1-14-1999

Meeting Notes 1999-01-14 [Part C]

Joint Policy Advisory Committee on Transportation

SYSTEM ELEMENT

III. System Element

State Highway Needs Analysis

Oregon's ability to implement highway programs in the future is grounded in the current condition of state highways, projected future use of the system and projected transportation revenues. Future trends were discussed in the "Description of the System" section earlier in this plan. This section presents a summary of current conditions, projected highway revenues, and the results of the highway needs analysis.

Current Infrastructure Condition

ODOT evaluates the condition of the state highway system's pavements on an annual basis using a visual assessment scale ranging from "very poor" to "very good." According to ODOT's 1997 Pavement Condition Report, 77 percent of state highway mileage is in fair or better condition (Figure III.1~~Figure III.1~~), down 1 percent from 1996 (Figure III.2~~Figure III.2~~).

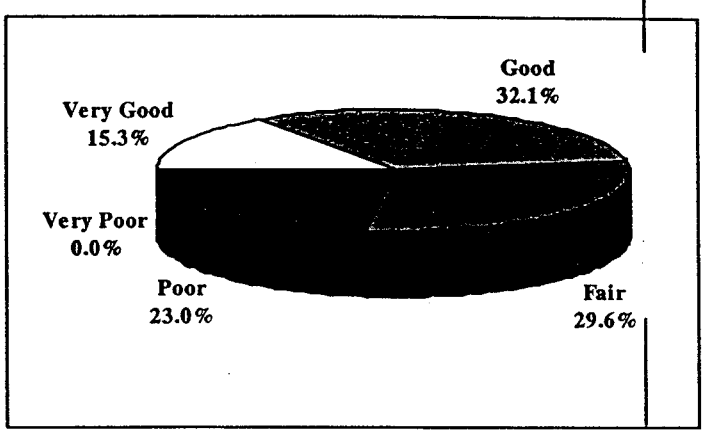

Figure III.1: Overall State Highway Pavement Condition, 1997

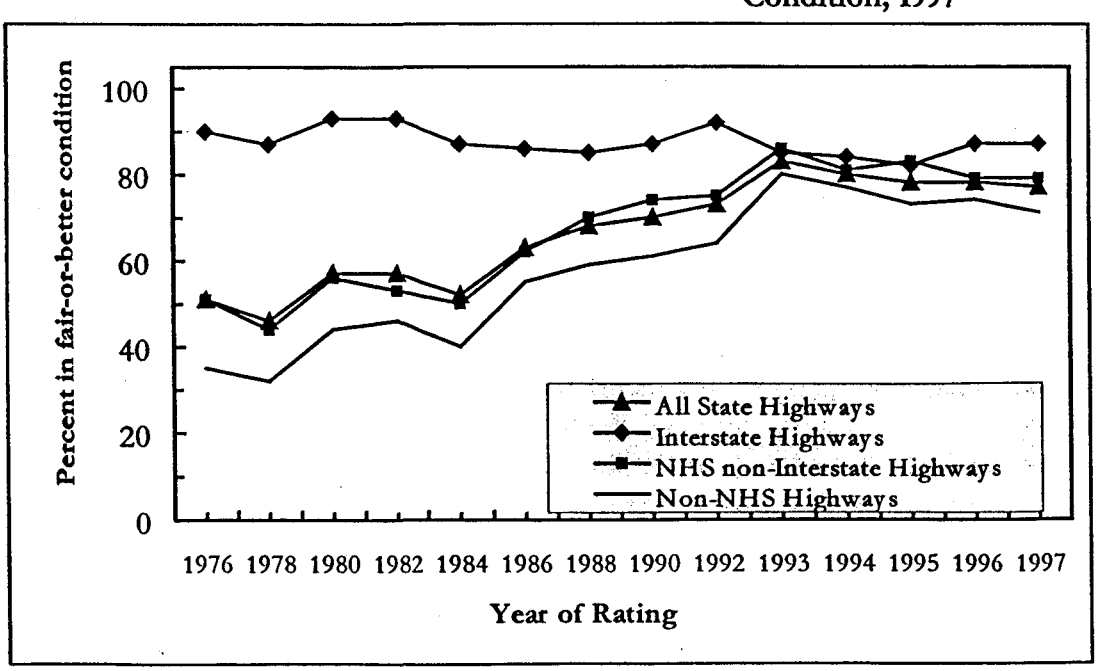

Figure III.2: History of State Highway Pavement Conditions

There are 2,551 bridges on the state highway system, about 38 percent of the bridges in the state. About 95 percent of ODOT bridges are either steel or concrete, and 5 percent are timber. By the year 2000, 76 percent of Oregon's state-owned bridges will be more than 30 years old, and 23 percent will be more than 50 years old (Figure III.3~~Figure III.3~~).

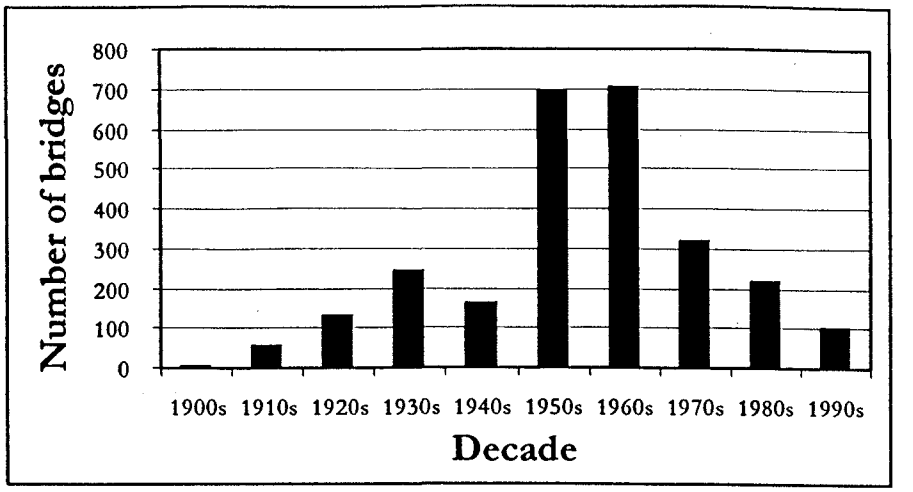

Figure III.33: Original Construction Year of ODOT Bridges

ODOT's goal is to maintain highway infrastructure in good condition. Not only does this provide the safest, smoothest ride for the public, but it is also the most cost-effective way to do business in the long run. This is because deterioration and repair costs accelerate rapidly over time (Figure III.4~~Figure III.4~~, page 131~~119~~). On average, for every dollar spent treating pavement in "fair or better" condition, four dollars are required to repair that same pavement once it has reached "poor" condition.

For this reason, ODOT has established a goal of having 90 percent of state highway pavements in "fair or better" condition. If this goal is to be reached by the year 2010, the average amount of paving completed each year will need to be increased from 550 miles (880 kilometers) to approximately 630 miles (1,010 kilometers). However, recent budgets have not even allowed ODOT to maintain pavement conditions.

Over the 20-year planning period of the Highway Plan, the state would need to perform 1,553 major bridge replacement and rehabilitation projects to keep state-owned bridges at current conditions. This includes work to repair seismic and load deficiencies, strengthen bridge footings, repair decks, railings, mechanical and electrical systems, and perform corrosion and painting projects.

As traffic volumes increase because of population increases, state highways reach capacity during all or part of the day, affecting safety, livability and economic activity. Based on projected traffic volumes, ODOT has identified highway segments that need added lanes, new alignments, bypasses and other major improvements. Some of these are needs and projects identified through corridor plans and/or regional and local transportation system plans. Without these projects, traffic speeds and movements, especially in metropolitan areas will dramatically decrease over the next 20 years.

ODOT's goal is also to make the system efficient and safe. Replacing traffic signs and guardrails, interconnecting traffic signals, and using intelligent transportation systems are means for achieving this goal. The needs analysis presents more details on these projects and associated costs.

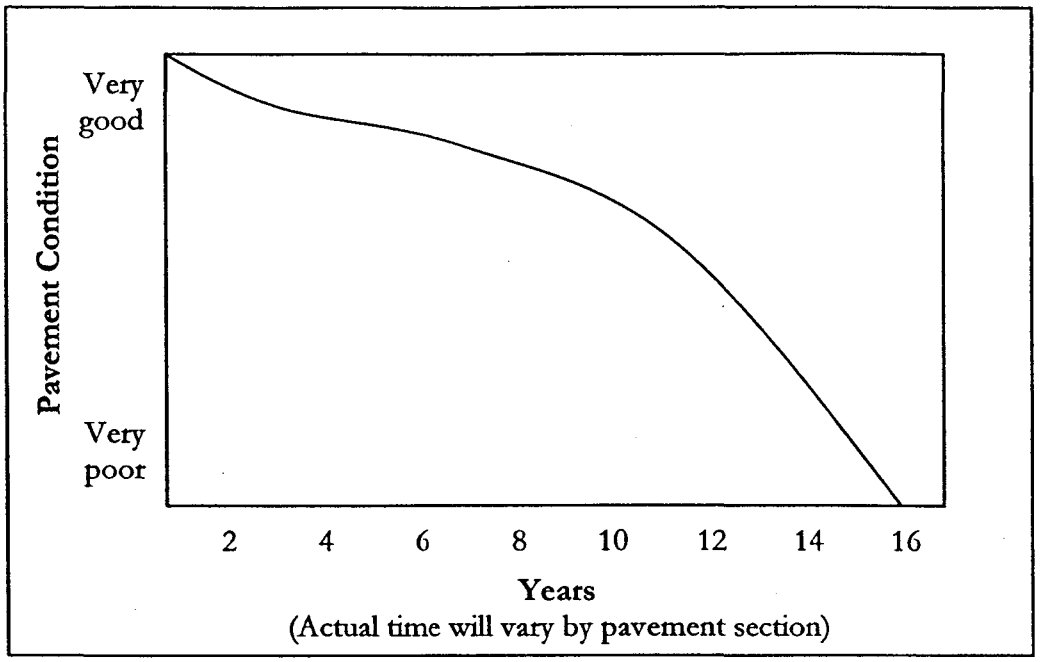

Figure III.44: Typical Pavement Deterioration Pattern

This chart illustrates that the rate of pavement deterioration increases with time. This means that the cost of repairs increases dramatically the longer that treatments are delayed. This is generally also true for other types of infrastructure, such as bridges.

20-Year Needs Summary

The 1998 Oregon Highway Plan breaks ODOT's highway responsibility into ~~ten~~ eleven major programs: modernization, preservation, maintenance, operations, bridge, safety, special programs, construction support, planning, administration and central services. This section presents a general description of each category, some examples of typical projects and costs in that category, and a summary of 20-year program needs. More detailed program definitions are presented in Appendix B.

The Highway Plan only addresses ODOT's highway programs. Many important ODOT departments and programs are not covered by the Highway Plan's needs analysis and revenue projections, including Driver and Motor Vehicle Services, Motor Carrier Transportation, Public Transit, Rail, and Aeronautics.

Policies in this plan may affect funding needs. The Land Use/Transportation Policy and Off-System Improvements Policy suggest that funds are needed to assist local governments in making improvements in Special Transportation Areas and on off-system arterials and collectors that benefit movement on the state highway system. Funding for improvements in STAs need to be identified. The costs of off-system improvements should be offset by reductions in the Modernization needs. The freight-related policies call for thicker pavements on designated freight routes and improvements to obstacles to freight movements. The needs analysis for Preservation includes funding for the thicker pavements. The Modernization needs analysis includes geometric improvements to right of ways that impede truck movements. The Scenic Byways policy calls for enhancing designated scenic byways. The needs analysis includes some funding for improvements, but relies on federal grants for the majority of the funding. No specific funding for Scenic Byways is included in the Maintenance program needs. The Major Improvements Policy should reduce Modernization needs since the policy requires examination and implementation of less costly alternatives before a major improvement is constructed.

Funding for the Intelligent Transportation System, Traffic Safety, and Rail and Highway Compatibility Policies are included in the needs analysis. Some funding to buy access is included under the Safety Program, but more is needed to fully implement the Access Management program. Most of the funding for the Travel Alternatives and Environmental Policies are also included in the analysis although additional funding, largely for Maintenance, may be needed to carry out the Scenic Resources Policy. Funding for HOV lanes should come from the modernization and/or operations programs, but needs for HOV lanes have not been identified. The needs of these policies means that the needs analysis underestimates the total highway needs.

For each highway program, needs estimates are presented for both average yearly and total 20-year investment. The costs were calculated in 1997 dollars. However, the effects of inflation must be considered in order to present a true picture of future buying power. Inflation is a rise in prices that is primarily due to an increase in the overall supply of money. Although inflation is currently quite low—2.3 percent in 1997—the State currently projects that it will increase gradually over the 20-year period, reaching 3.9 percent by 2017. The

Highway Plan uses the State of Oregon forecast, which projects an average annual inflation rate of 3.3 percent for the 20-year period from 1998 to 2017.

Inflation means that buying power decreases over time unless more dollars are spent. For example, annual inflation of 3.3 percent means that a program that spent $100,000 in 1997 would have to spend $103,300 in 1998 to achieve the same results. Inflation takes on particular importance over the 20-year Highway Plan period: a program that required $100,000 in 1997 would require $190,635 in 2017 with the average 3.3 percent inflation rate used in this plan. That is, if expenditures were not adjusted for inflation, a program would only have 52 percent of its original buying power after 20 years of 3.3 percent inflation.

The annual needs presented are averages. In some cases, programs require higher investments now and lower investments in the future. As discussed above, this is often the most cost-effective way to maintain highway infrastructure: higher investments in the short term result in savings over the long term.

1. **Modernization.** The primary goal of modernization projects is to add capacity to the highway system in order to facilitate existing traffic and/or accommodate projected traffic growth. Projects in this category include major widening of lanes or bridges, and the addition of lanes, rest areas, ~~bike lanes, sidewalks,~~ or entire facilities.

   The cost of modernization projects can vary greatly because there are so many different types of projects in this category. However, the following are some examples of recent modernization projects and their costs in 1997 dollars:

   - Widening and reconstruction of 3 miles of Highway 62 north of Medford: $8 million.
   - Construction of 4.2 miles of new highway on Route 20 west of Corvallis: $20 million.
   - Construction of the Chenoweth interchange on I-84 at the Dalles: $10 million.
   - Typical left turn lane: $150,000.
   - Typical passing lane (one direction): $650,000.

   Modernization needs were calculated by combining current traffic conditions with projections of future highway demand in a computer model. ODOT staff checked the results of the modeling for feasibility and added projects that had been identified in corridor plans and local transportation system plans. The result is an estimate of feasible needs on the state highway system that would allow the state to meet current design standards and minimum tolerable conditions.

2. **Preservation.** The preservation program includes rehabilitative work on roadways and improvements to rebuild or extend the service life of existing facilities. Preservation projects, such as paving, striping, and reconstruction, add useful life to a road without increasing its capacity.

   Paving costs alone for a two-lane roadway are typically from $100,000 to $200,000 per mile. However, preservation costs can vary greatly depending on the type of treatment required, existing traffic flow and patterns, and the cost of other features (such as safety guardrails) that are included in the total project. The average cost of preservation

projects in the 1998-2001 Statewide Transportation Improvement Program was $220,000 per mile. Recent preservation projects provide examples of this variation:

- Five miles on the northbound lanes of I-5 near Albany: $388,000 per mile.
- 21 miles on the Ukiah-Hilgard Highway near the Union County line: $55,000 per mile.
- Three miles on the Oregon Coast Highway in Newport: $900,000 per mile.
- 11 miles on Highway 97 beginning at the California border: $159,000 per mile.

