



June 2008

## Inside this Brief

- History
- Existing Infrastructure
- Sources of Highway Revenue
- Other States
- City and County Share of Fund
- Local Funding Variation
- Federal Funds
- Weight-Mile Taxes
- Setting Tax Rates
- Highway Taxes – Recent History
- Project Selection
- Unmet Needs
- Studded Tire Damage
- Oregon Transportation Investment Act
- Project Contracting
- Columbia River Crossing
- Preservation First
- Maintenance Agreements
- Road User Fee Pilot
- Innovative Finance
- Continuing Issues and Challenges
- Staff and Agency Contacts

Legislative Committee Services  
State Capitol Building  
Salem, Oregon 97301  
(503) 986-1813

Background Brief on ...

# Roads and Highways

*Prepared by: Patrick Brennan*

## History

Overland travel in Oregon progressed from private wagon roads and ferries during settlement days to a network of stage roads by 1890. The state began investing in roads in the early part of the 20<sup>th</sup> Century, instituting a \$3 vehicle registration fee in 1905. The State Highway Commission was created in 1913. Oregon imposed the nation's first gas tax (one cent per gallon) in 1919. By 1920, Oregon had 620 miles of paved roads, 297 miles of plank roads, 107,307 registered motor vehicles, and a population of 783,000.

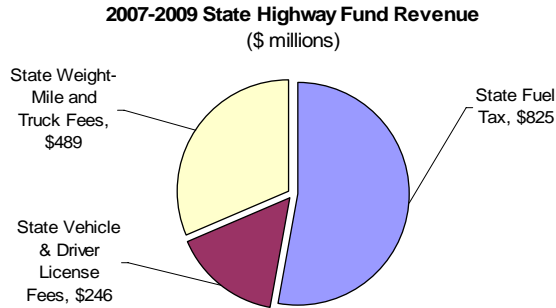
Today's most traveled routes were designed and built in the 1960s and 1970s, a period known as the "Interstate Era." A 50 percent increase in travel during the past 20 years, including substantially more truck travel, has led to more areas of congestion and a backlog of preservation and maintenance needs. An anticipated population increase of nearly 1 million people over the next 20 years means these trends are likely to continue.

## Existing Infrastructure

The Oregon Department of Transportation (ODOT) operates and maintains about 8,000 miles of road and 2,650 bridges. These numbers include interstates, U.S. highways, and state highways. State-maintained highways make up about 10 percent of road mileage in the state but carry about 60 percent of the estimated 35.5 billion vehicle miles traveled in the state each year. The rest of the traffic is carried on the local road system, including about 27,000 miles of county roads, 10,400 miles of city streets, and 42,000 miles controlled by federal and state agencies. The combined system annually carried over 3.2 billion truck miles in 2005.

## Sources of Highway Revenue

Oregon pays for the construction, maintenance, and operation of the state highway system primarily through user fees. Principal sources of revenue are federal funds, state fuel taxes, state weight-mile taxes on trucks, and state vehicle registration and title fees. The taxes and fees collected by the state are shared with Oregon cities and counties and are constitutionally dedicated to use on highways. The state does not use General Funds on highways. The chart below shows anticipated collections for this biennium after subtracting collection costs and transfers, but before distribution to cities and counties.



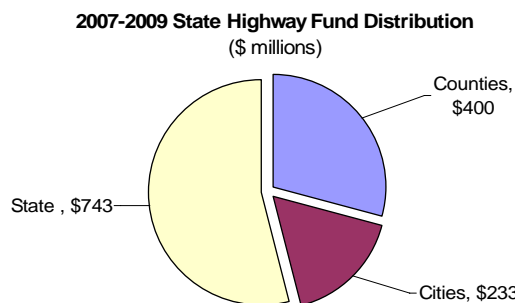
Source: December 2007 Transportation Economic and Revenue Forecast

## Other States

The chart above illustrates Oregon's policy of charging highway users based more on *use* of the system rather than on *vehicle ownership*. Most other states have sales taxes or other fees that apply to vehicles and some states base fees on the value of the vehicle. Such charges can substantially increase the cost of owning a vehicle. Oregon has relatively low registration fees and comparatively higher fuel and truck use taxes.

