

2008 Transportation System Planning Guidelines

List of Appendices

1. [Transportation Planning Acronyms](#)
2. [Information Resources](#)
3. [Oregon Transportation Plan](#)
4. [Oregon Highway Plan Applicability](#)
5. [Highway Mobility Standards](#)
6. [Transportation Planning Rule](#)
7. [Transportation Growth and Management](#)
8. [Guide to Transportation Finance for Transportation System Plans in Oregon](#)
9. [Transportation Systems Management & Operations](#)
10. [Traffic Volume Forecasting Methodologies](#)
11. [Federal Functional Classification](#)
12. [Access Management](#)
13. [Environmental Considerations for TSPs](#)
14. [Freight](#)
15. [Aviation](#)
16. [Rail](#)
17. [Public Transportation](#)
18. [Degree of Project Readiness Preferred for Project Funding/Project Readiness Matrix](#)

2008 Transportation System Planning Guidelines

Appendix 1 - Transportation Planning Acronyms

Transportation Planning Acronyms (Selected)

Also see the Acronyms and Abbreviations section in the [Planning Resources Handbook](#).

ACT	Area Commission on Transportation
ADA	American with Disabilities Act
ADT	Average Daily Traffic
AMP	Access Management Plan
DEIS	Draft Environmental Impact Statement
DEQ	Department of Environmental Quality (Oregon)
DLCD	Department of Land Conservation and Development (Oregon)
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulations
ESA	Endangered Species Act
FEIS	Final Environmental Impact Statement
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
HOV	High Occupancy Vehicle (lane)
IAMP	Interchange Area Management Plan
ITS	Intelligent Transportation Systems
LCDC	Land Conservation and Development Commission
LOS	Level of Service
MPO	Metropolitan Planning Organization
NEPA	National Environmental Protection Act
NHS	National Highway System
OAR	Oregon Administrative Rule
ODOT	Oregon Department of Transportation
OHP	Oregon Highway Plan
OPTP	Oregon Public Transportation Plan
ORS	Oregon Revised Statute
OTC	Oregon Transportation Commission
OTP	Oregon Transportation Plan
ROW	Right-of-Way
RTP	Regional Transportation Plan
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SDC	System Development Charge
SHPO	State Historic Preservation Office
SIP	(Oregon) State Implementation Plan
SOV	Single-Occupancy Vehicle
STA	Special Transportation Area
STIP	Statewide Transportation Improvement Program
TAC	Technical Advisory Committee
TAZ	Transportation Analysis Zones
TDM	Transportation Demand Management

2008 Transportation System Planning Guidelines

Appendix 1 - Transportation Planning Acronyms

TGM	Transportation and Growth Management (program)
TIP	Transportation Improvement Program
TMA	Transportation Management Area
TOD	Transit Oriented Development
TPR	Transportation Planning Rule
TPAU	Transportation Planning and Analysis Unit (ODOT)
TRB	Transportation Research Board
TSM	Transportation System Management
TSP	Transportation System Plan
UBA	Urban Business Area
UGB	Urban Growth Boundary
USDOT	United States Department of Transportation
V/C	Volume to Capacity (ratio)
VMT	Vehicle Miles of Travel

2008 Transportation System Planning Guidelines

Appendix 2 – Information Resources

Information Resources

Transportation System Plans (TSPs) and TSP updates must be consistent with the following regulations and policies issued since the initial introduction of the TSP Guidelines in 1995:

Transportation Planning Rule (TPR) (See Appendix 4)

http://arcweb.sos.state.or.us/rules/OARS_600/OAR_660/660_01_2.html

Access Management Rules, 2000, OAR 734, Division 51 (See Appendix 10)

http://arcweb.sos.state.or.us/rules/OARS_700/OAR_734/734_051.html

Oregon Transportation Plan

<http://www.oregon.gov/ODOT/TD/TP/ortransplanupdate.shtml>

Modal/Topic elements of the state TSP include:

- Oregon Highway Plan*
- Oregon Public Transportation Plan*
- Oregon Rail Plan*
- Oregon Bicycle and Pedestrian Plan*
- Aviation System Plan*
- Transportation Safety Action Plan*

Oregon Highway Plan, 1999 (See Appendix 3)

<http://www.oregon.gov/ODOT/TD/TP/orhwyplan.shtml>

Includes the following:

- Mobility Standards*
- Major Improvements*
- Expressways*
- Special Transportation Areas*
- Commercial Centers*
- Urban Business Areas*

Oregon Public Transportation Plan, 1997 (See Appendix 15)

<http://www.oregon.gov/ODOT/TD/TP/OPTP.shtml>

Oregon Aviation Plan, 2000 (See Appendix 13)

<http://www.oregon.gov/Aviation/docs/resources/OregonAviationPlan.pdf>

2008 Transportation System Planning Guidelines

Appendix 2 – Information Resources

Executive Order 12898 on Environmental Justice for Minority and Low Income Populations; USDOT Order 56102 and FHWA Order 6640.23.

<http://www.epa.gov/fedrgstr/eo/eo12898.pdf>

http://www.fhwa.dot.gov/legregs/directives/orders/6640_23.htm

Agency contacts that can provide valuable assistance in the preparation of a TSP are listed on ODOT's website <http://www.oregon.gov/ODOT/TD/TP/resourcelinks.shtml>. Some of these resources are listed below:

ODOT

<http://www.oregon.gov/ODOT/index.shtml>

Region 1 Planning (Portland)

503-731-8200

<http://www.oregon.gov/ODOT/HWY/REGION1/>

Region 2 Planning (Salem)

503-986-2600

<http://www.oregon.gov/ODOT/HWY/REGION2/>

Region 3 Planning (Roseburg)

541-774-6388 (Jackson and Josephine counties)

541-957-3656 (Douglas, Coos and Curry counties)

<http://www.oregon.gov/ODOT/HWY/REGION3/>

Region 4 Planning (Bend)

541-388-6180

<http://www.oregon.gov/ODOT/HWY/REGION4/>

Region 5 Planning (La Grande)

541-963-3177

<http://www.oregon.gov/ODOT/HWY/REGION5/>

Bicycle & Pedestrian Program

503-986-3555

<http://www.oregon.gov/ODOT/HWY/BIKEPED/index.shtml>

Geo-Environmental Section

503-986-4200

<http://www.oregon.gov/ODOT/HWY/GEOENVIRONMENTAL/>

ODOT Transportation Development Division (Planning) Salem

503-986-4121

<http://www.oregon.gov/ODOT/TD/TP/>

2008 Transportation System Planning Guidelines

Appendix 2 – Information Resources

Public Involvement Program

888-275-6368

<http://www.oregon.gov/ODOT/involvement.shtml>

Public Transit Division

503-986-3300

<http://www.oregon.gov/ODOT/PT/index.shtml>

Rail Division

503-986-4321

<http://www.oregon.gov/ODOT/RAIL/index.shtml>

STIP Development

503-986-4124

<http://www.oregon.gov/ODOT/HWY/STIP/index.shtml>

Transportation Planning Analysis Unit (Salem)

503-986-4121

<http://www.oregon.gov/ODOT/TD/TP/TPAU.shtml>

Department of Land Conservation and Development

503-373-0050

<http://www.lcd.state.or.us/>

Appendix 3 – Oregon Transportation Plan

Oregon Transportation Plan

Overview

The 2006 Oregon Transportation Plan (OTP) is the state's long-range multimodal transportation plan and overarching policy document among a series of plans that together form the state transportation system plan. The OTP considers all modes of transportation as a single system and addresses the future needs of Oregon's airports, bicycle and pedestrian facilities, highways and roadways, pipelines, ports and waterway facilities, public transportation and railroads through 2030. It assesses state, regional, and local public and private transportation facilities. The OTP establishes goals, policies, strategies and initiatives that address the core challenges and opportunities facing transportation in Oregon. The OTP provides the framework for prioritizing transportation improvements based on varied future revenue conditions, but it does not identify specific projects for development.

The 2006 OTP supersedes the 1992 Oregon Transportation Plan and builds on its vision of a balanced, multimodal transportation system and an increased role in non-highway investments. The 2006 OTP furthers these objectives with emphasis on maintaining the assets in place, optimizing the existing system performance, creating sustainable funding and investing strategically in capacity enhancements.

OTP Goals

The OTP encompasses seven goals which are defined by more specific policies (listed below) and strategies (not shown):

Goal 1– Mobility and Accessibility

To enhance Oregon's quality of life and economic vitality by providing a balanced, efficient, cost-effective and integrated multimodal transportation system that ensures appropriate access to all areas of the state, the nation and the world, with connectivity among modes and places.

Policy 1.1 – Development of an Integrated Multimodal System

Policy 1.2 – Equity, Efficiency and Travel Choices

Policy 1.3 – Relationship of Interurban and Urban Mobility

Goal 2– Management of the System

To improve the efficiency of the transportation system by optimizing the existing transportation infrastructure capacity with improved operations and management.

Policy 2.1 – Capacity and Operational Efficiency

Policy 2.2 – Management of Assets

Goal 3– Economic Vitality

To promote the expansion and diversification of Oregon's economy through the efficient and effective movement of people, goods, services and information in a safe, energy-efficient and environmentally sound manner.

Policy 3.1 – An Integrated and Efficient Freight System

Policy 3.2 – Moving People to Support Economic Vitality

Policy 3.3 – Downtowns and Economic Development

2008 Transportation System Planning Guidelines

Appendix 3 – Oregon Transportation Plan

Goal 4– Sustainability

To provide a transportation system that meets present needs without compromising the ability of future generations to meet their needs from the joint perspective of environmental, economic and community objectives. This system is consistent with, yet recognizes differences in, local and regional land use and economic development plans. It is efficient and offers choices among transportation modes. It distributes benefits and burdens fairly and is operated, maintained and improved to be sensitive to both the natural and built environments.

Policy 4.1 – Environmentally Responsible Transportation System

Policy 4.2 – Energy Supply

Policy 4.3 – Creating Communities

Goal 5 – Safety and Security

To plan, build, operate and maintain the transportation system so that it is safe and secure.

Policy 5.1 – Safety

Policy 5.2 – Security

Goal 6– Funding the Transportation System

To create a transportation funding structure that will support a viable transportation system to achieve state and local goals today and in the future.

Policy 6.1 – Funding Structure

Policy 6.2 – Achievement of State and Local Goals

Policy 6.3 – Public Acceptability and Understanding

Policy 6.4 – Beneficiary Responsibilities

Policy 6.5 – Triage in the Event of Insufficient Revenue

Goal 7 – Coordination, Communication and Cooperation

To pursue coordination, communication and cooperation among transportation users, providers and those most affected by transportation activities to align interests, remove barriers and bring innovative solutions so the transportation system functions as one system.

Policy 7.1 – A Coordinated Transportation System

Policy 7.2 – Public/Private Partnerships

Policy 7.3 – Public Involvement and Consultation

Policy 7.4 – Environmental Justice

Implementation

The OTP is implemented over the long-term in a variety of ways. Some of the implementation actions include OTC initiatives, potential legislation, multimodal and modal/topic plan development, updates and refinement, various ODOT efforts, project development, partnerships among federal and state agencies, MPOs, local governments, organizations and the private sector, as well as public involvement and consultation. These actions will further refine and apply the OTP's broad policy direction to activities across the state.

Appendix 3 – Oregon Transportation Plan

Investment Scenarios

Three investment scenarios were developed, each with a different funding level, to provide a framework for decision-making based on the amount of available funds. The investment scenarios are based on the OTP needs analysis, Plan goals, policies and strategies, and OTP policy analysis work that evaluated the potential impacts of policies or future conditions on Oregon's transportation system, economy and land use.

- ❑ Investment Scenario Level 1, Response to Flat Funding, includes the adjustments necessary if there are no additional transportation funds available. This level emphasizes preservation and operational improvements to maximize system capacity, yet even these improvements would have to be triaged. By 2030, inflation alone would reduce spending power by 40-50 percent.
- ❑ Investment Scenario Level 2, Maintaining and Improving Existing Infrastructure and Services, preserves existing facilities and services and keeps up with inflation. This preservation strategy holds existing facilities and services at their current performance levels to the extent possible. It addresses some bottlenecks and puts additional funding into operations to preserve capacity, but does not include major capacity-enhancing improvements.
- ❑ Investment Scenario Level 3, Expanding Facilities and Services, includes major investment in new infrastructure. It represents feasible needs, that is, funding that maintains the system at a slightly more optimal level than current levels, replaces infrastructure and equipment on a reasonable life-cycle, brings facilities up to standard or adds capacity in a reasonable way. It does not bring all infrastructure up to standard or meet all needs for capacity and/or services.

Key Initiatives

The OTP Steering Committee developed the key initiatives to provide a quick sense of the direction of the Plan. These initiatives help frame plan implementation and a general direction for updating modal/topic plans. They are not intended to override the direction of the goals and policies.

- ❑ Maintain the existing transportation system to maximize the value of the assets. If funds are not available to maintain the system, develop a triage method for investing available funds.
- ❑ Optimize system capacity and safety through information technology and other methods.
- ❑ Integrate transportation, land use, economic development and the environment.
- ❑ Integrate the transportation system across jurisdictions, ownerships and modes.
- ❑ Create a sustainable funding plan for Oregon transportation.
- ❑ Invest strategically in capacity enhancements.

Additional Information

For more information, visit the Oregon Transportation Plan web site at <http://www.oregon.gov/ODOT/TD/TP/ortransplanupdate.shtml> or contact:

TDD Long Range Planning Unit
<http://www.oregon.gov/ODOT/TD/TP/LRPU.shtml>

Appendix 4 – Oregon Highway Plan Applicability

Oregon Highway Plan Applicability

The 1999 Oregon Highway Plan (OHP) establishes long-range policies and investment strategies for the State Highway System. The Oregon Transportation Commission adopted the Highway Plan on March 18, 1999 and it was last amended January 2006. Under the Transportation Planning Rule, regional and local transportation system plans must be consistent with the state transportation system plan, including the Highway Plan. The Policy Element of the OHP can be found online at:

<http://www.oregon.gov/ODOT/TD/TP/docs/orhwyplan/hwyplan/PolicyElement.pdf>. It lists specific OHP Policies, the objective of the given policy, and some of the issues that should be addressed in a local or regional TSP.

Policy 1 A – State Highway Classification

Purpose

The state uses a classification system to identify different types of state highway facilities by their intended function in order to guide planning, management, and investment decisions.

- Interstate Highways provide high speed, continuous flow travel, and primarily serve through-trips and connections for regional trips.
- Statewide Highways provide high speed, continuous flow travel for inter-urban and inter-regional trips between urban areas and recreational destinations.
- Regional Highways provide links between regional centers and economic activity centers, with continuous, high speed flows in rural areas and moderate to high speed flows in urban areas.
- District Highways are facilities of county-wide significance and typically function as city or county arterials or collectors.

Issues to be Addressed

- Reflect highway classifications in local plans;
- Identify any state designated Expressways in local TSP;
- Plan local network improvements that will keep unnecessary trips off of state facilities to maintain highway function consistent with its classification.

Policy 1 B – Land Use and Transportation

Purpose

This policy recognizes that state highways serve as the main streets of many communities. The policy provides a framework to address the relationship between through-traffic mobility and local accessibility. The highway system's ability to maintain both mobility and accessibility depends in large part on community land use patterns and the management of access to local land uses.

Issues to be Addressed

- Develop plans that support compact development and protect the highway function and mobility.
- Develop access management plans.

2008 Transportation System Planning Guidelines

Appendix 4 – Oregon Highway Plan Applicability

- ODOT and local government work together to identify and designate highway segments; e.g., Expressways, STAs, Commercial Centers, Urban Business Areas.
- Plan for a local network of streets, bicycle and pedestrian facilities that preserves state highways for their intended functions, as indicated by the highway classification.

Policy 1 C – State Highway Freight Systems

Purpose

This policy recognizes the importance of maintaining efficient through-movement on state designated freight routes in order to balance the need for movement of goods with other uses of the highway system.

Issues to be Addressed

- Balance freight needs with needs for local circulation, safety and access.
- Consider designating state freight routes as expressways, particularly where routes are outside UGBs and unincorporated communities.

Policy 1 F – Highway Mobility Standards

Purpose

To maintain acceptable and reliable levels of mobility on the state highway system. Performance standards expressed as volume-to-capacity ratios are specified (OHP Table 6 and Table 7) to set an upper level of use for highway facilities that will preserve the intended function of the facility, as identified by the highway classification.

Issues to be Addressed

- Apply appropriate mobility standards to all state highway sections.
- Apply standards over a 20-year planning horizon in TSPs, corridor plans and other facility plans.
- Where it is infeasible to meet the mobility standards, one option is to develop alternate highway mobility standards which must be approved by the Oregon Transportation Commission. Alternative mobility standards must be supported by a plan adopted as part of a local or regional TSP.
- Where it is infeasible to meet the OHP mobility standards, the standard is to improve performance where possible and avoid further degradation.