Preservation needs were estimated by determining the cost of getting 90 percent of state highway pavement to be in "fair or better" condition by the year 2010 and keeping it at this level until 2017. In 1997, statewide pavement condition was 77 percent fair or better. The Pavement Management System was used to determine the required investment. Current funding will lead to a decline in pavement conditions.

3. **Bridge.** Bridge projects include improvements or work needed to rebuild or extend the service life of existing bridge structures. These projects include bridge reconstruction or replacement, painting, seismic retrofitting to mitigate the effects of earthquakes, and overpass screening, as well as major work on tunnels and large culverts.

   Bridge projects vary greatly in expense according to the type of work required, the location, and the type of bridge being considered. Projects identified in the bridge needs analysis provide examples of costs:

   - Rehabilitation of the Willamette River Bridge on 1-205 in West Linn to allow it to perform vital functions after a moderate earthquake: $8 million.
   - Cleaning and repainting of the 3,500-foot long northbound Interstate Bridge over the Columbia River in Portland: $23 million. Costs are high due to the bridge's size and the environmental and lead-abatement requirements of the project.
   - Replacement of the Kahler Creek Bridge on the John Day Highway in Wheeler County: $400,000.
   - Replacement of rails on the Gales Creek Bridge in rural Washington County: $73,000.

   Bridge needs were calculated from existing inventories and inspection databases. Only the most critical third of the identified seismic retrofit needs were included in the needs. At the current level of funding, bridges are declining in condition and value.

4. **Maintenance.** Maintenance covers many areas relating to the appearance and functionality of the highway system, including surface repairs, drainage work, minor structural work, maintenance of signs, signals, lighting, rest areas, and snow and ice removal.

   Maintenance needs were estimated on the basis of current expenditures, by assuming that maintenance practices will continue as they are today. Facility conditions under current funding levels are declining. Any additional facilities or infrastructure will require additional funding.

5. **Operations.** Operations investments increase the efficiency of the highway system, leading to safer traffic operations and greater system reliability. Operations programs include interconnected traffic signal systems, new traffic signals, ramp meters, signs, other control devices, Intelligent Transportation System features, transportation demand management, and rock fall and slide repairs.

   Typical costs for the operations program include the following:

   - Replacement of a typical traffic signal: $150,000.
   - Replacement of an electronic variable message sign: $600,000.
   - Replacement or rehabilitation of a typical sign on an Interstate highway: $5,000.
   - Placement of ramp meters: $100,000.

   Operations needs were based on staff estimates of individual program costs.

6. **Safety.** The safety program focuses on investments which address priority hazardous highway locations and corridors, ~~including Interstate highways,~~ in order to reduce the number of fatal and serious injury crashes. Projects funded through this program meet strict benefit/cost criteria. Safety projects may include access management features, guardrails, illumination, signing, rumble strips, and railroad crossing improvements.

   Safety needs were based on current and projected costs for each activity.

7. **Special programs.** Special programs meet special needs or mandates. Included in this category are the Transportation and Growth Management program, ODOT's share of the Oregon Plan for Salmon and Watersheds, Scenic Byways, the Immediate Opportunity Fund, and the Bicycle/Pedestrian program.

   The salmon recovery program makes up the bulk of the needs in this category. ODOT will retrofit culverts to improve fish passage. While these projects may vary greatly in cost, an average culvert retrofit is expected to cost approximately $150,000.

   Special program needs were calculated from individual program estimates.

8. **Construction support.** This category includes project reconnaissance, staff training, and personnel that directly support development of projects. The needs estimate was based on a percentage of construction and preservation related costs.

9. **Planning.** ODOT planning activities include policy development, modal and corridor planning, review of local comprehensive plans and transportation system plans, and transportation analysis, and accident data. Planning funds are also given to metropolitan planning organizations and local governments to support their planning activities.

   Planning needs were based on current funding and assume a decrease in corridor planning and an increase in state involvement with local plans.

10. **Administration.** Administration involves costs for management ~~, including human resources, central services, and financial services.~~ related to highway planning, operations, projects, preservation and maintenance.

11. **Central services assessment.** Central services includes central administration, communications, finance, human resources/organizational development, information services, and business services. The needs estimate was based on an assessment of 6 percent of program costs for these services.

Table III.1: Summary of Feasible Needs Analysis

PROGRAM	Average annual investment assuming no inflation (millions)	20-year total investment assuming no inflation (millions)	Average annual investment assuming 3.3% inflation (millions)	20-year total investment assuming 3.3% inflation (millions)
Modernization	$339	$6,785	$471	$9,428
Preservation	$172	$3,436	$239	$4,774
Maintenance	$159	$3,180	$221	$4,419
Bridge	$133	$2,664	$185	$3,702
Safety	$35	$694	$48	$964
Operations	$29	$576	$40	$801
Special Programs	$29	$581	$40	$807
Construction Support	$67	$1,339	$93	$1,861
Planning	$30	$590	$41	$820
Administration	$8	$160	$11	$222
Central Services Assessment	$48	$950	$66	$1,321
TOTAL	$1,048	$ 20,955	$1,456	$ 29,119

User Costs

In addition to state costs for modernization, preservation and other highway needs, there are very significant costs experienced by every user of the system. For example, roads in poor condition put extra wear and tear on private and commercial vehicles, meaning that the public spends more money on vehicle maintenance and replacement. Travel speed decreases as a result of both poorer roadway conditions and increased congestion. Declining travel speed results in increased costs to private and commercial travelers. As congestion reaches very high levels, or roadway condition deteriorates to very low levels, safety is also adversely affected, and the public bears additional costs in the form of accident-related losses. These kinds of costs are called "user costs," since they are paid "out of pocket" by highway users.

Oregon highway users are currently estimated to incur $16 billion per year in highway user costs. This is over 30 times as much as the current annual expenditure by ODOT on all highway programs and administration. User costs will go up in the future due to projected increases in vehicle miles of travel and the resulting impact on highway condition and congestion. Only a portion of future user costs can be impacted by ODOT programs. Whatever ODOT can do to minimize future user costs, however, will return dollars into the Oregon economy in the form of reduced users costs which can then be invested elsewhere.

The Oregon Highway Plan evaluates the return on investment or benefit/cost ratio of its programs. Since the State is concerned about all Oregon residents and industries and about Oregon's livability and economy, ODOT's concern is with overall benefits of its investments, not with whether state government captures those benefits. User costs and user benefits are of primary concern in this approach to evaluation of investment in the highway system.

Forecasts of vehicle miles of travel (VMT) indicate that VMT will increase by over 40 percent on the state highway system by 2017. This is consistent with forecasts of VMT growth by Metro for the Portland region and by ODOT for all highway travel in the state. VMT growth has direct implications for highway levels of service and user costs. If nothing is done to improve currently high volume highway segments and VMT grows substantially, levels of service will decrease, travel times will increase, and user costs will increase for each user as well as for users altogether.

Impact of Various Funding on User Costs

ODOT has estimated the impacts of various scenarios on user costs for selected categories of investments which are highly correlated with user costs. The Oregon Highway Economic Requirements System (OR HERS) was used to make estimates of user cost impacts of alternative levels of funding for modernization and preservation. ODOT has made parallel estimates of the user cost impacts of operations and safety improvements. Bridge investment impacts were estimated by ODOT not as user costs impacts, but rather as a related "value" of bridges in service by year. No formal estimates of user cost impacts were made for maintenance or special categories.

User cost impacts were estimated as accurately as possible for higher and lower investments in each category. The HERS model calculated that the user benefits in the 20th year of the Oregon Highway Plan would be $310 million greater each year for an additional $10 million per year invested in preservation, and about $260 million per year greater in the 20th year for an additional $10 million per year spent on modernization. These marginal benefits in comparison to marginal costs are much higher than could be achieved with any other private or public investment of the $10 million per year increment.

Similar returns on investment accrue from safety and operations improvements. Returns over 20 years from safety investments are estimated at over 20 to 1 in terms of ultimate dollars saved due to fewer fatalities and injuries. ~~In terms of returns on investment, investment in ODOT programs at higher levels than today produces greater returns than the stock market produces today and greater returns than the stock market has ever produced.~~

These ~~returns accrue~~ very high returns from added investments in each category provide assurance that added money over and above today's resources can be wisely spent, but provide little guidance about priorities among categories. The priorities among categories have to be set by first taking care of existing system deficiencies and then by investing in successively higher levels where the dollars have good payoff. Continuing to invest in any one category will result in decreasing returns to scale. Therefore, once critical needs are met in a category, additional resources may go to other categories with the larger backlog of needs. This is the basis for the investment scenarios.

Investment Policies and Scenarios

To meet the state highway system needs, ODOT has developed policies to use in planning and prioritizeing programs at a range of potential funding levels—from no increases in current state fees supporting the highway system, up to a level of funding that can support those highway needs which are feasible to implement.

As funding increases or decreases, various program categories are not increased or decreased proportionately. Difficult choices are necessary under constrained funding. None of the choices yield desirable outcomes. However, when the State is not able to fully fund feasible and desirable needs, the goal should be to minimize the short term and long term harm to Oregon's economy and livability which will occur when funding levels are inadequate.

At the lowest funding levels, the emphasis is on doing as much as possible to operate the highway system safely and efficiently and to preserve what already is in place,~~. If funding is low enough~~ although conditions are likely to continue to deteriorate under such a strategy. Trying to build a larger system of highways (or of other modes) would be ~~futile~~ counterproductive under very low funding levels because ~~even the current system~~ new or expanded portions of the system would not be sustainable~~ and the new systems would also deteriorate rapidly~~.

With higher than minimum funding, infrastructure conditions could be stabilized or improved, and attention and resources could begin to be devoted to a wider range of goals. All analyses have shown that conditions and system performance improve rapidly as more resources above the current levels are added for any of the program categories. The Plan has not examined levels of investment which are so high that conditions and performance could not be improved further in a cost-effective manner.

To operate the highway system as efficiently as possible with limited abilities to expand the infrastructure, the Plan's investment policies emphasize capacity-adding programs that are not as costly as traditional modernization projects. These include interconnected traffic signal systems and other operational changes, Intelligent Transportation System technologies, access management, off-system improvements, and HOV lanes.

Safety is an element in all the major programs. For example, new extended freeway ramps in the Modernization program can ensure that traffic does not back up extend from an off-ramp of an interchange onto the freeway. The Preservation program overlays rutted pavement that may cause drivers to lose control. The Operations program installs traffic signals at dangerous intersections. The Maintenance program fills potholes, and replaces signs and illumination devices. The Safety program addresses problems in priority hazardous locations and corridors; the solutions may involve better operations or maintenance or traffic enforcement or other changes.

~~Funding Priorities~~Investment Policy and Priorities

It is the policy of the State of Oregon to place the highest priority for making investments in the state highway system on safety and managing and preserving the physical infrastructure.

ODOT will use the following funding priorities in developing highway-related plans and programs:

1. ~~Under 1998 funding, manage~~Manage and preserve existing infrastructure at least at 1998 levels before adding new facilities.
2. ~~With increased funding, reverse declining~~Invest to improve infrastructure conditions and to add new ~~before adding new~~ facilities or capacity to address critical safety problems, critical levels of congestion, and/or desirable economic development.
3. When critical infrastructure preservation, safety and congestion needs are met, develop other high priority modernization projects.
4. With significant funding increases, develop feasible modernization projects, address long-term bridge needs and upgrade pavements to a more cost-effective condition.

Funding for specific programs will follow these priorities:

Modernization

- Give priority to modernization projects that improve livability and/or address high levels of congestion. Modernization means capacity-adding projects including HOV lanes, off-system improvements and other capacity-adding improvements.

~~Pavement~~Preservation

- Give priority to Interstate pavement condition.
- Maintain Statewide Highways at a higher condition than Region and District Highways, and invest in thicker pavement on designated freight routes.
- Preserve other highways at lower pavement conditions according to their classification. Preserve District Highways at 60 percent fair or better or higher.
- With no increase in state funding, consider the option of a "maintain only" policy for ~~highways with less than 500 average daily travel (ADT) per lane mile~~certain Regional/District Highways.
- With increased funding, increase pavement condition level toward an optimal level.
- With significantly increased funding, maintain pavement conditions at an optimal level of fair or better.

Bridge

- At declining funding, do critical bridge rehabilitation and replace critical bridges when rehabilitation is not feasible. Do seismic retrofit projects only to maintain the functionality of major river crossings on I-5 and I-84.
- At increased funding, preserve bridge value at the present state, but ignore most seismic retrofit needs.

- With more funding, maintain the Bridge Value Index (percentage of total replacement value) and address the most critical one-third of the seismic retrofit needs.
- With significant funding increases, address the long-term problems of replacing the 850 bridges built in the 1950s and 1960s.

Safety

- Focus expenditures where the greatest number of people are being killed or seriously injured[9].
- Allow for a reduced number of safety upgrades in preservation projects on highway segments with little or no crash history to increase dollars available for highway preservation.
- Make safety investments based on benefit/cost analysis. The first priority is on preservation projects with a high risk segment. The second priority is stand-alone projects on priority safety segments or spot locations.

Operations

- Maintain the existing facilities and services.
- Increase funding for Intelligent Transportation Systems and other operations to increase safety, increase travel time reliability, and relieve congestion, especially in congested metropolitan areas.
- With increased funding, take advantage of technological devices to increase safety, decrease travel time, and relieve congestion throughout the state.

Maintenance

- With existing funding, focus on maintenance of features critical to keeping roads open and safe for travel.
- With increased funding, begin to move toward desired levels of service of features critical to keeping roads open and safe for travel.
- With significantly increased funding, invest in high initial cost solutions that improve service to travelers and minimize long-term spending. Examples range from upgrading substandard guardrail to major culvert and ditch upgrades and include improvements such as durable pavement marking.

Special Programs

- **Scenic Byways:** Position the state and local entities to be able to fund national and state scenic byway improvements and facilities mainly through federal funding.

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[9] These priorities are reflected in the Safety Investment Program used to select safety projects for the Statewide Transportation Improvement Program. The Program identifies where the most people are being killed and seriously injured on the state highway system and applies the most cost-effective measures to reduce the number of crashes.

- **Salmon Recovery:** Implement the Oregon Plan for Salmon and Watersheds as directed under the Governor's Executive Order. Fund at appropriate levels.
- **Transportation/Growth Management:** Fund transportation plans and projects in local jurisdictions to support livability and economic opportunity.
- **Bicycle/Pedestrian Program:** Focus program on identifying simple, low-cost projects on urban highways to improve pedestrian and bicyclist access.
- **Immediate Opportunity Fund:** Fund street, road or other transportation-related improvements needed to respond quickly to economic development opportunities.

Planning

- Maintain basic planning program needs, including region and central work on Transportation Planning Rule implementation, periodic reviews, plan amendments, development review, access management, corridor plans, and transportation system plan assistance. Adhere to funding priorities when developing corridor plans, facility plans and local transportation system plans.
- Maintain basic ODOT long-range planning to comply with statutory requirements for the Oregon Transportation Plan and related modal plans.
- Continue to assist in funding local transportation system planning.
- If not able to maintain the basic planning program, decrease or eliminate ODOT funding assistance for local planning.

Investment Scenarios

The investment scenarios fit these policies and priorities together. They begin with the continuation of current (1998) funding rates.

Scenario 1: Current Funding Continued

This scenario is based on the assumption that funding rates will not rise; there will be no fuel tax increase or other state source increase. The scenario includes the increases in funding in the Transportation Equity Act for the 21st Century (TEA 21) passed by Congress in June 1998.

