

Appendix I

WSDOT WTP SUMMARY MATERIALS

Washington Transportation Plan

Phase 2: Developing the Constrained Plan

September 2004 - July 2005

Adopt Strategies

In the fall of 2004 the Transportation Commission will adopt the strategies, which will establish the policy framework for developing the investment plan.

Adopt Strategies

Develop Investment Plan

Set Priorities

Adopt the Plan

Develop Investment Plan

The Department of Transportation in cooperation with the Regional Transportation Planning Organizations will develop an investment plan to implement the strategies for our state's key transportation issues. These investments will vary by region and will reflect the appropriate regional response to implement the statewide strategies.

Set Priorities

Because funding is limited and competition for this limited funding is keen, the Transportation Commission will prioritize the investment plan to be constrained to a reasonable level of revenue. This prioritization process will reflect, to the extent possible, stated regional priorities.

Adopt the Plan

In the summer of 2005, the Transportation Commission will adopt the updated plan, which will include the constrained investment proposals, with state projects and state program recommendations, plus statewide policy recommendations needed to implement the plan. The updated plan will become the basis for the 2007-2009 Transportation budget proposal that the Transportation Commission will submit to the 2007 Legislature.

Ways to Participate in the Outcome

- Regularly attend your respective Regional Transportation Planning Organization's meetings.
- Visit WTP on the Web: www.wsdot.wa.gov/planning
- Attend WTP workshops, conference presentations, meetings and forums.

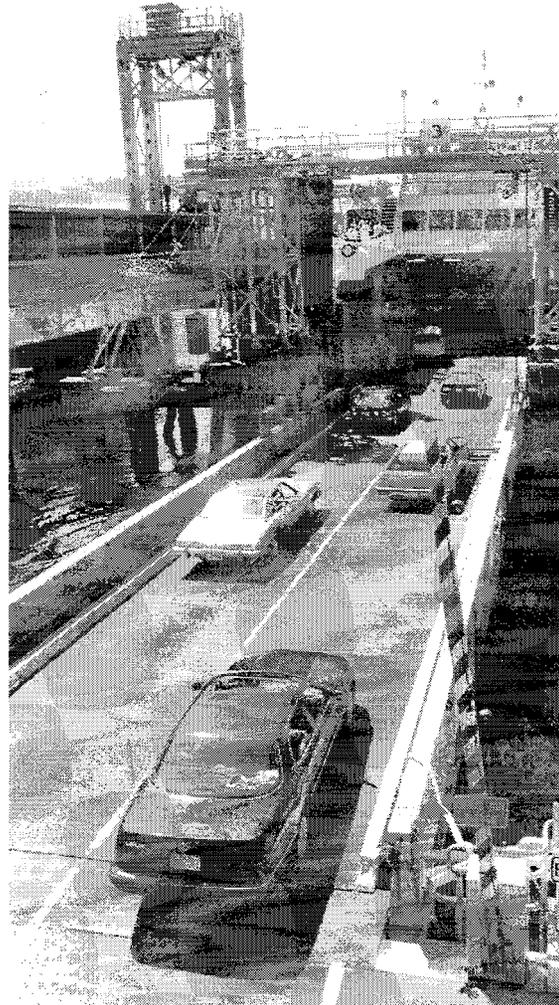
Here are a few that are currently scheduled:

Safety Conscious Planning Workshop

April 20th, 2004, 8:30 AM – 3:00 PM Red Lion, SeaTac

Planning Association of Washington Conference

May 14th, 2004 WTP Panel Session Red Lion, Richland



2005 Update: Work Plan Overview

“How can transportation serve our economy's productivity, our communities' livability, our ecosystem's viability, and our citizens' convenience?”

Washington's Transportation Plan (WTP) is a blueprint for transportation programs and investment. The plan covers all modes of Washington's transportation system: roadways, ferries, public transportation, aviation, freight rail, passenger rail, marine ports and navigation, bicycles and pedestrians. The WTP is required by state and federal law to be regularly updated. The update currently underway will be adopted by the Transportation Commission in 2005, will cover the period 2007-2026, and will be the basis for an investment proposal to the legislature in 2007.

This folio outlines the work plan for the plan update. The first phase: developing and analyzing data about the transportation system, includes current and expected future conditions, the use for movement of people and goods, and the effects of the system on the economy and the environment. This baseline data is being stored online in a WTP Data Library, available in Spring 2004. The data will support development of effective strategies to address the key issues facing the future of our statewide transportation system. The strategies will form the basis for the second phase of the WTP update including identifying & prioritizing specific program investments that will result in a constrained transportation plan. (see back page).



What is the Overall Process?

Phase 1: Data Compilation, Analysis & Strategy Development

December 2003 – September 2004

The Work Underway:

- Create the Statewide Transportation Data Library
- Analyze Statewide Trends & System Conditions
- Identify Key Strategic Issues & Develop Effective Strategies
- Share What We've Learned

Create the Statewide Transportation Data Library

The update to the plan started in late 2003 with several concurrent activities primarily involving data collection and analysis. Special subject research and modal plan update efforts are taking place to fill the gaps in the current data and customer input readily available for this update. Examples of the modal efforts include the long-range plan for the Washington State Ferries, a Marine Cargo Forecast, and updating the Intercity Passenger Rail and Public Transportation Plan. The research efforts are topics that apply across modes and jurisdictional boundaries, such as but not limited to, statewide safety needs, congestion relief analysis, local roadway needs, habitat corridors and species diversity, freight customer interviews, and economic development.

Techniques for collecting data vary from reviewing census information to conducting focus groups and workshops. Traditional demographic and economic trend data will be compiled. In addition, freight, personal travel, congestion, safety, technology, and environmental trends will be included. These baseline facts and assessments will provide the context for developing the strategies of the plan. In several areas forecasted information will describe the outlook of the next twenty years.

Analyze Statewide Trends & System Conditions

Identifying and understanding major trends and their implications to Washington's economy and demands on the transportation system are critical to developing the Washington Transportation Plan update. The statewide transportation system includes all modes of travel and related facilities and services, regardless of ownership. The condition assessment being conducted for this plan update is a summary that will include information such as the number of lane miles of federal, tribal, state, and local roadways, the location of airports and rail lines, and the condition or health of the facilities for each mode of transportation. In addition background papers are being compiled on our state's financial options, examining the relationship between growth management and transportation, and a summary of state and federal planning requirements.

Identify Key Strategic Issues & Develop Effective Strategies

The focus of this update is organized into nine key strategic issue areas. Each fundamental issue relates in some way to all modes of the transportation system and its facilities and services. Understanding the interrelationships between these issues is essential to creating a plan that has an appropriate positive contribution to our state. This step in the process involves identifying the needs at the regional level with specific modal needs that have statewide significance. Strategies for addressing gaps and needs will be developed for each of the nine issue areas. (See key issues list on right.)

Nine Key Statewide Transportation Issues

System Preservation

Fundamental Issue: What will it take to make sure that the elements of the transportation system that we take for granted today will still be in place when we need them in two, six, or twenty years?

System Efficiencies

Fundamental Issue: How can we best work toward optimizing how efficiently we derive the benefits of our current transportation system facilities and those we are able to create in the future?

Safety

Fundamental Issue: How do we make transportation systems and facilities throughout the state safer for their users?

Transportation Access

Fundamental Issue: Where basic transportation services are indispensable for all citizens' societal engagement, how is a "safety net" for transportation needs to be provided every citizen in every community?

System Extensions

Bottlenecks and Chokepoints

a. What opportunities for investment in new facility and system assets can help address system chokepoints and bottlenecks? What are the most effective near-term solutions through expanding capacity to move people and goods in shorter and more reliable times?

Contributing to a Strong Economy and Good Jobs

b. What investments in new facility and system assets can help support the state's economic vitality and strengthen the job picture?

Moving Freight

c. How are the special needs of freight movement to be incorporated into the state's transportation plan?

Building Future Visions

d. What are the visions of transportation system futures - shared and unshared - that should shape today's transportation planning to help create pathways to the future?

Health and the Environment

Fundamental Issue: How can transportation investments be developed, implemented and used in ways that at the same time enhance our citizens' transportation goals and our citizens' goals for healthy communities and a well-protected environment?

Share What We've Learned

Throughout Phase 1 information will be shared on the Department's web page as well as at workshops and meetings on various topics throughout the state. In addition, on September 21, 2004 the Washington State Transportation Commission will host an event that will serve as a milestone in the update process. This meeting of a variety of interests and transportation service and facility providers will provide an opportunity for a broader discussion of the data, the trends, the issues, and gaps and proposed strategies. This opportunity for review will also provide input to the Transportation Commission for Phase 2.

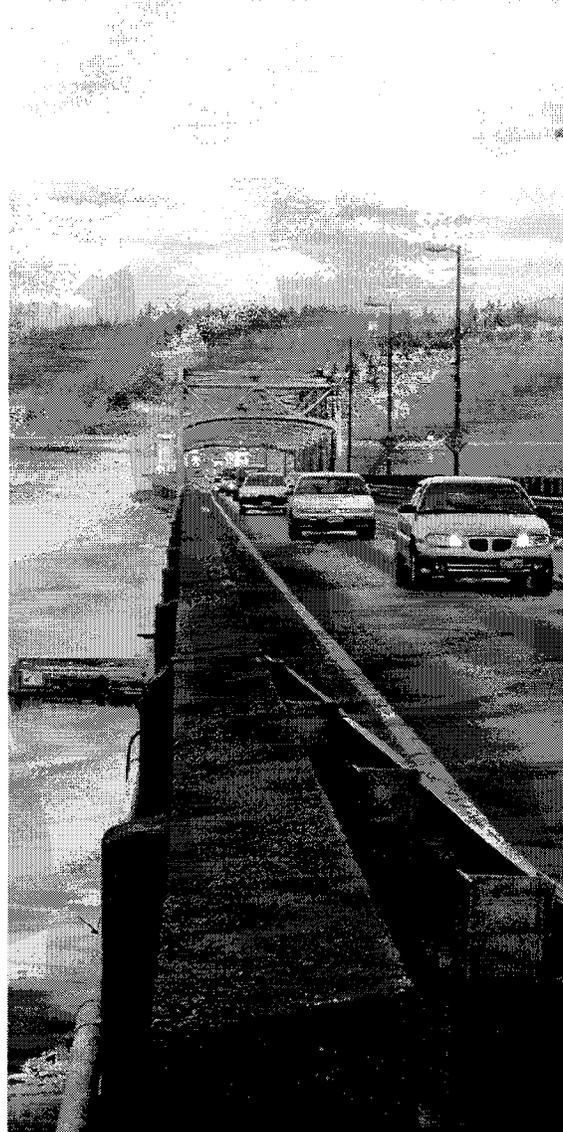
System Preservation

Emerging Directions

- Asset preservation or "fix it first" has emerged as a major issue for the WTP: "Pay me now, or pay me more—lots more—later."
- Big ticket state highway preservation needs include replacement of the Alaskan Way Viaduct, the SR 520 floating bridge, and concrete interstate pavements. In addition, regular state highway preservation programs (such as unstable slopes, drainage systems, electrical systems, and others) need to be augmented.
- Local roadway preservation shortfalls are affecting system performance and need to be addressed.
- Stable funding for transit and ferries is needed to enable fleet and terminal asset management strategies to work.
- An approach for prioritizing general aviation pavement rehabilitation needs is needed as is continued emphasis on protecting airports from land use encroachment.
- A policy defining the state role in and a strategy for short line rail preservation is needed.



Alaskan Way Viaduct, Seattle

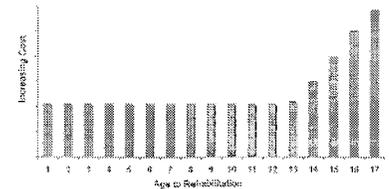


What will it take to make sure that the elements of the transportation system that we take for granted today will still be in place when we need them in two, six, or twenty years?

The Importance of Preservation

There is no more fundamental transportation capital investment than system preservation—keeping the physical infrastructure in good condition. As transportation facilities age and are used, a regular schedule of rehabilitation, reconstruction, and replacement is needed to keep the system usable. Timing is important: if preservation investment is deferred, costs increase dramatically, leading to the saying "Pay me now, or pay me more—lots more—later."

Asphalt Rehabilitation on State Highways (Cost per lane mile)



"Asset management" is a term that describes a proactive approach to investing in preservation at the right time to optimize condition. Asset management includes having comprehensive inventories of transportation facilities; a system for measuring and reporting system condition; predictive condition models that anticipate rehabilitation or replacement needs; and an investment program that ensures that the right investments are made at the right time. WSDOT's pavement management system, which includes a history of pavement performance from the 1970s is a good example of asset management. This system has been adapted for use by local governments in managing their pavement investments.

In 2002 and 2003, the Legislature reinforced this state's commitment to asset management. Legislation specifically required maintenance and preservation to be included in state plans for highways, ferries, and rail, and required cities, counties, and transit agencies to manage and report system condition. These requirements will help ensure that more consistent condition information will exist in the future about all transportation assets.

The Washington State Transportation Commission and the Washington State Department of Transportation are in the process of updating the Washington Transportation Plan. This long range plan is based on data analysis and is focused on ten issues: System Preservation, System Efficiencies, Safety, Transportation Access, Bottlenecks and Checkpoints, Economy and Jobs, Moving Freight, Future Visions, Health and Environment and Funding and Governance. This plan will shape future transportation budget proposals.

For more on this topic, visit www.wsdot.wa.gov/planning/wtp

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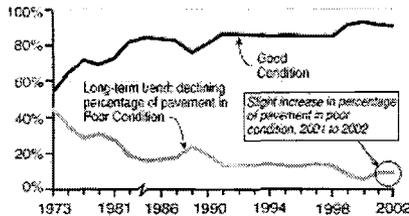
System Preservation

What are we finding?

On State Highway Pavements:

WSDOT has made progress on asphalt and chip seal pavements, improving conditions and achieving lowest life cycle cost investment.

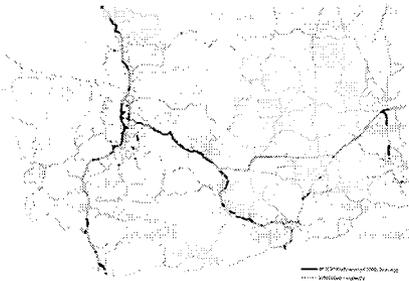
Pavement Condition Trends Percent of Pavements



Source: WSDOT Materials Lab.

Concrete pavements are an emerging need: they are disproportionately represented in future poor pavement miles. The current funding allocations are adequate to cover asphalt and chip seal repaving needs, but fall far short of funding concrete rehabilitation needs.

Concrete Pavements in Poor condition on Washington State Highways in 2003



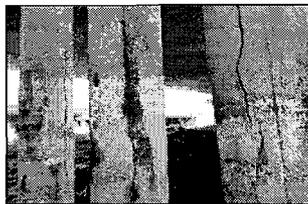
On State Highway Bridges:

A comprehensive bridge inventory exists, and WSDOT has made good progress on bridge rehabilitation, but aging bridges represent a growing need. Two big ticket bridge preservation needs include replacement of the Alaskan Way Viaduct and the SR 520 floating bridge, which are unfunded and represent a shortfall of several billion dollars. Bridges that are structurally sound, but have width and geometry deficiencies, are another emerging concern. Some of these bridges are among our



oldest, and have narrow lanes and narrow or no shoulders and poor pedestrian access. Modernizing these width and geometry challenged bridges could cost an additional \$1.4 billion which is now unfunded.

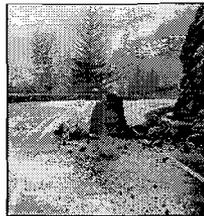
Tacoma Narrows Bridge (suspender cables)



US 101 Mud Bay (Olympia) concrete column deterioration



SR 99 George Washington Bridge, Seattle



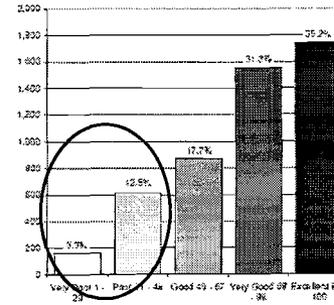
Other State Highway needs include shortfalls in unstable slope work; rest area preservation; and potentially large shortfalls in preserving drainage structures and electrical systems, pending complete inventories.

On Local Roadways:

Local governments face large shortfalls in preserving their pavements and bridges, with local transportation funding being squeezed by revenue reductions, growing needs of local government services and competing expansion needs. Recently compiled data indicate that sixteen percent of city roadway pavements are in poor or very poor condition

with indications that, at current funding levels, this number will grow. Additional data on preservation needs of local roadways is being developed.

City Roadway Condition (Lane miles)



On Washington State Ferries:

Current funding assumptions for the next ten years show the Washington State Ferries meeting targets for both vessel and terminal preservation, including the replacement of four 1927 vessels. Further vessel replacement beyond the 10 year period is an outstanding and unfunded issue.

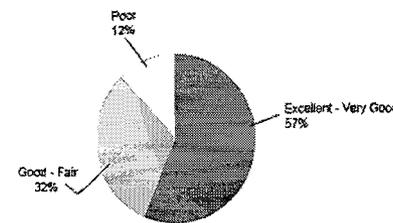
On Local Ferries:

There are four county-operated ferries in Washington which have needs for vessel and terminal assets. Need estimates are being compiled.

On General Aviation Airports:

A shortfall exists in paving, lighting, and navigation aids. An inventory is being updated. An important issue for airports is the need to preserve the airport sites themselves and their operations from encroachment by inappropriate land use development.

Airport Pavement Conditions, 2000

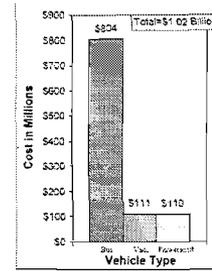


On Public Transit Systems:

An inventory is being developed on transit asset preservation needs. Issues include funding stability for bus fleet replacement strategies; increasing costs for preservation of service levels; park and ride lot preservation needs; and operating needs, especially for expensive demand response service, competing with other transit priorities including preservation.

10-Year Cycle of Bus Fleet Replacement

Cost in Millions for Current Fleets*



Source: WSDOT Bureau of Public Transportation - 2002 and King County. Mean average calculated for 1995-2002.

*Programmatic estimates to give an order of magnitude of vehicle replacement needs. Better information forthcoming as asset inventories and plans are received.

On Railroads:

Short line railroads are mostly owned by private operators, making information on system condition difficult to compile. Indications are that short line rail tracks are facing large rehabilitation needs, and may be at least partly unfunded. Worsening track conditions could lead to further abandonment.

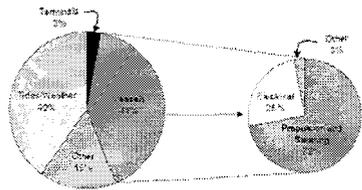
Railroad	Miles in Washington
Puget Sound and Pacific	149
Tacoma Rail Mountain Division	132
Lewis and Clark	14
Joppeish Simcoe and Western	21
Cascade and Columbia River	137
Royal Slope	26
Tri-Cities and Olympia	50
Columbia Basin	86
Palouse River and Coulee City/Blue Mountain	400
Camas Prairie	69
Mount Vernon Terminal	2
Yakima Valley Transportation	11
Ballard Terminal	3
Columbia and Cowlitz	8
Port of Chehalis	10
Tacoma Rail (Port operators)	32
Meeker Southern	5

System Efficiencies

Trip Reliability

WSF measures, reports, and manages on-time performance and missed boats by route to improve customer service.

Most Common Trip Cancellation Causes



Emerging Directions

System efficiency is about aligning transportation system performance with customer expectations and getting the highest performance possible out of the existing system – this applies to all modes.

On roadways, including transit, throughput is a key measure of system efficiency.

- Basic maintenance and operations are essential to keep the system open and operating.
- As traffic grows, increasingly sophisticated management techniques are needed to maintain flow.
- Information technology will allow the next generation of management techniques.
- Advance communication will permit real-time information for travelers.
- In-vehicle ITS devices (such as On-Star) will be the next step, sharing weather, safety, and transportation system data with drivers, system providers, and first responders.

- Closer integration of modes (highway and transit) will need to address real-time system coordination.

The focus has been on system efficiency measures – the next frontier is point-specific applications to improve flow at specific chokepoints (such as truck performance at specific on-ramps).

- System pricing is emerging as one of the primary options to effectively maintain flow, because price allows the ultimate flexibility in matching roadway capacity to traffic demands.
- Operational approaches should be viewed as a part of a continuum and an integral part of our investment program: a commitment to maintain and operate the system; management techniques to maximize use of the system, and capital investment to expand the system where needed.

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System Efficiencies

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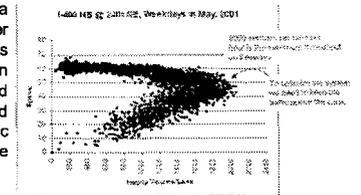
How can we best work toward optimizing how efficiently we derive the benefits of our current transportation system facilities and those we are able to create in the future?

Getting the highest possible performance from our existing transportation investments through operational strategies, from basic maintenance and operations activities to the application of sophisticated technologies, can make the system work better for customers and recover lost productivity. Several factors contribute to system inefficiency, including congestion caused by too much traffic or incidents, design issues, weather, mechanical failures in buses or ferries, uncoordinated operating schedules or traffic signals, and driver behavior itself. Operating programs can address many of these factors to improve how the system works.

Operating our roadways for maximum throughput is the key to getting the most out of the system

For most roadways, basic day to day 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 use of the roadway grows and congestion occurs, more sophisticated operating activities are needed to optimize use. Each roadway has an optimal capacity where throughput is maximized. The chart below is typical for a freeway, and represents real data from I-405.

The chart indicates that maximum throughput is about 2000 vehicles per lane per hour, and at this density, traffic is flowing at about 45 to 50 miles per hour. If demand increases further, speeds slow and throughput actually drops by as much as half of maximum throughput. This means that under congested conditions, the capacity of a roadway is actually less than if flow is maintained at a steady 45 to 50 miles per hour. Knowing that this is how roadways operate can lead to strategies aimed at maintaining flow and trying to prevent traffic from dropping "below the curve."



System Efficiencies



Intelligent Transportation System Technologies

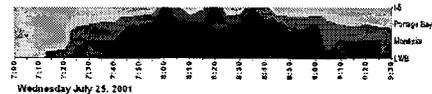
As roadway congestion increases, Intelligent Transportation Systems are used to maintain vehicle throughput. We now use these types of technology including ramp metering, traveler information, incident response, border crossing technology, weather operations based on prediction tools, commercial vehicle information systems networks (CVISN), and coordinated signal technology.

Ramp metering has been in place in the Seattle area for years and has proven highly effective in maintaining and even increasing throughput. Ramp meters work by metering the traffic from a ramp onto the freeway mainline, allowing smooth merging and preventing the brake-tapping which can lead to reduced speeds. The chart below shows the effect of ramp metering on SR 520 in Seattle: the ramp meters all but eliminated stop-and-go traffic, and actually increased the flow across the bridge by almost 500 vehicles per hour. This represents restored capacity that had been lost to congestion. Similar to ramp metering, providing travelers with accurate, timely information on traffic conditions can help spread traffic to avoid local slowdowns thereby maintaining flow.

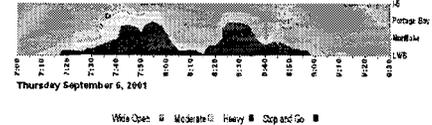
Ramp Metering

SR520 Westbound Ramp Meter Effects

BEFORE a series of ramp meters were activated: EB morning congestion, I-5 to Lake Washington Blvd.



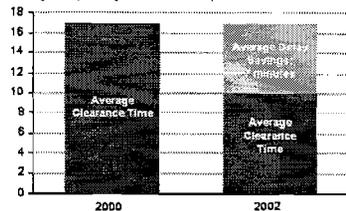
AFTER ramp meter activation:



Incident response

Traffic accidents and other incidents can contribute to congestion two ways: the incident itself can close lanes or

I-405 Disabled Vehicles
Average Delay Savings with Incident Response in Minutes

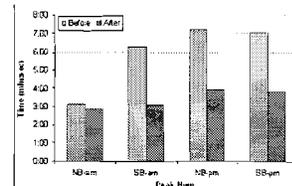


cause a distraction which reduces speed and throughput. However the primary incident often leads to secondary fender benders as traffic slows, exacerbating the problem. Incident response programs focus on responding quickly and clearing incidents to minimize primary impacts and prevent secondary collisions. In 2002, enhanced incident response patrols were instituted on I-405. These patrols have reduced the average clearance time for incidents on I-405 by over 40%.

Traffic Signals

Traffic signal synchronization is an issue that most drivers and riders can relate to. Like ramp metering for freeways, signal synchronization contributes to arterial operation efficiency similar to the maximum throughput concept on freeways. This example shows the effectiveness of signal synchronization on a 1.35-mile section of SR 527. Implementing signal optimization showed a reduction in average vehicle travel times up to 2 minutes 27 seconds (northbound evening commute). This reduced the travel time by nearly 38%.

Delay Reduction due to Signal Optimization on SR 527 from 228th Street to SR 624



Truck Operations

Trucks are required to be weighed, inspected, and registered for travel in Washington. Stopping at truck scales and ports of entry, however, can inconvenience and delay truck shipments. Advanced technology is being applied to improve efficiency, through the Commercial Vehicle Information Systems Networks (CVISN), to weigh the trucks, and check registration and inspection status without stopping at the scales.

Managed Lanes

Special use lanes, such as those restricted to High Occupancy Vehicles (HOV), have been used successfully to maintain flow. These lanes work by allowing limited numbers of vehicles to enter the lanes – in the case of HOV lanes, only those who meet certain occupancy requirements. By limiting the number of vehicles, maximum throughput can be maintained without breaking down into congestion. In addition, HOV lanes also improve the efficiency of the system by carrying more people than other lanes during peak traffic periods. In the Puget Sound region, some HOV lanes actually move more vehicles than the adjacent general purpose lanes because they maintain flow while the adjacent lanes are congested and have lost productivity.

Pricing

Information from other places clearly shows the huge potential of roadway pricing to maintain flow and capacity and prevent congestion. This is done by charging users a fee for using the roadway during congested times. The fee limits the vehicles using the lanes, keeping volumes at a level that allows smooth flow and maximum throughput. California and Texas have had success in charging a fee to use underused HOV lanes. These High Occupancy/Toll (HOT) lanes improve the utilization of the HOV lane, while maintaining smooth flow and a travel time advantage for transit and carpools. Pricing represents the next frontier and a real potential to maximize use of the system.

Improving Transit Operations

Transit agencies in Washington spend over \$600 million per year (54% of transit expenditures) operating their systems. Improving the efficiency of these operations is important in a time of doing more with less. Strategies that transit agencies are pursuing to improve operational efficiency include:

System Operating Configuration

Designing how to operate a transit system often involves trading off system efficiencies with the quality of customer service. Some systems have chosen a transfer-based system, which brings people to a central point for timed transfers to other locations. This type of system contrasts with a direct point-to-point system, often used for commuter bus services at peak periods. Route deviated services have been developed to allow fixed route buses to go off route to serve special needs people, especially in lower density areas. Demand response service has been plagued by high operating costs, but technologies such as automatic vehicle locators and efficient routing programs have helped improve efficiency.

Improving Communications

Just like highway operations, communication technologies have improved the efficiency and effectiveness of transit services, including automated vehicle locators to manage the fleet and inform customers of bus arrivals; transit signal pre-emption and queue jumps at ramp meters; and on-line trip planning services.

HOV Lanes Strategies

HOV lanes provide a predictable and quick travel time for buses, allowing them to maintain schedules and a travel time advantage.

Park and Ride Lots

Park and ride lots provide efficient service access in low density areas, allowing transit agencies to pick up large numbers of people at one location as opposed to circulating through widespread neighborhoods.

Vanpools

Washington State has the largest public vanpool program in the country. There are approximately 1,310 vans operating in the Puget Sound region and statewide over 1,600 vehicles each weekday. Additional vanpool vehicles are provided and used by nonprofit groups, employers, and private individuals.