Policy 1 G – Major Improvements

Purpose

Working in partnership with regional and local governments to address highway performance and safety needs, improve system efficiency and management before adding capacity. Road construction is expensive and funding is very limited. Policy 1 G prioritizes improvements for use in developing transportation system plans, corridor plans, the Statewide Transportation Improvement Program, and project plans to respond to transportation needs.

2008 Transportation System Planning Guidelines

Appendix 4 – Oregon Highway Plan Applicability

Issues to be Addressed

Use OHP priorities for developing TSPs and other plans to respond to highway needs. Implement higher priority measures first:

- Protect existing system;
- Improve efficiency and capacity of existing highway facilities;
- Add capacity to existing system;
- Propose major improvements only after comprehensive planning analysis.

ODOT will support major improvements to state highway facilities in local transportation system plans only if the improvements meet the conditions in Policy 1 G.2. (See the Oregon Highway Plan, Policy 1 G.2 for the complete list of conditions.)

Policy 2G – Rail and Highway Compatibility

Purpose

To increase safety and transportation efficiency through reduction and prevention of conflicts between railroad and highway users.

Issues to be Addressed

- Eliminate crossings at grade where possible.
- Design highway projects to avoid/reduce rail crossings at grade.
- Coordinate highway design, construction, resurfacing and traffic signals affecting rail crossings.
- Address pedestrian/bicycle access issues and design concerns when designing grade-separated crossings.

Goal 3– Access Management

Purpose

- To institute consistent practice statewide managing the location, spacing and type of road/street intersections/approach roads to ensure the safe/efficient operation of state highways, consistent with their classification.
- To plan for the location of medians and openings to enhance the efficiency and safety of the highways.
- To influence and support land use development patterns that are consistent with approved transportation system plans.
- This goal also calls for managing grade-separated interchange areas to ensure safe and efficient operation between connecting roadways.

Issues to be Addressed

- Evaluate potential access management strategies and adopt an access management plan that meets local needs and is consistent with state standards and policies.
- Manage access to state highways based on the access management classifications contained in Action 3A.1.
- Establish spacing standards on state highways based on highway classification, type of area and speed based on Tables 13, 14 and 15 in Appendix C of the Oregon Highway Plan. (See Action 3A.2.)

2008 Transportation System Planning Guidelines

Appendix 4 – Oregon Highway Plan Applicability

- Plan for a level of median control for safe and efficient operation of state highways, consistent with the classification of the highway. (See Policy 3.B.)
- Develop interchange area management plans to protect the function of interchanges. (See Policy 3.C.)
- Meet the requirements of OAR 734-051 Sections 0010 through 0480 on Highway Approaches, Access Control, Spacing Standards and Medians, and Section 0360, Access Management Plans.
[http://arcweb.sos.state.or.us/rules/OARS 700/OAR 734/734 051 .html](http://arcweb.sos.state.or.us/rules/OARS%20700/OAR%20734/734%20051.html)
- Meet the requirements OAR 660-012 (Transportation Planning Rule) Section 0045 (adopt land use or subdivision ordinances that include access control measures that are consistent with the functional classifications of roads).
[http://arcweb.sos.state.or.us/rules/OARS 600/OAR 660/660 01 2.html](http://arcweb.sos.state.or.us/rules/OARS%20600/OAR%20660/660%2001%202.html)

Policy 4A – Efficiency of Freight Movement

Purpose

To maintain and improve the efficiency of freight movement on the state highway system and access to intermodal connections. This policy seeks to balance the needs of long distance and through-freight movements with local transportation needs.

Issues to be Addressed

- Identify obstacles and barriers to efficient truck movements.
- Plan for intermodal facilities to support passenger and freight improvements.
- Support maintenance/improvement of non-highway infrastructure that provides alternative freight-moving capacity in critical corridors where it will maintain/improve overall performance of the highway system.

Policy 4D – Transportation Demand Management

Purpose

To support the efficient use of the state transportation system through investment in Transportation Demand Management (TDM) strategies. (See TSP Guidelines Appendix 7.)

Issues to be Addressed

- Establish/support TDM strategies that reduce peak period single occupancy vehicle travel, move traffic demand out of peak period and/or improve flow of traffic on the state highway system.
- Support existing TDM/rideshare programs to reduce peak period congestion.

Appendix 5 – Highway Mobility Standards

Highway Mobility Standards

Overview

The OHP establishes highway mobility standards to maintain acceptable and reliable levels of mobility on the state highway system. Mobility standards have three primary uses: identifying state highway mobility performance expectations for planning and plan implementation, evaluating the impacts on state highways from local plan amendments and zone changes pursuant to the TPR, and guiding operations decisions. OHP mobility standards are measured using volume to capacity ratios (v/c) for state highway type and location. Volume to capacity ratios are neutral as to whether solutions to mobility deficiencies should be addressed by actions that reduce highway volumes or increase highway capacities.

To help address concerns that mobility standards may have the unintended effect of discouraging development in downtowns and central business districts where facilities are near capacity and encouraging development in urban fringe areas where capacity is available, the OHP takes several actions. Mobility standards vary by type of area, allowing for more congestion in established and highly developed urban areas, Special Transportation Areas (STAs), and on highways that are less critical for long-distance through travel. Conversely, the OHP protects higher levels of mobility on interstates, statewide highways and freight routes through more stringent mobility standards. The OHP also allows for an alternate mobility standard process summarized in the next section.

Alternate Mobility Standards

In determining needs in a TSP it may become evident that it would be infeasible to meet the OHP mobility standards on a state highway. One approach that may be considered in that circumstance is the adoption of an alternate mobility standard, as provided for in the 1999 Oregon Highway Plan (OHP) Action 1F.3.

The OHP establishes provisions for considering alternate mobility standards to those currently adopted in the Plan. The OHP (Policy 1F) should be consulted for full provisions and processes on alternate mobility standards. In short, the OHP conveys:

- ❑ *Where it would be infeasible to meet the established standards, consider adopting alternate highway mobility standards for metropolitan areas or portions thereof to support an integrated land use and transportation plan, in STAs, or in areas of severe environmental or land use constraints.*
- ❑ *The alternate standards shall be related to v/c (e.g., corridor-average v/c, network-average v/c, and the ratio of average daily traffic and hourly capacity (adt/c)). The standards shall be adopted as part of a regional and/or local transportation system plan. The plan shall demonstrate that it would be infeasible to meet the highway mobility standards in the OHP. In addition, the plan shall include all feasible actions for:*
 - *Providing a local street network to relieve traffic demand on state highways and to provide convenient pedestrian and bicycle connections;*
 - *Managing access and traffic operations to make the most efficient use of highway capacity;*

Appendix 5 – Highway Mobility Standards

- *Managing traffic demand, where feasible, to manage peak hour traffic loads on state highways;*
- *Providing alternative modes of transportation; and*
- *Managing land use to limit vehicular demand on state highways consistent with OHP Policy 1B, Land Use and Transportation.*
- *The plan shall include a financially feasible implementation program and shall demonstrate strong public and private commitment.*
- *In metropolitan areas, the alternate highway mobility standards must be approved by the metropolitan planning organization (MPO) and adopted by the Oregon Transportation Commission (OTC). Outside of metropolitan areas, the alternate highway mobility standards will become effective after the OTC has adopted them as part of an ODOT planning process.*

Current Examples

Alternate mobility standards have been approved for the Portland metropolitan area and on a temporary basis in the Rogue Valley MPO area. The alternate standards for the Portland area were adopted with an understanding of the unique context and policy choices made by local governments in the area including a legally enforceable regional plan prescribing minimum densities, mixed use development and multimodal transportation options; high capacity transit provided along critical corridors; an Advanced Traffic Management System to improve system operations; and an air quality attainment/maintenance plan relying heavily on reducing auto trips through land use changes and increased transit.

The alternate standards were granted to the Portland metropolitan area with a mutual understanding that reduced mobility standards will result in congestion that will not be reduced by state highway improvements.

In the Rogue Valley MPO area, temporary standards were adopted for specific highway locations until construction of a planned highway project addresses the capacity issues on a long term basis. A number of actions were developed as part of the proposal to consider the alternate standards including minor facility improvements to benefit operations as well as policy decisions and other actions addressing the local transportation network, system operations, access management, providing travel options, promoting the use of alternative modes, and strengthening land use strategies that lower vehicle demand.

Alternate standards can also be considered to further protect the capacity of a facility for future development as has been done around several interchanges.

Future Guidance

ODOT is currently developing guidance that clarifies processes, options and tools to assist local jurisdictions in meeting highway mobility standards and in considering alternate mobility standards. This TSP Guideline Appendix will be updated upon completion of the additional guidance.

2008 Transportation System Planning Guidelines

Appendix 6 – Transportation Planning Rule (TPR)

Transportation Planning Rule (TPR)

The Transportation Planning Rule (TPR) was adopted in 1991 by the Land Conservation and Development Commission (LCDC) with the concurrence of the Oregon Department of Transportation (ODOT). The TPR implements Statewide Goal 12 on Transportation. Key amendments to the TPR were adopted by LCDC in 1995 and in 2005-06.

The TPR requires that Oregon jurisdictions prepare Transportation System Plans.

Below is a brief summary of the TPR sections that are most pertinent to the preparation of a Transportation System Plan. The entire text of the TPR can be found at:

http://arcweb.sos.state.or.us/rules/OARS_600/660/012.html.

660-012-0000 Purpose of the Transportation Planning Rule

- Implements Statewide Planning Goal 12 on Transportation.
- Directs transportation planning in coordination with land use planning.
- Balances vehicular use with other transportation modes.
- Provides for safe and convenient vehicular, transit, pedestrian and bicycle access and circulation.
- Facilitates the safe, efficient and economic flow of freight and other goods and services within regions and throughout the state.
- Protects existing and planned facilities, corridors and sites for their identified functions.
- Provides for the construction and implementation of transportation facilities, improvements and services necessary to support acknowledged comprehensive plans.
- Identifies how transportation facilities are provided on rural lands consistent with goals.
- Recognizes that planning will vary depending on community size, needs and circumstances.

660-012-0010 Transportation Planning

- Distinguishes transportation system planning from transportation project development.
- Describes transportation system planning in terms of establishing land use controls and a network of facilities and services to meet overall transportation needs.
- Describes transportation project development in terms of implementing the TSP by determining the precise location, alignment, and preliminary design of improvements included in the TSP.

2008 Transportation System Planning Guidelines

Appendix 6 – Transportation Planning Rule (TPR)

660-012-0015 Preparation and Coordination of Transportation System Plans

- Describes the various levels of government within Oregon that are required to prepare TSPs.
- Requires that the preparation of TSPs be coordinated among the various levels of government within Oregon, with special districts and private transportation providers, and with the Federal Government.

660-012-0016 Coordination with Federally-Required Regional Transportation Plans in Metropolitan Areas

- Requires, in metropolitan areas, that local governments prepare, adopt, amend and update TSPs in coordination with Regional Transportation Plans (RTPs) prepared by MPOs.

660-012-0020 Elements of Transportation System Plans

- Requires that a TSP include specific plan elements:
 - A determination of transportation needs.
 - Road Plan.
 - Public Transportation Plan.
 - Bicycle and Pedestrian Plan.
 - Air, rail, water and pipeline transportation plan.
 - Plan for transportation system management and transportation demand management (areas within an urban area that contains over 25,000 in population).
 - Parking Plan (MPO areas).
 - Policies and land use regulations for implementing a TSP.
 - Transportation Financing Program (areas within an urban area that contains over 2,500 in population).

660-012-0030 Determination of Transportation Needs

- Requires that the TSP identify transportation needs relevant to the planning area and the scale of the transportation network being planned.

660-012-0035 Evaluation and Selection of Transportation System Alternatives

- Requires that the TSP be based upon the evaluation of system alternatives that can reasonably be expected to meet transportation needs in a safe manner and at reasonable cost with available technology.
- Requires consideration of:
 - Improvements to existing facilities and services.

2008 Transportation System Planning Guidelines

Appendix 6 – Transportation Planning Rule (TPR)

- New facilities and services.
- Transportation system management measures.
- Demand management measures.
- A no-build system alternative.
- A land use alternative (required for MPO areas of 1,000,000 in population).

660-012-0040 Transportation Financing Program

- Requires a transportation financing program for communities greater than 2,500 in population that includes:
 - A list of planned transportation facilities and major improvements.
 - A general estimate of the timing for planned transportation facilities and major improvements.
 - A determination of rough cost estimates for the transportation facilities and major improvements identified in the TSP.

660-012-045 Implementation of the Transportation System Plan

- Requires each local government to amend its land use regulations to implement the TSP.
- Requires local government to adopt land use or subdivision ordinance regulations consistent with applicable federal and state requirements, to protect transportation facilities, corridors and sites for their identified functions.

660-012-0050 Transportation Project Development

- Requires coordination among affected governments.
- Addresses how a transportation facility or improvement authorized in a TSP is designed and constructed.
- States that during project development, projects authorized in an acknowledged TSP shall not be subject to further justification with regard to their need, mode, function or general location.
- States that a project is authorized in a TSP where the TSP makes decisions about transportation need, mode, function and general location for the facility or improvement.

660-012-0055 Exemptions

- Allows for whole or partial exemptions from the requirements of the TPR for:
 - Cities under 10,000 in population.
 - Counties under 25,000 in population.

2008 Transportation System Planning Guidelines

Appendix 6 – Transportation Planning Rule (TPR)

660-012-0060 Plan and Land Use Regulation Amendments

- Requires local governments to put in place measures where a plan or zone amendment would significantly affect an existing or planned transportation facility.
- Provides a menu of remedies to restore the balance between transportation and land uses.

Note: For additional information on Section 0060, see the TPR Guidelines, available at: <http://www.oregon.gov/ODOT/TD/TP/docs/TPR/tprGuidelines.pdf>.

660-012-0065 Transportation Improvements on Rural Lands

- Identifies transportation facilities, services and improvements which may be permitted on rural lands consistent with Goals 3, 4, 11 and 14 without a goal exception.

660-012-0070 Exceptions for Transportation Improvements on Rural Land

- Describes facilities and improvements that require an exception to be sited on rural lands.

2008 Transportation System Planning Guidelines

Appendix 7 - Transportation and Growth Management (TGM) Program

Transportation and Growth Management (TGM) Program Work Scope Recommendations for Key TSP Elements

Local Street Network Planning

Objective

Adopt plan policies, ordinance standards and, where possible, maps that assure existing and new streets will be extended and connected to provide direct and convenient routes for bicyclists and pedestrians to typical neighborhood destinations.

TPR Requirements (OAR 660-012)

- 020(2)(b) Road Plan
- 045 (3)(b) Bike and Pedestrian Circulation

Key Tasks

- Identify neighborhood activity centers and other local destinations (schools, parks, shopping, etc.).
- Map existing local streets and accessway network.
- Identify/map where connections or extensions are needed to provide direct convenient routes.
- Develop map and policies and standards for street connections and extensions.
- Investigate ways to provide bike and pedestrian circulation consistent with access management standards, such as right-in right-out, closed medians, etc.
- Review subdivision and ordinance standards for new streets to promote smaller blocks and limit cul-de-sacs consistent with the TPR.

Coordination and Public Involvement

- Coordinate with ODOT on access spacing along state highways and evaluate alternatives (such as medians, or right turn only restrictions).
- Meet with neighborhoods, the public, school districts and others to identify pedestrian circulation needs.

Products

- Map of planned local street extensions and connections (showing which properties planned local streets will cross).
- Policies and ordinances requiring connection and extension of local streets as new development is allowed.
- Proposed revisions to subdivision and development codes that require street connections as set forth in the street plan, smaller blocks and that limit cul-de-sacs consistent with the TPR.

Information Sources

- Creating livable streets: Street design guidelines for 2040
<http://www.metro-region.org/index.cfm/go/by.web/id=235>
- APA Planning for Street Connectivity
<http://www.planning.org/APAStore/Search/Default.aspx?p=2426>

2008 Transportation System Planning Guidelines

Appendix 7 - Transportation and Growth Management (TGM) Program

- TGM Street Connectivity Brief
http://darkwing.uoregon.edu/~cpw/projects/pdf/featured/tgm_2003/educational%20materials/Street%20Connectivity%20Brief.pdf
- Residential Streets, Third Edition by Walter Kulash (2001, Am Soc Civil Eng)

Planning for Bicycle and Pedestrian Improvements

Objective

Develop a list of bicycle and pedestrian improvements including sidewalks, bikeways, crossing improvements, and accessways to provide adequate facilities for bike and pedestrian travel.

TPR Requirements

- 020(2)(d) Bicycle and Pedestrian Plan.
- 045(3)(b) Pedestrian, bicycle and vehicular circulation that is consistent with access management standards and the function of affected streets.

