide connections with many modes of travel.

An additional ferry slip will improve the efficiency of ferry maintenance and operations. The new facility includes loading improvements for pedestrians, bicycles, and persons with limited mobility. The new facility will also meet new required security features.

Bottlenecks and Chokepoints Investments—$1.89 billion

- Address specific bottlenecks and chokepoints on highways around the state—$850 million
- Make improvements to vessels and terminals to maintain base level of service—$452 million
- Fund expanded operations to approach or exceed Transportation Commission level-of-service standards. Expanded operations are dependent on approval of $2 million (unfunded) for vessel and terminal improvements listed under Bottlenecks and Chokepoints High Priorities and another $436 million (unfunded) under Bottlenecks and Chokepoints Medium Priorities, in addition to the investments needed to maintain base level of service—$448 million

Outcome and Benefits

When completed, these funded investments will yield the following benefits to the state transportation system:

- Eliminate or reduce congestion at specific highway bottlenecks and chokepoints
- Improve levels of service by adding capacity and reducing wait times for expansion of ferry service and terminal throughput capacity

Building Future Visions Targets Currently Funded—$2.55 million

- Continue Transportation Commission Tolling Study currently underway—$2 million
- Continue statewide air transportation capacity and demand study (Phase I and part of Phase II)—$1.05 million

Outcome and Benefits

When completed, these funded investments will yield benefits to the statewide transportation system including: Complete defined implementation approach for recommended HOV investments

- Complete defined implementation approach for recommended tolling practices
- Increase awareness of statewide aviation needs
- Define implementation approach investment recommendations

Stanwood Station

Total Project Cost: $5.0 Million

Start Date: May 2006
Open to Public: November 2007 (est.)

Sources of Funding:
State $5.0 Million

Project Partners:

Design Stanwood

City of Stanwood

Washington State Department of Transportation (WSDOT)

BNSF Railway

Amtrak

Mobility- Passenger Rail Expansion

In 2006, the Washington State Legislature provided WSDOT with $5 million to construct a new train station platform in the City of Stanwood. The new station platform will provide a new Amtrak Cascades stop where the residents will have access to passenger trains.

The new platform will be constructed close to where the original historic depot was located. The platform will be 750 feet long and 18 feet wide and meet accessibility standards.

When completed, the project will provide rail access to the regional and national network for the people of Stanwood and Camano Island. Additionally, the new platform will also provide inter-modal transportation connections with local transit providers, increasing transportation accessibility options for residents in the region.

Tacoma Link Light Rail

Total Project Cost:
$80.4 Million

Start Date: December 2001
Opened to Public: August 2003

Sources of Funding:
Sound Transit

Project Partners:

City of Tacoma

Pierce County

Sound Transit

Mobility- Public Transit Access

Tacoma Link light rail is a 1.6-mile line running between the Tacoma Dome Station and downtown Tacoma. Link serves the University of Washington's Tacoma campus, the Washington State History Museum, the Museum of Glass, the Tacoma Convention Center, downtown offices, and the Broadway Theater District.

At the Tacoma Dome Station, the regional transportation hub, Link connects to Sounder commuter train service, and local and regional buses operated by Sound Transit, Pierce Transit, and Intercity Transit.

Tacoma Link's five stations are served by modern 66-foot-long air-conditioned streetcars. Tacoma Link rides are free of charge and the line has carried over 2 million riders since service began in August 2003.

I-5 Federal Way Transit Center Access Improvement

During Construction

After

Total Project Cost: $32.6 million

Start Date: Sept. 2004
Open to Public: February 2006

Sources of Funding:
Sound Transit

Participating Agencies and Organizations:

Sound Transit

Washington State Department of Transportation (WSDOT)

Mobility- Improve Transit Speed and Reliability to Eliminate Bottlenecks & Chokepoints

The new direct-access ramps are part of Sound Transit's overall program to reduce travel times for bus riders and improve traffic flow for all commuters in the area. WSDOT teamed up with Sound Transit to build direct-access ramps across I-5 to and from the new Federal Way Transit Center.

These new ramps allow transit, vanpools and carpools direct access between the transit center and the HOV lanes on I-5. These vehicles no longer have to weave across three lanes of traffic to enter and exit the highway, which benefits drivers in the remaining general-purpose lanes who no longer have to navigate around these vehicles. This improves traffic flow at the S. 320th Street SW freeway entrance.

Environmental Quality and Health—$198.6 million

Environmental Quality and Health Investments

- Remove fish passage barriers caused by state highways—$100 million
- Address the most urgent locations where stream banks fail and threaten highways—$52 million
- Install noise barriers at 11 locations around the state—$38 million
- Install stormwater treatment retrofits at 8 locations (significant unmet needs remain)—$8 million
- Develop stormwater treatment practices at airports—$190,000
- Address wildlife hazards at or adjacent to airports—$380,000

Outcome and Benefits

When completed, these funded investments will yield benefits to the state transportation system including:

- Connect fish to stream habitats critical to their life cycles and enhance salmon and trout survival
- Continue efforts to bring state highways up to post-1977 noise standards; improve or maintain property values and quality of life for residents near highways
- Improve stormwater management on highways and airports
- Reduce maintenance costs for recurring repairs while addressing natural stream processes
- Improve safety of aviation travel and prevent unnecessary wildlife death

U.S. 12 Integrated Vegetation Management

Before

After

Total Project Cost: $ 92,619

Start Date: January 2005
Open to Public: June 2005

Sources of Funding:
State $0.9 Million

Project Partners:

Port of Walla Walla

Washington State Department of Transportation (WSDOT)

Columbia School District

US Army Corps of Engineers

US Bureau of Reclamation

Environmental Quality- Reduction of herbicide use, sustainable practices

Roadside maintenance must achieve many goals including maintaining safe sight distance for the travelling public, filtering storm water, stabilizing slopes, buffering environmentally sensitive areas, and controlling noxious weeds. WSDOT uses Integrated Vegetation Management (IVM) techniques which includes revegetation in disturbed areas with carefully selected native plant species. This results in lower maintenance and self-sustaining roadside plant communities.

The US 12 Phase II project involved revegetating the roadside shoulders with native plants instead of placing rocks, which require vegetation control with herbicides. The use of native vegetation along roadsides reduces herbicide use significantly.

IVM plans are being developed and implemented statewide. These plans are intended to provide information and guidance for maintenance practices of naturally self-sustaining plant communities.

State Route 106 Skobob Creek Fish Passage

Total Project Cost: $1.7 Million

Start Date: July 2005
Open to Public: December 2005

Sources of Funding:
State $1.7 Million
Other Agency Funds $1,599
Qwest $1,599

Project Partners:

Hood Canal Salmon Enhancement Group

Skokomish Tribal Nation

Washington State Department of Transportation (WSDOT)

Qwest

Environmental Quality-Improvement of habitat

Before

After

This project was a cooperative effort between the Hood Canal Salmon Enhancement Group, the Skokomish Tribal Nation, and WSDOT. Skobob Creek crossing, located on the Skokomish Indian Reservation, was identified as a fish passage barrier. The project replaced a six-foot diameter culvert at the crossing on SR 106 with a bridge that improved fish passage and stream flow during storm events.

SR 106 flooded six-times in 1997. More recently, the creek flooded in 2003. The project improved the safety of SR 106 by reducing the impacts of flooding events, providing safer highway travel throughout the year.

The project also restored Skobob Creek channel at the crossing to a natural fish-friendly condition. In addition, the project benefits more than 500 acres of wetlands.

Statewide Strategic Transportation Targets

As previously mentioned, over the past few years Governor Gregoire and the legislature have identified critical transportation investments that will move Washington far down the path to achieving the statewide vision and goals detailed in this plan. These actions were affirmed by the defeat of Initiative 912. If passed, I-912 would have repealed the key strategic transportation investments of the 2005 Transportation Partnership Act.

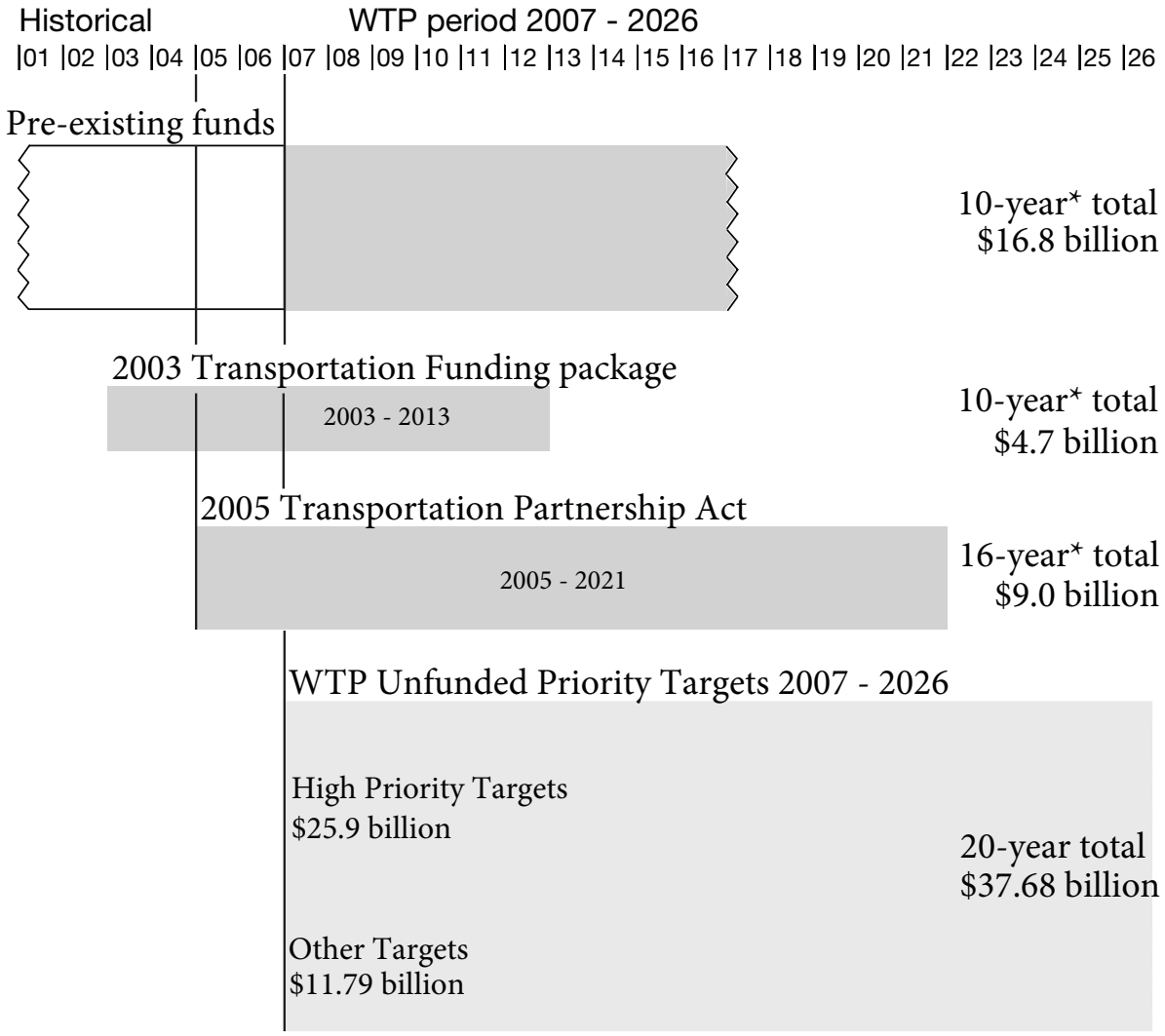
Although many critical investments have secured funding, many more transportation targets are still in need of funding. The following chapter, Unfunded High Priorities, presents these proposed high priority transportation investments and their funding needs.

Figure II-34 provides an illustration of the existing funding sources as well as the additional needs for the next twenty years.

Figure II-34

WTP Priority Investments and Current Funding

20-Year Outlook—2005 dollars



Source: WSDOT Gray Notebook and Transportation Planning Office

* A 10-year total is shown for pre-existing funds because the Transportation Commission proposes and the Legislature typically enacts a 10-year investment program. The 2003 and 2005 funding packages were enacted for the periods specified.

Unfunded High Priorities

This chapter is the WTP's approach to meeting the challenges identified in the previous chapters. The approach is strategic—make targeted, prioritized investments to achieve the greatest benefits attainable with limited funding.

We must make wise investments to preserve our transportation system and keep it functioning safely and effectively. We must ensure that the system has the connectivity and continuity needed to address ever-increasing demands for travel and options for travel. In addition we will need new and innovative mechanisms for financing that will sustain transportation revenue requirements in coming years.

In addition, we recognize that other areas will require attention. Strengthened regional partnerships and collaboration will be required to provide regional investments to fund, build, operate, and maintain additional transportation services and facilities. Such investments will be tailored to promote regional economies and improve the quality of life, promote goods movement to and through ports and border crossings, and support programs aimed at developing the state's economic clusters across all modes.

Making Strategic Choices is Critical

Beginning in 2004, through a series of outreach efforts and conversations with transportation professionals, stakeholders, and the public, 85 transportation program options were described as strategic needs. A diverse group of agencies, associations, and entities that are responsible for Washington State's transportation system initially identified these needs. The Washington Transportation Plan recognizes that the need for continued investment in our infrastructure and services remains paramount even with the recent boosts in project funding. Totalling nearly 38 billion dollars (2005 dollars), these 85 unfunded program options are critical to address statewide transportation needs over the next 20 years.

Recognizing that securing revenue at this significant level was not probable over 20 years, the Transportation Commission prioritized the needs into high, medium, and low priorities. The evaluation of each program investment option considered the feedback collected from regional transportation planning organizations, cities, counties, tribes, in addition to public transit agencies and non-profit and private transportation providers, various organizations and associations, as well as people who use or have an interest in the statewide transportation system.

High Priorities

The list of high priority programs totals approximately $26 billion dollars (2005 dollars). These high priorities were compared to the 20-year vision of the WTP to set the policy framework for future investments and define five areas where emphasis should be placed when additional revenue is available. Each high priority program was assigned to one of the prioritized investment guidelines.

The WTP confirms that most, if not all, of the transportation investments have multiple benefits. For example, ramp meters can smooth traffic flow, reduce congestion, increase throughput, and improve safety, while leading to improved economic productivity. A new passing lane increases freight mobility while enhancing the recreational experience for visitors traveling a scenic byway, both contributing to economic vitality and safety. Most investment in preservation of existing infrastructure also addresses the other priorities by improving safety, economic viability, mobility, and the environment.

In addition, all projects consider environmental issues and nearly all projects improve environmental conditions through collaborative design or mitigation. Environmental issues are considered to be a core part of the planning, design, engineering, and project delivery processes, even when the primary project scope is to improve safety or enhance system efficiencies. Improved accountability is essential.

Local, regional, and state transportation providers must base infrastructure investments on performance measurements and performance-based decision-making. This will ensure the right projects are delivered when needed and maintain the public's confidence in government's ability to meet their needs. Stable transportation funding is needed to provide sound plans and programs and to prevent expensive, inefficient project starts/stops/starts. Stable funding also supports the economy and local land use decisions. Innovative financing, public-private partnerships, and toll facilities or system management approaches will provide additional funding capacity and system management tools.

20-year Transportation Vision

Washington's transportation system should serve our citizens' safety and mobility, the state's economic productivity, our communities' livability, and our ecosystem's viability.

Prioritized Investment Guidelines

(P) **Preservation—** Preserve and extend prior investments in existing transportation facilities and the services they provide to people and commerce.

(S) **Safety—** Target construction projects, enforcement and education to save lives, reduce injuries, and protect property.

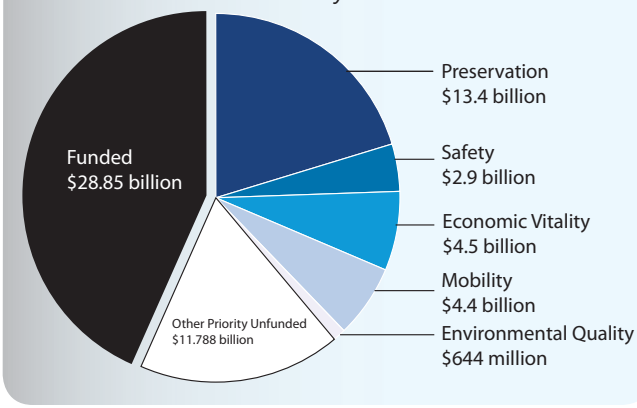
(EV) **Economic Vitality—** Improve freight movement and support economic sectors that rely on the transportation system, such as agriculture, tourism, and manufacturing.

(M) **Mobility—** Facilitate movement of people and goods to contribute to a strong economy and a better quality of life for citizens.

(EQ) **Environmental Quality and Health—** Bring benefits to the environment and our citizens' health by improving the existing transportation infrastructure.

20-Year Transportation Investment Needs
$67 Billion *(2005 dollars)*

Unfunded High Priorities By Investment Guideline



Wenatchee—August 2, 2006

Vancouver—August 22, 2006

Mt. Vernon—August 24, 2006

Public Comment Validates and Reshapes the WTP

The Transportation Commission and the Washington State Department of Transportation collaborated with Regional Transportation Planning Organizations (RTPOs) and Scenic Byway Organizations to co-host public outreach events statewide. A list of RTPOs, WSDOT regions, and Scenic Byways is included Part IV. Chapter B. Maps,

Public comment collected in July and August 2006 validated and strengthened the key messages of the WTP. Overall, validation and support for the vision statement and the investment guidelines were frequently mentioned by the public. While not all comments indicated agreement with the high priorities, strong support for preservation and safety as the foremost priorities was evident throughout public comment received. On the following pages the unfunded high priorities are grouped by investment guideline.

The following issues are discussed for each investment guideline:

- Recommended program investment levels
- Desired outcomes and benefits
- A comparison of the investments underway and the unfunded needs
- Key issues identified during the public comment period

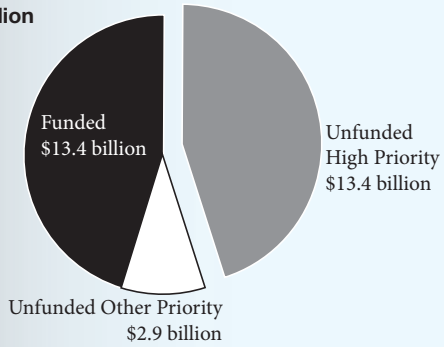
"The Washington Transportation Plan establishes the strategic direction for future transportation investments, shaped by the input from people across the state that use or share the responsibility for delivering the statewide system."

Washington Transportation Commission

Preservation—Preserve and extend prior investments in existing transportation facilities and the services they provide to people and commerce.

Legend:
- P Preservation
- S Safety
- EV Economic Vitality
- M Mobility
- EQ Environmental Quality and Health

Preservation Total Unfunded $16.3 billion



Public Comment Highlights

- Preserving the system is important at all jurisdictional levels and for all modes.
- Preservation of county roads should be of higher priority.
- Investments on state highways benefit communities where the highway also serves a mainstreet function.
- Cities make investments on state highways with non-state dollars.

**Note: All estimates in 2005 dollars*

Preservation—$13.379 billion*

Highway Pavement Preservation—$483.5 million
- Rehabilitate concrete pavement on interstate routes—$483.5 million P EV M

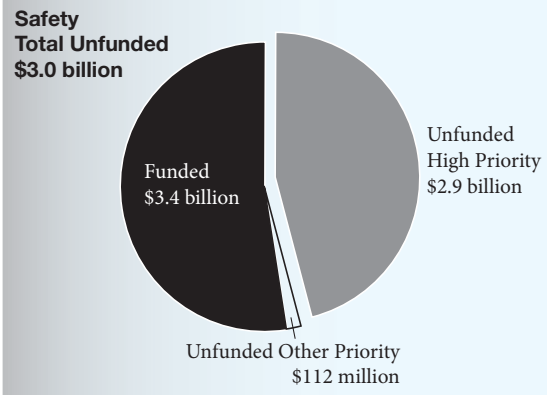
Highway Bridge Preservation—$6.8 billion
- Retrofit seismically vulnerable bridges in lower risk zones—$650 million P S EV M
- Replace major seismically vulnerable and aging bridges and replace seismically vulnerable bridges on remaining critical highway corridors:
  - Alaskan Way Viaduct and SR 520 Floating Bridge—$4.8 billion P S EV M
  - I-5 Columbia River crossing—$750 million P S EV M
- Replace city and county short-span and high-cost bridges—$645 million P S EV M

Other Facility Preservation—$6.05 billion
- Preserve electrical systems and drainage facilities—$50 million P S EV M
- Preserve, maintain, and operate city streets—$6 billion P EV M

Investment Benefits
- Extend the service life of the highway system, which leads to increased efficiency, safety, and delay reduction
- Eliminate city street maintenance and preservation backlog
- Extend the service life of bridges in the local road network

Safety—Target construction projects, enforcement and education to save lives, reduce injuries, and protect property.

Legend:
- (P) Preservation
- (S) Safety
- (EV) Economic Vitality
- (M) Mobility
- (EQ) Environmental Quality and Health



Public Comment Highlights

- Safety is paramount.
- The goal of zero deaths is admirable, but difficult to achieve because driver behavior is a challenge to control.
- Having access to transportation services for medical appointments is a personal safety issue.

**Note: All estimates in 2005 dollars*

Safety—$2.921 billion*

Highway Safety—$620.6 million

- Improve state highway safety by reducing risk on rural two-lane highways by providing passing lanes, intersection improvements, and new interchanges or overpasses—$275 million (S)(EV)(M)
- Continue bringing interstate highways up to current safety standards—$100 million (S)(EV)(M)
- Address seat belt use, impaired and aggressive driving, and motorcycle safety by providing behavioral programs—$210 million (S)(EV)(M)
- Make small-scale safety enhancements on state highways, including warning signs, ramp signal coordination, rumble strips, vehicle detection loops, and collision data reporting—$35.6 million (S)(EV)(M)

Local Road Safety Improvements—$2.3 billion

- Improve rural two-lane county road safety by implementing low-cost safety improvements—$200 million (S)(EV)(M)
- Improve safety by addressing accident locations on city streets—$800 million (S)(EV)(M)
- In larger cities, improve safety on city streets that are state routes by addressing accident locations and corridors—$1.3 billion (S)(EV)(M)

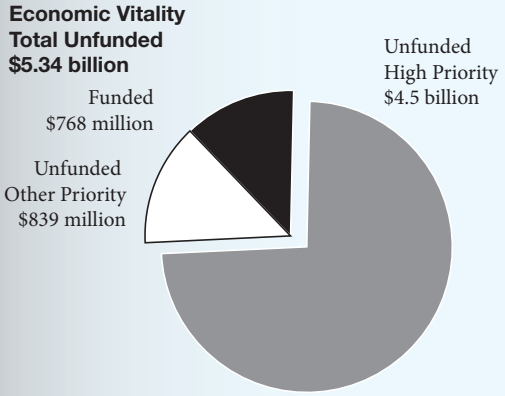
Investment Benefits

Reduce societal costs of collisions on the interstate system, state highways, county roads, and city streets by:

- Separating cross traffic
- Providing safe passing zones
- Improving intersections
- Reducing the incidence and risk of collisions on the interstate
- Reducing fatal and disabling collisions related to behaviors such as driving under the influence, failure to properly use seat belts, and aggressive driving

Economic Vitality—Improve freight movement and support economic sectors that rely on the transportation system, such as agriculture, tourism, and manufacturing.

Legend:
- (P) Preservation
- (S) Safety
- (EV) Economic Vitality
- (M) Mobility
- (EQ) Environmental Quality and Health



Public Comment Highlights

- Keeping I-90 open year-round is important to both eastern and western Washington.
- All-weather roads are critical for mobility, economic vitality, and safety.
- Statewide, there is high interest in the outcome of the rail study.

**Note: All estimates in 2005 dollars*

Establishing a Network of County All-Weather Roads

The proposed $200 million investment level would establish the program, define criteria for selecting key routes on county roads, prioritize projects, and begin investment in the design and construction of the highest priority projects.

The movement of freight is a key issue in the WTP. The need for a statewide system of all-weather roads was voiced at numerous freight summits, meetings with shippers, manufacturers, growers, ports, and other businesses. Up to two months per year, Washington State agricultural growers and processors, manufacturers, and timber/lumber businesses can not ship their products to market due to weight restrictions on county roads. In a global marketplace, the inability of Washington State producers to meet buyers' requirements causes loss of customers and, ultimately loss of the state's competitive advantage.

Economic Vitality—$4.504 billion*

Address Freight Constraints in the I-5 corridor—$3.46 billion
- Complete missing links on the major north-south freight corridor system—$3.46 billion (S)(EV)(M)
- Replace vulnerable and failing structures critical to freight movement (Funding needs associated with this target appear in the Preservation discussion.)

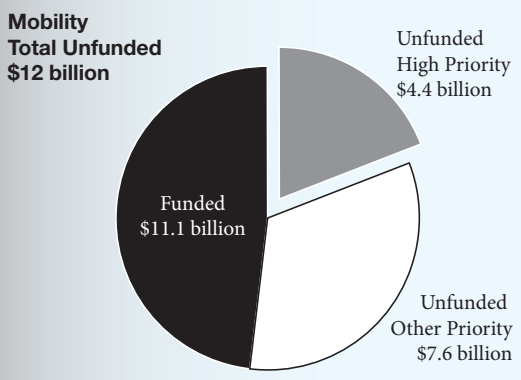
Freight Rail
- Support growth in east-west main line rail capacity and port-rail connections, and preserve metro rail yards. Cost is unknown and will be examined in the Transportation Commission's Rail Study (P)(S)(EV)(M)

Weather-Related Constraints on Freight Routes—$1 billion
- Reduce severe-weather closures and eliminate low-clearance structures on major east-west highway freight corridors (I-90 at Snoqualmie Pass)—$813 million (EV)(M)
- Develop a statewide core all-weather county road system—$200 million (EV)(M)

Technology for Freight Movement—$31 million
- Complete the Commercial Vehicle Information Systems and Networks (CVISN) / Weigh-in-Motion (WIM) system—$31 million (S)(EV)(M)(EQ)
- Continuously improve traffic management and incident response

Investment Benefits
- Support our state's growing economy, improve safety, maintain freight access to major markets and seaports, lower business costs, and sustain jobs in manufacturing, agribusiness, construction, warehousing, and transportation.
- Complete the north-south freight corridor to ensure market access and connectivity.
- Relieve congestion in the Puget Sound region by improving I-5 and creating better access for freight.
- Ensure freight rail capacity is able to accommodate future demand and remain a viable option for the movement of goods.
- Prevent increased congestion on alternative corridors and support growth of regional and national trade.
- Reduce severe-weather closures on Snoqualmie Pass and other major east-west highway freight corridors.
- Ensure that Washington State agricultural growers and processors, manufacturers and timber/lumber businesses, and freight-dependent industries can ship products to market year-round and support the state's ability to remain competitive.
- Reduce travel delay, safety hazards, and congestion for commercial vehicles and minimize air quality impacts from vehicle idling, while ensuring the state's highway system is protected from overweight and illegal vehicles.