Commuter Trip Reduction (CTR)

The goals of the CTR Program are to reduce traffic congestion, air pollution, and fuel consumption by working with local jurisdictions and major employers to reduce drive-alone commuting. Nearly 1,100 worksites in Washington State participate in the program.

Travel Conservation

Efforts to affect the demand for transportation, diverting it to carpooling or transit, or to a less crowded time of day, have been effective through employer-based promotion programs, vanpool programs, and other ridesharing services.

Land Use Strategies

Research has shown a link between land use patterns and travel patterns – denser, mixed-use types of development with good pedestrian and transit access have shown higher walking, transit, and carpooling behavior than lower density areas.

Issues in Ferry System Efficiency

Operations are a large focus at Washington State Ferries (WSF), representing 62% of all expenditures on the system.

Congestion and Peaking in the System

The ferry system is affected by peak travel demand like all other travel modes, but ferries experience both daily commuter peaks as well as seasonal tourist peaks. Sizing the fleet for peaks is difficult, since vessels are expensive, and their capacity comes in large units – you can't add a half boat to take on a peak load. WSF has adopted boat wait standards to communicate peak capacity to users. WSF has also adopted zero boat wait standards for buses, walk-on passengers, pre-registered carpools and vanpools, and certain reservations and freight users.

Intermodal Connections

In Island and Kitsap Counties and on Vashon Island, transit service is timed and linked with ferry schedules. In downtown Seattle, there is very frequent transit service, but not specifically linked to ferry schedules. New intermodal connections issues will emerge with the construction of new intermodal ferry terminals in Mukilteo and Edmonds, that may have connections to commuter rail services.

collisions. Two elements of operations – Incident Response Teams and Traveler Information Systems – play a key role in highway safety. Incident Response Teams help clear the road and direct traffic when incidents happen and reduce the risk of secondary collisions in the backup. Traveler Information Systems provide motorists with real-time traffic information that allows them to make informed travel decisions.

Roadway design and construction

Safety improvements are incorporated in WSDOT projects in many different ways – from the major improvement projects that add lanes or build interchange connections – to small projects that add a left-turn lane to address a specific problem.

Combined Average for 21 Safety Projects Collisions Per Year

	All Types	Property Damage Only	Injury Fatal
Before	15.5	8.8	6.7
After	9.7	5.5	4.2

Responsibility for programs and projects in the highway safety area is widely shared. At the state level, the Washington Traffic Safety Commission is a consortium of local and state organizations responsible for reducing death, injuries, and economic losses resulting from motor vehicle collisions. All of these groups, associations, and public agencies work together not to prevent all traffic collisions, but to make them more survivable.

Emerging Directions

- Behavioral approaches will be a significant part of the strategy to address impaired driving, seat belt use, speeding, aggressive driving, and other contributing driver behaviors. WSDOT and the Washington Traffic Safety Commission are working together to evaluate the effectiveness of potential behavioral countermeasures.
- Roadway Environment - safety conditions on rural two-lane roadways can and should be addressed. Strategies such as increased enforcement, centerline and edge rumble-strips, and improved shoulders and roadsides are being evaluated. Also, median cable barriers and rumble-strips on Interstates are proving to be cost-effective solutions.
- Pedestrians, bicyclists, and motorcyclists are disproportionately represented in fatality rates and need to be addressed in the safety strategy.
- Stepped up efforts to prevent railroad trespassing, such as Operation Lifesaver, are needed.
- Improved weather information access at general aviation airports will help pilots make good flight decisions.
- Better understanding of data should help target safety efforts where they will have the most effect.



Safety

How do we make transportation systems and facilities throughout the state safer for their users?

Transportation safety is a paramount concern in all forms of transportation: airplanes, ferries, buses, trains, roadways, marine ports, bicycles, and pedestrians. The data tell us that roadway safety, including bicyclists and pedestrians, is our biggest concern, accounting for 600 annual fatalities. Because of this most of the discussion that follows is focused on understanding our roadway safety issue, followed by a brief summary of safety concerns of other modes. In addition, transportation system security is an area that has recently moved into the forefront of public concern.

What The Data Are Telling Us

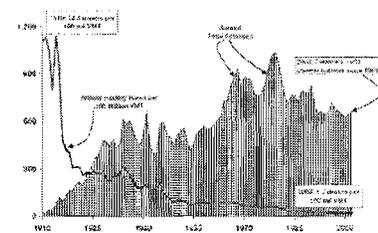
Despite declines, fatalities continue to be a serious problem

The number of deaths on Washington's roadways has declined over the past several years. Even so, more than 600 people die in collisions in Washington State each year – an unacceptable number despite our progress.

On Washington's highway system, collisions of all types (non-injury, other injury, disabling injury, and fatal) have gone up since 1980, from 34,662 in 1980 to 50,157 in 2002, an increase of 45 percent. However the fatality rate in the chart below has tended to steadily decline from 1915 forward.

The societal cost of motor vehicle collisions for all roadways (state, county, city, tribal, and federal) is estimated at \$5.6 billion annually. Although fatal collisions make up only 2.5 percent of the total number of collisions, they account for 54 percent of the total societal costs.

Washington Motor Vehicle Total Fatalities & Fatality Rates * 1915-2002



The Washington State Transportation Commission and the Washington State Department of Transportation are in the process of updating the Washington Transportation Plan. This long range plan is based on data analysis and is focused on ten issues: System Preservation, System Efficiencies, Safety, Transportation Access, Bottlenecks and Chokepoints, Economy and Jobs, Moving Freight, Future Visions, Health and Environment and Funding and Governance. This plan will shape future transportation budget proposals.

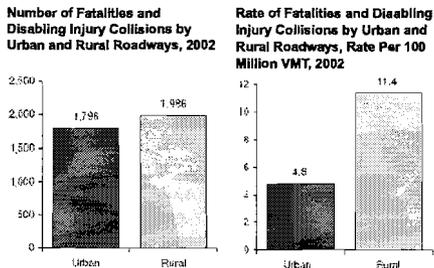
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By Traffic Volume, Serious Collisions occur most Frequently on Rural Roads

A greater number of fatal and disabling collisions occur on state highways (1,714) than on city streets (1,289) or county roads (1,087). When the volume of traffic is taken into account, however, the rate (per 100 million vehicle miles traveled) of serious collisions that occur is greatest on county roads (12.4 per 100 million vehicles miles traveled), followed by city (9.2) streets, and then highways (5.4).

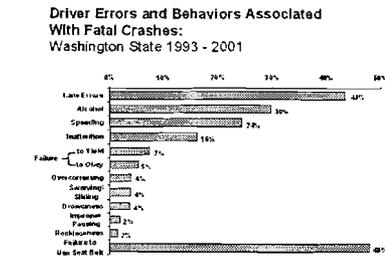
When looking at the data from an urban area versus a rural area, the number of collisions is about evenly divided. When the volume of traffic is examined, the rate of collisions per 100 million vehicle miles traveled is highest in rural areas.



The Contributing Factors

Age - Young inexperienced drivers (16 – 20 years old) are the age group with the highest rate of fatal collisions. On the other end of the age spectrum, the risk of being involved in a fatal collision begins to grow in the 71+ age group. As the state's population ages, this will be a continuing concern.

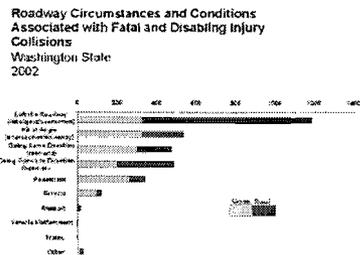
Driver errors and behavior - The top three contributors in fatal accidents are: Lane errors – 43%, Alcohol – 30 %, and Speeding – 24% ("Lane errors" is a broad category that includes improper lane changes, merging and exiting, leaving the roadway, crossing into the path of on-coming traffic, etc.)



Not using seatbelts contributes to fatalities - Analysis of motor vehicle fatalities for 2002, when seat belt use in Washington was about 93% (the highest in the nation), shows that about half the persons who died were not wearing seat belts.

Motorcycle, pedestrian, and bicycle collisions
While the rate of all collisions involving motorcycles is only 1.4%, the percent of fatal and disabling collisions involving motorcycles is 12%. The number of pedestrian fatalities as a result of vehicle collisions has declined slightly since 1993. Even so, the number of pedestrian deaths (11% of all fatalities in 2002) remains disproportionate to the frequency they are involved in roadway collisions (1.4% of all roadway collisions). The number of bicycle fatalities and disabling injuries compared to the number of crashes involving bicycles suggest that bicycle crashes with automobiles are of concern because they are so severe.

Roadway design
Features of the roadway may be a contributing factor in serious accidents. These features include access points along the roadway (driveways, intersections), objects along the roadway (trees, utility poles), curves (sight distance), and lane configuration (multiple lanes, median area, turn lanes). The conditions and circumstances that influence safety vary greatly between urban and rural aspects of the problem. In rural settings, "leaving the roadway" and "head-on collisions" are more likely, whereas in an urban setting, "hit at an angle" and "rear-end" collisions are more likely.



Safety Issues for other Modes

Rail Transportation
Passenger rail transportation has a strong safety record with a national accident fatality rate of .08 per 100 million passenger miles, about 1/10 that of motor vehicles. Work remains to further improve rail safety, including rail crossings, trespassing, and oversight of light rail and monorail systems. Flashing lights and gates now protect nearly all crossings on busy main line tracks resulting in a 56% reduction in railroad crossing collisions since 1992. Trespassing and suicides on rail lines have resulted in 14 people killed in 2002 and four killed in collisions at rail crossings.

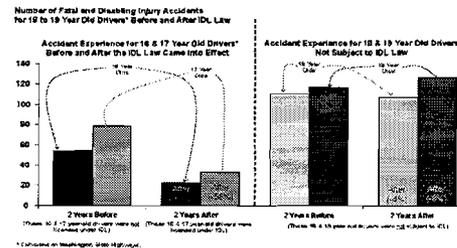
Aviation
General aviation has an excellent safety record in Washington. The national picture shows a fatality rate of .03 for 100 million miles flown. In recent years, general aviation has experienced about 51 accidents per year, with fatalities numbering in a range from 3 to 16 per year. The majority of general aviation collisions are the result of pilot error and weather.

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 State 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.

Transportation Security
Terrorism activities have become an issue of public concern following the attack on the United States of September 11, 2001. As a result, transportation system security has become a focus of safety planning to deal with operational challenges that might be present in a terrorist emergency. Transportation system security includes: implementing protections to prevent harm to the transportation systems or their users; putting measures in place that deter terrorists from acting; and preparing to respond in the aftermath of a terrorist act.

Effectiveness of Safety Programs
Through collecting and tracking data, it has been demonstrated that many steps to increase safety are effective in lowering the toll of fatalities, injuries, and property damage on our roadways. These strategies focus on education, enforcement, and roadway conditions.

Intermediate drivers' license for young drivers
This law, passed in July 2001, requires an additional 50 hours of behind-the-wheel driving time for drivers under the age of 18 before they can obtain a license. It also limits the number and age of passengers in a vehicle and late night driving hours for young drivers.



Early statistics collected in the two years after the law began indicate a drop of 60% in the number of fatalities and disabling injuries for 16 and 17 year-old drivers.

Alcohol limit .08
The State Legislature enacted anti-drunk-driving laws in 1998 that lowered the blood alcohol intoxication standard from 0.10 to 0.08 percent and provided for automatic loss of licenses for drunk drivers. The graph shows that in years prior to about 1998, a significant drop had been seen in the rate of alcohol related traffic fatalities. Since 1998, however, in Washington the trend mirrors the nationwide picture where the rate of alcohol related traffic fatalities has remained steady. Meanwhile, the nationwide rate has increased slightly from the year of its best performance (1998). In 2002, the rate of driver alcohol impairment associated with motor vehicle fatalities was 40%. This data is puzzling in view of the broad perception that the lowered alcohol threshold would, or has, spurred improvement in the drunk driving situation. More investigation is required before WSDOT can confidently suggest the meaning of these data.

Other measures taken in Washington to reduce drunk driving include offenders required 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 DUI prosecutions.

Alcohol Related Traffic Fatalities Washington State's Public Roadway Facility Fatality Rate and Alcohol Related Fatality Rate Per 100 Million VMT 1980-2002



Seat belts and the Click it or Ticket Program
Washington's strong policies and enforcement of the seat belt law resulted in a high of 93% seat belt use in 2002 and increased to about 95% in 2003 and 2004. Half of the fatalities of motor vehicle occupants are people who were among the 5% to 7% of non-seat belt users.

Maintenance and operations of the roadway
Maintaining and operating highway systems makes a critical contribution to roadway safety. Day-to-day maintenance activities – including snow and ice control, debris removal, guardrail repair, traffic signal maintenance and repair – help reduce the conditions and circumstances that can lead to

Transportation Access

and fares. Participating agencies can access Trip Planner to plan necessary trips when a wheelchair lift, infant car seat, or daycare stop is needed.

Emerging Directions

- Comprehensive strategies are needed to address the transportation issues of the growing elderly population, and of increasing rural isolation. Understanding the state role in providing basic transportation needs is necessary to effectively develop partnerships in meeting the state's interest.
- Consistent funding and service levels for demand response service by both transit agencies and other providers need to be addressed. Lack of consistent funding acts as a barrier to efficient coordinated transportation service.
- Continued focus on better coordination between services is needed to minimize duplication and make the most of available revenue. The Agency Council for Coordinated Transportation should continue its efforts to provide this coordination and needs adequate funding to accomplish this goal. Continued coordination to allow implementation of programs like Trip Planner should occur.
- New public transportation service strategies are needed to improve evolving transit markets, particularly rural, elderly, and suburban mobility.
- A policy defining the state's interest in Intercity transportation is needed from the Transportation Commission. This policy would define the state's objectives in intercity transportation access needs.



Where basic transportation services are indispensable for all citizens' societal engagement, how is a "safety net" for transportation needs to be provided for every citizen in every community?

Washington's Transportation Plan (WTP) is identifying key issues for people without access to an automobile or the ability to drive who face increasing isolation and the inability to have access to basic necessities or activities enhancing the quality of their lives.

Washington State citizens require access to basic transportation services. Individuals without access or who cannot transport themselves rely on services provided by volunteers, human service agencies, and public transportation agencies. This population is referred to as "persons with special transportation needs." Persons with special transportation needs fall into four broad groups: the elderly, people with low incomes, persons with disabilities, and children. It is difficult to determine how many people in these groups need specialized transportation services, but demand is growing.

Not all people who fit one or more of the four groups have a special transportation need, nor do they need financial assistance to access transportation. More information is required to better assess needs.

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Transportation Access

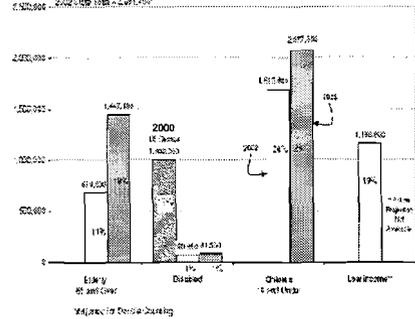
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People With Special Transportation Needs Include the Elderly, Persons With Disabilities, Children and Low-income Individuals.

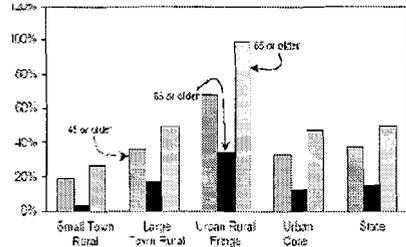
People with Potential Transportation Access Needs



Washington's Elderly Population is Growing

The elderly are a growing share of the population and they are driving more and longer than their predecessors. They are "aging in place," increasingly living in suburban areas

Percent Change in Elderly Population by Rural Classification Washington, 1990-2009



where driving is essential, and public transit service is difficult and expensive to provide. As a person ages, the ability of the person to meet their own transportation needs diminishes. The growing proportion of "old" elderly (85+) will increase demand for demand response public transportation. The growing number of older drivers will require special roadway safety emphases such as signing.

Persons with Disabilities in Washington

It is difficult to know how many people with disabilities in Washington have special transportation needs. What we do know, however, is that the 2000 U.S. Census says there are 1 million people with disabilities in Washington. Not all of these disabilities create a need for special transportation services.

There are a total of 60,850 persons with disabilities receiving assistance from the Dept. of Health and Human Services (DHS). According to the National Health Information Statistical Database, in Washington sensory limitations severe enough to affect everyday life afflict about five percent of the adult population. About 228,000 people have physical disabilities that affect their ability to walk and get around outside the home.



Washington's Children

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

Washington's Low Income Population

In 2002, 1.16 million people with low incomes were assisted by DHS, totaling \$2.45 billion in assistance. Low-income residents spend a higher percentage of their income on transportation than others. However, many people on public assistance subsidies receive transportation support. Low-income people in some rural counties and Tribal Nations may not have access to public transportation services.

Transportation Challenges in Rural Areas

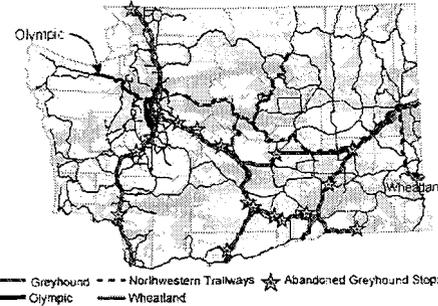
To maintain economic viability of rural communities, people in these communities must maintain access to the urban centers for banking, commerce, law, engineering, medicine and other specializations. In rural areas, this access is normally provided by automobile. With limited options, and long distances, providing this access to people who cannot drive is a challenge.

Intercity connections are supplied through a network of public and private services. As the business model for private providers changes, smaller rural communities are losing access to the national intercity network and the educational, employment, social service, and cultural opportunities in urban communities.

There are gaps in programs and funding that leave many of Washington'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 public transportation service areas.

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

Intercity Bus Service



Special Transportation Service Providers

Public transit agency spending represents a majority of funding for access services, but many people, especially in rural areas of the state do not have public transportation services. The continued loss of intercity bus services has further contributed to a sense of rural isolation. A large number of non-profit and for profit groups provide access services in all areas of the state. Many of these services rely on volunteers and funding is precarious. Demand response services are expensive to

provide and are taking an increasing share of limited transit funding. With current funding, transit agencies face a trade-off between demand response service and fixed route service.

Public transportation systems are seeing an increasing demand for expensive door-to-door service that significantly reduces their ability to maintain fixed route services at current levels. This challenge is further compounded by the increasing demand for trips by the growing elderly population, particularly in rural and suburban areas that are difficult or impossible to serve with traditional transit service. Public transportation agencies provided 4.8 million demand response trips in 2003 at a cost of \$104 million, more than \$21 per trip.

In addition to public transit agencies, a broad network of public and private non-profit and for-profit agencies provide specialized transportation services. The large and small public and private agencies face considerable challenges with insurance, reliable long-term funding (often based on grants), volunteer recruitment, and program costs vs. transportation funding choices.

To better coordinate Medicaid-related transportation (\$50 million a year to purchase 2.8 million trips) 8 medical assistance brokers, covering 13 brokerage areas, match up clients with providers.

Current Efforts underway with Transportation Access Coordination

Agency Council on Coordinated Transportation
The Washington State Legislature created the Agency Council on Coordinated Transportation (ACCT) in 1998 to increase transportation access by removing barriers through coordinated transportation services statewide. Significant local, state, federal, and private money is spent on accessing transportation. We cannot afford to have needs unmet due to uncoordinated spending.

The ACCT is chaired and staffed by WSDOT. The Council represents numerous public and state agencies and private transportation providers in an effort to achieve optimum coordination. This coordination is critically important as it leverages all public and private funds together to improve effectiveness of the return on investment for transportation; reduces duplication and unnecessary service trips; and makes it easier for users to access essential services.

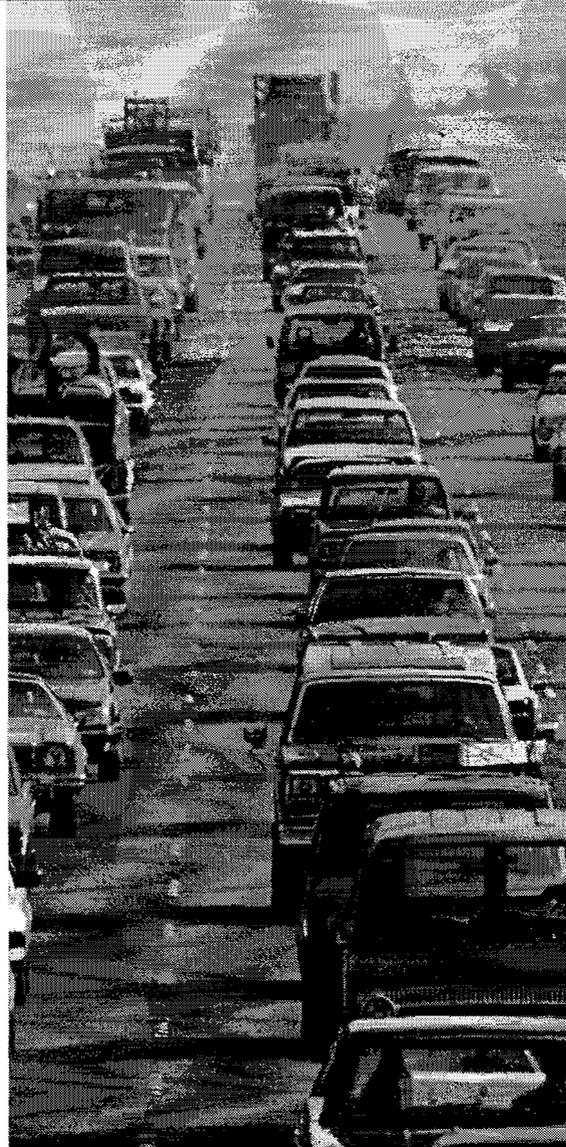
Trip Planner

WSDOT joined Oregon's DOT (ODOT) to develop a bi-state Regional Trip Planner system. The Trip Planner tool will improve coordination and use of public transportation. A multiyear project Trip Planner is the Internet-based, integrated transportation information system. It will reduce barriers to travel and services by capitalizing on the efficiencies of the Internet for the planning of trips including schedules, routes,

Emerging Directions

- The imbalance of demand and capacity on our system causes significant delay that affects the quality of people's lives. This imbalance will grow as the state experiences increases in population and jobs resulting in an increase of travel unmatched by new investment in highway system capacity. WSDOT is pursuing a practical and balanced strategy, which includes operational improvements (HOV lanes, ramp metering, incident response, traveler information, and signal synchronization) and targeted capital investments to get the most out of the existing system and restore lost productivity.
- History suggests that, although large-scale corridor improvement plans are desirable as a long-range vision, funding reality says that we need smaller scale affordable capital investments targeting specific traffic restrictions. Targeting capital investments at bottleneck and chokepoint locations would be less expensive than full corridor build-outs, but could deliver significant delay savings and restored productivity. These improvements offer the greatest return on investment.
- The Legislature's 2003 Transportation Funding Package is an example in delivering these targeted investments. For example, the package provides \$485 million for targeted improvements to I-405 at the worst congested locations: the Kirkland Crawl, through the Wilburton Tunnel approaching I-90 southbound, and at the I-405/SR 167 Interchange vicinity. Similarly, the package targets funding at other locations where traffic flow improvements can make a difference.

- Bottleneck and chokepoint investment options could be developed to improve travel for commuters, freight, interregional movement, recreation, and event access. However, new analysis techniques are needed to identify and prioritize the optimal combination of investments.



What opportunities for investment in new facility and system assets can help address system chokepoints and bottlenecks, the most effective near-term solution through expanding capacity to move people and goods in shorter times and more reliable times?

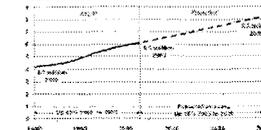
In Washington State, the growth in travel demand has outpaced expansion of transportation system capacity. Additionally there is little evidence that major levels of new investment in highway system capacity will be forthcoming, leaving the state with a backlog of capacity needs now and in the future. This imbalance of demand and capacity occurs in virtually every mode of transportation - at our airports, on our rail lines, and especially on our roadway systems.

The growing demand/capacity imbalance affects citizens' daily lives and almost every sector of economic activity. Commutes to work are time-consuming and often aggravating. Non-work trips, too, must be planned to avoid congestion or with an extra time allowance to account for the lack of reliability in travel times. Freight delivery becomes slower and less reliable. Air pollution is exacerbated by cars and trucks stuck in traffic. Even rural areas that have never seen traffic jams are penalized when highway congestion associated with urban areas interferes with their agricultural products reaching ports and customers.

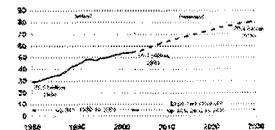
Washington is Growing

Population and jobs are expected to continue to grow in Washington State. This population growth will translate into substantial increases in travel demand. Washington's workforce is also growing and will continue to a projected 3.9 million by the year 2030. This growth is leading to more travel and compounding delay.

Population in Washington 1980 to 2030 in millions



Vehicle Miles Traveled in Washington 1980 to 2030



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Bottlenecks and Chokepoints

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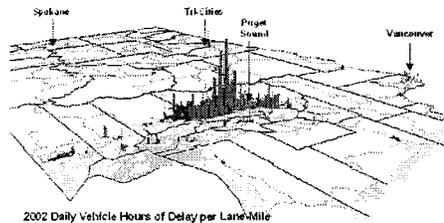
Washington State Transportation Plan

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Bottlenecks and Chokepoints

Delay Occurs Mostly in Urban Areas

There is a projected growth in travel that will be concentrated in Puget Sound, Spokane, and Vancouver. Consequently, the gap between demand and capacity will grow wider in the future, especially in the major urban areas and high traffic volume corridors.

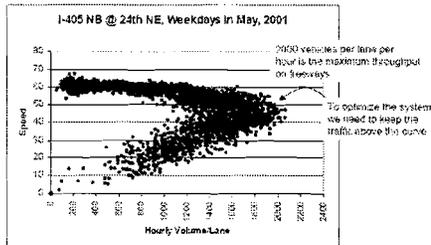


Delay is more prevalent in urban areas with the greatest delay found in the Central Puget Sound area. The total delay across the state is estimated to be over 365,000 hours per weekday and represents about \$1.6 billion annually in lost time.

Congestion Actually Reduces Capacity

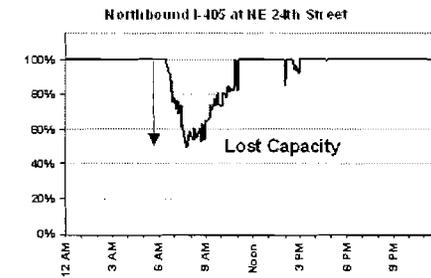
Congestion in the form of vehicle delay creates inefficiency and has the effect of reducing freeway capacity. The graph below illustrates that although congestion increases and freeway speeds drop below the posted speed limit, the total throughput of the freeway increases until a maximum throughput is reached at about 45 mph. If congestion worsens beyond this point speeds and total throughput drop rapidly. To optimize the efficiency of the freeway system we need to keep the traffic flow on top of the curve.

Congestion reduces the capacity of roadways by up to 50%.



This efficiency loss can be seen more clearly in this graph. 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 is most needed the equivalent of one whole lane (out of two general purpose lanes) is lost to congestion. These efficiency losses often occur at bottleneck and chokepoint locations, which can severely hinder the entire system's performance.

Percent of Lane Capacity Lost Due to Delay



Bottlenecks and Chokepoints are Major Causes of Delay

Bottlenecks and chokepoints are typically locations on the system where geometry and traffic patterns contribute to congestion. 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 the I-90 Snoqualmie Pass and roadways closed due to spring thaw restrictions are examples of weather related bottlenecks and chokepoints throughout the state.