Key Tasks

- Identify important bicycle and pedestrian routes to typical neighborhood destinations.
- Inventory/map existing bicycle and pedestrian improvements (sidewalks, bikeways) along important bicycle and pedestrian routes.
- Prepare a list of needed improvements, e.g. where sidewalks, bikeways, accessways, and crossing improvements are needed (identify type of improvement, location, length, estimated cost).
- Adopt plan policies to upgrade bicycle and pedestrian facilities.
- Adopt TSP/CIP list of needed bike improvements.

Coordination and Public Involvement

Meet with neighborhood groups, public, school districts, etc. to identify bicycle and pedestrian facility improvements such as:

- Striping of bicycle lanes.
- Addition of sidewalks.
- Repair of sidewalks.
- Addition of crossing improvements.
- Shoulder or roadway widening.
- Improvement of accessways, walkways or sidewalks across school ground or parks, etc.

Products

List of planned bike and pedestrian improvements, including:

- Adding or improving sidewalks.
- Adding bicycle lanes and bikeways.
- Adding or improving accessways and trails.
- Providing street crossing improvements: crosswalks, signals, lighting, traffic calming through bulbouts, raised crossings, etc.

2008 Transportation System Planning Guidelines

Appendix 7 - Transportation and Growth Management (TGM) Program

Information Sources

- Oregon Bicycle and Pedestrian Plan (ODOT)
http://www.oregon.gov/ODOT/HWY/BIKEPED/docs/bp_plan_2.pdf
- Complete the Streets, <http://www.completestreets.org/>
- Effective Utilization of Street Width on Urban Arterials NCHRP Report 330 (NCHRP-TRB)
- Walking Info <http://www.walkinginfo.org/>

Consider Reducing Standards for Local Streets

Objective

Consider standards for local street width and right of way to make streets that are safer, slower, conducive to walking and biking, livable, less expensive to build and maintain, and use less developable land.

TPR Requirements

0045(7) Consider minimizing pavement width and right-of-way consistent with the operational needs of the facility.

Key Tasks

- Review existing street standards to identify excessive standards.
- Identify alternative standards.
- Identify technical issues and concerns with reduced standards.
- Analyze and respond to concerns.
- Develop recommended street standards for local streets.

Coordination and Public Involvement

- Involve neighborhoods, local development community, fire and emergency service providers, garbage service, school bus provider, bicycle and pedestrian advocates, local safety committee.
- Provide background information and education on skinny streets in other communities.
- Address related street design issues: street trees, front yard setbacks.
- Coordinate with DLCDC (especially if jurisdiction is moving towards adopting something wider than in the Neighborhood Street Design Guidelines).

Products

Proposed revisions to local street standards with reduced standards for:

- Right of way width.
- Improved street width.
- Front yard setback.
- Curb return radius.
- Lot frontage.

Add standards allowing:

- Traffic calming measures; curb extensions, speed bumps.
- Alleys.
- Narrow, short or low volume streets.

2008 Transportation System Planning Guidelines

Appendix 7 - Transportation and Growth Management (TGM) Program

Revise standards that favor unconnected streets, allowing narrower street or lot widths for dead ends or cul-de-sacs.

Information Sources

- [Neighborhood Street Design Guidelines \(www.oregon.gov/LCD/TGM/publications.shtml\)](http://www.oregon.gov/LCD/TGM/publications.shtml)
- [Implementing the TPR: Narrow Streets \(www.oregon.gov/LCD/TGM/publications.shtml\)](http://www.oregon.gov/LCD/TGM/publications.shtml)
- Pavement Busters Guide (www.vtpi.org)
- Skinny Streets and Fire Trucks (ULI Urban Land, August 2007 - http://www.smartgrowth.umd.edu/pdf/ULI_SkinnyStreets.pdf)
- Street Design Guidelines for Healthy Neighborhoods (www.lgc.org)
- Emergency Response, Traffic Calming and Traditional Neighborhood Streets (www.lgc.org)
- Geometric Design of Highways and Streets, Page 392 (AASHTO)
- Residential Streets (www.uli.org)
- Federal Highway Administration <http://www.fhwa.dot.gov/planning/index.htm>
- Institute of Transportation Engineers <http://www.ite.org/planning/default.asp>
- Residential Street Design and Traffic Control (ITE)
- Roadway Widths for Low Traffic Volume Roads (NCHRP-TRB, Report 362)

Bike, Pedestrian-Friendly Development Ordinances

Objective

Amend local zoning and development ordinances to assure that new developments are laid out in a manner which provides safe, convenient and attractive routes and facilities for bike and pedestrian circulation.

TPR Requirements

0045(3) Adopt land use or subdivision regulations that provide for safe and convenient bike and pedestrian circulation in urban areas and rural communities.

Key Tasks

Amend local zoning and development ordinances to:

- Provide convenient bike and pedestrian circulation in neighborhoods.
- Require bicycle parking at most new developments.

Coordination and Public Involvement

Meet with local developers and neighborhood groups, including minority and low-income neighborhoods.

Products

Policies requiring new development to be bike and pedestrian friendly

Subdivision and development code amendments that:

- Require bikeways on arterials and major collectors.
- Provide sidewalks on arterials, collectors, and most local streets.

2008 Transportation System Planning Guidelines

Appendix 7 - Transportation and Growth Management (TGM) Program

- Require new development to provide an adequate network of streets and accessways for bike and pedestrian circulation.
- Require bike parking.
- Address cul-de-sacs consistent with TPR 0045(3)(C).

Information Sources

- TGM Model Development Code
<http://www.oregon.gov/LCD/TGM/docs/modelCode05/pdf/art3.pdf>
- Model Smart Land Development Regulations
<http://www.planning.org/smartgrowthcodes/>

Appendix 7 - Transportation and Growth Management (TGM) Program

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Appendix 8 - Guide to Financing Projects in Transportation System Plans

Guide to Financing Projects in Transportation System Plans

Information included in this appendix is designed to help transportation planners develop financial plans for TSPs, consistent with the direction in Step 15 of Transportation System Planning Guidelines 2008. The guidance in this appendix addresses:

- Principles for the development of financially realistic TSP Project Lists.
- The range of available Federal and State funding sources for transportation projects.
- Assumptions that can be used to estimate future transportation revenue from Federal, State and Local Sources.
- Inflation rates used by ODOT for the 2010-2013 STIP

Background

Funding has been and continues to be problematic for transportation. There simply is not sufficient funding available to meet State and Local needs in Oregon. Accordingly, communities must carefully manage funding that is available to them and develop mechanisms to generate additional funds. This theme is reflected in Step 15 of the Guidelines and elaborated upon in this appendix. In preparing TSP Project Lists, the principles shown below should be considered.

Principles for Developing Financially Realistic TSP Project Lists

- Available funding is not likely to be sufficient to meet the needs identified in the “Illustrative” or “Preferred Plan” scenario and may not be sufficient to meet the needs identified in the “Transportation Revenue Forecast Scenario”.
- Project lists for both scenarios should be shown in priority order so that those projects most important to a community have the best chance for being funded.
- Project costs and anticipated funding should be estimated for the expected year of construction and should be adjusted for inflation.
- Communities should consider strategically programming available transportation funding to maximize its use. Restrictive funding sources should be used for those projects that are with dedicated funding (e.g. roads) and flexible funding sources should be used for those projects that are more difficult to fund (e.g. transit).
- Communities should explore opportunities to develop local sources for transportation funding.

When evaluating the potential viability of new local funding sources, considerations could include:

- Financial capacity: Can the source pay for improvements? Is the funding likely to be adequate, stable and predictable?
- Flexibility of use: Can the source be used for a wide range of transportation projects or would it be limited to a narrow range of project types?
- Fairness or equity: Who pays? Should people pay based on the costs they impose or the benefits they receive? Should there be allowances for certain financially disadvantaged populations (e.g. elderly, youth and disabled persons)?
- Political acceptability: Is the institution of a new tax or an increase in an existing tax palatable to the citizens of the community? Is there concern over who would pay the tax and would benefit from it?

2008 Transportation System Planning Guidelines

Appendix 8 - Guide to Financing Projects in Transportation System Plans

- Administrative ease: Is the tax easily instituted and administered at a minimal cost to local government?
- Legal authority: Does the local government have the legal authority to institute the tax?

The Range of available Federal and State Funding Sources for Transportation Projects

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). This is the current version of the Surface Transportation Act. It has been in place since 2005 and expires in September, 2009. This legislation was designed to provide greater flexibility for the use of federal funding for transportation projects. Funding from this act has been used to fund a wide range of transportation projects in Oregon.

Community Development Block Grants (CDBG) are administered by the Department of Housing and Urban Development (HUD) and can be used, at least in part, for transportation improvements in eligible areas. The City of Medford, for example, has used CDBG funding for street light and sidewalk improvements in some of its older areas.

State Sources

The Oregon Highway Fund is composed of gas taxes, vehicle registration fees and weight-mile taxes assessed on freight carriers. Highway Fund revenues are used by cities, counties and ODOT for (generally) highway road and street related purposes. In addition to highway uses, a small percentage of the funding allocated to ODOT is used for bicycle and pedestrian projects.

Special City and County Allotments are distributed by ODOT to cities and counties for projects that improve safety or increase capacity. These allotments have been for relatively small scale projects and overall funding has been less than \$2 million annually.

Special Public Works Funds are allocated by The Oregon Economic and Community Development Department (OECDD) in the form of grants and loans to cities and counties and may be used for transportation projects.

The Immediate Opportunity Fund administered by ODOT is used for transportation improvements tied to job creation, primarily in conjunction with projects funded by OECDD.

Grant Anticipation Revenue Vehicles (GARVEE Bonds) allow jurisdictions to issue bonds backed by future allocations of Federal-aid highway funds and are financed by the actual bonds as they become available. Projects must be approved by FHWA.

Local Sources

Special assessments are charges levied on property owners for neighborhood public facilities and services. These assessments are commonly used for street paving, drainage, parking facilities and sewer lines.

2008 Transportation System Planning Guidelines

Appendix 8 - Guide to Financing Projects in Transportation System Plans

Local Improvement Districts (LIDs) are legal entities established by local governments to levy special assessments designed to fund improvements that have local benefits. Through a LID, local governments may construct transportation improvements and assess a fee to property owners to cover the costs of those improvements over time.

System Development Charges (SDCs) are fees paid by land developers to help offset capital costs incurred by local jurisdictions as a result of development. These fees can be used for a variety of improvements, including transportation.

Local Parking Fees are a commonly used mechanism that generates revenues often used for parking and road related maintenance and improvements.

Street Utility Fees are assessed to businesses and households based on the amount of street use typically generated by that activity. These fees are typically used to pay for maintenance rather than capital projects. This type of fee has the potential to be a stable and substantial revenue source for local government.

Payroll Taxes are a tax on wages and salaries paid by employers doing business within the TriMet, SMART (Wilsonville) and Lane Transit Districts. These revenues help fund transit services in the Portland, Wilsonville and Eugene areas.

Property Taxes are not usually used for transportation maintenance but are occasionally used to fund capital improvements for transportation, generally through a serial levy (Washington County).

Assumptions to use for the Estimation of Future Transportation Revenues from Federal, State and Local Sources

Federal and State Revenue

At the local level, transportation funding has come from a variety of sources. The largest revenue sources have been the Federal SAFETEA-LU (transit and roads) and the State Highway Fund (roads).

State Highway Fund, SAFETEA-LU funds and Federal Timber receipts associated with Federal land ownership have been the primary State and Federal sources for transportation funding. Additionally, other (smaller) discretionary programs administered by State and Federal governments have been used for transportation purposes.

In projecting future revenue levels it is important to remember that both Federal and Oregon State gas taxes have *not* been increased since the early 1990s. Additionally, Timber receipts associated with Federal land ownership have been reduced, and their future is uncertain.

Local Funds

Historically, local general funds (e.g. property taxes) have provided a large proportion of

2008 Transportation System Planning Guidelines

Appendix 8 - Guide to Financing Projects in Transportation System Plans

local transportation resources. With the implementation of fuel tax increases and increased Highway Fund revenue sharing with local governments in the 1980s, and implementation of property tax limitation measures in the 1990s, local governments started using fewer general fund resources for road programs. Nonetheless, a significant level of general fund support is still provided to road programs by cities and counties. As the property tax limitation measures have taken full effect, it has been reasonable to assume local general fund supports growth at about the same rate as the assessed valuation of property (three percent per year and perhaps more in faster growing communities).

As a group, local governments utilize many other revenue sources that are dedicated for transportation purposes. These include new system development charges (SDCs) or transportation impact fees, dedicated property tax levies, bonded debt tax levies, payroll taxes, parking revenues, etc. These revenue sources can be both inflation and growth rate sensitive. They do however require initial approval of either the governing body or the voters.

When a revenue source such as a bonded debt levy or SDC is already in use, it is relatively easy to anticipate eventual increased revenue as a result of growth and inflation. Revenue growth tends to be in a “stair-step” manner whereby a large increase is followed by several years of staying the course before another large increase occurs.

In areas where particular revenue sources are underutilized, have never been used or have not been used in many years, it is much more questionable as to whether these revenue sources can be relied upon to fund future improvements or programs. A well thought-out strategy that addresses projects to be funded, local importance, cost sharing, timing, geographical equity, and other likely issues is much more credible than a simple assumption that an unused or underutilized revenue source will be used.

Metropolitan Planning Organizations preparing Regional Transportation Plans should contact the ODOT Transportation Development Division for additional revenue estimation guidance.

Inflation Rates used by ODOT for the 2010-2013 STIP

The inflation rate used for the 2010-2013 STIP is compounded based on 2008 dollars and forecasts inflation from 2009 to the first year of the 2010-13 STIP at:

- 2009 4.3%
- 2010 4.3%
- 2011 4.3%
- 2012 4.0%
- 2013 4.0%

Factors used to forecast the rate of inflation include the Oregon Wage Index for Highway, Street and Bridge Construction Employees, Producer Price Index for Highway and Street Construction, and fuel prices. These factors are updated annually.

For additional information on inflation rates used by ODOT, contact the STIP Coordinator at the ODOT Region Office.

Appendix 8 - Guide to Financing Projects in Transportation System Plans

Sample TSP Project Lists

The sample TSP Project Lists shown on the next page provide an example of the "Illustrative," or "Preferred Plan," and the "Revenue Forecast" lists described in Step 15 of the 2008 TSP Guidelines. The "Illustrative" or "Preferred Plan" list is structured to respond to community needs and is characterized by the inclusion of modernization projects including a desired, but not funded, major capacity project (a bypass), as well as the minor improvements and operational projects found in most system plans. In this example, the "Revenue Forecast" project list replaces the major capacity bypass project with the significantly less expensive couplet project, representative of the scaled-back level of funding associated with this project list. Also included in the "Revenue Forecast" list are operational, preservation and a limited number of minor improvement projects.

The projects in both lists are shown in order of priority and are based on the anticipated level of transportation funding expected during the 20 year life of the TSP. The "Illustrative" or "Preferred Plan" list is based on a higher level of funding expectation while the "Revenue Forecast" list is based on a more conservative level of funding expectation.