Total Investment = ~~$507~~ 515 million/year

New Funding Requirements = $0

If current funding rates were to continue, ODOT would focus investment on preservation and maintenance. Modernization spending would be limited to the state legislative minimum (currently approximately $54 million in accordance with ORS 366.507) and the ~~demonstration (earmarked)~~high priority projects in TEA 21. Only the most critical capacity improvement projects and ~~demonstration~~ TEA21 projects would be completed. The emphasis of the remaining funds would be on preservation and maintenance.

Since this scenario assumes that current funding rates will continue, the absolute dollars of revenue would rise as population rises, but inflation and increased highway system use would mean that ODOT will not be able to maintain current conditions in terms of physical condition or mobility. This investment level would lead to higher long term costs to repair or replace system facilities.

Under this scenario, the physical condition of highway infrastructure would decline and congestion would increase.

Projected Highway System Conditions in 2017:

- *Pavement conditions would decline from 77% percent fair or better ~~to 59 percent fair or better~~ about 2 percent per year.*
- *Bridge Value Index would decline from 87% percent to 82% percent of total replacement value; funding does not keep up with even the most serious deficiencies. ODOT would place restrictions for truck weight on additional bridges.*
- *User costs would increase dramatically by over 50% percent per mile of travel, and speeds would decline by 50% percent compared to current levels.*

Scenario 2a: Protecting Current Infrastructure, But No Preservation of ~~Low Volume~~Certain Regional and District Roads

This scenario is designed to maintain the current physical condition of the system as well as possible with limited increases in funding.

Investment = ~~$571~~ 576 million/year (uninflated) ~~plus protective right-of-way purchase beginning in year 2000.~~

*New Funding Requirements: Approximately ~~2~~ 3 cent per gallon gas tax increase to take effect in year 2000 plus adjustments for inflation.**

ODOT will focus the first additional dollars on protecting the physical condition of the current system by investing more in its maintenance and preservation programs. No additional money would be spent on modernization beyond the level in Scenario 1. ~~Roads~~ Certain Regional and District roads ~~with less than 500 average daily traffic (ADT) in each direction~~ would receive maintenance treatments, but not preservation treatments. Long-term needs to replace aging bridges and retrofit high-priority bridges to withstand moderate earthquakes would be ignored.

With this level of investment, physical condition of higher volume roads would stabilize at current levels, but overall pavement conditions would decline, bridge conditions would decline, congestion would increase significantly, and mobility would decline.

Projected Highway System Conditions in 2017:

- *77 percent fair or better pavement for roads with ~~more than 500 ADT per lane mile. Condition of low volume roads would decline;~~ higher volumes. Overall ~~overall~~ condition of the system would decline over the long term.*
- *Bridge conditions would decline slightly, but most critical bridge projects are addressed. There is very little seismic retrofit.*
- *User costs would increase and speeds would decline but by much less than under current funding.*

Scenario 2b: Protecting Current Infrastructure

This scenario is designed to maintain the current physical condition of the system as well as possible with limited increases in funding.

Investment = ~~$620~~ 599 million/year (uninflated) beginning in year 2000.

New Funding Requirements: Approximately ~~7~~ 5 cents per gallon gas tax increase to take effect in year 2000, plus adjustments for inflation.

ODOT would focus additional dollars on protecting the physical condition of the current system by investing more in its maintenance and preservation programs. This scenario is like Scenario 2a in that no additional money would be spent on modernization beyond the level in Scenario 1. Preservation projects would occur on all state highways; safety costs would go up because of the additional preservation projects, but maintenance costs would go down slightly from Scenario 2a. Long-term needs to replace aging bridges and retrofit high-priority bridges to withstand moderate earthquakes would be ignored.

With this level of investment, the physical condition of pavement would stabilize at current levels, but congestion would increase and mobility will decline.

Projected Highway System Conditions in 2017:

- *77 percent fair or better pavement condition for roads overall.*

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* Each scenario's description contains a rough estimate of new funding required to match the scenario. These estimates are discussed in more detail on page ~~XX~~ 139

- *All critical bridge projects are addressed, but very little seismic retrofit.*
- *User costs would increase and speeds would decline but by less than under current funding.*

Scenario 2d: Protecting the Current Infrastructure with ~~No State-funded~~Some Modernization

This scenario focuses investment on preserving and maintaining pavement and bridge conditions as well as possible with limited funding. It ~~does not fund modernization projects except those that received earmarked funds in the federal TEA 21 bill. This scenario would require repealing of the state statute mandating the spending of $54 million a year for state authorized modernization projects~~would fund about 30 percent of feasible modernization needs.

Investment = $ ~~571~~ 659 million/year (uninflated).

New Funding Requirements: Approximately ~~2~~ 10 cents per gallon gas tax increase to take effect in year 2000, plus adjustments for inflation.

~~The funds that would have been spent on modernization are~~Although most of the funding would be directed to preserving pavement conditions, improving bridge conditions, and improving operations, safety and maintenance, funding would support additional modernization projects. Operational and safety increases could help mitigate increased congestion ~~resulting from not adding capacity~~.

Projected Highway System Conditions in 2017:

- *77 percent fair or better pavement condition for roads overall.*
- *Bridges maintained in their current state, but very little seismic retrofit.*
- *User costs would increase and speeds would decline.*

Scenario 2e: ~~Coping with Congestion~~Protecting the Current Infrastructure with Additional Modernization~~, But No Preservation Work on Low Volume Roads~~

~~In contrast with~~Like Scenario 2d, this level of investment is designed to marginally improve current pavement, bridge and maintenance conditions ~~on high volume roads, rather than simply maintain current levels. Low volume roads would receive maintenance, but not preservation treatments.~~ Additionally, this scenario addresses ~~a certain amount of~~ high priority capacity-improvement needs (modernization), thus providing greater management of mobility and congestion than the other scenarios.

Investment = ~~$729~~ 735 million/year (uninflated) beginning in year 2000.

New Funding Requirements: Approximately 17 cents per gallon gas tax increase to take effect in year 2000, plus adjustments for inflation.

This next level of funding would improve the condition of current infrastructure and allow additional high priority modernization projects. Modernization needs would be funded to about ~~$195~~ 145 million/year. About ~~55~~ 43 percent of the feasible projects identified through the review of current state and local transportation system plans and projected needs would be constructed.

Under this scenario, congestion continues to increase over current levels, but less than in the first two scenarios.

Projected Highway System Conditions in 2017:

- *Pavement conditions would be improved to ~~84 percent~~80 percent fair or ~~better on high volume roads. Conditions on low volume roads would decline, and the overall condition of the system would be lower~~.*
- *All critical bridge projects would be addressed; ~~but very little~~ seismic retrofit work would be focused on critical routes. Bridges would be maintained at 86 percent of full replacement value.*
- *Speeds would be higher and user costs would be lower than under protecting current infrastructure, but still very unfavorable compared to meeting feasible needs in Scenario 4.*

Scenario 3: Coping with Congestion

~~In contrast with Scenario 2, this~~This level of investment is designed to further improve current pavement, bridge and maintenance conditions on all roads. Bridge values are maintained at current levels, and the most critical seismic retrofit needs are addressed. Additionally, this scenario addresses ~~a certain amount~~ about 55 percent of high priority capacity-improvement needs (modernization), thus providing greater management of mobility and congestion than either of the first two scenarios.

Investment = ~~$795~~ 823 million/year (uninflated) beginning in year 2000.

New Funding Requirements: Approximately ~~23~~ 25 cents per gallon gas tax increase to take effect in year 2000, plus adjustments for inflation.

This next level of funding would improve the condition of current infrastructure and ~~and allow additional high priority~~ fund 55 percent of feasible modernization projects. ~~As in Scenario 3a, modernization needs would be funded to about $195 million/year.~~ The most critical one-third of the seismic retrofitting of bridges would be done.

Under this scenario, congestion continues to increase over current levels, but less than in the first two scenarios.

Projected Highway System Conditions in 2017:

- *Pavement conditions would be improved to 84 percent fair or better overall.*
- *All critical bridge projects and the most critical one-third of the seismic retrofit needs would be addressed. The Bridge Value Index would be maintained at 87* percent *of full replacement value.*
- *Speeds would be higher and user costs would be lower than Scenarios 1 and 2, but still very unfavorable compared to meeting Scenario 4 Feasible Needs.*

Scenario 4: Feasible Needs

This scenario is designed to improve pavement conditions to 90 percent *fair or better, improve bridge conditions to increase the current value of the system, and complete the list of feasible capacity-enhancing projects that has emerged from the Oregon Highway Plan Needs Analysis. These are projects identified through state and local transportation planning processes and analyses.*

Investment = ~~$1,060~~1,048 million/year (uninflated) beginning in year 2000.

New Funding Requirements = Approximately ~~47~~ 46 cents per gallon gas tax increase to take effect in year 2000, plus adjustments for inflation.

This scenario improves the physical condition of highways so that pavements and bridges can be maintained most cost-effectively, operates the system efficiently and completes

feasible capacity projects to relieve congestion programs everywhere except in places where physical constraints, environmental impacts, high costs and/or political would limit congestion relief. The places with these constraints are mainly in the metropolitan areas. A program to replace the 850 aging bridges built during the 1950s and 1960s would be underway. Seismic retrofitting would be incorporated into the replacement.

Highway physical condition would improve but congestion would increase, although less than above.

Projected Highway System Conditions in 2017:

- *Pavement conditions would be 90 percent fair or better overall.*
- *Bridge value would be increased to 91 percent of full replacement value, and problems with aging of "baby boomer" bridges would begin to be addressed.*
- *Speeds would decline and user costs would increase compared to current levels, but user costs per mile would increase by less than half the increase under current funding.*

These policies, priorities, and scenarios will be the basis for ODOT's Statewide Transportation Improvement Program (STIP), the document that programs and schedules specific construction projects for the next four years. Actual dollar figures will vary between the Highway Plan and the STIP because the Highway Plan figures are 20-year averages and include preliminary engineering, right-of-way and other costs that the STIP does not. The Highway Plan figures are based on needs, and the STIP project costs have to balance to revenues.

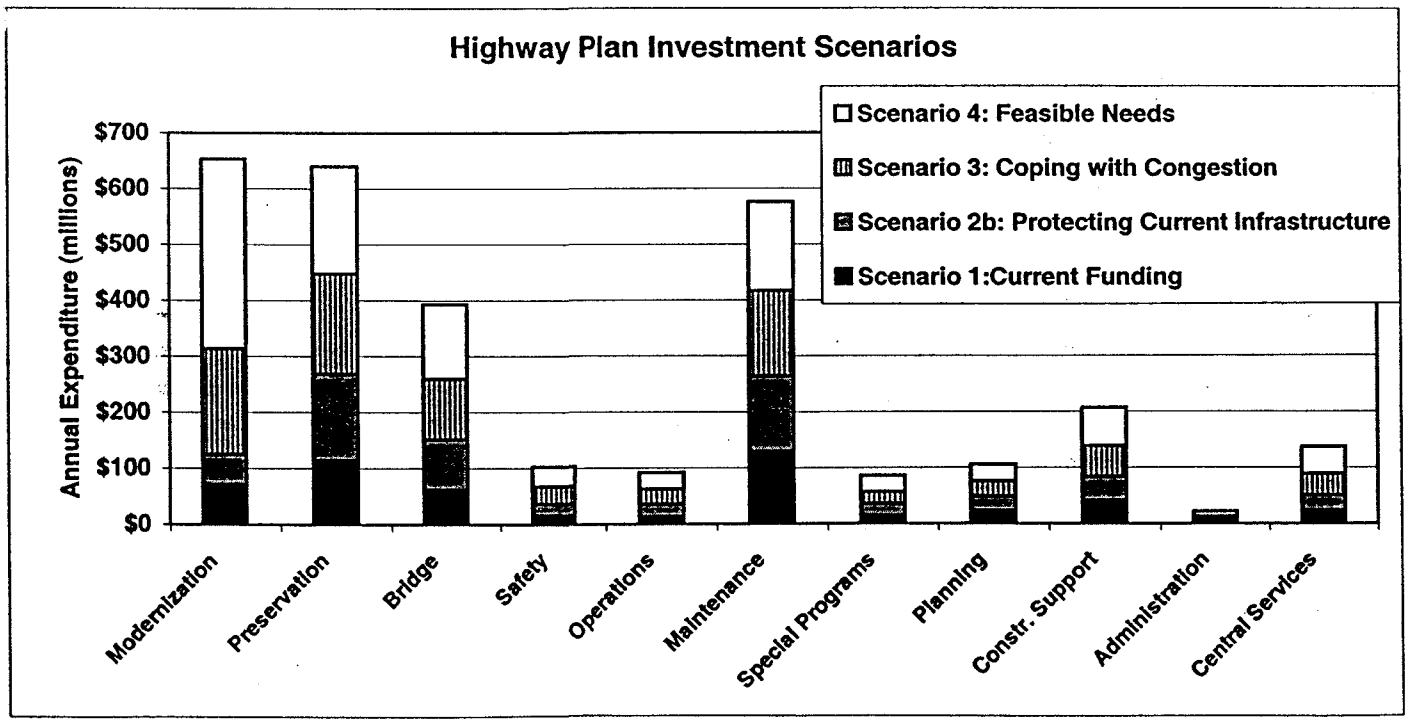

Figure III.5 Summary of Investment Scenarios.

This chart illustrates the relative size of the ~~ten~~ eleven highway programs that contribute to 20-year state highway needs. It also illustrates how spending on each program would vary under the Highway Plan's investment scenarios. The main differences between the scenarios are in the Modernization, Preservation, and Bridge categories.

Impacts of Scenarios on User Costs

User costs vary considerably across the scenarios. User costs always decrease much faster than ODOT investment levels increase, for all categories of expenditure and for all investment levels that have been analyzed. In terms of overall benefits that can accrue to Oregon's economy, the highest level of expenditure that was formally evaluated is the most desirable level of expenditure.

None of the alternatives examined, up to and including the alternative with the highest funding level, achieve speeds, user costs, and levels of service as good as current figures.

Table III.2~~Table III.2~~ shows the results of using the HERS model to estimate the speeds and user costs for the scenarios. The first row of numbers shows initial year conditions. Speeds average around 43 miles per hour for travel on state highways. The average cost per mile, considering ownership and operating costs, safety costs, and travel time costs, is about 82 cents per mile. Total user costs for travel on the state system are estimated at nearly $16 billion per year. Thus, users spend much more on travel costs on the state system than ODOT spends.

Table III.2: Implications of Scenarios for Transportation System

Investment Scenario	Average Speed	Total User Costs Per Mile	Total User Costs Per Year
Initial Year[10]	43.1 mph	82.4¢	$15.9 Billion
Protect Current Infrastructure[11]	21.6 mph	132.1¢	$34.4 Billion
Coping with Congestion[12]	22.6 mph	123.6¢	$32.5 Billion
Feasible Needs	29.0 mph	102.3¢	$28.4 Billion
Feasible Needs with Reduced VMT Growth[13]	31.2 mph	96.6¢	$25.7 Billion

The investment scenarios are shown in terms of the conditions in the 20th year (2017). The intermediate scenarios defined for the Highway Plan, Protect Current Infrastructure, and Coping with Congestion are shown in the second and third rows of the table. These scenarios result in user speeds and costs which are significantly worse than the initial year. These scenarios also show significantly worse performance than the Feasible Needs scenario

[10] All values, other than for the Initial Year, represent conditions at the end of the 20-year planning period.

[11] Approximately 40 percent below full needs.

[12] Approximately 27 percent below full needs.

[13] The maximum likely level of VMT reduction, relative to 20-year forecast, achieved through aggressive TDM programs primarily at the MPO level.