Operational and Targeted Capital Investments Can Improve Roadway Productivity

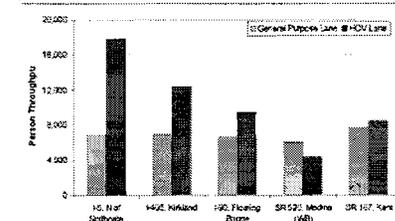
The state currently manages a number of programs to improve the productivity of our highway system. These programs include operational measures and capital investments.

Washington State is considered a leader in the use of high occupancy vehicle (HOV) lanes, ramp metering, and signal synchronization to improve the maximum throughput of a roadway experiencing congestion.

HOV Lanes

HOV lanes increase the efficiency of our system in three ways: by limiting the number of vehicles, overcrowding of the lane is prevented and vehicle throughput is increased, while the higher occupancy rate increases person-throughput and creates an incentive to commute via HOV modes.

People Moved in General Purpose and HOV Lanes (2002) PM Peak Period Peak Direction



This graph illustrates that in general on the Puget Sound freeways more people are moved in most HOV lanes than the average general purpose lane during the peak period. In this way HOV lanes help increase system efficiency and allow the region to accommodate increased demand.

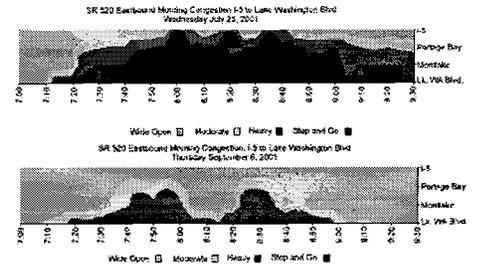
Fixing Bottlenecks and Chokepoints

Targeted traffic flow improvements can also make a significant difference in system performance. The recently completed I-405/SR 167 Flyover ramp is a good example of one such targeted investment.

Prior to the opening of the new ramp stop-and-go conditions occurred weekday mornings between 6:45 and 8:00 am. Immediately after the opening of the new ramp, the stop-and-

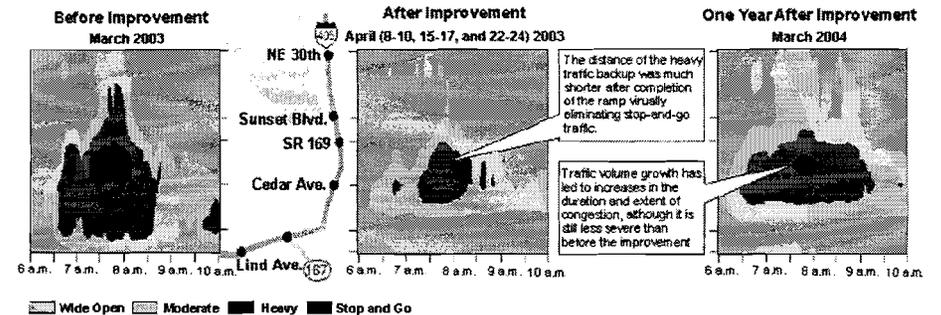
Ramp Meters

The effect of ramp metering in reducing delay is well documented. These graphs provide a comparison to show the benefits of ramp metering on SR 520. The black/darkest shading shows stop-and-go traffic conditions. Prior to ramp metering, stop-and-go conditions occurred between 7:25 and 9:25 am. After the ramp metering, most of the stop-and-go condition was eliminated.



go condition was almost entirely eliminated. In the past year we've seen continued growth in the I-405 mainline volumes as well as the I-405 southbound to SR 167 southbound ramp. While serving higher volumes, the congestion at the interchange area is still considerably lower than the conditions prior to the project. On weekends, both the stop and go traffic and heavy congestion conditions have been essentially eliminated.

Average Weekday Congestion I-405 Southbound





Washington Transportation Plan

Economy and Jobs

Aviation

Washington's system of 129 airports, generated 171,311 jobs, over \$4 billion in wages, and over \$18.5 billion in annual sales output.

The Tourism Cluster

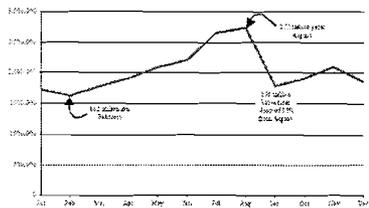
Transportation has a clear and inseparable link to the tourism cluster by providing several statewide services and programs including: infrastructure such as highways, airports, ferries, passenger rail, safety rest areas, viewpoints. Traveler information services include highway signing for destinations and businesses, roadside interpretation, traveler information, traffic cameras, interactive communications, and publications.

The Ferry System

The Washington State Ferries is a component that links central Puget Sound with the Olympic Peninsula. The ferry system is a tourist attraction with a ridership of 2.75 million in August 2003. In 1980, total ferry ridership was 16.7 million; in 2002 it increased 50 percent to 25.1 million. These volumes are projected to continue to increase to 43.4 million by 2020.

Total Monthly Ridership

All Ferries, all routes 2003



Scenic Byways

Washington's scenic byways are destinations for tourists. In the 2002 findings by the USDA Forest Service's National Survey on Recreation and Environment reports that 56 percent of Americans participate in driving for pleasure in rural or natural areas. In 2002, travelers in Washington spent \$11.2 billion generating \$3.5 billion in earnings and providing 139,200 jobs. In 2003 this increased to \$3.9 billion.

Emerging Directions

- Transportation infrastructure is a necessary factor for economic development, but not sufficient to ensure economic development. Other factors are important and may overshadow transportation investment.
- The Transportation Commission defines economic-development as: economic activities that result in development or retention of income-generating industries (those industries that raise per capita income). Transportation policy should continue to focus transportation projects on supporting "sure bets" rather than speculative development and should be aimed at supporting generative industries, not development that just redistributes personal income from one locality to another (such as retail).
- Targeted transportation economic development projects should focus on retaining existing jobs or probable new jobs to help ensure success.
- WSDOT should continue to work closely with the Washington State Department of Community, Trade and Economic Development and the State Economic Development Commission to evaluate the transportation needs of industry clusters and to support the overall state economic development direction as the Statewide Economic Vitality Plan is updated.



What investments in new facility and system assets can help support the state's economic vitality and strengthen the job picture?

Transportation's link to economic development is vital. 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.

Economic benefits of transportation investment fall into four categories:

- Basic user benefits (mainly reduced operating and production costs, reduced passenger and freight delay and reduced accidents)
- Jobs from project construction and the multiplier effect*
- Economic productivity increases that help expand the state economy
- Development for local or regional economies (through improved land access and support for tourism)

"The most important competitive investment the state of Washington can make is to improve its transportation infrastructure. Washington's currently overwhelmed transportation system threatens jobs and economic vitality, wastes people's time and money, diminishes quality of life, and degrades our environment." – Washington Competitiveness Council Report

This folio examines the structure of the state's economy, what research says about quantifying the benefits of transportation infrastructure investments and the role of the transportation system in supporting the economy. The discussion in this folio is closely related to the folios about Moving Freight and Bottlenecks and Chokepoints.

*The multiplier effect is a measure of the economic consequences of the change in one sector of the economy upon the other sectors of the economy. It incorporates the direct effects (project construction jobs) plus those supported through project purchases of goods and services (indirect jobs) plus the effects to the rest of the economy due to household spending (induced jobs).

The Washington State Transportation Commission and the Washington State Department of Transportation are in the process of updating the Washington Transportation Plan. This long range plan is based on data analysis and is focused on ten issues: System Preservation, System Efficiencies, Safety, Transportation Access, Bottlenecks and Chokepoints, Economy and Jobs, Moving Freight, Future Visions, Health and Environment and Funding and Governance. This plan will shape future transportation budget proposals.

For more on this topic: www.wsdot.wa.gov/planning/wtp

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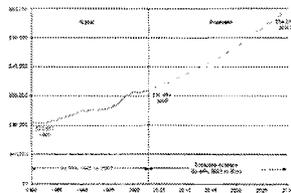
Economy and Jobs



Washington's Economic Structure

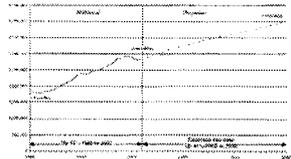
Per capita income is a real indicator of the state's economic growth. In Washington per capita income was \$31,984 in 2003, which ranked 14th nationally. Over the long run, growth in per capita income in Washington has trended closely with, and usually above, the national average.

Washington Per Capita Income (in 2000 dollars)



Along with population, Washington's workforce is also growing and will continue to grow.

Growth in Employment 1980 to 2030



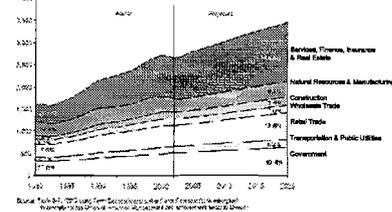
In March 2004 the state's unemployment rate of 7.6 percent was higher than the national rate of 5.7 percent (reflecting the severity of the recession on Washington's economy).

Most economic sectors are expected to see steady growth in the next 20 years, but the structure of Washington's economy is shifting. Following a national trend, services are expected to increase to almost 40 percent of non-agricultural employment by 2020, up from 25 percent in 1980. Most other sectors are projected to keep near their historical shares.

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, Washington out-performs the nation in manufacturing.

In 2003, Washington 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, though Washington is expected to see an average growth rate of 0.4% in manufacturing employment through 2030.

Washington Non-Agricultural Employment by industry, in thousands of jobs 1980 to 2020.



Agriculture

Agriculture is big business in Washington, even though it only employs about 3 percent of our workforce. In 2002, Washington produced \$5.6 billion in food and agricultural products, ranking ninth nationally as the number one producer of 11 crops.

Agriculture employed more than 87,000 people in Washington in 2002. Eighty percent of all agricultural employment is located in Eastern Washington. Yakima County accounts for 24 percent of statewide agricultural employment.

Quantifying the Economic Benefit of Transportation Investments

Research shows that transportation is linked to the economic health of a locality, state or region. Transportation infrastructure is a necessary but not sufficient factor for economic development. Transportation investments alone cannot prescribe the duration or magnitude of a specific economic improvement. Other factors are important and may overshadow the transportation investment. Transportation benefits are grouped into the following four categories.

Basic User Benefits

Improving safety, reducing delay, and lowering operating and production costs are examples of basic user benefits from making a transportation infrastructure investment. These are experienced directly by travelers and businesses.

Jobs, Project Construction, and the Multiplier Effect

The workforce that designs and builds transportation projects sees a direct benefit as additional funding for transportation projects is secured. Economists also show that there is an indirect benefit, or multiplier effect. Transportation infrastructure investment supports high paying jobs in the professional and construction sectors of the economy as well as additional jobs in the sectors that support transportation construction through the purchase of goods and services. Wages paid to this workforce translate into jobs in other trade and service sectors through household expenditures.

Statewide Economic Productivity Increases

Transportation investments have linked producers to new markets leading to statewide productivity increases and economic growth and expansion. Continued investment has contributed to improved business efficiency through new practices such as just-in-time delivery.

Research by Nadin and Mamuneas establishes the link between the highway network and economic performance. Their work provides empirical analysis about the historical contributions of roads to the U.S. economy. From 1950 to 1991, U.S. industries realized annual production cost savings averaging 18 cents for each dollar invested in the road system. This analysis captured the significant benefit that building the interstate system provided for economic growth and productivity. Decreased investment since the building of the interstate system has slowed transportation's contribution to productivity increases, but highway investment has remained a contributor to economic productivity growth.

Local and Regional Economic Development

Most importantly, transportation provides access and opportunities for local or regional economies to compete in larger areas of state, national, or world markets. Producers have greater opportunities to capitalize on their natural assets whether it be labor force, tourism, or other competitive advantages. Transportation access is necessary for the expansion of home-grown industries and the attraction of new industries.

Washington's Economic Clusters

In 2001 a study by the Washington Department of Community, Trade and Economic Development summarized the state's economic clusters. The study's intent was to encourage others to think about economic vitality issues in the framework of the clusters. An economic cluster consists of a lead or final product industry and suppliers, often concentrated in a particular region of the state. The state's economic vitality plan calls for supporting the needs of these industry clusters.

Washington's Top Three Economic Clusters

Ranked by Gross Business Income	2000
Aerospace	\$37.81 billion
Health Care	\$13.2 billion
Tourism	\$10.2 billion

Ranked by Employment	2000
Tourism	261,625
Health Care	216,618
Aerospace	88,079

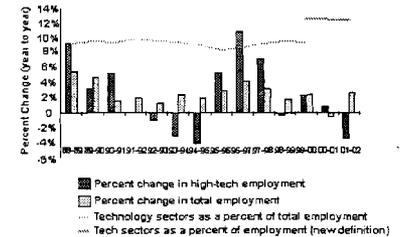
Aerospace and Technology

Regionally, an interesting shift occurred 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 Tri-Cities, and Bremerton all exhibited strong technology job growth over the past two years.

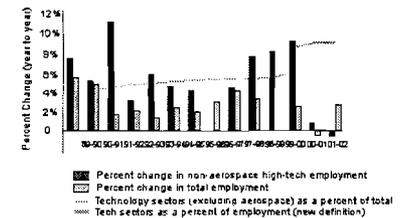
Technology industries account directly for more than 12 percent of Washington's total employment. Washington retains a highly educated workforce, critical to the technology industry, ranking twelfth for states with residents who have higher education degrees.

Since 1988, total high-tech employment fluctuated with the economic cycles of the aerospace industry, while non-aerospace high-tech employment showed steady growth during that same period.

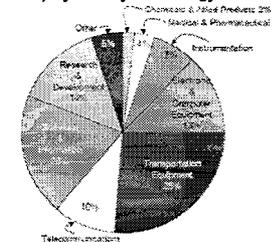
Technology Industries account directly for more than 12 percent of Washington's total employment



Technology Industries, excluding aerospace, account directly for almost nine percent of Washington's total employment



High Tech Employment by Technology Sector



Washington Transportation Plan

In Summary

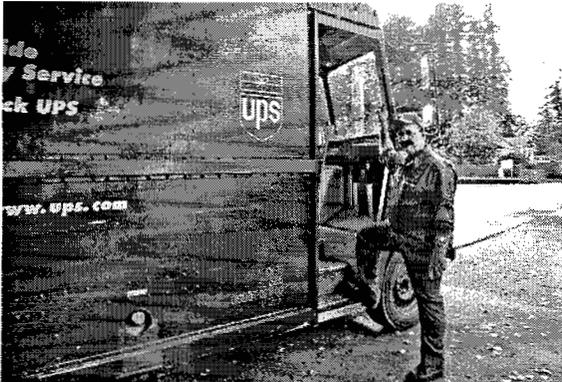
The three components of Washington's freight system are integrated and support our state's economy:

- International goods enter Washington State gateways and become part of Washington's manufactured output, or are distributed in our retail system. Washington's global gateways also carry national and international goods to and from the larger U.S. market.
- Washington manufacturers and farmers ship products directly to customers and to wholesalers in national and international markets. These industries support hundreds of thousands of jobs and contribute billions of dollars to the gross state product.
- Washington wholesalers and retailers supply consumers with goods from all over the U.S. and the world. They sustain our modern economy.

Freight related issues such as security, safety and the environment are being considered in other parts of the update of the Washington Transportation Plan.

What ideas did we miss?

We want the conversation about freight strategy to involve all parties. We need your help to make good investment choices that will address the needs of freight movement on our state's transportation systems and facilities. Especially when there isn't nearly enough money to do everything that clearly needs to be done.



Moving Freight

How are the special needs of freight movement to be incorporated into the state's transportation plan?

The three components of Washington's freight system – international gateways, transportation serving Washington's producers and manufacturers, and the retail and wholesale distribution systems – underpin 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.

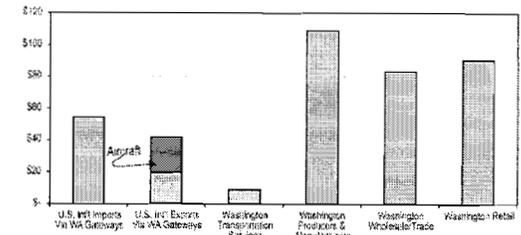
Washington is a gateway state, connecting Asian trade flows to the U.S. economy, Alaska to the Lower 48, and Canada to the U.S. West Coast. About 70 percent of international goods entering Washington gateways continue on to the larger U.S. market. Thirty percent become part of Washington's manufactured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

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

Washington'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 economy of the region would no longer function.

The value and volume of goods moving in these freight systems is huge and growing.

Washington State Value of Freight Shipments (2002: Billions of Dollars)



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International and National Trade Flows Through Washington

Washington Gateways

National and international economies rely on the efficiency and capacity of Washington's transportation systems. In 2002, almost \$96 billion of goods entered or departed the U.S. stream of commerce through Washington's global gateways, facilitating international trade with U.S. trading partners. About seventy percent of international goods entering Washington gateways are destined for the larger U.S. market. International and national trade routes run through our state on both east-west and north-south corridors.



Gateways Connect Asia to the U.S. Via East-West Corridors

Washington's Puget Sound seaports move large volumes of imported manufactured goods that are shipped in containers from Asian trading partners. The ports of Tacoma and Seattle, combined, are among the top three marine container cargo complexes in North America, handling 8.2 percent of total U.S. container traffic. About 76 percent of all international containers arriving at these ports are transferred to rail and delivered to the Midwest and/or the East Coast. The annual volume of containers through Puget Sound seaports is expected to more than double from 2002 to 2025 (some 80 percent of this growth will be international).

U.S. Agricultural Exports Rely on Washington's Transportation System

Washington's transportation system is also important for U.S. agricultural exports. In 2002, food and food products totaling almost 20 million tons were, by volume, the largest commodities leaving our seaports. Agricultural products such as wheat, corn, and soybeans, from the Midwest and Eastern Washington travel by barge and rail through the Columbia River ports of Vancouver, Kalama, and Longview to Asian buyers.

Washington Gateways Support National Defense

Washington State gateways are a critical link in the U.S. defense and national security system. Fort Lewis is the only Power Projection Platform on the West Coast. In the event of a major military conflict, inbound cargo needed for

mobilization will travel by road and rail across the U.S. for shipment out of the Port of Tacoma. The Port of Seattle is a designated sustainment port, used to ship consumable supplies to troops in the event of a major overseas conflict.

Canadian - U.S. Trade is Trucked on North-South Corridors

Canada has a long history as a significant U.S. trading partner, and Canadian trade is big business in the state. In 2002, \$16 billion in U.S. - Canadian trade was imported or exported through Washington. The majority of these goods are transported by truck along the I-5 corridor through the Western Washington border crossings of Blaine, Sumas and Lynden. About half of the trucks deliver goods within Washington State, and half transit the state to link the Canadian and the greater U.S. economies. Blaine is, by far, the busiest truck crossing in Washington State; in 2002 it was the fifth busiest in the nation. Cross-border truck volumes in Western Washington have nearly doubled over the past 11 years.

Washington Links Alaska to the Lower 48 States

In addition to international trade, Washington is a key gateway for trade with Alaska. By tonnage, crude petroleum from Alaska is the greatest waterborne commodity entering Washington State. In 2002, almost 25 million tons of crude petroleum was carried to Washington State from Alaska, using the inland waterways and landing at Puget Sound refineries. In turn, needed consumer products leave Washington seaports for Alaska. In 2002, more than 77 percent of domestic waterborne cargo tonnage entering Alaska originated from Washington State.

Time-Sensitive Freight Travels By Air

Our airports are critical for the fast shipment of goods to and from national and international markets. High-value, time-sensitive products from computer chips to fresh fish and perishable fruits travel through these gateways. Washington's largest volume of air cargo is received at Seattle-Tacoma International Airport, which ranks eighteenth in the United States by tons of cargo handled.

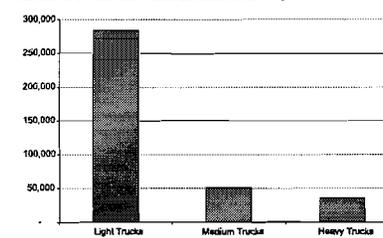
Competitive Advantages

Washington has built on its natural advantages: deep-water ports, proximity to fast-growing Asian and Canadian economies, and a short all-water route to Alaska, to create an enormously valuable multi-modal freight infrastructure. As a result, Washington also gains advantage from the region's "soft" trade infrastructure: human capital that facilitates financial, legal, and other international business issues.

Distribution Systems: Wholesale and Retail

By far, the greatest volume of trucks on our roads and highways serve the daily needs of Washington consumers through the wholesale and retail distribution system. Up to 80 percent of all truck trips operate in the local distribution system.

Number of Commercial Trucks Licensed in Washington State: 2004

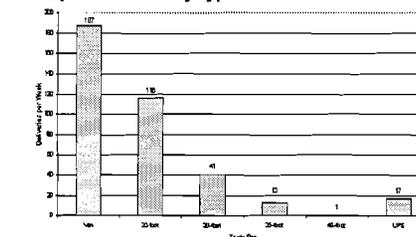


An enormous variety of goods are handled on this system; food and groceries, fuel, pharmaceuticals and medical supplies, retail stock, office supplies and documents, trash and garbage, construction materials and equipment. Without these goods, and the transportation system that moves the goods, Washington citizens would be without the daily necessities of life. High-volume distributors' goals for Washington's freight system are on-time delivery (50 percent), price (38 percent) and reliable trip time (12 percent). Source: WSDOT survey, 2004.

Grocery, Food Service, Retail, Parcels and Medical Supplies

Final distribution of goods is almost 100 percent by truck. For example, a huge volume of truck trips serves the daily needs of grocery shoppers. Efficient and cost-effective transportation is necessary to keep goods on the shelf at the lowest cost to consumers. A typical large grocery store receives two big semi-tractor-trailer deliveries and ten to twenty other specialized deliveries per day. Specialty markets, such as the Metropolitan Market on Seattle's Queen Anne Hill, may receive 375 van and small truck deliveries per week.

Weekly Deliveries to the Queen Anne Hill Metropolitan Market by Type of Vehicle



High-value, time-critical deliveries such as business documents and packages, cash in armored cars, and critical medical supplies and drug deliveries, must move quickly through the freight distribution system. When faced with transportation uncertainty, many companies are forced to add expensive buffer to their inventory stores. The costs of maintaining additional inventory – including space to store it, carrying and handling charges, waste and damage jeopardize the sustainability of these companies and the services they provide.

The Refuse System – Garbage Trucks Take It All Away

In 2001, Washington generated almost nine million tons of solid waste, over eight pounds per person per day. Garbage trucks pick up over 12,000 tons of residential and commercial waste every day and deliver it to transfer stations and landfills. Seventy percent of Washington's solid waste is shipped by railcar to the Roosevelt landfill in eastern Washington and to several Oregon landfills. Three 100-car trains of garbage arrive at Roosevelt every day, full of Washington garbage.

The Fuel Distribution System

In 2001, citizens of Washington State used 17.6 million gallons of petroleum every day. How does all that gas get to the gas station?

First, crude oil is processed at five refineries in Washington State; these refineries produce 89 percent of the petroleum needs for Washington State and 70 percent of Oregon's needs (there are no refineries in Oregon). The Olympic Pipe Line carries 50 to 60 percent of the output of these refineries to distribution centers in Western Washington, and is the sole source of jet fuel for Sea-Tac Airport. Two other pipelines serve Eastern Washington. Fuel that does not move by pipeline gets to distribution centers by barge or small tanker. Tanker trucks then make the final delivery to 2,800 gas stations throughout Washington State. Large gas stations may receive one or two fuel trucks each day, smaller facilities might receive one truckload of fuel per week.

Emerging Directions

Distribution

- Solution to I-5 congestion in urban areas: there is no alternative route to the mainline
- Solution to I-405 and Highway 167 congestion
- Completion of major freight corridors such as Highway 509, Highway 167/I-5 and Highway 18 to I-90
- Alaskan Way Viaduct risk of closure and freight capacity
- I-90 Snoqualmie Pass
- Local truck route program
- Construction planning on truck routes
- Ferry system freight runs
- Fuel pipeline capacity and distribution alternatives to meet long-term demand



Emerging Directions

Global Gateways

- Future east-west rail capacity, constraints, and port-rail connections
- Preservation and/or enlargement of rail yards in metro regions: Seattle, Spokane, Tacoma and Vancouver WA
- Capacity and constraints throughout the north-south I-5 corridor, including congestion from Everett to Olympia, missing highway links such as Highway 509 and Highway 167, and the Columbia River Bridge
- I-90 Snoqualmie Pass improvements
- Local road connections to ports
- Maintaining the Columbia-Snake River barge system (dredging and lock maintenance)
- Washington - Canadian border delays, congestion and security issues
- Ground access for air cargo: SR 518
- Grade separations at high-impact locations
- Operational improvements: complete statewide Weigh-In-Motion system, communications/ITS, truck rest stops

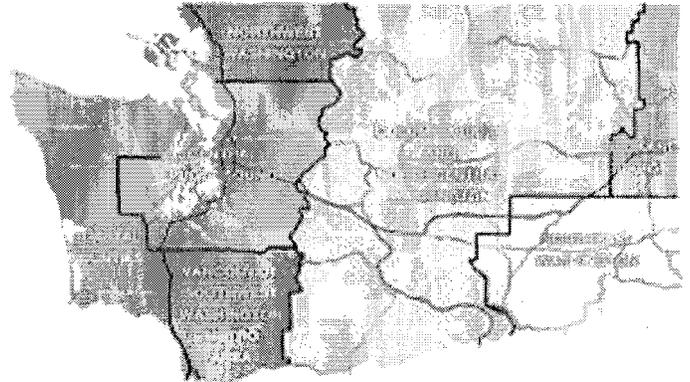
Washington Producers and Manufacturers

Our state's regions have built strong and distinct economies based on industry and agriculture. Regional manufacturing, agriculture, construction, and forestry depend on an effective and efficient freight transportation system.

Agriculture is big business in our state and supports the family farm as well as agri-business. In 2002, Washington State farmers and ranchers produced \$5.6 billion in food and agricultural products. Transportation is especially important for Washington agriculture because the state produces about three times as much food – and for some commodities up to twenty times as much – as it consumes, and is separated by long distances from the majority of the nation's consumers.

Manufacturing is rebounding in Washington State. In 2003, manufacturing Gross Business Revenues were \$88.3 billion, 21.3 percent of the total State Gross Business Income. The sector employed more than 265,000 workers (13 percent of all jobs) and paid 16 percent of total wages in Washington.

Regional Economies Rely on Washington's Freight System



Southeast Washington Sells Wheat to the World

Nationally, Washington ranked third in wheat production with 130 million bushels grown on 2.7 million acres in 2002. Eighty-five percent of Washington State wheat is sold to export markets, primarily Asia.

Only 50 percent of wheat growers are highly satisfied with the current performance of the state freight system. Maintenance and preservation of the Columbia River and the Snake River channels and locks are critical as 92 percent of southeast Washington wheat is shipped to Columbia River ports. Wheat growers say that getting their grain to the port on time, transportation costs, and adequate grain storage at the right locations are their big issues. Southeast Washington farmers shipping other foods to Central Puget Sound need improvements on I-90 at Snoqualmie Pass to prevent winter weather closures. All growers surveyed cite the need for a core all-weather county road system.

The Columbia Basin and North Central Washington: Agricultural Growing and Processing Center

87,500 jobs in the Columbia Basin and North Central Washington are directly dependent on our freight system. Washington is the second largest potato producing state in the country, and 90 percent of Washington potatoes are shipped to the U.S. market. Washington State ranked number one nationally in apple production, with a value of \$1.02 billion in 2002; 70 percent of apples are sold in the United States. Apples and potatoes must be shipped in refrigerated truck or rail cars; 90 percent is trucked. Continued refrigerated truck shortages are likely due to seasonal peak demands, and an ongoing pull from other U.S. regions for refrigerated capacity.

Timber sales from tribal lands such as those owned by the Confederated Tribes of the Colville Reservation and the Yakama Nation have become an important industry in Eastern Washington. Washington's harvest from tribal lands totaled 324 million board-feet in 2001; almost 300 million board-feet of the harvest was in Eastern Washington.



Growers and processors are seeking a solution to reposition refrigerated equipment, and I-90 Snoqualmie Pass improvements to avoid severe weather closures. Growers need a core all-weather county road system, and in the long run are interested in improving Highway 97 south to California markets.