2008 Transportation System Planning Guidelines

Appendix 8 - Guide to Financing Projects in Transportation System Plans

Sample “Illustrative” or “Preferred Plan” Project List

Project Priority	Project Name	Project Type	Project Description	Project Cost	Anticipated Source for Funding	Project Benefits	Outstanding Issues	Construction Timing
1	Southside Bypass	Modernization	Planning, Design and Construction for Bypass	\$125 M	FHWA and/or Federal Earmark	Congestion relief, safety	Environmental, Right of Way and Funding	Long Range (15-20 years)
2	Front Street Widening	Modernization	Add capacity by widening major arterial	\$4.0 M	FHWA	Congestion relief, traffic operations and safety	Funding; Right of Way	Medium Range (5-10 years)
3	Safe Routes to Schools	Safety/ Bicycle and Pedestrian	Add sidewalks, curb cuts, bicycle lanes and crosswalks	\$1.5 M	State/City	Safety	Funding	Short Range (0-5 years)
4	Signal Upgrades	Operations	Upgrade equipment/ interconnect system	\$2.0M (over four phases)	City	Efficient operations	Funding	Short-Medium Range (0-10 years)
5	Mill Street Signals	Signalization / Safety	Installation of traffic signals	\$1.4M (over 6 phases)	State	Operations and safety	Warrants; funding	Medium Range (5-10 years)
6	Garfield St. Overlay	Overlay	Overlay from Broadway to 12 th	\$ 3M	City	Maintain asset	Funding	Short Range (0-5 years)
7	Sidewalk Improvements	Operations - Pedestrian	Various sites –Infill, Repair and update to (A D A) standards	\$2.0M (over 6 phases)	City/SDC's	Safety/ Bicycle and Pedestrian	Funding	Medium Range (5-10 years)
8	Bicycle Lane Extensions	Bicycle/ Pedestrian	Various locations	\$1.5M	State/City	Operations, safety and connectivity	Funding	Short Range (0-5 years)
9	Park Street Extension	Modernization	Local road connection for network connectivity	\$ 5M	City/SDC's	Capacity, safety and connectivity	Funding	Medium Range (5-10 years)
10	9th Street Extension	Modernization	Local road connection for network connectivity	\$ 5M	City	Capacity, safety and connectivity	Right of way and funding	Medium Range (5-10 years)
11	Southside Park and Ride	Operations	Add Park and Ride facility to serve southbound commuters	\$500K	State	Congestion relief and operations	Right of way and funding	Short Range (0-5 years)

2008 Transportation System Planning Guidelines

Appendix 8 - Guide to Financing Projects in Transportation System Plans

Sample "Revenue Forecast" Project List

Project Priority	Project Name	Project Type	Project Description	Project Cost	Anticipated Source for Funding	Project Benefits	Outstanding Issues	Construction Timing
1	Downtown Couplet	Operations and Safety	Couplet through downtown to improve traffic flow/capacity	\$20 M	FHWA/State/ City	Traffic flow/capacity	Right of Way ; Stakeholder concerns	Medium Range (5-10 years)
2	Signal Upgrades	Operations	Upgrade equipment/interconnect system	\$1.5 M (over 3 phases)	City	Efficient operations		Ph 1 -2010 Ph 2 -2013 Ph 3 -2016
3	Sidewalk Improvements	Operations - Pedestrian	Various sites –Infill, Repair and update to (A D A) standards.	\$1.5 M (over 4 phases)	City /SDC's	Safety	Funding	Ph 1 -2010 Ph 2 -2012 Ph 3 -2014 Ph 4-2016
4	Mill St. Signals	Signalization/ Safety	Installation of traffic signals	\$1.4 (over 6 phases)	State	Operations and safety	Warrants; funding	Ph 1 -2011 Ph 2 -2012 Ph 3 -2013 Ph 4-2014
5	Mill Creek	Signalization/ Safety	Install traffic signal	\$500 K	City	Safety	Warrants; funding	2012
6	Garfield Street Overlay	Overlay	Overlay from Broadway to 12 th	\$ 3 M	City	Maintain Asset	Funding; Impacts of added depth	Short Range (0-5 years)
7	Park Street Extension	Modernization	Local road for connection for network connectivity	\$ 5M	City/SDC's	Capacity, safety and connectivity	Funding	Medium Range (5-10 years)
8	Central Park and Ride Expansion	Operations	Add spaces to serve southbound commuters	\$200 K	State/City	Congestion relief and operations	Funding	2012

Appendix 8 - Guide to Financing Projects in Transportation System Plans

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Appendix 9 - Transportation Systems Management & Operations

Transportation Systems Management & Operations

Transportation Operations

Introduction

Transportation Operations merges three varieties of transportation strategies. These strategies are usually identified within one, or more of the following categories:

- Transportation System Management (TSM)
- Transportation Demand Management (TDM)
- Intelligent Transportation Systems (ITS)

Overview

Effective management and operation of the transportation system is critical to help meet many of the challenges facing transportation throughout the state. Growing population and travel demand are placing increased pressure on facilities. At the same time decreasing purchasing power of transportation revenues is making it more difficult to meet these growing needs. This places an additional emphasis on Transportation Operations strategies that help optimize the utility of the system in place. Operations is a broad category that covers a wide range of investments and applications. Transportation System Management (TSM), Transportation Demand Management (TDM) and Intelligent Transportation Systems (ITS) help make up the broader operations category.

The U.S. Department of Transportation's definition on Transportation Systems Management and Operations provides a good sense of the types of applications that jurisdictions can consider to improve the operation of their transportation systems:

An integrated program to optimize the performance of existing infrastructure through the implementation of systems, services, and projects designed to preserve capacity and improve security, safety, and reliability.

<http://www.plan4operations.dot.gov/glossary.htm>

Some Useful Links

Federal Highway Administration, Office of Operations

<http://www.ops.fhwa.dot.gov/index.asp>

U.S. Department of Transportation, Planning for Operations

<http://www.plan4operations.dot.gov/>

Federal Highway Administration, Travel Demand Management

<http://www.ops.fhwa.dot.gov/tdm/index.htm>

Oregon Department of Transportation, Intelligent Transportation Systems

<http://www.oregon.gov/ODOT/HWY/ITS/index.shtml>

Oregon Department of Transportation, Trip Check

<http://www.tripcheck.com>

2008 Transportation System Planning Guidelines

Appendix 9 - Transportation Systems Management & Operations

ODOT Resources

- Region Planning Staff
- Region Traffic Managers
- Public Transit Division
- ITS Program Staff

Transportation Planning Rule References

TSM: OAR 660-012-0020 2(D)(f) and OAR 660-012-0035 (1)(c)

TDM: OAR 660-012-0020 2(D)(f) and OAR 660-012-0035 (1)(d)

ITS: OAR 660-012-0020-0035 (1)

The following several pages include discussions that will help local jurisdictions identify opportunities to better manage the transportation system by incorporating measures that use TSM, TDM and ITS strategies. Communities are advised that there may be some overlap between these three categories of transportation strategies.

Transportation System Management (TSM) Recommendations for System Planning

Objective

Identify opportunities to preserve and better manage the transportation system by incorporating Transportation System Management (TSM) measures into TSPs and TSP Updates.

Tasks

- Identify existing TSM measures during the inventory of the transportation system.
- Identify opportunities to respond to future demands on the transportation system through the use of TSM measures.
- Identify the TSM projects that would be a high priority for the community under the investment scenarios suggested in the TSP Guidelines.

Products and Deliverables

- An inventory that identifies TSM infrastructure and services currently in place.
- A TSP or TSP Update that includes TSM strategies as an element of the 20 year plan for the community.
- A TSP or TSP Update project list that includes TSM projects.

Typical TSM Projects (examples)

- Ramp Metering.
- Freeway Incident Detection/Management Systems.
- One-way streets.
- Reversible Traffic lanes.
- Traffic signal synchronization.
- Arterial Surveillance and Management.
- Truck Traffic lanes.
- Bus Bypass lanes.
- Traveler Information Systems.
- High Occupancy Vehicle (HOV) lanes.

2008 Transportation System Planning Guidelines

Appendix 9 - Transportation Systems Management & Operations

- Park and Ride facilities.
- Parking Management.
- Trip Reduction Ordinances.

Communities are reminded that there is some overlap between TSM, TDM and ITS. All of these strategies are intended to help the transportation system function more effectively, often by relying on lower cost measures. How a particular strategy is categorized is less significant than that it is considered as an option in the course of TSP or TSP Update preparation.

Transportation Demand Management (TDM) Recommendations for System Planning

Objective

Identify opportunities to preserve and better manage the transportation system by incorporating Transportation Demand Management (TDM) strategies in System Plans.

Definition

Transportation Demand Management (also called “Transportation Options” in Oregon) includes a broad range of strategies that encourage efficient transportation behavior by increasing the relative attractiveness of efficient transportation or access options. Typical TDM goals include:

- Make more efficient use of existing transportation infrastructure.
- Reduce single occupant motor vehicle travel.
- Increase use of active (cycling/walking) transportation modes.
- Reduce greenhouse gas emissions.
- Reduce energy consumption.
- Improve air quality.
- Spread traffic volume away from traffic peak(s).
- Improve motor vehicle traffic flow.

TPR Requirements

In urban areas that contain populations of greater than 25,000, the TPR requires coordinated land use and transportation plans whose intent are to improve livability and accessibility by “promoting the provision of transit service where feasible and more efficient performance of existing transportation facilities through transportation system management and demand management measures”.

Reduced reliance on automobile use is a theme that is expressed in OAR 660-012-0020(f), which requires, "for areas within an urban area containing a population greater than 25,000 persons a plan for transportation demand management."

Other Guidance

Transportation System Planning Guidelines Step 10 recommends identification of TDM service providers, characteristics, capital equipment and use of services in the course of conducting an inventory of the public transportation system in conjunction with preparation of a Transportation System Plan. These guidelines also recommend assessment of TDM services

2008 Transportation System Planning Guidelines

Appendix 9 - Transportation Systems Management & Operations

and facilities in the course of describing current conditions/deficiencies (Step 10) and in developing and evaluating system alternatives that eliminate deficiencies and meet needs in Step 12. Transportation Demand Management is cited in policies incorporated into the Oregon Public Transportation Plan and the Oregon Highway Plan.

Applicability

TDM Works best under the following circumstances:

- Favorable community demographics for employment/residency.
- Appropriate travel distances for the trip to work.
- Appropriate travel patterns for the trip to work.
- Supportive community attitudes.

Examples of favorable community demographics include:

- Existence of major employer work sites with excess of 250 employees.
- Existence of clusters of smaller employer work sites with 5 to 50 employees at each site.
- Constrained parking at employer work sites.
- Clustering of worker residences.
- Average or below-average household incomes.
- Residential densities of 5 dwelling units per acre and a population of 2,500 for Dial-a-Ride Transit.
- Residential densities of 5-8 dwelling units per acre and a population of 10,000 for Fixed Route Transit.
- Residential densities of 8-15 dwelling units per acre for 30 minute transit service.
- Residential densities of 15-20 dwelling units per acre for 15 minute transit service.

Examples of appropriate travel distances include:

- Carpool trip lengths of at least 5 miles (one way).
- Vanpool trip lengths of at least 20 miles (one way).
- Transit trip lengths of at least 2 miles (one way).
- Bicycling trip lengths of up to 5 miles (one way).
- Pedestrian trip lengths of up to 1.5 miles (one way).

Examples of appropriate travel patterns for the trip to work include:

- Clearly identifiable work trip origins (cross streets and zip codes).
- Clearly identifiable work trip destinations (cross streets and zip codes).
- Clearly identifiable travel patterns for the trip to work (corridors).
- Moderate to heavily congested commute corridors (LOS D or worse at the peak).

Examples of supportive community attitudes include:

- Environmentally concerned employers.
- Community commitment to clean air.
- Community commitment to reduced greenhouse gas emissions.
- Existence of trip reduction ordinances.
- Existence of transportation impact fees.
- Emphasis on transportation investment in system preservation or management rather than capacity expansion.

2008 Transportation System Planning Guidelines

Appendix 9 - Transportation Systems Management & Operations

Commonly Used TDM Tools:

- Carpooling.
- Vanpooling.
- Park and Ride Lots.
- Express Bus Service.
- Bicycling.
- Walking.
- Group Transit Passes.
- Parking Management.
- Reversible, HOV/HOT Lanes.
- Ramp Metering.
- Signal Synchronization.
- Bus Bypass Lanes.
- Trip Reduction Ordinances Compressed Work Schedules Staggered or Flex Schedules.
- Telecommuting.
- Telecommunications.

Other Information Sources

- Transportation Demand Management (TDM) Information for Planning, Project Development and Implementation, contact Public Transit Division, Transportation Options Program Manager at (503) 986-4131.
- Oregon Public Transportation Plan (OPTP), contact the Public Transit Division at (503) 986-4305.

Intelligent Transportation Systems (ITS) Recommendations for System Planning

Objective

To implement Intelligent Transportation Systems (ITS) technologies that meet community needs, that share infrastructure as much as possible, and that are interoperable and compatible.

Tasks

To inventory current systems and infrastructure, identify ITS projects and technology needs, prioritize those needs, coordinate project deployment with other agencies, and develop implementation strategies that meet the directives for interoperability and compatibility (conformity with the National ITS Architecture).

Information Sources

- ITS Manager, ODOT (503) 986-4486
- FHWA Oregon Division ITS/Operations Engineer, (503) 587-4709

Web Sites

- Existing Regional ITS Plans:
www.oregon.gov/ODOT/HWY/ITS/its_documents.shtml
- Oregon Department of Transportation, ITS Unit:
www.oregon.gov/ODOT/HWY/ITS/index.shtml

2008 Transportation System Planning Guidelines

Appendix 9 - Transportation Systems Management & Operations

- ❑ US DOT, ITS Joint Project Office: www.its.dot.gov
- ❑ FHWA, Office of Operations, ITS Architecture Implementation: www.ops.fhwa.dot.gov/its_arch_imp/index.htm
- ❑ FHWA, Office of Operations, Systems Engineering: www.ops.fhwa.dot.gov/int_its_deployment/sys_eng.htm
- ❑ ITS America: www.ITSA.org

Products and Deliverables

- ❑ A prioritized list of ITS projects.
- ❑ An inventory of ITS infrastructure in place.
- ❑ Identified coordination strategy with local and state agencies (Concept of Operations).
- ❑ Implementation strategy that addresses provisions in the Safe, Accountable, Flexible, Efficient Transportation Equity Act Legacy for Users (SAFETEA-LU).
- ❑ Identified funding sources that identify design, implementation, and ongoing operating/maintenance costs for proposed ITS projects.
- ❑ Development of or updates to existing regional ITS Architecture.

Appendix 10 - Traffic Volume Forecasting Methodologies

Traffic Volume Forecasting Methodologies

Generally, a travel demand forecasting model should be used for the estimation of future traffic volumes for areas requiring preparation of a TSP. The forecasting methodology should be used that is appropriate for the questions being asked and the complexity of the issues. There are four levels of methodology that range from simple, straightforward trending analyses to more complex and sophisticated regional transportation modeling:

- ❑ Level 1 Trending Forecast or similar forecasting methodology should be used in areas where enough data is not available to perform a cumulative analysis. Trending may be adequate (even when detailed data can be obtained) if the study does not need a higher level of analysis.
- ❑ Level 2 Cumulative Analysis or similar forecasting methodology is preferred over the trend analysis when data is available.
- ❑ Level 3 Transportation Model or similar forecasting methodology is generally for areas with a population greater than 15,000 and has extensive street network.
- ❑ Level 4 Regional Transportation Model or similar forecasting methodology is generally for metropolitan planning areas or areas covering multiple jurisdictions. This is similar to a Level 3 Model but encompasses several urban areas where regional coordination is needed and when there is significant interaction between two or more urban areas.

Communities currently preparing or updating a TSP are strongly advised to consult with the ODOT Transportation Planning Analysis Unit (TPAU) to determine the appropriate methodology to use to estimate future traffic volumes for their particular community. Contact the ODOT Public Transit Division, Bicycle/Pedestrian Program, Rail Division, Freight Mobility Section or the Department of Aviation for guidance in estimating future demand, capacity, deficiencies and needs for their respective modes.

The following methodologies are illustrative of those used to project future traffic volumes in TSPs throughout Oregon during the 1990's.

Level 1 Trending Forecast

A trending forecast projects future traffic volumes from historical growth trends of vehicle traffic. This forecasting method requires 20 years of historical data and is sufficient to project 20 years into the future. This level of analysis evaluates items such as traffic signal warrants and the capacity of intersections.

Growth trends can be determined from traffic volume data on the nearest state highway since most communities do not have a program to count vehicles. Since this analysis assumes past (linear) growth trends will continue into the future, the existing land use zoning must support this analysis. The analysis needs to evaluate how well the transportation system functions. Intersections must be evaluated since they have a considerable effect on the traffic flow. The volume of traffic needs to be related to the capacity that the intersection can accommodate.

2008 Transportation System Planning Guidelines

Appendix 10 - Traffic Volume Forecasting Methodologies

This level of analysis could result in recommendations for:

- Addition of a turn lane, lanes or additional travel lanes.
- Signal installation.
- Restriping of the existing roadway.
- Interconnections and spacing of traffic signals to accommodate progression of traffic.
- The development of a more complete city street network or off-street parking.
- New transportation facilities and services.
- Access management.

Level 2 Cumulative Analysis

This level of analysis is appropriate for a community with a sufficient level of data to support the cumulative analysis. In addition to trending historical growth patterns, Cumulative Analysis examines the existing and planned land uses to predict future development growth and to forecast the traffic generated from possible development. It is an effective method of evaluating areas that do not have an extensive street network and that have grown at a fairly uniform rate. It is useful in analyzing existing and future land uses, intersection capacity, traffic signal warrants and street networks.

This level of analysis evaluates the present street network of a small city and provides a means to analyze the effects of traffic and population growth, highlight potential problems and develop alternative solutions.

A Level 2 analysis requires all the data in the Level 1 analysis as well as the following additional data:

- A method to identify the number of through trips. This is best accomplished with an origin and destination (O & D) study, or review and update of an old O and D study if no major routes have been added or deleted. An extensive license plate survey may be appropriate if it is taken over a long enough time period and includes peak hour(s) of traffic (the AM and PM and other appropriate periods).
- An in-depth assessment of planned land uses is needed to develop a probable forecast of the amount of traffic that could be generated at build-out of the planning area. This includes a buildable-lands inventory and a review/discussion of re-development potential.

The Level 2 analysis could lead to identification of the need for:

- Traffic signals at intersections.
- Interconnections and spacing of traffic signals to accommodate progression of traffic.
- Turn lanes or additional travel lanes.
- The development of a more complete city street network or off-street parking.
- New transportation facilities and services, including a bypass route.
- The development of access management techniques.