Mobility—Facilitate movement of people and goods to contribute to a strong economy and a better quality of life for citizens.



Public Comment Highlights

- More emphasis on inter- and intra-city public transportation.
- Increased funding for public transportation is key to mobility.
- Interest in intercity passenger rail statewide was voiced repeatedly. Both increased frequency and more stations are needed for medical, business, and recreational travel.
- Regardless of the traffic volumes in each community, when residents experience increases in congestion, their expectations of system performance are not met.
- Coordinated planning for all modes should anticipate growth and future congestion statewide using advanced technology to shape solutions that are multimodal.

**Note: All estimates in 2005 dollars*

Mobility—$4.446 billion*

Transportation Access—$890 million

- Distribute operating funds to transit agencies for special needs transportation in order to maintain fixed-route bus service—$860 million EV M
- Support the Agency Council on Coordinated Transportation's performance measurement activities and re-establish support for community coalitions of providers—$30 million EV M

System Efficiencies—$1.56 billion

- Address increased maintenance and operations responsibilities with additions to the highway system—$292 million S EV M
- Add maintenance facilities to support the increased need for maintenance and operations of highway system additions — $2.1 million S EV M
- Add traffic management centers at high-volume locations to improve throughput and increase real-time travel information—$16.3 million S EV M
- Integrate, maintain, and operate new technology—$68 million S EV M
- Complete the 10-year ITS plan (capital and operations, but not security)—$600 million S EV M
- Address the incident response shortfall—$8 million S EV M
- Expand the commute trip reduction tax credit program, increasing the number of small employers in the program—$20 million EV M
- Complete the Puget Sound high occupancy vehicle (HOV) lanes to reduce travel delay and increase travel-time reliability for transit and carpools—$550 million EV M

Bottlenecks and Chokepoints—$2 billion

- Reduce or eliminate bottlenecks and chokepoints at over 200 locations on highways around the state—$2 billion EV M

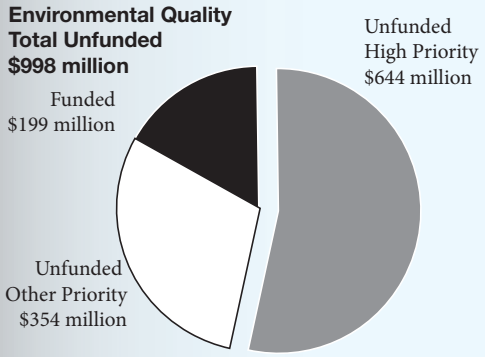
Investment Benefits

- Maintain the current level of special needs transportation service without diminishing fixed-route service
- Increase access to jobs, medical care, education, and communities for people who cannot or do not drive
- Increase numbers of people with access to intercity bus service
- Maximize safety, mobility, and the throughput capacity of the highways
- Improve traffic management and increase traveler information and incident response service
- Encourage more employers to create programs that reduce drive-alone commuting
- Increase travel-time reliability for all lanes
- Ensure that maintenance and operations keeps pace with the expansion of the transportation system

Environmental Quality and Health—Bring benefits to the environment and our citizens' health by improving the existing transportation infrastructure.

Legend:

- (P) Preservation
- (S) Safety
- (EV) Economic Vitality
- (M) Mobility
- (EQ) Environmental Quality and Health



Public Comment Highlights

- More attention should be given to improving air quality and to the topic of global warming.
- Healthy communities are critical to Washington's sustainable future. Transportation investments should link communities to increase personal mobility and to encourage walking and bicycling.
- Fish passage barriers exist on the local roadway network in the same watersheds as barrier removal efforts on state highways and are also connected to overall habitat health.

**Note: All estimates in 2005 dollars*

Environmental Quality and Health—$644 million*

- Provide enhanced tribal transportation planning capacity, to increase staff levels and to provide technical resources, data collection, and analysis to tribes—$11 million (S)(EV)(M)(EQ)
- Add sidewalks and trails between destinations in communities—$75 million (EQ)
- Remove nearly 900 remaining fish passage barriers created by state highways—$188 million (S)(M)(EQ)
- Complete the inventory of stormwater facilities on the state highway system to develop a strategic implementation plan, and begin retrofit installations at selected locations—$340 million (EQ)
- Retrofit existing state highway shoulders and medians as part of the Integrated Vegetation Management program to improve filtration of stormwater runoff and establish desired vegetation—$30 million (EQ)

Investment Benefits

- Improve tribal ability to plan needed transportation facilities
- Increase safety, access, and mobility for walkers and bicyclists and increase opportunities for physical activity
- Improve streams for fish habitat and watershed performance, improve fish passage, habitat connectivity, and water quality
- Improve water quality of runoff, improve performance of highway drainage facilities, and reduce damage to the highway system
- Decrease maintenance costs and herbicide use, reduce weeds and invasive species on roadsides, and improve water quality, while reducing runoff volumes by filtering contaminants

Remaining Unfunded Priorities

Figure II-36
WTP Funded and Unfunded Amounts

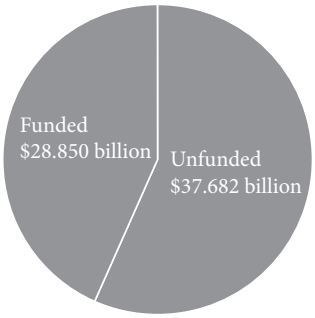


Figure II-37
High, Medium and Lower Priority Unfunded

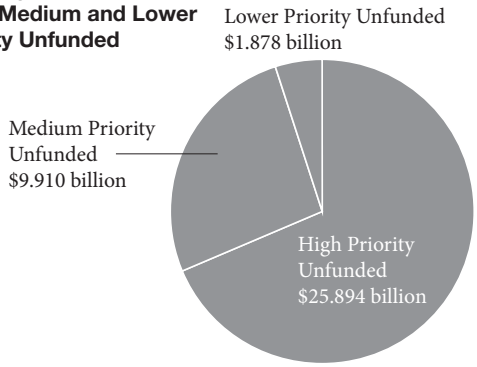


Figure II-38

Medium Priority Unfunded Investment Guidlines $9.9 Billion

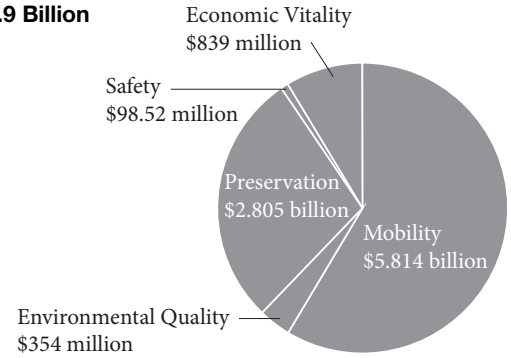
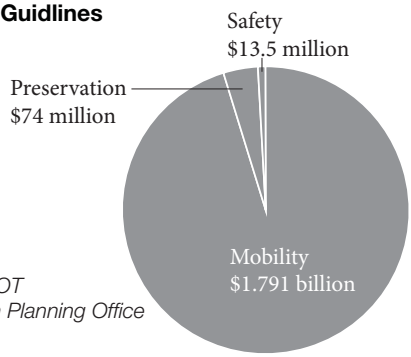


Figure II-39

Lower Priority Unfunded Investment Guidlines $1.9 Billion



Source: WSDOT Transportation Planning Office

As previously described, nearly $38 billion in unfunded transportation needs have been identified. Investing in the $26 billion Unfunded High Priorities described on the preceding pages will address the most strategic solutions. However, there remains additional needs. This section includes those program targets that the Transportation Commission prioritized as medium or lower priorities, totaling an estimated $12 billion. Many of these proposed targets are either related to current Commission studies, determined to need further data, or were simply not considered the most strategic investments needing immediate attention.

Because securing future revenue will require increasingly creative financing solutions and demand the most strategic approach to garnering legislative, gubernatorial, and citizen support, not all program targets can be high priorities.

The WTP recommends further review of the medium and lower priorities over the next two to five years.

The chart (top) shows the relationship between the funded and unfunded program targets over the next 20 years. The chart to the left, at the top, shows the distribution of the all the program targets considered, grouped by high, medium, and lower priority ranking.

The medium and lower priorities are grouped by the five investment guidelines as shown in the remaining charts to the left.

UNFUNDED MEDIUM PRIORITIES

Preservation—$2.805 billion

- Rehabilitate concrete pavement on non-interstate—$18 million
- Replace and rehabilitate to extend the service life of safety rest areas—$15 million
- Replace aging support facilities such as maintenance sheds—$181 million
- Preserve county roads and ferries—$41 million
- Replace transit system bus capital—$2 billion
- Address capital needs of public transit for new vehicles and equipment and replace facilities—$550 million

Safety—$98.52 million

- Provide better weather information to pilots—$150,000
- Incorporate analysis provided by Operation Lifesaver to prevent railroad trespassing by installing fencing and signage and other methods.
- Improve air transportation safety and airport operations by restricting the encroachment of obstructions within airport runway approach and departure areas and other critical airspace surfaces—$8.17 million
- Improve state highway infrastructure security by enhancing or establishing surveillance systems and reinforcing of bridges and structures—$25 million
- Complete the highway security vulnerability assessment to identify additional security needs and guide implementation—$50 million
- Add safety rest areas and make other necessary interstate system improvements to reduce driver fatigue and related collisions—$15.2 million

Economic Vitality—$839 million

- Prepare and respond to events of statewide significance such as the 2010 Vancouver Olympics—$44.26 million
- Provide regional economic development and freight system mitigation—$793 million
- Study the benefits of a public-private truck-toll highway from Central Puget Sound to the Oregon border (possibly an extension of I-5)—$500,000
- Create a plan for freight system security and restoration of service—$175,000
- Study fuel pipeline capacity and distribution alternatives—$750,000
- Develop a diesel emission reduction strategy for freight transportation—$110,000

Mobility—$5.814 billion

- Improve services for special needs populations in both rural and urban areas through demonstration projects—$20 million
- Expand the existing web-based public transportation information system to enable people to plan detailed itineraries between communities throughout Washington and other states— $8 million
- Fund remaining needs for rural mobility grants to assist non-profit providers in areas of the state with limited transit service—$364 million
- Connect communities and rural areas to urban centers with bus service—$32 million
- Improve capacity at five ferry terminals: Clinton, Edmonds, Tahlequah, Seattle, and Southworth, and construct four new ferry vessels— $520 million
- Connect urban area local corridors that span several jurisdictions— $150 million
- Address the backlog of WSDOT maintenance and operation facilities upkeep to extend the life of facilities, reduce maintenance costs, and increase efficiency of operations based at these locations—$208 million
- Identify travel demand mitigation needs—Currently under development, expected early 2007
- Expand the trip reduction performance program (part of Commute Trip Reduction) to fund cost-effective projects, implement recommendations to improve the program, and provide technical support to grant recipients —$20 million
- Implement a park-and-ride program in coordination with transit systems, including alleviating overcrowding at existing lots, providing safety and security, and accommodating growing demand—$200 million
- Provide incentives and support for local jurisdictions to develop Growth and Transportation Efficiency Centers, as employers located in these areas tend to have higher levels of trip reduction—$32 million
- Provide additional funds for Commute Trip Reduction County Support to help counties experiencing highway congestion integrate regional and local plans to reduce solo-driving commute trips—$25 million
- Educate the public and use marketing to increase travelers' use of commute options for Commute Trip Reduction—$10 million
- Purchase more vans for the vanpool enhancement program—$45.9 million

- Develop and sustain a vanpool rideshare incentive program, using vanpool financial incentives and technical assistance—$12.5 million
- Conduct a statewide air transportation capacity and demand study (remainder of Phase II and Phase III of the study)—$500,000
- Extend the state highway system, expand the corridors, improve interstate capacity, and complete non-interstate corridors—$2.25 billion
- Develop interstate capacity projects in conjunction with the update of the highway system plan—$2 billion

Environmental Quality and Health—$354 million

- Fix locations on state highways with recurring maintenance activities such as stream bank failures, which will reduce maintenance costs and protect the existing highway, reduce the risk of flooding, and improve habitat for important fish species—$98 million
- Complete noise retrofit at the 60 remaining locations on state highways where high noise levels are present—$205 million
- Increase habitat connectivity by providing safe highway crossing opportunities for wildlife migrations—$50 million
- Begin the cities and counties inventory and assessment of fish passage barriers, stormwater retrofits, habitat connectivity, and other environmental needs—$1 million

Investment Benefits include

- Extend service life of safety rest areas, lower the cost of operating and maintaining them, accommodate user demand, and increase energy efficiency.
- Reduce rail-trespasser fatalities.
- Increase highway security by focusing on the most vulnerable areas first.
- Reduce driver fatigue and related collisions.
- Assist travelers in reaching the 2010 Olympic Winter Games.
- Provide for positive visitor experiences before, during, and after the games, to support later recreational visits to Washington.
- Ensure balanced and continued economic growth for our state's distinct regions, as international trade and main line rail traffic grows. Optimize truck movements in metropolitan and local areas. Clarify the state's role regarding financial support of short line freight rail.
- Analyze the benefits of alternative options for adding capacity from Central Puget Sound to the Oregon border (truck-toll highway) to address long-range needs for freight capacity.
- Conduct a fuel pipeline capacity and distribution alternatives study to analyze fuel distribution constraints and the feasibility of the removal of obstructions.
- Ensure that there is a plan for timely restoration of freight service in the event of a major security disruption or natural disaster to prevent negative short-term and long-term impacts to Washington State's economy.
- Identify strategies and solutions that minimize the negative air quality impacts of freight-related diesel emissions.
- Improve maintenance and incident response on highways to provide greater safety, mobility, and reliability of the transportation system.
- Improve mobility for people and goods.
- Maintain current service standards on the ferry system.
- Improve service and reduce wait times for ferry travelers.
- Improve mobility and access on the local transportation network.
- Increase awareness of statewide aviation needs
- Reduce delay, improve travel time reliability, and increase capacity. Increase the capacity of the interstates by reducing delay.
- Improve streams for fish habitat, increase potential for salmon recovery, and improve wildlife habitat and connectivity.
- Reduce the use of herbicides, reduce the presence of noxious weeds, and improve water quality

UNFUNDED LOWER PRIORITIES

Preservation—$74 million

- Maintain airport pavements at lowest life-cycle cost for those rural airports that are not part of the National Plan of Integrated Airport Systems. A large backlog in general aviation airport runway pavement projects is threatening the viability of many rural general aviation airports. Full preservation needs and costs will be developed as part of the Aviation System Plan update that is currently underway
- —$74 million

Safety—$13.5 million

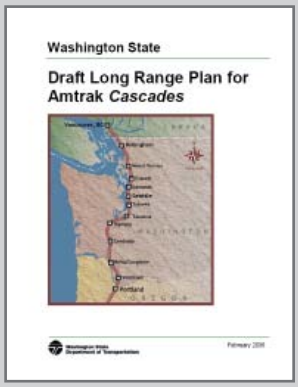
- Institute an all-weather airport access program to include the installation of airport weather reporting equipment, development of instrument approaches, and installation of navigation aids and data communication systems—$13.5 million

Mobility—$1.791 billion

- Assist transit agencies to provide additional and new on-demand (Dial-a-Ride) service—$1 billion
- Provide Amtrak *Cascades* intercity passenger rail service—$471.7 million
- Analyze the Regional Mobility Grant Program for transit expansion.

Investment Benefits include

- Increasing safety and operational efficiency of the transportation system as well as expanding economic development opportunities in many rural areas of the state.
- Increased safety during adverse weather conditions, increased accessibility to airports, and increased economic opportunities.
- Serving unmet needs for on-demand transit service.
- Improved passenger rail services and greater system efficiency on congested corridors. This means that travelers will have increased options for travel and they should notice increased reliability in trip duration and arrival times.



Long Range Plan for Amtrak *Cascades*: May 2006

WSDOT's draft Long Range Plan for intercity passenger rail (Amtrak *Cascades*) was released in May 2006 after investment prioritization in the WTP was completed. The plan identifies a vision for the incremental development of higher-speed intercity passenger rail service between Portland, Seattle, Vancouver, BC, and ten intermediate cities. Implementation of the vision is dependent upon available funding and agreements with the BNSF Railway for expanded operations on their rail line. More than $4 billion in unfunded investments have been identified for the multijurisdictional rail corridor.

WSDOT is working closely with the Washington Transportation Commission as they continue their study of strategic freight and passenger rail system needs, challenges, and opportunities. The findings and recommendations from the rail study will further define the state's role in rail investments.

Policy Recommendations

Phase I of the plan development included an assessment of existing state and federal planning laws and existing Transportation Commission policies. This set of directives was the benchmark against which the proposed needs were evaluated. For the most part it was determined that existing policy guidance provides clear expectations and affords implementation strategies leading to success. In selected areas where either innovative investment concepts or programs were proposed, it was determined that existing policy is insufficient to guide future investment decisions.

This section of the plan is a summary of gaps in transportation investment policy guidance, where it does not provide sufficient direction to address a problem, direct investment options, or guide program outcomes. Adoption and implementation of the recommendations in this chapter of the plan will provide momentum to establish the necessary guidance for improving strategic transportation investment decisions in the future.

- The Commission recommends that the state's role in making specific transportation investments be clarified or defined.

- In addition the Commission recommends that data collection and further study is needed in several areas to better understand the problems.

- It is recognized that all existing Transportation Commission policies will be evaluated in the near future in light of changes to the Commission's roles and responsibilities as a result of state legislation in 2005 and 2006. The evaluation process is planned to include updating, consolidating, and editing to make these policies more effective tools to guide Washington State's transportation future.

Key Policy Recommendations

In addition to the strategic priorities outlined, the Transportation Commission makes several policy recommendations in the WTP. Some of the most critical are:

Funding

- Identify strategies and methods to provide sustainable revenue sources for transportation, including tolling and innovative approaches.
- The state ferry finance study should identify the target percentage of system operating costs to be recovered from farebox revenues, with identifiable, sustainable sources of funding flows to cover the balance of operating expenses as well as the system's long-term capital needs.
- Develop a policy that defines the state's role and level of investment in public transportation.

Safety

Identify cost effective ways in which the state and local agencies responsible for safety on highways, streets, and roads can coordinate their efforts to achieve statewide safety goals in a comprehensive manner.

Congestion Relief

Develop a state policy and strategy to maximize traffic flows on the state's most congested highways. Assess the cost and benefits of expanding transit systems as a means of improving the overall utilization of street and road capacity.

Transportation and the Economy

- Measure the economic impacts and benefits of making transportation investments in the different regions and economies of the state.
- Define the state's role in making these investments, considering cost and benefit trade-offs.

Identify the transportation system elements that are critical to maintaining and improving Washington State's global competitiveness.

Land Use and Transportation

- Improve concurrency between transportation and land use decisions to ensure complementary development of land with transportation infrastructure.
- Clarify the state and local responsibility and options for addressing highway congestion that are driven by local permitting decisions.

Reduce Reliance on Fossil Fuels

- Support development and implementation of a state policy on alternative fuel development and use which could include the identification of possible regulatory and tax structures.
- Identify opportunities and strategies for addressing the growing demand for alternative fuels and their benefits to the environment.

Rural Economic Vitality

- Improve farm-to-market access by determining strategic investments in rail.
- Define the state's role in establishing and funding a year-round, statewide, core all-weather road system in rural areas.

Emergency Preparedness

Clarify the role of state and local governments in providing personal mobility and freight service in the event of a major disruption to the transportation system or in case of catastrophic events.

Preservation

Existing Commission Policies

- Protect our investments by keeping transportation infrastructure in sound operating condition.
- Emphasize infrastructure preservation and maintenance as the priority in funding transportation programs.
- Use lowest life-cycle cost methodology to determine the appropriate schedule for upkeep.

Ample policy exists to allow for preservation investments at all jurisdictional levels to continue as funding is available. In this situation, the WTP finds that what is needed is not more policy direction, but additional funding to keep pace with prevailing wage laws, and escalating costs of construction materials and fuel, as well as the increasing demand for limited materials.

The WTP recognizes that much policy debate has occurred in the past two decades about the best way to invest in maintenance, preservation, and improvement of the entire system. The final report of the Blue Ribbon Commission on Transportation made a determination in Recommendation Five, that studded tire damage to the system should be addressed by either phasing them out or establishing a surcharge for their use. In 2001 heavy weight studs were prohibited. In 2004, the Washington State Transportation Commission passed a resolution to request that the legislature outlaw all studded tires. Thus far, legislation has not passed to this effect.

Damage to roadway surfaces increases proportionately as the weight of vehicles increase.
Imposing weight restrictions on vulnerable surfaces (certain bridges and pavements) assists in extending the service life of that transportation asset.

These preservation issues will continue to be discussed in future legislative sessions. Operational practices will reflect future changes to policy as they are enacted.

Safety

Existing Commission Policies

- Improve safety through continuous reduction in the societal cost of accidents.
- Emphasize traveler safety and security as a primary consideration in the planning, designing, constructing, maintaining, and operating of all transportation systems.
- Support comprehensive transportation safety programs that target improving operator behavior and vehicle design and condition.

Action	Outcome
Strategic Highway Safety Plan	
Federal, state, and local agencies, and private organizations have been consulted and have contributed to the development of the Strategic Highway Safety Plan. This plan provides a comprehensive framework of specific goals, objectives, and strategies for reducing traffic fatalities and serious injuries. The Washington Transportation Plan recognizes the recommendations of the Strategic Highway Safety Plan as the necessary policy and action strategies to address the long-range safety needs of Washington State.	Reduction in fatalities and injuries resulting from automobile collisions.
Improve Safety Data and Sharing	
In cooperation with those involved in current efforts to produce the Statewide Highway Safety Plan, the Department of Transportation should implement a traffic records strategic plan to decrease paper usage by keeping electronic records; develop the Emergency Management System registry; improve data detail and location accuracy; improve statewide collision data; and design new law enforcement traffic collision reports and citizen reports.	Increase amount of safety data available for analysis. Increase analysis capacity. Improve safety-related data at various jurisdiction levels. Use improved safety data to target system improvements.

Safety, Continued

Action	Outcome
Aviation Study	
The General Aviation (GA) Airport Weather Safety Feasibility Study will determine needed weather- related improvements to airports.	Determine needed weather-related improvements to GA airports, to make airports safer, and more effective.
Address Truck Parking Capacity on State Highways	
The Department of Transportation, in cooperation with the Washington State Patrol, the industry (trucking and truck stop providers), and the RTPOs should recommend options for defining the state's role and appropriate investment, if any, in providing adequate, safe, and legal areas near state highways where commercial truckers can park and rest. The WSDOT 2005 Truck Parking Study should provide information to develop an action plan for this process.	An action plan to address how best to provide truck parking and rest areas, determine the various stakeholders' roles and responsibilities, and identify where truck parking and rest areas are needed most. It is the goal of this action plan to: provide safe and legal areas for commercial truck drivers to park so that drivers can take federally-mandated rests during long drives and decrease truck driver fatigue. Decrease the number of trucks parked illegally in undesirable and unsafe areas, such as weigh stations, chain up/down areas, highway ramps and shoulders, and local streets and parking lots by providing additional safe and legal parking capacity. Improve safety on highways and local roads. Increase transportation security. Decrease environmental impacts of truck parking and idling.

Economic Vitality

Existing Commission Policies

- Support the economy through reduced barriers to the movement of people, products, and information.
- Support investments in freight transportation services and infrastructure that maintain Washington State's competitive geographic advantage for world and domestic trade, and contribute to the economic productivity of the state.
- Value the movement of freight and people equitably.
- To the degree possible, streamline laws and regulations impacting freight transportation to allow ease of compliance and coordinated administration among jurisdictions.
- Support transportation investment that contributes to economic development.
- Support those aspects of the transportation system that enhance tourism.
- Develop good connections across interstate and international borders.

Action	Outcome
Statewide core all-weather county road network	
The Transportation Commission should recommend a policy regarding the state's role in establishing and funding a statewide core all-weather county road system. Develop a process to identify and prioritize investments that will minimize the economic impacts of freeze- and or thaw-related road closures on freight dependent industries, by identifying the most critical routes affected by freeze-and-thaw winter conditions through working with cities and counties, as well as freight stakeholders and associations, the Freight Mobility Strategic Investment Board, Transportation Improvement Board, County Road Administration Board, Washington State Association of Counties, and the Washington Department of Transportation.	Connect businesses and industries to the state highway system so they can ship and receive products year-round. Prioritize investments to provide maximum benefit for affected industries and regional economies. Support the state's job base in agribusiness, manufacturing, construction, and natural resource-based sectors.
Regional Economic Development	
The Department of Transportation should work with cities, counties, tribes, the Washington State Department of Community Trade and Economic Development, and local economic development councils, regional agencies, and the private sector to evaluate the economy and the economic development impacts of transportation infrastructure and services. The Department should also develop performance measures and rating criteria, so that future project selection can provide the best return on investment for growing Washington State's economy, and implement existing Transportation Commission policies.	Improved coordination of future capital funds will promote investments in job-producing private development and help expand the tax base for other necessary public services and facilities. Improved understanding of how transportation contributes to regional economies.

Economic Vitality, Continued

Action	Outcome
Economic Sectors and Clusters	
In response to "The Next Washington" Economic Plan from the Governor, the Department of Transportation should work with the Washington State Department of Community, Trade and Economic Development, cities, counties, tribes, and the private sector to: • Determine a way to measure transportation investment outcomes and identify investments that contribute to regional economies. Identify the dependencies of various clusters on the transportation system. • Identify the transportation system elements critical to maintaining and improving the performance and global competitiveness of these clusters. • Determine the state's share of transportation investments to meet these needs. • Develop and implement a strategy to improve support for tourism as transportation investments are planned and built by increasing access to Washington State's heritage and recreational assets.	Transportation contributes to achieving the goals identified in Washington State's economic plan. A clear understanding of how transportation benefits Washington State's economy; enhanced global competitiveness of Washington State's transportation-reliant industry clusters; maximized opportunities for transportation investment partnerships with cluster industries; alignment of agency missions and common goals to increase effectiveness of state government investment. Development of a basis for measuring economic benefits of transportation investments. Increased communication between the tourism sector, scenic byways, and state agencies through a structured event such as a scenic byway summit.
Emergency Preparedness and System Disruption Plan	
Clarify the state's role in ensuring timely restoration of freight service in the event of a major disruption to the transportation system. Working with all levels of transportation providers, develop a strategic plan for timely restoration of service that prioritizes freight transportation needs based on economic and quality of life impacts.	Plan and practice the state's response to high-impact and unpredictable events that would critically affect the freight transportation system serving Washington State. Minimize negative short-term and long-term impacts to the state's economic vitality and quality of life.
Develop and sustain economic growth	
Clarify the state's role in helping regional economies make capital investments in freight systems to develop and sustain economic growth. Support an ongoing, appropriate level of funding for regional economic development freight projects, port and intermodal access improvements, grade separations, short line rail improvements, and truck route programs to optimize truck movements in metro areas.	Provide incentives to help communities within a region prioritize desired freight improvements. Assist communities in developing and sustaining economic growth through investments in regional freight systems. Improve port and intermodal access. Mitigate the impact of growth in freight rail volumes on Washington State communities. Provide incentives to optimize truck movements in congested urban areas.