Central Puget Sound Manufacturing, Construction, and Maritime Center

Freight dependent industries employed 484,000 in manufacturing, transportation, construction, and wholesale trade in Central Puget Sound in 2002. The Boeing Company is Washington's largest manufacturer, with \$22.4 billion in revenues in 2003. Boeing's dependence on the freight system will be even greater as it sets new levels of efficiency in the manufacture of the new 7E7 Dreamliner. Another 6,500 mid-market manufacturing companies employed 150,000 in the region, and the maritime industry employed over 22,000 in King County alone.

Shippers and carriers in Central Puget Sound need solutions to I-5 congestion from Olympia to Everett, as there is no practical alternative route to the state's major freight corridor. The majority of Washington State air cargo moves through SeaTac and King County Airports, and I-5 congestion directly impacts reliability and on-time performance of the air cargo system. Industry inventory reduction strategies are driving shorter on-time delivery windows for producers and carriers, and those business needs are also driving demand for a solution to I-405 congestion, completion of major freight corridors such as Highway 509, Highway 167/ I-5 and Highway 18 to I-90, the Alaskan Way Viaduct, port connections, Fast Action Strategy (FAST) projects including SR519/Royal Brougham, the Cross Base Highway, ferry system freight runs, and local truck route programs.

Spokane Region Eastside Center of Manufacturing and Commerce

52,000 jobs in the Spokane region are directly dependent on the freight system, and the regional health care center receives vital supplies via the I-90 corridor. Fifty-six percent of Spokane manufacturers identified on-time delivery as the most important freight service, while 26 percent say price is the most important factor.

Spokane manufacturers and carriers say that meeting those customer needs will require I-90 Snoqualmie Pass improvements to avoid winter weather closures, as well as solutions to mainline congestion in Puget Sound and I-90 pavement rutting. They support a local truck route program and grade separations at high-impact crossings.

Vancouver: Southwest Washington Metropolitan Area

48,000 jobs in the Vancouver metro region directly depend on the freight system, in manufacturing, construction, trade and transportation. Clark County's economy is integrally linked with that of the larger Vancouver/Portland metropolitan area. The Vancouver/Portland metro region is connected by two bridges over the Columbia River on I-5 and I-205, while comparable cities such as Kansas City has 10 bridges and Cincinnati has seven. East Clark County's high-tech industries value speed of transit to ship high-value parts on I-205, the fast route to Portland International Airport.

Vancouver manufacturers and carriers ship product to Central Puget Sound, Portland, and California and require a solution to I-5 congestion from Olympia to Everett and on the Columbia River Bridge. They also support Columbia River channel maintenance, deepening and barge access, improving I-90 Snoqualmie Pass to avoid winter weather closures, and local truck route programs.

Northwest Washington

31,000 jobs in Whatcom and Skagit Counties rely on freight. The region's manufacturing sector's customers are predominately to the south and ship via the I-5 corridor. Their first priority is I-5 congestion from Olympia to Everett that delays fast truck service to California and Washington markets, airfreight to and from Sea-Tac International Airport, and container moves to the Ports of Seattle and Tacoma. Border delays caused by multiple federal databases regulating freight transport are an issue, as is the need for all-weather local roads, and improved east-west connections between I-5 and the Guide Meridian and Highway 9.

Coastal Counties

16,000 jobs in Clallam, Grays Harbor, Mason, Pacific and Wahkiakum Counties are in freight-dependent industries such as manufacturing and forestry. The forest industry in Washington is the second largest in the nation, behind Oregon, with about 10 percent of U.S. forestry employment. Over 90 percent of Pacific and Grays Harbor Counties are in forestland, and privately owned forests account for more than 80 percent of timber harvested in Washington. \$2.95 billion total products were shipped in 170,000 truckloads on Highways 12, 8, and 101 from the coast to the I-5 corridor in 2003. Thirty-six percent of that \$1.06 billion were logs and finished wood, and paper products. \$840 million, 28 percent, was machinery.

Future Visions

Hybrid vehicles are here now. They operate on two fuel sources, most commonly gasoline in an internal-combustion engine and electricity stored in a battery. The Toyota Prius and Honda Civic are two such models already on the market. Other makes and models are scheduled for production within the next three years. Hybrids are efficient in their gasoline consumption because they run on electricity except when additional power is necessary, at which point the internal combustion engine kicks in. Industry experts expect hybrid vehicle sales to accelerate sharply in the next few years. By 2008, it is estimated that hybrids will account for 2 percent of all vehicle sales.



GM Hy-wire Toyota Prius

Hybrid Launch Dates

Make/Model	Date	Make/Model	Date
Honda Insight	1990	Honda Accord	2005
Toyota Prius	2000	Lexus RX400	2005
Honda Civic	2002	Toyota Camry	2005
Chevy Silverado	2004	Toyota Highlander	2005
GM Sierra PU	2004	Nissan Altima	2006
Ford Escape SUV	2005	Chevy Malibu	2007

Hydrogen fuel cell vehicles obtain electrical energy from the chemical process of separating oxygen atoms from hydrogen atoms. In its pure form, the only waste product created by the process is warm water. However, most fuel cells currently being developed require another energy source to drive the chemical separation, such as an internal combustion engine. But that may not always be the case. In May 2003, a drivable, engine-less fuel cell prototype called the Hy-

wire was introduced by General Motors. It runs on compressed hydrogen and transmits energy to the drive train by electrical wire, rather than by mechanical linkages.

Emerging Directions

- In order to build the new systems and capacity expansions needed to support growth, new financing strategies will be needed. Regional approaches, such as the Regional Transportation Investment District (RTID) of Puget Sound, show promise if voters will support regional funding sources to augment state transportation funding.
- Pricing approaches also show promise to supplement traditional transportation funding, especially in congested corridors.
- As ITS technologies continue to be developed, such as smart vehicles and smart roads, Washington needs to be on the forefront of adapting the transportation system to make sure that the benefits of these innovations are accessible to drivers, including commercial drivers who make their living on the roads.
- The anticipated shift from petroleum-based fuels to alternative fuels requires Washington to adapt the current transportation funding system. Innovative and fair strategies for meeting future system needs must be devised and implemented.



What are the visions of transportation system futures - shared and unshared - that should shape today's transportation planning to help create pathways to the future?

There are a lot of visions for the future of transportation in Washington that come from all levels and perspectives - some are beyond our grasp (either by just a little or sometimes by a lot), and some are within sight (sometimes clearly, and sometimes more distantly). Some are clearly needed - some are less justified. Given that Washington's population is still growing, it is important to think today about shaping the future, even though current funding is tight.

Adding New Systems

New types of transportation are being pursued to provide alternatives to driving and to support growth management plans at the local and regional level.

High Capacity Transit

A high capacity transit vision is starting to unfold in Washington. Sound Transit's Tacoma Link light rail is now operating in downtown Tacoma. The first 14-mile segment of the Seattle Link light rail is under construction between downtown Seattle and Tukwila, with a second phase being planned. The light rail system vision lays out proposed connections across Lake Washington to Bellevue and Redmond and extensions north to Everett and south to Federal Way. Sound Transit commuter rail is now operating from Tacoma to Seattle and from Everett to Seattle, with expanded service under development. Sound Transit Express buses are also operating on major freeway corridors throughout the Puget Sound region, and a series of direct access ramps are being constructed to improve transit access to park and ride lots from HOV lanes.

In Portland, the TriMet MAX light rail system has four lines operating, two of which approach Clark County in the I-5 and I-205 corridors. The Vancouver area is considering high capacity transit in Clark County and connections across the Columbia River into Oregon. In Spokane, preliminary planning has been done for a light rail line from the Spokane Valley to downtown Spokane.

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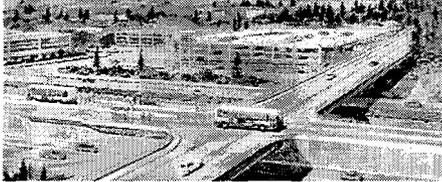
For more on this topic: www.wsdot.wa.gov/planning/ftp

Future Vision Washington State Transportation Plan
 Elizabeth Robbins (360) 705-7371 robbins@wsdot.wa.gov Elizabeth Robbins robbins@wsdot.wa.gov
 Planning Manager

Future Visions



Direct Access Ramp I-90 at Eastgate



Supporting this high capacity transit vision is the 300-mile HOV lane system in the Puget Sound region, with over 200 miles already constructed within congested freeway corridors. This HOV system is supported by a broad network of park and ride lots, an extensive vanpool fleet, and demand management programs aimed at encouraging transit alternatives. 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 the light rail and other transit corridors.

Monorail

Extension of Seattle's vintage monorail line was approved by voters in November 2002. Phase I will build the Green Line, which runs 14 miles from Ballard to downtown Seattle and from West Seattle to downtown Seattle. Future phases of the monorail are intended to connect other parts of the city.

High Speed Intercity Passenger Rail

Washington has a vision for high speed intercity passenger rail in the federally-designated Pacific Northwest Rail corridor which runs from Eugene, Oregon, through Portland and Seattle to Vancouver, British Columbia.

Amtrak Cascades Daily Roundtrip Trains

Total Trains	1994	2003	Mid-point	2023
Portland, OR to Seattle, WA	1	3	8	13*
Seattle, WA to Vancouver, BC	0	2**	3	4

*Includes 10th trains which travel north, beyond Seattle, to Vancouver, BC.
**Amtrak Cascades #513016 travels between Seattle and Bellingham.

This service is being incrementally implemented through track, signal, and rolling stock improvements to increase speeds and frequencies. The Amtrak Cascades currently provides three roundtrips per day between Seattle and Portland, and two roundtrips per day north of Seattle (one to Vancouver, B.C., and one to Bellingham). The lack of a stable source of state multimodal funding, and to date little federal support, has slowed the implementation of this vision and is leading WSDOT to reassess its high speed intercity passenger rail plan.

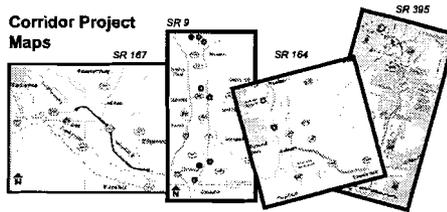
Major Roadway Capacity Expansions

With the population and job growth experienced in the past 20 years, which is projected to continue, Washington's roadway capacity is inadequate to meet the growing demand. 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.

Major corridor expansions have been planned for the I-405 corridor in East King County, SR 167 in South King County, and SR 522 and SR 9 in Snohomish County. A new north/south corridor as part of SR 395 has been planned in Spokane, with the first segment under construction. Highway missing links, including SR 509 south of SeaTac Airport, SR 167 from the Port of Tacoma to Puyallup, and SR 704 Cross-base Highway in south Pierce County, are also part of the state's expansion plan. In Vancouver, there is a need for an expanded I-5 Columbia River Bridge, with planning proceeding jointly between Oregon and Washington.

Capacity needs exist across the state, including SR 28 in East Wenatchee, SR 17 in Moses Lake, SR 101 in Olympia, SR 539 in Bellingham, and SR 240 in the Tri-Cities. In the Puget Sound region, growing delay is affecting regional highways such as SR 202 east of Redmond, SR 169 in Maple Valley, SR 164 from Auburn to Enumclaw, SR 162 in Pierce County, SR 524 in Snohomish County and others. Local arterial expansion plans to meet growth needs are numerous, including Myra Road in Walla Walla, Stevens Drive in Richland, Valley Mall Boulevard Extension in Yakima, and Schurman Way Extension at the Port of Woodland.

Corridor Project Maps



Changes in How Freight is Moved

Intermodal Logistics Parks

Freight capacity is being expanded by development of intermodal efficiencies and connections. Burlington-Northern Santa Fe Railroad (BNSF) is developing rail-truck Intermodal Logistic Parks. Recognizing the shift from a manufacturing economy to a warehouse and distribution economy sparked development of this concept of offering multimodal transportation choices in major regional markets. BNSF is developing a "four corner" nationwide strategy with one location in the Pacific Northwest.

Short Sea Shipping

Short sea shipping is a future intermodal shipping concept that would transport freight via barge or container ship for short-hauls over water in lieu of highway or rail movements that might be delayed by congestion. The water-borne freight would bypass the most congested land areas and be picked up by truck or rail to complete its journey.

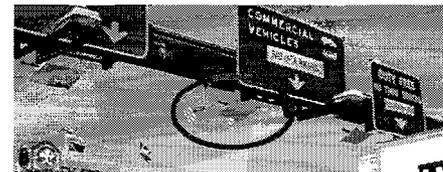
Intelligent Transportation Systems – Smart Vehicles and Smart Roads

Intelligent Transportation Systems (ITS) technology is rapidly evolving and includes such things as smart vehicles and smart roadways. Imagine having a vehicle that can sense the location of other vehicles on the road and activate variable cruise control and collision avoidance systems. A non-connected train of vehicles such as these, all communicating directly with each other, will allow them to safely travel at close distances and high speeds, while improving current highway system efficiency. Vehicles outfitted with smart technologies are starting to enter the marketplace, such as the On-Star navigation system.

Smart road technologies are being put into place as quickly as they can be developed and funded. In the future, roads across the state will feature such things as variable speed limits, customized traveler information delivered directly to a traveler's car or personal digital assistant (PDA), interaction between arterial traffic signals and ramp meters, special time-saving features for transit, and automated maintenance devices that protect worker safety, such as remote control traffic cones.

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, including weighing of trucks, safety inspections, and license and operator credential checks. But waiting in line at a weigh station adds time (and therefore expense) to the trucker's trip. The Commercial Vehicle Information Systems and Networks (CVISN) and Weigh-In-Motion (WIM) system embedded in the roadway about a half-mile before a weigh station weighs each truck passing over it. 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.

CVISN/WIM System



The data is instantly checked and if no problems appear, the truck can bypass the station and continue down the highway. Within the next four years all interstate weigh stations should be converted to this technology. Up to now WSDOT has applied an incremental approach to CVISN. The ultimate vision is paperless permitting and tracking and data sharing within a national system. International border crossing applications of this technology are underway with a pilot project for sealed cargo containers.

Tolling Technologies

System pricing strategies show promise as a way to increase traditional transportation funding, especially in congested corridors. Also known as congestion pricing, these concepts include

- System-wide tolling, where fees are based on actual road use throughout the entire system. "Dynamic Pricing" (variable pricing based on demand) may be applied in this form of congestion pricing.
- Segment tolling, such as traditional, limited-access toll roads or toll express lanes. Advances in electronic toll collection now provide for "at speed" (no tollbooth) collection of tolls.
- Cordon tolling, where all drivers are charged a toll when entering an area, such as a downtown district.
- High-Occupancy-Toll (HOT) lanes, where single-occupant vehicles can pay to use High-Occupancy Vehicle (HOV) lanes when there is available capacity. Almost 20 different projects using or studying HOT lane applications are currently underway in the United States.

Systemwide Tolling



New Fuels

Fluctuating world petroleum markets causing price increases and concern about environmental pollution are focusing attention on alternative fuels. Non-petroleum energy sources include biodiesel, ethanol, natural gas, electricity, propane and hydrogen. Alternative fuel development will likely become a significant factor in the second decade of this century.

Health and Environment

Emerging Directions

Automobiles and Sprawl

• One state growth management goal is to reduce sprawl, and transportation expansion projects are often discussed and debated in connection with sprawl. Is it appropriate to address sprawl on a project-by-project basis, as currently required by federal environmental review laws, or should it be addressed in a more systematic way? A systems approach for addressing the cumulative effects of transportation projects and induced growth issues is needed.

Healthy Communities

• WSDOT places a priority on improving pedestrian and bicycle safety through the construction of sidewalks, trails, crosswalks, medians, and other features, particularly when it results in increased opportunities for children and others to be physically active and reduces environmental impacts. To continue to improve conditions for biking and walking, state resources for pedestrian safety will focus on locations that improve modal connections, specifically transit access. Existing resources for paths and trails will be applied to statewide priorities with a focus on improving safety for the young and the old.

Improving Air Quality

• The transportation sector is the source of more than half of the state's carbon dioxide emissions. The governors of Washington, Oregon, and California have begun to develop strategies to reduce carbon dioxide emissions in their states. The two ways to reduce transportation's carbon dioxide emissions are to improve vehicle technology and to reduce driving. California is proposing new carbon dioxide standards for cars and light trucks, beginning in 2009. The Washington State Legislature and Governor passed legislation to adopt the California standards in 2005.

Greater Returns on Investments

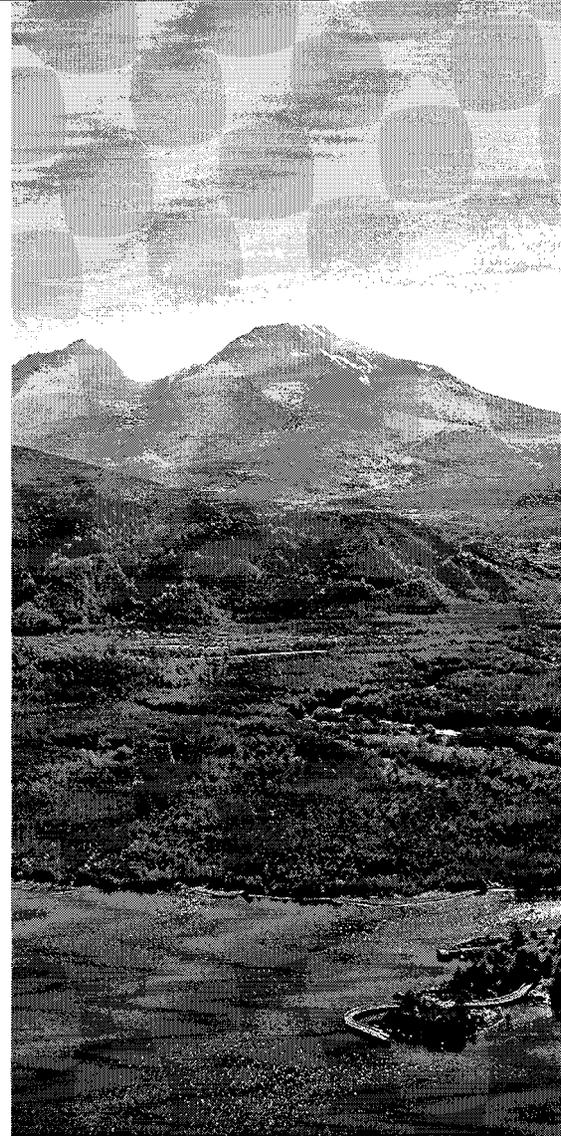
• The watershed approach involves looking at watershed needs and improvement opportunities beyond the immediate area of a project. In some watersheds, dollars can be better spent to deliver large benefits to water quality protection and habitat conservation and enhancement by investing in stormwater and wetlands needs away from the highway, compared to localized mitigation by the highway. This strategy continues to be developed.

Managing Stormwater

• The stormwater retrofit program addresses some of the highest priority stormwater deficiencies, but the program remains largely unfunded. In the WTP update, WSDOT will examine the environmental performance of existing facilities and propose methods to address deficiencies. In order to determine what to fix first, WSDOT needs to continue to inventory its outfalls and stormwater facilities. Only when the inventory is more complete can the highest priorities and most cost-effective locations be identified.

Protecting and Connecting Habitat

• WSDOT is addressing the need for habitat connections in the design of several projects, including SR 240 near the Tri-Cities, the I-90 Hyak to Easton project in the Cascade Mountains, and the Cross-Base Highway in Pierce County. Careful analysis is needed to determine the highest priority locations where investments should be made for connectivity, and habitat data needs to be better integrated into transportation planning and design. Integrating habitat planning and transportation planning is a key challenge for this WTP update. At the same time, existing retrofit programs for fish passage and chronic environmental deficiencies need more dedicated funding to address existing problems on the state highway system.



How can transportation investments be developed, implemented, and used in ways that both enhance our citizens' transportation goals and our citizens' goals for healthy communities and a well-protected environment?

Transportation systems touch many complex health and environmental concerns, including human health, natural ecosystem processes, species protection, climate change, and land use.

WSDOT's environmental enhancement efforts take their cues from citizen expectations that have been captured over time in federal, state, and local environmental regulations and policies. Public discussion of emerging issues, advances in scientific knowledge, and the evolution of transportation practices further direct our efforts.

WSDOT's overarching transportation goal related to human health is improving the safety of users of the transportation system. Beyond that core principle, WSDOT recognizes its role in protecting and sustaining the natural environment and the cultural and historic resources that are also critical to our quality of life. The Health and Environment paper explores five ways that transportation systems interact with communities and the environment:

- Air quality
- Active living and healthy communities
- Noise issues for highways and ferries
- Stormwater runoff
- Protecting and connecting habitat

An analysis of growth management trends and policy recommendations will be released as a stand-alone paper at a later date.

Protecting Washington's water supply, air quality, natural ecosystems along with other efforts to sustain the abundant natural setting of this state is no small task and will require the efforts of every citizen. For a fuller description of WSDOT's environmental work, visit: www.wsdot.wa.gov/environment

For up to date environmental reports, visit: www.wsdot.wa.gov/accountability

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For more on this topic: www.wsdot.wa.gov/planning/wtp

Health and Environment

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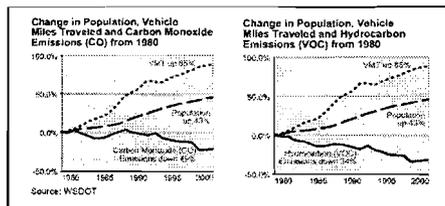
Washington State Transportation Plan

Elizabeth Robbins robbins@wsdot.wa.gov

Environmental & Health Trends in Washington

Air Quality

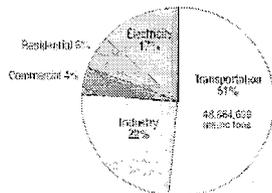
Emissions associated with transportation – from cars, trucks, buses, cargo vessels, cruise ships, ferries, and trains – are major sources of local air pollution and greenhouse gases. Air quality trends for regulated pollutants have improved over the past few decades, even as the state's population and vehicle miles traveled have increased.



However, concerns are growing in the areas of unregulated air toxics and inhalable soot (PM_{2.5}) related to diesel exhaust. While scientific study of the health effects of diesel continues to evolve, it is generally understood that prolonged exposure to these fine particles lead to respiratory and other health problems. Steps already taken in the regulatory arena (low sulfur diesel fuel and new exhaust systems in heavy trucks) and in Washington State (the recent move to low sulfur diesel in all state ferries) have helped to reduce PM_{2.5} emissions by more than 20 percent from 1980.

Another emerging trend is the share of carbon dioxide (CO₂) produced by transportation sector. Because Washingtonians rely less on fossil fuel for electricity generation, our vehicles are the largest source of CO₂ emissions.

Carbon Dioxide Emissions in Washington State by Source, 2000



The opportunities to constrain CO₂ emissions from motor vehicles lie in:

- Increasing fuel efficiency
- Converting to less polluting technologies
- Holding down vehicle miles traveled

WSDOT and other state and federal agencies are working together to respond to these issues.

Healthy Communities

Transportation not only determines how we move from place to place, but also the character of our communities. There is an increasing body of research suggesting that automobile-oriented land uses (e.g., those that create auto dependency) limit transportation options, adversely affect air quality, water quality and safety, and discourage physical activity.

Some of the most compelling new research related to transportation and healthy communities has shown that:

- Children's walking trips to school have declined by 40 percent between 1977 and 1999, and children between the ages of 5 and 15 make only 10 to 12 percent of their school trips by walking or riding their bicycles.
- Nearly a 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 people make are less than three miles, but most of these are made by car.
- People walking and biking on the road face disproportionately high risks as 13 percent of all traffic deaths are pedestrians.

Access to sidewalks and bike paths as well as transit friendly land use patterns can improve our health and the health of our communities by helping to improve air quality and providing more opportunity for physical activity.



Reducing Highway Noise

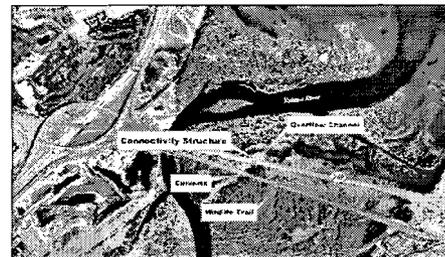
Traffic can create a lot of noise, sometimes at levels that are unacceptable for nearby neighborhoods. Though WSDOT cannot provide sound barriers everywhere, federal law and state policy requires that every project that adds through-lanes or significantly realigns roadways must receive a noise evaluation. Outdoor noise impacts (more than 66 decibels) on locations such as homes, schools, churches, day cares, and hospitals trigger evaluation of whether noise mitigation (e.g., walls, earth berms) will be meaningful and cost-effective. The result is that WSDOT builds many noise barriers that generally halve residents' perception of traffic noise. From 1963 to 2000, WSDOT built approximately 65 miles of noise barriers throughout the state.

Before 1976, noise was not accounted for on highway projects. WSDOT's noise retrofit program allows placement of barriers on existing highways where homes existed before May 1976. More than seventy locations are on the priority list, subject to funding.

Protecting Habitat and Wetlands

Washington State has a wide diversity of habitats that support more than 650 native fish and wildlife species. As the population increases, and our human footprint expands, added pressure is placed on natural systems that are already heavily stressed in many cases. Habitat fragmentation, road kill, and wetlands loss are some of the impacts that transportation systems can cause.

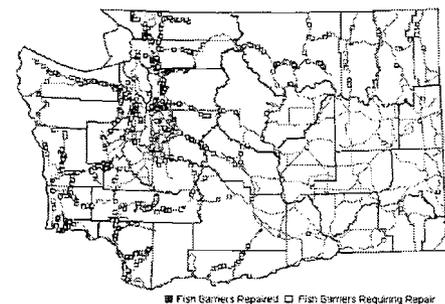
Roads can fragment habitat for fish and wildlife, restrict the movement of wildlife across landscapes, and lead to vehicle collisions with wildlife (on average, 1,200 reported accidents, 134 injuries, and one fatality each year – in 2004, five people were killed in vehicle-wildlife collisions).



Highway 240 near Tri-Cities: Additional structures allow for high water flows as well as enhanced wildlife movement in a wildlife refuge.

Nearly 900 WSDOT fish barriers have been identified for correction. The Washington Department of Fish and Wildlife has estimated there are another 33,000 non-WSDOT fish passage barriers located on city, county, federal, private, and tribal roads. So far, 140 WSDOT fish barriers have been fixed during the construction of a larger highway project, routine maintenance, or through the fish barrier retrofit program. Since 1991, 370 linear miles of stream habitat have been restored.

Fish Passage Barriers on State Highways



WSDOT adheres to wetlands protection requirements under Section 404 of the Clean Water Act and numerous state and local environmental provisions. At the same time, WSDOT is working with others to improve the effectiveness of wetlands protection and replacement requirements through opportunities for "watershed-based mitigation."

This and many other important efforts, such as water conservation, herbicide use reduction, and native plantings along roadsides, can be found at www.wsdot.wa.gov/accountability/graynotebook.

Construction projects affecting wetlands can avoid or minimize impacts by selecting a different alignment, widening bridge structures, or adding retaining walls that limit the need for fill. To compensate for unavoidable wetland impacts, WSDOT has developed 116 mitigation sites, totaling 675 acres since 1987. Of the 53 sites (272 acres) that have completed monitoring since 1988, 49 (267 acres) have been judged successful.

Stormwater Runoff

When stormwater flows over roads and through roadway drainage systems, it carries pollutants originating from motor vehicles, the atmosphere, and other sources into surface water bodies. Sediments and pollutants (nutrients, oil, grease, metals) are carried into rivers and streams in this way, affecting the quality and health of the water for people, animals, and plants.