(row four). In fact, because user costs go up much faster than ODOT budget reductions, all reductions below the Feasible Needs scenario have significant negative impacts which far outweigh the budget savings. For example, by the 20th –year, any reduction in expenditure levels is costing users 40 times the savings in ODOT highway budget for that year, due to the cumulative negative impact of foregone investments.

For the Feasible Needs scenario with the VMT growth as forecast, speeds will decrease compared to today and user costs will go up, both in total and on a cost per mile basis.

The fifth row shows what speeds and user costs would be by 2017 if Feasible Needs were funded and if the VMT reductions that the MPOs consider to be the maximum feasible were achieved. Speeds increase substantially compared to a higher VMT, and user costs go down. User costs per mile still increase compared to today, but by a lower amount than if Feasible Needs were implemented but VMT was not reduced.

Revenue Projections

It is difficult to accurately predict future revenues since they are dependent on a large number of political and economic variables. The Highway Plan makes general estimates so that investment priorities can be discussed. State highway funding in Oregon comes from both state and federal taxes and fees. Each of these revenue sources is discussed briefly below. This discussion and the numbers cited only cover those revenues that go to the highway programs described above. There are a number of state transportation programs that are not covered by the Highway Plan.

State road user revenues provide approximately 65 percent of state transportation revenues. Oregon's State Highway Fund, which is constitutionally dedicated to highways, derives most of its revenue from three major highway user taxes: vehicle registration fees, motor vehicle fuel taxes, and motor carrier fees (the weight-mile tax). These taxes are governed by the concept of cost responsibility–collecting revenues from users based on their fair share of highway costs. Cost responsibility studies are published periodically to ensure that users' shares reflect current conditions. The latest cost responsibility study update was completed in 1995, and assigns 62.3 percent of highway costs to vehicles weighing less than 8,000 pounds and 37.7 percent to heavy vehicles. The 1995 State Legislature reduced heavy vehicle registration fees and weight mile taxes to match this cost responsibility.

In 1998 automobiles pay an annual registration fee of $15 and a state gas tax of 24.6 cents per gallon. Heavy vehicles (those over 8,000 pounds) pay an annual registration fee of between $110 and $415 depending on their weight. In addition, all commercial vehicles with a registered weight of over 26,000 pounds pay a weight-mile tax of between 4.45 cents and 20.4 cents per mile depending on their weight and the number of axles. Vehicles that pay the weight-mile tax do not pay state fuel taxes.

If there are no rate increases, state highway revenues from these sources are expected to average approximately $424 million over the next 20 years, for a total of $8.1 billion. This estimate assumes growth in revenues from additional users of the system, but does not assume any increase in the tax rate. Since motor vehicle taxes in Oregon are fixed amounts (i.e., rather than a percentage of fuel prices), these revenues will not grow with inflation over time.

Oregon also receives highway revenues from the federal government. The federal highway program is financed with proceeds from federal fuel and other transportation-related user taxes and fees. These funds are discretionary and subject to Congressional authorization. The federal Transportation Equity Act for the 21st Century, signed in June 1998, will provide over $246 million annually for Oregon state highways for fiscal years 1998-2003. After this point, it is difficult to accurately forecast revenues. This analysis assumes a gradual rise in federal highway funds which reflects an upper limit of what may be achievable under fixed tax rates. Using this assumption, federal highway funds for the State of Oregon are estimated at a total of $5.8 billion over the next 20 years.

Thus, Oregon's total highway revenues for the period 1998-2017 are projected to be approximately $13.9 billion (see Table III.3~~Table III.3~~, page 150~~138~~) if state funding rates do not change.

Table III.33: Projected State and Federal Highway Revenues, 1998-2017

Year	State	Federal	Total
1998	$346,983,057	$184,257,079	$531,240,136
1999	$364,822,730	$211,757,470	$576,580,200
2000	$369,977,182	$217,371,205	$587,348,387
2001	$375,263,272	$222,597,185	$597,860,457
2002	$381,364,362	$227,419,252	$608,783,614
2003	$386,202,160	$229,322,523	$615,524,683
2004	$392,805,296	$279,526,785	$672,332,081
2005	$398,948,938	$279,526,785	$678,475,723
2006	$405,115,216	$279,526,785	$684,642,001
2007	$410,579,143	$279,526,785	$690,105,928
2008	$415,577,315	$279,526,785	$695,104,100
2009	$420,216,752	$279,526,785	$699,743,537
2010	$424,528,797	$334,432,142	$758,960,939
2011	$427,621,303	$334,432,142	$762,053,445
2012	$431,120,636	$334,432,142	$765,552,778
2013	$434,492,387	$334,432,142	$768,924,529
2014	$437,387,939	$334,432,142	$771,820,081
2015	$440,453,086	$334,432,142	$774,885,228
2016	$442,803,615	$400,318,571	$843,122,186
2017	$445,689,041	$400,318,571	$846,007,612
Total	**$8,151,952,226**	**$5,777,115,420**	**$13,929,067,646**

Summary of Needs and Revenues

If revenues remain at current rates, there will be a shortfall of at least $15.6 billion over the 20-year planning period of the 1998 Highway Plan (Figure III.6~~Figure III.6~~). This means that all state highway needs will not be met unless highway funding rises.

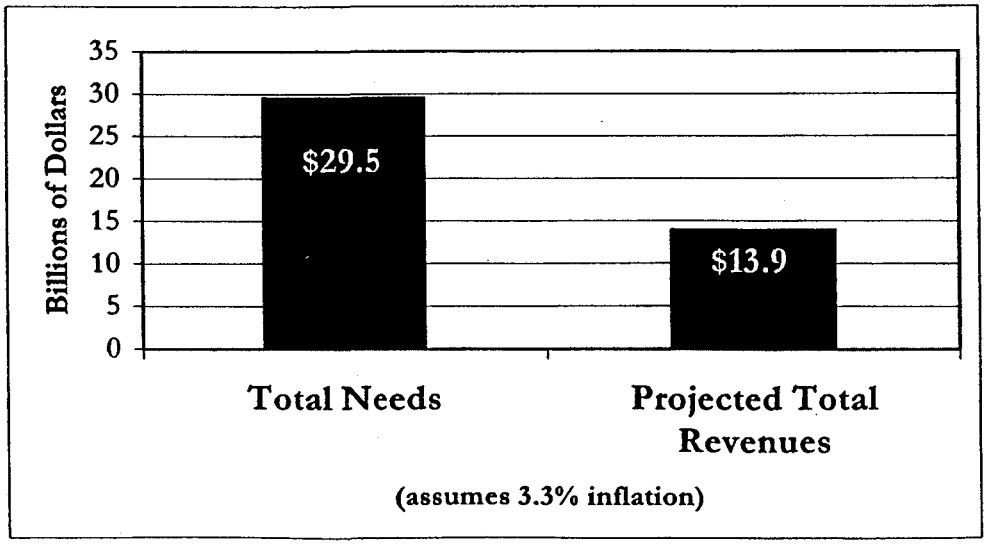

Figure III.66: Projection of 20-Year Highway Needs and Revenues

Tax Increases Required to Meet Scenarios

In order to meet the needs of any of the scenarios above current funding, state highway revenues would have to rise. Table III.4~~Table III.4~~ lists estimates of the gas and weight-mile tax increases that would be necessary to meet the needs of each scenario. These are general estimates, presented to give a context for long-term state highway needs. The estimates are shown in two ways—a steady increase each year which covers the effects of inflation, and a "one-time" increase with future adjustments tied to inflation.

Table III.44: Examples of Tax Increases Needed to Match Projected Revenues with Needs

	Scenario 2a	Scenario 2b	Scenario 2d	Scenario 2e	Scenario 3b	Scenario 4
Steady Increase	1 cent increase per year (1+1+1...)	1.1 cent increase per year (1+1+1...)	2 cent increase per year (2+2+2...)	3 cent increase per year (3+3+3...)	4 cent increase per year (4+4+4...)	7 cent increase per year (7+7+7...)
Total new gas tax by 2018 with steady increase	18 cents	18.5 cents	54 cents	54 cents	72 cents	126 cents
"One-time" Increase	3 cents	5 cents	10 cents	17 cents	25 cents	46 cents
Total new gas tax by 2018 with "one-time" increase	19 cents	22 cents	32 cents	44 cents	58 cents	93 cents

Notes for Table III.4:

A. The **steady increase** only meets highway needs (including the effect of inflation) over the full 20-year period. In the next 5-10 years, relatively low levels of new revenues are generated, but this would be compensated for by increased revenues in the out years.

B. The **"one-time" increase** would match needs and revenues in the year 2000. After this increase, there would still need to be yearly increases pegged to inflation in order to meet the needs.

C. Revenue produced by each penny assumes:
   1. There will be an equivalent increase in the weight-mile tax that will maintain the cost responsibility split at current levels (62.3 percent light vehicles/37.7 percent heavy vehicles).
   2. The State will receive 50 percent of any new revenues (the State would receive half of the increase shown in Table III.4).
   3. There will be growth in the revenue produced by each penny due to increased highway use.
   4. Taxes take effect in the year 2000.

D. The numbers assume that federal revenues will increase as shown in Table III.3.

E. Needs were calculated assuming an average inflation rate of 3.3 percent for the period 1998-2017. This consists of inflation rates under 3 percent until 2003, and rising to 3.9 percent by 2018.

F. The numbers do not include needs for city or county-owned roads.

Implementation Strategies

The Highway Plan will be implemented through planning, project selection, design and development, operations, and maintenance related to the state highway system. Within one year of the Plan's adoption, ODOT will develop an Action Plan that identifies implementation actions and agency responsibilities; more specifically ODOT will:

1. Identify responsibilities and impacts of the Plan related to planning, project selection and development, maintenance and investments.
2. Monitor the implementation of the plan's policies through performance measures.
3. Develop a funding plan that includes looking at various funding options. These options might include:
   - Increased vehicle fuel taxes
   - Higher vehicle registration fee
   - Increased weight/mile tax compenserate with increased fuel taxes
   - Increased heavy vehicle fees
   - New vehicle sales tax
   - Fee on vehicle miles traveled
   - Congestion pricing
   - Tolls
   - State systems development charge
4. Work with local governments to
   - Develop a process for identifying and transferring local interest roads.
   - Conduct a demonstration project in each ODOT region to apply the Special Transportation Area designation.
   - Complete corridor plans and transportation system plans to address Highway Plan policies.
   - Achieve consistency between the Highway Plan and local plans and ordinances.
   - Establish criteria and designate lifeline routes.
   - Develop a policy or strategy for interchange management through the I-5 corridor study or another planning effort.
   - Establish criteria for considering, evaluating, and prioritizing off-system improvements.
5. Conduct a process for designating Expressways and examining highway classifications.
6. Develop an administrative rule for access management procedures and standards.

~~5.~~7. Work with freight interests to identify concerns about freight movements on state highways.

~~6.~~8. Develop best management practices to protect environmental and scenic resources.

Performance Measures

The following performance measures have been developed as a means of monitoring the overall implementation of the Highway Plan. ODOT will use these measures to track progress in meeting the goals of the Plan. In some cases, current and historical trend data already exist. In others, the current or baseline conditions need to be established. Once the baseline data is in place, future trends will be monitored to evaluate how well the Highway Plan is helping ODOT and its partners meet their stated goals in four policy areas. These measures are intended for overall system-wide use rather than for project-specific application. They are intended to guide the implementation and periodic refinement of programs and strategies rather than be used for budgeting purposes.

Goal 1: System Definition

Policy 1B: Land Use and Transportation

1. Percent of Special Transportation Areas where the level of service, as measured by volume-to-capacity ratios (v/c), meets the designated standard.

2. Highway v/c ratio within a Special Transportation Area (for corridor planning applications).

Policy 1C: State Highway Freight System

1. Percent of freight system lane miles that meet level of service standards during peak hour or two hour peak period.

2. Number of accidents on the designated state highway freight system involving trucks, and percent of total freight system accidents that involve trucks.

Policy 1D: Scenic Byways

1. Percent of customers reporting favorable perception of Scenic Byway aesthetics, safety, and performance.

2. Oregon Scenic Byway Committee rating (every 3 years) as a monitor of improvement/degradation overall and for certain routes.

Policy 1E: Lifeline Routes

1. Percent of bridges on lifeline routes with satisfactory seismic rating (potentially bridge health index, sufficiency rating, and/or National Bridge Inventory rating).

2. Number of bridges on lifeline routes brought to satisfactory rating in reporting period.

Additional desirable measures which would be feasible as Geographic Information Systems capabilities are expanded within ODOT include:

3. Percentage of Oregon residents whose lifeline system access has been defined and evaluated.

4. Percentage of Oregon residents whose lifeline system access meets bridge rating standards.

Policy 1F: Level of Service Standards

1. Percent of highway lane miles that meet level of service standard, by statewide highway classification.

2. Percent miles limited-access highways in Oregon urban areas that do not meet level of service standard (Oregon Benchmark #70).

Goal 2: System Management

Policy 2A: Interjurisdictional Partnerships

1. Percent of state expenditures saved through cost-sharing and other partnership arrangements

Policy 2B: Off-System Improvements

1. Net benefit (savings and/or benefits less costs) of off-system improvements.

Policy 2C: Interjurisdictional Transfers

1. Number of route miles designated by ODOT as having potential for interjurisdictional transfer.

2. Number (and percent of potential total) of route miles transferred.

Policy 2F: Traffic Safety

The Oregon Transportation Commission established safety priorities to carry out the Traffic Safety policy when it approved the *Oregon Transportation Safety Action Plan.* Three of the performance measures included in the OTSAP are directly related to state highway travel:

1. Reduce deaths due to motor vehicle crashes from 1.73 per 100 million vehicle miles traveled (VMT) in 1996 to 1.30 by the year 2010.

2. Increase the percentage of occupants using vehicle safety restraints from 83 percent in 1996 to 90 percent by the year 2010.

3. Reduce the number of deaths due to alcohol and drug-related motor vehicle crashes from .72 per 100 million VMT in 1996 to .58 per 100 million VMT by the year 2010.

~~1. Number of deaths due to motor vehicle crashes per vehicle miles traveled.~~

~~2. Percent of motor vehicle occupants who regularly use active safety restraints (includes seat belts, child seats, etc., but not passive restraint systems such as air bags).~~

~~3. Alcohol and/or drug-related fatalities as a percent of total traffic fatalities.~~

Two additional measures are:

4. Number of accidents with fatalities or serious injury (F/SI) per million vehicle miles traveled.

5. Annual percent reduction in fatal and injury crashes on Class 3, 4, and 5 safety segments, based on 1998 baseline[14].

Policy 2G: Rail and Highway Compatibility

1. Number of newly constructed at-grade crossings on the state system (target is zero).

2. Number of at-grade crossings eliminated or replaced with grade-separated crossings.

3. Number of at-grade crossings improved through installation of new control devices or improved geometric design.

Goal 3: Access Management

There are no performance measures proposed for the Access Management policy.

Goal 4: Travel Alternatives

Policy 4A: Efficiency of Freight Movement

1. Percentage of identified obstacles to freight movement that are eliminated through action of the state, or the state in partner with others.

2. Percentage (number) of intermodal connectors improved.

Policy 4B: Alternative Passenger Modes

1. Percent of Oregonians who commute to and from work during peak hours by means other than a single occupancy vehicle (Oregon Benchmark #73.).

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[14] The state highway system is divided into five-mile segments, and a tally is made of the number of fatal and serious injury crashes over a three-year period. Category 3, 4, and 5 have three or more fatal and serious injury crashes during this time period.