Economic Vitality Continued

Action	Outcome
Fuel Distribution and Pipeline Capacity	
Determine the state's role in ensuring that fuel distribution and pipeline capacity alternatives meet Washington State's long-term demand. Analyze the constraints and develop a strategy to remove obstructions so that the market can respond to increasing demand.	Support the state's long-term economic vitality by ensuring that fuel is efficiently supplied to Washington State citizens and businesses. Respond to increasing demand for fuel, when there is no plan to increase pipeline or refinery capacity in the state.
Main Line Rail	
Following the completion of the Transportation Commission Rail Study (refer to Part III for further detail), determine the state's role in enhancing main line freight rail capacity. Please refer to III. Focus on Transportation, B. Transportation Policy Studies and Plans for additional information on the Rail Study.	Add main line rail capacity to support growth in international trade and regional economies. Improve safety. Maximize system capacity and eliminate or reduce bottlenecks. Improve the freight-passenger train interface and prevent future conflicts of service. Mitigate the impact of growth in freight rail volumes on Washington State communities.
Short Line Rail	
Following the completion of the Transportation Commission Rail Study (refer to Part III for further detail), the Department of Transportation should develop an asset management plan for state-owned rail assets and define criteria for future investments in short line railroads. WSDOT Should consider developing a strategic business plan to implement policies and address the viability of the short line railroad system in Washington, to include an analysis of: • Ability of short line railroads to support regional economic development, with a comparison of the opportunity costs for alternate investments. • Freight market trends that impact short line railroad viability. • Track conditions and the cost of improvements required to operate the lines safely and efficiently. • Impacts on county roads and the highway system if short line and/or branch lines aren't viable. Separate analysis to be done for each low-volume, at-risk branch line. • Commitment of main line rail service at a level sufficient to attract targeted customers.	Clarify the state's role regarding financial support of short line freight railroads, and develop methods to fully assess the economic impact of such investments. Focus limited public resources on the most productive investment proposals. Support the development of regional economies and national and international trade. Selection of short line freight rail projects is linked to achieving maximum investment potential. Please refer to III. Focus on Transportation, B. Transportation Policy Studies and Plans for additional information on the Rail Study.

Economic Vitality, Continued

Action	Outcome
Columbia-Snake River Trade Corridor:	
Define a policy to ensure the long-term viability of the Columbia-Snake River trade corridor. In partnership with other responsible federal and state agencies, take a leadership role to ensure sound management of the locks, jetties, and main channel. Develop and implement a strategic plan (in coordination with the U.S. Army Corps of Engineers dredging and lock maintenance plan) to dredge, maintain locks and jetties, and deepen the Columbia River channel down river.	Prevent closure or decreased efficiency of the Columbia-Snake River trade corridor for waterborne traffic. Maintain navigation infrastructure to accommodate increasingly larger ships and growing inland barge movements. Support economic growth by providing Washington State agribusiness and U.S. grain shippers with efficient access to world markets. Avoid increased freight traffic on Columbia Gorge highways and rail lines.
Events of Statewide Significance	
2010 Olympics—Participation in the Governor's 2010 Winter Olympics Task Force to seek grant funding, deliver priority projects, align project schedule to reduce travel delays, document successful projects, and share outcomes.	Enhanced traveler experience for visitors to the state during the Vancouver Winter Olympics; return trips to Washington state after the Olympics, increasing tourism's contribution to the state economy.

Mobility

Existing Commission Policies

- Make customer service primary.
- Consider, and implement where appropriate, operational changes that improve efficiency before expanding the existing transportation system.
- Operate transportation systems to work reliably and responsibly for the customer.
- Incorporate long-term operations needs in capital investment decisions.
- Promote the use of advanced technologies to improve system efficiency and service.
- Consider system operations a separate budget category with high priority for funding.
- Aggressively pursue access management to protect operations of existing and future systems.
- Identify and preserve vital transportation corridors and sites for future transportation uses.
- Support regions in adopting different and regionally-appropriate mobility strategies.
- Promote modal connections to provide seamless travel to the customer.
- Provide mobility for people with special needs.
- Use cost-benefit methodologies as key determinants in selecting mobility projects.
- Provide viable mobility choices for the customer and expand the system to accommodate growth.
- Recognize that there will be congestion on the system and the ability to control congestion by expansion of the system is limited due to funding and other considerations. Promote land management, telecommunications, and other innovative technologies as viable mobility options to reduce the impact of congestion on all system users. Support limited strategic expansions to accommodate growth and reduce congestion when possible.
- Recognize that the primary mode of travel for Washington State citizens will continue to be the private automobile, but provide citizens with mobility choices which include, at a minimum, some forms of public transportation.

Action	Outcome
Aviation	
Address long-term passenger, cargo, and airport capacity and facility needs. Complete a statewide airport capacity and facilities study by July 2006, conduct a market assessment of aviation demand, needs, and forecasted needs for the next 25 years by July 2007. Governor-appointed commission to develop recommendations on long-term needs for commercial and general aviation airports by July 2009.	Identify gaps and deficiencies within the air transportation system and provide recommendations on how to address future long-term passenger, air cargo, and airport facility needs.

Mobility, Continued

Action	Outcome
Aviation, continued	
The Department of Transportation should complete the aviation system plan with classification of airports and performance standards.	The study will focus on 139 commercial and general aviation airports within the state, with emphasis on commercial aviation. The purpose of the study is to understand what capacity currently exists in aviation facilities and what will be needed to meet future demands for air transportation and increased economic opportunities. The study will also assist in promoting the effective use of federal, state, regional, and local aviation resources. High-speed passenger rail connections will also be evaluated as part of the study. See Part 3 for details on all phases of this study and plan update. Schedule: Underway—Targeted completion: Phase 1—completed on September 30, 2006 Phase 2—July 1, 2007 Phase 3—July 1, 2009
Washington State Ferries	
The Washington State Ferries Long-Range Strategic Plan should guide future WSF decisions on services and investments over the next 25 years. It serves as a 25-year strategic investment plan for vessel and terminal improvements will also have a route-specific program including route structures, frequencies and carrying capacities.	The Washington Transportation Plan will result in strategic system improvements to increase capacity and reduce delay. As part of its System Plan update within the framework of the Washington Transportation Plan, Washington State Ferries (WSF) is assessing and defining options for ferry service reconfiguration to meet increasing travel demand. Schedule: The Draft Ferry System Plan public comment review period ended on July 31, 2006. The final plan is expected to be adopted in early 2007.
System Tolling Study	
The Transportation Commission conducted a comprehensive tolling study which addressed the following eight key questions on tolling: 1. What role can tolling play in developing and managing Washington's transportation system? 2. How should Washington decide which parts of the system to toll or price? 3. What rules should govern the use of toll revenue? 4. What rules should govern setting toll rates? 5. What is the most appropriate governance and organizational structure? 6. How do technology and toll operations influence toll policy? 7. How do equity, fairness, and uniformity issues influence toll policy? 8. What are the implications of alternative toll policies at the Tacoma Narrows Bridge?	Provide guidance for when to use tolling as a tool to increase transportation system performance and reliability. Establish a single user experience "one device, one phone number, one statement." Note: Further information about the details of this study is included in Part 3. Adopted on September 19, 2006.

Mobility Continued

Action	Outcome
Future Funding	
In cooperation with the Governor's Office, the Department of Revenue, and the Office of Financial Management, the Department of Transportation should propose options for a transportation funding strategy based on alternative fuels.	New source of transportation funding, to offset a portion of revenues lost annually by reduction in gas and diesel fuel consumption by fuel efficient vehicles.
Passenger Rail	
Update strategy for intercity passenger rail system expansion.	Improve consistency between available funding and expansion plans. Critical system expansion and operation improvements identified and future investments justified by benefits.
Intercity Transportation and Basic Access	
Define as policy the state's role and the level of state investment in public transportation service to provide basic access and intercity transportation.	Clarify the state role for intercity transportation investment. Improve connections between rural and urban centers. Intercity transportation provides a vital link between rural communities and urban areas. This will provide a framework that can be used to develop programs that address basic connectivity between communities, define goals for connecting rural areas to urban service centers, and reduce rural isolation. The policy will also provide the local communities and service providers a clear vision of the state's interest in intercity transportation, and allow these partners to participate in meeting the needs.

Mobility, Continued

Action	Outcome
Corridor Efficiency	
The Department of Transportation, in cooperation with Washington State Transit Association and others, should develop a strategy for closer integration between roadway and transit operations, including exploring innovative approaches to access management	Public transportation improves the efficiency of the highway system by moving more people with fewer vehicles, improves person throughput on congested corridors, and provides travel options beyond a single occupancy vehicle.
Travel Conservation Approaches	
The Department of Transportation should identify needed policy adjustments to ensure continued effectiveness of the high occupancy vehicle (HOV) system.	More efficient movement of roadway system for increased capacity, improved air quality, and improved travel times and reliability.
Park-and-Ride Lots for Corridor Efficiency	
Demand for parking at lots in congested corridors is high and many facilities are at or over capacity. The lack of available parking along these critical highways affects the efficiency of the highway system. The Department of Transportation's Office of Transit Mobility, in cooperation with the Washington State Transit Association and others, should develop a strategy for determining the state role in park-and-ride facilities, particularly lots that improve highway efficiency on congested corridors.	Park-and-ride lots strategically located on key highway corridors are integral to improving the efficiency of the system. The facilities work in conjunction with other highway system investments including HOV lanes and direct access ramps. Development and implementation of a park-and-ride policy will help define the role of the state and improve the efficiency of our transportation system. This policy will serve as a guide for a long-term park-and-ride lot program. Prevent loss of existing park-and-ride lots. Add capacity where most needed.
New Technologies and Alternative Fuels	
Work closely with the Governor's Office, the Washington State Department of Community, Trade and Economic Development, and the Department of Ecology to develop a strategy to adapt to the demand for alternative vehicles and fuels.	Adapt the transportation system to serve evolving needs. The transportation system is based on sustainable fuel supplies.

Environmental Quality and Health

Commission Policies

- Meet environmental responsibilities.
- Minimize, and avoid when practical, air, water, and noise pollution; energy usage; use of hazardous materials; flood impacts; and impacts on wetlands and heritage resources from transportation activities.
- When practical, and consistent with other priorities, protect, restore, and enhance fish and wildlife habitats and wetlands impacted by transportation facilities.
- Coordinate and take the lead in partnering with other agencies on environmental issues affecting transportation to reduce costs and increase effectiveness.
- Transportation plans and actions will support and encourage partnering with local communities to achieve our mutual interests in promoting livable communities.

Action	Outcome
Tribal Consultation	
The Department of Transportation and the Regional Transportation Planning Organizations should work together to improve implementation of the Centennial Accord and create additional guidance for tribal consultation for transportation planning.	Improved communication will identify issues early in project development so that project teams can reduce conflict or delay.
Path and Trails	
The Department of Transportation should work with the Interagency Committee for Outdoor Recreation and the Regional Transportation Planning Organizations to develop a strategy for path and trail investments, similar to state pedestrian program investments.	Improve safety and mobility for pedestrians and bicyclists. Improve coordination between local comprehensive plans and the WTP.
Healthy Communities	
The Department of Transportation should coordinate with the Growth Management Services Division of the Department of Community, Trade and Economic Development. The two departments should convene a task force to identify sources and ways of pooling funds in order to support local governments seeking assistance in addressing the Growth Management Act requirement to include a pedestrian and bicycle component in comprehensive plans.	Pedestrian and bicycle facilities and network constructed to provide for safe and healthy transportation options through walking and biking.

Environmental Quality and Health, Continued

Action	Outcome
Emissions Reduction	
Working with the Department of Ecology, Metropolitan Planning Organizations, and the Federal Highway Administration, the Department of Transportation should refine policy regarding the state's position and appropriate role in reducing freight-related diesel emissions. Identify strategies and solutions that minimize adverse air quality impacts of freight-related diesel emissions, while ensuring continued freight mobility and support of freight dependent industries. Develop a program and pilot structure based on the strategic plan and its policy direction. Coordinate with regional, state, and national groups to refine strategies and advance pilot projects in Washington.	Reduce adverse side effects of diesel-related emissions, including air pollution and health risks. Prioritize the numerous strategies and technologies that may help reduce harmful emissions. Ensure continued support of an efficient freight transportation system, where strategies and programs enhance industry and carrier needs. Reduce toxic emissions. Improve fuel efficiency.

Measuring Progress

In Washington, statewide transportation performance is not uniformly measured across modes or jurisdictions. State, federal, tribal, and local entities each collect data about system condition and performance in a manner that meets their needs. Washington State lacks a coordinated and comprehensive transportation performance reporting process. Following passage of the recent transportation investment packages, accountability to the public has never been more important.

This section provides a series of examples taken from various editions of the Gray Notebook to illustrate how the Washington State Department of Transportation measures system performance. The current reporting model is a strong platform on which to build a transportation plan approach to statewide performance reporting. The Transportation Commission proposes to convene a study team to focus on performance reporting. The Transportation Commission also recognizes the importance of the Governor's Priorities of Government process and its relation to the long-range statewide transportation plan.

Improved accountability is essential. Local, regional, and state transportation providers must base infrastructure investments on performance measurement and performance-based decision making to ensure the right projects are delivered when needed, and to maintain the public's confidence in government's ability to meet their needs.

The Transportation Commission recommends that consideration be given to addressing performance measures with regard to all of the investment guidelines. Discussions should focus on the appropriate data to collect to determine how the following goals can be achieved:

- Transportation Access—Provide effective and affordable mobility options for citizens without access to an automobile or without the ability to drive, especially in isolated areas.

- Bottlenecks and Chokepoints—Invest in new facilities and system assets that address the most severely congested locations.

- Economic Vitality—Invest in new facilities and system assets that strengthen the state's economic vitality and support family-wage jobs.

- Moving Freight— Invest in the specific needs to move goods as part of the state's transportation system.

- Building Future Visions—Today's planning efforts should help shape visions of the transportation system for the future.

Performance and Accountability

The Washington Transportation Plan recognizes and correlates with the Governor's Priorities of Government.

The Priorities of Government are the statewide approach used by the Governor to identify results as the basis for budget decision-making. This approach facilitates strategic thinking and uses performance evidence to make investment choices for maximum benefits.

The Priorities of Government performance goals establish expectations that shape transportation investments, project design, and accountability at all jurisdictional levels.

The statewide transportation system contributes primarily to three Priorities of Government:

- Improve economic vitality of business and individuals
- Improve statewide mobility of people, goods, information, and energy
- Improve safety of people and property

Measuring the Performance of the State-Owned Transportation System

Since March 2001, the Department of Transportation has been tracking a variety of performance and accountability measures for review by the public, the Transportation Commission, the Legislature, the Governor, and others. These measures are reported in *Measures, Markers, and Mileposts*, also called the Gray Notebook. It provides in-depth reviews of agency and transportation system performance.

The Gray Notebook is organized into two main sections. The Beige Pages report on the delivery of the projects funded by the 2003 Transportation Funding Package, the 2005 Transportation Funding Package, and pre-existing funds. The White Pages describe key agency functions and provide regularly updated system and program performance information.

The Gray Notebook is published quarterly in February, May, August, and November. The current edition and archived past editions are available on-line at: www.wsdot.wa.gov/accountability. An annual goal is established for specific programs and issues and then reported on periodically. For some issues the data is reported quarterly and for others there is an annual cycle.

The Gray Notebook is primarily focused on those parts of the state's transportation system owned and operated by the Department of Transportation. The WTP recommends that this performance measurement approach needs to be expanded to include other components of what is truly an integrated system.

The following pages highlight a few goals that support the vision of the WTP that are currently being measured on a periodic basis in the Gray Notebook.

Preservation—
Ensure that today's transportation systems will continue to serve us into the future

How do we know Washington State's transportation systems are being preserved?

The investments made in our transportation system, both historically and in the future, are vital to the quality of life in our state, as well as the efficiency of day-to-day business and operations of our society as a whole. The critical nature of this system and the high expenses incurred through maintenance and operations require foresight and planning to preserve the system. It is necessary to maintain the Lowest Life Cycle Cost in order to provide the most economical investments and protect taxpayer dollars. Pavements and bridges are the most costly investments in our statewide transportation system. Therefore, their preservation is critical to the sustainability of the operation and the expenses incurred by the system.

State Highway Pavement

The Department of Transportation has been rating pavement condition since 1969, using Lowest Life Cycle Cost (LLCC) analysis to manage pavements for preservation. The principles behind LLCC are that if rehabilitation is done too early, pavement life is wasted; if rehabilitation is done too late, additional costly repair work may be required, especially if the underlying structure is compromised. The department continually looks for ways to strike the best balance between these two basic principles.

State Bridges

The state benchmark law established a goal of no structurally deficient bridges, and for safety retrofits to be performed on state bridges with the highest seismic risk levels. The Department of Transportation tracks bridge condition using the Bridge Management System (BMS) to achieve optimum service life. The structural deficiency rating is based on inspection findings. At the same time, some bridges are simply more important and more expensive than others. BMS considers the cost-effectiveness of several feasible corrective actions for any given bridge deficiency and provides cost-effective indices for each potential action in various time periods.

Goal

- Maintain interstate and state highways so that none are in "poor" condition—(0 percent)
- No bridges in the state are to be structurally deficient—(95 percent of bridges are in at least "fair" structural condition)

Performance Measure

- Percent of miles in "poor" condition
- Percent of bridges in at least "fair" structural condition

Highlights of Gray Notebook Preservation Measures

Bridge Structural Conditions Ratings

The condition rating shown below is based on the structural sufficiency standards established in the Federal Highway Administration's "Recording and Coding Guide for the Structural Inventory and Appraisal of the Nation's Bridges." This structural rating relates to the evaluation of bridge superstructure, deck, substructure, structural adequacy, and waterway adequacy.

Bridges rated as "poor" may have structural deficiencies that restrict the weight and type of truck traffic allowed. No bridge currently rated as "poor" is unsafe for public travel. Any bridge determined to be unsafe is closed to traffic. In 2004 and 2005, The Department of Transportation did not close any bridges due to unsafe conditions.

The Department of Transportation policy is to maintain 95 percent of its bridges at a structural condition of at least fair, meaning all primary structural elements are sound. Since 2000, there has been a slow but steady increase of bridges in the "good" category. In 2004, 3 percent of bridges showed a condition rating of "poor," and in 2005, only 2 percent were rated as "poor." The department credits this improvement to preventative measures such as structural or scour repair, painting, or bridge deck overlays that are keeping some of the "fair" bridges from declining into the "poor" category, and the building of new bridges in the "good" category.

Figure II-40

Category	Description	2000	2001	2002	2003	2004	2005
Good	A range from no problems to some minor deterioration of structural elements	84%	85%	87%	86%	87%	89%
Fair	All primary structural elements are sound but may have deficiencies such as minor section loss, deterioration, cracking, spalling or scour.	11%	11%	10%	11%	10%	9%
Poor	Advanced deficiencies such as section loss, deterioration, cracking, spalling, scour or seriously affected primary structural components. Bridges rated in poor condition may be posted with truck weight restritions.	5%	4%	3%	3%	3%	2%

Source: WSDOT Bridge Office, Gray Notebook Edition 22, page 85

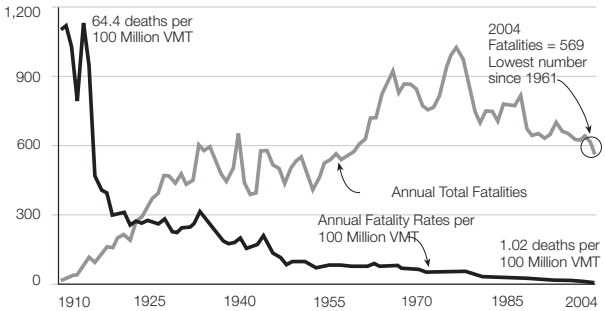
Safety—
Make transportation infrastructure and facilities throughout the state safer and more secure for their users.

How do we know things are safer?

The benchmark law established a goal to improve safety. While many criteria and measures are used to track safety on the state transportation system, the Transportation Commission and the Department of Transportation use the state motor vehicle fatality rate to determine progress. The 2004 fatality rate was 1.02 deaths per 100 million vehicle miles traveled (VMT) on all Washington State roadways, while the total fatality count shows 567 people killed in motor vehicle collisions and two people killed in bicyclist/pedestrian fatalities where a moving motor vehicle was not involved.

Figure II-41

Washington Motor Vehicle Total Fatalities and Fatality Rates
1910-2004



Source: WSDOT Transportation Data Office

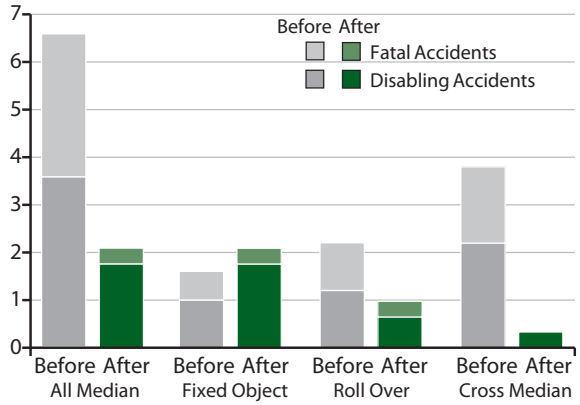
> *"The region's top priorities remain safety, efficiency and preservation of the existing transportation system."*
>
> **Thurston Regional Planning Council**
> *2025 Regional Transportation Plan*

Goal	Performance Measure
Reduce the annual number of fatalities statewide	Annual number of fatal collisions
Reduce the severity of collisions statewide	Frequency and severity of disabling collisions in areas where cable median barrier has been installed (before and after)
Reduce collisions (fatal and disabling) caused by driver behaviors including seat belt use and driving under the influence (DUI)	Number of collisions related to driver behavior

Highlights of Gray Notebook Safety Measures

Figure II-42

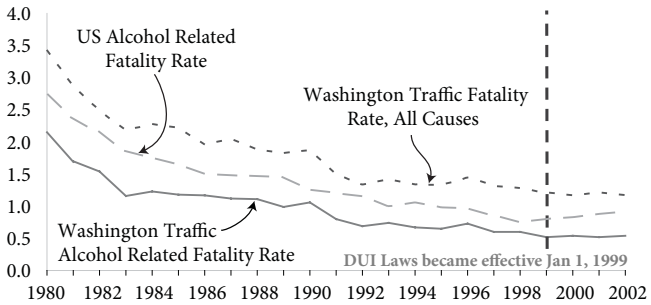
Severe Collisions
Before and After Cable Median Barrier Installation
Annual Fatal and Disabling Collisions and Median Collision Type



Source: WSDOT Engineering and Regional Operations Division; as taken from the WSDOT *Gray Notebook* Published Decemeber 2003

Figure II-43

Alcohol-Related Traffic Fatalities
Comparison of Washington's Public Roadway Fatality Rate And Alcohol-Related Fatalities Per Million VMT
1980 - 2002



Source: WSDOT Transportation Data Office

Before and After Reductions in Severe Collisions

While total collisions in the study areas, I-5 in Everett, Vancouver, and Fife, nearly doubled (from 45 to 100, including collisions with property damage only), the number of severe collisions (fatal and disabling) decreased significantly. This resulted in a societal benefit of cable median barriers calculated to be $420,000 per mile annually. A breakout of the types of severe collisions is shown in the graph to the left (graph does not include "property damage only" collisions.)

The data on the left was normalized and represents 12 months before and 12 months after the project.

Alcohol-Related Fatalities on Public Roadways

From 1998 to 2002, alcohol-related deaths per 100 million miles driven dropped 11 percent overall from 0.60 to 0.54 per 100 million miles driven in Washington State.

A package of drunk-driving laws, enacted in 1998, lowered the blood alcohol intoxication threshold from 0.10 to 0.08 percent, and provided for automatic loss of license for drunk driving. These legislative steps, together with increased State Patrol emphasis on stopping drunk drivers, are credited with the decrease in alcohol related deaths. Other measures in Washington State include increased use of ignition interlock devices (a device attached to the car's ignition system that requires the driver to blow into the device before starting the car - if alcohol is detected the car won't start), and a crackdown on deferred prosecutions.

Mobility—System Efficiencies
Optimize the efficient operation of our current transportation facilities and those we develop in the future

How do we know Washington State's transportation systems are being operated most efficiently?

The efficient operation of Washington State's transportation system is assessed by measuring the reduction of the greatest contributors of congestion. In Washington State, the greatest source of congestion is accidents. Reduction in the number of accidents and the average clearance time for accidents provides the best measurement of our progress in improving the efficiency of the system.

What We Measure Today

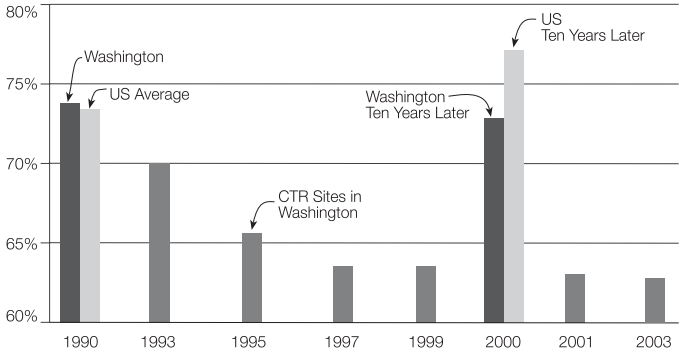
Commute Trip Reduction (CTR) Program

In the decade from 1990 to 2000, the percentage of drive-alone commute trips in Washington State decreased slightly from 73.9 percent to 73.3 percent. Washington and Oregon were the only states where the percentage of people driving alone to work decreased during the decade. Nationally, drive-alone commuting increased 3.4 percent during the same period.

In comparison, since 1993 the drive-alone rate at work sites in the CTR Program decreased even more than the state average. The drive-alone rate at these sites dropped from 69.7 percent in 1993 to 62.8 percent in 2003, a decrease of nearly ten percent.

Figure II-44

Comparing Drive-Alone Rates: CTR Sites, Washington and U.S.



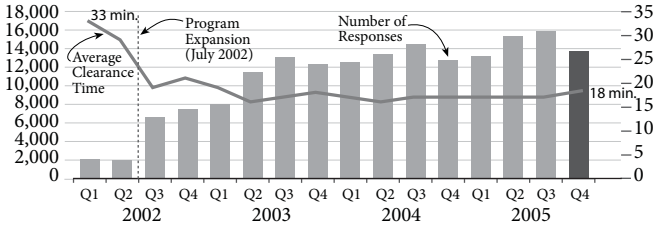
This graph compares reductions in the drive-alone commuting rates within the eight counties that began participating in CTR in 1993. The 2000 Census data is for residents of the eight counties. The CTR data applies to the 525 worksites that have participated continuously since 1993.
Source: Transportation Demand Management Office

Overall Clearance Time

During the fourth quarter of 2005 (October – December), WSDOT Incident Response team members responded to 13,705 incidents. This was down 14 percent from last quarter's summertime peak of 15,881 responses. However, when compared with the same period in 2004, the number of incidents continues to increase consistent with a steady upward trend since program expansion in 2002 (as shown in the bar chart below). The average clearance time for all responses to incidents was 18 minutes. An incident also tends to invite rubbernecking and gawking, which can suddenly slow traffic down, and may result in a secondary incident.