## City and County Share of Fund

The following chart shows forecast distribution to cities and counties for the 2007-2009 biennium. The distribution is based on statutory distribution formulas and special programs, including a recent bond program (see OTIA p. 4 below) and Senate Bill 994 (2007).



Source: December 2007 Transportation Economic and Revenue Forecast

Funds are distributed to individual cities by population. Most state highway funds are distributed to counties based on the number of vehicles registered in each county. Money

distributed under Senate Bill 994 (2007) is done in proportion to the amount of money that each county road program lost because Congress did not reauthorize the federal Secure Rural Schools and Community Self-Determination Act of 2000 (P.L. 106-393).

## Local Funding Variation

Roughly half of all local highway revenue comes from the distribution of the state Highway Fund as shown above. However, individual cities and counties vary significantly as to the proportion of their road revenue. The remainder of local road revenue is locally generated or of federal origin.

Local sources of road revenue include property taxes, system development charges, traffic impact fees, maintenance fees, parking fees and fines, lodging taxes, franchise fees, accrued interest, county fuel taxes (Multnomah and Washington counties), and city fuel taxes (Astoria, Coburg, Coquille, Cottage Grove, Dundee, Eugene, Milwaukie, Oakridge, Sandy, Springfield, Stanfield, The Dalles, Tigard, Tillamook, Veneta, Warrenton, and Woodburn). Static state tax rates over the past ten years have increased pressure on local sources.

**Federal Forest Revenues:** Thirty-one of Oregon's 36 counties receive federal payments in lieu of property taxes. These revenues, dedicated to schools and roads, represent a substantial share of highway revenue in some counties. The roads portion for these counties totaled nearly \$105 million in Fiscal Year 2006. Congress is considering legislation that would substantially reduce this subsidy that currently represents about 25 percent of total county road revenues.

## Federal Funds

Most states, including Oregon, depend on federal funds for a significant portion of their highway revenue. Oregon's legislatively adopted budget for the state highway system for the 2007-2009 biennium is 80 percent state revenue and 20 percent federal revenue. Federal highway funds derive mainly from an 18.4-cent federal gas tax, a 24.4-cent diesel tax, and other fees on trucks. Federal transportation programs are adopted on a

six-year cycle through authorization bills. These bills set anticipated funding levels over the six-year period, define categories of funding, and establish formulas and program criteria under which states receive funds. The most recent authorizing bill, passed in 2005, increased federal highway funding by 30 percent. Actual funding depends on the annual appropriations process in Congress and is traditionally short of the authorized level.

Federal funding comes from formula grants, discretionary funds, or earmarked funds. Because most federal funding is distributed through formula grants, congressional delegates attempt to negotiate formulas into authorization bills that favor their states. They also attempt to earmark funds for specific projects in their districts. The U.S. Department of Transportation makes federal discretionary funds available in several different program categories; state and local highway agencies must submit project applications and compete for funding.

For the most part, federal funds are received as reimbursement after state funds are spent on a project. State or local matching requirements for federally funded projects in Oregon are currently about 11 percent.

### **Weight-Mile Taxes**

Oregon uses a weight-mile tax to assess trucks for use of state and local highways. Under this system, the tax rate for a truck increases with its weight and the rate is paid per mile of operation in the state. Most states levy a diesel tax on trucks operating on their roads but Oregon assesses the weight-mile tax instead. The rationale is that a weight-mile tax more accurately assesses trucks for road wear than does a fuel tax.

Farm vehicles, unless they are used for hire, are exempt from weight-mile taxes and pay fuel taxes. Truck owners carrying logs, wood chips, and rock products have the option of paying “flat fees” instead of weight-mile taxes. These fees vary with weight but are “flat” because they do not vary with mileage. The flat fee option is

available for these trucks because they are often operated seasonally, make shorter trips, and mix taxable and non-taxable (non-highway) miles. These factors make mileage reporting and auditing more difficult. In 1999, the American Trucking Association sued the state over flat fees and the farm vehicle exemption, asserting that they benefit intrastate carriers and are anti-competitive. The case was recently resolved in favor of the state on appeal to the Oregon Supreme Court.