Level 3 Transportation Model

Generally a Transportation Demand Model has been used in areas with an existing population of 15,000 or greater with an extensive street network. It can be a valuable tool in analyzing complex networks where there are several simultaneous or alternative solutions, and by

2008 Transportation System Planning Guidelines

Appendix 10 - Traffic Volume Forecasting Methodologies

providing information on the effects of changing land use zoning and traffic trends. It evaluates the present network and highlights existing and future problems by means of a transportation model and traffic engineering analysis. Combined with this broad range analysis would be additional post processing evaluation of data for deficiencies and remedies such as turning lane requirements, intersection capacity and signal warrants. Transportation modeling reference materials are provided at the end of this section.

A Level 3 analysis uses the data in the Level 2 analysis as well as:

- Establishment of a major street network for the transportation model comprised of the state highways, county roads and the city major and minor arterials. Major collectors may also be included in the network depending on elements such as the size of the city or traffic volumes.
- Division of the city into logical transportation analysis zones (TAZs) based on state of the practice methods. The zones are determined by such items as existing and planned land use zones, the transportation network, and travelsheds. TAZs should also have some correlation with U.S. Census block boundaries for comparison of census data with local population and employment data and with other demographic data such as household size, income and auto ownership.
- Identification of where population or dwelling units are located within the TAZs, the number of units, and similar information, including minority and low-income populations and communities.
- Identification of each major employment type, the number of employees in each category (or some other means to determine how many trips would be attracted, e.g. square footage of commercial space) and the assignment within the appropriate TAZ. Information also needs to be furnished for high volume generators that may have unique characteristics (special generators).

A significant feature of a transportation model is the ability to perform a system-wide comparative analysis of several alternatives or an "Alternatives Analysis."

- The model can estimate the effects of changes and provides a means to see the increased traffic resulting from population and employment growth.
- Proposed changes to land use zoning and densities can be evaluated.
- It could be useful in approximating the number of vehicles that would likely use an alternative route or new facility.

Traffic engineering analysis could result in:

- Identification of intersections meeting traffic signal warrants.
- Areas needing interconnections of traffic signals to accommodate progression of traffic.
- Identification of the need for turn lanes or additional travel lanes.
- The development of a more complete city street network or off-street parking.
- Access management techniques.

Some transportation modeling software packages can also estimate the effects of transportation demand management strategies and the ridership for multi-modal options. If examining these effects cannot be accomplished with the model, additional software and/or hand analysis may be required to evaluate all the options.

Appendix 10 - Traffic Volume Forecasting Methodologies

The accuracy of the model for both the existing and future years depends on the accuracy to the input data, (e.g. the street network, population, employment and assignment of the correct TAZ.)

Level 4 Regional Transportation Model

The Level 4 Model is similar to the Level 3 Model but it involves the development of a regional model that encompasses several urban system areas. It is used at the Metropolitan Planning Organization (MPO) area level or in other areas where regional analysis and coordination are needed. It is useful where there is significant trip interaction between two or more urban areas. This analysis uses the same process as Level 3, but on a larger scale and requires data for the appropriate cities, county and the regional MPO, if one exists. It may require more data collection such as an internal O and D study to determine how the existing trips interrelate between communities within the regional model.

Traffic Volume Forecasting References (recommended)

Forecasting models used to develop traffic volumes estimated for transportation system plans must be consistent with the following reference materials for model development and application. These references are organized by the type of urban area to be considered, with separate requirements presented for MPO and non-MPO areas. They are also structured with the understanding that modeling requirements vary between urban areas, depending upon the type of information required by the analysis, size of the area, whether or not it is an air quality attainment area, and the availability of data.

- ❑ TRB 255 Highway Traffic Data for Urbanized Area Project Planning and Design for communities of population 5,000 or greater.
- ❑ Oregon Modeling Protocol (in development):
 - Pertains to the collection, preparation and maintenance of data that is used as input to travel demand models: socioeconomic, modal system, modal use, and travel cost data.
 - Describes general process to be followed for model development.
 - Describes process for adjustment and update of existing models.
 - Describes way in which models are to be applied and the application process.
 - Describes how model output is to be used and how it is to be made available.
- ❑ ODOT Model Development and Application Guidelines:
 - Describes technical model development requirements.
 - Provides model application standards.
 - Provides methodology and process for post-processing of model output.
- ❑ ODOT Model Development Procedures Manual:
 - Describes technical model development requirements.
 - Provides standards for the collection, preparation and maintenance of model data by model users.

Appendix 11 - Federal Functional Classification

Federal Functional Classification

Federal Functional Classification (FC) is the system by which roads are grouped into functional systems according to the type of service and amount of traffic the facility carries. FC is used to determine design standards of roads and determines Federal Aid funding eligibility. FC is assigned to all public roads using federal guidelines and is approved by the FHWA.

Functional Classification should be in accordance with the local Transportation System Plan and Federal Highway Functional Classification Concepts, Criteria and Procedures (see link below). The FHWA requires an update of FC whenever the function of the road changes, and after each decennial census. If the FC is kept up to date, for example by reviewing the FC after updating the TSP, it will save a lot of time and effort when the decennial review comes around.

To update FC, describe the requested changes on the FC Change Request Form. This form is located on the ODOT FC web page (see link on next page). Note an associated change number on a map. Coordinate with other road authorities when FC changes are needed on roads that are not under your jurisdiction, such as BLM or Forest Service roads, or roads that cross a county or state line.

Send the request form and map(s) to your ODOT Region Planner, who will review it with you. The request will then be sent to the Senior Classification Specialist in Salem, who will review it before sending it to the FHWA for approval.

Who	Responsibility
Local Government Officials	Recommend updated FC in Small Urban (population over 5,000) and Rural Areas.
MPO	Recommend updated FC in Urbanized Areas
ODOT Staff	Review recommended changes for consistency and compliance with Federal Guidelines
FHWA	Final Approval of updated FC

There are three main functional classifications: arterial, collector, and local roads. All streets and highways are grouped into one of these classes, depending on the character of the traffic (e.g. local or long distance) and the degree of land access that they allow. These classifications are described in the table below.

2008 Transportation System Planning Guidelines

Appendix 11 - Federal Functional Classification

Functional System	Services Provided
Arterial	Provides the highest level of service at the greatest speed for the longest uninterrupted distance, with some degree of access control.
Collector	Provides a less highly developed level of service at a lower speed for shorter distances by collecting traffic from local roads and connecting them with arterials.
Local	Consists of all roads not defined as arterials or collectors; primarily provides access to land with little or no through movement.

Typically, travelers will use a combination of arterial, collector, and local roads for their trips. Each type of road has a specific purpose or function. Some provide land access to serve each end of the trip. Others provide travel mobility at varying levels, which is needed en route.

There is a basic relationship between functionally classified highway systems in serving traffic mobility and land access. Arterials provide a high level of mobility and a greater degree of access control, while local facilities provide a high level of access to adjacent properties but a low level of mobility. Collector roadways provide a balance between mobility and land access.

The importance of the functional classification process as it relates to highway design lies in the fact that functional classification decisions are made well before an individual project is selected to move into the design phase. Moreover, such decisions are made on a system wide basis by city, county, or State DOTs or MPOs as part of their continuing long-range transportation planning functions. Such systematic reassessments are typically undertaken on a relatively infrequent basis. Thus, it is highly recommended that federal FC updates be considered as part of local Transportation System Plan Updates and other planning studies in order to maintain consistency.

Below are some links to further information on Federal Functional Classification.

- ❑ ODOT FC web page:
<http://www.oregon.gov/ODOT/TD/TDATA/rics/FunctionalClassification.shtml>
- ❑ FHWA FC Manual:
<http://www.oregon.gov/ODOT/TD/TDATA/rics/docs/HighwayFCConceptsCriteriaProcedures.pdf>
- ❑ FAUB and FC FAQ:
<http://www.oregon.gov/ODOT/TD/TDATA/rics/docs/FrequentlyAskedQuestions.pdf>

Appendix 12 - Access Management

Access Management in Oregon Transportation System Planning

Overview

Access management is a set of transportation and land use principles, policies, regulations and design elements that state and local governments can employ to manage access to land adjacent to highways and roadways. The need to control and manage roadway access is more pronounced in recent years because of increased traffic volumes, congestion and travel delays; unacceptable crash and fatality rates; increased roadway construction and maintenance costs; and other social, economic and environmental impacts of roads and highways.

Benefits and Outcomes

Key benefits of effective access management policies and practices include:

- Congestion and mobility management
 - Improve roadway performance.
 - Achieve more predictable travel times, smooth traffic flow, and reduce travel delay.
- Asset management
 - Preserve function and operation of existing roadways.
 - Reduce the need for reconstruction or expansion.
- Safety management
 - Increase safety and decrease crash rate and fatalities.
- Other social, economic and environmental benefits
 - Improve driver performance, increase market area, conserve fuel and reduce emissions.

The most Benefits are maximized is realized when access management is implemented through interrelated statutes, administrative procedures, land use and transportation policy, land use regulations, engineering standards, permitting, and capital improvement programs.

Principles of Access Management

- Classify roadway system by the primary function of each roadway.
- Limit direct access to roads with higher functional classification.
- Provide a supporting street and circulation system.
- Promote intersection hierarchy.
- Locate and time traffic signals to emphasize through traffic movement.
- Locate driveways and road connections to minimize interference with traffic operations.
- Limit the number of conflict points.
- Separate conflict areas.
- Preserve the functional area of intersections and interchanges.
- Remove turning vehicles from through traffic lanes.
- Use non-traversable medians and locate median openings to manage left turn movements and minimize conflicts.

2008 Transportation System Planning Guidelines

Appendix 12 - Access Management

OAR 660-012 Transportation Planning Rule (TPR)

The TPR supports access management principles and provides a solid foundation for local jurisdictions to develop comprehensive and effective access management policies and regulations.

OAR 660-012-0020(b) requires a TSP to include:

A road plan for a system of arterials and collectors and standards for the layout of local streets and other important non-collector street connections. Functional classifications of roads in regional and local TSPs shall be consistent functional classifications of roads in the state and regional TSPs. . . New connections to arterials and state highways shall be consistent with designated access management categories.

An updated or amended TSP and implementing regulations need to be consistent with state access management policies, administrative rules and standards.

OAR 660-012-0045(2):

Local governments shall adopt land use or subdivision regulations, consistent with applicable federal and state requirements, to protect transportation facilities, corridors and sites for their intended functions.

(a) Access control measures, for example, driveway and public road spacing, median control and signal spacing standards, which are consistent with the functional classification of roads and consistent with limiting development on rural lands to rural uses and densities;

(d) A process for coordinated review of future land use decisions affecting transportation facilities, corridors or sites;

(e) A process to apply conditions to development proposals in order to minimize impacts and protect transportation facilities, corridors or sites;

(f) Regulations to provide notice to public agencies providing transportation facilities and services, MPOs, and ODOT...

OAR 660-012-0045(3):

Local governments shall adopt land use or subdivision regulations for urban areas and rural communities. . . to provide for safe and convenient pedestrian, bicycle and vehicular circulation consistent with access management standards and the function of affected streets...

Land use and subdivision regulations may need to be amended to implement an updated or amended TSP.

OAR 660-012-0045(1):

Each local government shall amend its land use regulations to implement the TSP.

OAR 660-012-0060(1):

Where an amendment to a functional plan, an acknowledged comprehensive plan, or a land use regulation would significantly affect an existing or

2008 Transportation System Planning Guidelines

Appendix 12 - Access Management

planned transportation facility, the local government shall put in place measures as provided in section (2) of this rule to assure that allowed land uses are consistent with the identified function, capacity, and performance standards (e.g. level of service, volume to capacity ratio, etc.) of the facility...

1999 Oregon Highway Plan (OHP)

The 1999 Oregon Highway Plan establishes access management as a high priority for regulating and managing the state highway system. A new or updated TSP needs to contain policies for managing state highways that are consistent with the access management goals, policies and standards in the 1999 OHP.

Goal 1 - System Development defines the state highway functional classification system and links the classifications to land use and transportation policies. It establishes a high priority to more effectively manage existing highways before making major improvements.

Goal 2 - System Management establishes a policy to work in partnership with local governments to safeguard the function, efficiency and safety of the integrated federal, state and local transportation system.

Goal 3 - Access Management establishes a goal to employ access management principles and techniques to manage highways in a manner consistent with highway functional classifications. This is accomplished by establishing access location and spacing standards that are linked to the highway functional classification and by setting policy for median placement.

OAR 734-051 Highway Approaches, Access Control, Spacing Standards and Medians

OAR 734-051, Highway Approaches, Access Control, Spacing Standards and Medians, was adopted by ODOT in 2000 in response to a need for more consistent procedures to control and manage access to state highways. The rules apply to state transportation facilities. The access spacing standards in the rules and in the 1999 Oregon Highway Plan are the same.

The rules cover highway approach permitting, deviation and appeal procedures; as well as access management planning and project delivery. The rules conform to the State Permit Compliance and Compatibility Rules (OAR 660-031) and ODOT planning Coordination Rules (OAR 731 -015).

A new or updated TSP needs to contain policies for managing access to state highways that are consistent with these access management rules.

The Local Comprehensive Plan and TSP

Transportation is a key element of a local comprehensive plan. Effective local access management begins with the comprehensive plan and TSP and is carried out through policy,

2008 Transportation System Planning Guidelines

Appendix 12 - Access Management

regulations, standards and capital improvements. Local governments can accomplish access management in the following ways:

- ❑ Include access management policies in the comprehensive plan and TSP.
- ❑ Adopt access management ordinances that establish connection spacing, driveway design and corner clearance requirements for all major roadways, along with supporting land development regulations.
- ❑ Consider establishing a corridor overlay district for high priority arterial roadways that establishes a high degree of access control and supporting land development regulations. Small communities may choose this approach to focus on a key corridor, as opposed to a system-wide program.
- ❑ Plan for the development of a supporting network of local and collector streets to provide alternative access off of major arterial roadways through subdivision regulations, development exactions, traffic impact studies and capital improvement plans and programs.

Access management is most successful when:

- ❑ Transportation policy defines a complete hierarchy of roads and design criteria for different roadway functional classifications; and
- ❑ Land use planning and development review are coordinated with transportation planning and roadway design standards and operations.

Work Tasks

Task 1- Policy Analysis

The task is to conduct a review of the TSP element of the Comprehensive Plan, transportation facility plans, relevant ordinances, design standards, and administrative procedures and evaluate current state and local access management policies and practices. For roadways in local jurisdiction the focus is on local policies. For state highways the focus is on state policies and rules. A check list can be used as a tool to determine the strengths and weaknesses of local plans and ordinances as they relate to access management and as a guide for policies and standards that may need to be adopted. (Example: [Checklist for Evaluating Local Access Management Programs](#))

For state highways, local comprehensive plan and TSP policies and regulations should either adopt or reference state access management policies and standards in the 1999 OHP and in OAR 734-051.

Refer to Task 3 (below) for examples of effective transportation and land use policies and regulations for managing access. Additional resources for this task are listed at the end of this appendix.

Task 2- Data Collection and Analysis

Access management is one factor addressed in a TSP. Developing effective access management policies and regulations requires collecting, analyzing and integrating land use, traffic and roadway geometric design data. The task is to make sure access management issues are addressed and integrated into the overall planning process. Resources to help integrate access management into transportation planning include:

2008 Transportation System Planning Guidelines

Appendix 12 - Access Management

- ❑ *A Guidebook for Including Access Management in Transportation System Planning*, NCHRP Report 548. Transportation Research Board (2005)
- ❑ *Guide for Analysis of Corridor Management Policies and Practices*, by Kristine M. Williams, AICP and Christina Hopes, Center for Urban Transportation Research (2007)
- ❑ *Access Management Manual* Transportation Research Board Committee on Access Management, (2003)

Task 3 - Draft plan and regulation text amendments

The task is to update transportation and land use plan policy and zoning and subdivision regulation amendments to support access management. A comprehensive access management policy or Access Management policy includes effective transportation and land use policy statements and regulations that support access management. Most local governments should consider including most, if not all, of the following components.

Transportation Plan Policies. A TSP should describe the principles and benefits of access management and link these benefits to the objectives of the TSP and to public safety. The following are some effective policy statements to consider including in a TSP:

- ❑ Plan, develop and manage a complete hierarchy of interconnected roadways based on primary roadway function - arterials, collectors and local streets.
- ❑ The functional classification assigned to state highways shall be consistent with the state highway functional classifications in the 1999 Oregon Highway Plan.
- ❑ Preserve the functional area of intersections and interchanges.
- ❑ Link access policies, regulations and standards to roadway function.
- ❑ For state highways, adopt or reference the access management policies and standards for state highways.
- ❑ Establish levels of access for each functional classification to preserve safe and efficient operations of major arterials and highways.
- ❑ Promote transportation network connectivity and circulation.
- ❑ Restrict direct access to arterials and provide access from collector and local streets.
- ❑ Retro-fit built up areas by consolidating, redesigning, relocating and removing access points.