Figure II-45

Number of Responses and Overall Average Clearance Time
January 2002 - December 2005



Source: WSDOT Incident Response Tracking System
Note: Program-wide data is available since January 2002. Prior to Q3 of 2003, number of responses by IRT are shown. From Q3-2003, responses by Registered Tow Truck Operators and WSP Cadets have been reported in the total.

Goal

- Reduce delay time caused by incidents on state highways by providing Incident Response Teams
- Reduce congestion by reducing the number of single-passenger commute trips through the Commute Trip Reduction program

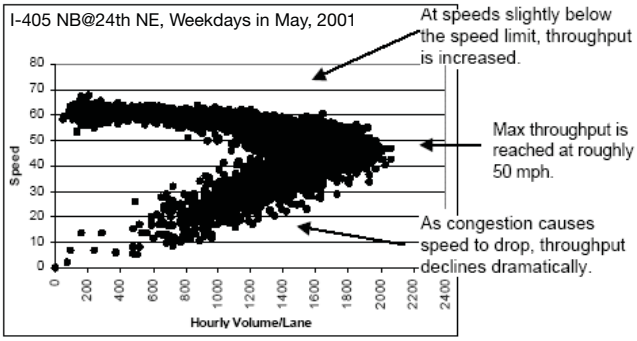
Performance Measure

- Actual overall clearance times
- Rate of drive alone trips

Mobility—Bottlenecks and Chokepoints
Invest in new facilities and system assets that help address the most severely congested corridors

Figure II-46

Minimal congestion maximizes throughput



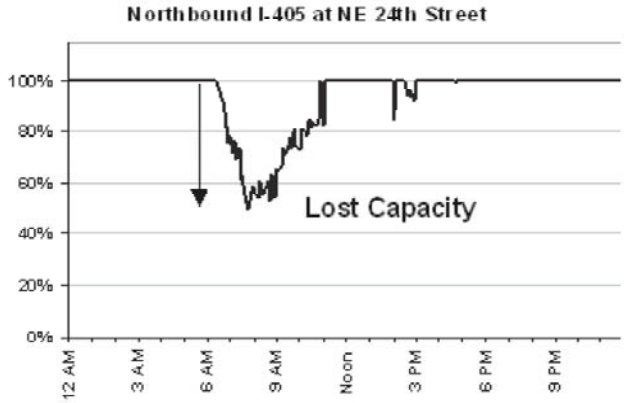
Source: WSDOT

For most roadways, basic day-to-day maintenance activities, such as snow plowing, picking up debris, controlling vegetation, and patching potholes, are the activities needed to keep the road available for optimal use. Each roadway has an optimal capacity where throughput is maximized. The scatter graph to the left, where each dot represents a specific moment's observation of speed and throughput, is typical for a freeway and represents real data from I-405. It shows maximum throughput at about 2000 vehicles per lane per hour.

Maximum freeway throughput should typically be achieved when freeway traffic is flowing at about 45 mph. System throughput drops dramatically when traffic volume forces speeds to drop below 40 mph, as shown by the scatter graph.

Figure II-47

Percent of Lane Capacity Lost Due to Delay



Source: WSDOT Urban Corridors Office

The Productivity Lost Due to Delay graph (left) shows that during the peak period on I-405 at NE 24th Street, congestion reduces the throughput of the two general-purpose lanes in Renton to the capacity of one free-flowing lane.

WSDOT's goal is to work toward improving productivity of the system by investing in opportunities that provide optimal throughput. WSDOT currently has about 20 projects scheduled for construction in the 2005-2007 biennium that are designed to improve productivity of the system.

Goal	Performance Measure
Reduce peak travel times	Peak travel times
Reduce number of slow traffic days	Number of slow traffic days
Reduce amount of lost throughput efficiency	Amount of lost throughput efficiency

Environmental Quality
Develop, implement, and use transportation investments in ways that promote energy conservation, enhance healthy communities, and protect the environment

How do we know health and the environment in Washington State are protected and cared for?

Vegetation management for the Department of Transportation's 100,000 acres of roadside must meet operational, safety, environmental, and aesthetic objectives. Management techniques include soils amendment, planting, hand weeding, mowing, tree maintenance, and herbicide application. Herbicide use is a sensitive issue for many citizens, drawing special attention to the importance of Integrated Vegetation Management (IVM).

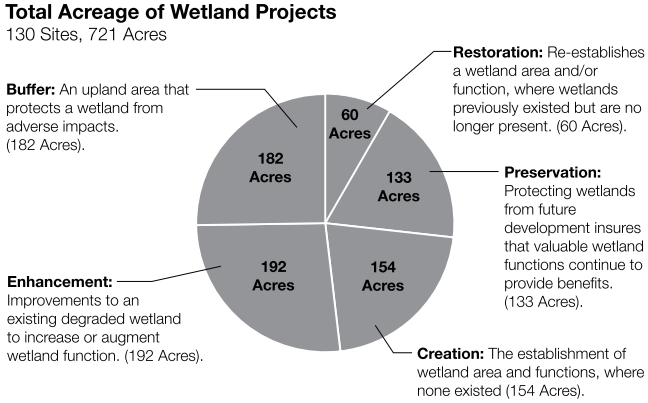
Types of Wetland Mitigation

When transportation projects cause unavoidable wetland impacts, wetlands are enhanced, restored, created, or preserved to achieve a no-net-loss policy. The Department of Transportation has a total of 130 replacement wetland sites (721 acres). Monitoring was initiated on four new sites in 2004. Two of these sites were created wetlands, one involved both creation and enhancement of wetlands, and one involved wetland enhancement only. These sites add more than 25 acres to the state's inventory of replaced wetland acreage.

Figure II-48

WSDOT Replacement Wetlands, 1988-2005[1]

Total Acreage of Wetland Projects
130 Sites, 721 Acres



[1] Pie Chart: This also includes seven established sites in the Eastern Region

Source: WSDOT Environmental Services Office

Goal	Performance Measure
Improve streams for fish habitat conditions by removing fish passage barriers	Number of fish passage barriers removed
Manage roadsides to achieve better operation and environmental outcomes through Integrated Vegetation Management	Percent reduction in the use of herbicides Control of noxious weeds Achievement of greater slope stability Preservation of sight distance
Mitigate for unavoidable wetlands loss with replacement wetlands to achieve zero net loss of wetlands	Percentage of successful replacement wetlands Percent net loss of wetlands

Highlights of Gray Notebook Environmental Measures

Fish Passage Barrier Removal Projects on Highways
Moose Creek under SR 530 at milepost 44 near Darrington in Snohomish County

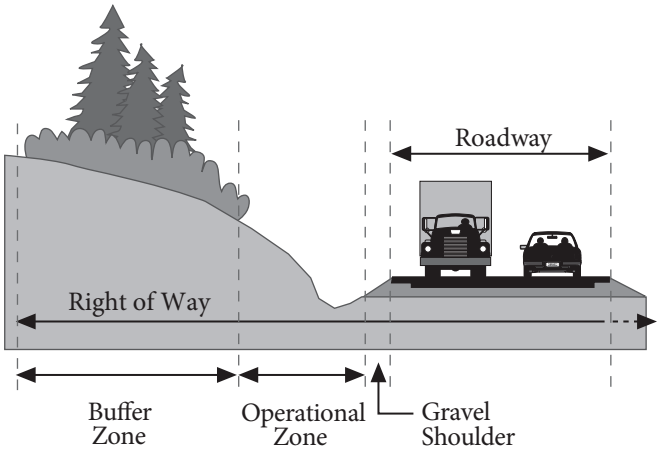
Before
Two corrugated steel culverts are too high and too steep to provide adequate passage

After
New Bottomless culvert replaces the two round steel culverts, eliminating the barrier

2001-2003 Goals Accomplished

The goals for the fish passage barrier removal program during the 2001-03 biennium were to inventory 400 miles of highway and construct 16 fish passage retrofit/replacement projects. These goals were exceeded. An additional 441 miles have been inventoried as of June 30, 2003, and all 16 fish passage projects were successfully constructed. The inventory work is a huge effort and, at present staffing levels, will take a number of years to complete for WSDOT's 7,000-plus miles of highway. The inventory goal for 2003-2005 was an additional 700 miles, which was met and surpassed by 500 miles. As of March 2005, the inventory had been completed on 3,405 miles of state routes, or 48 percent of the total highway system. Fourteen fish passage barrier projects were completed in the 2003-2005 biennium.

Integrated Vegetative Management (IVM) of Highway Roadsides



Gravel Shoulder – Vegetation Free Area
Maintained with herbicides where necessary to allow surface water drainage off the pavement into the ditch.

Operational Zone – Grass or Small Trees and Shrubs
Maintained through mowing to allow visibility of signs and traffic at interchanges and curves. Large trees are also removed for safety in case vehicles leave the road. Herbicides are used very selectively for control of noxious weeds and, sometimes, for brush control.

Buffer Zone – Natural/Native Vegetation
Wherever possible, the roadside is designed and maintained with native and/or low maintenance vegetation. The IVM approach encourages stable self-sustaining vegetation with limited use of mowing, herbicides, tree removal, and other methods as necessary.

Part III
Focus on Transportation

Washington's transportation system should serve our citizens' safety and mobility, the state's economic productivity, our communities' livability, and our ecosystem's viability.

Washington State Transportation Commission

Washington State Department of Transportation

Focus on Transportation

In this part of the plan, we recognize that the world is changing. Certain trends and circumstances are emerging that are likely to significantly affect Washington State's transportation system in several ways. In addition, emerging topics are explored. These topics are included in the issues addressed by the chapters of Part II. Part III discusses these topics in greater depth to provide the variables influencing transportation planning and policy.

Each topic raises new questions, highlights differing perspectives, describes new or potential relationships, and draws attention to variables that are beyond our control. The plan recognizes that in the coming two to five years, resolution of several issues will have a direct impact on shaping the update to the next WTP update, future transportation budgets, and the state's economic vitality.

Part III is organized as follows:

- Funding and Financing
- Transportation Policy Studies and Plans
- Governance and Partnerships
- Transportation and Land Use

Funding and Financing

I-5 38th Street Interchange—Tacoma, WA

Funding Availability and Stability

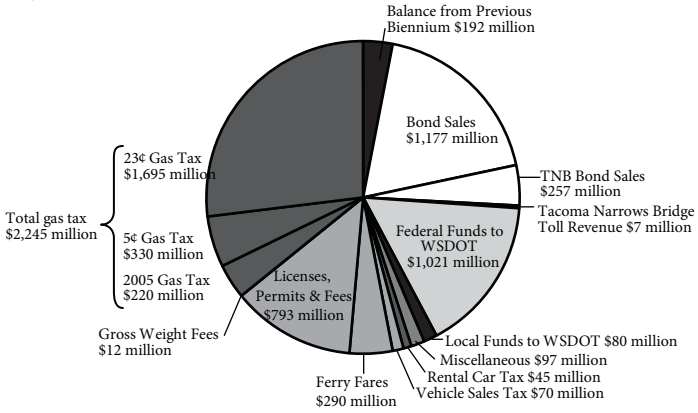
A variety of sources have funded and continue to fund transportation systems in Washington State. The major sources of state transportation revenue are the gas tax, licenses, permits, and fees. The state budget is also funded from ferry fares and concessions, rental car taxes, a 0.3 percent sales tax on vehicles, and miscellaneous revenues, which include interest earnings. Funds also come from bond sales, federal funds, local funds, and remaining cash balances from previous years.

The state collects gas tax revenues, vehicle license fees, permits, and other fees. Portions of these funds are distributed (by statute) to cities, counties, and other state agencies. The chart below depicts projected transportation funds coming into the state for the 2005–2007 biennium. The next pie chart on the right shows how these funds will be distributed to cities, counties, and other agencies. In general, the pattern of collection and expenditure is expected to continue into the future.

Washington Motor Vehicle Fuel Tax History 1920-2005

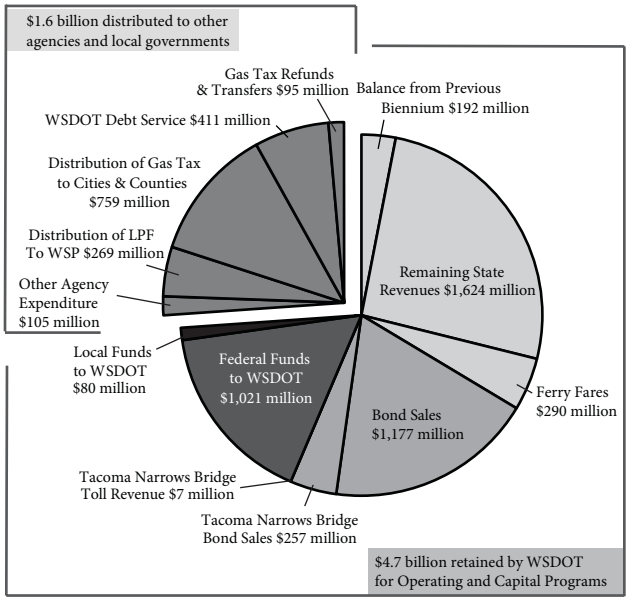
The Motor Vehicle Fuel Tax (gas tax) is the most significant source of revenue for Washington State's transportation system. The state has had a gas tax in place since 1921. The 18th Amendment to the State Constitution, passed in 1944, dedicated revenue from the gas tax solely to "highway purposes," clarified in statute and case law as state highways, state ferries, county roads, and city streets. This provision is still in effect.

Figure III-1
Total State Transportation Funds
(Reflects 2006 Legislative Supplemental Budget)
2005-2007
$6.3 billion



Source: WSDOT Financial Planning and Economic Analysis Office

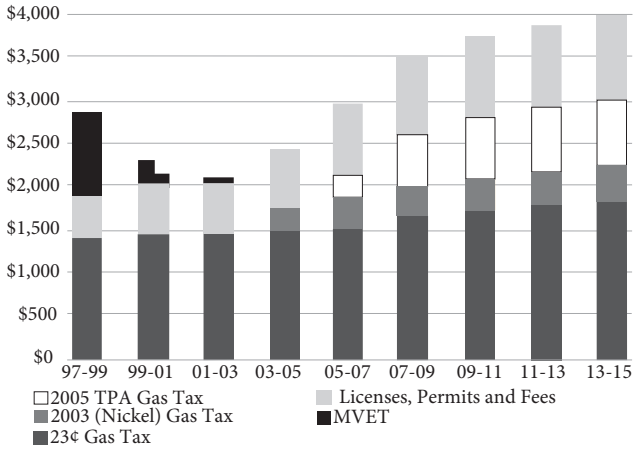
Figure III-2
Distribution of State Transportation Funds
(Reflects 2006 Legislative Supplemental Budget)
2005-2007



Source: WSDOT Financial Planning and Economic Analysis Office

As of July 1, 2006 the state gas tax is 34¢/gallon. The first tax on motor fuel in 1921 was 1¢/gallon, increasing every few years through 1949 when it reached 6.5¢/gallon. Less frequent increases brought the rate to 23¢/gallon by 1991. The rate then stayed constant for 12 years. In 2003, the legislature increased the gas tax by 5¢/gallon, bringing the rate to 28¢/gallon. The 2005 Legislature further increased the tax rate to ultimately reach 37.5¢/gallon by July 2008.

Figure III-3
Major Sources of Tax Revenue (millions of dollars)



Source: WSDOT Financial Planning and Economic Analysis

Vehicle Licenses, Permits, and Fees History 1915–2005

The state began collecting vehicle registration fees in 1915 to support state roads. Initially the fees were based on vehicle horsepower, but quickly shifted to vehicle weight. By 1957, some of the revenues began to be used by the State Patrol, with some of the funds distributed to a separate State Patrol account. Between 1971 and 1980 the State Patrol was funded directly through the Motor Vehicle account. Separate deposits for the State Patrol account resumed in 1981 and continue today. The current vehicle registration fee for new or used vehicles is $30.

Legislation passed in 2005 created a new vehicle weight fee on passenger cars. In addition to the $30 registration fee, vehicles weighing up to 4,000 pounds pay a $10 fee, vehicles weighing up to 6,000 pounds pay $20, and vehicles weighing up to 8,000 pounds pay $30.

Gross weight fees that apply specifically to trucks were established in 1937. Up until 1987, two fees were levied separately, a registration fee and a fee based on the weight of the truck. In January 1987, a new law went into effect that brought the two fees together to form the Combined License Fee. In 1994 the weight schedule was extended from 80,000 pounds to 105,500 pounds and fees increased for trucks over 40,000 pounds declared gross weight. The most recent fee increases for the combined license fee took place in 2003 and 2005.

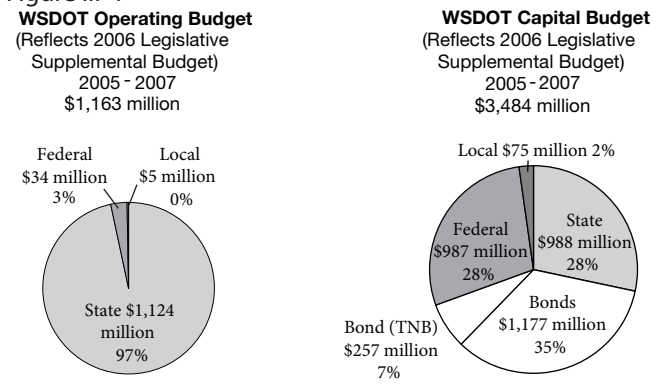
From 1977 until December 1999 a portion of the proceeds from the Motor Vehicle Excise Tax (MVET) helped to fund transportation systems. Enactment of legislation initially proposed in Initiative 695 eliminated much of this taxing authority. Sound Transit (the Puget Sound Regional Transportation Authority) still collects an MVET tax in the Puget Sound Region.

Current Financing Sources and Uses

WSDOT Sources of Funds

WSDOT projects are not appropriated by funding source. Revenues restricted by the 18th Amendment, such as the gas tax, are only available for "highway purposes." Gas tax and non-gas tax revenues such as licenses, permits, and fees are commingled and combined with federal and local funds and bond proceeds to provide the basis from which funding for highways is achieved. Non-restricted funds (rental car tax, 0.3 percent vehicle sales tax, vehicle weight fees, and certain license fees) are also commingled with federal, local, and general obligation bond proceeds for use on non-highway transportation projects. WSDOT develops a budget designating an amount to be used for capital expenditures and an amount to be used for operating costs. WSDOT's budget for operations and capital investment for 2005-2007 is expected to be $4.65 billion.

Figure III-4



Source: WSDOT Financial Planning and Economic Analysis Office

Bond financing is an important component of the capital program. It is important to remember that

this instrument obligates a portion of the tax revenues collected, making them unavailable for cash financing of projects. State transportation bonds are referred to as "double barreled" bonds. Bonds do not create new funds, they just make them available for projects sooner. They are obligation bonds secured by the full faith and credit of the state as well as the gas tax. Debt service is paid directly from gas tax receipts.

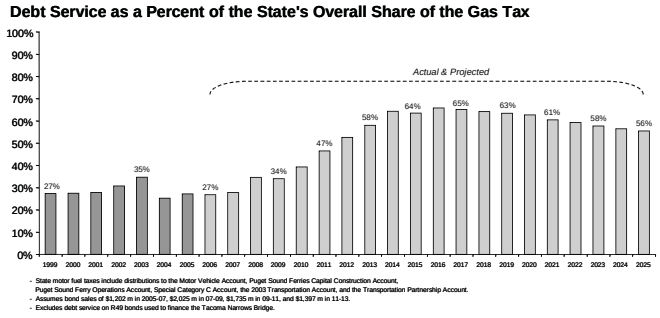
The use of bond financing for transportation follows a rigorous legal process. The legislature must enact a statute authorizing the sale of bonds for a specific purpose, and the bond proceeds must be appropriated before they can be spent. Bonds are sold through the State Finance Committee.

The 2003 and the 2005 transportation funding packages are dependent on bond financing. Ultimately the gas tax component for both of these packages will be completely leveraged to pay debt service.

The Tacoma Narrows Bridge project is nearly 100 percent bond financed, however, debt service (although backed by the gas tax and the full faith and credit of the state) is to be paid with toll revenues.

The chart below shows the amount of the gas tax leveraged against current debt service and planned debt service from future bond sales. Because the revenue stream to pay debt service on the Tacoma Narrows Bridge is from tolling, the debt service for this project is not included in the chart below.

Figure III-5



Source: WSDOT Financial Planning and Economic Analysis Office

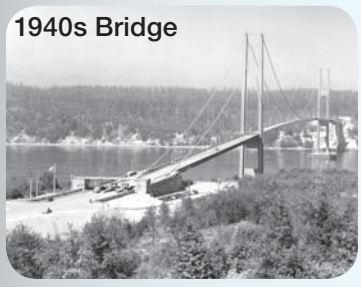
Figure III-6

Comparing Prices: Then and Now

Coffee (lb)
1940 = $0.21
1950 = $0.79
2006 = $3.16

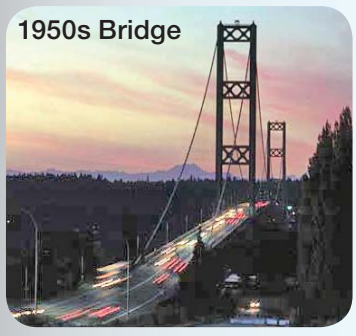
Bread (lb)
1940 = $0.08
1950 = $0.14
2006 = $1.07

Comparing Tolls—Tacoma Narrows Bridge to 1940 "Galloping Gertie"



Toll in 1940 = $1.10 (Round trip, car and driver only)

Inflation adjusted to 2006 dollars = $15.94



Toll on bridge built in 1950 = $1.00

Inflation adjusted to 2006 dollars = $8.42

Proposed Toll on New Bridge = $3.00

Inflation adjusted to 1940 dollars = $0.21

Inflation adjusted to 1950 dollars = $0.36

Source: WSDOT Planning Office

Tacoma Narrows Bridge

The Tacoma Narrows Bridge project is currently WSDOT's single largest capital project, and is the world's largest suspension bridge currently under construction. Planning and financing major transportation structures is an ongoing, complex endeavor that requires innovative solutions.

The Tacoma Narrows bridge in 1940

Construction started on the bridge that would be known as "Galloping Gertie" on November 25, 1938. The state had estimated it would cost $11 million to build but Leon Moiseiff of New York said it could be done cheaper. Against protest from state engineers, the design went forward at $5.59 million. The bridge opened to traffic on July 1, 1940. Governor Clarence D. Martin paid the first toll and drove across. The bridge collapsed on Nov. 7, 1940 and remained closed until completion of a new bridge in October of 1950.

The 2003 Transportation Funding Package also authorized the sale of general obligation (GO) bonds to be used for multimodal projects. These bond proceeds will be used for rail projects and for multimodal transportation terminals relating to ferries. Debt service on the GO bonds will be paid from non-18th Amendment revenues.
Federal funding also leverages state revenues, however not in the same way as bond financing. Federal funds require a certain percentage of state matching funds to use them. Federal gas tax and several other federal transportation-related taxes are the basis for federal transportation funds. The newest federal transportation act enacted in 2005 is called SAFETEA-LU (Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users).

The Tacoma Narrows bridge in 1940

In addition to highway construction, SAFETEA-LU will provide funding for interstate maintenance, border crossing initiatives, transportation community and system preservation, real-time management information, projects of national and regional significance, national corridor infrastructure projects, truck parking facilities, roadway and work zone safety improvements, and other transportation improvements such as Safe Routes to Schools.

Some benefits from prior transportation funding will be lost without WSDOT's work to protect the state system from the potential impacts of land use and development. The department reviews proposed land use changes and developments and works through local governments to reduce and mitigate adverse impacts on state transportation assets. Mitigation funding obtained through local government, is extremely small in relation to other sources. However, WSDOT's participation in development and land use reviews is critical to preserving the benefits of prior investments for the traveling public.

2006 Under Construction

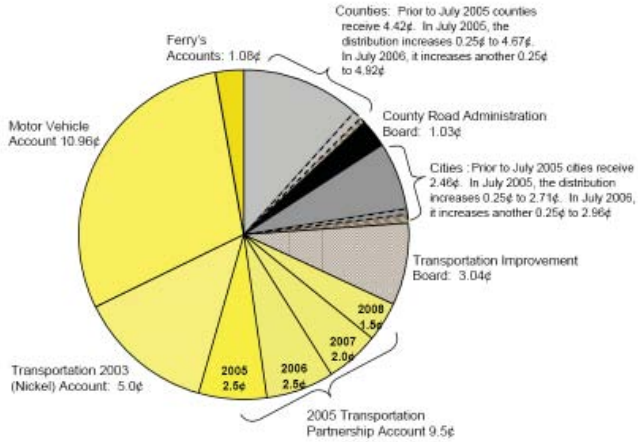
When all the new revenues are in place, how will the state's total gas tax amounts be distributed?
Collected at the state level, the gas tax is distributed by statutory formula. The gas tax is protected by the 18th Amendment of the State Constitution and can only be used for highway purposes (state ferries are considered highways).

Cities and counties receive a statutory distribution of the gas tax. The 2005 Funding Package provides an additional distribution to local governments. Cites and counties will each receive a quarter of a cent from the first 3¢ increase in 2005, and another quarter of a cent from the second increase in 2006 (totaling ½¢ for each). Like the state, cities and counties must use these funds for highway purposes.

WSDOT receives the remaining 2½¢ from the 2005 and 2006 increases, 2¢ from the 2007 increase, and 1½¢ from the 2008 increase (totaling 8½¢). The chart displays the new statutory distribution of the gas tax through 2008.

Figure III-7

Statutory Distribution of the 37.5¢ Gas Tax 2008
(31¢ in 2005, 34¢ in 2006, 36¢ in 2007 and 37.5¢ in 2008)

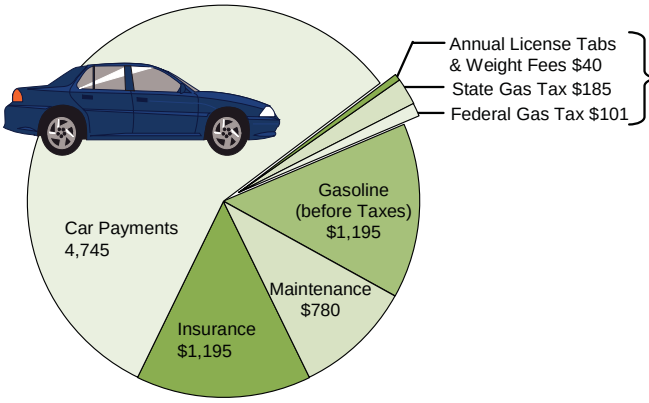


Source: WSDOT Financial Planning and Economic Analysis Office

Figure III-8

What does it typically cost for us to travel by car and where does the money go?