### **Setting Tax Rates**

Rates for state fuel taxes, registration fees, and weight-mile taxes are all set in statute. The Oregon Constitution (Section 3(a), Article IX) requires adjustment of tax rates to ensure fairness and proportionality between classes of vehicles. State economists perform a biennial Highway Cost Allocation Study to determine how the burden of highway expenditures should be shared between cars and trucks, and between different types and weights of trucks. The study determines proper balance of tax rates between classes of highway users but does not attempt to determine appropriate levels of total revenue. Study results are presented to the House and Senate Committees on Revenue that determine what legislative action is appropriate.

### **Highway Taxes - Recent History**

*Fuel Taxes:* The state fuel tax was last increased by the 1991 Legislative Assembly. The increase was phased from 20 to 22 cents in 1992 and from 22 to 24 cents in 1993. Prior to that, the 1989 Legislative Assembly passed a two-cent increase and the 1987 Legislature passed a six-cent increase phased in over three years. Most recently, the 1999 Legislative Assembly passed a five-cent fuel tax increase that was subsequently placed on the ballot through a citizen-initiated referendum. The measure also would have replaced truck weight-mile taxes with a diesel tax and truck registration fees. The measure was defeated at the polls by a nearly seven-to-one margin.

*Registration fees:* Registration fees, currently \$27 per year for cars, was increased (from \$15)

in 2003. Truck registration fees vary by weight from \$169 to \$636 per year and were also increased in 2003.

*Title fees:* Title fees were increased to \$55 (from \$30) in 2003. The title fees for heavy vehicles over 26,000 pounds were set at \$90 in 2001.

*Weight-mile taxes:* Weight-mile taxes were increased nearly ten percent by the 2003 Legislative Assembly.

### **Project Selection**

The Statewide Transportation Improvement Program (**STIP**) is a capital improvement program adopted by the Oregon Transportation Commission and approved by the U.S. Department of Transportation. The STIP contains schedules and funding assignments for project development and construction for an upcoming four-year period. The commission begins the update process by setting program funding levels and approving project selection and prioritization criteria for bridge, pavement preservation, and modernization projects. Projects are identified and prioritized at the ODOT region and area Commissions on Transportation level. The regions use technical ratings, traffic counts, and local knowledge and priorities to rank preservation projects. ODOT also uses a technical advisory committee for bridge project selection. Factors considered when ranking modernization projects include safety, benefits, land use impacts, modal integration, congestion, public support, environmental impact, and economic impact.

### **Unmet Needs**

The Oregon Transportation Plan was approved by the Oregon Transportation Commission in September 2006. The Plan's needs analysis identified an approximately \$1.3 billion (in 2004 dollars) annual gap in the funding needed to adequately maintain and expand the publicly funded transportation modes over the 2005 to 2030 timeframe. The analysis included the needs of the public and privately-owned components of the state, regional, and local transportation systems for the following:

- Air freight and passenger services
- Intermodal connectors
- Local roads and bridges
- Natural gas and petroleum pipelines
- Ports and waterways
- Public transportation
- Rail freight and passenger services
- State highways, including state bicycle and pedestrian facilities

City and county circumstances vary, but most also report high levels of unmet need. High-growth areas and popular tourist areas are unable to fund capacity improvements to handle overwhelming increases in vehicle travel. At the same time, sparsely populated counties do not receive enough in state-shared highway revenues to cover basic maintenance costs on the many miles of road network that link communities.

### **Studded Tire Damage**

Use of studded tires is currently legal in Oregon between November 1<sup>st</sup> and April 1<sup>st</sup>. Although improved winter tires are available, and some are certified by the ODOT for use as traction tires, many drivers prefer to use studded tires. The ruts created by studded tires on high-use routes can become deep enough to adversely affect driving, and when the ruts fill with water, hydroplaning and splash/spray conditions worsen. In its most recent analysis (2000), the ODOT estimated spending \$7.8 million a year to repair damage caused by studded tires without keeping up with the annual damage. An additional \$3 million was spent by cities and counties to repair studded tire damage.