Land Use Plan Policies. The following are examples of policy statements to consider including in a comprehensive plan:

- ❑ Access to land along major arterials shall be provided through use of parallel roads, side streets and intra-parcel circulation, and cross-over easements to connect adjacent properties.
- ❑ Properties under the same ownership, consolidated for development, or part of phased development plans shall be considered one property for the purpose of access management. Access points to such development shall be the minimum necessary to provide reasonable access, and not the maximum available, for that property frontage.

2008 Transportation System Planning Guidelines

Appendix 12 - Access Management

- ❑ New residential subdivisions shall include an internal street layout that connects to the streets of surrounding developments to accommodate travel demand between adjacent neighborhoods, without the need to use the major roadway system.
- ❑ Residential subdivisions abutting arterial roadways shall be designed so that street connections conform to access spacing standards for those roadways. Where the street pattern is discontinuous within the subdivision, continuity shall be maintained for pedestrian and bicycle movement.
- ❑ Commercial development shall be encouraged to share common access connections as well as to provide a convenient system of inter-parcel circulation so that customers as well as delivery and service vehicles can move between sites without using the abutting public roadway.
- ❑ Commercial office and retail should be encouraged to develop activity centers as opposed to strip commercial development. A more compact urban pattern facilitates pedestrian circulation, reduces the need for vehicles to use the public street to move between businesses, increases corner clearance between driveways and intersections and reduces the occurrence of conflict points in the vicinity of intersections.

Regulations and Design Standards. The following are examples of effective zoning and subdivision regulations to support access management:

- ❑ Access connection spacing standards for each roadway classification.
- ❑ Requirements for joint and cross-access, driveway consolidation, intra-parcel connections, and unified access and circulation plans (including regulations for shopping center out parcels).
- ❑ Policies and guidelines for driveway location and design, including driveway turning radius/flare, throat length and width, corner clearance, and sight distance.
- ❑ Policies and guidelines for non-traversable medians, median opening spacing standards and review procedures, where applicable.
- ❑ Criteria to control and manage access in the vicinity of freeway interchanges, where applicable.
- ❑ Traffic impact assessment requirements and procedures, that are keyed to access management requirements and provide for mitigation where needed in the context of a development proposal.
- ❑ Redevelopment or “change of use” criteria for bringing existing situations into conformance when there is a change of use.
- ❑ Special requirements for older developed areas or non-conforming situations.
- ❑ A procedure and criteria for reviewing and approving access permits.

Resources

- ❑ *Access Management Manual*, Committee on Access Management, Transportation Research Board (2003)
- ❑ *A Guidebook for Including Access Management in Transportation System Planning*, NCHRP Report 548. Transportation Research Board.
- ❑ *Impacts of Access Management Techniques*, NCHRP Report 420, Transportation Research Board (1999)

2008 Transportation System Planning Guidelines

Appendix 12 - Access Management

- ❑ Guide for Analysis of Corridor Management Policies and Practices, by Kristine M. Williams, AICP and Christina Hopes, Center for Urban Transportation Research (2007)
- ❑ Access Management for Small and Medium-Sized Communities, by Kristine M. Williams, AICP and Virgil G. Stover PE, PhD.
- ❑ Check list for Evaluating Local Access Management Programs
- ❑ Model Land Development & Subdivision Regulations That Support Access Management for Florida Cities and Counties, by Kristine M. Williams, AICP, Center for Urban Transportation Research (2004)
- ❑ Transportation and Land Development, 2nd Edition, by Vergil G; Stover and Frank j. Koepke, Institute of Transportation Engineers (2002)
- ❑ A Policy of Geometric Design of Highways and Streets, AASHTO 5th Edition
- ❑ ODOT Access Management Program Unit website:

Planning Resources

- ❑ Access Management Manual, Volume 2, Technical papers
- ❑ ODOT Local Government Programs
- ❑ Local Agency Guidelines – Access Management
- ❑ Transportation Research Board:
 - Access Management Committee Homepage
 - South Florida University, Center for Transportation Research: Access Management and Corridor Preservation – Projects and Publications

Appendix 13 - Environmental Considerations

Environmental Considerations for Transportation System Planning

Objective

To integrate environmental factors into TSP strategies and decisions.

TPR Requirement

(OAR 660-012-0035) (3) (b):

The transportation system shall be consistent with state and federal standards for protection of air, land and water quality including the State Implementation Plan under the Federal Clean Air Act and the State Water Quality Management Plan;

(OAR 660-012-0035) (3)(c):

The transportation system shall minimize adverse economic, social, environmental and energy consequences.

Coordination and Public Involvement

Outreach should include direct contact with ODFW, SHPO, ONHP, Oregon DEQ, and local planning departments, plus USFWS and National Marine Fisheries Service.

Products and Deliverables

- List of projects with potential environmental impacts.
- Summary of methods used and contacts made to identify known environmental resources in the area.
- Map(s) illustrating the location of sensitive environmental resources (excluding archaeology).
- Summary of environmental resources in the area covered by the TSP.
- Anticipated impacts of specific projects on resources.
- Measures taken for specific projects to avoid or minimize impacts.
- For major projects, a draft Purpose and Need Statement.

Key Tasks

Task 1 - Identify projects with potential environmental impacts.

- Road System
 - Bridge repair or replacement.
 - New bridge or roadway.
 - Addition of travel or turning lanes.
 - Addition/expansion of shoulders.
 - Any work outside the existing roadway.
- Bicycle/Pedestrian
 - New/widened sidewalks or paths.
- Transit
 - New/expanded parking areas.
 - New facilities (transit centers, bus pullouts, maintenance or administrative facilities).

Appendix 13 - Environmental Considerations

Task 2 - Gather information on known environmental resources in the area of the projects identified in Task 1.

- Wetlands.
 - Check National Wetland Inventory maps.
 - Check local comprehensive plan list of Goal 5 resources.
- Threatened and endangered species.
 - Request Oregon Natural Heritage Database search.
 - Contact fisheries and wildlife biologists at local ODFW office to determine presence of critical habitat and to identify other concerns.
- Cultural resources.
 - Check historic and archaeological resource inventories at State Historic Preservation Office (SHPO) in Salem.
 - Check list of properties on the National Register of Historic Places maintained by SHPO.
 - Check local comprehensive plan list of Goal 5 resources.
- Geologic hazards/flooding.
 - Check local comprehensive plan for designated geological hazards and/or flood areas.
 - Check Federal Emergency Management Agency flood maps for floodway and flood plain boundaries.
- Hazardous materials.
 - Check with local DEQ office to identify known hazardous material storage/spill/disposal locations and underground storage tanks.
- Section 4(f) of the Federal Transportation Act.
 - Check local plans for existing or planned parks and recreation facilities (already done in cultural resources element).
 - Check list of properties on the National Register of Historic Places maintained by SHPO (already done in cultural resources element).
 - Check with ODFW and US Fish and Wildlife Service on presence of wildlife or waterfowl refuges.
- Socioeconomic and Land Use
 - Identify “environmental justice” populations that could be affected by the project. (See Appendix 2 for more information)
 - Identify potential property acquisitions.
- Water Quality
 - Check and report on any local water quality deficiencies; identify potential stormwater/water quality issues.
- Air Quality
 - Check as to whether the project area is located within an air quality non-attainment or maintenance area.
- Visual Resources
 - Identify protected or sensitive visual resources, such as scenic highways, Wild and Scenic River corridors, forest highways, designated Heritage Trees or Historical Markers, etc.

Appendix 13 - Environmental Considerations

- Noise
 - Identify projects that could require noise mitigation.
- Federal Lands
 - Identify projects that will occur on property managed by another federal agency (e.g., USFS, BLM).

Task 3 - Screen projects for possible environmental impacts.

- Would the project result in:
 - Filling or removing materials from wetlands?
 - Impacts to sensitive plant or animal species?
 - Impacts to National Register listed or eligible historic properties?
 - Impacts to Section 4(f) resources?
 - Impacts to hazardous materials sites that cannot be reasonably mitigated?
 - Environmental Justice impacts?
 - Noise impacts that will require mitigation?
 - Impacts to visual resources?
- If any of the above questions are answered with a "yes" for a specific project:
 - Identify alternative ways to satisfy the need for the project.
 - If a reasonable alternative with fewer impacts is available, use it to replace the original idea.
 - Identify and incorporate measures to minimize impacts of the forwarded project alternative.
- Document in the TSP.
 - Methodologies used to identify resources.
 - Resources identified (note that some resource locations are not disclosed for their protection).
 - Project specific impacts.
 - Avoidance and impact minimization measures taken.

Information Sources

- Oregon Natural Heritage Program database (ONHP).
<http://oregonstate.edu/ornhic/data.html>
- National Wetland Inventory Maps.
<http://www.fws.gov/nwi/>
- State Historic Preservation Office (SHPO) cultural resource inventories.
<http://ecfd.oregon.gov/OPRD/HCD/SHPO/survey.shtml>
- Oregon Department of Fish and Wildlife (ODFW)
<http://www.dfw.state.or.us/>
- National Marine Fisheries – NW Region
<http://www.nwr.noaa.gov/>

2008 Transportation System Planning Guidelines

Appendix 13 - Environmental Considerations

- U.S. Fish and Wildlife Service – threatened, endangered, and candidate species in Oregon <http://www.fws.gov/oregonfwo/Species/>
- National Parks Service - National Register of Historic Places <http://www.nps.gov/history/nr/research/>
- Oregon Dept. of Environmental Quality - Water Quality Assessment database: <http://www.deq.state.or.us/wq/assessment/rpt0406/search.asp>
- Oregon Dept. of Fish and Wildlife - list of state threatened and endangered species: http://www.dfw.state.or.us/threatened_endangered/t_e.html
- Oregon Dept. of Environmental Quality - searchable hazardous materials databases http://www.oregon.gov/OSP/SFM/CR2K_Home.shtml#Searchable_Databases
- Oregon Dept. of Environmental Quality - LUST cleanup site database <http://www.deq.state.or.us/lq/tanks/lust/LustPublicLookup.asp>
- Oregon Dept. of Environmental Quality - air quality non-attainment and maintenance areas: <http://www.deq.state.or.us/aq/planning/nonattainment.htm>
- Oregon Dept. of State Lands - Wetland Resources local wetland inventories: <http://www.oregon.gov/DSL/WETLAND/lwi.shtml>
- National wetland inventories: <http://www.oregon.gov/DSL/WETLAND/nwi.shtml>
- Oregon Watershed Enhancement Board <http://www.oregon.gov/OWEB/>
- Oregon Plan for Salmon and Watersheds <http://www.oregon-plan.org/>
- Oregon State University Institute for Natural Resources: http://inr.oregonstate.edu/data_index.html
- Oregon Dept. of Fish and Wildlife - fish passage requirements: <http://www.dfw.state.or.us/fish/passage/>
- Oregon Travel Information Council - Heritage Programs <http://www.oregontic.com/heritage/>
- Local Comprehensive Plan.

Appendix 13 - Environmental Considerations

Refinement / Facility Planning

OAR 660-012-0005 (25) defines “Refinement Plan” as “an amendment to the transportation system plan, which resolves, at a systems level, determinations on function, mode or general location which were deferred during transportation system planning because detailed information needed to make those determinations could not reasonably be obtained during that process.”

OAR 731-015-0015 (10) defines “Facility Plan” as “a plan for a transportation facility such as a highway corridor plan and an airport master plan.”

Refinement planning efforts may present opportunities to integrate planning and environmental review processes. Conducting environmental analyses during the planning phase may result in efficiencies vs. the traditional method of refinement planning followed by NEPA. Jurisdictions considering refinement plan preparation are advised to consult with ODOT Planning staff as to whether the upcoming effort would be a good candidate for planning/NEPA integration.

Purpose and Need Statement

Background

A Purpose and Need Statement is a fundamental requirement when developing a proposal that will require future NEPA documentation – an Environmental Impact Statement or Environmental Assessment. In addition, some other federal processes, such as granting a 404 permit, also require the generation of a Purpose and Need Statement in order to apply for the permit. Clarity of purpose and confirmation of need are in themselves sound practices when developing large-scale proposals requiring public expenditure.

Writing the Purpose and Need Statement (Applies to “major projects” only.)

The Purpose and Need Statement sets the stage for consideration of the alternatives. The Purpose defines the transportation problem to be solved. The Need provides data to support the problem statement (Purpose). The Purpose and Need Statement is intended to clarify the expected outcome of public expenditure and to justify that expenditure – what you are trying to accomplish and why you think it is necessary.

Purpose

The Purpose is analogous to the problem. It is the “what” of the proposal.

- The Purpose should focus on the state transportation system.
- The Purpose should be stated in a single sentence.
- The Purpose should be stated as the positive outcome that is expected. For example, the purpose is to reduce congestion in the interstate corridor.
- It should avoid stating a solution as in - the purpose of the project is to build a bypass.
- Where appropriate, it should be stated broadly enough so that more than one transportation mode can be considered and multi-modal solutions are not dismissed prematurely.

Appendix 13 - Environmental Considerations

- Where appropriate, it should be stated broadly enough so that more than one alternative can be considered and alternatives are not dismissed prematurely.
- The Purpose should be stated in a manner so that a suite of intermediate steps could be posed as the solution, scaled to the needs of the community, if appropriate.

Need

- Should establish the evidence that the problem exists, or will exist if projected population and planned land use growth are realized.
- Should be factually and numerically based.
- Should support the assertion made in the purpose statement. For example, if the purpose statement is based on safety improvements, the need statement should support the assertion that there is or will be a safety problem to be corrected.

Applicability

A draft Purpose and Need Statement should be developed for all projects on the state highway system or receiving federal funding that may require an Environmental Impact Statement (EIS) or an Environmental Assessment (EA). An EIS is prepared for projects that will have significant impacts to the human and/or natural environment. An EA is prepared for projects when it is unclear whether significant environmental impacts will occur.

Timing and Process

A draft Purpose and Need Statement should be included in the TSP for projects that may require an EA or EIS. If a Refinement Plan or Facilities Plan is developed for a specific project, a final Purpose and Need Statement should be developed in coordination with an ODOT NEPA specialist.

Documentation

The draft Purpose and Need Statement must be included in the TSP for projects that will require an EIS or EA. The statement will be used in later environmental documentation and will be required for the project to enter onto the STIP for development and construction.

Appendix 14 – Freight Considerations

Freight Considerations for Local Transportation System Planning

Most freight moves by truck. Nearly all communities are located on a highway on which freight moves. Many smaller communities don't generate much freight, but most receive it. Freight is important to local businesses that receive or generate freight.

Objective

To address freight considerations in local transportation system planning.

TPR Requirement

660-01 2-0030(1)(c):

Identify needs for the movement of goods and services to support industrial and commercial development.

Coordination and Public Involvement

Coordinate the development of freight-related language in the TSP with the development of modal and topic plans, corridor plans and/or regional (MPO) transportation plans. Coordinate with the ODOT Freight Mobility Section, shippers and carriers, transportation brokers, port districts, and other groups and persons interested in freight.

Key Practice/Tips

Allocate extra time and energy to obtaining and keeping freight sector involvement and interest in the planning process. Identify tangible benefits that could result from involvement by freight interests in the planning process. Keep in mind that freight sector decisions and constraints are largely driven by businesses, not government.

Examples/Models

- ❑ Salem/Keizer Area Transportation Study.
- ❑ Technical Elements for *Regional Aviation System; Regional Intermodal Systems; Regional Rail System, Regional Maritime System, Regional Pipeline System; and Regional Goods Movement.*

Products and Deliverables

- ❑ Create a Freight Element or Section of the TSP and include goals, objectives and policies, strategies and actions, information on inventories, identified needs, recommended improvements and funding opportunities.
 - Identify the major freight issues in the planning area including accessibility, mobility, safety and other issues.
 - Make discussion of goals, objectives, policies, strategies actions, and/or other language consistent with statewide plans, corridor plans, airport master plans, port plans, and other relevant policy and planning documents.
 - Identify mobility and other freight-related needs. Establish a procedure for prioritizing and ranking needs. Work with engineers and others to assess technical feasibility of possible improvements to address highly ranked needs. Identify strategies, costs, and funding sources to address highly ranked needs and ways to meet the needs. Include highly ranked financially

2008 Transportation System Planning Guidelines

Appendix 14 – Freight Considerations

- constrained needs in the TSP.
- Recognize and alleviate potential conflicts created with certain land uses and freight corridors.

List the proposed projects in the plan that will improve freight and/or programs and an estimate of the timing (e.g., near-term, intermediate term, long-term) for their implementation. Include tables, figures, maps and text that address the following, where applicable.¹

Highways - Identify and describe highways that traverse the planning area. Include data on truck ADT volumes and percent of trucks in the traffic stream. Include data on truck crashes. If any highway in the planning area is part of a Truck–Crash Corridor, (see *Freight Moves the Oregon Economy*, <http://www.oregon.gov/ODOT/TD/TP/FME.shtml>) state so in the plan and identify strategies to improve safety.