Average expenditures for traveling in a typical passenger car in Washington State by major category



Annual transportation tax and fee payments attributable to a car driven 12,000 miles per year in the last 12 months

State Gas Tax 34¢/gal	$185.47
Federal Gas Tax 18.4¢/gal	100.92
State License Tabs Fee/year	40.00
Total	$326.39*

* $20 tab fee goes to the State Patrol and aproximately 35% of the gas tax goes to local governments.

Note: Local option taxes for local transportation projects may exist over and above those listed.

Distribution of the $326 in taxes and fees for a typical car

State Gas Tax to Cities and Counties for Roads	$66.06
State License Tab Fees to the Washington State Patrol	21.12
State Gas Tax and License Tab Fees to WSDOT*	133.23
Federal Gas Tax Returns to the State for Federal Highway Programs**	105.98
Total Funds Distributed	$326.39

* The legistature appropriates some of these state funds to other agencies including; DOL, State Parks, etc
** Federal Highway Programs include monies for Local Governments as well as for the State.

The **$133** WSDOT retains of the state gas tax and license tab fees maintains the state highway system, pays bond debt service on current, past and future capital projects and more.

•Based on the average annual cost for fuel for Washington State in the last 12 months ($2.19/gal + 28¢ + 3¢ + 3¢ = $2.53/gal)
Provided by the Energy Information Administration. www.eia.doe.gov

Source: WSDOT Financial Planning and Economic Analysis Office

Figure III-9

Where does the gas tax go today?

34¢ **per gallon** Washington State gas tax rate as of July 1, 2006*

- 6¢ Goes toward **274 specific transportation projects statewide** (2005 Transportation Partnership Projects)

MAKING EVERY DOLLAR COUNT.

28¢

- 5¢ Goes to **160 specific transportation projects statewide** (2003 Nickel Package projects)

IT'S YOUR NICKEL. WATCH IT WORK.

23¢

- 11½¢ Goes to **cities and counties** for local roads and county ferry operations

12¢

- 4¢ Goes to pay off **bond debt** that funded past highway projects

8¢

- 4¢ Goes to **maintenance and operation** of state highways

4¢ is left for state highway **preservation, safety improvements**, and **congestion relief** projects.

How much will the new gas tax add-ons cost you?

Annual Cost of the 4 Year Phase-in of the New Gas Tax (12,000 miles/year)				
Miles per gallon	July 2005 3¢ Increase	July 2006 additional 3¢ increase (total 6¢)	July 2007 additional 2¢ increase (total 8¢)	July 2008 additional 1½¢ increase (total 9½¢)
10	$36	$72	$96	$114
20	$18	$36	$48	$57
30	$12	$24	$32	$38

Source: WSDOT

* As of WTP printing, $0.34 is the current state gas tax.

WSDOT Uses of Funds

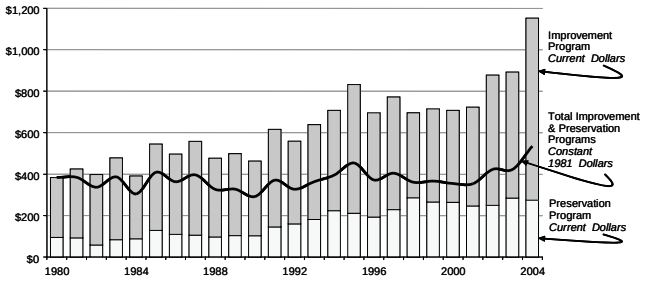
Highways and Ferries (18th Amendment Protected Funds)
Funding for all transportation systems is viewed as either a capital investment use or an operating use. Highways and ferries use funding for both purposes: capital uses include new projects or preservation of existing facilities and operations include maintenance, management and support, planning, data analysis, and research.

Operating Uses
Maintenance is the largest component of the operating budget. For the 2005-2007 biennium, $353 million is budgeted for highway maintenance and $376 million for ferry maintenance. State tax revenues, federal funds, and local government funds pay for operating costs. Ferry fare revenue is used exclusively for ferry operations and maintenance and currently covers approximately 70 percent of the costs.

Capital Uses
Highway capital program funding is comprised of a mix of state tax revenues, federal funds, and local government funds and bond proceeds.

Bonding is a significant funding component of the capital program. Both the 2003 and the 2005 transportation packages specified specific highway and ferry capital projects to be paid for with a mix of cash and bond proceeds. With the passage of these two funding packages WSDOT's construction program is now one of the largest in the country.

Figure III-10
Preservation and Improvements Investment
Dollars in millions



Source: WSDOT Financial and Economic Analysis Office

The two primary components of the capital program are the improvement program and the preservation program. The chart above shows the investment ratio between the improvement and preservation programs over time. In 1980 preservation was approximately 25 percent of the improvement and preservation budget. By 1998 preservation of the existing system had increased to 41 percent of the budget. With the passage of the Nickel gas tax (2003) and the start of the capital construction projects associated with the tax increase, the ratio returned the preservation program to 25 percent of the budget in 2004.

Other Sources and Uses—Multimodal Projects (non-restricted funds)
Multimodal projects generally are non-highway transportation projects and can include rail, aviation, multimodal ferry terminals, and public transportation. (Because funds are non-restricted, use of these funds can include highways.) Funding for these types of projects comes from the rental car tax, the 0.3 percent sales tax on vehicle sales, vehicle weight fees, and certain license fees. These taxes and fees are combined with federal and local funds, as well as some bonding, to provide the base for multimodal project funding.

Operating Uses—Multimodal Projects
Grants to public transportation districts and for rail operations are the biggest portion of the multimodal operating budget. The grant program for public transportation is administered by WSDOT; hence it is an operating cost in WSDOT's budget even though ultimately the funds are often used for capital expenditures by the individual public transportation districts.

Capital Uses—Multimodal Projects
Under the current budget, the major components of the capital program are Washington State Ferry terminal construction, rail capital construction, and funds to local programs. General obligation bonds will continue to be sold to support the construction of the Mukilteo Ferry Terminal and the rail capital program.

Aviation Division—Sources and Uses
Funding for pavement projects, signage, lighting and other facility maintenance and improvements at 139 public use, general aviation airports comes primarily from the tax on general aviation fuel. Funds are distributed in the form of grants (Airport Aid Grant Program) and leverage federal aviation dollars. Currently, the ratio of state funds to federal funds is about 1 to 10. The Federal Aviation Administration (FAA) has additional funding for airports listed in the National Plan of Integrated Airport Systems (NPIAS). Washington State currently has 67 NPIAS-listed airports, which receive $150,000 per year under the current Vision 100 Non-Primary Entitlement Program.

Local Roads and Streets—Sources and Uses

Funding for local roads and streets, public transit districts, and ports plays a crucial role in Washington State's transportation system. The following section describes the sources available and uses for these funds as they currently exist.

Revenues from local governments play an important role in transportation finance. General funds and property taxes have traditionally been the primary local revenues supporting transportation. However, since enactment of Initiative 747 in 2001, property tax revenue growth is limited to one percent annually without action by the county council or board of county commissioners. In cities, these funds are not reserved exclusively for transportation purposes and, therefore, must compete for other city priorities, such as public health and safety. In addition, increased pressure to produce revenue for transportation spending and for leveraging ever scarcer federal, state, and local funds has caused local governments to turn to such revenues as special assessments, development fees, and local highway user revenue. Local debt initiatives have also seen greater use.

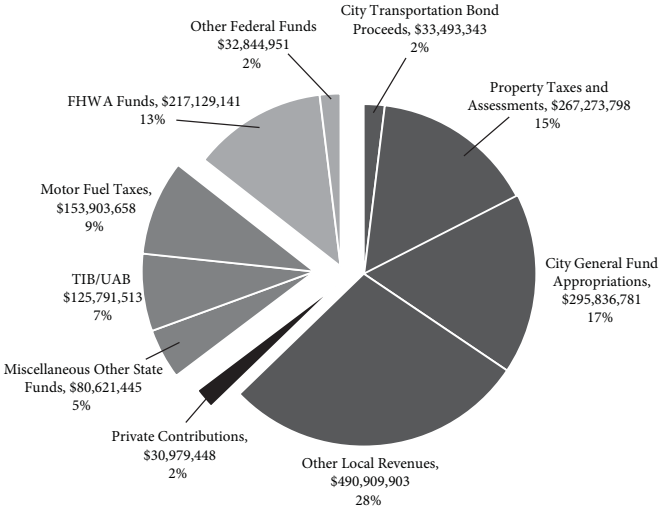
When a state highway travels through a city it may serve as the main street of that community. State routes through counties serve an important role as regional arterials in most cases. Improvements to these state highway segments bring multiple benefits to cities and counties. Conversely, cities make transportation investments on state highways within city limits, benefiting the statewide system.

Cities—Sources of Funds

While gas tax receipts are a significant portion of state transportation funding, the gas tax accounts for only 16 percent of transportation funding for cities. Cities use a mix of taxes and fees, along with state and federal funds and bond proceeds to fund transportation.

Figure III-11

Total Transportation Funding - Cities, 2004-2005
$1.730 billion



Source: WSDOT Financial Planning & Economic Analysis Office

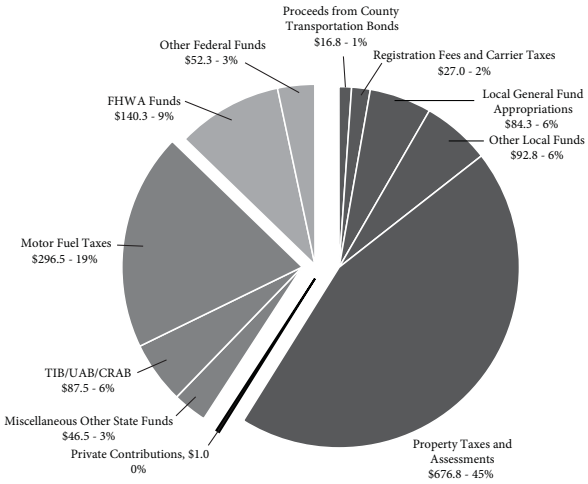
The recent Transportation Partnership Act resulted in an increase in the distribution of the gas tax to cities of approximately $16 million annually. This revenue is distributed among 281 cities. In addition, cities are eligible for grant funding. Combining the new gas tax distribution and grant programs is expected to result in a 2 to 5 percent increase in new transportation funds for cities.

Counties—Sources of Funds

The gas tax is a more significant source of funds for counties than for cities. The gas tax provides approximately 25 percent of transportation funding for counties. Property taxes make up the largest contribution at 45 percent. Bonding is not a significant transportation funding component for most counties.

Figure III-12

Total Transportation Funding - Counties, 2004 - 2005
$1.522 billion



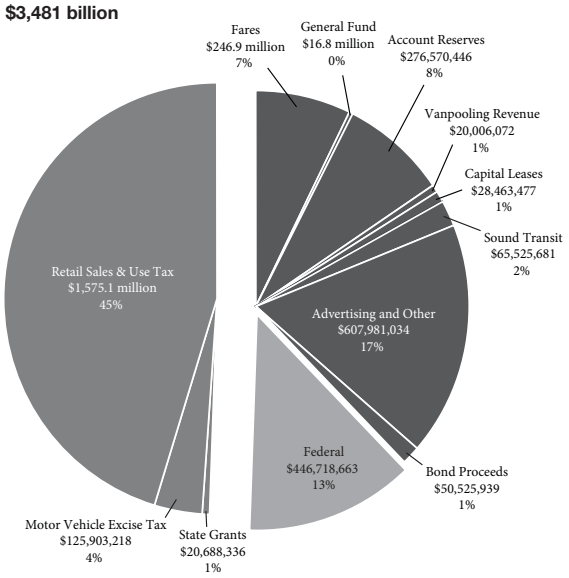
Source: WSDOT Financial & Economic Analysis Office

The recent Transportation Partnership Act resulted in an increase in the distribution of the gas tax to counties of approximately $16 million annually. This revenue is distributed among 39 counties. In addition, counties are eligible for grant funding. Combining the new gas tax distribution and grant programs is expected to result in a 2 to 5 percent increase in new transportation funds for counties.

Public Transit—Sources of Funds

The 28 transit districts in the state each have the authority to impose (with voter approval) an additional local sales tax. This locally-imposed sales tax is the major revenue source for transit districts. These tax revenues are combined with fare box revenues, federal funds, state grants, and a mix of various local funds to form the basis for the operating and capital public transit budget. State grants are not a significant component for either the operating or capital budgets of transit districts.

Figure III-13
Total Public Transit District Funds, 2004-2005
$3,481 billion

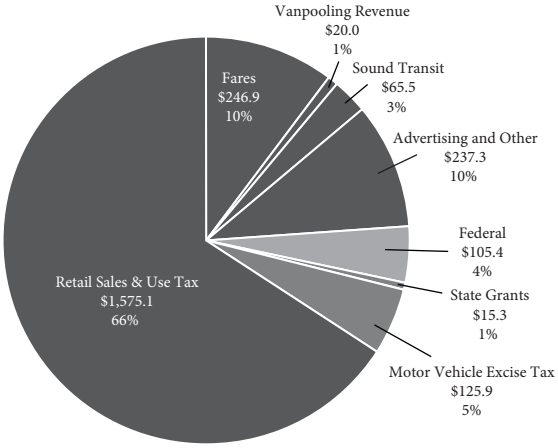


Source: WSDOT Public Transportation and Rail Division

Public Transit Operating Uses

Unlike the state and cities and counties, the operating budget for public transit is the more significant budget. sixty-six percent of the operating budget comes from the locally-imposed sales tax component. Sales tax for transit varies for each transit district and ranges from 0.1 percent–0.8 percent. Fares contribute another 10 percent and advertising and other fees make up an additional 14 percent. The operating budget balance is a mix of federal funds, grants, and distributions from other agencies.

Figure III-14
Total Public Transit Operating Budget, 2004 - 2005
$2,391 Billion

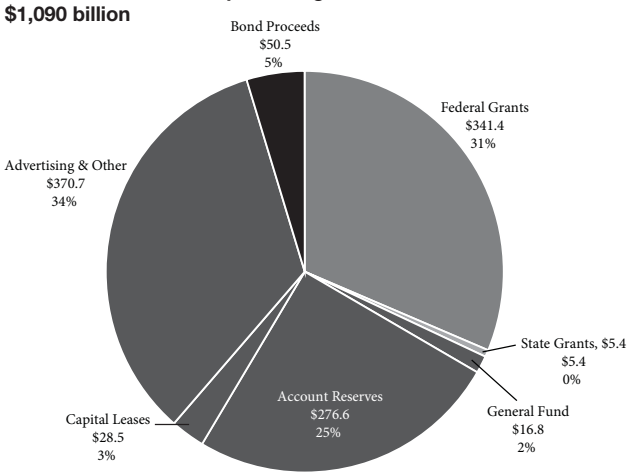


Source: WSDOT Public Transportation and Rail Division

Public Transit Capital Uses

The capital budget is the smaller component of the public transit budget. Federal funds make up 31 percent of the funds, while advertising, interest, and other miscellaneous fees and taxes make up 64 percent of the capital budget. Bond proceeds are not a significant component of the capital budget.

Figure III-15
Total Public Transit Capital Budget 2004 - 2005
$1,090 billion



Source: WSDOT Public Transportation and Rail Division

Options for the Future

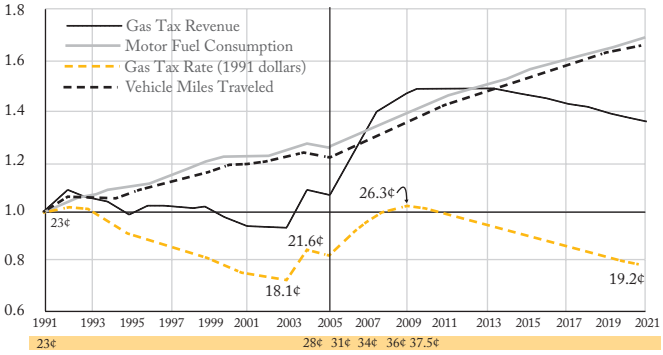
Assessing the Current Situation

Traditional funding sources have not kept up with the ever-increasing demands placed on publicly-financed transportation systems. These traditional revenue streams cannot substantially improve or expand transportation systems. For example, the tax on gas has been increased from one cent per gallon in 1921 to 34 cents per gallon in 2006. Gas tax increases were necessitated by many factors, most prominently, the effects of inflation diminishing the purchasing power of revenues collected, increases in vehicle fuel efficiency, increases in the size, scope, complexity, and diversity of transportation systems, and ever-increasing infrastructure costs from such things as stricter environmental regulations and increasing materials and land acquisition costs. Since these historical pressures are not likely to diminish in future years, traditional funding sources intended to address transportation system obligations will either need to continue increasing or new sources of revenue will be needed.

Because the fuel tax is levied on a volume basis rather than on value, changes in consumption patterns can affect receipts regardless of the price of the gasoline. If price increases reduce demand for fuel, tax receipts fall even if the total value of the gas sold goes up. The opposite may also occur.

Figure III-16

Growth Rates Compared: Vehicle Miles Traveled, Gas Tax and Gas Tax Rates



Historical, Current and Future Look at Gas Tax Revenue Components (in millions)

	1991	2005(Estimated)	2021(Projected)
Vehicle Miles Traveled	45,500	55,100	75,500
Fuel Gallons of Consumption	2,600	3,200	4,400
Gas Tax Revenue (1991 dollars)	$574	$681	$836

Sources: WSDOT Financial Planning and Economic Analysis

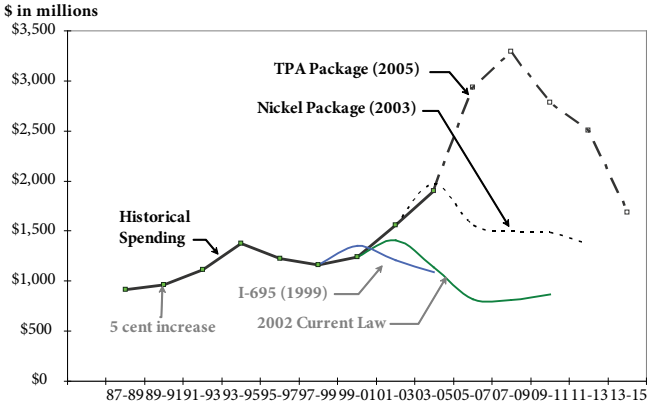
The Growth Rates Compared chart shows how inflation affects the ability to fund transportation systems. For example, looking at the gas tax rate from 1991 (when the gas tax was raised to 23 cents per gallon) out to 2021, the effect of inflation is clearly evident. The value (in 1991 dollars) of 23 cents dips to a low of 18.1 cents in 2003, rises to 21.6 cents when the Nickel tax is added in 2004, then starts to decline again until 2005 when the new tax is implemented. The value of this revenue is projected to continue to rise through 2009 when it will reach a high of 26.3 cents in constant 1991 dollars. The value will then start to decline again, reaching a projected 1991 purchasing power value of 19.2 cents in 2021. Revenues from the gas tax (expressed in 1991 purchasing power) follow the same trend line. However, motor vehicle fuel consumption and travel are projected to grow with population in the state.

It is evident that this approach to funding transportation systems has not kept pace with overall transportation needs. Specifically, non-highway transportation system needs (such as transit, rail, bike, pedestrian, marine shipping, and pipelines), which have the potential to increase system efficiencies and thus benefit the economy of the state and quality of life for citizens, cannot receive funding from 18th Amendment funding sources unless it can be demonstrated that doing so would benefit highways. As highway transportation systems become more and more congested, many of the most affordable and cost-effective gains in system efficiencies will need to come from new funding sources.

A further problem facing the transportation system is that of stability, or lack of stability in funding sources. Unpredictability in funding and delays in projects and programs translate into highly inefficient system management. Instability also frustrates citizens, tax payers, and users of the system who expect it to keep up with demand and support their businesses and communities.

The chart below illustrates the funding variability over time for just highway capital investments.

Figure III-17
Highway Capital Program Trends
Historical and Projected dollars for 1987 - 2015
$ in millions



Source: WSDOT Systems Analysis and Program Development

Similar charts could also be drawn for other components of the statewide transportation system, such as the variability of funding for transit services. Local jurisdictions, transit agencies, and others have difficulty managing and planning for their facilities when funding is unpredictable and buying power diminishes.

Innovative Funding

New Funding Sources

The 2005 Legislature gave the Transportation Commission the task of conducting a statewide tolling study to consider how tolling could be used in the future, both to manage traffic on the highway system and to understand revenue-generating potential. The results of the study include:

- Potential tolling opportunities in the near-, mid-, and long-term
- Traffic analysis—how tolls will affect roadway use
- Fiscal analysis—assessing fiscal opportunities and strategies
- Technology analysis—technologies for facilities, vehicles, and financial systems
- Assessment of social and environmental impacts
- Legal and regulatory constraints
- Public attitudes—including current experiences elsewhere in the country
- Administrative arrangements—implementing and managing tolled facilities
- Project evaluation and selection—a screening process for how and where to apply tolls

WSDOT's Transportation Innovative Partnerships Program, currently being developed with Transportation Commission oversight, may result in new ways to make needed investments in the transportation system with both government and private partners.

Regional funding of projects and programs may also be more of an option in the future. The Regional Transportation Investment District (RTID) is a joint effort of King, Pierce, and Snohomish counties to identify specific road, transit, and light rail improvement projects of regional significance in the three counties. RTID also has the authority to propose ways to fund transportation projects in the region through local taxes and fees (as approved by voters). Recent (2006) legislation on transportation governance in the region will affect how RTID and Sound Transit together can pursue needed transportation improvements together.

Other revenue sources that the legislature and others should consider include:

- Implementing user fees based on a vehicle's miles of travel on the highway (sometimes referred to as an odometer fee)
- Connecting some existing taxes (such as the gas tax) to an inflation rate
- Advertising, such as transit agencies use in and on buses, bus shelters, transit stations, and other transfer points. However, revenues generated from such a source may be insufficient to cover the cost of administering or regulating an advertising program
- Special sales tax on vehicle parts, accessories, and services
- Sales tax on fuels
- Tolls and pricing strategies
- General sales tax increase
- Regional funding options
- Special assessments or taxes as part of a community facilities district
- Development impact fees
- Tax increment revenues
- Private sector contributions

These kinds of options, while few in number, could be expanded. They will all need further in-depth analysis to determine their usefulness and viability. Any funding source for the future must contribute to the significant needs of the transportation system and must assist in maintaining a level of stability in funding.

In 2005, the legislature provided funding for the Joint Transportation Committee to conduct an analysis of the long-term viability of the state's transportation financing methods and sources. Washington State currently levies a 31 cents per gallon tax on motor vehicle fuel, including gasoline and diesel. The fuel tax and related bonding provide approximately 57 percent of the revenues available for the 2005-2007 State Transportation Budget and varying percentages of local government transportation budgets.

The state motor fuel tax is not indexed to inflation, thus requiring periodic increases in the tax rate by the legislature to maintain real revenues. Resistance to increasing the tax rate resulted in the tax rate staying the same for 13 years, from 1991 to 2003, thus causing revenues in real dollars to decline significantly. Further, technological advances in vehicles are increasing fuel mileage and new vehicles are being developed to operate on alternative energy sources that do not require motor fuel. Additionally, future supplies of oil are uncertain, both from a supply and cost standpoint. All of these factors bring into question the viability of the fuel tax to provide sufficient revenues needed to improve, maintain, and operate the transportation system in the future.

- It should be recognized that projected transportation funds have not yet been collected and that actual collections may not meet current expectations.
- Actual receipts of transportation taxes (such as gas taxes, licenses, permits, and fees) may be lower than current projections.
- Federal receipts could fall short of projections.
- Ferry riders may be more sensitive to an increase in ferry fares than is currently predicted, causing a reduction in fare box collections.
- Revenues can be impacted by changes in the law, either through legislative action or through the initiative process.
- Project costs will increase due to cost escalation of petroleum based products.
- Higher than expected interest rates for bond sales may cause increases to debt service obligations.

The Joint Transportation Committee's study findings and recommendations will be used to inform decision makers of the viability of the motor fuel tax and alternative approaches for financing and operating transportation systems in the future.
The study will also propose an approach for the transition to those alternatives. The principle objective of this study is to provide steps that Washington State should take in the short- and intermediate- term to maintain a stable finance system and to develop and utilize alternative transportation finance tools for the long-term. This should include steps to position itself to take best advantage of federal transportation financing opportunities and private initiatives. The goal is to have tangible, specific options and recommendations for the legislature to consider and implement for future transportation funding. The final report is due to the legislature by January 1, 2007.

Challenges to Addressing Emerging Opportunities

During the public outreach process the topic of partnerships and the flexibility of funding for new projects was raised. As unique partnership opportunities between the state, communities, and businesses arise, many challenges present themselves in the form of funding limitations. As the current budget is structured, funding is required to be expended according to defined criteria and specific projects. This leaves minimal flexibility for discretionary use when a partnership opportunity emerges that has not been budgeted.

Transportation Policy Studies and Plans

Statewide Transportation Studies

Many planning efforts are underway around the state that have influenced and have been influenced by the Washington Transportation Plan. In addition, various studies have influenced the plan, just as future studies will affect future transportation planning in the future. Given that these plans and studies occur at different times, it is expected that their relationships to each other will continue to evolve and help guide transportation policy.

This section of the WTP highlights some of the more recent policy and study efforts that are likely to influence transportation policy in the near future. In addition, routine updates to modal plans, regional transportation plans, and tribal plans will occur during the twenty-year period of this plan. Each study or plan connects and relates to the WTP; in many ways each contributing to the shaping of the others.

Washington Transportation Commission Tolling Study—September 19, 2006

The purpose of the tolling study is to help the state make policy-level decisions regarding if, where, when, and how to toll, by providing a practical, step-by-step tolling strategy for Washington State. Although the state had numerous toll facilities in the past, with the exception of the Washington State Ferries, there are none currently in operation. Two facilities, the Tacoma Narrows Bridge and the SR 167 HOT Lanes Pilot Project, are authorized as toll facilities and are currently under construction. WSDOT and the Puget Sound Regional Council have been reviewing 21 tolling proposals – each in various stages of study and demonstration.

This comprehensive tolling study outlines a broad strategy for advancing tolling in Washington. If the legislature accepts these recommendations, tolling and pricing transportation systems will become a more common travel experience.

Summary of study tasks

- Potential tolling opportunities in the near- mid- and long-term
- Traffic analysis; how tolls will affect roadway use
- Fiscal analysis; assessing fiscal opportunities and strategies
- Technology analysis; technologies for facilities, vehicles, and financial systems
- Assessment of social and environmental impacts
- Legal and regulatory constraints
- Public attitudes, including current experiences elsewhere in the country
- Administrative arrangements; implementing and managing tolled facilities
- Project evaluation and selection; how projects should be considered and implemented

The study analyzed the following specific topics:

- The possibilities for a more uniform and equitable distribution of the financial impact on those paying tolls and explore options for reducing the outstanding debt on the Tacoma Narrows Bridge.
- The use of value pricing by the Regional Transportation Improvement District to pay for needed transportation facilities within the districts.
- The potential for tolling SR 704 (Cross-Base Highway).