2. Vehicle miles traveled per capita in metropolitan areas (Oregon Benchmark #74.)

Policy 4C: High-Occupancy Vehicle (HOV) Facilities

1. Percent of total person miles of travel that are made in high-occupancy vehicle lanes.

2. Percent VMT reduction attributable to high occupancy vehicle lanes.

Policy 4D: Transportation Demand Management

1. Percent of Oregonians who commute to and from work in peak hours in a single-occupant vehicle.

Policy 4E: Park-and-Ride Facilities

1. Inventory (number) of park-and-ride spaces within and immediately adjacent to the state highway right-of-way, by corridor.

Goal 5: Environmental and Scenic Resources

Policy 5A: Environmental Resources

1. Number of state highway miles with up-to-date natural resource maps relative to the total number of miles needing mapping.

2. Number of culverts retrofitted for salmon relative to the total number of culverts needing retrofitting.

Policy 5B: Scenic Resources

1. Percent of customers by region reporting "favorable or better" perception of the state highway system for aesthetics, safety, and performance.

IV. Appendices

Appendix A: Glossary

(Note: there is a separate list of definitions in Appendix D for the Access Management Policies. The lists will be combined in the final draft of the Plan.)

A1: Definition of technical terms and acronyms

AASHTO: American Association of State Highway and Transportation Officials.

ADT: Average Daily Traffic, the average number of vehicles passing a certain point each day on a highway, road, or street.

Access management: Measures regulating physical connections to streets, roads, and highways from public roads and private driveways. See page ~~143~~.

Alignment: Geometric arrangement of a roadway (curvature, etc.).

Approach road: A roadway or driveway, connection between the outside edge of the shoulder or curb line, and the right-of-way line of the highway, intended to provide vehicular access to and from said highway and the adjoining property.

Alternative modes: Modes such as rail, transit, carpools, walking, and bicycles that provide transportation alternatives to the use of single-occupant automobiles.

AOH: Access Oregon Highways, a 1987-1997 highway development and funding program which focused on through traffic movements and economic development.

ATMS: Advanced Traffic Management System, technology which facilitates traffic movements.

BMP: Best Management Practices, techniques which reflect current thinking on a specific subject.

Capacity: Maximum volume of traffic that the roadway section is able to carry on a sustained basis.

Continuous two-way left-turn lane (TWLTL): A traversible median that is designed to accommodate left-turn egress movements from opposite directions.

Deviation: A departure from an access management standard.

DLCD: Department of Land Conservation and Development

"Fair or better" condition: A measure of pavement condition. ODOT annually evaluates the condition of the state highways, and rates the pavement from "very poor" to "very good." See page 129~~116~~.

Feasible needs: Projects and services needed on the state highway system to meet performance measures and carry out corridor plans and acknowledged regional and local transportation system plans, but constrained by topographical, environmental, community, and fiscal considerations.

FHWA: Federal Highway Administration

Grade crossings: Intersections between railroad tracks and a road. Crossings can be either "at-grade" (at the same level), or separated grade, where the road uses either a tunnel or a bridge to avoid crossing the rail tracks.

Highway: A public way for purposes of travel, including the entire area within the public right-of-way.

Highway mobility standards:

HOT Lanes: High-Occupancy/Toll lanes, a type of HOV lane which can be used by single occupant vehicles for an extra charge. See page 80.

HOV Lanes: High-Occupancy Vehicle lanes, special road lanes which can only used by vehicles with more than one occupant. See page 80.

Immediate opportunity fund: A fund that enables ODOT to respond quickly to economic development opportunities by funding transportation projects that will influence business location decisions.

Incident management: The detection and verification of incidents (accidents, stalled vehicles, etc. blocking traffic) and the implementation of appropriate actions to clear the highway.

Interchange management area: The area defined by a distance along both the mainline and crossroads in all directions extending beyond the end of the interchange ramp terminal intersections, or the end of the ramp merge lane tapers, as shown in Tables D3-D6.

Intermodal connectors: Short lengths of roads that connect intermodal facilities to the state highway system.

Intermodal facilities: Facilities that allow passenger and/or freight connections between modes of transportation. Examples include airports, bus stations, ports, and rail stations.

ISTEA: Intermodal Surface Transportation Efficiency Act, passed by Congress in 1991; see page 12.

ITS: Intelligent Transportation System, see page 7674.

Lane miles/kilometers: Length of road multiplied by the number of lanes.

LCDC: Land Conservation and Development Commission

LOI: Level of Importance, the highway classification system used in the 1991 Highway Plan and replaced in this plan by the State Highway Classification System.

LOS: Level of Service, a range of operating conditions defined for each type of facility and related to the amounts of traffic that can be accommodated at each level.

LRT: Light Rail Transit, urban transit system using self-propelled rail cars such as Portland's MAX.

Median: A continuous traffic divisional island which separates opposing traffic streams.

Median pedestrian island: A nontraversible median section designed to provide an area where pedestrians can take refuge while crossing the traffic stream approaching from the left and then the traffic stream approaching from the right.

Mode of transportation: A means of moving people and/or goods.

MPO: Metropolitan Planning Organization, a planning body in an urbanized area over 50,000 population which has responsibility for developing transportation plans for that area. Designated in the 1991 ISTEA. MPOs currently exist in the Eugene/Springfield, Medford, Portland, and Salem areas. Rainier is part of a fifth MPO, Longview-Kelso-Rainier, which is not considered to be an MPO for the purposes of this plan.

Native plant: A species that occurs naturally in a particular region, ecosystem, and/or habitat without direct or indirect human actions.

New road: A public road or road segment that is not a realignment of an existing road or road segment.

NHS: National Highway System, a system of statewide and Interstate highways and intermodal connectors meeting federal criteria (approximately 155,000 miles total), designated by Congress in the National Highway System Designation Act of 1995.

Nontraversible median: A median which, by its design, physically discourages or prevents vehicles from crossing it except at designated openings which are designed for turning or crossing movements. Nontraversible medians include grass, flush grass, and raised medians. Landscaping is used to delineate medians and is commonly used to actively discourage cross median vehicular movements or pedestrian crossing except at locations designated and designed for such movements or crossings as well as for beautification. Access can be provided for emergency and official vehicles.

OAR: Oregon Administrative Rules, rules written by a government agency intended to clarify the intent of an adopted law.

ODFW: Oregon Department of Fish and Wildlife

ODOT: Oregon Department of Transportation

ORS: Oregon Revised Statutes, the laws that govern the state of Oregon.

OTC: Oregon Transportation Commission, ODOT's governing body.

OTI: Oregon Transportation Initiative, see page 1~~6~~6.

OTP: Oregon Transportation Plan, see page 1~~5~~5.

Peak hour: Hour of the day with the most traffic, usually during morning and evening commute times.

Pedestrian: A person on foot, in a wheelchair, or walking a bicycle.

Policy: For ODOT, this is a strategy or direction officially adopted by the Oregon Transportation Commission.

Raised median: A nontraversible median where curbs are used to help delineate the boundary between the median and the adjacent traffic lane and to elevate the surface of the median above the surface of the adjacent traffic face.

Realignment: Rebuilding an existing roadway on a new alignment where the new centerline shifts outside the existing right-of-way and where the existing road surface is either removed, maintained as an access road or maintained as a connection between the realigned roadway and a road that intersects the original alignment.

Region Access Management Engineer: An individual who is a registered engineer and who by training and experience has comprehensive knowledge of the Department's access management standards, policies and procedures, and has professional expertise in traffic engineering concepts which underlie access management principles.

Right-of-way: A general term denoting publicly-owned land, property, or interest therein, usually in a strip. The entire width between the exterior right-of-way lines including the paved surface, shoulders, ditches, and other drainage facilities in the border area between the ditches or curbs and right-of-way line.

Roadway: The paved portion of a highway.

RTP: Regional Transportation Plan, see page 12.

SAC: State Agency Coordination, see page 14~~14~~.

SOV: Single Occupancy Vehicle, a non-commercial vehicle with only one occupant.

STA: Special Transportation Area, see page 32.

State highway system: Public roads owned and operated by the State of Oregon through the Oregon Department of Transportation. The state highway system does not include state-owned roads managed by State Parks, State Forests, Oregon Department of Fish and Wildlife, college campuses, or other state institutions.

STIP: Statewide Transportation Improvement Program, see page 16~~16~~.

TEA-21 The Transportation Equity Act for the 21st century. See page 11.

TDM: Transportation Demand Management, see page 117~~104~~.

Traversible median: A median that by its design does not physically discourage or prevent vehicles from entering upon or crossing it. Such medians include painted medians and continuous two-way left-turn lanes.

TPR: Transportation Planning Rule, see page 12.

TSP: Transportation System Plan, see page 12.

UBA: Urban business area, see page ___.

UGB: Urban Growth Boundary, the area surrounding an incorporated city in which the city may legally expand its city limits.

US DOT: U.S. Department of Transportation

Variance: An authorization issued by the Department that allows a deviation from the Department's access management standards.

V/C ratio: Volume-to-capacity ratio, a measure of roadway congestion, calculated by dividing the number of vehicles passing through a section of highway during the peak hour by the capacity of the section.

Vehicle miles of travel (VMT): Miles traveled per vehicle multiplied by the total number of vehicles.

Vehicle miles of travel per capita: VMT divided by the number of people in the area in question.

A2: Definition of verbs used in Policy Element

The following verbs appear throughout the draft goals, policies, and actions of the Oregon Highway Plan. The terms are used to confer varying levels of commitment, action, or involvement from ODOT in the administration and implementation of the Highway Plan. To facilitate shared understanding of the goals, policies, and actions, these verbs have been organized into three categories. Within each category, definitions and examples of usage from the current draft Highway Plan draft are given.

•**Obligation**: This category of terms shows ODOT's intention to ensure the outcome, whether through funding, policy enforcement, or other means of implementing a policy or objective. The terms that fall within this category include:

- implement
- provide
- protect
- maintain
- support
- establish
- develop
- improve
- enhance

•**Compromise**: This middle category of terms indicates ODOT willingness to consider specific circumstances when applying a policy or implementing an action. Terms that fall within this category include:

- balance
- favor
- consider

•**Accommodation**: This is the most flexible category of terms, giving ODOT grounds to evaluate the situation's particular conditions at the time and location of a policy decision or implementation of an action. Terms that fall within this category include:

- recognize
- encourage
- promote
- investigate

Specific definitions and usage examples of each of these verbs follow.

Obligation:

•**Implement**: Generally means *fulfill* or *execute*. ODOT will take part in the actual accomplishment of a plan or policy. One of the highest apparent levels of commitment or involvement.

Example: *Identify and implement water- and energy-efficient construction and maintenance practices.*

•**Provide**: Render, arrange, offer. Used to demonstrate ODOT's role as both the funding authority and the agency for interpreting regulations.

Example: *It is the policy of the State of Oregon to provide a secure lifeline network of streets, highways and bridges to facilitate emergency services response and to support rapid economic recovery after a disaster.*

•**Protect**: Asserts ODOT's role as a guarantor of statewide priorities.

Example: *The State of Oregon will use best practices to protect and enhance scenic resources in all phases of highway project planning, development, construction, and maintenance.*

•**Maintain**: Similar to *protect*, suggests ODOT's role as the custodian of the highway system, or indirectly of other systems affected by highway system actions.

Example: *It is the policy of the State of Oregon to maintain and improve the efficiency of freight movement on the State's highway system and access to intermodal connectors.*

•**Support**: The definition ranges from *sustain* (its weakest meaning) to *champion* (a proactive role). In its weakest usage, *support* could be part of the "accommodation" category. This ambiguity suggests the verb might be replaced with more precise terms.

Example: *Support the establishment of stable funding or financing sources for transportation systems that will benefit the efficiency of freight movement on the highway system.*

•**Establish**: Means *enact* or *make into law*. This term is used to show ODOT's institutional commitment to formal legal or administrative action.

Example: *Establish spacing standards on state highways based on highway classification, type of area and speed.*

•**Develop**: Similar to *establish*, but without any legal connotation; implies commitment of resources to create or enact.

Example: *Develop partnership opportunities with neighboring states for the installation of ITS technologies and for opportunities to share services and information.*

•**Enhance, Improve**: Connotes ODOT's willingness to actively *make better* and may imply financial effort to ensure the improvements are carried out.

Examples: *The State of Oregon will use best practices to protect and enhance scenic resources in all phases of highway project planning, development, construction, and maintenance.*

Set up a process through the Statewide Transportation Improvement Program to systematically improve the highway segments that hinder or prevent freight movements.

Compromise

•**Balance**: Strive to accommodate multiple goals or objectives by taking different perspectives into consideration.

Example: *It is the policy of the State of Oregon to balance the need for movement of goods with other uses of the highway system...*

•**Favor**: Generally meant as *appease* or *conciliate*. Implies ODOT's willingness to compromise a statewide objective *in favor* of a local or alternative statewide objective, under certain circumstances.

Example: *It is the policy of the State of Oregon to favor local accessibility in designated Special Transportation Areas (STAs) and to maintain or improve through transportation functions on the highway system outside of STAs.*

•**Consider**: Means to *bear in mind* or *take into account*. This term is intended to note the non-exclusivity of a criteria.

Example: *Consider the need for transit and park-and-ride facilities, along with the effect on pedestrian and bicycle traffic, in the design of urban interchanges.*

Accommodation

•**Recognize**: Generally intended as *endorse, sanction*, or *approve*. Indicates ODOT's intention to scrutinize the circumstances and uphold ODOT policy.

Example: *It is the policy of the State of Oregon...to recognize the importance of maintaining efficient through movement on major truck freight routes. On designated statewide freight routes other than in a Special Transportation Area, performance standards appropriate to the movement of freight by truck shall prevail.*

•**Encourage**: Could be considered similar to *support* but with a lesser level of commitment and direct involvement. Used by some committee members to distinguish situations involving an outside agency where ODOT wishes to see change in a certain direction, but does not feel compelled to be the driving force behind that change, as in the example below.

Example: *Encourage transit operators and emergency service providers to develop standardized dispatching, vehicle monitoring, and vehicle priority systems.*

•**Promote**: Advocate or urge; in the example below, *promote* is used to suggest that ODOT, along with other players, will contribute to development of certain facilities. By itself, *develop* would imply too great a commitment.

Example: *Promote alternative passenger transportation services in commute highway corridors to help maintain or meet established performance standards.*

•**Investigate**: To research or explore further, before moving to a higher level of commitment.

Example: *Investigate the legality of combining federal, state, regional, local, and private funding to achieve...*

Appendix B: Highway Program Definitions Used in Needs Analysis

Note: each category includes examples of elements which may be used to accomplish the goal. The list of examples is not necessarily exhaustive.

- Modernization

Primary goal is to add capacity. Improvements to accommodate existing traffic and/or projected traffic growth.

- Addition of lanes
- Passing and climbing lanes
- Turn lanes
- Acceleration and deceleration lanes
- New alignments or facilities (bypasses)
- Highway reconstruction with major alignment improvements or major widening
- Widening of bridges to add travel lanes
- New safety rest areas
- Grade separations
- Intersection improvements
- Intermodal connectors

- Preservation

Improvements to rebuild or extend the service life of existing facilities and rehabilitative work on roadways. Preservation projects add useful life to the road without increasing capacity.

- "Pave Mainly" (includes minor safety and bridge improvements)
- Interstate Maintenance Program
- Reconstruction to re-establish an existing roadway
- Resurfacing projects
- Durable striping

- Bridge

Improvements or work needed to rebuild or extend the service life of existing bridges and structures beyond the scope of routine maintenance.

- Bridge reconstruction/replacement
- Painting
- Seismic retrofitting
- Overpass screening
- Tunnels
- Large (over 6') culverts

- Safety

An investment program focused on improvements which address priority hazardous highway locations and corridors, including the Interstate, in order to reduce the number of fatal and serious injury crashes. Projects funded through this program meet strict benefit/cost criteria.