Typical Sources of Pollutants in Urban Runoff

	Highways	Residential	Commercial/Industrial
Phosphorus	4%	39%	53%
Hydrocarbons	16%	26%	54%
Copper	9%	10%	79%
Suspended Sediments	7%	44%	44%

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

Controlling the amount of flow is also important, as high flows can damage habitat, property, and transportation infrastructure. Managing stormwater flowing over transportation facilities is achieved through use of runoff treatment and flow control. Most of WSDOT's stormwater outfalls were built prior to stormwater regulations and have no treatment facilities. To date, only 4,000 of WSDOT's estimated 18,000 to 24,000 outfalls have been inventoried, so adequate data is lacking to prioritize outfalls for retrofit.

At the current rate of construction, it will take at least a century to fix all of the locations lacking treatment facilities.

What are the Legal Requirements?

Federal Surface Transportation Act (TEA-21)

- Each state must prepare a transportation plan and program providing for development, management, and operation of systems and facilities considering all modes of transportation.
- Plan must be based on at least a 20-year forecast period and may include a financial plan.
- The plan shall be continually evaluated and periodically updated as appropriate.

Section 135 of title 23 of the U.S. Code

State Law

- WSDOT must prepare a “comprehensive and balanced statewide transportation plan” every two years based on legislative policies and applicable state and federal laws.

RCW 47.01.071

- The Commission must develop a state transportation policy plan that establishes a vision and goals for the transportation system consistent with the state's growth management goals; identifies significant transportation policy issues; and recommends statewide transportation policies to the Legislature.

RCW 47.06.030

What are the Stipulated Goals of the Plan? How Clear is the Overall Guidance?

Federal Planning Factors <small>(23USC135)</small>	State Planning Emphasis Areas <small>(RCW 47.06)</small>	Required Modal Plans <small>(RCW 47.06)</small>
<ul style="list-style-type: none"> ▪ Support the economic vitality of the United States, the States, and metropolitan areas, especially by enabling global competitiveness, productivity, and efficiency. ▪ Increase the safety and security of the transportation system for motorized and non-motorized users. ▪ Increase the accessibility and mobility options available to people and for freight. ▪ Protect and enhance the environment, promote energy conservation, and improve quality of life. ▪ Enhance the integration and connectivity of the transportation system, across and between modes throughout the State, for people and freight. ▪ Promote efficient system management and operation. ▪ Emphasize the preservation of the existing transportation system. 	<ul style="list-style-type: none"> ▪ Relief of congestion. ▪ Preservation of existing investments. ▪ Preservation of downtowns. ▪ Ability to attract or accommodate planned population and employment growth. ▪ Improvement of traveler safety. ▪ Efficient movement of freight and goods. ▪ Improvement and integration of all transportation modes to create a seamless intermodal transportation system for people and goods. 	<p><u>State-owned</u></p> <ul style="list-style-type: none"> ▪ Highways ▪ Ferries <p><u>State Interest</u></p> <ul style="list-style-type: none"> ▪ Aviation ▪ Public Transportation ▪ Freight Rail ▪ Intercity Passenger Rail ▪ Bicycle & Pedestrian ▪ Marine Ports & Navigation

Washington Transportation Plan Update

Interim Briefing to the Transportation Commission

Charlie Howard
Director

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Amy Arnis

Deputy Director

Strategic Planning & Programming

Douglas B MacDonald

Secretary of Transportation

Paula Hammond

Chief of Staff

Commission Retreat
April 22, 2004



Washington State
Department of Transportation

4/29/2004

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RCW 47.06.030

4/29/2004

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This Afternoon:

- Planning requirements and the update process
- Key financial background

Tomorrow:

- Issue area progress
- Special briefing topics

4/29/2004

2

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4/29/2004

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Base Chronology of Transportation Planning Efforts in Washington State

	Transportation Planning Environment	Example Documents & Plans
1960's	Interstate Era: Highway and Transit Expansion Plan	1964 Puget Sound Regional Transportation Plan
1970's	Freeway Revolt: <ul style="list-style-type: none"> • Removal of cross sound bridges from plan • Removed freeways from Central Puget Sound • Transit in Central Puget Sound voted down 	1975 Puget Sound Regional Transportation plan
1977	State DOT and Transportation Commission created and state transportation plan required.	1980 State Transportation Plan, with 1981 and 1982 Updates
Mid 80's	Financial Bust: WSDOT eliminated planning – "maintain only" operation with a pessimistic view on revenue.	No Plan
1987	Commission and WSDOT restart planning – Strategic Issues and Policy	1989 to 1993 State Transportation Policy Plans
1993	WSDOT begins system planning – First highway system plan published	1993 State Highway Systems Plan
1995	First Multimodal Plan published - Each mode in its own silo	1995 Washington's Transportation Plan
2001	Multimodal Approach: <ul style="list-style-type: none"> • Multimodal goals and objectives • Focused on objectives, not modes • No financial constraints 	2001 Washington's Transportation Plan

4/29/2004

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How is the Process Taking Shape?

Phase 1: Data and Approach Development

- Build statewide transportation "data library".
- Analyze statewide trends and system conditions.
- Identify key issues and choices.
- Share the learning and analysis with others.

Phase 2: Developing the Plan Update

- Commission guides tentative judgments on scale and direction of investment programs.
- WSDOT works with RTPOs and others to develop proposals for investment plans and funding scenarios.
- Commission matches priorities to funding scenarios
- Commission adopts the plan.

4/29/2004

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Aspiration for the 2005 Plan Update

- Data driven, analytically grounded and organized by major Issue areas.
- Program and investment proposals advanced for the state for each major issue area.
- Investment and programs proposals prioritized into high, medium, and low priority categories.
- Scale of proposed investment constrained by financial realities.

What we're hearing...

"The WTP should be a collection of information and data from which decision makers can make choices."

"DOT's analytic capability must be strengthened so that we have better information on which to take the long view... The key word everyone has to keep in mind is prioritization..."

"We must prioritize and make choices. The debate is not about how to keep doing just about what we are already doing. It's about how to choose to spend the money we have on what we really want."

4/29/2004

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What is the Outreach Program?

RTPO Outreach

- Briefing by Secretary MacDonald at quarterly meeting with all MPOs and RTPOs.
- WSDOT Modal Directors one on one meetings with each RTPO.
- WSDOT WTP briefings at RTPO policy or technical committees by WSDOT regional staff.
- Joint process for developing investment plan.

Document and Information Sharing

- The WTP web page.
- Creating web based documents accessible by everyone.
- Creating an on-line data library to share WTP data.
- Publishing and distributing folios describing WTP progress.

Special Outreach Meetings

- Legislator and legislative committee staff conversations
- Tribal Transportation Planning Organization
- Washington Public Ports Planning Group
- Freight Customer Interviews
- Safety Conscious Planning Workshop
- Freight Workshop with FMSIB
- Congestion Relief Study in Puget Sound, Vancouver and Spokane
- Other Events

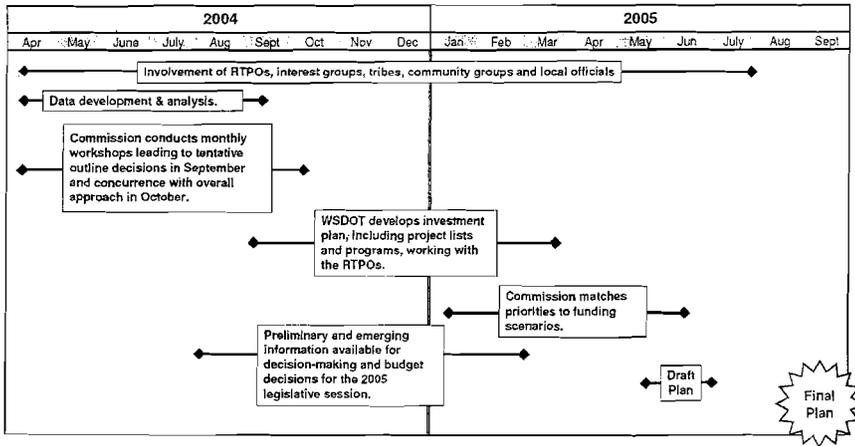
Late Summer "Milestone" Event

- Scheduled for September 21, 2004
- Hosted by Transportation Commission
- Opportunity to share what we've learned, to discuss approaches, and solicit views.

4/29/2004

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What's the Schedule?



4/29/2004

9

Demands on the Transportation Systems and Services

4/29/2004

11

Washington Transportation Plan Update

What you will hear over and over throughout this two-day presentation. . .

- Demands on our state's transportation systems are up, and have not been adequately addressed for years.
- Funds for transportation are not there to do what needs to be done.
- Aging and deterioration of our state's transportation system will require spending more and more to "stay in place".

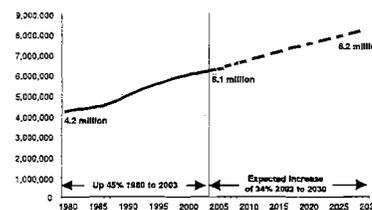
How do we talk about and settle on our real priorities in light of these paramount realities?

4/29/2004

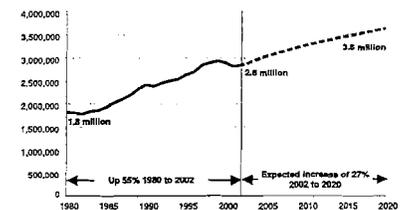
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Demand is up...

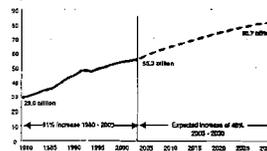
Population Will Continue to Grow



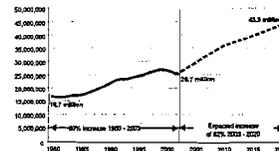
Employment Will Continue to Grow



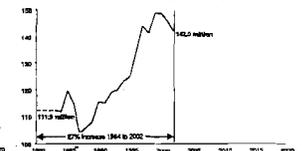
Vehicle Miles Traveled Will Continue to Grow (Miles in billions)



Ferry Ridership Will Continue to Grow



Transit Ridership Will Continue to Grow (Fixed Urban Passenger Trips displayed)



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Funding

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The New Games in Town for Funding are:

RTID:

- If passed, could increase capital investments by \$10+ billion in King, Pierce and Snohomish counties.

Overall Level of Capital Investment Continues to Depend on the RTID (in 1990 constant dollars)



Initiative 864: 25% Property Tax Initiative

- If passed, could result in a statewide reduction of \$426m per year (based on 2004).
- Of this reduction, \$112m counties current expense \$76m county roads, \$131m cities. Compounds losses already experienced by I-695, I-776 and I-747

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Initiative 883:

"Reduce Traffic Congestion" Plan

- Declares road construction to reduce traffic congestion the top priority of the transportation system.
- Revenue from three existing taxes are redirected to a new account: for congestion relief. The new account would capture 2.8c of existing gas tax, 20% of existing gross weight fees, and about one third of existing tax on vehicle sales tax which equals about \$330 million currently going to the State General Fund.
- Funding criteria to rate and choose state and arterial transportation projects by congestion relief rating ranking..
- HOV lanes are opened at off-peak hours and are re-evaluated.

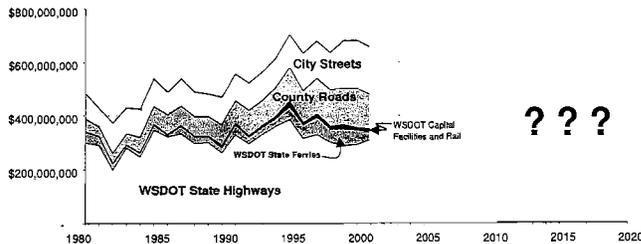
Additional State Revenue:

?

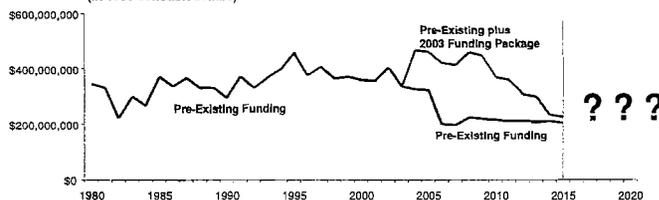
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Funding: Down or flat...more or less....???

Transportation Capital Investment by WSDOT, Counties, & Cities 1980 - 2001 - projections to 2020 (1980 dollars)



Over the Next Decade WSDOT Funding is Declining Even With the Last Funding Package (in 1980 constant dollars)



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What are we hearing about funding issues from the cities and counties and transit systems?

- County road levy and the current share of the gas tax cannot meet current funding needs.
- Most rural counties do not have an adequate tax base to fund general government needs let alone local transportation improvements.
- Local options cannot generate enough funds to provide for construction maintenance and preservation programs.
- Recent statewide initiatives have repealed local transportation funding tools.
- For transit, the state provides less than 2% of their total funding.
- Capital needs of transit systems vary depending on size and location, but are most acute in urban areas.
- Most critical for transit is augmenting funding for operations.
- In some areas of the state, the sales tax imposed by transit will not grow by enough to support funding for current operations.

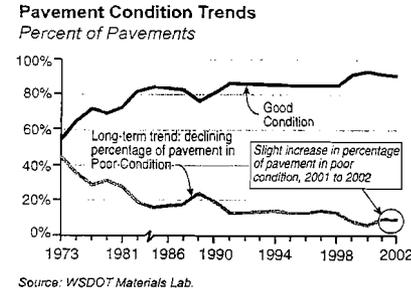
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The System is Aging and Deteriorating...

Even though *asphalt pavement* conditions are improving, *concrete pavement* conditions on the state's most important highways are in decline and will be expensive and inconvenient to fix.

System Aging and Deterioration



2004 Concrete Lane Miles*		
Current Age (Construction or Reconstruction)	Total Lane Miles	Lane Miles Rehabilitated to Date by Dowel Bar Retrofit
0-10	147.1	0.0
11-20	274.0	0.0
21-30	566.8	35.0
31-40	642.0	322.4
41-50	279.1	58.1
51-60	5.0	0.2
61 or more	66.1	0.0
Total	1980.0	415.7

* Does not include 321 lane miles of bridge sections and 112 lane miles of ramps.

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The System is Aging and Deteriorating...

These problems are best recognized by the public as:

- Alaskan Way Viaduct
- SR 520 (Evergreen Point Floating Bridge)
- Interstate Pavements

On inspection, this is the problem of “preservation” investment. It is statewide and multimodal. It affects bridges, pavement and other facilities that the public assumes it can “take for granted”.

But preservation cannot be taken for granted and needs to be funded.

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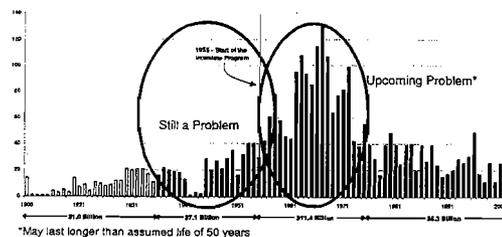
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The System is Aging and Deteriorating

Bridges are getting older.

- In the next 20 years, much of the bridge inventory will reach the age of 50 or more years.
- As more of our bridge inventory reaches the age of 50, investment needs for bridge rehabilitation will continue to rise sharply with the most pressing needs being to replace the oldest structures in the system.

Bridge Inventory by Age and Replacement Costs
2004 dollars



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Ferry system assets are getting older.

- Just as with bridges the time is coming when expensive investments in ferry terminals and vessels will need to be made.
- Of our 28 ferry boats, 21 are more than 20 years old and six are 50 years or older.

Class	Name	Year Constructed	Age
Jumbo/Mar II	Tazonia	1997	7
	Wenatchee	1998	6
Jumbo	Puyallup	1998	6
	Spokane	1972	32
	Walla Walla	1972	32
Super	Hyak	1967	37
	Kalaelan	1967	37
	Yakima	1967	37
Isaquah 130	Bush	1967	37
	Issaquah	1979	25
	Kitsap	1980	24
	Kittitas	1980	24
	Cathlamet	1981	23
	Chelan	1981	23
	Sealth	1982	22
Evergreen State	Evergreen State	1954	50
	Kahowya	1958	46
	Tillamook	1959	45
Steel Electric	Oysterville	1922	77
	Ilwaco	1927	77
Miscellaneous	Nisqually	1927	77
	Klickitat	1927	77
	Rhododendron	1947	57
Passenger Only	Hiyu	1957	37
	Skagit	1989	15
Chinook	Kelama	1988	15
	Chinook	1998	6
	Snohomish	1999	6

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So how should we approach the problem of making choices and setting priorities?

Capital investment in preservation and current investment in maintenance and operations are paramount issues.

Also:

- The ability to address “New Capacity” for congestion relief will be an issue.
- Targeted safety investments that provide the highest benefit will also need to be made.
- There are many other potential priorities in the area of rural roads and freight mobility - to name a few.

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The Discussion Involves:

- Even with RTID, more will be needed from the state for the Alaskan Way Viaduct, SR 520 (Evergreen Point Floating Bridge), interstate pavements, and other preservation needs.
- Maintenance and other operating and capital programs were not augmented by Transportation 2003 Funding Package. Safety programs need more funding.
- Only the very worthiest “new works” (i.e., capacity enhancement) projects can be funded at the likely levels of future investment capacity. How should they be prioritized?
- The 18th Amendment will continue to present a roadblock to multimodal funding – other sources besides the gas tax and vehicle fees will need to be tapped.
- Increased state funding will need to be shared with cities, counties and transit.
- Equity amongst areas of the state will continue to be an issue: the “donor areas” are very restless.

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Reality Intrudes

How much additional funding could be raised over the next decade?
Choose a Scenario!

Dollars in millions

Three scenarios, 2 options each.	Option A				Total	Option B			
	Local Share		State Share			Local Share		State Share	
	50%	20% Maintenance	80% WSDOT Capital*	50%		25%	75%	20% Maintenance	80% WSDOT Capital*
Scenario 1: 1¢ gas tax increase each year for the next 10 years	\$993	\$199	\$1,835	\$3,027	\$497	\$298	\$2,722	\$3,517	
Scenario 2: 10¢ gas tax increase beginning July 1, 2005	\$1,781	\$356	\$2,526	\$4,663	\$890	\$534	\$3,790	\$5,214	
Scenario 3: 10¢ gas tax increase beginning July 1, 2005, plus another 10¢ increase July 1, 2011	\$2,675	\$535	\$4,344	\$7,554	\$1,337	\$802	\$6,577	\$8,716	

*Amounts shown for WSDOT Capital investment include assumptions for the sale of bonds using the available revenue stream. The funding level can vary depending on the timing of expenditures and the resulting bond sales needed, as well as from financing assumptions including interest rates and debt service coverage requirements.

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Local Roadways: The County System

Washington State Transportation Commission
October 19, 2004



Gary Nelson,
Snohomish County
Council member

Jim Whitbread, PE
Stevens County Engineer

This presentation was prepared and presented by the Washington Association of Counties and may not be representative of the Washington State Transportation Commission and the Department of Transportation's viewpoint.

An Overview of Washington's Counties

- 39 counties (281 cities and towns)
- The total population living in unincorporated areas is 2.423 million (40% of the total state population of 6.041 million).
- The county road system makes up 66% of the center line miles and carries 16.5% of the vehicle miles traveled.

Diversity of County Road System

- **Approximately 85,000 lane miles of roads.**
 - 57,800 miles paved (68%)
 - 27,200 miles unpaved (32%)
- **Freight and Goods system is comprised of over 21,000 lane miles.**
 - Many of these roads have deficiencies that require closures or restrictions.
- **Four counties operate ferries and they have similar operations and maintenance issues as the state ferry system.**

Major County Responsibilities County Wide

- Law & Justice (except Police/Sheriff)
- Assessment, Tax Collection
- Records, Elections
- Public Health
- Human Services

Unincorporated

- Police/Sheriff
- Road Construction & Maintenance (in unincorporated areas funded with dedicated property tax)
- Land Use

Major Funding Sources

Counties

- Sales Tax
- Property Tax

Cities

- Sales Tax
- Property Tax
- Utility Tax
- B & O Tax
- Business License Fees

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County Road Levy Summary

2002 Revenue produced by full levy of \$2.25/\$1,000

- \$386 million – if full levy applied
- \$327 million – actual revenue produced
 - \$306 million in revenue to the road fund
 - \$21 million diverted for traffic enforcement and other purposes

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Major Funding Sources – General Fund County Wide

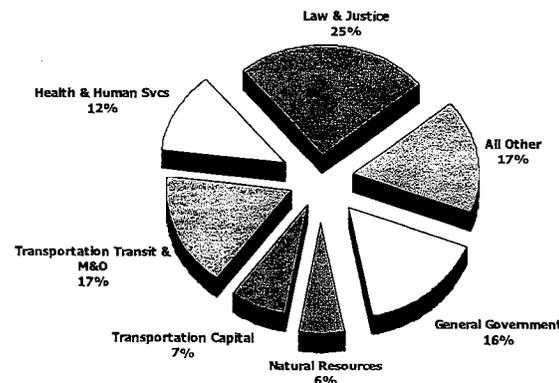
- \$1.80 Property Tax Levy
- Sales Tax (15% of City Tax)
- 0.1% Sales Tax Correctional Facilities
- 0.1% Sales Tax - Criminal Justice (shared with cities)

Unincorporated

- Up to 1% Sales Tax

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2002 County Expenditures

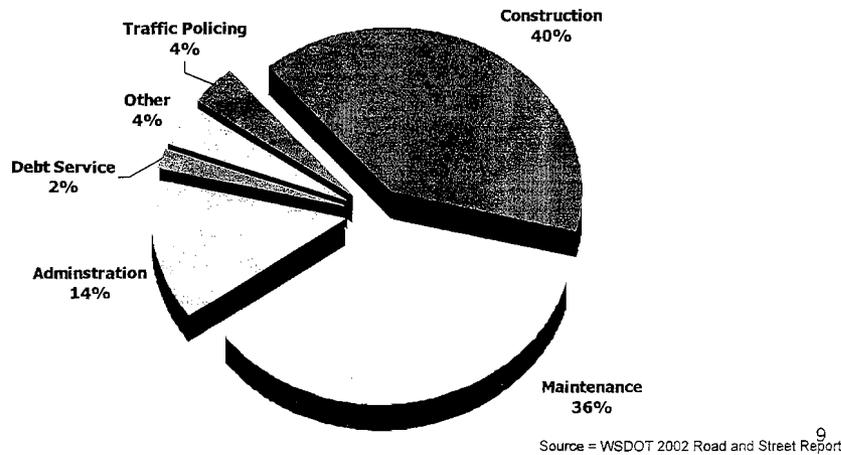


Source = State Auditor's Office
2002 Audited data from the
Local Government Financial Reporting System

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2002 County Transportation Expenditures

\$756.8 Million

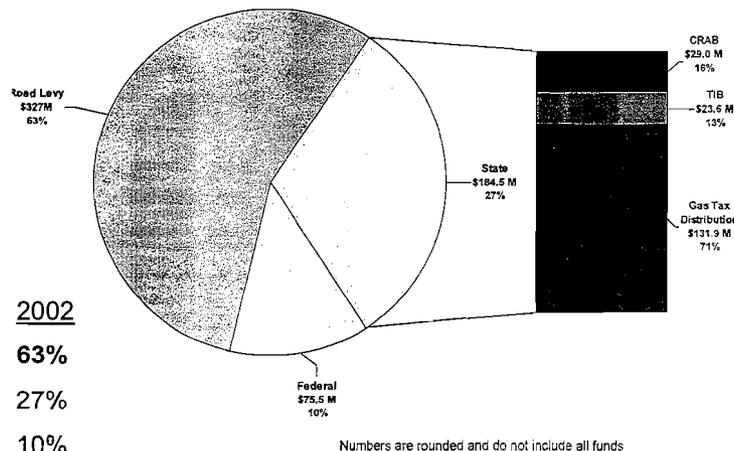


Washington's Transportation Plan

You asked us:

- Have we identified the right issues?
- Have we collected the right data?
- Do we interpret the data in the right way?
- What are the implications for capital investment?

Local Funds are paying for the majority of the system



	1991	2002
Local	56%	63%
State	34%	27%
Federal	11%	10%

Issues we agree on

- ✓ System Efficiencies
- ✓ Transportation Access
- ✓ Health & the Environment
- ✓ Strong Economy & Good Jobs
- ✓ Building Future Visions

Preservation

- The current state funding programs through WSDOT, TIB and CRAB are not keeping up with the need.
- Counties are trying to balance competing needs between safety, preservation and maintenance and falling short on all three.

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Freight

- We agree with the emerging directions.
- For counties, many of the roads have deficiencies that necessitate weight restrictions and/or road closures during certain times of the year, making them unusable for reliable freight transport. Estimated costs range from \$2.4 Billion for upgrading all roads to all weather standards to \$1.8 Billion for making improvements that would still necessitate moderate restrictions on the roadways.

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Strong Economy & Good Jobs

- We agree with the statewide perspective.
- And, we must note: urban areas need the rural areas to survive and rural areas need the urban areas to survive. Urban areas provide the jobs and markets. The rural areas provide the food and resources for the urban areas.
- We must work together in order to be successful.

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Safety

- We agree with the emerging directions and findings.
- Two lane rural roads have the highest accident rates and deserve special attention.
- Investments are needed for both the roadways, and education and enforcement.

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So...

- Every trip begins and ends on a local road.
- Urban counties are using preservation funding for construction to meet growth needs.
- Rural counties are using construction money to preserve the system.
- Inflation pressures exceed road levy growth rate limits.
- Criminal justice costs are significant and are placing increased pressures on the road levy.

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What do Counties need?

- We need additional program funding for
 - Preservation;
 - Maintenance;
 - Safety improvements;
 - Congestion relief and;
 - Local freight improvements in order to maintain and improve the system.
- The funding should be flexible enough to allow local elected's and professional staff to manage diverse demands.