### **Oregon Transportation Investment Act**

The 2001 and 2003 Legislative Assemblies passed funding bills known collectively as the Oregon Transportation Investment Act (**OTIA**). The law enacted in 2001 authorized \$500 million in bonding authority for state and local highway improvement projects and increased vehicle title fees to provide a means of bond repayment. The law enacted in 2003 raised title fees further and also increased registration fees and truck weight-mile taxes to help finance a 10-year \$2.5

billion highway improvement program. \$1.6 billion of the total was dedicated to bridge repair and replacement, including \$300 million for city and county-owned bridges (see the *Bridges* Background Brief).

Oregon has traditionally been a “pay as you go” state, not bonding to the extent of many states. This policy is based on the reasoning that pledging future revenue to bond repayment leaves less money for future projects. The decision to bond OTIA projects was based on low interest rates, a source of new revenue dedicated to bond repayment, and a backlog of critical projects.

### **Project Contracting**

All state highway construction and preservation projects are contracted to the private sector. The traditional state contracting model is known as *design-bid-build*. Under this model, state engineers design a project, and the agency solicits bids to meet their specifications and selects the lowest responsible bidder to construct the project. State staff oversees and manages the project.

ODOT also uses the *design-build* contracting process. In this process, a bid is put out for both design and construction of a project. Bids can be submitted by a single entity, a consortium, a joint venture, or other organization assembled for a particular project. Design-build contracting is widely used throughout the United States and can reduce delivery time and related delays, simplify relationships, more quickly develop solutions and establish project costs, and decrease the number of construction contract changes.

Customary practice with design-build contracting is to rely on best value that takes into account both the technical capabilities and qualifications of the design build team and the cost of the bid. There is no universally accepted approach for determining best value. The request for proposals usually specifies the relationship between cost and technical factors.

### **Columbia River Crossing**

Unmet needs include several high-cost projects under discussion for the Interstate 5 corridor between Portland and Vancouver, Washington. This small area has become a major bottleneck for the Northwest’s principal east-west and north-south highway, rail, and shipping corridors. A bi-state committee has developed a strategic plan for adding highway, transit, light rail, and rail capacity. The committee has identified a range of options but not a source of funds for the larger projects.

### **Preservation First**

Through policies and budget decisions, the Oregon Transportation Commission, the Governor, and recent legislatures have made preservation of the existing system their highest priority for use of available funds. Because of tight funding, they also stress strategies of demand management and operational efficiency to extend the useful life of transportation facilities.

### **Maintenance Agreements**

Agreements between governments for road maintenance and operation offer substantial savings in labor, equipment, and facilities. Existing agreements are widespread and varied, from joint purchasing and training to sharing equipment, co-locating facilities, and contracting with one another for activities such as ditching, lane striping, mowing, snow removal, and vehicle maintenance. Current agreements involve city, county and state maintenance operations.

### **Road User Fee Pilot**

The 2001 Legislative Assembly passed legislation creating a Road User Fee Task Force. The measure directed the task force to study revenue options and to recommend a replacement for the current tax system. The task force was created out of concern that the gas tax is a declining revenue source, especially over the long term given fuel efficiency improvements, hybrid-electric vehicle usage, and inflation. Inflation reduces buying power by approximately one cent of fuel tax a year.

After investigating 28 different potential revenue sources, the task force developed the Oregon Mileage Fee concept as an alternative to the gas tax. The concept proposed to use existing technology in a new way and to institute new administrative processes to integrate a mileage based fee with gasoline tax collections.

Volunteers participated in the year long Portland-area pilot that began in March 2006. During the pilot a surcharge was collected at the gas pump based on miles the vehicle had been driven on Oregon roads instead of gallons of fuel used. Volunteers' vehicles were equipped with mileage counters and technology to transmit counts to readers at the gas pump. The pilot demonstrated that the technology behind the Oregon Mileage Fee Concept is sound and that the administrative changes on which it depends work.

The pilot project was financed principally through a 6-year, \$2.1 million federal grant. With the pilot program complete, the next development steps prior to implementation of a mileage based fee include refinement of the prototype equipment so that it is commercially viable as well as conducting a multi-state simulation.

### **Innovative Finance**

The Oregon Innovative Partnerships Program was formed at ODOT to foster the development of public-private transportation projects both through solicitation of projects and response to project proposals developed by the private sector or other units of government. Senate Bill 772 (2003) gave ODOT specific authority to solicit proposals for transportation projects and to enter into agreements with private and public entities. The measure also outlined rights and restrictions under such agreements. Consultants and the agency are currently working on the financial and technical feasibility of the Solar Highway and investigating public-private financing options for the Columbia River Crossing. The consultants may help ODOT evaluate proposals, negotiate agreements, and manage such initiatives.