The study is due to the legislature by December 1, 2006.

Tolling Study Recommended Policies

1. Overall Direction
Washington should use tolling to encourage effective use of the transportation system and provide a supplementary source of transportation funding. That policy should evolve over time.

Short-Term (within 10 years)
- Accelerate implementation of high-cost/high-need projects, such as SR 520, the Columbia River Crossing at Vancouver, and Snoqualmie Pass.
- Use price differentials as appropriate to make the most effective use of the system.
- Convert HOV lanes to HOV/tolled express lanes to optimize performance and maintain free-flowing service for transit, vanpools, and carpools.

Medium-Term (within 20 years)
- Consider the potential for building additional capacity as tolled express lanes through more extensive study of long-term costs and benefits.
- Consider broader use of tolling to optimize system performance.

Long-Term (beyond 20 years)
Consider more extensive use of tolls as the ability to build more capacity is constrained, traditional revenue sources decline, and technology advances.

2. When to use Tolling

Tolling should be used when it can be demonstrated to:
- Contribute to a significant portion of the cost of a project that cannot be funded solely with existing sources; and/or
- Optimize system performance, such as with an HOV/Tolled Express lane.

Such tolling should in all cases:
- Be fairly and equitably applied in the context of the statewide transportation system.
- Not have significant adverse impacts through the diversion of traffic to other routes.

3. Use of Toll Revenue
Toll revenue should only be used to improve, preserve, or operate the transportation system.

4. Setting Toll Rates
Toll rates, which may include variable pricing, should be set to optimize system performance, recognizing necessary tradeoffs to generate revenue.

5. Duration of Toll Collection
Since transportation infrastructure projects have costs and benefits that extend well beyond those paid for by initial construction funding, tolls should remain in place to fund additional capacity, capital rehabilitation, maintenance, and operations, and to optimize performance of the system.

6. State Toll Authority to Set Toll Policy
Following broad statutory direction, the Washington State Transportation Commission, as the designated State Tolling Authority, should develop policies and criteria for selecting the parts of the transportation system to be tolled; propose the study of potential toll facilities; recommend toll deployments to the Governor and legislature; and set toll rates. The Authority should engage in robust and continuous coordination continuously with state-authorized regional or multi-state entities that may propose toll facilities to the Authority.

7. WSDOT to Implement Policy
The Washington State Department of Transportation should be responsible for planning, development, operations, and administration of toll projects and toll operations within the state.

8. Toll Collection Systems
Toll collection systems in the State of Washington should be simple, unified, and interoperable, and avoid attended tollbooths, wherever possible.

Washington Transportation Commission Rail Capacity and System Needs Study

Insufficient rail capacity within the State of Washington impacts the ability to improve passenger rail service and may result in a loss of business to the state. Therefore, the Legislature has asked the Washington State Transportation Commission to assess the rail freight and rail passenger infrastructure needs in this state, review the state's current powers, authorities, and interests in freight and passenger rail and recommend policies for state participation and ownership in rail infrastructure and service delivery, including planning and governance issues. The policy recommendations, including a methodology to evaluate benefits and impacts, will be submitted to the Legislature for consideration in the 2007 Legislative session.

Underlying principle of study

It is in the State's interest to increase and improve railroad transportation availability for both passenger and freight movements. The State should pursue a variety of options including focused communication with carriers, adjustments in permitting, and financial investment where warranted. To maximize state investments, state dollars should be leveraged with private and/or other public partner funding. That kind of leveraged financing can make larger projects more feasible and ensure the State has the local or private support necessary for ultimate success.

Preliminary Findings

Freight demand for use of the Washington State rail system is growing. Businesses within the state require more rail capacity, but much of the growth is driven by shippers and receivers outside of the state. Overall, the railroad industry is not keeping pace with demand.

Class I railroads are changing their business model to more of a "hook and haul" system which is available to fewer low volume individual shippers and reduces access by short line railroads to the main lines.

Short line railroads touch a large percentage of rail freight (30 percent of the Union Pacific traffic) and will continue to play an important role serving carload traffic in Washington State.Yet some short line railroads in Washington State will continue to have financial difficulties that will affect service quality and availability. The impacts will be most noticeable in the agricultural sector.

International trade growth will continue to dominate growth in rail traffic. Rail connections will be critical to port competitiveness. The future competitiveness of Washington's international trade ports will require resolution of a mix of main line capacity, access/egress, and intermodal terminal capacity issues. Solutions will require partnerships among the ports, the state, the Class I railroads, and local governments and may require the use of new financing mechanisms.

Addressing capacity issues alone may not be sufficient to ensure that state rail system is responsive to the needs of traditional carload shippers and receivers within Washington State. Carload shippers which generate small volumes of cargo are already finding that the BNSF and UP shift to longer trains and "hook and haul" strategies often results in service that is harder to obtain, more costly, and of lower quality—unless transload facilities are readily available.

Passenger rail ridership in Washington State is effectively capped by current capacity, bottlenecks, high freight volume and associated limitations on service frequency. Without changes to the system passenger rail will continue to be disadvantaged in competing for access to capacity on a strained rail network. The planned long-range investments in the passenger rail system have potential to improve overall rail capacity (both passenger and freight) in the Washington State rail system, but they need to be more clearly linked to a system-level strategy.

Emerging Policies and Processes:

- The benefit evaluation processes used by other states and organizations offer some guidance for Washington to evaluate benefits of state investment.
- Every project, package, or policy under consideration must be reviewed through the lens of each of the different key stakeholder groups.
- The Rail Study will recommend a benefit/impact methodology that provides a standard process and clear decisional criteria to comprehensively evaluate quantitative and qualitative public benefits to the State.
- Case studies will refine and test the methodology presented to decide if it is the correct approach to take.

Washington State Ferry System Finance Study

The 2006 Legislature instructed the Joint Transportation Committee to conduct a finance study of the Washington State Ferry system to facilitate policy discussions and decisions.

The study is expected to:
- Improve the predictability of cash flows
- Increase transparency
- Assess the organizational structure
- Verify that the Washington State Ferry system is operating at maximum efficiency
- Improve labor relations

The committee shall report the study results to the House of Representatives and Senate transportation committees by January 1, 2007.

The study must include, at a minimum, a review and evaluation of the ferry system's financial plan, including current assumptions and past studies, in the following areas:
- Operating program, including ridership, revenue, and cost forecasts, and the accuracy of those forecasts; and
- Capital program, including project scoping, prioritization and cost estimating, project changes including legislative input regarding significant project changes, and performance measures.

Washington State Long-Term Air Transportation Study

In 2005, the Governor signed into law Engrossed Substitute Senate Bill (ESSB) 5121, which authorizes a long-term air transportation and air cargo planning study for general aviation and commercial airports statewide. The legislation is also known as the Washington State Long-Term Air Transportation Study (LATS).

The purpose of LATS is to understand the current capacity of aviation facilities and what will be needed to meet future demand for air transportation. The bill requires WSDOT Aviation to conduct an airport capacity/facility assessment in Phase I and a demand/market analysis in Phase II.

In the final phase the Governor will appoint an aviation planning council. The council will review the data and make recommendations to the Governor, legislature, and Transportation Commission on how to best meet statewide commercial and general aviation capacity needs. The project will be funded primarily through Federal Aviation Administration (FAA) grants.

The statewide assessment, Phase I, is required to be submitted to the Governor, appropriate standing committees of the legislature, the Transportation Commission, and regional transportation planning organizations by July 1, 2006.

The statewide airport capacity and facilities market analysis, Phase II, is required to be submitted to the Governor, appropriate standing committees of the legislature, the Transportation Commission, and regional transportation planning organizations by July 1, 2007. High-speed passenger transportation facilities assessment is also required to be completed by July 1, 2007. The Airport Planning Council report and recommendations, Phase III is required to be completed by July 1, 2009.

Urban Areas Congestion Relief Analysis

The 2003 Legislature asked WSDOT to conduct a congestion relief analysis for the urban areas of Seattle, Spokane, and Vancouver, Washington. They required the study to include proposals to alleviate congestion consistent with population and land use expectations under the Growth Management Act and include measurements of all modes of transportation.

The analysis examined a variety of congestion relief scenarios. Its purpose was to answer the questions, "What would it take to significantly reduce expected future traffic delay due to congestion in the state's major urban areas?" and "What are the associated costs and impacts?" The study was based on adopted regional growth management plans as required by the Growth Management Act of 1990.

Primary Focus of the Analysis

1. Existing system performance—baseline condition
2. The cost of doing only the funded projects by 2025
3. The price of meeting "unconstrained demand" by 2025
4. The transit/travel demand management (TDM) pricing effect on congestion relief including various highway approaches to congestion relief (answering the following questions):
    - With optimum TDM, transit and pricing strategies in place, how much highway improvement is needed to achieve a particular level of congestion relief?
    - How much will it cost?
    - What impacts will it have?
    - What benefits will it bring?

Primary findings of the Analysis

As the urban areas grow, congestion will grow too. A computer analysis showed that, without a substantial increase in transportation capacity or significant changes in travel behavior, by 2025 total travel delay could increase from three to five times current levels in the three major urban areas.

Large-scale roadway expansion could reduce travel delay on highways. However, future population and job growth would overwhelm the ability of the most extensive capacity expansion scenarios tested in this study to reduce total regional delay to below today's levels. Furthermore, due to man-made and/or natural environmental constraints, it is estimated that the cost to reduce travel delay in 2025 to below today's level could exceed $100 billion dollars in the Central Puget Sound region alone.

Major transit expansion in the three urban areas would provide an alternative to single-occupancy vehicles for people traveling congested corridors during peak periods. However, according to computer modeling, transit expansion alone is not shown to be effective in reducing total delay at the system level. The lack of supportive land use densities and the difficulty in serving non-commute travel limits the ability of transit to serve trips that are now customarily made by automobile.

Combining roadway and transit improvements to match the unique characteristics of particular corridors is shown to provide the potential for more practical congestion relief when compared to single strategies. The monetary cost for the combined improvements would be cheaper than the roadway improvement alone in order to achieve the same level of travel delay reduction.

Region-wide value pricing (roadway toll rates vary according to demand levels) is indicated to be very effective in reducing total delay. Roadway tolling helps to dampen travel demand, shorten trips, shift travel to non-peak periods, and encourage use of other travel options (transit, carpooling, biking, and walking) that are not subject to toll charges. Value pricing helps to maximize the efficiency of our transportation system. Value pricing is consistent with the way almost all other utility and transportation services are provided in market-based economies (for example, water, electricity, air travel, and telecommunications services). As with the use of prices to establish access to services in other utility areas, special provisions may be necessary to ensure adequate access by those unable to pay market prices for indispensable services. The special requirements need to be carefully considered.

Value pricing in the form of High Occupancy Toll (HOT) lanes is found to reduce corridor delay and make the corridor operate more efficiently. HOT lanes make corridor travel time more reliable, which benefits everyone, including occasional users.

The computer models suggest that a strategic combination of transportation supply and demand management will be effective in fighting the growing demand and capacity imbalance. When value pricing is added to a mix of highway and transit capacity improvements, the model analysis shows a large increase in benefits for a small additional cost. This combination of capacity improvements and value pricing should be given much greater attention as an implementation strategy.

Strategic Highway Safety Plan

A state-developed Strategic Highway Safety Plan (SHSP) is a new federal requirement of SAFETEA-LU, 23 USC 148. The SHSP will meet those federal requirements for Washington State.

The purpose of the Strategic Highway Safety Plan is to identify Washington State's traffic safety needs and guide investment decisions to achieve significant reductions in traffic fatalities and serious injuries. In developing this plan, Washington State seeks to build traffic safety partnerships throughout the state in order to align and leverage our resources to address Washington's traffic safety challenges.

Closely following the successful model adopted in the AASHTO Strategic Highway Safety Plan, Washington State's SHSP is strongly data driven. The AASHTO SHSP model was developed in cooperation with the Federal Highway Administration (FHWA), The National Highway Traffic Safety Administration (NHTSA), and the Transportation Research Board (TRB). At the core of Washington State's SHSP are traffic safety emphasis areas and proven strategies and countermeasures that target problems unique to Washington roadways. These emphasis areas and proven strategies are organized under the following five basic categories: Driver and Occupant Behaviors; Other Special Users; Roadways; Emergency Medical Services; and Traffic Information Systems.

The SHSP provides a comprehensive framework of specific goals, objectives, and strategies for reducing traffic fatalities and serious injuries.

> *"Like the Canoe Journey, transportation development involves years of coordinated effort charting a journey to destinations where high priority transportation projects become a reality, growing our communities into a better place to live."*
>
> ***Jim Peters,*** *Chairman*
> **Squaxin Island Tribe**
> **Tribal/State Transportation Conference**
> **October 17, 2005**

Statewide Transportation System Plans

The WTP is a multimodal transportation plan. The various transportation system plans developed by WSDOT and partner agencies directly connect with the WTP to improve statewide transportation planning and policies. The following plans are listed in alphabetical order:

Aviation System Plan
Airline passengers, mail and parcel services, emergency services, agriculture, and aviation-related businesses all depend on an adequate network of airports and connections to intermodal transportation services and facilities. The aviation system plan provides the framework for the preservation, enhancement, and public investment strategies of the state and federal government to meet current and future aviation needs. The plan determines the number, location, and type of aviation facilities required to adequately serve the state's aviation needs over the next 20 years.

State Statutory Authority: RCW 36.70, RCW 36.70A, RCW 47.06, RCW 47.68, RCW 47.80

Bicycle Transportation and Pedestrian Walkways Plan
Bicycling and walking are two modes that signify a dynamic transportation system. They not only provide environmental and health benefits, but also provide a strategy to reduce traffic congestion and have a positive economic impact across the state. The goals of the plan are to improve bicycle and pedestrian safety while increasing the number of people who bicycle and walk. The strategies for accomplishing these goals include: maximizing funding through partnerships; raising awareness of the needs for bicycle and pedestrian safety; and sharing information on bicycle and pedestrian issues between agencies, jurisdictions, and organizations in Washington State.

State Statutory Authority: RCW 47.06.100

Freight and Goods Transportation System Update

The Washington State Freight and Goods Transportation System (FGTS) is a classification of state highways, county roads, and city streets based on their average annual gross truck tonnage. The FGTS report is updated on a periodic basis, is data driven, and identifies the highways and roads most heavily used to move freight by truck. Projects that improve conditions for freight transportation serve as a resource for establishing project eligibility for Freight Mobility Strategic Investment Board grants, and designation as Highways of Statewide Significance, and fulfill federal reporting requirements for truck and traffic counts. In addition, the FGTS report also supports pavement upgrade planning, traffic congestion management, and other investment decisions, and allows preliminary assessment of statewide freight needs and impacts.

Last Updated: December 2005
Next Scheduled Update: 2007
State Statutory Authority: RCW 47.06.045, RCW 81.104.100

Highway System Plan

The Highway System Plan (HSP) guides WSDOT in prioritizing and budgeting for highway projects and is updated every two years. The HSP is a result of federal and state legislative action that introduced greater integrated and coordinated planning processes. Together with the WTP, the HSP assesses future transportation needs through a collaborative planning process with the goal of ensuring that the transportation system provides convenient, reliable, safe, efficient, and seamless connections and services.

State Statutory Authority: RCW 47.06.050, RCW 36.70A.70, RCW 47.80.030

Passenger Rail Plan

The Passenger Rail Plan, through multiple studies, addresses key areas, including but not limited to, ridership estimates; preliminary location and environmental analysis on new corridors; detailed station location assessments in concert with affected local jurisdictions; coordination with the air transportation commission on statewide air transportation policy and its effects on high-speed ground transportation service; and coordination with the governments of other states and provinces, when appropriate, on alignment, station location, and environmental analysis.

Last Updated: May 2006
State Statutory Authority: RCW 47.79.040

Planning Studies

Planning studies are comprehensive evaluations of specified routes conducted by WSDOT region planning offices. These studies assess highway corridors to evaluate future needs over a 20-year period. The studies identify what state system improvements are appropriate and what local system improvements are needed to keep the state system functioning. The approach to the studies varies depending upon the characteristics of the specific route. The general process for developing a planning study involves the following: define the study area, establish goals and objectives, collect data, conduct public meetings, coordinate with agencies and communities, conduct traffic analysis, and develop proposals for implementation and evaluation.

State Statutory Authority: RCW 47.06, 36.70A

Public Transportation Plan

Developed with the vision that people should be able to easily and efficiently move through congested intercity corridors using a variety of transportation options, the Public Transportation Plan guides the state in its public transportation role, describes the condition of public transportation, discusses significant issues, identifies future needs, and proposes realistic strategies and responsibilities for achieving the vision. It provides the framework for preserving the public transportation system while improving mobility for a growing population.

State Statutory Authority: RCW 47.06.110

Roadside Classification Plan
The Roadside Classification Plan provides policy and guidelines for the management of Washington State highway roadsides, including planning, design, construction, and maintenance activities. The intent of this plan is to provide a uniform framework for consistent, proactive roadside management statewide and to facilitate cost-effective restoration of roadsides. In coordination with the State Highway System Plan, it sets statewide goals and objectives for roadside management, establishes roadside character classifications, provides guidelines for roadside restoration, and advocates the use of native plants, integrated vegetation management (IVM), and a long-term approach to achieve sustainable roadsides.

Scenic Byway Corridor Management Plans
Planning studies take an in-depth look at how transportation needs to accommodate planned growth or other changes along a corridor or in an area. These studies often focus on vehicular use of roadways, but also need to take into account how people and goods can be moved better. They should include looking at transit services, use of commute trip reduction, and walking and bicycling as appropriate.

While somewhat different in purpose than a highway, route or corridor plan, Corridor Management Plans (CMPs) provide an analysis of a corridor over a 20-year planning horizon. CMPs are developed in coordination with the United States Department of Transportation and the Federal Highway Administration Scenic Byways program. These plans follow FHWA guidelines for a master planning process along a corridor, with a focus both within and outside of the highway right of way. CMPs establish community-based goals and implementation strategies along a corridor and describe how to use community resources efficiently, how to conserve intrinsic qualities of the corridor, and how to enhance its value to the community. For additional information, see the Scenic Byways map in Part IV. Chapter B.

State Statutory Authority: RCW 47.39

Sustainability Plan and Progress Report
A sustainability plan is an action plan that incorporates sustainable business practices. The governor-signed executive orders directing state government operations to apply principles of sustainability and to contribute positively to the quality of life of all citizens apply to all state agencies and their day-to-day operations.

State agencies are required by these executive orders to adopt targets and take action to use sustainable practices, phase out persistent toxic chemicals, and establish goals for sustainable operations.

The WTP recognizes that these approaches can be applied not only to state agencies, but also to private businesses and citizens of Washington State. Living and working in a more sustainable way benefits all citizens and all businesses, and contributes positively to their quality of life. Creative approaches to making transportation options available has a direct relationship to supporting sustainable practices.

Governor's Executive Order 02-03 (2002) *Sustainable Practices by State Agencies*
Governor's Executive Order 04-01 (2004) *Phase Out of Persistent Toxic Chemicals in Washington*
Governor's Executive Orders 04-06 (2004) and 05-01 (2005) *Establish Sustainability Goals for State Operations*

Washington State Ferries Long-Range Strategic Plan
The Washington State Ferries Draft Long-Range Strategic Plan guides future service and investment decisions of the Washington State Ferries through the year 2030. The primary goal of the plan is to prepare Washington State Ferries to provide ferry service that is best able to meet future customer demand. The plan guides key policy decisions in the following areas: long-term funding, role of fares in long-term funding, capital investments, and growth and service expansion. Ultimately, the plan attempts to minimize congestion delays on all routes and add service where it is needed most. See the Ferry Route map in Part IV. Chapter B. for further information

Last Updated: 1999
Next Scheduled Update: 2006
State Statutory Authority: RCW 47.06.040

Governance and Partnerships

The Washington Transportation Commission from left to right: Bob Distler, San Juan County; Elmira Forner, Vice Chair, Chelan County; Richard Ford, Chair, King County; Reema Griffith, Executive Director; Dale Stedman, Spokane County; Edward Barnes, Clark County; Dan O'Neal, Mason County; and Carol Moser, Benton County.

In 2005 and 2006, the legislature and the Governor redefined the roles and responsibilities of the Transportation Commission and the Washington State Department of Transportation. The legislature also changed how the Puget Sound region may make regional investments in transportation.

Transportation Commission Roles

The 2005 and 2006 legislatures changed the roles and responsibilities of the Washington Transportation Commission, which retained certain authority, including statewide transportation planning, bond issuance approval, serving as the state's tolling authority, and setting ferry fares. Additionally, the Commission received an expanded role as a public forum for transportation policy development.

The Commission's role in developing transportation policy was modified in a way that largely increased its role as a policy advisory body to the Governor and the legislature, with the following mandates:

- Propose policies to be adopted by the Governor and the legislature to ensure the development and maintenance of a comprehensive and balanced statewide transportation system.
- Provide coordination among federal, state, local, and regional transportation planning and programing agencies.
- Provide for public involvement in transportation planning.
- Prepare a statewide transportation plan based on existing state policies, as well as state and federal laws, while reflecting the Priorities of Government and addressing regional needs, including multimodal transportation planning.
- Conduct transportation-related studies and policy analysis as directed by the legislature and the Governor in the biennial transportation budget (refer to the tolling and rail study in the Policy Studies and Plans Chapter).
- Provide a public forum for developing transportation policies with regional transportation planning organizations, transportation stakeholders, counties, cities, and citizens.
- The commission may recommend to the Secretary of Transportation, the Governor, and the legislature, the means for obtaining appropriate citizen and professional involvement in transportation policy formulation and matters related to the powers and duties of WSDOT.
- The Commission may hold hearings and explore ways to improve the mobility of the citizens of the state.
- In addition to the monthly meeting required by statute, the Commission must convene regional forums on transportation at least every five years. The purpose of the forums is to gather citizen input on transportation.
- Every two years, the Commission will prepare a statewide multimodal transportation progress report and transportation priorities for the ensuing biennium, reporting goals, targets, and benchmarks.
- Offer policy guidance and make recommendations to the Governor and the legislature on key issue areas including:
  - Transportation financing
  - Preserving, maintaining, and operating the state transportation system
  - Transportation infrastructure needs
  - Promoting best practices for adoption and use by transportation-related agencies and programs
  - Transportation efficiencies that will improve service delivery and/or coordination

  - Improving planning and coordination among transportation agencies and providers
  - Use of intelligent transportation systems and other technology-based solutions
  - Reporting of performance against goals, targets, and benchmarks
  - Developing a 10-year investment program
- Provide oversight and make key decisions related to the implementation of the newly created Transportation Innovative Partnerships program within WSDOT.

- The Commission must review performance and outcome measures to ensure transportation system performance at local, regional, and state government levels.

New Roles for the Washington State Department of Transportation

In addition to the roles described in detail in the Laws section of the Appendix, legislation in 2005 and 2006 changed the Washington State Department of Transportation's (WSDOT) roles and responsibilities. The primary change for WSDOT is the moving of the agency to the Governor's cabinet. The Secretary of Transportation now is appointed by and serves at the pleasure of the Governor. The Secretary now proposes WSDOT's budget and authorizes departmental requested legislation. The Secretary will continue to serve as an ex officio member of the Transportation Commission.

The department now has the responsibility to determine if highway improvement projects proposed by and funded by the Community Economic Revitalization Board are appropriate. This was previously a responsibility of the Transportation Commission. Additionally, the department now has the responsibility of adopting the functional classification of highways. This was also previously the responsibility of the Transportation Commission.

> *"The coordination between the Washington Transportation Plan and our Regional Transportation Plan is critical to ensure proper prioritization and funding to maintain and improve the condition and accessibility of our city, county and state road system as we seek to maximize our agricultural and recreational economic development and safety opportunities."*
>
> **Paul Bennett, P.E.**
> Quad-County Regional Transportation Organization

Regional Partnerships

The 2006 Legislature created the Regional Transportation Commission to evaluate transportation issues in the Puget Sound region and to develop a regional transportation governance proposal. The Regional Transportation Commission is comprised of nine members, all private citizens appointed by the Governor, plus the Secretary of Transportation as a nonvoting member. The Regional Transportation Commission will:

- Evaluate a broad range of regional transportation governance issues, including transit agency boundary adjustments, consolidation options, and coordination of all agencies (including WSDOT) that have a role in regional transportation planning, funding, and operations
- Develop a proposal that includes an option for forming a permanent, directly-elected regional transportation governing entity, as well as the governing entity's finance strategy, authorized revenue sources, and planning authority
- Submit its governance proposal to the 2007 Legislature

The legislature modified the Puget Sound Regional Transportation Improvement District (RTID) in several respects:

- The RTID is allowed to change its boundaries to be contiguous with regional transit authority boundaries. The peninsula portion of Pierce County is exempted from inclusion in the RTID.
- The RTID must submit its finance plan as a common ballot measure along with a Sound Transit Phase 2 plan at the 2007 general election and is permitted to have a ballot title exceeding 75 words.

Regional Transportation Planning Organizations have been established by the legislature to further the coordination of transportation planning among local jurisdictions and the state. The duties of the Regional Transportation Planning Organizations include:

- Prepare and update a transportation strategy and plan for the region
- Certify that transportation elements of comprehensive plans of cities and counties within the region are consistent with the regional transportation plan
- Certify county-wide planning policies to be consistent with the regional transportation plan
- Develop a six-year regional transportation improvement program
- Designate a lead planning agency to coordinate the

preparation of the regional transportation plan
- Work with local jurisdictions and agencies and the state to develop level of service standards or other transportation performance measures

Coordinated Transportation Agencies

Three independent state agencies partner with local governments to develop and build street, road, and freight improvements.

Transportation Improvement Board—The Transportation Improvement Board (TIB) distributes grants to cities and counties for high priority transportation projects that foster state investment in quality local transportation projects. Its six grant programs provided over $98 million dollars of capital funds in 2006 to communities throughout the state. Over the past four years, TIB contributed funds to over 700 completed projects.

Specific TIB grant programs focus on transportation needs of small cities and towns, urban arterials and urban corridors, and sidewalks. Its 21 member Board includes 6 city members, 6 county members, two WSDOT officials, 2 transit representatives, a private sector representative, a member representing the ports, a member representing non-motorized transportation, a member representing special needs transportation, and a governor appointee. TIB funding comes from the revenue generated by three cents of the statewide gas tax.

County Road Administration Board—The County Road Administration Board (CRAB) works to preserve and enhance the transportation infrastructure of Washington State's counties by providing standards of good practice, fair administration of funding programs, visionary leadership, and integrated, progressive, and professional technical services. The legislature created CRAB in 1965 to provide statutory oversight of Washington State's 39 county road departments.

CRAB administers the County Arterial Preservation Program ($14 million annually) and the Rural Arterial Program ($19 million annually) and is a major technical resource for the Washington Association of County Engineers. It distributes the counties' portion of the Motor Vehicle Fuel Tax and is custodian of the county road log, a database of over 40,000 miles of roads. CRAB is funded from the portion of the counties' fuel tax that is withheld for state supervision and from a small portion of the two grant programs that it administers.