If any highway in the planning area is part of the State Highway Freight System, state so in the plan along with the function and management strategies of this designation per the Oregon Highway Plan, <http://www.oregon.gov/ODOT/TD/TP/orhwyplan.shtml>. (For example, highways on the State Highway Freight System have higher mobility standards than other Statewide Highways.)

Identify problem areas such as capacity, turning radii at intersections, or bridges with weight or height concerns. Discuss roadway access and use performance measures or standards (e.g., congestion, condition, and safety) to identify existing and potential deficiencies.

Truck Routes - Describe existing and/or anticipated local truck routes (designated and not designated), include data on truck ADT volumes, percent of trucks in the traffic stream and truck crashes. Discuss roadway access and use performance measures or standards (e.g., congestion, condition, and safety) to identify existing and potential deficiencies. Identify problem areas such as capacity, turning radii at intersections, or bridges with weight or height concerns.

Truck Support Facilities - Identify location of support facilities including commercial truck stops, public rest areas, and commercial fueling stations; identify any deficiencies in truck support facilities.

Freight Generators and Receivers - Identify and describe the major freight generators and receivers, industrial areas, distribution centers and truck terminals in the planning area. These should include big box retail clusters. Identify the major commodities shipped or received and tonnage if available.

Intermodal Facilities - Identify and describe the intermodal facilities (truck-rail intermodal yards, truck-rail reload facilities, marine terminals, pipeline terminals, air cargo facilities). Discuss service levels and other characteristics.

¹ Many of the terms mentioned in this appendix are defined in the TDD study: *Freight Moves the Oregon Economy* (<http://www.oregon.gov/ODOT/TD/TP/FME.shtml>).

Appendix 14 – Freight Considerations

Connector Roads - Identify and describe the connector roads (on and off the NHS) to intermodal facilities or to major truck traffic generators or receivers. Include data on truck ADT volumes, percent of trucks in the traffic stream and truck crashes. Discuss roadway access (main routes and connector routes) and use performance measures or standards (e.g., congestion, condition, and safety) to identify existing and potential deficiencies, including potential negative impacts on minority and low-income neighborhoods. Identify problem areas such as capacity, turning radii at intersections, or bridges with weight or height concerns.

Pipelines - Identify if there are pipeline terminals in or in the vicinity of the jurisdiction and the companies operating the terminals. If available, indicate the amount of product transferred to another mode of transportation (e.g. truck, rail, marine). (For petroleum products use barrels/day and for natural gas use cubic feet/day.)

Rail Freight - If any rail lines pass through the planning area, identify owner/operator and describe location, classification, condition and local rail activity, including the local shippers served, commodities and approximate tonnage. Provide information on the number of at-grade (public and private) crossings, crashes, delays, and other rail crossing issues. Identify abandoned or underutilized facilities that have the potential to accommodate future traffic. Identify potential land use conflicts including adjacent residential zones, schools, or hospitals.

Navigable Waterways - Identify any marine terminal operators, and any applicable port district. Identify abandoned or underutilized facilities that have the potential to accommodate future traffic. Discuss characteristics and major issues. (For example, depth of channel, deepening or drawdown issues.)

Industrial Sanctuaries - All modes.

Appendix 14 – Freight Considerations

State-Level Information Sources

Air

- Oregon Transportation Plan*
<http://www.oregon.gov/ODOT/TD/TP/ortransplanupdate.shtml>
- Oregon Aviation Plan*
<http://www.oregon.gov/Aviation/docs/resources/OregonAviationPlan.pdf>
- Freight Moves the Oregon Economy*
<http://www.oregon.gov/ODOT/TD/TP/FME.shtml>
- Airport master plans
- Corridor planning documents
- Regional (MPO) transportation plans

Rail

- Oregon Transportation Plan*
<http://www.oregon.gov/ODOT/TD/TP/ortransplanupdate.shtml>
- Oregon Rail Plan*
<http://www.oregon.gov/ODOT/RAIL/docs/railplan01.pdf>
- Freight Moves the Oregon Economy*
<http://www.oregon.gov/ODOT/TD/TP/FME.shtml>
- Corridor planning documents
- Regional (MPO) transportation system plans
- Contact the Rail Division for crossing information, track condition and rail customers, (<http://www.oregon.gov/ODOT/RAIL/index.shtml>)

Water

- Oregon Transportation Plan*
<http://www.oregon.gov/ODOT/TD/TP/ortransplanupdate.shtml>
- Freight Moves the Oregon Economy*
<http://www.oregon.gov/ODOT/TD/TP/FME.shtml>
- Statewide Ports Study, port master plans or business plans
- Corridor planning documents
- Regional (MPO) transportation system plans.

2008 Transportation System Planning Guidelines

Appendix 14 – Freight Considerations

Pipeline

- Oregon Transportation Plan*
<http://www.oregon.gov/ODOT/TD/TP/ortransplanupdate.shtml>
- Freight Moves the Oregon Economy*
- <http://www.oregon.gov/ODOT/TD/TP/FME.shtml>
- Corridor planning documents
- Regional (MPO) transportation plans

Truck

- Oregon Transportation Plan*
<http://www.oregon.gov/ODOT/TD/TP/ortransplanupdate.shtml>
- Oregon Highway Plan*
<http://www.oregon.gov/ODOT/TD/TP/orhwyplan.shtml>
- Freight Moves the Oregon Economy*
<http://www.oregon.gov/ODOT/TD/TP/FME.shtml>
- Corridor planning documents
- Regional (MPO) transportation plans

ODOT Freight Mobility Section

Phone: 503-986-3520

Other ODOT Resources

Statewide Traffic Mobility - Phone: 888-275-6368

Motor Carrier Transportation - Phone: 503-378-5849

Rail Division - Phone: 503-986-4321, raildivision@odot.state.or.us

Planning Section - Phone: 503-986-4121

Appendix 15 – Guidelines for Addressing Aviation

Guidelines for Addressing Aviation in Transportation System Plans

Determine if jurisdiction is affected by air.

- Is there a public use general aviation airport inside or within 3 miles or a commercial airport inside or within ten miles of the jurisdiction's boundaries?
- Is there a private use general aviation airport (as defined in ORS 836.608(2)) inside or within one mile of the jurisdiction's boundaries?

If the answer is yes, then the TSP should include:

- Owner/operator of airport.
Data Source. Oregon Department of Aviation/facility owner
- General description:
Data Source. ODA/facility owner
 - Location.
 - State and Federal Classifications.
 - Present and future role.
 - Type and amount of service (current and future).
- List of jurisdictions and total area served (service area).
Data Sources. ODA/facility owner, ODOT
- Relationship/impact to jurisdiction.
Data Source. ODA/facility owner
- The portions of the jurisdiction located within airport imaginary surfaces or other lands or airspaces protected by state or federal regulations
Data Sources. facility owner, ODOT, ODA, DLCD
 - Meet 660-13 Airport Planning Rule requirements
http://arcweb.sos.state.or.us/rules/OARS_600/OAR_660/660_013.html.
- Inventory of surface accesses and modes and problems.
Data Source. ODOT

Contact the Oregon Department of Aviation at (503) 378-4880 for more information.
<http://www.oregon.gov/Aviation/>

Appendix 16 – Guidelines for Addressing Rail

Guidelines for Addressing Rail in Corridor Plans and Transportation System Plans

Limitations on State and Local Authority

Railroads are regulated by the federal government based on interstate commerce laws that stem from the U.S. Constitution. Most state and local regulatory powers are preempted by federal laws. Train speed, length, use of horns, and schedules are not subject to local regulation.

The Parameters of ODOT Rail Authority

The State of Oregon, through ODOT does have exclusive regulatory authority over railroad/public highway crossings. Any addition, closure, or modification of a public crossing, whether by the railroad or the road authority, must be applied for and approved by ODOT.

Trends in Rail Service

As a result of increased highway congestion and rising energy costs, both freight and passenger rail service are likely to increase dramatically. The number of mainline freight trains is projected to double by 2020. Today's 10 mph branch line with one train per day could be tomorrow's 60 or 70 mph commuter line with thirty trains per day. Communities should prepare for this increase. Rail corridors should be viewed similarly to interstate highway corridors. Complete grade separation should be sought.

Safety Considerations

Railroad right-of-ways are dangerous. Pedestrians, bicyclists, children, pets as well as motor vehicles should be kept off of them. Growing communities should consider planning for overpasses (over rail lines) in areas of future growth. A local plan should be developed to eliminate existing grade crossings on a priority basis as funds are available.

Communication

Early and continued communication is critical in working through rail issues. Be prepared to work with the railroad as well as with the ODOT Region office and the ODOT Rail Division to address those issues.

Determine if corridor or community/county is affected by rail.

If there is a rail line within the study area, either parallel to or crossing the highway, the Corridor Plan or TSP should include the following:

- Owner/operator of the rail line.
Data Source: ODOT Rail Division

- General description:
Data Source: ODOT Rail Division
 - Location.
 - Class of track (based on allowable speed).
 - Number of trains per day and speed.

Appendix 16 – Guidelines for Addressing Rail

Inventory of crossings

Data Source. ODOT Rail Division, Survey (for private crossings)

- Accident history.
- Possible crossing consolidations.
- Potential grade separations and closures.
- Crossing signals, active or passive.
- Existing and potential interconnections with traffic signals.

Future potential for passenger rail service.

Data Source. ODOT Rail Division

- If a public roadway is to be constructed, altered, or closed within 500 feet of a railroad crossing, a Crossing Order must be obtained from ODOT Rail Division.

Contact the appropriate ODOT Region Office or the ODOT Rail Division (<http://www.oregon.gov/ODOT/RAIL/index.shtml>) at (503) 986-4321 for more information.

Appendix 17 – Work Scope Recommendations for Key Public Elements

Work Scope Recommendations for Key Public Transportation Elements for Transportation System Plans

Objective

To inventory current services and facilities, identify the long-range needs for the community, prioritize those needs, identify anticipated resources, and define the financial investment strategy.

TPR Requirements (Summarized)

OAR 660-12-0015

- (5) TSPs shall be coordinated with affected agencies, local governments, special districts, including human services and employment agencies, and private providers of transportation services.
- (6) Mass transit and transportation districts shall participate in development of TSPs.

OAR 660-12-0020

- (2)(c) A public transportation plan which:
 - (A) Describes services for the transportation disadvantaged and identifies inadequacies. This description must consider and be compatible with the information provided in the required Human Services Transportation Coordination Plan.
 - (B) Describes intercity bus and passenger rail service and identifies location of stops, signage and terminals.
 - (C) For areas within an urban growth boundary which have public transit service, identifies existing and planned transit truck routes, exclusive transit ways, terminals and major transfer stations, major transit stops and park-and-ride stations.
 - (D) For areas within an urban area with a population greater than 25,000 persons, not currently served by transit, evaluates feasibility of developing a public transit system at buildout.
 - (f) A TSM and TDM plan for urban areas with populations greater than 25,000.
- (3) Each element identified in (2) (c) shall contain:
 - (a) Inventory and general assessment of existing and committed facilities and services.
 - A) The transportation capacity analysis shall include information on:
 - (1) The capacities of existing and committed facilities.
 - (2) The degree to which those capacities have been reached or surpassed on existing facilities.
 - (3) The assumptions upon which these capacities are based.
 - (C) A general physical and operational condition analysis.
 - (b) Planned transportation facilities services and major improvements and levels of service.
 - (c) A description of the planned location for the major improvements.

OAR 660-012-0035

- (1) Evaluate and select transportation system alternatives.

2008 Transportation System Planning Guidelines

Appendix 17 – Work Scope Recommendations for Key Public Elements

OAR 660-012-0040

(1) For areas within UGBs with populations over 2,500 persons, a transportation financing program.

Examples and Models

- Salem to Bend Corridor: Contact ODOT Region 2 or 4 Planning
- Corvallis Transit Element: Contact ODOT Region 2 or Public Transit Division
- Umatilla County Public Transportation Needs Assessment: Contact ODOT Region 5 or Public Transit Division

Coordination and Public Involvement

Outreach should include representatives from local MPOs, social service agencies, minority and low income neighborhoods, transit and special needs providers, TDM program managers, intercity transportation providers, taxi companies, high speed rail program and school districts.

Products and Deliverables

- An inventory and general assessment of existing and committed facilities and services.
- A prioritized list of needed facilities, services and improvements.
- The provider of each transportation facility or service.
- Identify coordination strategies to help meet needs.
- Maps, figures, tables and other materials showing locational and other relevant information.
- A general estimate of the timing for planned improvements.
- Rough cost estimates for needed improvements.
- A financing program.
- Changes or amendments to acknowledged comprehensive plan that will be required for implementation.

Key Tasks

Task 1 - Inventory existing conditions.

- Review the above policy documents and sources of information.
- Review existing city or county TSPs and refinement plans to determine existing services, connectivity, relevant policies and goals.
- Review existing demographic data to ascertain information about potential target markets.
- Obtain reports regarding providers and capital equipment from Public Transit Division
- Public Transportation Management System data base.
- Conduct telephone interviews with public and private transit providers, social service providers, TDM/rideshare program operators, taxi services and local planners.
- Identify existing services, including use, demand, cost, capital equipment and facilities, proposed changes, problems and opportunities.

2008 Transportation System Planning Guidelines

Appendix 17 – Work Scope Recommendations for Key Public Elements

Task 2 - Assess existing shortcomings and opportunities.

- Identify gaps or overlaps in service (e.g., under-served areas or populations including low income and minority neighborhoods, rides turned down, opportunities to coordinate with health and human resource providers).
- Identify gaps in connectivity (include other modes, pedestrians or rail).
- Assess potential for service coordination and any unmet needs.
- Assess opportunities to expand special needs service to the general public.

Task 3 - Assess service needs for the planning period.

- Review demographic forecasts and proposed land use changes, assessing changing trends.
- Assess any changing trends (e.g., increases in minority and low income populations).
- Develop a prioritized list of needed improvements. Include future right of way for park and ride or transit stops, carpool/vanpools opportunities, modal connections, capital equipment, increased frequency, etc.
- Determine a rough cost estimate for the improvements needed to fill gap.

Task 4 - Develop and prioritize strategies to meet future needs.

- Identify coordination strategies and programs to improve service (include strategies for service to low income and minority neighborhoods).
- Identify funding strategy.
- Develop an implementation timetable.
- Identify needed comprehensive plan amendments.
- Identify capacity needs.
- Identify connectivity needs.
- Identify capital needs related to system preservation, growth connected to population increases and system expansion.
- Identify (support) capital improvements including transit shelters, benches, administrative facilities, garages, maintenance shops, etc.
- Identify potential for alternative fuels use, cooperative maintenance, shared facilities, using green materials, improving pedestrian access to travel alternative, access to travel information, signage, and marketing strategies.

Information Sources

- 1997 Oregon Public Transportation Plan*, (<http://www.oregon.gov/ODOT/TD/TP/OPTP.shtml>) level of service goals Chapter V, Sherrin Coleman (503) 986-4305 or Dinah Van Der Hyde (503) 986-3885
- The Oregon Transportation Plan 2006* (<http://www.oregon.gov/ODOT/TD/TP/ortransplanupdate.shtml>)
- Rail Passenger Policy and Plan*, Bob Melbo (503) 986-4137
- TDM Information for Planning, Project Development and Implementation*,
- Transportation Options Program Manager (503) 986-4131
- Intercity Service Matrix*, Matthew Barnes (503) 986-4051

Appendix 18 – Degree of Project Readiness Preferred for Project Funding

Degree of Project Readiness Preferred for Project Funding

The consultant (or staff if the plan is done in-house) should develop a package of transportation projects that implement the TSP and a transportation financing plan that explains how the projects identified will be funded. The product of this analysis is a technical memo or TSP chapter that:

- ❑ Identifies a list of planned transportation projects, documents why each project was selected, and, clearly demonstrates consistency with the applicable Project Readiness characteristics outlined in the matrix below.
- ❑ Identifies the timing for planned transportation facility and major improvement projects (indicating that projects fall into a long, medium or short-term category for implementation).
- ❑ Identifies the likely environmental impacts of proposed transportation projects and/or describes the status of necessary environmental work. (See Appendix 13 for more specific guidance.)
- ❑ Identifies or estimates the cost for all transportation facility and major improvement projects (on the state and local system) identified in the TSP. Cost estimates are firmer and more precise (e.g., Construction, Design, Right-of-Way or land costs) for near-term projects than for long-term projects.
- ❑ Discusses existing funding mechanisms and the ability of these and new mechanisms to fund the projects identified in the package of transportation projects; identifies the use of system development charges (SDCs) if applicable, or other local funding mechanisms.

To the greatest extent possible, projects should be prioritized within the package of transportation projects and constrained to revenue likely to be available.