- Capital improvements such as passing lanes, turn lanes, and wider shoulders
- Access management
- New guardrails
- Illumination, delineation, or signing
- Channelization within the existing roadway at intersections
- Continuous shoulder rumble strips
- Enforcement
- Railroad crossing improvements (separate funding source)

- Operations

Relates to system efficiency. System management and improvements that lead to efficient and safer traffic operations and greater system reliability.

- ITS: Intelligent Transportation Systems (includes ramp metering, incident management, emergency response, and traffic management operations centers)
- TDM: Transportation Demand Management (includes Rideshare, Vanpool, Park and Ride Programs)
- Rock falls and slides (named, known rockfall areas and slides; not emergency repair work)
- Slow moving vehicle turnouts
- Signals and signs

- Maintenance

Repairs and work on the highway system.

- Surface repairs
- Bridge deck repairs
- Drainage work on ditches
- Culverts, storm sewers, curbs and bridges
- Stream channel maintenance and improvements
- Minor structural work (including cleaning and vegetation control)
- Roadside maintenance
- Signing, signal and illumination maintenance (including Intelligent Transportation System (ITS) features)
- Snow and ice removal
- Rest area maintenance and upgrades
- Maintenance paving (including chip seals and crack sealing)

- Special Programs

- The Oregon Plan for Salmon and Watersheds
- Other modes: Bikeways/Lanes, Pedestrian Walkways/Sidewalks, Bus Pullouts

- Immediate Opportunity Fund projects
- Transportation and Growth Management program (funded through ODOT Planning & the Department of Land Conservation and Development)
- Scenic Byways program

Planning

- Planning and research

Construction Support

- Reconnaissance
- Project development
- Training
- Other construction support expenses

Construction Administration

- Administration and managers related to highway planning, operations, projects, preservation and maintenance.

Central Services

- Central administration, communications, finance, human resources/organizational development, information services and business services.

Appendix C: Highway Classification by Milepoint

This appendix, which is still being completed, will contain a list of state highway classification by milepoint.

The statewide highway classification system is presented below, sorted by the state highway number and beginning milepost. Special milepost are designations with "Y", "Z" and "T".

Y = Spur Mileage - A short off-shoot of an established highway.
Z = Overlapping Mileage - An added section created when a road is lengthened in the middle due to realignment.
T = Temporary Mileage - A temporary traveled route, usually due to a detour or highway under construction.

HWY	BEG MP	END MP	ROUTE NUMBER	1998 SCS	
State Highway:	**Pacific**				
001	0.00	35.62	I-5	Interstate	NHS
001	35.62	40.66	I-5 / OR 99	Interstate	NHS
001	40.66	58.34	I-5	Interstate	NHS
001	58.34	99.29	I-5 / OR 99	Interstate	NHS
001	99.29	101.40	I-5	Interstate	NHS
001	101.40	103.76	I-5 / OR 99	Interstate	NHS
001	103.76	108.47	I-5	Interstate	NHS
001	108.47	112.23	I-5 / OR 99	Interstate	NHS
001	112.23	124.16	I-5	Interstate	NHS
001	124.16	136.27	I-5 / OR 138	Interstate	NHS
001	136.27	140.53	I-5	Interstate	NHS
001	140.53	150.08	I-5 / OR 99	Interstate	NHS
001	150.08	162.57	I-5	Interstate	NHS
001	162.57	168.46	I-5 / OR 99	Interstate	NHS
001	168.46	188.83	I-5	Interstate	NHS
001	188.83	192.25	I-5 / OR 99	Interstate	NHS
001	192.25	234.39	I-5	Interstate	NHS
001	234.39	258.26	I-5 / OR 99E	Interstate	NHS
001	258.26	301.91	I-5	Interstate	NHS
001	301.91	302.91	I-5 / US 30	Interstate	NHS
001	302.91	308.38	I-5	Interstate	NHS
State Highway:	**Columbia River**				
002	0.00	43.38	I-84 / US 30	Interstate	NHS
002	43.38	45.33	I-84	Interstate	NHS
002	45.33	61.81	I-84 / US 30	Interstate	NHS
002	61.81	64.69	I-84	Interstate	NHS
002	64.69	69.63	I-84 / US 30	Interstate	NHS
002	69.63	87.23	I-84	Interstate	NHS
002	87.23	167.58	I-84 / US 30	Interstate	NHS
002	167.58	184.08	US 730	Region	
002	184.08	184.11	US 730 / US 395	Region	
002	184.11	184.87	US 730 / US 395	State	NHS
002	184.87	203.28	US 730	Region	

HWY	BEG MP	END MP	ROUTE NUMBER	1998 SCS	
State Highway: Oswego					
003	0.00	6.13	OR 43	District	
003	6.13	11.29	OR 43	State	NHS
003	11.29	11.66	OR 43	District	
State Highway: The Dalles-California					
004	0.00	33.89	US 197	Region	
004	33.89	42.39	US 197 / OR 216	Region	
004	42.39	67.17	US 197	Region	
004	67.17	91.94	US 97	State	NHS
004	91.94	97.18	US 97 / US 26	State	NHS
004	97.18	121.29	US 97	State	NHS
004	121.29	121.50	US 97 / OR 126	State	NHS
004	121.50	135.14	US 97	State	NHS
004	135.14	137.62	US 97 / US 20	State	NHS
004	137.62	291.73	US 97	State	NHS
State Highway: John Day					
005	0.00	38.07	OR 19	Region	
005	38.07	38.27	OR 19 / OR 206	Region	
005	38.27	124.15	OR 19	Region	
005	124.15	124.17	OR 19	State	NHS
005	124.17	154.03	US 26	State	NHS
005	154.03	162.29	US 26 / US 395	State	NHS
005	162.29	278.21	US 26	State	NHS
State Highway: Old Oregon Trail					
006	167.58	189.13	I-84 / US 30	Interstate	NHS
006	189.13	207.10	I-84 / US 30 / US 395	Interstate	NHS
006	207.10	209.36	I-84 / US 395	Interstate	NHS
006	209.36	213.37	I-84	Interstate	NHS
006	213.37	259.22	I-84 / US 30	Interstate	NHS
006	259.22	265.26	I-84	Interstate	NHS
006	265.26	285.51	I-84 / US 30	Interstate	NHS
006	285.51	306.78	I-84	Interstate	NHS
006	306.78	342.52	I-84 / US 30	Interstate	NHS
006	342.52	353.29	I-84	Interstate	NHS
006	353.29	376.56	I-84 / US 30	Interstate	NHS
006	376.56	378.01	I-84	Interstate	NHS
State Highway: Central Oregon					
007	0.51	104.62	US 20	State	NHS
007	104.62	134.08	US 20 / US 395	State	NHS
007	134.08	246.39	US 20	State	NHS
007	246.39	258.14	US 20 / US 26	State	NHS
007	258.14	258.20	US 20 / US 26 / OR 201	State	NHS
007	258.20	265.97	US 20 / US 26 / OR 201	Region	
007	265.97	266.82	US 20 / US 26	Region	

HWY	BEG MP	END MP	ROUTE NUMBER	1998 SCS	
State Highway:	**Oregon-Washington**				
008	-1.77	-0.73	OR 11	State	NHS
008	-0.73	0.00	OR 11 / US 30	State	NHS
008	0.00	35.32	OR 11	State	NHS
State Highway:	**Oregon Coast**				
009	0.00	3.80	US 101	State	NHS
009	3.80	24.93	US 101 / US 26	State	NHS
009	24.93	363.11	US 101	State	NHS
State Highway:	**Wallowa Lake**				
010	0.00	0.82	OR 82	District	
010	0.82	71.42	OR 82	State	
State Highway:	**Enterprise-Lewiston**				
011	0.00	43.19	OR 3	District	
State Highway:	**Baker-Copperfield**				
012	0.00	1.56	OR 7	District	
012	1.56	2.43	I-84 (Common w/ Hwy 6)	Interstate	NHS
012	2.43	70.80	OR 86	District	
State Highway:	**Baker-Copperfield (Halfway Spur)**				
012 Y	53.55 Y	54.70		District	
State Highway:	**Crooked River**				
014	0.00	42.51	OR 27	District	
State Highway:	**McKenzie**				
015	-0.06	6.23	OR 126 Bus	State	NHS
015	6.23	54.97	OR 126	State	NHS
015	55.46	92.28	OR 242	District	
015	92.28	93.07	OR 126 / US 20	State	NHS
015	93.07	111.94	OR 126	State	NHS
State Highway:	**Santiam**				
016	-0.01	71.50	US 20	Region	
016	71.50	71.52	US 20	State	NHS
016	71.52	100.36	OR 126 / US 20	State	NHS
State Highway:	**McKenzie-Bend**				
017	0.00	18.51	US 20	State	NHS
State Highway:	**Willamette**				
018	-0.30	-0.12	OR 58 / OR 99	State	NHS
018	-0.12	86.45	OR 58	State	NHS

HWY	BEG MP	END MP	ROUTE NUMBER	1998 SCS	
State Highway:	**Fremont**				
019	0.00	120.53	OR 31	Region	
019	120.53	120.57	US 395	Region	
019	120.57	157.73	US 395	State	NHS
State Highway:	**Klamath Falls-Lakeview**				
020	-0.14	0.19	US 97 Bus / OR 39	District	
020	0.95	3.28	OR 39	Region	
020	3.28	5.54	OR 39	State	NHS
020	5.54	96.37	OR 140	State	NHS
State Highway:	**Green Springs**				
021	0.00	58.86	OR 66	District	
021	58.86	59.05	OR 66 / OR 140	State	NHS
State Highway:	**Crater Lake**				
022	0.00	0.47	OR 62	State	
022	0.47	6.03	OR 62	State	NHS
022	6.03	57.28	OR 62	Region	
022	57.28	65.45	OR 62	District	
022	83.63	103.87	OR 62	District	
022	103.87	103.95		District	
State Highway:	**Dairy-Bonanza**				
023	0.00	6.97	OR 70	District	
State Highway:	**Redwood**				
025	-2.74	0.01	OR 99 / US 199	State	NHS
025	0.01	41.69	US 199	State	NHS
State Highway:	**Redwood (Grants Pass Spur)**				
025 Y	-0.48 Y	1.99	US 199	Region	
State Highway:	**Mt. Hood**				
026	0.00	14.18	US 26	District	
026	14.18	57.46	US 26	State	NHS
026	57.46	101.82	OR 35	State	NHS
State Highway:	**Alsea**				
027	0.00	58.56	OR 34	District	
State Highway:	**Pendleton-John Day**				
028	0.03	1.37		State	
028	1.37	1.57	OR 37	State	
028	1.57	1.70	US 395 / OR 37	State	
028	1.70	120.51	US 395	State	NHS

HWY	BEG MP	END MP	ROUTE NUMBER	1998 SCS	
State Highway: Tualatin Valley					
029	0.00	2.90		District	
029	2.90	17.88		State	NHS
029	17.88	20.00		District	
029	20.00	20.14	OR 47	District	
029	20.14	42.46	OR 47	Region	
State Highway: Tualatin Valley (Forest Grove Spur)					
029 Y	17.88 Y	19.19		State	NHS
State Highway: Willamina-Salem					
030	0.00	26.14	OR 22	State	NHS
State Highway: Albany-Corvallis					
031	0.10	11.28	US 20	Region	
State Highway: Three Rivers					
032	0.00	24.97	OR 22	District	
State Highway: Corvallis-Newport					
033	0.00	49.76	US 20	State	NHS
033	49.76	56.80	US 20 / OR 34	State	NHS
State Highway: Coos Bay-Roseburg					
035	0.00	73.37	OR 42	State	NHS
035	73.37	76.03	OR 42 / OR 99	State	NHS
035	76.03	77.20	OR 42	State	NHS
State Highway: Pendleton-Cold Springs					
036	0.00	30.75	OR 37	District	
State Highway: Wilson River					
037	0.00	51.62	OR 6	Region	
State Highway: Oregon Caves					
038	0.00	19.33	OR 46	District	
State Highway: Salmon River					
039	-0.22	23.06	OR 18	State	NHS
039	23.06	27.17	OR 18 / OR 22	State	NHS
039	27.17	49.91	OR 18	State	NHS
039	49.91	52.65	OR 18 / OR 233	State	NHS
State Highway: Salmon River (McMinnville Spur)					
039 Y	46.26 Y	47.20	OR 18	District	
State Highway: Beaverton-Hillsdale					
040	0.97	3.41	OR 10	District	

HWY	BEG MP	END MP	ROUTE NUMBER	1998 SCS	
State Highway:	**Ochoco**				
041	-0.06	18.16	OR 126	State	NHS
041	18.16	98.39	US 26	State	NHS
State Highway:	**Sherman**				
042	-0.43	68.66	US 97	State	NHS
State Highway:	**Monmouth-Independence**				
043	0.00	2.35	OR 51	District	
State Highway:	**Wapinitia**				
044	0.18	26.03	OR 216	District	
State Highway:	**Umpqua**				
045	0.00	50.25	OR 38	State	NHS
045	50.25	57.13	OR 99	State	NHS
State Highway:	**Necanicum**				
046	0.04	19.03	OR 53	District	
State Highway:	**Sunset**				
047	-0.10	45.48	US 26	State	NHS
047	45.48	49.47	US 26 / OR 47	State	NHS
047	49.47	73.94	US 26	State	NHS
047	73.94	74.62	US 26	State	
State Highway:	**John Day-Burns**				
048	0.00	67.78	US 395	State	NHS
State Highway:	**Lakeview-Burns**				
049	0.00	90.02	US 395	State	NHS
State Highway:	**Klamath Falls-Malin**				
050	-6.92	-4.97	US 97 Bus / OR 39	State	NHS
050	-4.97	-2.24	OR 39	State	NHS
050	-2.24	0.00	OR 39 (Common w/ Hwy 20)	State	NHS
050	0.00	16.51	OR 39	State	NHS
050	16.51	27.10		District	
State Highway:	**Klamath Falls-Malin (Esplanade Spur)**				
050 Y	4.97 Y	5.10	US 97 Bus	District	
State Highway:	**Wilsonville-Hubbard**				
051	-0.31	5.63		District	
State Highway:	**Heppner**				
052	0.00	36.42	OR 74	District	
052	36.45	45.89	OR 74 / OR 207	Region	
052	45.89	83.15	OR 74	District	

HWY	BEG MP	END MP	ROUTE NUMBER	1998 SCS	
State Highway: Warm Springs					
053	57.45	117.58	US 26	State	NHS
State Highway: Umatilla-Stanfield					
054	0.04	12.90	US 395	State	NHS
State Highway: Albany-Junction City					
058	0.00	1.38	OR 99E	Region	
058	1.38	2.28	OR 99E / US 20	Region	
058	2.28	32.37	OR 99E	Region	
State Highway: Sandy Boulevard					
059	-0.05	5.51	US 30 Bus	District	
State Highway: Rogue River					
060	0.00	14.95	OR 99	District	
State Highway: Stadium Freeway					
061	-0.04	3.08	I-405	Interstate	NHS
061	3.08	3.57	I-405 / US 30	Interstate	NHS
061	3.57	4.21	I-405	Interstate	NHS
State Highway: Florence-Eugene					
062	0.02	52.69	OR 126	State	NHS
State Highway: Rogue Valley					
063	0.00	24.12	OR 99	District	
State Highway: East Portland Freeway					
064	0.00	12.94	I-205	Interstate	NHS
064	12.94	13.11	I-205 / OR 224	Interstate	NHS
064	13.11	26.56	I-205	Interstate	NHS
State Highway: La Grande-Baker					
066	-0.04	5.32	US 30	District	
066	5.32	5.62	US 30 / OR 203	District	
066	5.62	15.93	OR 203	District	
066	15.93	16.51	OR 203 / OR 237	District	
066	16.51	32.23	OR 237	District	
066	32.23	32.29	US 30 / OR 237	District	
066	32.29	51.79	US 30	District	
066	51.79	52.04	US 30 / OR 7	District	
066	52.04	54.46	US 30	District	
State Highway: Pendleton					
067	-0.03	2.08	US 30	District	
067	2.08	2.54	US 30 / OR 37	District	
067	2.54	3.92	US 30	District	
067	3.92	4.63	OR 11/US 30 (Common w/Hwy 8)	State	NHS
067	4.63	6.60	US 30	District	