Freight Mobility Strategic Investment Board—Washington State's economy is the most dependent upon trade of all the states. Our ability to compete in a global economy depends to a great extent on the efficiency of the state's multimodal transportation network to move our products and goods efficiently. In 1998, the legislature created the Freight Mobility Strategic Investment Board (FMSIB) to facilitate freight movement between and among local, national, and international markets and find solutions that lessen the impact of the movement of freight on local communities.

FMSIB proposes policies, projects, corridors, and funding to the legislature. Its 2006 six-year project list anticipates $350 million of strategic state investment in freight mobility.

Transportation and Land Use

Historically, the type and availability of transportation has had a major influence in defining the physical structure of our communities. Communities have evolved from being oriented around ports, rivers, canals, and railroads, to a pattern now dominated by the roadway. In turn, where we live, work, recreate, and find goods and services all drive transportation demand. Community design, social, political, and economic activity, and transportation are intertwined.

Traffic congestion, travel delays, unreliable travel times, and reduced safety can occur when demand exceeds roadway or transit capacity.

Transportation problems can be exacerbated when:

- People perceive that the only available and apparently affordable housing they desire is miles, cities, and even counties away from jobs, schools, shopping, and recreation.
- Businesses relocate to the suburban fringe, creating "edge cities" and stranding their transit-dependent employees because traditional transit systems do not typically provide effective service in the "reverse-commute" direction or from suburb to suburb.

Transportation problems cannot be solved solely by building additional roadways, interchanges, transit lines and stations, or intercity and commuter railway capacity.

These actions can address some congestion in the short-term and are very important, but developing a transportation system to improve Washington State's mobility that is sustainable, environmentally sound, socially equitable, and economically viable requires recognizing that:

- Transportation problems are symptoms of underlying individual and community decisions.
- "Sprawl" development has infrastructure cost implications and travel cost and time implications that can directly affect housing affordability and quality of life. No one actually wants to commute several hours a day in congested traffic or considers the event life-enriching. People do it to gain other real and perceived benefits.
- Many metropolitan area issues, including transportation and affordable housing, are regional and sometimes interregional in nature. Addressing these issues requires unprecedented levels of government cooperation and shared vision.

Transportation funds are collected from the public with the expectation that they will be used to meet transportation needs. There are more transportation needs and desires than there are funds to support them. Any expenditure of transportation funds must have a reasonable link to improving mobility and access for people, goods, services, and information.

However, since transportation and community development are interconnected, the availability and location of housing, especially affordable housing, can have a positive impact on reducing overall transportation demand and increase the use and effectiveness of the transportation system. The appropriate investment of transportation funds in projects and services can foster affordable housing and yield a long-term transportation benefit.

Transportation investments can support the vitality and redevelopment of urban areas and first-ring suburbs. This includes brownfield and grayfield areas, where infrastructure already exists and affordable housing can be developed. Such redevelopment can serve to increase transit usage and efficiency. It can also promote walking and bicycling.

Local agencies can use their discretionary transportation funds, such as Congestion Mitigation and Air Quality and Transportation Enhancement and Regional Surface Transportation Program funding, to help support transit-oriented development, redevelopment, and affordable housing development. Local agency-provided transportation improvements can offset some of the total cost of transit-oriented development or other development that includes affordable housing.

State transportation investments can be prioritized with the intent of targeting areas where local investments in transportation facilities, transit services, and local decisions on development help to increase the long-term return on the state's transportation investment. Transportation planning funds can be used to jointly plan transportation services and community development to maximize return on future investments and ensure the transportation system complements community growth and vitality.

Transportation and Land Use—Key Challenges

Washington State citizens often talk about the challenges facing the transportation systems in the next twenty years, including sprawl, quality of life, and the threats to natural ecosystems and salmon.

Confronting these issues is central to creating forward-looking programs for transportation investment. There is no question that efficient transportation systems are essential to economic vitality. There is no question that individualized free market choices about housing, work, and lifestyles are influencing transportation and land use with greater force than either independently influences the other. And there is no question that failure of transportation systems to meet the needs of growing communities can trigger social and environmental costs, including poor land use outcomes.

Although since implementation of the GMA the state as a whole has begun to coordinate growth and transportation and address congestion more effectively, there remains much to learn about what mix of incentives and disincentives will improve the mobility of people and goods. It may take more serious efforts at partnership between governments and businesses to address land use and the everyday decisions people make about where to work, live, and recreate.

> "Encourage development in areas where public facilities and services exist or can be provided in an efficient manner."
>
> ***Palouse RTPO***
> *2005 Regional Transportation Plan*

Growth Management

Transportation systems are costly public investments. Land use decisions made by local jurisdictions are key determinants of how the state's transportation system serves people, communities, and the economy. Transportation, in turn, helps define the physical structure of our communities.

When passed in 1990, the Growth Management Act included 13 far-reaching goals to guide local comprehensive plans and development regulations. (A fourteenth goal for shorelines was added later.) The basic principle of the Growth Management Act is that new development should be allowed only at a pace that public agencies providing public services such as roads, water, and sewer systems can keep up with. Local jurisdictions planning under the Growth Management Act implemented these statewide goals with flexibility to make their own choices about growth and development.

Transportation investments must be made in support of growth management strategies or growth management cannot succeed.

Our state's Growth Management Act (GMA) created a framework rooted in local government for reconciling the pressures from growth on the uses of land with the consequent demands for public infrastructure investment. Since the GMA passed, we have seen improved consistency and public engagement in our local land use decisions as a direct result of the coordinated planning required by the law. Major elements of the GMA are:

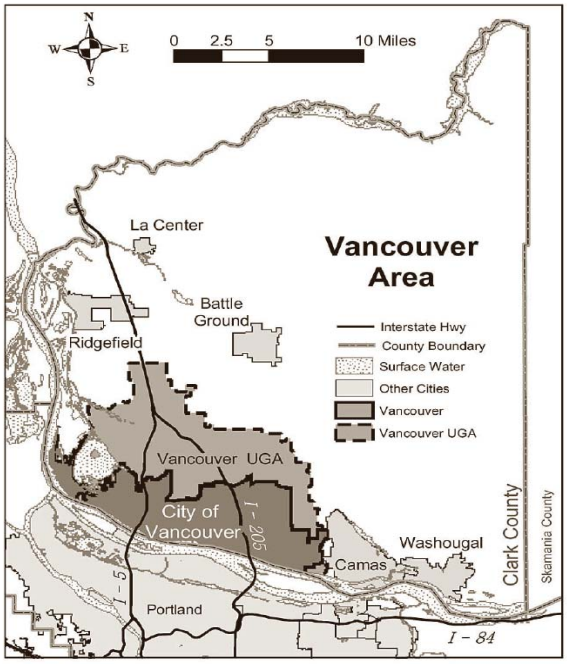
- Comprehensive Plans
- Urban Growth Areas
- Concurrency

Comprehensive Plans

Fast-growing counties and the cities within them are required to create comprehensive plans that include several plan elements addressing projected changes in land use and public facilities. Cities and counties have discretion in their comprehensive plans to make many choices about how to plan for and accommodate

growth. The local transportation system is part of the infrastructure needed to support the land use element of the comprehensive plan. Regional Transportation Planning Organizations certify the transportation element of local comprehensive plans for consistency with regional goals.

Urban Growth Areas
Jurisdictions preparing comprehensive plans are also required to designate Urban Growth Areas (UGA) where future population growth and infill development is to be encouraged and outside of which growth should occur only if it is rural in character. The purpose of the UGA is to attract and funnel growth to certain core areas, increasing density there while maintaining the rural character of the land outside the UGA.



Vancouver and surrounding area. Source: Vancouver GIS.

Development Encroachment
Washington's Growth Management Act (GMA) also requires local jurisdictions to discourage incompatible development adjacent to public use airports through comprehensive plan policies and development regulations. The airport may no longer be able to function if nearby development creates an unsafe setting for planes taking off and landing. Incompatible development can affect both the short-term and long-term operational capabilities of the airport, impact airport capacity, cause safety implications for people in the air and on the ground, impact noise sensitive uses, affect navigation, and impair the utility of the airport as an economic resource. Airports are recognized under GMA as Essential Public Facilities.

Growth Management Goals

- Focus urban growth in urban areas
- Reduce sprawl
- Provide efficient transportation
- Encourage affordable housing
- Encourage sustainable economic development
- Protect property rights
- Process permits in a timely and fair manner
- Maintain and enhance natural resource-based industries
- Retain open space and habitat areas and develop recreation opportunities
- Protect the environment
- Encourage citizen participation and regional coordination
- Ensure adequate public facilities and services
- Preserve important historic resources
- Manage shorelines wisely

WSDOT encourages ports, special districts, airport sponsors, aviation interests, and local jurisdictions to form partnerships and to work together to discourage incompatible development. The Aviation Division provides research documentation and best management practices and tools that can be used by local jurisdictions and airports to address land use compatibility adjacent to airports.

Similarly, Washington's seaports, highways, rail lines, and distribution centers are vital links to the global economy. The compatibility of these facilities with neighboring communities can affect Washington State's ability to move products for export and serve as a gateway for imported goods.

Concurrency
Transportation and land use decisions continue to shape Washington State's quality of life. In 1990, when the legislature passed the growth management act, transportation planning across regional boundaries and the topic of concurrency were included.

Concurrency refers to the timely provision of public facilities and services relative to the demand for them. To maintain concurrency means that adequate public facilities are in place to serve new development as it occurs. The Growth Management Act (GMA) gives special attention to concurrency for transportation. The GMA requires that transportation improvements or strategies to accommodate development impacts need to be made concurrently with land development.

"Concurrency" is defined by the GMA to mean that any needed improvements or strategies are in place at the time of development or that a financial commitment exists to complete the improvements or strategies within six years. Local governments have many choices about how to apply concurrency within their plans, regulations, and permit systems.

If concurrency cannot be demonstrated, then local jurisdictions are required to enforce adopted ordinances, which prohibit development approval unless transportation improvements or strategies to accommodate the impacts of development are made concurrent with the development.

Most local governments have comprehensive plans that include level of service (LOS) standards. If levels of service fall below those described in the transportation chapter of the local comprehensive plan, then corrective action is needed. Concurrency is managed at the local level through ordinances consistent with the standards and policies in the locally adopted comprehensive plans. Sprawl happens in several areas for various reasons. Counties fully planning under the GMA have concurrency requirements as well the cities and their LOS standards are often lower in urban areas. To reduce inconsistency between neighboring jurisdictions and to consider regional implications of comprehensive plans, local plans are reviewed and certified by metropolitan planning organizations and regional transportation planning organizations.

Because state highways serve as primary arterials for many local governments, establishing and maintaining a comprehensive level of service for local governments and the state continues to be an ongoing challenge. In 1998, the Washington State Legislature passed HB 1487, relating to transportation and growth management planning. House Bill 1487, known as the Level of Service (LOS) Bill, was passed to enhance the identification and coordinated planning for major transportation facilities identified as "transportation facilities and services of statewide significance." LOS for Highways of Statewide Significance (HSS) is set by WSDOT, however, these facilities are not subject to local concurrency requirements under the GMA. Non-HSS facilities have LOS set by WSDOT in consultation with the RTPOs. The GMA does not address whether or not these facilities are subject to local concurrency requirements. Applicability of concurrency to state highways and ferry routes continues to surface as a policy discussion.

Two legislative studies underway in 2006 address concurrency. These studies include an examination of whether the concurrency goal should apply to state-owned transportation facilities and how multimodal systems such as transit contribute to concurrency goals. These studies present a timely opportunity to discuss the Growth Management Act's concurrency requirement as it relates to statewide transportation needs. Both projects are in development and will be submitted to the Legislature by December, 2006.

Multimodal Concurrency Study

The multimodal transportation concurrency study requires WSDOT and the Puget Sound Regional Council (PSRC) to coordinate efforts to deliver a study that examines multimodal transportation improvements and strategies to comply with the concurrency requirements of the Growth Management Act (GMA).

The study request calls for analyzing approaches to concurrency that better integrate roadway and transit planning, maintain the ability to attain development objectives of growth centers, and allow for tailoring of Level of Service standards to different growth centers and travel periods. Technical assistance is provided by the Washington State Transportation Research Center (TRAC). For more information, see www.wsdot.wa.gov/planning/concurrency/MultimodalStudy.htm.

State-Owned Transportation Facilities Analysis

The state-owned transportation facilities study directs WSDOT to conduct an analysis of expanding the statewide transportation concurrency requirements. It includes development impacts on LOS standards applicable to state-owned transportation facilities, including state highways and state ferry routes. The analysis will examine gaps in law and practice that strengthen state and local transportation planning. The Legislative objective of the analysis is to ensure that jurisdictional divisions do not defeat growth management concurrency goals.

Growth Management Act Planning Goals

The following goals are adopted to guide the development and adoption of comprehensive plans and development regulations of those counties and cities that are required or choose to plan under RCW 36.70A.040. The following goals are not listed in order of priority and shall be used exclusively for the purpose of guiding the development of comprehensive plans and development regulations:

(1) Urban growth. Encourage development in urban areas where adequate public facilities and services exist or can be provided in an efficient manner.

(2) Reduce sprawl. Reduce the inappropriate conversion of undeveloped land into sprawling, low-density development.

(3) Transportation. Encourage efficient multimodal transportation systems that are based on regional priorities and coordinated with county and city comprehensive plans.

(4) Housing. Encourage the availability of affordable housing to all economic segments of the population of this state, promote a variety of residential densities and housing types, and encourage preservation of existing housing stock.

(5) Economic development. Encourage economic development throughout the state that is consistent with adopted comprehensive plans, promote economic opportunity for all citizens of this state, especially for unemployed and for disadvantaged persons, promote the retention and expansion of existing businesses and recruitment of new businesses, recognize regional differences impacting economic development opportunities, and encourage growth in areas experiencing insufficient economic growth, all within the capacities of the state's natural resources, public services, and public facilities.

(6) Property rights. Private property shall not be taken for public use without just compensation having been made. The property rights of landowners shall be protected from arbitrary and discriminatory actions.

(7) Permits. Applications for both state and local government permits should be processed in a timely and fair manner to ensure predictability.

(8) Natural resource industries. Maintain and enhance natural resource-based industries, including productive timber, agricultural, and fisheries industries. Encourage the conservation of productive forest lands and productive agricultural lands, and discourage incompatible uses.

(9) Open space and recreation. Retain open space, enhance recreational opportunities, conserve fish and wildlife habitat, increase access to natural resource lands and water, and develop parks and recreation facilities.

(10) Environment. Protect the environment and enhance the state's high quality of life, including air and water quality, and the availability of water.

(11) Citizen participation and coordination. Encourage the involvement of citizens in the planning process and ensure coordination between communities and jurisdictions to reconcile conflicts.

(12) Public facilities and services. Ensure that those public facilities and services necessary to support development shall be adequate to serve the development at the time the development is available for occupancy and use without decreasing current service levels below locally established minimum standards.

(13) Historic preservation. Identify and encourage the preservation of lands, sites, and structures, that have historical or archaeological significance.

(14) Manage Shorelines wisely

IV. Additional Information

Washington's transportation system should serve our citizens' safety and mobility, the state's economic productivity, our communities' livability, and our ecosystem's viability.

Washington State Transportation Commission

Washington State Department of Transportation

Glossary

Additional terms related to the transportation industry and technology can be referenced through the Transportation Research Thesaurus, of the Transportation Research Board. This tool can be accessed through http://trt.trb.org.

A

Access	Ability to make convenient use of the transportation system.
Access point	Any point that allows entrance to or exit from the traveled way of a freeway. (This includes "locked gate" access.)
Accessible Transportation	Ability to make convenient use of the transportation system.
Active Warning Device	Flashing lights and/or gates used at grade crossings.
Advance Warning Signals	A sign used along a roadway to warn that a roadway-rail grade crossing is ahead.
Agency Council on Coordinated Transportation (ACCT)	Seeking to improve transportation for people with special needs, ACCT proposes mix of immediate actions, stakeholder discussions, and demonstration projects.
Americans with Disabilities Act (ADA)	This 1990 federal legislation mandates changes in building codes, transportation, and hiring practices to prevent discrimination against persons with disabilities involving federal dollars, including federally and non-federally funded transportation projects
Annual Average Daily Traffic (AADT)	Daily traffic that is averaged over a calendar year.
Arterial	A major street carrying the traffic of local and collector streets to and from freeways and other major streets. Arterials generally have traffic signals at intersections and may have limits on driveway spacing and street intersection spacing. Arterials are most likely to be designated as X roadways of regional significance."
Automatic Vehicle Identification (AVI)	The use of AVI includes applications such as weigh station bypass, travel time and speed measurements and for electronic toll collection (ETC). It has become widely deployed over the last twenty (20) years.
Average Daily Traffic (ADT)	The average number of vehicles that pass a specified point during a period. Unless otherwise stated, the period is a year.
Average Vehicle Occupancy (AVO):	The average number of persons traveling in a vehicle on a facility.

B

Basic Access Defined by each community, it is a term that describes the ability of people to live independently - in terms of transportation.

Bottleneck Places where roadways physically narrow, causing congestion (examples: lane drops; narrowing shoulders).

Bridge Deficiencies Seismically vulnerable, weight restricted, narrow width

Bridge Types There are four main types of bridges: beam bridges, cantilever bridges, arch bridges and suspension bridges

C

Capacity The maximum amount of traffic or people that can be accommodated on a transportation facility at any point in time.

Centennial Accord The Centennial Accord was created in 1989 to commemorate one hundred years of statehood, with a promise to improve tribal/state relations. It is an agreement between the State of Washington and the federally recognized Indian Tribes to work together to improve services to all of Washington's citizens.

Chokepoint Places where delay occurs because of traffic interference and/or the roadway configuration (examples: freeway interchanges; lack of left turn lanes at intersections; seasonal road closures.

Clean Air Act (CAA) Originally passed in 1963, the 1970 version of the federal law, together with amendments in 1990, form the basis for the national air pollution control program. Basic elements of the act include national ambient air quality standards for major air pollutants, hazardous air pollutants standards, state attainment plans, motor vehicle emissions standards, stationary source emissions standards and permits, acid rain control measures, stratospheric ozone protection, and enforcement provisions.

Clearance (vertical) Vertical clearance is the critical height under a structure that will safely accommodate vehicular and rail traffic based on its design characteristics. This height is the least available from the lower surface (including usable shoulders), or the plane of the top of the rails, to the bottom of the encroaching structure.

Collision When a vehicle impacts a person or object.

Collision Type Fatal, disabling injury, serious injury, evident injury, possible injury, property damage only.

Commercial Service Airport — Any airport that provides scheduled passenger service

Commercial Vehicle Information System Network (CVISN) — CVISN provides the ability to weigh vehicles in motion, automatically clear those that meet state transportation standards, and check vehicle licenses and permits against state records. It also provides private sector commercial vehicle owners with the ability to electronically purchase licenses and permits. This is accomplished through electronic interfaces with legacy systems at DOL, WSP, and DOT.

Commute Trip Reduction (CTR) — The Washington State Legislature passed the Commute Trip Reduction (CTR) Law in 1991, incorporating it into the Washington Clean Air Act. The goals of the program are to reduce traffic congestion, reduce air pollution, and petroleum consumption through employer-based programs that decrease the number of commute trips made by people driving alone.
http://wwwi.wsdot.wa.gov/pubtran/ctrdefault.htm

Commuter Rail — Operates between a central city and its suburbs, and runs on a railroad right-of-way. The Sound Transit's commuter rail system in Puget Sound is a commuter rail.

Concurrent — A term used in the Growth Management Act that describes the requirement that supporting infrastructure must be in place or "concurrent with the development" to accommodate transportation impacts, or a financial commitment is in place to provide the improvements or strategies within six years.

Congestion — It occurs when the demand is greater than the transportation system's capacity. Recurrent congestion is caused by constant excess volume compared with capacity. Nonrecurring congestion is caused by actions such as special events and/or traffic incidents.

Congestion Mitigation Air Quality Improvement — Provides federal funding for surface transportation and other related projects that contribute to air quality improvements and congestion mitigation in areas that do not meet ambient air quality standards or may have trouble meeting those standards (non-attainment or maintenance areas).

Context Sensitive Solutions — A collaborative, interdisciplinary approach that involves all stakeholders to develop a transportation facility that fits its physical setting and preserves scenic, aesthetic, historic and environmental resources, while maintaining safety and mobility. http://www.wsdot.wa.gov/eesc/design/Urban/Default.htm

Corridor — A path or guided way. In planning, a broad geographical band that follows a general directional flow or connects major sources of trips. It may contain a number of streets and highways and transit lines and routes.

Critical Areas — As a key part in managing growth in Washington, the Growth Management Program requires that every county and city classify and designate critical areas: wetlands, aquifer recharge areas, fish and wildlife habitat, frequently flooded areas, geologically hazardous areas, and rare/endangered plant habitat.

Culvert — The culvert is the conduit through which flow passes. Culverts can be made of many different materials. Steel and Concrete are the two most common. It may be used to allow water to pass underneath a road, railway, or embankment for example.

D

Daily Vehicle Delay (DVD) The sum of hourly delay values (for 24 hours) for all vehicles traveling on a typical day for both directions in one mile of roadway.

Deficiency The condition when a facility does not meet adopted level of service standards.

Delay An indicator of transportation level of service at intersection measured as the length of time at which a vehicle is stopped.

Demand Management Changing or reducing demand for car use by encouraging the behavioral change of household choices of travel. Transportation Demand Management is used increasingly by urban planners to affect the rate at which new development attracts cars and increases the need for new or expanded roadways.

Demand-Response Service Curb-to-curb transportation for individuals who are not able to utilize a regular fixed route bus service. See also, On Demand Service.

Determination of Nonsignificance (DNS) The written decision by the responsible official of the SEPA lead agency that a proposal is not likely to have a significant adverse environmental impact, and therefore an EIS is not required. WAC 197-11-734.

Determination of Significance (DS) The written decision by the responsible official of the SEPA lead agency that a proposal is likely to have a significant adverse environmental impact and therefore an EIS is required. The DS form is in WAC 197-11-980 and must be used substantially in that form. WAC 197-11-736.

Direct Access Ramp An on-ramp to a limited access highway intended for HOV use.

DOE Washington State Department of Ecology is Washington's principal environmental management agency. Our mission is to protect, preserve, and enhance Washington's environment, and promote the wise management of our air, land, and water for the benefit of current and future generations. Our goals are to prevent pollution, clean up pollution, and support sustainable communities and natural resources.

DOL Washington State Department of Licensing. The Department of Licensing (DOL) is comprised of five divisions: Driver Services, Vehicle Services, Business & Professions, Information Services, and Management Services.

Driving Under the Influence (DUI) The act of operating a motor vehicle (and sometimes a bicycle or similar human-powered vehicle) after having consumed alcohol (ethanol) or other drugs, to the degree that mental and motor skills are impaired.

E

Easement A right to use or control the property of another for designated purposes.

Economic Clusters Conglomerations of related businesses.

Economic Sectors Major economic sectors are: Construction, Mining, Manufacturing , Retail, Wholesale Trade, Transportation, and Service

Economic Vitality Defined locally, this economic term is typically inclusive of quality of life issues.

Ecosystem An ecosystem is an abbreviation of the term, ecological system. Ecosystems can be as big as the Sahara Desert or as small as a pond.

Eighteenth Amendment Amendment to the State Constitution passed in 1944, stating that motor vehicle license fees, gas tax, and other state revenue intended for highway purposes may only be used for highway purposes. http://www1.leg.wa.gov/LawsAndAgencyRules/constitution.htm (Article 2, section 40)

Emergency Management System Minimizes the impacts of emergencies and disasters on the people, property, environment, and economy of Washington State. Establishes emergency management functions and the responsibilities of the Washington State Military Department, Emergency Management Division (EMD), state agencies, commissions, boards, and councils. http://emd.wa.gov/3-pet/pal/cemp/01-cemp-idx.htm

Endangered Species Act The purposes of this Act are to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species, and to take such steps as may be appropriate to achieve this conservation.

Environmental Assessment A document prepared for federally funded, permitted, or licensed projects that are not categorical exclusions (CE) but do not appear to be of sufficient magnitude to require an EIS. The EA provides sufficient analysis and documentation to determine if an EIS or a Finding of No Significant Impact (FONSI) should be prepared.

Environmental Checklist A state SEPA document used by the authorized agency to determine if an action will significantly impact the environment. The checklist form contained in WAC 197-11-960 is used for all actions not categorically exempt or not clearly requiring an EIS.

Environmental Document A collective term used for any document that identifies the social, economic, and environmental effects of a proposed action.

Environmental Impact Statement (EIS) A detailed written statement of project environmental effects required by state and/or federal law. This term refers to either a draft or final environmental impact statement, or both, depending on context.

Environmental Justice (EJ)

EJ provides for the protection of low income and minority populations from disproportionately high and adverse social, economic, and environmental impacts as it relates to federal programs and activities.
The EPA defines EJ as the "fair treatment for people of all races, cultures, and incomes, regarding the development of environmental laws, regulations, and policies." Over the last decade, attention to the impact of environmental pollution on particular segments of our society has been steadily growing. Concern that minority populations and/or low-income populations bear a disproportionate amount of adverse health and environmental effects, led President Clinton to issue Executive Order 12898 in 1994, focusing Federal agency attention on these issues.
Title VI of the Civil Rights Act of 1964 set a standard, which authoritatively outlaws discrimination in the conduct of all federal activities. This is the driving force behind Environmental Justice.

Essential Public Facilities

Under GMA: Defined in RCW 36.70A.200 to include airports, state or regional transportation facilities as defined in RCW 47.06.140, including improvements to facilities and services of statewide significance identified in the statewide multi-modal plan, and other public facilities that are difficult to site.

Events of Statewide Significance

Events of statewide significance create challenges for completing transportation assets. The World's Fair, the Lewis and Clark Bicentennial Commemoration, and being a neighbor to the 2010 Winter Olympics in British Columbia are examples of events of statewide significance. Prior to these events taking place there is a need for coordinated planning, partnership development, fundraising and collaboration among many local, tribal, state, and federal entities and organizations.

F

Financing

A series of actions to be taken which will result in a system of projects and services being provided based on the identification of needs, cost estimates, assessment of the ability to pay, the development of financial policies and financing schedule, the establishment of forecasted cash flow, and priorities to govern management of the system.

Freeway

A divided arterial highway designed for the safe non-impeded movement of large volumes of traffic, with full control of access and grade separations at intersections.

Freight

Denotes goods or produce being transported generally for commercial gain, usually on a ship, plane, train or truck.

Freight and Goods Transportation System (FGTS)

A statewide network and classification system of state highways, county roads, and city streets that carry freight. Routes are classified by total tonnages of freight carried per year. General costs associated with administering, planning, and operating the transportation system.