Background on Project Readiness

ODOT has been moving to establish closer linkages between transportation planning and the funding for transportation projects. These improved linkages should lead to better plans, better projects and better use of transportation dollars. Each STIP cycle, the Oregon Transportation Commission adopts selection criteria for modernization, preservation, state bridge, and development projects that include consistency with local plans and OTC policy established in the Oregon Transportation Plan and its mode and topic plans. OTC advisory committees may have further criteria for recommending mode or topic specific projects. Freight criteria have also been developed.

Consistent with this direction, ODOT has developed a Project Readiness Matrix that identifies preferred characteristics for projects coming from TSPs. The matrix covers key project types included in the STIP.

The Project Readiness Matrix is intended to help local jurisdictions identify projects (through the TSP process) that could be considered for funding, including through the Development or Construction STIP. This should help cities and counties better position themselves to compete for scarce dollars to complete their projects and at the same time ensure the quality of the analysis that went in to the identification of these projects.

2008 Transportation System Planning Guidelines

Appendix 18 – Degree of Project Readiness Preferred for Project Funding

The degree of project readiness preferred varies based on the type of project and the anticipated timetable for project implementation. The matrix identifies preferred characteristics for projects that address: Highway Modernization and Preservation, Transit, TDM, ITS, Signals and Signs, Bridge, Bicycle and Pedestrian, and Safety.

While there are unique characteristics that distinguish the project types, there are also similarities that are shared:

- ❑ Projects should demonstrate consistency with policy documents such as the Oregon Transportation Plan and its mode and topic plans such as the Oregon Highway Plan, and the Oregon Public Transportation Plan.
- ❑ Projects should be consistent with local ordinances or the TSP should envision updating those local ordinances to allow for the projects.
- ❑ Necessary environmental work should be identified. If projects are to be implemented in the short term, that work needs to be at least underway, and in some cases near completion or completed.
- ❑ Costs should be estimated and if the project is to be implemented in the short term, those costs should be firmer and more precise (e.g., Construction, Design, or Right-of-Way costs).
- ❑ Projects should show consistency with state priorities for the STIP.
- ❑ Projects with a long-term implementation timetable may be more conceptual than those with a short-term implementation timetable.

Project Readiness and ODOT Funding through the STIP

Projects for which ODOT funding through the STIP will be sought should be consistent with the preferred characteristics for Project Readiness as described below for the project type for which funding will be requested. Not all eligible projects will be included in the STIP. Projects included in the STIP may not include all elements in the TSP due to STIP priorities or limitations on the availability and/or allowable uses of transportation funding. Projects may be modified during the project development process.

Modernization, Preservation and Bridge Projects

Area Commissions on Transportation (ACTs) and other regional and statewide advisory groups assess Project Readiness in the course of prioritizing Modernization, Preservation and Bridge projects under the STIP criteria adopted by the Oregon Transportation Commission.

Projects that can begin construction within the intended timeframe will be considered “ready.” Projects with more or complicated remaining steps to be completed prior to implementation will be considered less than ready. Projects should also demonstrate consistency with the applicable TSP and comprehensive plan and with the relevant mode plan. The Commission will rely on advice from the ACTs and other regional and statewide advisory groups based on their application of the STIP Criteria.

Projects that will meet OTC criteria but need further planning or environmental work before they are “ready” may be considered for inclusion in ODOT’s Development STIP (D-STIP). See the OTC approved STIP criteria for the definition of D-STIP projects and the

Appendix 18 – Degree of Project Readiness Preferred for Project Funding

eligibility and prioritization criteria. STIP projects will be prioritized by ACTs and other regional and statewide advisory groups during the STIP development process. ODOT regions then assemble their recommended STIP programs with that advice and the OTC approves the program. The STIP criteria and the STIP Users' Guide, which contains more information about this process, are available online. See website at: <http://www.oregon.gov/ODOT/TD/TP/Background.shtml>.

Local jurisdictions are again reminded that following this guidance will not guarantee funding for requested projects. However, it should make those projects more competitive.

Project Readiness Matrix

Projects included in the TSP Project List should clearly demonstrate consistency with the characteristics (identified in the matrix on next page) for the project category under which they would be included in the STIP. For example, a Highway Modernization Project anticipated for construction in the near term (0-5 years) should address issues such as: purpose and need, consideration of reasonable options, environmental fatal flaws and OHP Policy 1G1. Similarly, a Bridge Project anticipated for construction in the long term (10 years or more out) should address issues such as: consistency with owner agency policies/plans, and identification by the Bridge Management System.

2008 Transportation System Planning Guidelines
Appendix 18 - Degree of Project Readiness Preferred for Project Funding

Degree of Project Readiness Preferred for Projects Coming From TSPs*

STIP Project Type	Anticipated Implementation Timetable for Projects		
	Long-term Implementation (10 years or more out)	Mid-term Implementation (5-10 years out)	Near-term Implementation (0-5 years out)
Highway Modernization	<ul style="list-style-type: none"> ▪ Purpose and need statement in TSP. ▪ Reasonable options have been considered and process documented (desirable). ▪ No environmental fatal flaws have been identified in the preferred alternative (desirable). ▪ Address consistency with OHP Policy 1G1. ▪ Conceptual – general concepts/alignments and known capacity needs. ▪ Preliminary cost estimates identified. 	<p>Same as previously identified for long-term implementation, plus</p> <ul style="list-style-type: none"> ▪ Consistent with comprehensive plan (desirable) ▪ Refinement level analyses including necessary environmental work initiated. ▪ Begin to address applicable land use issues and initiate any necessary actions. ▪ Likelihood for design exception(s) identified to greatest extent possible. ▪ Cost estimates are still preliminary but include a greater degree of precision than long-term estimates. 	<p>Same as previously identified for long-term/mid-term implementation, plus:</p> <ul style="list-style-type: none"> ▪ Reasonable options have been considered and process documented (critical). ▪ Consistent with comprehensive plan (critical). ▪ No environmental fatal flaws identified in the preferred alternative (critical). ▪ Necessary environmental work is completed or near completion for class 1 and 3 projects, for the Construction STIP or projects are identified in the Development STIP. ▪ Refinement level products continue to move the project forward to the Development or Construction STIP, or call for additional analysis, or consideration of other solution options. ▪ Costs are firmer or more precise.
Highway Preservation	<ul style="list-style-type: none"> ▪ Urban projects have considered the preferred attributes of the project beyond paving (such as streetscape improvements) and funding necessary for these. 	<p>Same as previously identified for long-term implementation, plus:</p> <ul style="list-style-type: none"> ▪ Consistent with strategy developed by Statewide Pavement Committee to optimize preservation funding. ▪ Urban projects have considered the preferred attributes of the project beyond paving (such as streetscape improvements) and funding necessary for these, and potential funding sources have been identified. 	<p>Same as previously identified for long-term/mid-term implementation, plus:</p> <ul style="list-style-type: none"> ▪ Cost estimates identified. ▪ ROW issues recognized. ▪ Urban projects have considered the preferred attributes of the project beyond paving (such as streetscape improvements) and funding necessary for these, and non-preservation funds have been identified and secured. ▪ Identified by Pavement Management System.

Note: ODOT guidance on project readiness is intended to help local jurisdictions better compete for funding. Those projects included in the STIP may not include all elements in the TSP due to STIP priorities or limitations on the availability and/or allowable uses of transportation funding. Projects may be modified during the project development process.

2008 Transportation System Planning Guidelines
Appendix 18 - Degree of Project Readiness Preferred for Project Funding

STIP Project Type	Long-term Implementation (10 years or more out)	Mid-term Implementation (5-10 years out)	Near-term Implementation (0-5 years out)
<p>Transit Modernization (Note: Includes capital, operations or planning projects that extend service.)</p>	<ul style="list-style-type: none"> ▪ Project is consistent with the following policies: OHP 1B, 2A, 1G and OPTH policies. ▪ Project is consistent with local policies or plans. ▪ Service, equipment or facility needs are identified. ▪ Public participation has identified potential issues. ▪ Environmental issues have been identified including environmental justice. ▪ Corridor or locations identified. ▪ Project magnitude identified. ▪ Preliminary cost estimates identified. 	<p>Same as previously identified for long-term implementation, plus:</p> <ul style="list-style-type: none"> ▪ Service extensions identified will support system efficiencies. ▪ Service, equipment or facility needs are refined. ▪ Project issues have been refined through public involvement. ▪ Environmental issues have been refined including environmental justice. ▪ Corridor and location improvements are refined. ▪ Cost estimates are still preliminary but include a greater degree of precision than long-term estimates. 	<p>Same as previously identified for long-term/mid-term implementation, plus:</p> <ul style="list-style-type: none"> ▪ Service extension project is consistent with priority for system efficiencies. ▪ A service, equipment or facility project is developed to implementation readiness. ▪ Project included public participation during development. ▪ Environmental issues have been addressed including environmental justice. ▪ Costs are firmer and more precise.
<p>Transit Preservation</p>	<ul style="list-style-type: none"> ▪ Project is consistent with the following policies: OHP 1B, 2A, 1G and OPTH policies. ▪ Fleet replacement and service support needs are estimated consistent with strategy developed by Public Transit Division and Public Transportation Advisory Committee to optimize preservation funding to meet OTC transit vehicle condition and service level targets. ▪ Project cost is estimated. 	<p>Same as previously identified for long-term implementation, plus:</p> <ul style="list-style-type: none"> ▪ Consistent with strategy developed by Public Transit Division and Public Transportation Advisory Committee to optimize preservation funding to meet OTC transit vehicle condition and service level targets. ▪ Vehicle replacement projects are estimated to support PDT's fleet preservation objectives. 	<p>Same as previously identified for long-term/mid-term implementation, plus:</p> <ul style="list-style-type: none"> ▪ Project is consistent with strategy developed by Public Transit Division and Public Transportation Advisory Committee. ▪ Project will optimize preservation funding to meet OTC transit vehicle condition and service level targets. ▪ Identified in Transit Management System. ▪ Vehicle replacement project supports PTD's fleet preservations objectives.

2008 Transportation System Planning Guidelines
Appendix 18 - Degree of Project Readiness Preferred for Project Funding

STIP Project Type	Long-term Implementation (10 years or more out)	Mid-term Implementation (5-10 years out)	Near-term Implementation (0-5 years out)
TSM/TDM	<p>Capital Projects</p> <ul style="list-style-type: none"> ▪ Demand estimated. ▪ Corridor options narrowed. ▪ Property options identified. ▪ Project costs estimated. ▪ Consistent with OHP policies 1G1, 4D and 4E, and OPTP policies 1A, 1E and 2A. <p>TDM/Rideshare Programs</p> <ul style="list-style-type: none"> ▪ Employment and population growth projected. ▪ Mobility options identified (need for). ▪ Congestion increases anticipated. ▪ Road capacity problems expected. ▪ Consistent with OHP policies 1G1, 4D and 4E, and OPTP policies 1A, 1E and 2A. 	<p>Capital Projects, same as previously identified for long-term implementation, plus:</p> <ul style="list-style-type: none"> ▪ Corridor identified. ▪ Property size estimated. ▪ Property options narrowed. ▪ Project costs estimated. <p>TDM/Rideshare Programs, same as previously identified, plus:</p> <ul style="list-style-type: none"> ▪ Program staffing needs identified. ▪ Target markets/corridors identified. ▪ Project costs estimated. ▪ Need for mobility options identified. 	<p>Capital Projects, same as previously identified for long-term/mid-term implementation, plus:</p> <ul style="list-style-type: none"> ▪ Necessary environmental issues have been addressed. ▪ Property location and size specified. ▪ ROW needs identified. ▪ Project costs identified. ▪ Local agreements in place for match. <p>TDM/Rideshare Programs same as previously identified for long-term/mid-term implementation, plus:</p> <ul style="list-style-type: none"> ▪ Program staffing needs specified. ▪ Cost identified. ▪ Work program goals identified.
ITS	<ul style="list-style-type: none"> ▪ Project is consistent with OHP Policy 2E. ▪ Project is consistent with regional ITS architecture and concept of operations (required by 23 CFR, part 940). 	Same as previously identified for long-term implementation.	<p>Same as previously identified for long-term/mid-term implementation, plus:</p> <ul style="list-style-type: none"> ▪ Maintenance and operations funding has been identified. ▪ State traffic engineer approval has been obtained if necessary. ▪ Project is consistent with region priorities and site criteria from the ITS Design Code.

2008 Transportation System Planning Guidelines
Appendix 18 - Degree of Project Readiness Preferred for Project Funding

STIP Project Type	Long-term Implementation (10 years or more out)	Mid-term Implementation (5-10 years out)	Near-term Implementation (0-5 years out)
Signals/Signs	<ul style="list-style-type: none"> ▪ Project is consistent with OHP and specifically addresses policies 1F, 2F and 2G. ▪ Projects which identify future traffic signals shall address ▪ OHP actions 3A.3, 3A.4, 3A.5 and 3A.6. ▪ Future traffic signals are supported by warrants for the year of implementation. 	<p>Same as previously identified for long-term implementation, plus:</p> <ul style="list-style-type: none"> ▪ Refinement levels analysis including necessary environmental work. 	<p>Same as previously identified for long-term/mid-term implementation, plus:</p> <ul style="list-style-type: none"> ▪ Project is consistent with pertinent elements of the OHP. ▪ Proposed traffic signals are supported by warrants, signal spacing criteria and systems considerations as outlined in the <i>ODOT Traffic Signal Policy and Guidelines</i> and consistent with OAR Division 20. ▪ All proposed traffic control devices, speed zones and parking restrictions have State Traffic Engineer approval. ▪ Agreements for operation and maintenance have been advanced. ▪ Traffic signals near railroad grade crossings have been identified in <i>ODOT Rail Division Crossing Orders</i>. ▪ Proposed illumination is consistent with the <i>ODOT Lighting Policy and Guidelines</i>. ▪ Proposed signing is consistent with the <i>ODOT Sign Policy and Guidelines for the State Highway System</i>. ▪ Project has identified adequate right-of-way and appropriate spacing between intersections and interchange ramps to properly install guide signs, sign bridges and illumination of traffic signal poles. ▪ Refinement level products continue to move the project forward to the Development or Construction STIP, or call for additional analysis, or consideration of other solution options.

2008 Transportation System Planning Guidelines
Appendix 18 - Degree of Project Readiness Preferred for Project Funding

STIP Project Type	Long-term Implementation (10 years or more out)	Mid-term Implementation (5-10 years out)	Near-term Implementation (0-5 years out)
Bridge	<ul style="list-style-type: none"> ▪ Consistent with owner agency policies or plans. ▪ Identified by the Bridge Management System. 	Same as previously identified for long-term implementation, plus: <ul style="list-style-type: none"> ▪ Project cost is estimated. ▪ ROW and environmental issues recognized. ▪ Historical significance of the bridge is identified. ▪ Consistent with owner agency policies, plans, and/or strategies. ▪ Consistent with STIP funding priorities. 	Same as previously identified for long-term/mid-term implementation, plus: <ul style="list-style-type: none"> ▪ Firm cost estimates identified. ▪ Project is included in a prioritized list for which finding is likely. ▪ Necessary environmental issues have been addressed. ▪ Project funding, including any necessary match, is firmly identified. ▪ Consistent with owner agency policies, plans and/or priorities. ▪ Identified by the Bridge Management System.
Bicycle/Pedestrian	<ul style="list-style-type: none"> ▪ Projects that are described in enough detail so all parties are aware of the plan if other changes are proposed. ▪ Project is consistent with OHP/OBPP policies. ▪ Need for mobility options has been identified. ▪ Right of Way/property options identified. ▪ Project is consistent with STIP priorities. 	Same as previously identified for long-term implementation, plus: <ul style="list-style-type: none"> ▪ Projects that could be incorporated into other larger projects. ▪ Projects that could be implemented if opportunities arise. ▪ Project cost estimated. ▪ Right of Way/property options narrowed. ▪ Environmental issues identified. ▪ Project is consistent with STIP funding priorities. ▪ Elements that may need State Traffic Engineer approval are identified. ▪ Likelihood for design exceptions identified to greatest extent possible. 	Same as previously identified for long-term/mid-term implementation, plus: <ul style="list-style-type: none"> ▪ Projects with enough engineering so cost estimates are reliable enough to apply for funding. ▪ Project is consistent with OHP/OBPP policies. ▪ Firm project cost identified. ▪ Right of Way/property needs specified. ▪ Environmental issues have been addressed. ▪ Project is consistent with STIP funding priorities. ▪ State Traffic engineer approval obtained if necessary. ▪ Design Exceptions identified and approved.
Safety	<ul style="list-style-type: none"> ▪ Project is consistent with OHP and specifically addresses policies 2F. ▪ Project is consistent with region priorities. ▪ Project is consistent with the TSAP. 	Same as previously identified for long-term implementation, plus: <ul style="list-style-type: none"> ▪ Project addresses high priority safety site (i.e. SPIS). ▪ Project has benefit-to-cost ratio greater than one. ▪ Refinement level analysis including necessary environmental work identified. 	Same as previously identified for long-term/mid-term implementation. <ul style="list-style-type: none"> ▪ Refinement level analysis including necessary environmental work begun or completed.