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Appendix J

PAVEMENT MAINTENANCE/PRESERVATION DETAILED FORCAST FOR CITIES AND COUNTIES

20 Year Pavement Maintenance/Preservation Cost CITIES

	Miles	Pavement Width	Crack Seal				Single Chip Seal			
			Cost/ Sq.Yd.	Cost/mile	20 year cost	average cost per year	Cost/ Sq.Yd.	Cost/mile	20 year cost	average cost per year
Adams										
Hatton	6.00	32	\$ 0.76	\$ 14,000	\$ 560,000	\$ 28,000	\$ 1.90	\$ 36,000	\$ 617,000	\$ 30,850
Lind		32	\$ 0.76	\$ 14,000	\$ -	\$ -	\$ 1.90	\$ 36,000	\$ -	\$ -
Othello	37.00	32	\$ 0.76	\$ 14,000	\$ 3,453,000	\$ 172,650	\$ 1.90	\$ 36,000	\$ 3,806,000	\$ 190,300
Ritzville	35.00	32	\$ 0.76	\$ 14,000	\$ 3,267,000	\$ 163,350	\$ 1.90	\$ 36,000	\$ 3,600,000	\$ 180,000
Washtucna		32	\$ 0.76	\$ 14,000	\$ -	\$ -	\$ 1.90	\$ 36,000	\$ -	\$ -
Total	78.00				\$ 7,280,000	\$ 364,000			\$ 8,023,000	\$ 401,150

Grant

Coulee City	7.00	32	\$ 0.76	\$ 14,000	\$ 653,000	\$ 32,650	\$ 1.90	\$ 36,000	\$ 720,000	\$ 36,000
Electric City	10.40	32	\$ 0.76	\$ 14,000	\$ 971,000	\$ 48,550	\$ 1.90	\$ 36,000	\$ 1,070,000	\$ 53,500
Ephrata	42.39	32	\$ 0.76	\$ 14,000	\$ 3,956,000	\$ 197,800	\$ 1.90	\$ 36,000	\$ 4,360,000	\$ 218,000
George	5.68	32	\$ 0.76	\$ 14,000	\$ 530,000	\$ 26,500	\$ 1.90	\$ 36,000	\$ 584,000	\$ 29,200
Grand Coulee	11.39	32	\$ 0.76	\$ 14,000	\$ 1,063,000	\$ 53,150	\$ 1.90	\$ 36,000	\$ 1,172,000	\$ 58,600
Hartline	8.20	32	\$ 0.76	\$ 14,000	\$ 765,000	\$ 38,250	\$ 1.90	\$ 36,000	\$ 843,000	\$ 42,150
Krupp	2.65	32	\$ 0.76	\$ 14,000	\$ 247,000	\$ 12,350	\$ 1.90	\$ 36,000	\$ 273,000	\$ 13,650
Mattawa	6.96	32	\$ 0.76	\$ 14,000	\$ 650,000	\$ 32,500	\$ 1.90	\$ 36,000	\$ 716,000	\$ 35,800
Moses Lake	98.90	32	\$ 0.76	\$ 14,000	\$ 9,231,000	\$ 461,550	\$ 1.90	\$ 36,000	\$ 10,173,000	\$ 508,650
Quincy	27.03	32	\$ 0.76	\$ 14,000	\$ 2,523,000	\$ 126,150	\$ 1.90	\$ 36,000	\$ 2,780,000	\$ 139,000
Royal City	11.20	32	\$ 0.76	\$ 14,000	\$ 1,045,000	\$ 52,250	\$ 1.90	\$ 36,000	\$ 1,152,000	\$ 57,600
Soap Lake	21.22	32	\$ 0.76	\$ 14,000	\$ 1,981,000	\$ 99,050	\$ 1.90	\$ 36,000	\$ 2,183,000	\$ 109,150
Warden	22.38	32	\$ 0.76	\$ 14,000	\$ 2,089,000	\$ 104,450	\$ 1.90	\$ 36,000	\$ 2,302,000	\$ 115,100
Wilson Creek	5.50	32	\$ 0.76	\$ 14,000	\$ 513,000	\$ 25,650	\$ 1.90	\$ 36,000	\$ 566,000	\$ 28,300
Total	280.90				\$ 26,217,000	\$ 1,310,850			\$ 28,894,000	\$ 1,444,700

	Miles	Pavement Width	Treatment Type							
			Cost/ Sq.Yd.	Cost/mile	Crack Seal 20 year cost	average cost per year	Cost/ Sq.Yd.	Cost/mile	Single Chip Seal 20 year cost	average cost per year

Kittitas

Cle Elum	16.43	32	\$ 0.76	\$ 14,000	\$ 1,533,000	\$ 76,650	\$ 1.90	\$ 36,000	\$ 1,690,000	\$ 84,500
Ellensburg	62.11	32	\$ 0.76	\$ 14,000	\$ 5,797,000	\$ 289,850	\$ 1.90	\$ 36,000	\$ 6,388,000	\$ 319,400
Kittitas	6.55	32	\$ 0.76	\$ 14,000	\$ 611,000	\$ 30,550	\$ 1.90	\$ 36,000	\$ 674,000	\$ 33,700
Roslyn	11.55	32	\$ 0.76	\$ 14,000	\$ 1,078,000	\$ 53,900	\$ 1.90	\$ 36,000	\$ 1,188,000	\$ 59,400
South Cle Elum	5.62	32	\$ 0.76	\$ 14,000	\$ 525,000	\$ 26,250	\$ 1.90	\$ 36,000	\$ 578,000	\$ 28,900
Total	102.26				\$ 9,544,000	\$ 477,200			\$ 10,518,000	\$ 525,900

Lincoln

Almira	7.00	32	\$ 0.76	\$ 14,000	\$ 653,000	\$ 32,650	\$ 1.90	\$ 36,000	\$ 720,000	\$ 36,000
Creston	7.00	32	\$ 0.76	\$ 14,000	\$ 653,000	\$ 32,650	\$ 1.90	\$ 36,000	\$ 720,000	\$ 36,000
Davenport	20.00	32	\$ 0.76	\$ 14,000	\$ 1,867,000	\$ 93,350	\$ 1.90	\$ 36,000	\$ 2,057,000	\$ 102,850
Harrington	5.72	32	\$ 0.76	\$ 14,000	\$ 534,000	\$ 26,700	\$ 1.90	\$ 36,000	\$ 588,000	\$ 29,400
Odessa	10.25	32	\$ 0.76	\$ 14,000	\$ 957,000	\$ 47,850	\$ 1.90	\$ 36,000	\$ 1,054,000	\$ 52,700
Reardan	8.00	32	\$ 0.76	\$ 14,000	\$ 747,000	\$ 37,350	\$ 1.90	\$ 36,000	\$ 823,000	\$ 41,150
Sprague	7.00	32	\$ 0.76	\$ 14,000	\$ 653,000	\$ 32,650	\$ 1.90	\$ 36,000	\$ 720,000	\$ 36,000
Wilbur	17.75	32	\$ 0.76	\$ 14,000	\$ 1,657,000	\$ 82,850	\$ 1.90	\$ 36,000	\$ 1,826,000	\$ 91,300
Total	82.72				\$ 7,721,000	\$ 386,050			\$ 8,508,000	\$ 425,400

Note: City road widths assumes a 32 foot wide road.

City road miles are taken 2005 WSDOT Revenue & Expenditures Summary.

Crack seal cost estimate assumes \$0.76 per sq.yd. for cities

Chip seal cost estimate assumes \$1.90 per sq.yd for cities

Crack seal assumes a 3yr maintenance plan

Chip seal assumes a 7yr maintenance plan

20 Year Pavement Maintenance/Preservation Cost

COUNTIES

Adams County

Treatment Type

County	Miles	Pavement Width	Crack Seal				Single Chip Seal			
			Cost/ Sq.Yd.	Cost/mile	20 year cost	average cost per year	Cost/ Sq.Yd.	Cost/mile	20 year cost	average cost per year
Adams	0.26	14	\$ 0.70	\$ 6,000	\$ 10,000	\$ 500	\$ 1.75	\$ 14,000	\$ 15,000	\$ 750
Adams	0.03	16	\$ 0.70	\$ 7,000	\$ 1,000	\$ 50	\$ 1.75	\$ 16,000	\$ 2,000	\$ 100
Adams	12.39	18	\$ 0.70	\$ 7,000	\$ 578,000	\$ 28,900	\$ 1.75	\$ 18,000	\$ 892,000	\$ 44,600
Adams	194.99	20	\$ 0.70	\$ 8,000	\$ 10,400,000	\$ 520,000	\$ 1.75	\$ 21,000	\$ 16,379,000	\$ 818,950
Adams	91.39	22	\$ 0.70	\$ 9,000	\$ 5,483,000	\$ 274,150	\$ 1.75	\$ 23,000	\$ 8,407,000	\$ 420,350
Adams	158.28	24	\$ 0.70	\$ 10,000	\$ 10,552,000	\$ 527,600	\$ 1.75	\$ 25,000	\$ 15,828,000	\$ 791,400
Adams	19.38	26	\$ 0.70	\$ 11,000	\$ 1,421,000	\$ 71,050	\$ 1.75	\$ 27,000	\$ 2,093,000	\$ 104,650
Adams	63.28	28	\$ 0.70	\$ 11,000	\$ 4,641,000	\$ 232,050	\$ 1.75	\$ 29,000	\$ 7,341,000	\$ 367,050
Adams	86.76	30	\$ 0.70	\$ 12,000	\$ 6,941,000	\$ 347,050	\$ 1.75	\$ 31,000	\$ 10,758,000	\$ 537,900
Adams	2.96	32	\$ 0.70	\$ 13,000	\$ 257,000	\$ 12,850	\$ 1.75	\$ 33,000	\$ 391,000	\$ 19,550
Adams	13.00	34	\$ 0.70	\$ 14,000	\$ 1,213,000	\$ 60,650	\$ 1.75	\$ 35,000	\$ 1,819,000	\$ 90,950
Adams	0.42	36	\$ 0.70	\$ 15,000	\$ 42,000	\$ 2,100	\$ 1.75	\$ 37,000	\$ 62,000	\$ 3,100
Adams	1.03	38	\$ 0.70	\$ 16,000	\$ 110,000	\$ 5,500	\$ 1.75	\$ 39,000	\$ 161,000	\$ 8,050
Adams	3.30	40	\$ 0.70	\$ 16,000	\$ 352,000	\$ 17,600	\$ 1.75	\$ 41,000	\$ 541,000	\$ 27,050
Adams	0.27	42	\$ 0.70	\$ 17,000	\$ 31,000	\$ 1,550	\$ 1.75	\$ 43,000	\$ 46,000	\$ 2,300
Adams	0.32	45	\$ 0.70	\$ 18,000	\$ 38,000	\$ 1,900	\$ 1.75	\$ 46,000	\$ 59,000	\$ 2,950
Adams	1.37	50	\$ 0.70	\$ 21,000	\$ 192,000	\$ 9,600	\$ 1.75	\$ 51,000	\$ 280,000	\$ 14,000
Total	649.43				\$ 42,262,000	\$ 2,113,100			\$ 65,074,000	\$ 3,253,700

Grant County

Treatment Type

County	Miles	Pavement Width	Crack Seal				Single Chip Seal			
			Cost/ Sq.Yd.	Cost/mile	20 year cost	average cost per year	Cost/ Sq.Yd.	Cost/mile	20 year cost	average cost per year
Grant	0.09	10	\$ 0.70	\$ 4,000	\$ 2,000	\$ 100	\$ 1.75	\$ 10,000	\$ 4,000	\$ 200
Grant	0.63	12	\$ 0.70	\$ 5,000	\$ 21,000	\$ 1,050	\$ 1.75	\$ 12,000	\$ 30,000	\$ 1,500
Grant	0.60	14	\$ 0.70	\$ 6,000	\$ 24,000	\$ 1,200	\$ 1.75	\$ 14,000	\$ 34,000	\$ 1,700
Grant	2.77	16	\$ 0.70	\$ 7,000	\$ 129,000	\$ 6,450	\$ 1.75	\$ 16,000	\$ 177,000	\$ 8,850
Grant	2.20	18	\$ 0.70	\$ 7,000	\$ 103,000	\$ 5,150	\$ 1.75	\$ 18,000	\$ 158,000	\$ 7,900
Grant	120.78	20	\$ 0.70	\$ 8,000	\$ 6,442,000	\$ 322,100	\$ 1.75	\$ 21,000	\$ 10,146,000	\$ 507,300
Grant	1.21	21	\$ 0.70	\$ 9,000	\$ 73,000	\$ 3,650	\$ 1.75	\$ 22,000	\$ 106,000	\$ 5,300
Grant	251.67	22	\$ 0.70	\$ 9,000	\$ 15,100,000	\$ 755,000	\$ 1.75	\$ 23,000	\$ 23,154,000	\$ 1,157,700
Grant	237.09	24	\$ 0.70	\$ 10,000	\$ 15,806,000	\$ 790,300	\$ 1.75	\$ 25,000	\$ 23,709,000	\$ 1,185,450
Grant	180.16	26	\$ 0.70	\$ 11,000	\$ 13,212,000	\$ 660,600	\$ 1.75	\$ 27,000	\$ 19,457,000	\$ 972,850
Grant	252.61	28	\$ 0.70	\$ 11,000	\$ 18,524,000	\$ 926,200	\$ 1.75	\$ 29,000	\$ 29,302,000	\$ 1,465,100
Grant	80.89	30	\$ 0.70	\$ 12,000	\$ 6,471,000	\$ 323,550	\$ 1.75	\$ 31,000	\$ 10,030,000	\$ 501,500
Grant	43.55	32	\$ 0.70	\$ 13,000	\$ 3,774,000	\$ 188,700	\$ 1.75	\$ 33,000	\$ 5,748,000	\$ 287,400
Grant	151.46	34	\$ 0.70	\$ 14,000	\$ 14,136,000	\$ 706,800	\$ 1.75	\$ 35,000	\$ 21,204,000	\$ 1,060,200
Grant	39.25	36	\$ 0.70	\$ 15,000	\$ 3,925,000	\$ 196,250	\$ 1.75	\$ 37,000	\$ 5,809,000	\$ 290,450
Grant	3.56	38	\$ 0.70	\$ 16,000	\$ 380,000	\$ 19,000	\$ 1.75	\$ 39,000	\$ 556,000	\$ 27,800
Grant	13.51	40	\$ 0.70	\$ 16,000	\$ 1,441,000	\$ 72,050	\$ 1.75	\$ 41,000	\$ 2,215,000	\$ 110,750
Grant	0.21	42	\$ 0.70	\$ 17,000	\$ 24,000	\$ 1,200	\$ 1.75	\$ 43,000	\$ 37,000	\$ 1,850
Grant	2.20	44	\$ 0.70	\$ 18,000	\$ 264,000	\$ 13,200	\$ 1.75	\$ 45,000	\$ 396,000	\$ 19,800
Grant	0.29	46	\$ 0.70	\$ 19,000	\$ 37,000	\$ 1,850	\$ 1.75	\$ 47,000	\$ 55,000	\$ 2,750
Grant	7.11	48	\$ 0.70	\$ 20,000	\$ 948,000	\$ 47,400	\$ 1.75	\$ 49,000	\$ 1,394,000	\$ 69,700
Grant	0.51	50	\$ 0.70	\$ 21,000	\$ 71,000	\$ 3,550	\$ 1.75	\$ 51,000	\$ 104,000	\$ 5,200
Grant	0.33	51	\$ 0.70	\$ 21,000	\$ 46,000	\$ 2,300	\$ 1.75	\$ 52,000	\$ 69,000	\$ 3,450
Grant	1.46	52	\$ 0.70	\$ 21,000	\$ 204,000	\$ 10,200	\$ 1.75	\$ 53,000	\$ 310,000	\$ 15,500
Grant	0.25	54	\$ 0.70	\$ 22,000	\$ 37,000	\$ 1,850	\$ 1.75	\$ 55,000	\$ 55,000	\$ 2,750
Grant	0.41	55	\$ 0.70	\$ 23,000	\$ 63,000	\$ 3,150	\$ 1.75	\$ 56,000	\$ 92,000	\$ 4,600
Grant	0.05	58	\$ 0.70	\$ 24,000	\$ 8,000	\$ 400	\$ 1.75	\$ 60,000	\$ 12,000	\$ 600
Grant	0.61	60	\$ 0.70	\$ 25,000	\$ 102,000	\$ 5,100	\$ 1.75	\$ 62,000	\$ 152,000	\$ 7,600
Total	1395.45				\$ 101,367,000	\$ 5,068,350			\$ 154,515,000	\$ 7,725,750

Kittitas County

Treatment Type

County	Miles	Pavement Width	Crack Seal				Single Chip Seal			
			Cost/ Sq.Yd.	Cost/mile	20 year cost	average cost per year	Cost/ Sq.Yd.	Cost/mile	20 year cost	average cost per year
Kittitas	0.09	12	\$ 0.70	\$ 5,000	\$ 3,000	\$ 150	\$ 1.75	\$ 12,000	\$ 4,000	\$ 200
Kittitas	3.39	16	\$ 0.70	\$ 7,000	\$ 158,000	\$ 7,900	\$ 1.75	\$ 16,000	\$ 217,000	\$ 10,850
Kittitas	23.76	18	\$ 0.70	\$ 7,000	\$ 1,109,000	\$ 55,450	\$ 1.75	\$ 18,000	\$ 1,711,000	\$ 85,550
Kittitas	105.44	20	\$ 0.70	\$ 8,000	\$ 5,623,000	\$ 281,150	\$ 1.75	\$ 21,000	\$ 8,857,000	\$ 442,850
Kittitas	120.88	22	\$ 0.70	\$ 9,000	\$ 7,253,000	\$ 362,650	\$ 1.75	\$ 23,000	\$ 11,121,000	\$ 556,050
Kittitas	82.20	24	\$ 0.70	\$ 10,000	\$ 5,480,000	\$ 274,000	\$ 1.75	\$ 25,000	\$ 8,220,000	\$ 411,000
Kittitas	0.32	25	\$ 0.70	\$ 10,000	\$ 21,000	\$ 1,050	\$ 1.75	\$ 26,000	\$ 33,000	\$ 1,650
Kittitas	68.01	26	\$ 0.70	\$ 11,000	\$ 4,987,000	\$ 249,350	\$ 1.75	\$ 27,000	\$ 7,345,000	\$ 367,250
Kittitas	0.09	27	\$ 0.70	\$ 11,000	\$ 7,000	\$ 350	\$ 1.75	\$ 28,000	\$ 10,000	\$ 500
Kittitas	59.26	28	\$ 0.70	\$ 11,000	\$ 4,345,000	\$ 217,250	\$ 1.75	\$ 29,000	\$ 6,874,000	\$ 343,700
Kittitas	12.76	30	\$ 0.70	\$ 12,000	\$ 1,021,000	\$ 51,050	\$ 1.75	\$ 31,000	\$ 1,582,000	\$ 79,100
Kittitas	3.38	32	\$ 0.70	\$ 13,000	\$ 293,000	\$ 14,650	\$ 1.75	\$ 33,000	\$ 446,000	\$ 22,300
Kittitas	7.27	34	\$ 0.70	\$ 14,000	\$ 679,000	\$ 33,950	\$ 1.75	\$ 35,000	\$ 1,018,000	\$ 50,900
Kittitas	0.80	36	\$ 0.70	\$ 15,000	\$ 80,000	\$ 4,000	\$ 1.75	\$ 37,000	\$ 118,000	\$ 5,900
Kittitas	0.62	38	\$ 0.70	\$ 16,000	\$ 66,000	\$ 3,300	\$ 1.75	\$ 39,000	\$ 97,000	\$ 4,850
Kittitas	3.77	40	\$ 0.70	\$ 16,000	\$ 402,000	\$ 20,100	\$ 1.75	\$ 41,000	\$ 618,000	\$ 30,900
Kittitas	0.49	42	\$ 0.70	\$ 17,000	\$ 56,000	\$ 2,800	\$ 1.75	\$ 43,000	\$ 84,000	\$ 4,200
Kittitas	0.38	44	\$ 0.70	\$ 18,000	\$ 46,000	\$ 2,300	\$ 1.75	\$ 45,000	\$ 68,000	\$ 3,400
Kittitas	0.17	46	\$ 0.70	\$ 19,000	\$ 21,000	\$ 1,050	\$ 1.75	\$ 47,000	\$ 31,000	\$ 1,550
Kittitas	0.10	64	\$ 0.70	\$ 26,000	\$ 16,000	\$ 800	\$ 1.75	\$ 66,000	\$ 25,000	\$ 1,250
Total	493.15				\$ 31,666,000	\$ 1,583,300			\$ 48,479,000	\$ 2,423,950

Lincoln County

Treatment Type

County	Miles	Pavement Width	Crack Seal				Single Chip Seal			
			Cost/ Sq.Yd.	Cost/mile	20 year cost	average cost per year	Cost/ Sq.Yd.	Cost/mile	20 year cost	average cost per year
Lincoln	0.05	10	\$ 0.70	\$ 4,000	\$ 1,000	\$ 50	\$ 1.75	\$ 10,000	\$ 2,000	\$ 100
Lincoln	0.50	12	\$ 0.70	\$ 5,000	\$ 17,000	\$ 850	\$ 1.75	\$ 12,000	\$ 24,000	\$ 1,200
Lincoln	9.55	18	\$ 0.70	\$ 7,000	\$ 446,000	\$ 22,300	\$ 1.75	\$ 18,000	\$ 688,000	\$ 34,400
Lincoln	4.08	20	\$ 0.70	\$ 8,000	\$ 218,000	\$ 10,900	\$ 1.75	\$ 21,000	\$ 343,000	\$ 17,150
Lincoln	18.02	22	\$ 0.70	\$ 9,000	\$ 1,081,000	\$ 54,050	\$ 1.75	\$ 23,000	\$ 1,658,000	\$ 82,900
Lincoln	63.19	24	\$ 0.70	\$ 10,000	\$ 4,213,000	\$ 210,650	\$ 1.75	\$ 25,000	\$ 6,319,000	\$ 315,950
Lincoln	137.63	26	\$ 0.70	\$ 11,000	\$ 10,093,000	\$ 504,650	\$ 1.75	\$ 27,000	\$ 14,864,000	\$ 743,200
Lincoln	151.45	28	\$ 0.70	\$ 11,000	\$ 11,106,000	\$ 555,300	\$ 1.75	\$ 29,000	\$ 17,568,000	\$ 878,400
Lincoln	22.43	30	\$ 0.70	\$ 12,000	\$ 1,794,000	\$ 89,700	\$ 1.75	\$ 31,000	\$ 2,781,000	\$ 139,050
Lincoln	11.76	32	\$ 0.70	\$ 13,000	\$ 1,019,000	\$ 50,950	\$ 1.75	\$ 33,000	\$ 1,552,000	\$ 77,600
Lincoln	1.66	34	\$ 0.70	\$ 14,000	\$ 155,000	\$ 7,750	\$ 1.75	\$ 35,000	\$ 232,000	\$ 11,600
Lincoln	13.85	36	\$ 0.70	\$ 15,000	\$ 1,385,000	\$ 69,250	\$ 1.75	\$ 37,000	\$ 2,050,000	\$ 102,500
Lincoln	0.36	38	\$ 0.70	\$ 16,000	\$ 38,000	\$ 1,900	\$ 1.75	\$ 39,000	\$ 56,000	\$ 2,800
Lincoln	0.06	40	\$ 0.70	\$ 16,000	\$ 6,000	\$ 300	\$ 1.75	\$ 41,000	\$ 10,000	\$ 500
Lincoln	2.53	42	\$ 0.70	\$ 17,000	\$ 287,000	\$ 14,350	\$ 1.75	\$ 43,000	\$ 435,000	\$ 21,750
Lincoln	3.24	44	\$ 0.70	\$ 18,000	\$ 389,000	\$ 19,450	\$ 1.75	\$ 45,000	\$ 583,000	\$ 29,150
Total	440.36				\$ 32,248,000	\$ 1,612,400			\$ 49,165,000	\$ 2,458,250

Note:

- County road width and miles are actual amounts from the County Road Log.
- Crack seal cost estimate assumes \$0.70 per sq.yd. for counties
- Chip seal cost estimate assumes \$1.75 per sq.yd for counties
- Crack seal assumes a 3yr maintenance plan
- Chip seal assumes a 7yr maintenance plan

Appendix K

DETAILED ENGINEERS OPIONON OF PROBABLE COST TO ADD SHOULDERS TO MEET DESIGN STANDARDS

Detailed Engineers Opinion of Probable Cost to Add Shoulders to meet Design Standards

Item Name	Unit	Unit Cost	Quantities per 0.10 mile						Cost per 0.10 mile					
			Widths						Widths					
			2	4	6	8	10	12	2	4	6	8	10	12
HMA -- 4"	SF	\$ 2	1056	2112	3168	4224	5280	6336	\$ 2,112.00	\$ 4,224.00	\$ 6,336.00	\$ 8,448.00	\$ 10,560.00	\$ 12,672.00
CSTC	TON	\$ 20	24	48	72	96	119	143	\$ 477.55	\$ 955.09	\$ 1,432.64	\$ 1,910.19	\$ 2,387.73	\$ 2,865.28
CSBC	TON	\$ 20	36	72	109	145	181	217	\$ 723.56	\$ 1,447.11	\$ 2,170.67	\$ 2,894.22	\$ 3,617.78	\$ 4,341.33
Roadway Excavation	CY	\$ 15	79	129	179	229	279	329	\$ 1,184.13	\$ 1,934.13	\$ 2,684.13	\$ 3,434.13	\$ 4,184.13	\$ 4,934.13
Embankment Compaction	CY	\$ 2	50	100	150	200	250	300	\$ 100.00	\$ 200.00	\$ 300.00	\$ 400.00	\$ 500.00	\$ 600.00
Clearing & Grubbing	ACRE	\$ 1,500	0.02	0.05	0.08	0.10	0.12	0.15	\$ 30.00	\$ 75.00	\$ 120.00	\$ 150.00	\$ 180.00	\$ 225.00
Sawcutting	LF	\$ 2	1056	1056	1056	1056	1056	1056	\$ 2,112.00	\$ 2,112.00	\$ 2,112.00	\$ 2,112.00	\$ 2,112.00	\$ 2,112.00
Roadside Seeding	ACRE	\$ 1,500	0.36	0.36	0.36	0.36	0.36	0.36	\$ 545.45	\$ 545.45	\$ 545.45	\$ 545.45	\$ 545.45	\$ 545.45
Soil Sterilant	ACRE	\$ 500	0.13	0.18	0.23	0.28	0.33	0.38	\$ 66.42	\$ 90.67	\$ 114.91	\$ 139.15	\$ 163.39	\$ 187.64

Item Totals \$ 7,351.11 \$ 11,583.45 \$ 15,815.80 \$ 20,033.14 \$ 24,250.49 \$ 28,482.83

Traffic Control	15%	15%	15%	15%	15%	15%	15%	15%	\$ 1,102.67	\$ 1,737.52	\$ 2,372.37	\$ 3,004.97	\$ 3,637.57	\$ 4,272.42
Engineering/Administrative Fees	20%	20%	20%	20%	20%	20%	20%	20%	\$ 1,470.22	\$ 2,316.69	\$ 3,163.16	\$ 4,006.63	\$ 4,850.10	\$ 5,696.57
Contingency	20%	20%	20%	20%	20%	20%	20%	20%	\$ 1,470.22	\$ 2,316.69	\$ 3,163.16	\$ 4,006.63	\$ 4,850.10	\$ 5,696.57

Total Cost per 0.10 Miles \$ 11,394.22 \$ 17,954.35 \$ 24,514.49 \$ 31,051.37 \$ 37,588.26 \$ 44,148.39

Total Cost Rounded to nearest 100 \$ 11,000 \$ 18,000 \$ 25,000 \$ 31,000 \$ 38,000 \$ 44,000

Basic Information

Length:	0.10 mile	528 ft.
Width:	Variable	
Depth:	HMA	0.33 ft.
	CSTC	0.33 ft.
	CSBC	0.50 ft.
	Exc.	1.16 ft.
	Emb.	

Appendix L

DETAILED ENGINEERS OPTION OF PROBABLE COST TO CONSTRUCT BST ROADWAY OVER EXISTING GRAVEL ROAD

ENGINEER'S OPINION OF PROBABLE COST

PROJECT: QUADCO Regional Transportation Plan Up **DATE:** 4/4/2007

PROJECT DESCRIPTION: Construct BST roadway over existing gravel road -- 26' wide
Cost per mile of Road

CLIENT: QUADCO Sheet: 1 of 1

CLIENT PROJ. NO. n/a

J-U-B PROJ. NO.: 70-06-94

ITEM NO.	DESCRIPTION	SCHEDULE OF VALUES			
		QUANTITY	UNIT	UNIT PRICE	TOTAL COST
ROADWAY/STORM DRAINAGE					
1	Processing and Finishing	1.00	Mile	\$1,500.00	\$1,500.00
2	Furnishing and Placing Crushed Screening 3/4 to 1/2	224	CY	\$28.00	\$6,272.00
3	Furnishing and Placing Crushed Screening 1/2 to No. 4	161	CY	\$28.00	\$4,508.00
4	Furnishing and Placing Crushed Screening No. 4 to 0	26	CY	\$28.00	\$728.00
5	Additional Brooming	1	HOUR	\$80.00	\$80.00
6	Asphalt MC-250	29.1	TON	\$360.00	\$10,476.00
7	Asphalt CRS-2	27.0	TON	\$500.00	\$13,500.00
8	Paint Line	5280	LF	\$0.10	\$528.00
SUBTOTAL					\$37,592.00
	Sales Tax			0.00%	\$0.00
	Engineering/Administration Fees			20.00%	\$7,518.40
	Contingency			20.00%	\$7,518.40
Total					\$52,628.80

J-U-B ENGINEERS, INC.