HWY	BEG MP	END MP	ROUTE NUMBER	1998 SCS	
State Highway:	**Cascade Highway North**				
068	0.00	10.18	OR 213	District	
State Highway:	**Beltline**				
069	0.00	3.10	OR 126	State	NHS
069	3.10	12.76		State	NHS
069	12.76	13.00		Region	
State Highway:	**McNary**				
070	0.00	0.76	I-82 / US 395	Interstate	NHS
070	0.76	11.21	I-82	Interstate	NHS
State Highway:	**Whitney**				
071	0.00	50.92	OR 7	Region	
State Highway:	**Salem**				
072	0.00	4.93	OR 99E	District	
072	4.93	5.19	OR 99E	State	NHS
072	5.19	8.52	OR 99E / OR 22	State	NHS
State Highway:	**North Umpqua**				
073	0.00	86.01	OR 138	Region	
State Highway:	**Pacific Highway East**				
081	-6.09	-4.01	OR 99E	State	NHS
081	-4.01	1.24	OR 99E	District	
081	1.24	5.46	OR 99E	State	NHS
081	5.46	11.73	OR 99E	District	
081	11.73	31.70	OR 99E	Region	
081	31.70	32.87	OR 99E / OR 214	Region	
081	32.87	46.21	OR 99E	Region	
081	46.21	46.49		Region	
State Highway:	**Pacific Highway West**				
091	-5.76	-4.75		District	
091	-0.44	-0.06		District	
091	0.85	1.71		District	
091	1.71	3.08	OR 10	District	
091	3.08	7.42		District	
091	7.42	7.61		State	NHS
091	7.61	23.04	OR 99W	State	NHS
091	23.04	23.45	OR 99W / OR 219	State	NHS
091	23.45	29.79	OR 99W	State	NHS
091	29.79	108.77	OR 99W	Region	
091	108.77	108.89	OR 99W / OR 99	Region	
091	108.89	117.04	OR 99	Region	
091	117.04	122.26	OR 99	State	NHS
091	122.26	123.37	OR 99 / OR 126	State	NHS
091	123.37	124.02	OR 99 / OR 126 Bus	State	NHS
091	124.02	125.81	OR 99	State	NHS
091	125.81	126.37	OR 99	Region	

HWY	BEG MP	END MP	ROUTE NUMBER	1998 SCS	
State Highway:	**(Lower) Columbia River**				
092	0.95	99.34	OR 30	State	NHS
State Highway:	**Historic Columbia River**				
100	0.00	22.25		District	
100	22.25	30.00	I-84 / US 30 (Common w/ Hwy 2)	Interstate	NHS
100	30.00	31.28	US 30	District	
100	33.08	34.49		District	
100	34.49	48.67	I-84 / US 30 (Common w/ Hwy 2)	Interstate	NHS
100	48.67	51.26	US 30 / OR 35	District	
100	51.26	52.74		District	
100	56.91	57.53		District	
100	57.53	72.37	US 30	District	
State Highway:	**Nehalem**				
102	0.00	1.52	OR 202 / US 101 Bus	State	
102	1.52	2.64	OR 202	State	
102	2.64	46.14	OR 202	District	
102	46.14	77.00	OR 47	District	
102	77.00	80.83	US 26/OR 47 (Common w/Hwy 47)	State	NHS
102	80.83	90.09	OR 47	State	NHS
102	90.09	91.50	OR 47	Region	
State Highway:	**Fishhawk Falls**				
103	0.00	9.02		District	
State Highway:	**Fort Stevens**				
104	0.00	6.03		District	
State Highway:	**Fort Stevens (Fort Stevens Spur)**				
104 Y	4.44 Y	5.38		District	
State Highway:	**Warrenton-Astoria**				
105	0.00	7.25	US 101 Bus	District	
State Highway:	**Mist-Clatskanie**				
110	0.00	11.89	OR 47	District	
State Highway:	**Swift**				
120	0.00	1.04		District	
120	1.04	2.69		State	NHS
120	2.69	2.71		District	
State Highway:	**Northeast Portland**				
123	0.00	1.31	US 30 BY	State	NHS
123	1.31	9.20	US 30 BY	District	
123	9.20	11.15	US 30 BY	State	NHS
123	11.15	18.75	US 30 BY	District	
State Highway:	**Little Nestucca**				
130	-0.10	9.30		District	

HWY		BEG MP	END MP	ROUTE NUMBER	1998 SCS	
State Highway:		**Netarts**				
131		0.00	9.08		District	
State Highway:		**Hillsboro-Silverton**				
140		0.00	20.16	OR 219	District	
140		20.16	20.22	OR 219 / OR 99W	District	
140		20.22	20.59	OR 99W/OR 219 (Common w/Hwy 9)	State	NHS
140		20.59	36.72	OR 219	District	
140		36.72	39.29	OR 214	District	
140		39.29	40.46	OR 99E/OR 214 (Common w/Hwy 81)	Region	
140	Z	39.31	50.66	OR 214	District	
State Highway:		**Beaverton-Tualatin**				
141		2.57	13.05		District	
State Highway:		**Farmington**				
142		-0.06	8.74	OR 10	District	
State Highway:		**Scholls**				
143		0.00	5.43	OR 210	District	
143		9.03	9.60	OR 210	District	
State Highway:		**Beaverton-Tigard**				
144		0.00	7.44	OR 217	State	NHS
State Highway:		**Salem-Dayton**				
150		0.00	9.26	OR 221	District	
150		9.26	20.78	OR 221	Region	
State Highway:		**Yamhill-Newburg**				
151		0.00	11.50	OR 240	District	
State Highway:		**Bellevue-Hopewell**				
153		0.00	6.38		District	
153		6.38	6.45	OR 99W (Common w/ Hwy 91)	Region	
153		6.45	11.11		District	
153		11.11	14.36		Region	
State Highway:		**Lafayette**				
154		0.00	0.52	OR 233	Region	
154		0.52	6.26		Region	
State Highway:		**Amity-Dayton**				
155		0.00	7.44	OR 233	District	
155		7.44	9.19		District	
State Highway:		**McMinnville**				
156		0.00	1.71		District	
State Highway:		**Willamina-Sheridan**				
157		0.00	8.60	OR 18 Bus	District	

HWY	BEG MP	END MP	ROUTE NUMBER	1998 SCS	
State Highway:	Cascade Highway South				
160	0.00	29.71	OR 213	District	
State Highway:	Woodburn-Estacada				
161	0.00	33.49	OR 211	District	
State Highway:	North Santiam				
162	1.21	81.81	OR 22	State	NHS
State Highway:	Silver Creek Falls				
163	8.78	40.84	OR 214	District	
State Highway:	Jefferson				
164	0.00	8.39		District	
State Highway:	Clackamas				
171	-0.01	0.11	OR 224	District	
171	0.11	4.04	OR 224	State	NHS
171	4.04	4.36	OR 224 / OR 213	State	NHS
171	4.36	4.91	I-205 / OR 224 (Common w/Hwy 64)	Interstate	NHS
171	4.91	8.15	OR 224 / OR 212	State	NHS
171	8.15	17.92	OR 224	District	
171	17.92	23.36	OR 224 / OR 211	District	
171	23.36	49.97	OR 224	District	
State Highway:	Eagle Creek-Sandy				
172	-0.23	5.94	OR 211	District	
State Highway:	Timberline				
173	0.12	5.49		District	
State Highway:	Clackamas-Boring				
174	0.03	8.87	OR 212	State	NHS
State Highway:	Eddyville-Blodgett				
180	0.00	19.25		District	
State Highway:	Siletz				
181	-0.21	31.24	OR 229	District	
State Highway:	Otter Rock				
182	0.00	0.75		District	
State Highway:	Dallas-Rickreall				
189	0.00	4.01	OR 223	District	
State Highway:	Kings Valley				
191	0.00	31.40	OR 223	District	

HWY	BEG MP	END MP	ROUTE NUMBER	1998 SCS	
State Highway: Independence					
193	0.00	6.34	OR 51	District	
State Highway: Monmouth					
194	0.00	7.56		District	
State Highway: Territorial					
200	-0.06	8.62		District	
200	8.62	10.06	OR 36 (Common w/ Hwy 229)	District	
200	10.06	42.08		District	
State Highway: Alsea-Deadwood					
201	0.00	9.49		District	
State Highway: Corvallis-Lebanon					
210	-0.10	-0.05		District	
210	-0.05	0.00	US 20	District	
210	0.00	0.34		District	
210	0.34	9.94	OR 34	State	NHS
210	9.94	10.14	OR 34	State	
210	10.14	18.13	OR 34	Region	
State Highway: Albany-Lyons					
211	0.00	25.71	OR 226	District	
State Highway: Halsey-Sweet Home					
212	0.00	21.40	OR 228	District	
State Highway: Clear Lake-Belknap Springs					
215	0.00	19.81	OR 126	State	NHS
State Highway: Springfield-Creswell					
222 T	0.00	8.00		District	
222	11.63	14.88		District	
State Highway: McVay					
225	0.01	2.53		District	
State Highway: Goshen-Divide					
226	0.02	19.92	OR 99	District	
State Highway: Eugene-Springfield					
227	0.00	3.49	OR 126 / I-105	Interstate	NHS
227	3.49	3.95	OR 126	Interstate	NHS
227	3.95	9.97	OR 126	State	NHS
State Highway: Springfield					
228	0.00	1.40		District	

HWY	BEG MP	END MP	ROUTE NUMBER	1998 SCS	
State Highway:	**Mapleton-Junction City**				
229	0.01	51.59	OR 36	District	
State Highway:	**Tiller-Trail**				
230	41.46	52.71	OR 227	District	
State Highway:	**Elkton-Sutherlin**				
231	0.00	24.25	OR 138	Region	
231	24.25	25.39		Region	
State Highway:	**West Diamond Lake**				
233	0.00	23.80	OR 230	Region	
State Highway:	**Oakland-Shady**				
234	11.77	17.18	OR 99	District	
234	17.18	17.41	OR 99 / OR 138	District	
234	17.41	22.25	OR 99	District	
State Highway:	**Cape Arago**				
240	-0.05	14.15		District	
State Highway:	**Coos River**				
241	0.00	0.06		State	NHS
241	0.06	19.15		District	
State Highway:	**Powers**				
242	0.00	18.91		District	
State Highway:	**Empire-Coos Bay**				
243	0.00	3.57		District	
State Highway:	**Coquille-Brandon**				
244	0.00	16.94	OR 42S	District	
State Highway:	**Cape Blanco**				
250	0.16	5.57		District	
State Highway:	**Port Orford**				
251	0.00	0.76		District	
State Highway:	**Rogue River Loop**				
260	1.30	22.24		District	
State Highway:	**Lake of the Woods**				
270	0.00	68.76	OR 140	State	NHS
State Highway:	**Samms Valley**				
271	-0.30	2.36	OR 234 / OR 99	District	
271	2.36	17.48	OR 234	District	

HWY	BEG MP	END MP	ROUTE NUMBER	1998 SCS
State Highway:	**Samms Valley (Gold Hill Spur)**			
271 Y	2.36 Y	3.32	OR 99	District
State Highway:	**Jacksonville**			
272	0.00	38.93	OR 238	District
State Highway:	**Siskiyou**			
273	0.00	6.96		District
State Highway:	**Hood River**			
281	0.00	19.07		District
State Highway:	**Odell**			
282	0.00	3.45		District
State Highway:	**Sherars Bridge**			
290	-0.05	28.42	OR 216	District
State Highway:	**Shaniko-Fossil**			
291	0.00	42.98	OR 218	District
State Highway:	**Mosier-The Dalles**			
292	18.61	20.24	US 30	District
State Highway:	**Antelope**			
293	0.00	13.52		District
State Highway:	**Wasco-Heppner**			
300	-1.97	-0.09		Region
300	-0.09	40.72	OR 206	Region
300	40.72	40.92	OR 19 / OR 206 (Common w/ Hwy 5)	Region
300	40.92	73.33	OR 206	District
300	73.33	84.12	OR 206	Region
State Highway:	**Celilo-Wasco**			
301	0.00	15.57	OR 206	District
State Highway:	**Celilo-Wasco (Celilo-Wasco Spur)**			
301 Y	4.80 Y	7.62		District
State Highway:	**Lexington-Echo**			
320	0.00	27.24		Region
320	27.24	40.25		District
State Highway:	**Heppner-Spray**			
321	0.00	40.96	OR 207	Region
State Highway:	**Weston-Elgin**			
330	-1.36	40.84	OR 204	Region

HWY	BEG MP	END MP	ROUTE NUMBER	1998 SCS	
State Highway:	**Umatilla Mission**				
331	0.00	4.84		District	
State Highway:	**Sunnyside-Umapine**				
332	0.00	7.93		District	
State Highway:	**Hermiston**				
333	0.02	7.24	OR 207	Region	
333	7.24	7.30	US 395 (Common w/ Hwy 54)	State	NHS
333	7.30	17.81	OR 207	Region	
State Highway:	**Athena-Holdman**				
334	0.00	8.44		District	
334	8.44	9.57	(Common w/ Hwy 335)	District	
334	9.57	18.16		District	
State Highway:	**Havana-Helix**				
335	0.00	2.40		District	
335	2.40	3.53		District	
335	3.53	9.79		District	
State Highway:	**Freewater**				
339	0.00	5.25		District	
State Highway:	**Medical Springs**				
340	0.00	38.94	OR 203	District	
State Highway:	**Ukiah-Hilgard**				
341	0.00	47.22	OR 244	District	
State Highway:	**Cove**				
342	0.00	22.07	OR 237	District	
State Highway:	**Little Spring Creek**				
350	0.00	29.36		District	
State Highway:	**Joseph-Wallowa Lake**				
351	0.00	6.94		State	
State Highway:	**Madras-Prineville**				
360	0.00	26.28	US 26	Region	
State Highway:	**Culver**				
361	0.00	11.62		District	
State Highway:	**O'Neil**				
370	0.00	17.67		District	
State Highway:	**Powell Butte**				
371	0.00	7.57		District	

HWY	BEG MP	END MP	ROUTE NUMBER	1998 SCS	
State Highway:	**Century Drive**				
372	0.00	21.98		District	
State Highway:	**Paulina**				
380	0.00	55.91		District	
State Highway:	**Service Creek-Mitchell**				
390	0.00	24.32	OR 207	District	
State Highway:	**Kimberly-Long Creek**				
402	0.00	34.88		District	
State Highway:	**Sumpter**				
410	0.00	3.71		District	
State Highway:	**Halfway-Cornucopoa**				
413	0.00	11.45		District	
State Highway:	**Pine Creek**				
414	0.00	0.91		District	
State Highway:	**Dooley Mountain**				
415	0.00	36.62	OR 245	District	
State Highway:	**Midland**				
420	0.00	5.65		District	
State Highway:	**Chiloquin**				
422	0.00	5.29		District	
State Highway:	**Chiloquin (Chiloquin Spur)**				
422 Y	4.39 Y	4.58		District	
State Highway:	**South Klamath Falls**				
424	0.00	5.97	OR 140	State	NHS
State Highway:	**East Diamond Lake**				
425	86.00	100.82	OR 138	Region	
State Highway:	**Hatfield**				
426	16.51	18.93	OR 39	State	NHS
State Highway:	**Crescent Lake**				
429	0.00	2.39		District	
State Highway:	**Warner**				
431	0.00	65.28	OR 140	District	

HWY	BEG MP		END MP		ROUTE NUMBER	1998 SCS	
State Highway: Frenchglen							
440	0.00		73.35		OR 205	District	
State Highway: Steens							
442	0.00		91.60		OR 78	Region	
State Highway: Huntington							
449	0.00		11.09		US 30	District	
State Highway: Succor Creek							
450	0.02		20.11		OR 201	District	
State Highway: Succor Creek (Parma Spur)							
450	Y 12.51		Y 15.26			District	
State Highway: Succor Creek (Homedale Spur)							
450	Y 20.11		Y 22.24		OR 201	District	
State Highway: Vale-West							
451	0.00		10.39			District	
State Highway: Adrian-Arena Valley							
453	0.00		3.19			District	
State Highway: Adrian-Caldwell							
454	0.00		5.09			District	
State Highway: Olds Ferry-Ontario							
455	-0.29		25.20		OR 201	District	
455	25.20		27.02		OR 201 / US 30 Bus	District	
455	27.02		31.81		OR 201	State	NHS
State Highway: Olds Ferry-Ontario (Weiser Spur)							
455	Y 11.65		Y 13.66		US 95	District	
State Highway: Olds Ferry-Ontario (Payette Spur)							
455	Y 19.65		Y 21.30		OR 52	District	
State Highway: Olds Ferry-Ontario (Ontario Spur)							
455	Y 27.02		Y 27.73		US 30 / US 30 Bus	State	NHS
455	Y 27.73		Y 28.39		US 30	District	
State Highway: I.O.N.							
456	0.00		121.36		US 95	State	NHS

Not listed above:

- Tualatin-Sherwood Connector has been designated as a NHS route, but has not been constructed.
- Region 3 has requested that "Carpenterville Highway", a frontage road, be given an official highway name and number, and that it be designated as a District highway.