G

General Aviation The term general aviation describes any flight other than a military or scheduled airline flight, ranging from gliders and powered parachutes to large, non-scheduled cargo jet flights. As a result, the majority of the world's air traffic falls into this category, and the vast majority of the world's airports serve general aviation exclusively.

General Purpose Lane (GP) Lane opened to all vehicular traffic.

Geographical Information System (GIS) A system of hardware, software, and data for collecting, storing, analyzing, and disseminating information about areas of the Earth. For Highway Performance Monitoring System (HPMS) purposes, Geographical Information System (GIS) is defined as a highway network (spatial data which graphically represents the geometry of the highways, an electronic map) and its geographically referenced component attributes (HPMS section data, bridge data, and other data including socioeconomic data) that are integrated through GIS technology to perform analyses. From this, GIS can display attributes and analyze results electronically in map form.

Global Gateways Public and private infrastructure that facilitates international and national trade flows through Washington State.

Globalization Globalization refers to the worldwide phenomenon of technological, economic, political and cultural exchanges, brought about by modern communication, transportation and legal infrastructure as well as the political choice to consciously open cross-border links in international trade and finance. It is a term used to describe how human beings are becoming more intertwined with each other around the world economically, politically, and culturally. Although these links are not new, they are more pervasive than ever before.

Grade Crossing The area along the track where a roadway or pathway crosses.

Grade Separation A vertical separation of intersecting facilities (road, rail, etc.) by the provision of crossing structures. For example, a rail/highway intersection where there is a tunnel or a bridge.

Grade-Separated Crossing lines of traffic that are vertically separated from each other (i.e., a roadway that goes over or under a railroad track).

Gray Notebook A periodic report prepared by WSDOT staff to track a variety of performance and accountability measures for routine review.
http://www.wsdot.wa.gov/accountability/GrayNotebook.pdf

Groundwater Supply of fresh water found beneath the earth's surface, usually in aquifers, that supply wells and springs.

Growth and Transportation Efficiency Centers The 2006 legislative changes to the Commute Trip Reduction (CTR) program make the program more efficient and effective by focusing on congested state highways. One new tool provided is the GTEC. These are higher density

(GTEC) centers where CTR can be applied more intensively to support local economic development, achievement of the regional transportation plan goals and increased person throughput on the highway system. The statutory changes encourage state, regional transportation planning organizations and local governments to prioritize road, transit, non-motorized, and transportation demand management (TDM) funds for these growth and transportation efficiency centers.

Growth Management Act (GMA—RCW 36.70a and RCW 47.80) Adopted in 1990 and all associated amendments since that time. Passed by the state legislature in 1990, and amended in 1991, GMA addresses the negative consequences of unprecedented population growth and suburban sprawl in Washington. The GMA requires all cities and counties in the state to do some planning and has more extensive requirements for the largest and fastest-growing counties and cities in the state. Its requirements include guaranteeing the consistency of transportation and capital facilities plans with land use plans.

H

Habitat The place where a population (human, animal or plant) lives and its surroundings.

High Capacity Transit A public transit system, such as rail, that can accommodate large volumes of riders.

High Occupancy Vehicle (HOV) A vehicle with enough people to travel in the HOV lane. In Washington, all HOV lanes require vehicles with two or more persons, and Eastbound SR 520 where three or more people are required. All motorcycles are also allowed, even with only one person. http://www.wsdot.wa.gov/HOV/default.htm

High Volume Locations Places that approach or exceed designed volume capabilities.

Highway Runoff Manual Directs the planning and design of stormwater management facilities for existing and new Washington State highways, rest areas, park and ride lots, ferry terminals, and highway maintenance facilities throughout the state.
http://www.wsdot.wa.gov/fasc/EngineeringPublications/Manuals/HighwayRunoff2004.pdf

Highways of Statewide Significance (HSS) Highways of statewide significance (HSS) include, at a minimum, interstate highways and other principal arterials that are needed to connect major communities in the state. The designation helps assist with the allocation and direction of funding. The HSS was mandated by the 1998 legislature through enactment of Substitute House Bill SHB 1487 and codified into RCW 47.06.140
The HSS was designated by the Transportation Commission through Resolution #584 on December 17, 1998. The Legislature concurred and adopted the HSS, including a map and route list through House Joint Memorial 4006 on April 14, 1999. For more information on HSS go to the WSDOT HSS website:
http://www.wsdot.wa.gov/ppsc/hsp/hss.htm

I

Impact Area The geographic area within which the traffic impacts of a development must be evaluated.

Incident Response Program to help clear roads, help drivers of disabled vehicles, and help restore the normal flow of traffic as safely and quickly as possible. http://www.wsdot.wa.gov/incidentresponse/default.htm

Infrastructure The set of interconnected transportation elements that provide the framework for moving people and goods.

Innovative Financing Innovative finance for surface transportation infrastructure is a broadly defined term that encompasses a combination of techniques and specially designed mechanisms to supplement traditional financing sources and methods. Innovative finance for surface transportation includes such measures such as: new or non-traditional sources of revenue; new financing mechanisms designed to leverage resources; new funds management techniques; and new institutional arrangements.

Intelligent Transportation System (ITS) Generally refers to the application of advanced electronics and computer technology to automate highway and vehicle systems to enable more efficient and safer use of existing highways. http://www.wsdot.wa.gov/biz/atb/default.htm

Intercity Rail Connects central city to central city on a railroad right-of-way in densely traveled corridors. Locally, the Amtrak Cascades train from Seattle to Portland is an example of intercity rail.

Intermodal Surface Transportation Equity Act (ISTEA) – The 1991 law that reauthorized the $155 billion federal surface transportation program for six years. ISTEA emphasizes diversity and balance of modes, as well as the preservation of existing systems before construction of new facilities. The federal legislation also increased reliance on regional planning agencies to weigh transportation options and make decisions utilizing public participation. The program has been reauthorized twice: TEA-21 in 1998 and SAFETEA-LU in 2005.

L

Land Use Element The land use element of the comprehensive plan designates the proposed general distribution and general location and extent of the uses of the land. Land uses include, but not limited to the following, where appropriate: agriculture, timber production, housing, commerce, industry, recreation, open spaces, public utilities, and public facilities. The land use element includes population densities, building intensities, and estimates of future population growth.

Larger Cities Cities with a population of 22,500 or more.

Level of Service A qualitative assessment of a transportation system's operating conditions. For local government comprehensive planning purposes, level of service means an indicator of the extent or degree of service provided by, or proposed to be provided by, a facility based on and related to the operational characteristics of the facility. Level of Service indicates the capacity per unit of demand for each public facility.
(1) A qualitative rating of the effectiveness of a highway in serving traffic, measured in terms of operating conditions. Note: The Highway Capacity Manual identifies operating conditions ranging from "A" for free flow operations to "F" for forced or breakdown flow. (2) The quality and quantity of transportation service provided, including characteristics that are quantifiable (safety, travel time, frequency, travel cost, number of transfers) and those that are difficult to quantify (conform, availability, convenience, modal image).

Level of Service Standards (LOS) A gauge for evaluating the quality of service on the transportation system. Described by travel times, freedom to maneuver, traffic interruptions, comfort, convenience, and safety.

Life Cycle Cost The cost of a system or product over its entire life span.

Light Rail A range of electric-powered rail systems, from street cars operated as single units on streets with mixed traffic to trains of vehicles operating in exclusive, grade separated rights-of-way. The distinction between light rail transit and heavy rail is primarily based on carrying capacity; the latter carries more passengers. Another difference is that light rail transit draws its power from overhead catenaries, while heavy rail's power comes from an electric power source along the track.

Local Needs The needs (deficiencies & solutions) for those city streets and county roads that are supported by state and local tax revenues and state grant programs.

Lowest Life Cycle Cost In terms of highway pavement preservation, this is the point in a pavement's lifecycle where optimum pavement life has been achieved and the least cost to resurface is obtained. Pavements that have gone beyond this optimum point typically incur more costs to rehabilitate.

M

Main line Rail A Class I railroad's primary track that usually extends great distances.

Maintenance Those activities that ensure that the right-of-way and each type of roadway, roadway structure and facility remain, as nearly as practical in its original, as constructed condition or its subsequently improved condition, and the operation of roadway facilities and services to provide satisfactory and safe motor vehicle transportation.

Maintenance Shed WSDOT specific term for buildings and grounds containing the necessities for maintenance operations including storage for equipment and materials.

Metropolitan Planning Organization (MPO) An agency designated by a governor (or governors in multi-state areas) to administer the federally required transportation planning process for a metropolitan area. An MPO must be in place in every urbanized area with a population in excess of 50,000. http://www.wsdot.wa.gov/planning/Metro/Default.htm

Metropolitan Transportation Plan (MTP) A detailed long-range transportation plan that guides future regional investments and responds to legal mandates contained in ISTEA, the 1990 Clean Air Act Amendments, and the State of Washington's Growth Management Act.

Mitigation Measures taken to reduce adverse impacts on the environment.

Mobility A measure of transportation service performance that takes into consideration the ability of a traveler to move from origin to destination at the time and with the travel mode desired.

Mode A means of transportation for people and goods. Automobile travel, rail, air, ferries, etc., are different modes of travel.

Multimodal Transportation Systems Buses, ferries, cars, bicycles, and aviation are all examples of modes of travel. In a multimodal transportation system, each of these components is factored in so that service can be delivered efficiently. For example, the waterfront trolley that conveys ferry passengers to a bus terminal might be considered an interdependent multimodal transportation system.

N

Nickel Package The 2003 Washington State Legislature enacted the Nickel funding package (ESHB 1163). The revenue package funded 158 projects over a 10-year period. The package includes: 5 cents per gallon gas tax increase, 15 percent increase in gross weight fees on heavy trucks, 0.3 percent increase in the sales tax on motor vehicles.

Nonpoint Source Pollution sources without a single point of origin. The pollutants are generally carried off the land by stormwater.

Non-Recurring Delay About half of all congestion is "non-recurring," or temporary disruptions in traffic flow. About one-quarter of congestion is due to traffic incidents ranging from disabled vehicles (due to flat tires, overheated engines, etc.) to fender-bender's, to overturned tanker trucks. Other non-recurring disruptions include weather (15 percent), work zones (10 percent), and things such as special events (five percent).

O

On Demand Service (Dial-a-Ride) Dial-a-Ride services are specifically designed for passengers who are unable to access local bus services. Typically these services provide curb to curb transportation. See also, Demand Responsive Service.

Open space Any parcel or area of land or water that is essentially unimproved and devoted to an open space use such as preservation of natural resources, outdoor recreation not requiring development of play fields or structures, or public health and safety (flood control). Landscape settings having attributes that are predominantly natural in character.

Outfall A structured drainage of stormwater runoff from highways or intersecting streams.

P

Pacific Rim The Pacific Rim is a political and economic term used to designate the countries on the edges of the Pacific Ocean as well as the various island nations within the region.

Paratransit Transit service that is publicly or privately operated, scheduled, or dispatched upon demand, providing "point-to-point" transit service. Normally used in specialized applications with user eligibility limitations (e.g., elderly and/or disabled) or where demand is not sufficient to support fixed-route service.

Park and Ride Lot A parking facility for individuals to rendezvous for carpools, vanpools, or public transportation as a transfer of mode with their private automobile.

Pavement Condition The elements of pavement condition rating are type of, severity of, and extent to which the roadway is affected by defects. http://www.wsdot.wa.gov/fasc/EngineeringPublications/Manuals/PSCRMan.pdf

Peak Period The time period during which the maximum amount of travel occurs. Generally, there is a morning peak and an afternoon peak period, and less frequently, a midday peak period. The peak period usually extends for at least two hours, which encompasses the peak hour. Also see definition of Peak Spreading on next page.

Per Capita A Latin phrase meaning for each head. Usually used to indicate the average per person of any given statistic, commonly income.

Plan A method or scheme for achieving or doing something.

Point Source Pollution source with a single point of origin.

Policy A principle or course of action chosen to guide decision making.

Preservation Those specialized maintenance activities that serve to extend the originally estimated useful life of each type of roadway, roadway structure and facility but do not increase its capacity or efficiency

Public Sector That part of economic and administrative life that deals with the delivery of goods and services by and for the government, whether national, regional or local/municipal.

Public-Private Partnership A system in which a government service or private business venture is funded and operated through a partnership of government and one or more private sector companies.

Public-Use Airport Identified on the Federal Aviation Administration's Airport Master Record as open for use by the general public. Public-use airports may be publicly- or privately-owned.

R

Real-Time Travel Information

Services such as weather and traffic reports on media like radio, web, and pager services as well as variable message signs. http://www.wsdot.wa.gov/traffic

Regional Transportation Plan (RTP)

The Regional Transportation Plan is a product of the regional transportation planning process. It guides the improvement of the regional transportation system. The plan shall identify and address regional transportation issues. The Regional Transportation Planning Organization proposes it.

Regional Transportation Planning Organization (RTPO)

Authorized by the Legislature in 1990 as part of the Growth Management Act. They are voluntarily created by local governments to coordinate transportation planning among jurisdictions and to develop a regional transportation plan. Washington provides funding and a formal mechanism that is available to all local governments (and not only those required to plan under GMA) and the state to coordinate transportation planning for regional transportation facilities.
http://www.wsdot.wa.gov/planning/Metro/Default.htm

Reliability

In transit planning, if a train or bus arrives within 10 minutes of its schedule time, it is considered reliable. Reliability can be dictated by congestion on the tracks, delays at stations, and equipment malfunction.

Reservations

American Indian Reservation
A federal American Indian reservation is an area that has been set aside by the United States for the use of one or more federally recognized American Indian tribes. Together with off-reservation trust land, a reservation covers territory over which one or more tribes have primary governmental authority. The boundary of a federal reservation is defined by tribal treaty, agreement, executive or secretarial order, federal statute, or judicial determination.
A state American Indian reservation is an area that a state government has allocated to a tribe recognized by that state, but not by the federal government. American Indian reservations are known as colonies, communities, Indian communities, Indian villages, pueblos, rancherias, ranches, reservations, reserves, and villages. See American Indian off-reservation trust land, American Indian tribal subdivision, American Indian trust land, joint use area.

Return on Investment (ROI)

Benefits from investments, typically judged against time.

Revised Code of Washington (RCW)

Code enacted by the State of Washington and intended to embrace in a revised, consolidated, and codified form and arrangement all the laws of the state of a general and permanent nature. http://apps.leg.wa.gov/rcw/default.aspx

Right-of-Way (ROW)

The horizontal and vertical space occupied by the rail service. In the Pacific Northwest Rail Corridor, the Burlington Northern and Santa Fe Railway Company (BNSF) owns the right-of-way. Amtrak, the Washington State Department of Transportation, and Sound Transit run their trains on the BNSF's right-of-way through operating agreements. **Technical Definition:** A general term denoting land, property, or interest therein, usually in a strip, acquired for or devoted to transportation purposes.

Risk Factor A variable associated with an increased risk but not necessarily causal.

Risk Taking Behavior Human behavior involving the choice to incur some amount of risk.

Run off the Road Term used when a vehicle unintentionally departs from the traveled way or a portion of the roadway intended for vehicular travel.

Rural Sparsely settled places away from the influence of large cities and towns. Such areas are distinct from more intensively settled urban and suburban areas, and also from unsettled lands such as outback or wilderness. Rural areas can have an agricultural character, though many rural areas are characterized by an economy based on logging, mining, petroleum and natural gas exploration, or tourism.

S

Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) SAFETEA-LU authorizes the Federal surface transportation programs for highways, highway safety, and transit for the 5-year period 2005-2009. http://www.fhwa.dot.gov/safetealu/

Safety Rest Area Safety Rest Areas contribute to highway safety by providing fatigued drivers safe and convenient facilities to stop and rest themselves before continuing with their journey. The department owns and operates forty-two Safety Rest Areas within our state. Twenty-seven of which are located on the Interstate System.

Scenic Byway Any roadway designated as a Scenic Byway by state or federal agencies or authorities, comprised of outstanding local or regional scenic character.

Scour Scour is the natural process of sediment being transported downstream during high flow events.

Seismic-Risk Zones Measured against gravity (1.0g), effective peak ground acceleration, attenuation, and duration are considered when mapping seismic—risk zones. Zone 1 locations have a one in ten chance that an earthquake with an active peak acceleration level of 0.1g (1/10 the acceleration of gravity) will occur within the next fifty years.

Short Line Freight Rail A Class II or III railroad's track. A Class I railroad's secondary track that serves intrastate or regional movement.

Short Span Bridges Bridges ranging from 12 to 70 feet in length.

Single Occupant Vehicle (SOV) A passenger car or truck carrying only one person (a driver).

Smaller Cities Cities with a population of less than 22,500.

Societal Cost These costs include medical costs, lost wages, property damage, lost productivity, etc..

Special Needs Population Persons with Special Transportation Needs: those persons, including their personal attendants, who because of physical or mental disability, income status or age are unable to transport themselves or purchase transportation.

State Environmental Policy Act SEPA Adopted in 1971. Provided Washington State's basic environmental charter. The Rules that implemented the act directed agencies to consider environmental information (impacts, alternatives, and mitigation) before committing to a particular course of action. Chapter 43.21C RCW (State Law) and Chapter 197-11 WAC (SEPA Rules).

State Interest The portion of the state transportation system that is owned and/or operated by local jurisdictions, agencies, and private corporations and is of importance to the entire transportation system. The State-Interest systems' needs were identified through Regional Transportation Planning Organizations in collaboration with local jurisdictions and agencies, and private corporations. These modes include Public Transportation, Freight and Intercity Passenger Rail, Marine Ports, Bicycle and Pedestrian Transportation, and Aviation.

State Owned The portion of the state transportation system that is owned and/or operated by the state. The State-Owned systems include state highways, Washington State Ferries (WSF), and state airports. The state also owns eight daily trains of the Amtrak *Cascades* passenger rail system. Amtrak is contracted to operate all twelve of the Amtrak Cascades trains. The needs for state-owned systems were identified by the systems in coordination with the Regional Transportation Planning Organizations.

Stormwater Outfall See Outfall

System Management Improves traffic flow through signal synchronization, freeway on-ramp signals, the construction of high-occupancy-vehicle (HOV) lanes, left turn restrictions, and other measures.

T

Target The Transportation Commission identified and grouped over 80 program needs into high, medium, and low priorities. These identified investment needs are not a comprehensive accounting of all needs but rather e a subset of statewide gaps in funding that represent only the most strategic and critical program needs.

Through-put An accounting of people or vehicles passing a certain point in a given amount of time.

Traffic Records Strategic Plan Focused on replacing paper with electronic records; developing an Emergency Management System registry; improving feature and location accuracy, improving statewide collision data; designing new police traffic collision and citizen reports; enhancing traffic records and forming an oversight committee.

Transportation Efficiency Act for the 21st Century (TEA-21) The Transportation Equity Act for the 21st Century was enacted June 9, 1998 as Public Law 105-178. TEA-21 authorizes the Federal surface transportation programs for highways, highway safety, and transit for the 6-year period 1998-2003. The TEA 21 Restoration Act, enacted July 22, 1998, provided technical corrections to the original law. http://www.fhwa.dot.gov/tea21/

Transportation Partnership Act (TPA) The 2005 Washington State Legislature provided a 16-year expenditure plan to take care of some of Washington State's most critical transportation needs. Over 270 projects will be funded by this package that will make roads and bridges safer as well as ease choke points on the system. http://www.wsdot.wa.gov/Projects/Funding/2005/

Transportation System Public and private infrastructure involved in moving people or goods.

Tribal Nations / Tribal Lands The Indian Self-Determination and Education Assistance Act (25 U.S.C. 450b(e)) defines the term "Indian tribe" as any Indian tribe, band, nation, or other organized group or community, including any Alaska Native village or regional or village corporation as defined in or established pursuant to the Alaska Native Claims Settlement Act (85 Stat. 688) (43 U.S.C. 1601 et. seq.), which is recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians.

TriCities The TriCities in the state of Washington are Richland, Pasco, and Kennewick. They are located at the confluence of the Yakima, Snake, and Columbia Rivers in southeastern Washington. Pasco is on the north side of the Columbia, Kennewick and Richland are south of it (Kennewick is directly east of Richland). According to the 2000 census, the combined population of the TriCities is 125,467, though 2005 census estimates put the population at closer to 160,000.

Trip Reduction Performance Plan (TRPP) The Washington State Legislature created a trip reduction performance program in 2003 to encourage entrepreneurs, private companies, transit systems, cities, non-profit organizations, developers, and property managers to provide services to employees that result in fewer vehicle trips arriving at work sites.

U

Unemployment Rate The percentage of people available in the labor force who are deemed unemployed when compared to the total labor force.

Urban Growth Areas Areas where urban growth will be encouraged. Counties and cities must cooperatively establish the urban growth areas and cities must be located inside urban growth areas. Once established, cities cannot annex land outside the urban growth area. Growth outside of urban growth areas must be rural in character.

V

Vehicle Miles Traveled (VMT) A measure of highway system use reflecting the number of miles traveled over a highway section, route or system. VMT is calculated by multiplying the total highway section length by the total number of vehicles that have traveled over that section within a given time.

W

Wait Time Transportation systems and services such as a Ferry or Safety Rest Area may require users to queue and wait. This wait time is measured to help manage service delivery.

Weigh In Motion (WIM) These devices are designed to capture and record truck axle weights and gross vehicle weights as they drive over a sensor. Unlike older static weigh stations, current WIM systems do not require the subject trucks to stop, making our transportation system much more efficient.

Wetlands Areas saturated by surface or groundwater with vegetation adapted for life under those soil conditions. Examples of wetlands are swamps, bogs, and estuaries.

Work Trip One way person-trip between home and work.

Maps

The following maps are included to provide additional background for the Washington Transportation Plan.

This section is organized as follows:

Aviation Facilities Map
Federally Recognized Tribes in Washington
Ferry Route Map
Freight & Goods Transportation System
Highway: Current State Highway Congestion
Highway: 2030 State Highway Congestion
National Highway System
Puget Sound Freeway High Occupancy Vehicle System
Rail: 2006 Average Train Counts and Capacities
Rail: Amtrak Route Map
Rail: Grain and Food Products Routes and Identified Bottlenecks
Rail: Intermodal Rail Routes and Bottlenecks
Rail: Manufactured Goods Rail Lines and Bottlenecks
Rail: Passenger Rail Lines and Bottlenecks
RTPO/MPO Contacts
Regional Transportation Planning Organizations
Scenic Byways
State Nickel and Transportation Partnership Act Projects
Sound Transit Long-Range Plan Map
Statewide Seismic Acceleration Map
Seismic Map of Puget Sound Area
WSDOT Region Contacts
WSDOT Region Map
Washington State Freight Atlas
Washington State Public Transportation Transit Authorities

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Regional and Tribal Organizations

Benton-Franklin-Walla Walla RTPO*
Lewis-Clark Valley MPO*
North Central RTPO*
Northeast Washington RTPO*
Palouse RTPO*
Peninsula RTPO*
Puget Sound Regional Council*
Quad-County RTPO*
Skagit/Island RTPO*
Southwest Washington RTPO*
Southwest Washington Regional Transportation Council*
San Juan County Commissioners
Spokane Regional Transportation Council*
Thurston Regional Planning Council*
Tribal Transportation Planning Organization*
Wenatchee Valley Council of Governments*
Whatcom Council of Governments*
Yakima Valley Conference of Governments*

* Co-host for Public Outreach Event

Additional Organizations

Association of Washington Cities
Cape Flattery Tribal Scenic Byway*
Cascade Loop*
Chinook Scenic Byway*
Chuckanut Drive Scenic Byway*
Columbia River Gorge Scenic Byway*
Community Economic Revitalization Board
Community Trade and Economic Development
Coulee Corridor Scenic Byway*
County Road Administration Board
Freight Mobility Strategic Investment Board
International Selkirk Loop*
Lewis and Clark Trail Scenic Byway*
Mountains to Sound Greenway*
North Cascades Scenic Highway*
North Pend Oreille Scenic Byway*
Okanogan Trails Scenic Byway*
Palouse Scenic Byway*
Sherman Pass Scenic Byway*
Stevens Pass Greenway*
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Pete Beaulieu
Paul Bennett
Ed Berry
Germaine Beveridge
Thera Black
Wendell Black
Judith Boekholder
Scott Bradshaw
Chris Branch
Frank Brock
Amy Brockhaus
Allison Brooks
Michael Brower
Mike Chapman
Phyllis Chun
Marina Cofer-Wildsmith
Hugh Conroy
Eli Cooper
Glenn Cramer
Barbara Culp
Vicki Cummings
King Cushman
Lynda David
Richard DeRock
Kevin Desmond
Judy DeVaul
Bob Drewel
Duane Dunford
Joni Earl
Rob Fellows
Clif Finch
Jeni Forman
Dara Frederickson
David Frey
Rick Galloway
Nancy Garrett
Carol Graham
Mike Groesch
Josh Hall
Mike Harbour
Trip Hart
Steve Harvey
Mary Margaret Haugen
Tom Hill
Jim Horn
Andrew Johnsen
Dave Johnson
Eric Johnson
Glenn Johnson
Susan Kempf
Nancy Keith
Shinwon Kim
Al King
Pete Kremen
Rick Krochalis
Sam Kung
Mark Kushner
Tim LaPorte
Dick Larman
Maree Lerchen
Dave Leighow
Rob Lemmon
David Levinger
Jerry Lewis
Alan Lichter
Steve Lind
Dick Little
Dean Lookingbill
Doug Maples
Trent Marquis
Keith Martin
Sheila Martin
Marilyn Mason-Plunkett
Dave Mastin
Dan Mathis
Blanchard Matte
Sue Mauerman
Dean Maxwell
Mary McClure
Gerry McFaul
Liz McNett Crowl
Scott Merriman
Tracy Milburn
Glenn Miles
Arch Miller
Jim Miller
Kelley Moldstad
Lynn Moody
Mike Morton
Joyce Mulliken
Joe Murray
Bob Myhr
Gary Nelson
Mary Kay Nelson
Craig Newhouse
Phil Nollmeyer
Dale O'Brien
Todd O'Brien
Joyce Olsen
Walt Olsen
Ken Olson
Dawn Pannell
Julia Patterson
Don Petersen
Joyce Phillips
Ed Pickering
Dan Pike
Mary Place
Derek Pohle
Robin Pollard
Kevin Poole
Michelle Posey
Joy Potter
Craig Pridemore
Ashley Probart
Charlie Raines
Kevin Ranker
Janet Ray
Loni Rahm
Joel Ristau
Gordon Rogers
Richard Rolland
Thayer Rorabaugh
Linda Rotmark
Bob Ryan
Sheila Salomone
Cheryl Saltys
Jim Sayce
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Jessyn Schor
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Tim Sheldon
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Jim Shipman
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Kelly Simpson
John Sindzinski
Don Skone
Henry Sladek
Sid Stecker
Deb Stevens
Mark Storey
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Scott Taylor
Victor Vasquez
Anne Vernez-Moudon
John Vicklund
Kirk Vinish
Curt Warber
Steve Watson
Jim Whitbread
Kristen Whitener
Jackie White
Jeff Wilkens
Martin Wold
Beverly Woods
Lon Wyrick
Theo Yu