SUITE 201, 2810 WEST CLEARWATER AVE., KENNEWICK, WASHINGTON 99336 (509) 783-2144

Appendix M

HIGH PRIORITY SAFETY CORRIDORS

Adams County

Road .	Road Name	Length	MVMT	Accidents	Accident Rate per MVMT
90354	KAYLEE RD	0.369	0.0006	4	7064.38
90344	RAINIER RD	0.21	0.0003	1	3103.28
90174	MAY ST RD	0.2	0.0058	3	513.70
90124	ANDES RD	0.55	0.0161	6	373.60
90144	APRIL RD	0.24	0.0070	2	285.39
90284	DANIELLE RD	0.31	0.0091	2	220.95
90194	SPUR LANE RD	0.15	0.0149	1	67.09
90204	SADDLE RD	0.49	0.0477	3	62.87
90172	PANAMA RD	0.38	0.0369	2	54.20
52414	GRAY RD	1.1	0.0214	1	46.66
90214	CANAL RD	0.28	0.0278	1	35.94
90114	JUNE RD	0.31	0.0296	1	33.79
84731	SCHOESSLER RD	1.1	0.0321	1	31.13
90164	JULY RD	0.41	0.0709	2	28.21
90134	WAGON RD	0.44	0.0437	1	22.87
12092	HATTON RD	0.98	0.1094	2	18.29
21842	BILLINGTON RD	0.96	0.0987	1	10.13
62964	HILLER RD	1	0.0994	1	10.06
33501	ROXBORO RD	2.38	0.2029	2	9.86
23304	JOHNSON RD	9.68	0.4125	4	9.70
11504	MOON RD	0.4	0.2140	2	9.35
12352	CEMETERY RD	0.341	0.1173	1	8.52
57624	DYER RD	1.34	0.1279	1	7.82
45604	THIEL RD	6.04	0.1444	1	6.92
11294	SCHAAKE RD	1.74	0.1456	1	6.87
33491	ROXBORO RD	9.06	0.3253	2	6.15
23124	IRBY RD	10.06	0.1671	1	5.99
33674	DAMON RD	1.19	0.1754	1	5.70
32611	HERMAN RD	12.76	0.7578	4	5.28
75261	LONGMEIER RD	6.07	0.1943	1	5.15
64444	KOCH RD	14.99	0.2011	1	4.97
21704	STEELE RD	2.04	0.2046	1	4.89
12602	HERMAN RD	1	0.2109	1	4.74
66024	GRIFFITH RD	6.14	0.2115	1	4.73
12722	PROVIDENCE RD	0.82	0.2188	1	4.57
11462	THACKER RD	1.41	0.4565	2	4.38
33664	DAMON RD	4.84	0.4859	2	4.12
11072	BARTON RD	2.02	0.2436	1	4.11
64371	URQUHART RD	2.52	0.2453	1	4.08
11372	MORGAN LAKE RD	1.64	0.2590	1	3.86
74574	WEBER RD	2.84	0.2711	1	3.69
63483	ROXBORO RD	5.17	0.2821	1	3.55
12101	HATTON RD	4.63	1.1322	4	3.53
11451	TAYLOR RD	1	2.2679	8	3.53
84494	HEINEMANN RD	2.11	0.2976	1	3.36
12421	LEE RD	1.006	2.9239	9	3.08
84903	TOKIO RD	5.02	0.3269	1	3.06
11612	REYNOLDS RD	1.92	0.3431	1	2.91
11581	REYNOLDS RD	5.046	4.2608	12	2.82
12371	CUNNINGHAM RD (MAIN ST)	0.53	0.3565	1	2.81
11134	DANIELSON RD	1.41	0.3968	1	2.52
57611	BECKLEY RD	13.2	0.4282	1	2.34
87194	DURRY RD	4.66	0.4409	1	2.27
33521	LIND-HATTON RD	13.83	3.1065	7	2.25
74582	WEBER RD	0.86	0.4553	1	2.20
12711	MCMANAMON RD	12.014	12.2515	26	2.12
33511	LIND-HATTON RD	3.12	0.4926	1	2.03
87903	MCCALL RD	8.74	0.5147	1	1.94
33784	LAUER RD	5.62	0.5184	1	1.93

Adams County

Road .	Road Name	Length	MVMT	Accidents	Accident Rate per MVMT
22121	HATTON RD	11.16	2.7077	5	1.85
75121	WAHL RD	11.79	0.5491	1	1.82
66064	ARLT RD	5.94	0.5555	1	1.80
52921	RALSTON-BENGE RD	14.48	1.6829	3	1.78
22724	PROVIDENCE RD	11.27	0.5795	1	1.73
84561	WELLSANDT RD	15.11	2.9028	5	1.72
63364	DEAL RD	18.79	1.2023	2	1.66
12241	BENCH RD	8	14.5693	24	1.65
32674	PHILLIPS RD	5.71	0.6130	1	1.63
11562	ATKINSON RD	2.16	1.2274	2	1.63
22242	BENCH RD	3.08	1.3035	2	1.53
12252	BENCH RD	2	6.6534	10	1.50
85761	DANEKAS RD	9.32	4.9674	7	1.41
52741	BENGE-WINONA RD	8.69	0.7234	1	1.38
21844	BILLINGTON RD	3.55	0.7602	1	1.32
64431	SCHRAG RD	15.49	0.7870	1	1.27
TOTAL		1778.50	234.52	272	1.16
Unidentified Accidents*				76	
Total		1778.50	234.52	348	1.48

* Unidentified accidents includes all accidents located within the County on private or Forest Service roads or accidents without a primary trafficway identified.

Grant County

Road .	Road Name	Length	MVMT	Accident	Accident Rate per MVMT
92150	EL CAMINO CT	0.09	0.0030	1	337.69
46482	18.6 NE	0.04	0.0034	1	292.15
92180	FRONTENAC ST	0.12	0.0039	1	253.27
45139	IDANO LN	0.46	0.0214	5	233.37
41027	H.2 NE	0.51	0.0160	2	125.26
21645	SUPERIOR CT	0.17	0.0081	1	122.80
10110	N SW	0.5	0.0088	1	113.39
10870	A ST *SCHAWANA*	0.12	0.0103	1	97.38
45022	FORRESTALL LN	0.13	0.0218	2	91.67
10871	T.5 SW	0.52	0.0445	4	89.89
24715	X SE	0.13	0.0111	1	89.89
12530	13.5 SW	0.28	0.0128	1	77.91
20600	LINDEN ST	0.15	0.0128	1	77.91
10600	J SW	0.83	0.0146	1	68.31
55630	57.1 NE	0.18	0.0154	1	64.92
11030	PASCO ST	0.19	0.0163	1	61.51
43101	JOEY RD	0.45	0.0343	2	58.23
45023	HALSEY DR	0.07	0.0176	1	56.75
46680	18.5 NE	0.22	0.0188	1	53.12
45032	CANNON LN	0.09	0.0755	4	52.97
45022	BONG LP	0.23	0.0579	3	51.81
11050	TACOMA ST	0.228	0.0195	1	51.25
10800	MORRISON ST	0.26	0.0222	1	44.95
45017	TRAVIS DR	0.4	0.2056	9	43.77
45016	DOW AV	0.1	0.0252	1	39.72
42082	JACKIE DR	0.19	0.0255	1	39.20
41390	CALVERT RD	0.49	0.0258	1	38.80
41480	LEE DR	0.08	0.0295	1	33.86
41210	DENTON RD	0.35	0.0300	1	33.39
43200	FRONT ST	0.28	0.0314	1	31.87
42680	APPLE RD	0.14	0.0342	1	29.22
41580	DAHL RD	0.24	0.0350	1	28.54
20990	D.4 SE	0.41	0.0351	1	28.50
53030	39.7 NE	0.41	0.0351	1	28.50
42604	SAGEDALE RD	0.14	0.0352	1	28.38
45025	WESTOVER BLVD	0.25	0.0369	1	27.13
45038	PERSHING RD	0.31	0.0780	2	25.63
45049	MOSES ST	0.24	0.1204	3	24.91
94030	7 NE WYE	0.05	0.0403	1	24.80
45033	VANDENBERG LP	0.23	0.1274	3	23.55
31990	U.5 NW	0.5	0.0428	1	23.37
11980	12.5 SW	0.51	0.0436	1	22.91
31280	5.2 NW	0.51	0.0436	1	22.91
45039	LINDBERG LN	0.23	0.0877	2	22.81
45090	M.2 NE	0.22	0.0443	1	22.57
46630	B.7 NE	0.52	0.0445	1	22.47
10510	G SW	0.46	0.0475	1	21.07
12450	H SW	1.5	0.1531	3	19.60
42910	M NE	0.62	0.0531	1	18.85
10736	HILDY WY	0.32	0.0553	1	18.09
53930	41.5 NE	0.66	0.0565	1	17.71
10360	S SW	0.77	0.0585	1	17.10
93039	8.5 NW	0.37	0.1173	2	17.05

Grant County

Road .	Road Name	Length	MVMT	Accident	Accident Rate per MVMT
53050	J NE	0.72	0.0616	1	16.23
11880	10.5 SW	2.5	0.1266	2	15.80
34470	MOSES LAKE AV	0.35	0.0646	1	15.48
12230	14 SW	1.51	0.0663	1	15.09
43390	3RD ST *WHEELER*	0.3	0.0668	1	14.97
42070	BROAD ST	0.34	0.0681	1	14.68
41510	WILD GOOSE RD	0.84	0.0682	1	14.66
45058	NORTHWEST LN	0.18	0.0755	1	13.24
56110	EDEN HARBOR RD	1.06	0.1530	2	13.07
21630	YOUNG RD	0.76	0.0775	1	12.91
31490	U NW	0.46	0.0777	1	12.86
30431	10 NW	1.03	0.0782	1	12.78
42650	ALMA RD	0.55	0.3185	4	12.56
40200	8 NE	1.63	0.0834	1	12.00
10350	K SW	0.98	0.0847	1	11.81
41970	DOROTHY ST	0.46	0.0852	1	11.73
36270	O NW	1	0.0856	1	11.69
46430	DIVISION.5 NE	0.51	0.0865	1	11.56
17000	L SW	1.03	0.0881	1	11.35
52430	X NE	2	0.0885	1	11.30
46220	7.8 NE	1.93	0.0957	1	10.45
95037	52 NE	1.01	0.1023	1	9.78
40300	I NE	2.32	0.2094	2	9.55
34360	GOLF CLUB RD	0.23	0.1051	1	9.51
52300	CANNAWAI VALLEY RD	3.9	0.1095	1	9.13
40514	5 NE	2.61	0.1099	1	9.10
34050	18 NW	0.2	0.1109	1	9.02
25190	T SE	1.32	0.1130	1	8.85
41440	RAINIER RD	0.41	0.1155	1	8.66
45013	BIGGS DR	0.28	0.1235	1	8.10
15990	6 SW	1.52	0.1296	1	7.72
32350	T NW	2.58	0.2649	2	7.55
41550	COCHRAN RD	0.25	0.6660	5	7.51
45017	TINKER LP	0.23	0.2675	2	7.48
93039	O NW	1.55	0.5369	4	7.45
46500	18.8 NE	0.82	0.1354	1	7.38
45013	CARSWELL DR	0.41	0.2717	2	7.36
21603	VIEWMONT DR	0.62	0.2742	2	7.29
43110	CRYSTAL SPRINGS DR NE	0.47	0.1406	1	7.11
45012	LORING DR	0.9	0.8581	6	6.99
32850	OVEREN RD	2.72	0.1521	1	6.57
32950	Q.5 NW	1.78	0.1523	1	6.57
30550	V SW	2	0.1544	1	6.48
33150	J NW	4.93	0.1557	1	6.42
45047	LOWRY DR	0.61	0.8031	5	6.23
33350	JOHNSON RD/CULVERT C162	2.99	0.8194	5	6.10
20450	S SE	2	0.1643	1	6.09
47600	10 NE	2.02	0.3342	2	5.98
50150	A NE	2	0.1711	1	5.84
52500	29 NE	6.23	0.1713	1	5.84
94020	8 NE	2.98	0.3438	2	5.82
45028	DOOLITTLE DR	0.42	0.7433	4	5.38
15990	6.5 SW	1	0.1860	1	5.38

Grant County

Road .	Road Name	Length	MVMT	Accident	Accident Rate per MVMT
46222	STONECREST RD	1.21	0.1929	1	5.18
30990	SILICA RD	6.733	2.3502	12	5.11
53150	I.8 NE	1.12	0.3925	2	5.10
92047	8.5 SE	1.1	0.3925	2	5.10
30990	1 NW	5.43	2.3555	12	5.09
33350	JOHNSON RD	2.53	0.2017	1	4.96
10100	E SW	1.71	1.0238	5	4.88
92015	M NE	0.64	0.2063	1	4.85
92039	SOUTH FRONTAGE RD	0.11	0.2114	1	4.73
45017	DALEY DR	0.35	0.4238	2	4.72
46800	21 NE	4.97	0.4245	2	4.71
45055	MATHER ST	0.41	0.2159	1	4.63
42440	KINDER RD	0.4	0.4323	2	4.63
34200	DIVISION N	0.32	0.2171	1	4.61
45024	WESTOVER BLVD	0.23	0.6621	3	4.53
40300	HARRIS RD	1.51	0.4460	2	4.48
31090	RIVER DR	0.86	0.2260	1	4.42
55810	SPOKANE BLVD	0.35	0.2312	1	4.32
34360	ADAMS ST	0.34	0.2319	1	4.31
40510	A NE	2.8	0.2355	1	4.25
18990	D SW	1.81	0.4737	2	4.22
45014	LORING DR	0.4	1.9289	8	4.15
10590	U SW	2.72	0.9654	4	4.14
41360	LYBBERT DR	0.56	0.2433	1	4.11
13950	A SW	3.36	0.7404	3	4.05
41500	KONISHI RD	0.77	0.2468	1	4.05
45060	CRAIG BLVD	0.65	1.0008	4	4.00
37750	RAILROAD AVE	0.64	0.5034	2	3.97
50610	B NE	5.95	0.5092	2	3.93
22000	L SE	3.04	0.2561	1	3.91
54400	46 NE	3.01	0.2576	1	3.88
53850	S NE	3.02	0.2584	1	3.87
93039	N.5 NW	5.55	1.5639	6	3.84
45056	LARSON BLVD	0.42	0.5448	2	3.67
93035	P NW	1.57	1.1220	4	3.57
21590	SAND DUNES RD	5.086	3.3974	12	3.53
36700	WINCHESTER RD	2.01	0.2835	1	3.53
45372	COLLEGE PARKWAY NE	1.321	1.1393	4	3.51
46450	B.5 NE	4.867	1.1586	4	3.45
15990	O SW	2.93	0.5879	2	3.40
55700	ALCAN RD	0.76	0.3037	1	3.29
10662	EAST DESERT AIRE DR	1.8	0.6189	2	3.23
43970	V NE	3.84	0.3286	1	3.04
94040	NORTHLAKE RD NE	0.916	0.3363	1	2.97
40750	PANORAMA DR NE	1.05	0.3378	1	2.96
45080	TYNDALL RD	1	1.3720	4	2.92
45028	SCHILLING DR	0.55	0.3442	1	2.91
55650	LUDOLPH RD	1.39	0.3443	1	2.90
20790	E SE	6.42	1.7578	5	2.84
92045	R SE	1.09	0.7273	2	2.75
10640	E SW	1.98	0.3736	1	2.68
94046	20 NE	9.26	4.5451	12	2.64
41660	SHORECREST RD	0.81	0.3789	1	2.64

Grant County

Road .	Road Name	Length	MVMT	Accident	Accident Rate per MVMT
93000	BEVERLY BURKE RD	1.469	1.9565	5	2.56
30410	K NW	6.55	1.9670	5	2.54
46451	C NE	4.59	0.3983	1	2.51
12990	E SW	2.88	1.1956	3	2.51
43750	S NE	12.1	1.2203	3	2.46
43160	4 NE	8.99	0.4083	1	2.45
30690	T NW	4.46	0.4132	1	2.42
93048	SHEEP CANYON RD	6.98	1.2508	3	2.40
31140	2 NW	4.98	0.8340	2	2.40
15140	SOUTH FRONTAGE RD	4.75	0.8366	2	2.39
33450	NORTON CANYON RD	5.83	1.2637	3	2.37
15000	S SW	5.99	0.8560	2	2.34
50980	23 NE	2.8	0.8593	2	2.33
10610	M SW	1.99	0.4373	1	2.29
42440	ORCHARD DR	0.53	0.4393	1	2.28
37810	EMPIRE RD	0.97	0.4412	1	2.27
32100	10 NW	0.85	0.4433	1	2.26
46350	NEPPEL RD	6.22	3.5518	8	2.25
47150	K NE	5.14	0.4606	1	2.17
95003	V NE	6.06	0.4624	1	2.16
91044	FRENCHMAN HILLS RD	0.99	0.4642	1	2.15
41250	VALLEY RD	2.5	7.9929	17	2.13
95039	GRAND COULEE HILL RD	4.93	0.9547	2	2.09
11500	10 SW	3.06	0.4820	1	2.07
93020	9 NW	13.07	5.8369	12	2.06
42600	MAPLE DR	1.42	1.4634	3	2.05
31500	6 NW	1.51	0.4884	1	2.05
10620	WAHLUKE SLOPE RD	8.46	2.4674	5	2.03
20670	D SE	5.11	2.4791	5	2.02
37000	10 NW	1.51	0.5031	1	1.99
93032	20 NW	1.51	1.0064	2	1.99
91049	G SW	2.04	1.0167	2	1.97
43100	5 NE	1.27	3.0507	6	1.97
94030	M NE	5.19	4.1863	8	1.91
45900	19 NE	5.04	0.5238	1	1.91
45042	ARLINGTON DR	0.52	1.0708	2	1.87
31550	S NW	5	2.7062	5	1.85
42400	BEACON RD	0.49	0.5418	1	1.85
46450	19 NE	2.45	2.7168	5	1.84
33450	E NW	2.51	0.5441	1	1.84
41240	SCOTT RD	0.56	0.5446	1	1.84
50100	L NE	6.56	0.5527	1	1.81
45020	ANDREWS ST	0.707	0.5581	1	1.79
22140	SOUTH FRONTAGE RD	7.06	1.1240	2	1.78
45100	10 NE	2.95	1.6878	3	1.78
94030	7 NE	3	6.2339	11	1.76
40555	HIAWATHA RD	3.91	2.2941	4	1.74
10300	26 SW	7	1.7325	3	1.73
91047	K SW	1.89	0.5780	1	1.73
94040	10 NE	5.6	2.9575	5	1.69
45053	ARNOLD DR	0.75	1.1886	2	1.68
22050	O SE	3.03	1.2013	2	1.66
94010	6 NE	2.04	0.6016	1	1.66

Grant County

Road .	Road Name	Length	MVMT	Accident	Accident Rate per MVMT
46750	16 NE	3.99	1.2058	2	1.66
91043	O SW	9.44	4.3358	7	1.61
53500	42 NE	12.15	0.6215	1	1.61
31650	V NW	1.97	0.6312	1	1.58
95010	44 NE	6.07	0.6317	1	1.58
45170	PATTON BLVD	2.29	21.7492	34	1.56
93045	B NW	5.05	3.8400	6	1.56
10270	12 SW	7.97	8.9761	14	1.56
93047	SAGEBRUSH FLATS RD	12.03	5.1415	8	1.56
91010	E SW	3.69	1.9290	3	1.56
94030	12 NE	3.01	0.6457	1	1.55
10290	28 SW	7.3	1.2923	2	1.55
93004	4 NE	6.42	3.9707	6	1.51
42900	4 NE	3.26	3.3533	5	1.49
30350	MONUMENT HILL RD	8.26	0.6764	1	1.48
92025	N NE	1.97	2.0431	3	1.47
92020	2 SE	4.04	2.0792	3	1.44
14200	10 SW	3.52	0.7024	1	1.42
46200	6.5 NE	1.03	0.7031	1	1.42
91030	DODSON RD	28.23	58.4248	83	1.42
94025	STRATFORD RD	19.86	48.6813	68	1.40
93010	U NW	4.72	15.9996	22	1.38
40305	7 NE	0.81	1.4572	2	1.37
30250	9 NW	4.76	2.9363	4	1.36
30400	MARTIN RD	16.5	6.7699	9	1.33
92005	H SE	4.67	3.0325	4	1.32
93010	5 NW	18.19	22.8115	30	1.32
95025	PINTO RIDGE RD	14.5	8.6386	11	1.27
40350	U NE	7.06	0.7886	1	1.27
91017	ADAMS RD	25.26	40.5379	50	1.23
92045	S SE	4.93	4.0907	5	1.22
15240	9 SW	4.89	0.8225	1	1.22
41690	AIRWAY DR	1.78	6.7025	8	1.19
10660	DESERT AIRE DR	2.57	1.6765	2	1.19
12710	G SW	3.29	5.0323	6	1.19
52250	Q NE	12.73	0.8411	1	1.19
43050	K NE	3.03	7.6552	9	1.18
TOTAL		2526.81	1022.24	1206	1.18
	Unidentified Accidents*			109	
	Total	2526.81	1022.24	1315	1.29

* Unidentified accidents includes all accidents located within the County on private or Forest Service roads or accidents without a primary trafficway identified.

Kittitas County

Road .	Road Name	Length	MVMT	Accident	Accident Rate per MVMT
69650	MANITOBA ST	0.05	0.0018	1	542.52
13760	SILVER TRAIL	0.17	0.0206	1	48.65
22540	1ST ST (RONALD)	0.27	0.0244	1	40.98
61261	BULL RD	0.6	0.1265	4	31.62
56010	THORP DEPOT RD	0.86	0.0342	1	29.21
56761	DURR RD	1.95	0.0345	1	28.98
69752	WILLIS RD EAST	0.26	0.0388	1	25.75
42777	COLEMAN CREEK RD	0.56	0.0562	1	17.81
15020	KACHESS RIVER RD	0.48	0.0609	1	16.43
63686	VANDERBILT RD	0.48	0.0623	1	16.05
34002	KLOCKE RD	0.53	0.0711	1	14.06
22240	TAYLOR RD	0.88	0.0779	1	12.84
22611	NELSON DAIRY RD	1.17	0.0875	1	11.42
35541	HANNAH RD	0.35	0.0914	1	10.95
69010	BERRY RD	1.03	0.1840	2	10.87
33800	HOWARD RD	1.99	0.2168	2	9.23
68750	TJOSSEM CONNECTION	0.09	0.1165	1	8.58
25850	HORVATT RD	0.46	0.1235	1	8.10
61680	MATTHEWS RD	0.36	0.2500	2	8.00
10600	SNOQUALMIE DRIVE	0.885	0.2571	2	7.78
25620	WATSON CUTOFF RD	1.12	0.2824	2	7.08
25860	MCDONALD RD	0.6	0.1522	1	6.57
56770	TANEUM RD WEST	1.96	0.3121	2	6.41
22510	PAYS RD	0.9	0.1699	1	5.89
25500	WHITE RD	0.52	0.1733	1	5.77
13090	CABIN CREEK RD	2.92	0.1839	1	5.44
68020	ALKALI RD	1	0.1843	1	5.43
40315	SANDERS RD	1.16	1.9281	10	5.19
63065	DODGE RD	1.04	0.1963	1	5.09
40271	JUDGE RONALD RD	1	0.1976	1	5.06
43752	GILBERT RD	1.54	0.1998	1	5.00
43163	SCHNEBLY RD	2.98	0.2031	1	4.92
35562	PIONEER RD	0.51	0.2098	1	4.77
41010	BOWERS RD	0.56	0.2139	1	4.68
43883	COOKE CANYON RD	4.61	0.8867	4	4.51
22350	MOHAR RD	2.01	0.4624	2	4.33
60640	ANDERSON RD	0.41	0.9680	4	4.13
34761	FAUST RD	2.47	0.4992	2	4.01
29000	HIDDEN VALLEY RD	2.37	0.5223	2	3.83
69770	FIRST AV (GRASSLANDS)	0.54	0.2637	1	3.79
94026	AIRPORT RD	0.32	0.5393	2	3.71
44760	FOX RD	1.55	0.2857	1	3.50
53650	BARNES RD	0.78	0.2956	1	3.38
69370	PARKE CREEK RD	7.06	2.4667	8	3.24
43512	CHARLTON RD	2.5	0.3306	1	3.02
69511	CLERF RD	2.71	2.3172	7	3.02
54150	WEAVER RD	3.65	1.3439	4	2.98
35285	ROBBINS RD	2.82	1.0182	3	2.95
42000	NANEUM RD	8.94	3.4801	10	2.87
21900	GOLF COURSE RD	0.89	1.1703	3	2.56
93526	REECER CREEK RD	11.49	9.3706	24	2.56
94051	GAME FARM RD	2.54	1.6042	4	2.49
42012	RADER RD	3.68	0.8083	2	2.47

Kittitas County

Road .	Road Name	Length	MVMT	Accident	Accident Rate per MVMT
40761	LOOK RD	3.3	4.8649	12	2.47
42271	ALFORD RD	1.07	0.8331	2	2.40
96951	KITTITAS HWY	4.61	20.8313	49	2.35
69910	THIRD AV (GRASSLANDS)	0.46	0.4341	1	2.30
41271	BRICK MILL RD	7.21	3.9139	9	2.30
53010	RIVERBOTTOM RD	3.06	1.3164	3	2.28
40772	LYONS RD	7.05	1.4034	3	2.14
93075	BENDER RD	0.754	0.9834	2	2.03
22710	WESTSIDE RD	7.34	7.0061	14	2.00
23030	NELSON SIDING RD	4.49	3.0096	6	1.99
95501	COVE RD	4.42	2.0632	4	1.94
96400	CLEMAN RD	2.86	3.6474	7	1.92
64756	UPPER BADGER POCKET RD	6.62	2.1557	4	1.86
65002	PRATER RD	2.48	0.5392	1	1.85
22770	LOWER PEOH POINT RD	4.71	2.7314	5	1.83
96937	UMPTANUM RD	8.91	9.2566	16	1.73
75040	HUNTZINGER RD	10.74	6.3919	11	1.72
94126	WILSON CREEK RD	9.02	8.7406	15	1.72
96200	NO. 6 RD	5.1	8.2358	13	1.58
56160	STRANDE RD	3.61	0.6412	1	1.56
TOTAL		561.787	329.87	512	1.55
	Unidentified Accidents*			89	
	Total	561.787	329.87	601	1.82

* Unidentified accidents includes all accidents located within the County on private or Forest Service roads or accidents without a primary trafficway identified.