Appendix D: Environmental Laws and Regulations

(BASIC STATE AND FEDERAL ENVIRONMENTAL REGULATIONS, STATUTES, and EXECUTIVE ORDERS applicable to ODOT)

This is not an exhaustive compendium of all environmental regulations; it is a listing of umbrella legislation and regulation for general guidance.

General Process Regulations

National Environmental Policy Act 1969 (NEPA)
40 CFR 1500 et seq. and
Council on Environmental Quality Regulations for the Implementation of NEPA (1978)
40 CFR 1500-1508
The basic national charter for protection of the environment. Requires federal agencies (and their designees) to consider environmental consequences in decision making. Requires the preparation of Environmental Impact Statements or Environmental Assessments.

U.S. DOT Order 5610.1C (1979)
U.S. Department of Transportation's procedures for consideration of NEPA requirements.

FHWA Environmental Impact and Related Procedures (1987)
23 CFR 771
The Federal Highway Administration's regulations for the compliance of NEPA.

FHWA Technical Advisory (1987)
T6640.08
Guidance for the preparation and processing of environmental and Section 4(f) documents. Includes guidance on content.

Section 4(f) for the Department of Transportation Act of 1966
23 CFR 771.135
Requires U.S. DOT agencies to avoid impacts to parklands, recreation property, wildlife and waterfowl refuges, and historic property unless they can demonstrate there are no feasible and prudent alternatives and that all measures to minimize harm have been taken.

Section 4(f) Policy Paper (1987)
An extensive discussion of Section 4(f) (see above) and FHWA's policy on the applicability of Section 4(f) to various resources.

FHWA Environmental Policy (1990, revised 1994)
The FHWA's statement on environmental protection, which guides approval and funding of state DOT actions.

Biology, Water Resources, Wetlands

Federal Endangered Species Act (1973)

50 CFR 402

Requires the protection of federally-designated threatened and endangered animal and plant species. Avoidance of taking individuals or jeopardy to populations is required. Agencies are required under Section 7 to consult with appropriate federal resource agency before taking any action.

Oregon Endangered Species Act (1987)

OAR 603-73...and 496 et seq.

Establishes program for the protection and conservation of wildlife and plant species that are threatened or endangered. Requires state agencies to inventory populations on state lands and establish protection and conservation programs.

Waterway Habitat Policies

ORS 496...506...and 635...

Various Oregon statutes that charge Oregon Department of Fish and Wildlife to protect fish and wildlife habitat.

Executive Order 11990 and
U.S. DOT Order 5660.1A (1977)

23 CFR 777

Declares that it is the policy of the federal government, to the extent possible, to avoid new construction in wetlands and to minimize their destruction.

Clean Water Act (1972, 1977, 1987)

33 USC 1251, 1342 & 1344 and 33 CFR 230 and 40 CFR 131

This umbrella legislation covers the protection of waters of the U.S. to include wetlands. It establishes various programs such as the National Pollution Discharge Elimination System (NPDES) governing pollution point sources, an indirect source control program, and the 404 Process and permits controlling pollution and filling in wetlands and deep water habitat.

Oregon Removal - Fill Law

ORS 196.800 - 196.990

Regulates the removal of material from the beds and banks of, and the filling of, the waters of this state.

Oregon Freshwater Wetland Compensatory Mitigation Rules

OAR 141-85-005 through 141-85-690

Estuarine Mitigation in Oregon Estuaries

OAR 141-85-240 through 141-85-264

Controls the removal and filling of materials in the waters of the state, including wetlands. Requires a review for avoidance, need, and mitigation of effects of fills and removals, particularly in wetlands.

Oregon Mitigation Law
ORS 541.626
Requires mitigation of impacts as a condition of any permit for filling or the removal of material from freshwater, intertidal or tidal marsh area of an Oregon estuary.

Executive Order 11988 and
Location and Hydraulic Design of Encroachments on Floodplains
23 CFR 650 Subpart A (1984)
Federal agencies must avoid adverse impacts associated with the occupancy and modification of floodplains. They must furthermore avoid support of floodplain development wherever there are practicable alternatives.

Executive Memorandum on Environmentally Beneficial Landscaping (1977, 1979)

Oregon Standards and Criteria for Stream-road Crossings
ORS 498.351 and ORS 509.605

Cultural, Social, Land Use, Aesthetics

Executive Order 11593 and
National Historic Preservation Act (1971)
36 CFR et seq. and 36 CFR 66
Establishes national policy to identify and protect cultural resources, historic and archaeological sites. Requires agencies to inventory for significant properties and address impacts. Requires concurrence of State Historic Preservation Officer and the President's Advisory Council on Historic Places before commencing with actions which may impact.

Oregon Scenic and Historic Highways Act (1983)
ORS 377, 100-105
Requires ODOT to identify its most scenic and historic highways and features for purposes of preservation and avoid adversely affecting them unless there is no prudent or feasible alternative to meet transportation needs.

Native American Graves Protection and Repatriation Act (1990)
43 CFR 10
Gives rights to lineal descendants and Indian tribes of human remains, funerary objects, sacred objects or objects of cultural patrimony with which they are affiliated. This and other legislation give a high degree of control to native Americans over archaeological site mitigation and protection.

Oregon Land Use Program and Statewide Planning Goals (1973)
Establishes Oregon's land use planning program. Requires the identification of certain land use categories and natural resources and the development of mechanisms for their protection. Also requires the development of agency land use coordination agreements that spell out how state agencies will pursue their missions while fulfilling the goals of the land use program.

Coastal Zone Management Act (1972)

15 CFR 923 et seq.

Requires actions in the coastal zones to demonstrate consistency with the land use programs to protect coastal features and resource values.

Uniform Relocation Assistance and Real Property Acquisition Act and Civil Rights Act (Title VI) (1970)

49 CFR 24 and 23 CFR 740 et seq.

Identifies policies and procedures to insure that individuals and businesses being relocated as a result of federal actions are fairly and equitably compensated for their homes, business and relocation expenses.

Wild and Scenic Rivers Acts (federal and state)

36 CFR 297

Requires coordination with the federal land management agency or Oregon State Parks and identification of the compatibility of the proposed action with the river management plan. Adverse actions may trigger the provisions of Section 4(f) (see above) and prevent the action unless minimized.

6(f)(3) of Land Water Conservation Act

36 CFR 297

Requires National Park approval of lands acquired with Land Water and Conservation Funds if converted to another use.

Farmland Protection Policy Act (1981)

7 USC 4201

Programs are to minimize the extent to which they contribute to the unnecessary, irreversible, and avoidable conversion of farmland to non-agricultural use.

Executive Order 12898 (Environmental Justice)

Agencies are to evaluate and eliminate programs and actions which disproportionately adversely impact or negatively affect minority and other protected classes and identify methods to better communicate with these groups on proposed actions.

Noise, Air Quality and Hazardous Material

Procedures for the Abatement of Highway Traffic and Construction Noise

23 CFR 772

Establishes FHWA policies on noise analysis, disclosure and mitigation. Supplies noise abatement criteria. Directs the sharing of their information with local government officials for use in planning and design.

Clean Air Act, (1970, last amended 1990), EPA/DOT Conformity Guidance, Air Quality Conformity and Priority Procedures for Use in Federal-Aid Highway and Federally Funded Transit Programs (1984), and Oregon Air Pollution Control laws

42 USC 7401 et seq., 23 USC 109 et seq., 49 USC 1601 et seq., and OAR 340-20-710 et seq.

The Clean Air Act established a national policy on controlling air pollution. The 1990 Amendments to the Clean Air Act attempt to limit air pollution through changes to industrial operations, advanced control technologies, and community action.

Resource Conservation Act and Recovery Act,
Comprehensive Environmental Response, Compensation and Liability Act, and
Guidance for Hazardous Waste Sites Affecting Highway Project Development

PL 94-580, PL 96-510

RCRA and CERCLA set national policy on disposal and treatment of hazardous waste.

Appendix E: Members of Steering and Policy Advisory Committees

Steering Committee

Chair: Steve Corey, Member, Oregon Transportation Commission

Vice-Chair: Tom Schuft, Manager, ODOT Region 5

Christine Andersen, Director, City of Eugene Public Works

Ralph Blanchard, Commissioner, Polk County/Art Schlack, Association of Oregon Counties

Andy Cotugno, Transportation Director, Metro

Cam Gilmour, Manager, ODOT Finance and Administration Operations

Tom Lulay, Deputy Director, ODOT

Robin McArthur-Phillips, Office of the Governor

Curtis McCracken, President, McCracken Motor Freight

John Porter/Anne O'Ryan, AAA Oregon/Idaho

Ron Schaadt/Craig Greenleaf, Manager, ODOT Transportation Development Division

System Definition Committee

Chair: Steve Macnab, Manager, ODOT Region 4

Rex Burkholder, Bicycle Transportation Alliance

Nicholas Fortey, Federal Highway Administration

Terry Harbour, Transportation Development Unit Manager, ODOT Region 3

Mike Hoglund, Transportation Planning Director, Metro

Del Huntington, Access Management Coordinator, ODOT Planning

Dan Moore/Elaine Wray, Rogue Valley Council of Governments

Jon Oshel, Director, Tillamook County Public Works

Norm Paullus, Engineering Superintendent, City of LaGrande

Dave Reinhard, Transportation Engineer, City of Eugene Public Works

Art Schlack, Association of Oregon Counties

Lainie Smith, Urban Growth Management Planner, Department of Land Conservation and Development

Karen Swirsky, Statewide Bicycle/Pedestrian Advisory Committee

Dave Williams, Manager, ODOT Region 1 Planning & Development

System Management Committee

Chair: Gary Johnson, Manager, ODOT Region 2

Daniel Boldt, Director, Wasco County Public Works

Bob Doran/Pat Creedican, District Manager, ODOT Region 4

Erik Havig, Preliminary Design Manager, ODOT Technical Services Branch

Bob Payne, Councilman, City of McMinnville

Louie Pitt, Jr., Governmental Affairs Director, Confederated Tribes of Warm Springs

Anna Russo/Bob Cortright, Department of Land Conservation and Development

Jeff Schieck/John Grassman, State Traffic Engineer, ODOT Traffic Management

Richard Schmid/Barry Hennelly, Transportation Planning Manager, Mid-Willamette Valley Council of Governments

Goran Sparrman/Rob Burchfield, City of Portland Traffic Management

Joe Strahl, Director, Jackson County Roads & Parks Services

Michael Sykes, Assistant Manager, Port of St. Helens

Jerry Thackery, Mayor, City of Redmond

Travel Alternatives Committee

Chair: Paul Norris, Manager, ODOT Planning

G.B. Arrington, Strategic Planning Director, Tri-Met

Keith Bartholomew, Staff Attorney, 1000 Friends of Oregon

Todd Davidson, Manager, Tourism Commission

Chuck Fisher, City of Salem

Lanny Gower, Licensing Manager, CNF Transportation

Von Hemmert, Manager, ODOT Transportation Planning Analysis Unit

Leo Huff, Land Use Manager, ODOT Region 1

Craig Lomnicki, Mayor, City of Milwaukie

Robert McKellar, President, Oregon Forest Products Transportation Association

Allan Rumbaugh, General Manager, Port of Coos Bay

Tom Schwetz, Lane Council of Governments

Greg Smith, Port of Morrow

Susan Walsh-Enloe, Portland and Western Railroad

Dennis Williams, Transportation Services Manager, Roseburg Forest Products

Environmental and Scenic Resources Committee

Chair: Paul Mather, Manager, ODOT Region 3

Sue Chase, Manager, ODOT Salmon Recovery Program

Pieter Dykman, Research Unit Supervisor, ODOT Environmental Services

Paul Edgecomb, Landscape Architect, ODOT Technical Services

Pat Ehrlich, County Road Program Manager, Association of Oregon Counties

Roy Gerig, Conservation Director, Salem Audubon

Pat Moran, Oregon Scenic Byways Coordinator, ODOT Planning

Louie Pitt, Jr., Governmental Affairs Director, Confederated Tribes of Warm Springs

Jim Pollock/Frank Hunsaker, US Forest Service

Janet Porter, Oregon Tourism Commission

Don Richards, Applied Horticultural Consulting

Kathryn Ryan, District Manager, ODOT Region 2

Ken Stoneman, Manager, ODOT Operations Support

Other Major ODOT Contributors

Don Aman, Financial Services
Linda Apple, Planning
Bill Barnett, Region 5
Frannie Brindle, Geo/Hydro
Molly Cary, Region 2
Larry Christianson, Transportation Safety
John deTar, Region 2
Mark DeVoney, Region 4
Victor Dodier, Government Relations
Mark Ford, Policy
Jeff Gower, Pavement
Brian Gregor, Planning
Dick Groff, Bridge
Allison Hamilton, Financial Services
Bonnie Heitsch, Region 2
Claudia Howells, Rail
Kim Hunn, Financial Services
Steve Kale, Planning
Joan Kugler, formerly Region 1
Dan Layden, Region 1
Dave Lutz, Policy
Mazen Malik, Finance
Cole Mullis, Operations Support
Frank Nelson, Bridge
Robin Phillips, Public Transit
Kate Poole, Planning
Michael Ronkin, Bicycle/Pedestrian Program
June Ross, Traffic Management
Martha Sartain, Bridge
Bob Sherman, Planning
Doug Tindall, Office of Maintenance
Jill Vosper, Management Systems
Linda Willnow, Planning