### **Continuing Issues and Challenges**

*Congestion:* Over 50 percent of urban freeways in Oregon are considered congested. Traffic congestion causes millions of dollars worth of delays for motorists and trucks annually and contributes substantially to fuel consumption and air pollution.

*Freight:* All modes of freight transportation have seen tremendous growth in the past 20 years, straining the capacity of port, highway, rail, and airport facilities. Moderate economic growth over the next 20 years is expected to double tonnage of import/exports nationwide and to increase domestic freight tonnage by 70 percent. Transportation delays affect the competitiveness of state and regional companies.

*Traffic Safety:* Oregon traffic safety laws are relatively strict, including special restrictions on teen drivers. When many states raised speed limits and relaxed motorcycle helmet requirements, Oregon retained them. A combination of laws, safer cars, better engineered roads, education, enforcement, and citizen behavior helped reduce annual traffic fatalities from highs between 500 and 700 to 452 fatalities in 2007. Though this progress is notable, the death toll is tragic and preventable; the top three causes of fatal crashes are speeding, impairment from alcohol and drugs, and failure to wear a safety belt. The economic impact of traffic crashes in Oregon for 2006 was estimated at \$1.95 billion.

*Highway Patrol:* Law enforcement is one of the keys to reducing loss of life and preventing the delays and costs attributed to traffic crashes. Patrol officers serve multiple roles such as sanctioning violators, responding to crash and crime scenes, and deterring law breakers by raising the perceived chance of being ticketed. Of continuing concern is the reduction in numbers of State Police highway troopers due to increasing demands on the state General Fund. In addition, county sheriffs' offices have reduced traffic patrol services due to the reductions in federal timber payments.

*Planning, Environment, Public Involvement:* Passage of environmental and land use laws in the 1970s and growth pressures over two decades have added new dimensions to highway planning. Additional time and resources are directed to environmental safeguards and decision-making, including planning, public involvement, and interagency coordination. Transportation agencies are required to balance numerous opposing interests and priorities.

*Traffic Management & Demand Management:* Transportation planning requires strategies that increase highway capacity as well as those that increase efficiency and reduce demand, especially peak-period demand. Traffic management strategies include incident clearance, ramp metering, traveler information, and high-occupancy vehicle lanes. Demand management activities include promoting other modes of travel, ride-sharing, telecommuting, flex-hours, transit-oriented development, and efficient, inter-modal connections.

*Access Management:* Controlling the number of points of access to a highway is a proven way to move high volumes of traffic safely and efficiently. Interstate highways are examples of access-controlled facilities. Many state highways, however, function simultaneously as principal through-ways and as streets handling local traffic on local trips. In many cases, efforts to increase flow through a city have reduced local livability. In other cases, local development approvals have attracted traffic that overwhelms an existing state highway or interchange and seriously impairs its function. Access management includes a range of activities aimed at balancing the need for access to properties adjacent to a highway with efficient and safe traffic movement on the highway.

*Deferred maintenance:* ODOT periodically surveys pavement conditions on state-controlled highways. The 2006 survey results continued a trend of improvement since the late 1990s:

10%	Very Good
62%	Good
15%	Fair
13%	Poor

Deferring maintenance on any type of facility creates higher costs in the long run. This is especially true for road pavements because the surface layer protects underlying layers from water and freeze damage. ODOT estimates that if a section of pavement falls to a rating of “poor,” it is four to five times more costly to bring it to a “good” rating than it is to bring pavement in “fair” condition to a “good” rating.

### **Staff and Agency Contacts**

Robin Freeman

[Oregon Department of Transportation](#)

503-986-3444

Art Schlack

[Association of Oregon Counties](#)

503-585-8351

Linda Ludwig

[League of Oregon Cities](#)

503-588-6550

Phillip Ditzler

[Federal Highway Administration](#) (Salem)

503-587-4702

Patrick Brennan

[Legislative Committee Services](#)

503-986-1674