Lincoln County

Road .	Road Name	Length	MVMT	Accident	Accident Rate per MVMT
64920	SAWYER ROAD #64920	1.08	0.0147	1	67.89
37070	KALLENBERGER ROAD #37070	0.8	0.0327	1	30.55
64300	HALLETT ROAD #64300	1.01	0.0531	1	18.82
65200	ALEXANDER ROAD #65200	6.11	0.2026	3	14.81
65590	GREEN CANYON ROAD #65590	1.76	0.2128	3	14.10
40010	CHILDERS ROAD #40010	8.79	0.2059	2	9.71
57860	HAWK CREEK ROAD #57860	1.63	0.2240	2	8.93
40360	ZIMMERMAN ROAD #40360	1.32	0.1183	1	8.45
51620	BACHELOR PRAIRIE ROAD #51620	2.22	0.1341	1	7.46
96310	BALD RIDGE ROAD #96310	4.07	0.3372	2	5.93
66370	MILL CANYON ROAD #66370	6.55	0.7149	4	5.60
11450	LAUER ROAD #11450	4.38	0.1804	1	5.54
43910	JOHNSON ROAD #43910	2.81	0.1916	1	5.22
21170	COYOTE HEIGHTS ROAD #21170	4.36	0.1998	1	5.01
46170	SHERMAN DRAW ROAD #46170	7.34	0.6058	3	4.95
62800	SUNSET HIGHWAY ROAD #62800	5.7	0.6115	3	4.91
68890	TRAMM ROAD #68890	5.25	0.8303	4	4.82
21040	LANEY BROTHERS ROAD #21040	12.2	0.4429	2	4.52
63060	DETOUR ROAD #63060	4.5	0.4941	2	4.05
29880	MT VIEW CEMETARY ROAD #29880	2.61	0.2532	1	3.95
65720	FOUR CORNERS ROAD #65720	5.84	0.2557	1	3.91
12670	LAKEVIEW RANCH LOOP ROAD #12670	7.54	0.2883	1	3.47
53880	COTTONWOOD CREEK ROAD #53880	6.34	0.2887	1	3.46
48950	MOUNTVIEW ROAD #48950	6.51	0.2897	1	3.45
20260	HEIMBIGNER ROAD #20260	3.01	0.2910	1	3.44
27870	SCHMIERER ROAD #27870	8.09	0.3052	1	3.28
45860	RUX ROAD #45860	7.29	0.3160	1	3.16
43740	ALDERSON ROAD #43740	6.11	0.3321	1	3.01
28130	HIGHLINE ROAD #28130	5.23	0.3330	1	3.00
68200	TAMARACK CANYON ROAD #68200	3.38	0.6915	2	2.89
66890	HART ROAD #66890	3.12	0.3482	1	2.87
32760	LAKE VALLEY LOOP ROAD #32760	3.3	0.7490	2	2.67
19010	CRICK ROAD #19010	9.62	0.3774	1	2.65
35880	STAR BARN ROAD #35880	5.56	0.3792	1	2.64
92200	DOERSCHLAG ROAD #92200	14.49	1.1416	3	2.63
93050	LAKE ROAD #93050	6.71	0.3940	1	2.54
63000	SUNSET HIGHWAY ROAD #63000	5.32	1.2868	3	2.33
66450	TEEL HILL ROAD #66450	10.64	0.9018	2	2.22
62040	TELECKY ROAD #62040	8.32	0.5168	1	1.93
62240	DENNY STATION ROAD #62240	10.82	0.5317	1	1.88
29110	VALLEY ROAD #29110	6.4	0.5351	1	1.87
51410	UNDERWOOD CANYON ROAD #51410	2.3	0.5378	1	1.86
45800	CRESTON BUTTE ROAD #45800	2.91	0.5690	1	1.76
92100	KING RANCH ROAD #92100	6.17	2.0248	3	1.48
54710	GUNNING ROAD #54710	8.01	1.5049	2	1.33
28560	SEVEN SPRINGS DAIRY ROAD #28560	12.89	0.8124	1	1.23
96430	PORCUPINE BAY ROAD #96430	6.1	2.4970	3	1.20
57860	INDIAN CREEK ROAD #57860	8.73	0.8505	1	1.18
63370	GRAVELLE ROAD #63370	7.87	0.8591	1	1.16
22250	COAL COULEE ROAD #22250	13.07	0.8677	1	1.15
20790	DOWNS ROAD #20790	8.75	0.8878	1	1.13
94750	SWANSON LAKE ROAD #94750	8.82	1.8462	2	1.08
93150	MAX HARDER ROAD #93150	3.82	1.0446	1	0.96

Lincoln County

Road .	Road Name	Length	MVMT	Accident	Accident Rate per MVMT
52870	HAWK CREEK RANCH ROAD #52870	4.67	1.0503	1	0.95
96540	DEVILS GAP ROAD #96540	3.13	2.3269	2	0.86
93350	WAUKON ROAD #93350	17.84	4.6539	4	0.86
95100	MILES CRESTON ROAD #95100	18.96	19.6708	16	0.81
41100	DOUGLAS ROAD #41100	9.86	1.2573	1	0.80
55540	HAWK CREEK ROAD #55540	10.66	1.4008	1	0.71
92550	ROCKLYN ROAD #92550	10.72	2.9045	2	0.69
48410	HANSON HARBOR ROAD #48410	12.37	1.4890	1	0.67
TOTAL		1992.2566	210.15	122	0.58
Unidentified Accidents*				22	
Total		1992.2566	210.15	144	0.69

* Unidentified accidents includes all accidents located within the County on private or Forest Service roads or accidents without a primary trafficway identified.

Appendix N

FUNDING MECHANISMS

Funding Mechanisms

This is excerpted from Your Community's Transportation System - "A Transportation Element Guidebook" by Washington State Department of Community Development (1993), and supplemented with more up-to-date information on the Washington State Gas Tax.

This appendix identifies funding mechanisms and types of debt available for transportation improvement. These mechanisms include new sources provided through state legislation in conjunction with the State Growth Management Program. The state provides for imposition of impact fees, additional real estate excise taxes, local option taxes (fuel tax, vehicle license fee, commercial parking and street utility), and High Occupancy Vehicle (HOV) local option taxes.

These transportation-funding mechanisms require that the city or county interested in using the mechanism comply with transportation planning requirements of the State Growth Management Program, including the finance element.

City/County Funds

City/county revenue resources can be categorized as unrestricted and dedicated. Unrestricted revenue is available for transportation to the extent transportation needs can compete with the many other local government needs.

Unrestricted Governmental Funds

General Funds: General funds include all local funds subject to appropriation by the governing body: property taxes, local option sales taxes, utility taxes, general state shared revenues, business license fees, etc. These funds may be used for transportation purposes.

Special Property Taxes: Additional taxes can be authorized by voters, usually for the purpose of bonds. If a proposal is above the statutory limitation for taxing rate, it must be approved by 60 percent of voters with 40 percent turnout. If it is below the legal limitation, a simple majority is sufficient (usually called a "lid lift"). The tax may be temporary or permanent.

Dedicated Governmental Funds for Capital Purposes

State Fuel Tax: Tax on motor fuels specifically dedicated to highway purposes. Currently a total of 34 cents is collected for each gallon of fuel sold. This will increase by \$0.02 on July 1, 2007 and by \$0.015 on July 1 2008 as part of the Transportation Partnership Act of 2005. Of the current total, 10.96 cents is allocated to state programs, 1.08 cents to ferries, 4.92 cents is allocated to counties, 2.96 cents to cities, 3.04 cents to the Transportation Improvement Board, and 1.03 cents to the County Road Administration Board. In 2003 the Nickel Funding Package added 5 cents of fuel tax to fund specific projects that have been grouped into the following: Highway Improvement (inc HOV), Highway Preservation, Ferry, Local Roads, Rail and Public Transportation Programs and Grants. The Transportation Partnership Act of 2005 increased the fuel Tax by 9.5 cents over 4 years, 5 cents of the current 34 cents

goes towards specific High Priority projects statewide and ½ cent each to cities and counties (included in numbers above).

Real Estate Excise: Tax on sale of real property. Two categories are available; now both can be used for all types of GMA defined capital projects, not just streets. One-fourth cent is authorized for capital facilities; if used, another 1¼ cent may be levied. The projects must be included in capital facilities element of the comprehensive plan.

Sales and Use Tax for High Occupancy Vehicles (HOV): Up to 0.9 percent additional sales tax for HCT by transit agencies for HOV in King, Pierce, Clark, Thurston, Spokane and Snohomish Counties; requires a vote prior to implementation.

Other Dedicated Governmental Funds for Transportation Purposes

Transportation Benefit Districts: Special taxing district for transportation purposes created by cities and/or counties. Allows more than one jurisdiction to join together for purposes of acquiring, constructing, improving, providing; funding any city street, county road, or state highway improvement within the district. With voter approval, has authority to levy property tax and issue general obligation bonds. With city/county approval, has authority to impose fees on building construction or land development.

Transit Tax: Separate taxing authority for transit authorities. Voter approval is required for B&O, household/utility, and sale and use taxes.

Federal Financial Assistance

Federal funds are available to cities or counties as distributed by the state and Metropolitan Planning Organizations (MPO). Allocation typically has three components: regional competition, statewide competition, and Washington State Department of Transportation (WSDOT) funding. Funds can be used for highways, roads, transit, bicycles facilities and related improvements.

For regional competition, funds would be distributed to:

- Transportation Management Areas (TMAs) (Areas with an urban population over 200,000.)
- Metropolitan Planning Organizations (MPOs) (Areas with an urban population over 50,000.)
- Counties (Areas with urban populations under 50,000.)

Public Works Trust Fund (PWTF): Available to cities, counties, and special purpose districts from the state in the form of low interest loans for public work improvements.

Motor Vehicle Excise (MVET) for Transit and High Occupancy Vehicle (HOV) Lanes: With voter approval, transit agencies may collect a local excise tax for vehicles registered within their taxing district, imposed as an addition to the state MVET, for high capacity transit service. Certain large population counties may, with voter approval, collect a local excise tax on vehicles registered within their county, imposed

as an addition to the state MVET, for high occupancy vehicle lanes and related facilities.

Local Development Matching Fund (LDMF): Available to cities to fund transportation related to economic development.

Essential Rail Assistance Account (ERAA): Available to cities, county rail districts and port districts; provided to preserve essential freight rail service on economically viable light density lines. Rail lines must appear in the State Freight Rail Plan.

Essential Rail Banking Account (ERBA): Available to cities, county rail districts, and port districts. Preserve freight rail corridors. The rail lines must appear in the State Freight Rail Plan.

User Fees

Transit Fares: Established by transit operator.

Tolls: Paid by user: limited to repayment of bonds to finance construction.

Ferry Fares: Established by ferry operator.

Parking Fees: Either for use of right-of-way (on street parking), or special facility (parking garage).

Developer Contributions

Developer Regulations: Various development regulations (especially subdivision ordinances) may require that certain facilities be available, frequently requiring developers to finance them.

Debt Types

Many of the various sources of revenue can be used either to fund the facility at one time or through various debt financing systems.

Voted General Obligations: Debt secured by "full faith and credit" of the jurisdiction: taxing power pledged to repay debt. Usually (not always) involves approval of an additional property tax levy pledged to retire the debt. Requires a vote with a 60 percent approval of those voting at an election, with participation of 40 percent of the number who voted in the last general election in the jurisdiction.

Non-voted General: This debt is also secured by "full faith and credit" of the jurisdiction. However, no voter approval is required and debt service is paid out of current taxing authority (revenue is diverted from operations and is committed debt service).

Revenue Bonds: Debt is secured by identified revenue source, not taxing power of the jurisdiction. Such revenue is usually some sort of user fees, such as fare box revenue or toll charges. Because such revenues are less secure than taxing powers, this type of

debt usually has higher interest costs than GO bonds. Rarely used for street financing, but theoretically possible. Street utilities could increase the use of this type of debt. Industrial revenue bonds are technically a specialized type of revenue bonds.

Double Barreled Bonds: Debt secured by taxing authority (under one of the two types of GO methods), but debt services is paid out of other revenues. This allows revenue bonds to enjoy the lower interest benefits of GO bonds.

Special Assessment Debt: Bonds financed by formation of a special assessment district: Local Improvement District, Road Improvement District, or Utility Improvement District. Predominate method of debt financing of developer contributions. Must be based on benefit to assessed properties, and must meet requirements of IRS code. Can be augmented by general revenues (usually by absorbing financing costs or "buying down" interest rates).

Appendix O

DETAILED HISTORIC EXPENDITURES AND REVENUE FORECASTS

Transportation Revenue Forecast Summary

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Forecast Revenues For Transportation Total 2007 - 2027
Adams County																								
Property Tax	1,169,579	1,181,275	1,193,088	1,205,018	1,217,069	1,229,239	1,241,532	1,253,947	1,266,486	1,279,151	1,291,943	1,304,862	1,317,911	1,331,090	1,344,401	1,357,845	1,371,423	1,385,138	1,398,989	1,412,979	1,427,109	1,441,380	1,455,794	27,451,874
State Motor Fuel Tax	4,374,335	4,537,480	4,789,196	4,919,598	5,042,943	5,159,163	5,270,160	5,392,284	5,510,334	5,626,691	5,735,559	5,842,329	5,943,698	6,050,694	6,157,207	6,258,326	6,359,773	6,462,619	6,591,871	6,723,709	6,858,183	6,995,347	7,135,254	122,227,164
Federal Revenues	1,534,457	1,552,866	1,571,090	1,589,733	1,608,598	1,627,886	1,647,001	1,666,545	1,686,321	1,706,332	1,726,580	1,747,068	1,767,800	1,788,777	1,810,004	1,831,482	1,853,215	1,875,206	1,897,458	1,919,974	1,942,758	1,965,811	1,989,138	36,782,106
Total	\$7,078,371	\$7,271,420	\$7,553,374	\$7,714,349	\$7,868,609	\$8,016,088	\$8,158,693	\$8,312,776	\$8,463,142	\$8,612,174	\$8,754,082	\$8,894,259	\$9,029,409	\$9,170,561	\$9,311,612	\$9,447,653	\$9,584,412	\$9,722,963	\$9,888,319	\$10,056,662	\$10,228,049	\$10,402,538	\$10,580,186	186,461,144
Cities - Adams County																								
Property Tax	177,772	179,550	181,346	183,159	184,991	186,841	188,709	190,596	192,502	194,427	196,371	198,335	200,318	202,322	204,345	206,388	208,452	210,537	212,642	214,768	216,916	219,085	221,276	4,172,601
State Motor Fuel Tax	193,628	213,381	224,797	231,610	237,570	243,087	248,363	253,954	259,567	265,095	270,270	275,351	280,178	285,271	290,341	295,155	299,987	304,886	310,983	317,203	323,547	330,018	336,618	5,760,614
Federal Revenues	14,050	14,216	14,385	14,556	14,729	14,903	15,080	15,259	15,440	15,623	15,809	15,996	16,186	16,378	16,573	16,769	16,968	17,170	17,373	17,580	17,788	17,999	18,213	336,784
Total	\$385,450	\$407,148	\$420,528	\$429,325	\$437,289	\$444,831	\$452,152	\$459,809	\$467,509	\$475,146	\$482,450	\$489,682	\$496,683	\$503,971	\$511,258	\$518,313	\$525,407	\$532,592	\$540,999	\$549,551	\$558,251	\$567,103	\$576,107	10,269,998
Grant County																								
Property Tax	6,143,761	6,205,199	6,267,251	6,329,923	6,393,223	6,457,155	6,521,726	6,586,944	6,652,813	6,719,341	6,786,535	6,854,400	6,922,944	6,992,173	7,062,095	7,132,716	7,204,043	7,276,084	7,348,845	7,422,333	7,496,556	7,571,522	7,647,237	144,203,822
State Motor Fuel Tax	6,736,622	6,988,037	7,375,794	7,576,606	7,766,564	7,945,552	8,116,496	8,304,582	8,486,388	8,665,587	8,833,251	8,997,685	9,153,800	9,318,582	9,482,620	9,638,350	9,794,586	9,952,976	10,152,036	10,355,077	10,562,178	10,773,422	10,988,890	188,240,168
Federal Revenues	1,291,541	1,305,854	1,320,326	1,334,958	1,349,753	1,364,711	1,379,836	1,395,128	1,410,589	1,426,222	1,442,028	1,458,009	1,474,167	1,490,505	1,507,023	1,523,725	1,540,611	1,557,685	1,574,948	1,592,402	1,610,050	1,627,893	1,645,934	30,686,422
Total	\$14,171,924	\$14,499,090	\$14,963,371	\$15,241,488	\$15,509,540	\$15,767,418	\$16,018,058	\$16,286,653	\$16,549,790	\$16,811,150	\$17,061,814	\$17,310,094	\$17,550,912	\$17,801,260	\$18,051,739	\$18,294,791	\$18,539,241	\$18,786,745	\$19,075,828	\$19,369,812	\$19,668,784	\$19,972,837	\$20,282,061	363,130,412
Cities - Grant County																								
Property Tax	769,214	776,906	784,675	792,522	800,447	808,452	816,536	824,702	832,949	841,278	849,691	858,188	866,770	875,437	884,192	893,034	901,964	910,984	920,093	929,294	938,587	947,973	957,453	18,054,672
State Motor Fuel Tax	915,121	1,008,478	1,062,434	1,094,633	1,122,799	1,148,875	1,173,808	1,200,232	1,226,759	1,252,889	1,277,345	1,301,357	1,324,174	1,348,245	1,372,203	1,394,957	1,417,791	1,440,945	1,469,764	1,499,159	1,529,142	1,559,725	1,590,919	27,225,713
Federal Revenues	132,373	133,840	135,323	136,823	138,339	139,872	141,423	142,990	144,574	146,177	147,797	149,435	151,091	152,765	154,458	156,170	157,901	159,651	161,420	163,209	165,018	166,846	168,696	3,145,121
Total	\$1,816,708	\$1,919,224	\$1,982,432	\$2,023,978	\$2,061,586	\$2,097,199	\$2,131,766	\$2,167,923	\$2,204,282	\$2,240,343	\$2,274,832	\$2,308,979	\$2,342,034	\$2,376,447	\$2,410,853	\$2,444,160	\$2,477,656	\$2,511,579	\$2,551,277	\$2,591,662	\$2,632,747	\$2,674,544	\$2,717,068	48,425,506
Kittitas County																								
Property Tax	3,076,511	3,107,276	3,138,348	3,169,732	3,201,429	3,233,443	3,265,778	3,298,436	3,331,420	3,364,734	3,398,382	3,432,365	3,466,689	3,501,356	3,536,369	3,571,733	3,607,451	3,643,525	3,679,960	3,716,760	3,753,927	3,791,467	3,829,381	72,210,581
State Motor Fuel Tax	2,183,906	2,263,982	2,388,780	2,453,970	2,515,529	2,573,511	2,628,889	2,689,772	2,748,669	2,806,721	2,861,036	2,914,306	2,964,882	3,018,265	3,071,408	3,121,858	3,172,474	3,223,787	3,288,263	3,354,028	3,421,108	3,489,531	3,559,321	60,970,768
Federal Revenues	1,022,991	1,034,378	1,045,893	1,057,535	1,069,307	1,081,210	1,093,245	1,105,415	1,117,720	1,130,161	1,142,742	1,155,462	1,168,324	1,181,329	1,194,479	1,207,776	1,221,220	1,234,814	1,248,559	1,262,458	1,276,511	1,290,720	1,305,088	24,319,257
Total	\$6,283,407	\$6,405,636	\$6,573,021	\$6,681,237	\$6,786,265	\$6,888,164	\$6,987,912	\$7,093,622	\$7,197,809	\$7,301,616	\$7,402,159	\$7,502,134	\$7,599,896	\$7,700,951	\$7,802,256	\$7,901,367	\$8,001,144	\$8,102,126	\$8,216,782	\$8,333,245	\$8,451,546	\$8,571,717	\$8,693,790	157,500,606
Cities - Kittitas County																								
Property Tax	108,087	109,168	110,260	111,362	112,476	113,601	114,737	115,884	117,043	118,213	119,395	120,589	121,795	123,013	124,243	125,486	126,741	128,008	129,288	130,581	131,887	133,206	134,538	2,536,977
State Motor Fuel Tax	468,788	516,612	544,252	560,746	575,175	588,533	601,305	614,841	628,431	641,816	654,344	666,645	678,333	690,664	702,937	714,593	726,290	738,151	752,914	767,972	783,332	798,998	814,978	13,946,882
Federal Revenues	33,952	34,330	34,712	35,098	35,489	35,884	36,283	36,687	37,096	37,509	37,926	38,348	38,775	39,207	39,643	40,085	40,531	40,982	41,438	41,899	42,366	42,837	43,314	807,125
Total	\$610,827	\$660,109	\$689,223	\$707,207	\$723,140	\$738,018	\$752,325	\$767,413	\$782,569	\$797,538	\$811,665	\$825,582	\$838,903	\$852,884	\$866,824	\$880,163	\$893,561	\$907,141	\$923,640	\$940,453	\$957,584	\$975,041	\$992,830	17,290,984
Lincoln County																								
Property Tax	1,174,966	1,186,716	1,198,583	1,210,569	1,222,675	1,234,901	1,247,250	1,259,723	1,272,320	1,285,043	1,297,894	1,310,873	1,323,981	1,337,221	1,350,593	1,364,099	1,377,740	1,391,518	1,405,433	1,419,487	1,433,682	1,448,019	1,462,499	27,578,323
State Motor Fuel Tax	4,343,897	4,512,557	4,766,743	4,895,818	5,018,410	5,134,021	5,244,430	5,366,128	5,483,550	5,599,293	5,707,584	5,813,782	5,914,604	6,021,025	6,126,967	6,227,541	6,328,441	6,430,731	6,559,346	6,690,532	6,824,343	6,960,830	7,100,047	121,626,676
Federal Revenues	1,325,371	1,337,555	1,349,852	1,362,261	1,374,785	1,387,424	1,400,179	1,413,051	1,426,042	1,439,152	1,452,383	1,465,735	1,479,210	1,492,809	1,506,533	1,520,383	1,534,360	1,548,466	1,562,702	1,577,068	1,591,567	1,606,199	1,620,965	30,827,717
Total	\$6,844,234	\$7,036,828	\$7,315,177	\$7,468,649	\$7,615,870	\$7,756,346	\$7,891,860	\$8,038,902	\$8,181,912	\$8,323,488	\$8,457,860	\$8,590,390	\$8,717,795	\$8,851,055	\$8,984,093	\$9,112,024	\$9,240,542	\$9,370,715	\$9,527,480	\$9,687,088	\$9,849,592	\$10,015,048	\$10,183,511	180,032,717
Cities - Lincoln County																								
Property Tax	105,067	106,118	107,179	108,251	109,333	110,427	111,531	112,646	113,773	114,911	116,060	117,220	118,392	119,576	120,772	121,980	123,200	124,432	125,676	126,933	128,202	129,484	130,779	2,466,095
State Motor Fuel Tax	124,289	136,969	144,297	148,670	152,496	156,037	159,423	163,012	166,615	170,164	173,486	176,747	179,846	183,115	186,369	189,459	192,561	195,705	199,619	203,612	207,684	211,838	216,074	3,697,724
Federal Revenues	1,494,201	1,507,937	1,521,800	1,535,791	1,549,910	1,564,159	1,578,538	1,593,050	1,607,696	1,622,476	1,637,392	1,652,445	1,667,637	1,682,968	1,698,440	1,714,054	1,729,812	1,745,715	1,761,764	1,777,960	1,794,306	1,810,801	1,827,449	34,754,651
Total	\$1,723,557																							

	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>
Grant County											
Revenues											
Property Taxes	3,843,871	4,350,031	4,794,389	4,425,895	5,421,450	5,509,204	5,766,358	5,938,168	5,923,493	6,082,932	6,143,761
Special Assessments	-	-	-	-	-	-	7,012	11,860	8,263	3,554	-
General Fund Appropriations	153,676	-	558,611	-	-	-	175,454	-	-	265,318	-
Local Road User Taxes	740	-	-	-	-	-	-	-	-	-	-
Other Local Receipts	292,648	550,871	420,532	469,533	376,574	493,306	333,061	275,107	241,129	528,342	-
State Fuel Tax Distributions	5,368,730	5,656,254	5,876,187	5,979,392	6,123,246	6,274,795	6,262,559	6,373,593	6,402,974	6,602,225	6,736,622
Other State Funds	1,212,607	1,117,416	1,447,852	2,734,635	1,775,811	1,031,736	114,736	151,350	921,846	922,282	-
Federal Revenues	1,558,026	1,073,352	833,606	2,193,255	1,502,130	1,890,913	1,781,838	3,748,126	4,380,820	1,277,384	1,291,541
Bond Proceeds	-	-	-	-	-	-	-	-	-	-	-
Total	12,430,298	12,747,924	13,931,177	15,802,710	15,199,211	15,199,954	14,441,018	16,498,204	17,878,525	15,682,037	-
Expenditures											
Construction	5,805,955	5,436,676	5,439,948	6,097,652	5,199,323	5,667,949	5,522,119	5,948,195	6,793,352	7,427,391	-
Preservation	-	-	-	-	-	-	-	1,737,664	2,072,952	2,578,852	-
Maintenance	5,404,215	5,621,043	5,219,060	5,554,194	6,017,562	5,842,221	6,263,228	4,520,449	4,979,139	5,032,307	-
Administration	345,736	1,248,607	902,824	1,508,147	1,284,070	1,468,870	1,142,269	1,654,246	1,509,893	1,030,435	-
Plant Maintenance & Constructi	35,294	48,813	154,908	167,856	49,430	51,147	2,223,835	847,590	1,050,839	2,451,782	-
Debt Service	41,890	41,466	37,816	44,898	40,678	27,781	24,436	24,472	3,000	1,815	-
Other	32,545	867,981	165,089	235,017	778,570	85,301	740,701	1,617,546	242,775	133,939	-
Traffic Policing	153,676	-	178,961	176,657	154,133	167,833	175,454	179,836	181,030	182,538	-
Total	11,819,311	13,264,586	12,098,606	13,784,421	13,523,766	13,311,102	16,092,042	16,529,998	16,832,980	18,839,059	-
% Change											
Property Taxes	4.7%	13.2%	10.2%	-7.7%	22.5%	1.6%	4.7%	3.0%	-0.2%	2.7%	5.5%
State Fuel Tax Distributions	5.8%	5.4%	3.9%	1.8%	2.4%	2.5%	-0.2%	1.8%	0.5%	3.1%	2.7%
Federal Revenues	14.2%	-31.1%	-22.3%	163.1%	-31.5%	25.9%	-5.8%	110.4%	16.9%	-70.8%	16.9%
Population					74,698					82,397	
MVFT Allotment % Grant											4.11450%
MVFT CAP % Grant											6.44286%

Average

	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>
Cities - Grant County											
Revenues											
Property Taxes	480,557	833,587	461,332	521,700	795,952	714,020	784,314	841,285	833,016	761,598	769,214
Special Assessments	83,413	466,867	155,648	196,436	237,403	468,549	187,487	184,211	128,146	179,690	
General Fund Appropriations	2,109,209	723,520	1,529,176	1,672,591	2,387,399	1,596,913	1,861,482	2,777,744	2,791,489	3,136,620	
Local Road User Taxes	38,568	-	-	-	-	-	-	-	-	-	
Other Local Receipts	2,165,381	1,889,428	2,893,090	3,530,009	4,567,774	3,752,250	3,392,339	3,054,161	3,498,461	3,573,404	
State Fuel Tax Distributions	724,152	1,182,277	768,621	782,736	786,420	832,231	843,095	830,668	855,306	877,193	915,121
Other State Funds	315,751	345,305	1,614,566	2,064,953	3,887,380	2,179,413	3,548,591	993,579	551,608	278,790	
Federal Revenues	210,012	1,754	132,665	-	10,560	121,835	126,050	64,707	26,228	130,922	132,373
Bond Proceeds	1,853,374	1,883,190	1,346,386	1,597,439	-	-	-	-	-	-	
Total	7,980,417	7,325,928	8,901,484	10,365,864	12,672,888	9,665,211	10,743,358	8,746,355	8,684,254	8,938,217	
Expenditures											
Construction	2,653,016	2,665,303	3,178,868	3,413,402	5,239,761	3,282,465	4,367,268	1,678,281	783,874	867,210	
Preservation								18,021	75	-	
Maintenance	1,647,478	1,760,787	1,747,601	1,962,050	1,882,176	2,154,585	2,479,216	2,646,413	2,310,725	3,207,885	
Administration	90,042	98,787	100,917	115,463	189,571	166,213	447,376	340,147	388,631	352,938	
Plant Maintenance & Constructi	26,525	92,065	11,736	4,316	19,262	518,754	38,907	196,795	111,609	117,568	
Debt Service	199,896	529,036	1,343,754	1,645,270	1,426,144	726,013	263,950	286,910	342,729	175,137	
Other	216,665	135,267	64,809	122,495	177,157	213,456	261,770	130,023	130,998	323,466	
Traffic Policing	1,060,867	1,185,658	1,335,047	1,573,621	1,561,539	1,734,268	1,636,102	2,452,802	2,396,689	2,697,773	
Total	5,894,489	6,466,903	7,782,732	8,836,617	10,495,610	8,795,754	9,494,589	7,749,392	6,465,330	7,741,977	
% Change											
Property Taxes	4.5%	73.5%	-44.7%	13.1%	52.6%	-10.3%	9.8%	7.3%	-1.0%	-8.6%	9.6%
State Fuel Tax Distributions	1.7%	63.3%	-35.0%	1.8%	0.5%	5.8%	1.3%	-1.5%	3.0%	2.6%	4.3%
Federal Revenues	2700.2%	-99.2%	7463.6%	-100.0%	#DIV/0!	1053.7%	3.5%	-48.7%	-59.5%	399.2%	#DIV/0!
MVFT Allotment % Grant											1.07998%

Average

Appendix P

QUADCO AGENCY TRANSPORTATION IMPROVEMENT PROGRAMS

(UPDATED ANNUALLY AND BOUND SEPERATELY)